SASKATOON

CONFERENCE CAHR 2019

28th Annual Canadian Conference on HIV/AIDS Research

May 9-12, 2019
Saskatoon, Saskatchewan

CONGRÈS DE L'ACRV 2019

28e Congrès annuel canadien de recherche sur le VIH/sida

Du 9 au 12 mai 2019
Saskatoon, Saskatchewan

ᐊᑐᓂᑲ

Wuniska!

ABSTRACTS
ABRÉGÉS

www.cahr-acrv.ca

CONFERENCE CAHR 2019

CONGRÈS DE L'ACRV 2019

CAHR 2019

ACRV 2019

Wuniska!

Abstracts / Abrégés

May 9 - 12, 2019/ 9 au 12 mai 2019

Saskatoon, Saskatchewan

Message from the CAHR President

Dr. Curtis Cooper

On behalf of the Canadian Association for HIV Research (CAHR), welcome to the 28th Annual Canadian Conference on HIV/AIDS Research.

As has happened for over a quarter century, those working in all disciplines of HIV/AIDS research, as well as policy makers, persons living with HIV and other individuals committed to ending the pandemic, will come together to share the outcomes of new research, honour new investigators and acknowledge the achievements of major contributors to the field.

Our decision to return to Saskatoon this year was a strategic one: Saskatchewan has the highest rate of HIV in Canada, and Indigenous populations within Saskatchewan and throughout Canada continue to be disproportionately affected. Hosting the Conference in Saskatchewan will provide a platform to illustrate this stark reality and allow area researchers/students to participate and showcase their work.

This year's stellar program is thanks to the work of the 2019 Conference Scientific Committee for which CAHR extends it gratitude and appreciation. Together we will learn new scientific knowledge and exchange ideas through structured and spontaneous dialogue on the major issues facing the global response to HIV.

As outgoing President, I am also pleased to highlight a number of changes that were developed over the last two years in response to ideas put forward by the membership. It is our hope that these changes better align CAHR and our Conference with the relevant needs of HIV/AIDS researchers in Canada and the face of the epidemic. Changes include increased number of oral abstract sessions that will allow more cuttingedge research to be presented and a more dynamic Sunday program; a greater focus on key populations that will include a dedicated oral abstract session on Saturday; and waiving the registration fees for community members.

For the next four days, I hope you have a great Conference, find it to be a worthwhile learning experience and are able to reconnect with old friends and colleagues while engaging new ones.

Message du président de l'ACRV


Dr. Curtis Cooper

Au nom de l'Association canadienne de recherche sur le VIH (ACRV), je vous souhaite la bienvenue au 28e Congrès annuel canadien de recherche sur le VIH/sida.

Cette année encore, comme depuis plus d'un quart de siècle, ceux qui travaillent dans les diverses disciplines de la recherche sur le VIH/sida, de même que les décideurs, les personnes vivant avec le VIH et autres personnes résolues à mettre fin à la pandémie se rassembleront pour partager les résultats des recherches nouvelles, honorer les nouveaux chercheurs et reconnaître les réalisations des principales personnes contribuant aux travaux dans ce domaine.

La décision de retourner à Saskatoon cette année n'est pas fortuite. La province a le plus haut taux de VIH au Canada et les populations autochtones de la province et de l'ensemble du pays sont encore disproportionnellement affectées. La tenue du congrès en Saskatchewan servira de plateforme afin d'illustrer cette dure réalité et permettre aux chercheurs/étudiants de la région de participer et de mettre en lumière leurs travaux.

L'excellence du programme de cette année est le fruit du travail du Comité scientifique du Congrès 2019, auquel l'ACRV exprime sa gratitude et son appréciation. Nous acquerrons ensemble de nouvelles connaissances scientifiques et les dialogues spontanés ou structurés donneront lieu à des échanges d'idées sur les grands enjeux qu'affronte la réponse globale au VIH.

À titre de président sortant, j'ai également le plaisir de rappeler un certain nombre de modifications introduites au fil des deux dernières années en réponse aux idées exprimées par les membres. Nous espérons que ces changements correspondront mieux à notre Association et au congrès en intégrant les besoins pertinents des chercheurs sur le VIH/sida au Canada et le visage de l'épidémie. Parmi ces changements, mentionnons l'augmentation du nombre de séances de présentation d'abrégées qui permettra à un plus grand nombre de chercheurs de pointe d'être présents, ainsi qu'un programme du dimanche plus dynamique; un accent accru sur les populations clés, dont une séance de présentation orale d'abrégés spécialisés le samedi, et l'abandon des frais d'inscription pour les membres de la collectivité.

J'espère que les quatre prochaines journées vous offriront un excellent congrès, où vous trouverez des expériences d'apprentissage précieuses, tout en pouvant renouer avec d'anciens amis et collègues et vous en faire de nouveaux.

Message from the Conference Co-Chairs

Dr. Alexandra King

Dr. Linda Chelico

It is with great pleasure that we welcome you to Treaty 6 territory and the homeland of the Métis people for the 28th annual CAHR Conference. The last time that CAHR was on this land was in 2010. Many things have changed in Saskatoon in nine years, and we are pleased to showcase the positive work that has been done here to rise to the challenge of HIV/AIDS in Saskatchewan.

As Co-Chairs, we felt that it was important to assemble a Scientific Committee of people predominantly from Saskatchewan. In 2010, only two of the twelve committee members were from Saskatchewan. This year, eleven of the thirteen committee members are from Saskatchewan, and the other two are from our neighboring prairie provinces. This alone demonstrates the increased capacity that the province has to conduct HIV/AIDS research and support our community members.

For CAHR 2019, we have made our community members central to the conference. The theme, Wuniska (a Cree and Saulteaux word that means wake up, awaken, arise, wake up and rise) was gifted to us by the Saskatchewan Health Authority Patient/Family Advisory Committee for HIV/AIDS, which is composed of predominantly First Nations and Métis people with lived HIV experience. We listened to what they felt was important to address in this conference. This is because even though 16% of the Saskatchewan population self-identify as Indigenous, they represent 79% of the persons newly diagnosed with HIV in the province. We have all heard the statistics that Saskatchewan has. We know that change is desperately needed, and our community members highlighted key areas that need change that we will address this year at CAHR. However, we want to also celebrate all the accomplishments that have been made in the last nine years since CAHR was in Saskatoon and showcase the resiliency, ingenuity, and determination of our researchers, healthcare providers, and community members.

We hope that this conference will incite great discussions on how to continue to work towards the UN AIDS 90-90-90 targets, especially with Inuit, Métis and First Nation peoples disproportionally affected by HIV. An important aspect of this is focusing on community specific needs to determine culturally appropriate ways of dealing with HIV education and prevention. As a result, we are continuing for the 2nd year the four key population sessions across all tracks exploring structural health determinants and including a cultural opening for the Indigenous Key Population session, and other sessions throughout the conference. We hope that in future years each key population will develop a tradition of opening the session in a community specific manner.

We wish you to have an exciting time at the conference, filled with lots of scientific discussion, but please do not forget to enjoy our beautiful prairie lands and South Saskatchewan River.

Message des coprésidents du congrès

Dr. Alexandra King

Dr. Linda Chelico

C'est avec un très vif plaisir que nous vous accueillons sur le territoire du Traité 6 et la terre des Métis pour le 28e Congrès annuel de l'ACRV. La dernière fois que l'ACRV s'est rassemblée ici était en 2010. Nombre de choses ont changé à Saskatoon en neuf années et nous avons le plaisir de faire ressortir le travail positif abattu ici pour relever le défi du VIH en Saskatchewan.

En tant que coprésidentes, nous avons jugé important de réunir un comité scientifique de personnes provenant surtout de la Saskatchewan. En 2010, deux seulement des 12 membres du comité étaient de la Saskatchewan. Cette année 11 des 13 membres du comité viennent de la province et les deux autres des provinces des Prairies voisines. Cela même prouve une hausse de la capacité de la province de mener des recherches sur le VIH/sida et d'appuyer les membres de notre collectivité.

Pour l'ACRV 2019, nous avons fait des membres de la collectivité le point central du congrès. Le thème, Wuniska (cri et saulteaux signifiant Réveille-toi, Lève-toi) nous a été accordé par le comité consultatif des patients/familles de l'administration sanitaire de la Saskatchewan pour le VIH/sida, qui se compose surtout de membres des Premières Nations et des Métis qui ont vécu l'expérience du VIH. Nous avons écouté et entendu ce qu'ils estimaient important d'aborder dans ce congrès. C'est pour cette raison que même si 16 % de la population de la Saskatchewan s'identifient comme autochtones, ils représentent 79 % des personnes nouvellement diagnostiquées comme atteintes du VIH dans la province. Nous avons tous entendu la statistique de la Saskatchewan. Nous savons qu'il est désespérément nécessaire de changer et les membres de notre collectivité ont fait ressortir les domaines clés qui doivent changer et que nous aborderons cette année à l'ACRV. Par contre, nous voulons aussi souligner toutes les réalisations

accomplies au cours des neuf dernières années depuis la venue de l'ACRV à Saskatoon et faire ressortir l'adaptabilité, l'inventivité et la détermination de nos chercheurs, fournisseurs de soins de santé et membres de la collectivité.

Nous espérons que ce congrès stimulera de profondes discussions sur la façon de poursuivre vers les cibles 90-90-90 de l'ONUSIDA, particulièrement chez les Inuits, les Métis et les membres des Premières Nations, qui sont affectés de façon disproportionnée par le VIH. Un des aspects importants de cela est de se concentrer sur les besoins propres à la collectivité afin de déterminer les façons culturellement appropriées de faire face à la sensibilisation et à la prévention du VIH. Voilà pourquoi nous maintenons pour la deuxième année les quatre séances sur les populations clés dans l'ensemble des volets, afin d'explorer les déterminants structurels de la santé et d'inclure une ouverture culturelle pour la séance sur la population clé des Autochtones et les autres séances tout au long du congrès. Nous espérons que, dans les années à venir, chaque population clé se dotera d'une tradition d'ouverture de la séance d'une manière propre à sa collectivité.

Nous vous souhaitons de passer du bon temps au congrès, du temps intéressant, rempli de nombreuses discussions scientifiques, mais nous vous prions de ne pas oublier de profiter aussi de la magnificence des terres des Prairies et de la rivière Saskatchewan Sud.

CAHR Committees / Comités de l'ACRV

CAHR Executive Committee / Conseil de direction de l'ACRV

President / Président	Dr. Curtis Cooper
President Elect / Président désigné	Dr. Carol Strike
Past President / Ancien président	Dr. Michael Grant
Treasurer / Trésorière	Dr. Marissa Becker
Secretary / Secrétaire	Terry Howard

CAHR Board of Directors / Conseil d'administration de l'ACRV

Track A: Basic Sciences / Volet A : Sciences fondamentales	Dr. Hélène Côté
Track B: Clinical Sciences / Volet B : Sciences cliniques	Dr. Shariq Haider
Track C: Epidemiology and Public Health Sciences Volet C : Épidémiologie et sciences de la santé publique	Dr. Angela Kaida
Track D: Social Sciences / Volet D : Sciences sociales	Dr. Ciann Wilson
Community Representative / Représentant communautaire	Maureen Owino

CAHR Staff Members / Personnel de l'ACRV

Executive Director / Directeur général	Andrew Matejcic
Sponsorship, Accreditation, Education Gestionnaire, Commandites, agrément et formation	Erin Love
Finance, Communications / Gestionnaire Finances et communications	Shelley Mineault

Scientific Program Committee / Comité du programme scientifique

Conference Co-Chairs / Coprésidents du congrès

Dr. Alexandra King
Dr. Linda Chelico

Track Co-Chairs / Coprésidents des volets

Track A: Basic Sciences / Volet A : Sciences fondamentales

Dr. Lyle Mckinnon
Dr. Joyce Wilson

Track B: Clinical Sciences / Volet B : Sciences cliniques

Dr. Stuart Skinner
Dr. Kris Stewart

Track C: Epidemiology and Public Health Sciences

Volet C : Épidémiologie et sciences de la santé publique

Dr. Nnamdi Ndubuka
Dr. Denise Walker
Dr. Ibrahim Khan

Track D: Social Sciences / Volet D : Sciences sociales

Dr. Vera Caine
Dr. Geoffrey Maina

Abstract Reviewers / Évaluateurs des abrégés

Track A:
Basic Sciences
Volet A :
Sciences fondamentales

Jonathan Angel
Benoit Barbeau
Stephen Barr
Nicole Bernard
Mark Brockman
Zabrina Brumme
Adam Burgener
Nicolas Chomont
Éric Cohen
Cecilia Costiniuk
Angela Crawley
Christina Farr
Andrés Finzi
Yong Gao
Ravendra Garg
Anne Gatignol
Caroline Gilbert
Michael Grant
Christina Guzzo
Rupert Kaul
Marc-André Langlois
Kerry Lavender
Paul McLaren
Andrew Mouland
Thomas Murooka
Ralph Pantophlet
Art Poon
Jean Pierre Routy
Tara Schellenberg
Xiaojian Yao

Track B:
Clinical Sciences
Volet B :
Sciences cliniques

Lisa Barrett
Marissa Becker
Ari Bitnun
Joanne Embree
Michelle Foisy
Troy Grennan
Marianne Harris
Mark Hull
Jack Janvier
Yoav Keynan
Osacr Larios
Mona Loutfy
Valerie Martel Laferriere
Sharmistha Mishra
Melanie Murray
Neora Pick
Stanley Read
Carmine Rossi
Steve Sanche
Lena Serghides
Joel Singer
Mike Stuber
Darrell Tan
Alex Wong
Mark Yudin

Track C:
Epidemiology and Public Health Sciences
Volet C :
Épidémiologie et sciences de la santé publique

Grace Akinjobi
Mustafa Andkhoie
Chris Archibald
Suneil Bapat
Karine Blouin
Allison Carter
Khami Chokani
Alexandra Crizzle
Carolyn Cyr
Mark Gilbert
Maurice Hennink
Nashira Khalil
Stephanie Konrad
Nathan Lachowsky
Carla Loeppky
Mona Loutfy
Valerie Mann
Taylor McLinden
Nasheed Moqueet
Michelle Murti
Earl Nowgesic
JohnMark Opondo
Briann Quinn
Carmine Rossi
Steve Sanche
Tara Schellenberg
Mark Tyndall
Sanaz Vaseghi
Judith Wright
Qiuying Yang

Track D:
Social Sciences
Volet D :
Sciences sociales

Mehdee Araee
Heather Armstrong
Josie Auger
Donna Bulman
Allison Carter
Anthony De Padua
Aniela Delacruz
Georgia Dewart
Andrew Estefan
Jacqueline Gahagan
Oralia Gómezmírez
Adrian Guta
Trevor Hart
Ashley Lacombe-Duncan
Charlotte Loppie
Sithokozile Maposa
Zack Marshall
Jane Mccall
Judy Mill
Earl Nowgesic
Kelly Obrien
Bernie Pauly
Craig Phillips
Rusty Souleymanov

Table of Contents

Oral Presentations / Exposés oraux

Poster Presentations / Affiches

Basic Sciences / Sciences fondamentales

Clinical Sciences / Sciences cliniques

Epidemiology and Public Health / Épidémiologie et santé publique

Social Sciences / Sciences sociales

***Basic Sciences:* HIV Immunology**
***Sciences fondamentales :* Immunologie du VIH**

BS1.01

Assessing Immunologic Impact of CCR5delta32 Homozygous Stem Cell Transplant in HIV Infection

Clarissa Brisseau[3], Drew Slauenwhite[3], Wanda Hasagawa[3, 2], Kate Gillis[2], Nicholas Forward[3, 2], Sharon Oldford[3], Lisa Barrett[1, 2, 3]

1. Canadian Centre for Vaccinology, Halifax, NS, 2. Nova Scotia Health Authority, Halifax, NS,
3. Dalhousie University, Halifax, NS

Introduction: Despite multiple attempts, stem cell transplant (SCT) has only been associated with durable cure in one patient. While several of the 15 patients in the EPISTEM cohort had decreased viral reservoir after SCT, it is unclear how SCT impacts HIV-associated chronic immune exhaustion and immune responses to other viral pathogens such as influenza and CMV.

Purpose: Examine phenotypic and functional immune changes, as well as the inducible viral reservoir, in an HIV positive person receiving a CMV+, CCR5delta32 SCT for chronic myeloid leukemia.

Methods: A 58 year old individual living with HIV for 25 years provided written informed consent. Mononuclear cells were collected by leukapheresis and peripherally. PBMC (peripheral blood mononuclear cells) were collected 9 months post-transplant. Immune function and phenotype were assessed via ELISPOT, ELISA, and flow cytometry. Inducible HIV viral reservoir was quantified by Tat/Rev Limiting Dilution Assay (TILDA).

Results: The individual achieved full engraftment and CML remission without HIV virologic rebound. The peripheral inducible viral reservoir was reduced, but not eliminated, at 9 months post-transplant. Phenotypically exhausted ($CD57^+PD\text{-}1^+$, $PD\text{-}1^+Tim\text{-}3^+$) $CD8^+$ T cells and immature ($CD10^+CD20^+CD27^-$) B cells increased post-transplant, but tissue like memory ($CD10^-CD20^-CD21^{lo}CD27^-$) B cells decreased. Anti-HIV $CD8^+$T cell responses were reduced below pre-transplant viral suppression levels, while anti-HIV B cell responses were markedly higher. Anti-CMV and anti-influenza B cell responses remained low between pre and post-transplant but anti-CMV T cell responses remained high. The individual passed away at 1.5 years post-transplant due to myocardial infarction.

Conclusion: CCR5delta32 homozygous SCT can be safely done in HIV positive people, and these data extend global knowledge on immune exhaustion and HIV viral reservoir reversibility. While absolute cure and immune normalization is unlikely, rejuvenation of anti-HIV B and T cell responses suggest may be possible with significant reservoir reduction, even after decades of HIV infection.

***Basic Sciences:* HIV Immunology**
***Sciences fondamentales :* Immunologie du VIH**

BS1.02

Effects of NK Cell Adaptation to Cytomegalovirus and Engagement of TIGIT on HIV-specific Antibody-dependent Cell-mediated Cytotoxicity

Kayla A. Holder, Emma C. Antle, Neva J. Fudge, Michael D. Grant
Memorial University of Newfoundland, St. John's, NL

Adaptation to human cytomegalovirus (HCMV) infection enhances antibody-dependent natural killer (NK) cell function. Chronic human immunodeficiency virus (HIV) infection amplifies HCMV-driven accumulation of NK cells expressing NKG2C. To evaluate functional and phenotypic impacts of HCMV-driven NK cell adaptation in HIV infection, we compared three groups of subjects distinguished by either HCMV-seronegative status or by high (> 20) versus low (< 6) percentages of NKG2C-expressing NK cells. Reduced transcription factor PLZF and signaling adaptor protein FcεRIγ expression ($p = 0.0244$) accompanied NK cell adaptation in the HCMV-infected groups and FcεRIγ expression inversely correlated with NKG2C expression ($p = 0.0004$). Despite a clear hierarchy of phenotypic adaptation, CD16-mediated NK cell degranulation, IFN-γ production or antibody-dependent cellular cytotoxicity (ADCC) did not differ significantly between groups. Adapted NK cells did not display a classical exhausted phenotype as there was low PD-1, LAG-3 (<1%), and TIM-3 (<10%) expression, however, TIGIT was present on the majority of NK cells from all three groups. To selectively examine the impact of HCMV driven adaptation and TIGIT expression on HIV-specific ADCC, we used Fc receptor expressing P815 cells and NK cell resistant CEM.NK^{r} cells infected with a recombinant vaccinia virus expressing gp160 (vPE16) as targets in the presence and absence of anti-TIGIT mAb. Levels of HIV-specific ADCC were similar across groups (30-50% specific lysis at effector to target ratio 30:1) and were lowered by TIGIT engagement. The ability of NK cells to respond through CD16 was generally well preserved in HIV infection. Although HCMV infection affected NK cell FcεRIγ, PLZF and NKG2C expression, there was little evidence of a selective impact on CD16-dependent NK cell function. Engagement of TIGIT inhibited HIV-specific ADCC, suggesting TIGIT is an appropriate target for invigorating ADCC against HIV-infected CD4^{pos} T cells in functional cure or other treatment strategies. Supported by CIHR.

Basic Sciences: **HIV Immunology**
Sciences fondamentales : **Immunologie du VIH**

BS1.03

CXCL13 as a Biomarker of Immune Activation during Early and Chronic HIV Infection

Vikram Mehraj[1, 5], Rayoun Ramendra[1], Stéphane Isnard[1], Franck P. Dupuy[1], Bertrand Lebouché[1], Cecilia Costiniuk[1], Réjean Thomas[2], Jason Szabo[3], Jean-Guy Baril[3], Benoit Trottier[3], Pierre Coté[3], Roger LeBlanc[4], Madeleine Durand[5], Carl Chartrand-Lefebvre[5], Ido Kema[6], Yonglong Zhang[7], Malcolm Finkelman[7], Cécile Tremblay[5, 8], Jean-Pierre Routy[1], Montreal Primary HIV-infection Study, Canadian Cohort of HIV infected Slow Progressors' Study

1. Research Institute and Chronic Viral Illness Service, McGill University Health Centre, Montreal, QC, 2. Clinique Médicale l'Actuel, Montréal, QC, 3. Clinique Médicale Quartier Latin, Montréal, QC, 4. Clinique Médicale OPUS, Montréal, QC, 5. Centre de Recherche du Centre Hospitalier de l'Université de Montréal, Montréal, QC, 6. Department of Laboratory Medicine, University Medical Center, University of Groningen, Groningen, Netherlands, 7. Associates of CapeCod Inc., Falmouth, MA, USA, 8. Département de microbiologie, infectiologie et immunologie, Université de Montréal, Montréal, QC

Background: CXCL13 is preferentially secreted by Follicular Helper T cells (T_{FH}) to attract B cells to germinal centers. Plasma levels of CXCL13 are elevated during chronic HIV-infection, however there is limited data on such elevation during early phases of infection and on the effect of ART. Herein, we assessed the relationship of plasma levels of CXCL13 with systemic immune activation and HIV disease progression.

Methods: 114 people living with HIV (PLWH) who were in early (EHI) or chronic (CHI) HIV infection, 35 elite controllers (EC) and 17 uninfected controls (UC) were studied. A subgroup of 11 EHI who initiated ART and 14 who did not were followed prospectively. Plasma levels of CXCL13 were correlated with CD4 T cell count, CD4/CD8 ratio, plasma viral load (VL), markers of microbial translocation (LPS, sCD14, and (1-3)-β-D-Glucan), B cell activation (total IgG, IgM, IgA, and IgG1-4), and inflammation (IL-6, IL-8, IL-1b and TNF-α), IDO-1 activity, and frequency of $CD38^+HLA\text{-}DR^+$ T cells on $CD4^+$ and $CD8^+$ T cells.

Results: CXCL13 Plasma levels were elevated in EHI (127.9±64.9 pg/mL) and CHI (229.4±28.5 pg/mL) compared to EC (71.3±20.11 pg/mL) and UC (33.4±14.9 pg/mL). Longitudinal analysis demonstrated that CXCL13 remains significantly elevated after 14 months without ART ($p<0.001$) and was reduced without normalization after 24 months on ART ($p=0.002$). Correlations were observed with VL, CD4 T cell count, CD4/CD8 ratio, LPS, sCD14, (1-3)-β-D-Glucan, total IgG, TNF-α, Kynurenine/Tryptophan ratio, and frequency of CD38+HLA-DR+ CD4 and CD8 T cells. In addition, PLWH with high anti-CMV IgG titre presented with higher levels of plasma CXCL13 ($p=0.005$).

Conclusion: Plasma CXCL13 levels increased with HIV disease progression. Early ART reduces plasma CXCL13 and B cell activation without normalization. CXCL13 represents a novel marker of systemic immune activation during early and chronic HIV infection and may predict the development of non-AIDS events.

***Basic Sciences:* HIV Immunology**
***Sciences fondamentales :* Immunologie du VIH**

BS1.04

Cd8 T Cells Expressing CXCR5 During SIV Infection Do Not Express Higher Levels of Effector Cytotoxic Molecules

ghita Benmadid-Laktout[1], julien Clain[1], Yasmina Fortier[2], mireille Laforge[2], Gina Racine[1], Ouafa Zghidi-Abouzid[1], Henintsoa Rabezanahary[1], Jérôme Estaquier[1]

1. Université laval, Québec, QC, 2. CNRS FR3636 Université Paris Descartes, Paris, France

CD8 T lymphocytes are considered to be essential in the control of viral infections. Recently, it has been proposed that CD8 T cells expressing CXCR5 contribute in the elimination of viral infected cells in the germinal center (GC) of lymphoid tissues (1). During HIV/SIV infections, it is well known that CD8 T cells are exhausted expressing higher levels of PD1 and lower levels of effector cytotoxic molecules (2).

Herein, we assessed the dynamics of CD8+CXCR5+ T cells in rhesus macaques (RMs) infected with SIVmac251. RMs were treated with antiretroviral therapy (ART) early after infection. Blood, spleen, peripheral lymph nodes (LNs) as well mesenteric LNs were analyzed from sacrificed RMs at different time point post-infection covering the acute and the chronic phases of infection. We performed flow cytometric analyses of CD8 T cell subsets expressing CXCR5,PD-1,perforin and granzyme B were assessed by flow cytometry. In addition, several transcriptional factors (TFs) reported to be implicated in the regulation of CD8 T cells were analyzed. Immunofluorescence microscopic analyses were performed to determine CD8 T cell distribution in the tissues with a special focus on GCs.

Our results indicated that CD8 T cells expressing CXCR5 do not express higher levels of effector cytotoxic molecules compared to the other CD8 T cell subsets. We observed consistent with previous reports lower levels of these cytotoxic molecules during SIV-infection. Tbet, Eomes and Foxo1 TFs are differentially induced. Finally our results do not support a major recruitment of these CD8+CXCR5+ T cells in the GCs f SIV-infected RMs.

In conclusion, CD8+CXCR5+ are impaired during SIV-infection contributing in the absence of viral control in SIV-infected RMs.

This work was supported by the Canadian Institutes of Health Research (CIHR), and by the Canadian HIV Cure Enterprise Grant (CANCURE).

(1) He R, Nature 2016; (2) Cumont MC, Cell Death Differ 2007.

***Basic Sciences:* HIV Immunology**
***Sciences fondamentales :* Immunologie du VIH**

BS1.05

Reg3α as a Novel Marker of Gut Damage in People Living with Hiv

Stéphane Isnard[1, 2], Rayoun Ramendra[1, 2], Franck P. Dupuy[1, 2], Nikola Kokinov[1, 2], Bertrand Lebouché[1, 2], Cecilia Costiniuk[1, 2], Vikram Mehraj[1, 2, 3], Petronela Ancuta[3, 4], Nicole F. Bernard[1, 2], Madeleine Durand[3], Cécile Tremblay[3, 4], Jean-Pierre Routy[1, 2, 5]

1. Research Institute of McGill University Health Centre, Montréal, QC, 2. Chronic Viral Illness Service - McGill University Health Centre, Montréal, QC, 3. Centre de Recherche du Centre Hospitalier de l'Université de Montréal, Montréal, QC, 4. Département de Microbiologie, Infectiologie et Immunologie, Faculté de Médecine, Université de Montréal, Montréal, QC, 5. Division of Hematology, McGill University Health Centre, Montréal, QC

Background: Gut damage persists during HIV infection despite long-term antiretroviral therapy (ART) and has been associated with microbial translocation, immune activation, and the development of non-AIDS events. The identification of gut damage markers in easily accessible samples is warranted for an accurate evaluation of HIV remission interventions.

Regenerating islet-derived protein 3α (Reg3α) is an intestinal anti-microbial protein secreted by Paneth cells in response to mucosal damage. Reg3a plasma levels have been reported to be a predictor of graft vs host disease and elevated in inflammatory bowel diseases. Herein, we assessed Reg3α as a marker of gut damage in people living with HIV (PLWH).

Methods: 128 adult PLWH categorized into early (EHI) or chronic HIV (CHI) infection receiving or not ART, and 30 elite controllers (EC) were analyzed. A sub-group of EHI was assessed prospectively. Plasma Reg3α levels were measured by ELISA and correlated with validated markers of HIV pathogenicity, gut damage (intestinal fatty acid binding protein I-FABP), and microbial translocation (lipopolysaccharide (LPS) and (1->3)-β-D-glucan (βDG)).

Results: In a cross-sectional analysis, plasma Reg3α levels were significantly elevated in untreated EHI (1669±330 pg/ml), and even more in CHI (2056±191) compared to uninfected controls (715±243) and ART-treated CHI (1590±310). EC had intermediate Reg3α levels (1287±241). Over the course of two years, plasma Reg3α levels increased in 11 PLWH without ART (p=0.002) and tended to decrease in 10 individuals who initiated ART during EHI (p=0.08). Spearman analysis revealed that Reg3α levels inversely correlated with CD4 count (p=0.0002, r=-0.31), CD4/CD8 ratio (p<0.0001, r=-0.34) and positively with viral load (p=0.041, r=0.24), I-FABP (p=0.048,r=0.16), LPS (p=0.002, r=0.27) and βDG (p=0.03, r=0.18) and as well as with 5 other markers of inflammation.

Conclusion: Plasma levels of Reg3α were increased during HIV infection and did not normalize with ART. Reg3a represents a potent epithelial gut damage marker in PLWH.

***Basic Sciences:* HIV Immunology**
***Sciences fondamentales :* Immunologie du VIH**

BS1.06

Impact of Sustained Viral Suppression on HIV-specific Cell-mediated Immune Responses in Children and Adolescents with Perinatally Acquired HIV Infection

Hinatea Dieumegard[1, 2], Doris G. Ransy[1], Ari Bitnun[3], Jason Brophy[4], Lindy Samson[4], Fatima Kakkar[1], MIchael T. Hawkes[5], Stanley Read[3], Hugo Soudeyns[1, 2], EPIC4 Study Group

1. Centre de recherche du CHU Sainte-Justine, Montreal, QC, 2. Departement de microbiologie, infectiologie et immunologie, Université de Montréal, Montreal, QC, 3. Hospital for Sick Children, Toronto, ON, 4. Children's Hospital of Eastern Ontario, Ottawa, ON, 5. Department of Pediatrics, University of Alberta, Edmonton, AB

Background: It is well established that sustained viral suppression (SVS) is critical to prevent HIV transmission and disease progression. Both antiretroviral therapy (ART) and HIV-specific cell-mediated immunity contribute to the establishment and maintenance of SVS. The objective of this study was to explore the associations between age at initiation of ART, cumulative proportion of life under SVS (cPLUS), and HIV-specific cell-mediated immune responses in children and adolescents with perinatally acquired HIV infection.

Methods: Study participants (n=80) were stratified according to the median cPLUS value (cPLUS ≤36.50%, n = 40, and cPLUS ≥36.50%, n=40). Peripheral blood mononuclear cells (PBMC) were used in ELISpot assays to measure IFN-γ production in response to stimulation with clade-matched HIV-1 Gag peptide pools. The relationship between clinical parameters and characteristics of the IFN-γ response were compared between the two groups.

Results: Age and absolute $CD4^+$ and $CD8^+$ T cell counts were not significantly different between participants with cPLUS ≤36.50% and those with cPLUS ≥36.50%, but participants with low cPLUS had a lower %CD4/%CD8 ratio (0.90 vs. 1.15, p=0.0208) and were significantly older at first treatment initiation (5.41 vs. 0.84 years, p=0.0003). HIV-specific IFN-γ responses, expressed as spot-forming units (SFU)/10^6 PBMC, varied widely between participants and were significantly larger in participants with low cPLUS in terms of magnitude (3631 vs. 1528 SFU/10^6 PBMC, p=0.0067) but not breadth of antigenic recognition (47.8 vs. 35.8 pools recognized, p=0.1443).

Conclusions: These results indicate that a larger cPLUS is associated with a reduction in the magnitude of HIV-specific IFN-γ responses, consistent with reduced levels and/or duration of exposure to HIV antigens. This effect is not comparatively as important in terms of breadth of antigenic recognition, which suggests that these two descriptors of HIV-specific IFN-γ responses are differentially affected by the completeness and duration of SVS in perinatally infected children and adolescents.

***Clinical Sciences:* ARVs, Coinfections and Comorbidities**
***Sciences cliniques :* Antirétrovirus, coinfections et comorbidités**

CS1.01

Lung Cancer Diagnoses in People Living with HIV at the Chronic Viral Illness Service in Montreal, Canada: a Retrospective Review of Cases Over 3 Decades

Béatrice Bichara[1], Jean-Pierre Routy[2], Nicole Ezer[3, 4], Cecilia Costiniuk[2]

1. Department of Medicine, University of Ireland, Galway, Ireland, 2. Chronic Viral Illness Service, McGill University Health Centre, Montreal, QC, 3. Division of Respirology, Department of Medicine, McGill University Health Centre, Montreal, QC, 4. Clinical Outcomes Research and Evaluation (CORE), McGill University, Montreal, QC

Introduction: Lung cancer is a leading cause of non-AIDS defining cancers and the most frequent cancer-related death in people living with HIV. Our aim was to conduct a review of cases of lung cancer in one academic centre to better understand areas needed for quality improvement at the McGill University Health Centre (MUHC).

Methods: The clinical database the of the Chronic Viral Illness Service (CVIS) was queried to identify individuals who had a pathology-confirmed diagnosis of lung cancer from 1980-2018. Demographical data, HIV-related factors, smoking history, co-morbidities, lung cancer type, stage at diagnosis and outcomes were extracted.

Results: 21 PLWH received a pathology-confirmed diagnosis of primary lung cancer. Median age was 55 years [Interquartile Range (IQR 48,62] and 19% were female. 3, 13, and 5 cases were diagnosed between 1990-1999, 2000-2010 and 2011-2018 respectively. Median CD4 count was 197 cells/mm^3 [70, 450] and 52% were on ARVs with suppressed viral loads. Type of lung cancer included: non-small cell lung cancer in 15 cases (5 adenocarcinoma, 2 squamous cell carcinoma, 2 were large cell carcinoma, and 6 were unspecified). Small-cell Lung cancer accounted for 4 cases and bronchial carcinomas for 2 cases. Metastases at diagnosis were present in 11 (52%) persons, 2 underwent surgical lobectomy and 7 received radiation therapy alone or combined with chemotherapy. Mean overall survival was 8 months (IQR 1.75, 11.75) and 4 persons survived without recurrence.

Conclusion: There were a high proportion of lung cancers diagnosed at advanced clinical stages. The implementation of a lung cancer screening program, a tobacco cessation program and the integration of cancer care in the HIV setting at the MUHC should set the stage for earlier diagnosis and treatment of lung cancer, thus reducing morbidity and mortality in PLWH.

Clinical Sciences: **ARVs, Coinfections and Comorbidities**
Sciences cliniques : **Antirétrovirus, coinfections et comorbidités**

CS1.02

Effectiveness of sofosbuvir / velpatasvir in Treating Hepatitis C Virus Infection in Real-world Setting

Naveed Z. Janjua[1, 2], Stanley Wong[1], Amanda Yu[1], Darrel Cook[1], Zahid A. Butt[1, 2], Carmine Rossi[1, 2], Hasina Samji[1], Maria Alvarez[1], Mawuena Binka[1], Maryam Darvishian[1, 2], Eric Yoshida[2], Alnoor Ramji[2], Mark Tyndall[1, 2], Mel Krajden[1, 2]

1. BC Centre for Disease Control, Vancouver, BC, 2. University of British Columbia, Vancouver, BC

Background: To assess the effectiveness of sofosbuvir / velpatasvir (SOF/VEL) in treating HCV genotype 1 (GT1) to genotype 6 (GT6) in routine medical practice using a large population based Canadian cohort.

Methods: The BC Hepatitis Testers Cohort includes all individuals tested for HCV or HIV (~1.7 million) from 1990 integrated with medical visit, hospitalization and prescription drug data. This analysis included individuals who initiated SOF/VEL for treatment of GT1-GT6 and had at least one PCR test since treatment initiation to June 30, 2018 and were followed for sustained virologic response (SVR) to October 30, 2018. The primary outcome was SVR at 12 weeks (SVR) following end of HCV treatment.

Results: Analysis included 1801 individuals treated with SOF/VEL (n=1574) or SOF/VEL+ Ribavirin (RBV, n=227). The largest proportion was treated for GT3 (727, 40%) followed by GT1 (628, 35%) and GT2(351, 19%). The majority of individuals were male (64%), and aged ≥50 years (82%). The overall SVR was 94% (1685/1801); slightly higher for SOF/VEL (94%) than SOF/VEL+RBV (89%). SVR for GT1, GT2 and GT3 was, 93% (584/628), 96% (338/351), and 92% (670/725), respectively. People with recent (GT1:83%/GT3:91%) and past (GT1:93%/GT3: 90%) injection drug use had lower SVR than those with no injection drug use (GT1:96%/GT3:94%). 46% of people who inject drugs(PWID) who did not achieve SVR were lost to follow-up; did not complete treatment or return for RNA testing after treatment. In multivariable logistic regression models for all genotypes, genotype 3 and genotype 1, recent and past injection drug use was associated with not achieving SVR.

Conclusion: This study based on real-world clinical practice shows high SVR across genotypes, which is slightly lower than that reported in clinical trials. Lower SVR among PWID related to loss to follow-up indicates need for additional support measures required for optimal scale-up of treatment in PWID.

***Clinical Sciences:* ARVs, Coinfections and Comorbidities**
***Sciences cliniques :* Antirétrovirus, coinfections et comorbidités**

CS1.03

Congenital Anomalies Following Antenatal Exposure to Dolutegravir: a Canadian Surveillance Study

Deborah Money[1, 2], Terry Lee[4], Claire O'Brien[1, 3], Jason Brophy[5], Ari Bitnun[6], Fatima Kakkar[7], Isabelle Bourcoiran[7], Ariane Alimenti[1, 2], Wendy Vaudry[8], Joel Singer[4, 1], Laura J. Sauve[1, 2, 3], Canadian Perinatal HIV Surveillance Program

1. University of British Columbia, Vancouver, BC, 2. Women's Hospital and Health Centre of British Columbia, Vancouver, BC, 3. BC Children's Hospital, Vancouver, BC, 4. CIHR Canadian HIV Clinical Trials Network, Vancouver, BC, 5. Children's Hospital of Eastern Ontario, University of Ottawa, Ottawa, ON, 6. Hospital for Sick Children, University of Toronto, Toronto, ON, 7. CHU Ste-Justine, Université de Montréal, Montreal, QC, 8. Stollery Children's Hospital, University of Alberta, Edmonton, AB

Dolutegravir is recommended worldwide as one of the first line antiretroviral therapies (ART). In a Botswana birth surveillance study, of 11,558 women living with HIV (WLWH) who became pregnant, 0.9% of babies born to the women taking dolutegravir at conception had a neural tube defect (NTD) (4/426), compared with 0.1% of babies born to mothers taking other antiretrovirals (14/11,173).

This study examines rates of congenital anomalies (particularly NTDs) in infants born to WLWH on antiretrovirals in Canada.

Data was extracted from the Canadian Perinatal HIV Surveillance Program's (CPHSP) national dataset from 2007-2017. Descriptive analyses examined the demographics of pregnant WLWH, and incidence of congenital anomalies among women exposed to antiretrovirals during pregnancy.

From 2007-2017, there were 2,591 live infants born to WLWH of which 2,423 had congenital anomaly data. 1,311 women (56.4%) were on antiretrovirals at the time of conception, and 204 (8.8%) started in the first trimester. There were 98 cases of anomalies (4.04%; 95% CI: 3.30-4.91%) of whom 12 had chromosomal abnormalities (0.5%), resulting in a non-chromosomal congenital anomaly prevalence of 3.5%, with no difference across gestational age exposure groupings (p=0.915). There were 3 cases of NTD with an incidence rate of 0.12%, of which two women were taking ART at conception, neither on dolutegravir. Of the 80 WLWH with dolutegravir exposure in the first trimester, there were 4 (5.0% [CI: 1.4%-12.3%]) non-chromosomal congenital anomalies. Three of the 28 infants exposed to elvitegravir had congenital anomalies (10.7%) [CI:2.3%-28.2%].

This small data set demonstrates no safety signal for congenital anomalies amongst pregnancies with first trimester dolutegravir exposure, with the rate of NTDs (0.13%) being only slightly higher than Canadian population data (0.04%). In the few pregnancies with first trimester elvitegravir, there were 3 non-NTD anomalies. There were no other safety signals for other ART exposure in pregnancy.

***Clinical Sciences:* ARVs, Coinfections and Comorbidities**
***Sciences cliniques :* Antirétrovirus, coinfections et comorbidités**

CS1.04

Characterizing Canadians Living with HIV to Improve Management of Comorbidities

Alex Wong[1], Gary Rubin[2], Rejean Thomas[3], Jason Brunetta[4], Joss De Wet[5], Hugues Loemba[6], Chris Fraser[7], Jean Guy Baril[8], Ken Logue[9], Michael Silverman[10], Jean Palmart[11], Rene Pierre Lorgeoux[12], Harout Tossonian[12], Connie J. Kim[12]

1. University of Saskatchewan, Regina, SK, 2. Church Wellesley Health Center, Toronto, ON, 3. Clinique Medicale l'Actuel, Montreal, QC, 4. Maple Leaf Medical Clinic, Toronto, ON, 5. Spectrum Health, Vancouver, BC, 6. University of Ottawa Health Services, Ottawa, ON, 7. Cool Aid Community Health Centre, Vancouver, ON, 8. Clinique de Médecine Urbaine du Quartier Latin, Montreal, ON, 9. St. Clair Medical Associates, Toronto, ON, 10. St. Joseph's Hospital, London, ON, 11. Advisory Physicians Research Services Inc, Sooke, BC, 12. Gilead Sciences Canada, Inc, Mississauga, ON

Management of non-HIV related comorbidities in persons living with HIV (PLHIV) is an important concern since PLHIV experience disproportionately high comorbidity rates.

This retrospective analysis characterized 200 most recently seen PLHIV in each of 10 Canadian HIV clinics via chart review. Data on demographics, comorbidities and lab results were collected, and risk categories of developing chronic kidney disease (CKD), cardiovascular disease (CVD) and fractures were calculated by D:A:D, Framingham, and FRAX equations. Sub-analyses compared younger (<50 years) vs older individuals (≥50 years) using Cochran-Mantel-Haenszel testing.

Most persons were Caucasian (68%), male (87%) with a median age of 52 (57% ≥50 years). The median CD4 count was 583 cells/uL and nearly all (97%) had HIV-RNA <400 copies/mL. Comorbidities were common (mean of 2.8/person; 31% had ≥4); only 8% of patients had no documented comorbidity. Frequent comorbidities included central nervous system (61%), overweight/obesity (43%), hepatic (37%), dyslipidemia (37%), hypertension (27%), bone (23%), CVD (18%), and renal (17%). Although younger patients (n=865) were less likely to have comorbid conditions than older patients (n=1135; 16% vs 3%; p<0.001), 54% had ≥2 comorbidities. Of note, older individuals were 4.8-times more likely to have ≥4 co-morbidities compared to younger patients (48% vs 10%).

Risk stratification revealed that 48% had high-risk CKD scores (n=554/1150), while 47% had medium/high CVD risk score (n=782/1672). Older patients were 5.2 and 13.5-fold more likely to score high for CKD (72% vs 14%) and CVD (18% vs 1.3%) than younger patients, respectively. Bone mineral density was measured in some patients (n=417); 54% were osteopenic and 13% were osteoporotic. Using FRAX (n=96), 15% of patients were at high risk of hip fractures and 2.1% for major osteoporotic fractures.

Routine clinical practice should be optimized to prevent and manage the high rates of comorbidities and risks Canadian PLHIV are experiencing, especially in aging patients.

***Clinical Sciences:* ARVs, Coinfections and Comorbidities**
***Sciences cliniques :* Antirétrovirus, coinfections et comorbidités**

CS1.05

High Levels Of Viral Suppression And Care Engagement Following Rapid Access To Antiretroviral Therapy (ART) Upon HIV Diagnosis

Luciana Urbina, Mark Hull, Wendy Zhang, Rolando Barrios, Julio Montaner, Silvia Guillemi

BC Centre for Excellence in HIV AIDS, Vancouver, BC

Background: Immediate ART initiation has been shown to improve clinical outcomes. Recently, attention has been directed to Rapid Access to ART (RA-ART) upon HIV diagnosis.We assessed viral suppression and engagement in care among individuals that accessed RA-ART.

Methods: We conducted a chart review of individuals with newly diagnosed HIV infection linked to an HIV clinic in Vancouver, British Columbia, from June 30th 2015 to June 30th 2018. Individuals with a positive Western Blot (WB) were classified as presenting with Chronic HIV Infection (CHI), and those with a negative or undetermined WB and a positive P24 Ag were classified as presenting with Acute HIV Infection (AHI). Assessed variables included baseline HIV-RNA viral load and CD4 cell count, time from diagnosis to ART initiation, baseline resistance, number and class of drugs at treatment initiation and time to viral suppression. Retention in care was assessed at 12 months follow-up.AHI and CHI were compared using Chi-squared test, continuous variables were compared using Wilcoxon rank sum test.

Results: Of 104 individuals 53 had AHI (98% males) and 51 (100 % males) had CHI, with a median age of 30 (IQ: 26-37) and 36 (IQ 30-51) years respectively. The main risk factor was MSM (AHI 92.5 %, CHI 72.5%). Baseline characteristics, and outcomes after ART initiation are shown in table 1

Conclusions: Individuals that accesses RA-ART upon HIV diagnosis achieved high levels of viral suppression and retention in care. Those with AHI were more likely to be prescribed 4 drugs and achieved faster HIV-RNA viral suppression.

Baseline Variables And Outcomes`

Variable	AIH (n=53)	CHI (n=51)	P value
Baseline HIV-RNA VL (log 10 scale) Median (IQR)	5.87 (5.18-6.87)	4.78 (4.40-5.08)	<0.001
Baseline CD4 cell count (cell/mm3) Median (IQR)	450 (320-620)	380 (110-560)	0.033
Baseline resistance (any)	13 (24.5%)	6 (11.7%)	0.092
HIV-RNA clade B	45 (85%)	41 (80%)	0.686
Time to ART initiation from HIV diagnosis (days) Median (IQR)	1 (0- 5)	14 (7-21)	< 0.001
Time to HIV-RNA <40 c/ml (days) Median (IQR)	67 (33-90)	85 (42-169)	0.021
First ART regimen: INSTI + bPI + NRTI INSTI + NRTI bPI + NRTI	52 (98%) 1 (2%) 0 (0%)	2 (4 %) 13 (27%) 36 (73 %)	<0.001
Engagement in care at 12 months	44 (83%)	39 (76%)	0.406
HIV-RNA VL <40 c/ml at 12 months	47(89%)	39(76%)	0.593
VL: viral load, INSTI: integrase strand transfer inhibitors, bPI: boosted protease inhibitors, NRTI: nucleoside reverse-transcriptase inhibitors.			

***Clinical Sciences:* ARVs, Coinfections and Comorbidities**
***Sciences cliniques :* Antirétrovirus, coinfections et comorbidités**

CS1.06

Routinized Syphilis Screening Among Men Living with HIV: Results of the ESSAHM Trial

Ann N. Burchell[1, 3], Darrell H. Tan[1, 3], Ramandip Grewal[1, 3], Sharon Walmsley[2, 3], Anita Rachlis[3], Paul MacPherson[4], Sharmistha Mishra[1, 3], Sandra Gardner[3], Nisha Andany[5, 3], Rodney Rousseau[3], John Maxwell[6], Kevin Thorpe[1, 3], Vanessa A. Allen[7], ESSAHM Team

1. St. Michael's Hospital, Toronto, ON, 2. University Health Network, Toronto, ON, 3. University of Toronto, Toronto, ON, 4. The Ottawa Hospital, Ottawa, ON, 5. Sunnybrook Hospital, Toronto, ON, 6. ACT, Toronto, ON, 7. Public Health Ontario, Toronto, ON

Objective: Frequent syphilis screening allows for early detection and treatment and decreased transmission. We conducted a clinic-based intervention incorporating opt-out syphilis testing into routine HIV viral loads. The primary objective was to determine the degree to which the intervention increased the detection rate of early syphilis.

Methods: The Enhanced Syphilis Screening in HIV-positive Men (ESSAHM) Trial was a stepped wedge cluster-randomized controlled trial in 4 urban HIV clinics in Ontario from 01/02/2015 to 31/07/2017 (ClinicalTrials.gov: NCT02019043). Population: adult males undergoing viral load testing. Intervention (I): standing orders for syphilis serological testing with HIV viral loads. Control (C): maintenance of current, provider-initiated syphilis testing practice. Outcome: new diagnoses of early infectious syphilis. We obtained syphilis serologies via linkage with the centralized provincial laboratory and defined early syphilis cases using a standardized clinical worksheet and medical chart review. The trial was powered (≥80%) to detect a ≥75% increase in case detection rate, assuming 3 tests per patient per year. We employed a generalized linear mixed-effect model to estimate time- and age-adjusted rate ratios (aRR) comparing intervention to control periods.

Results: 3,893 men were followed over 7,468 person-years (PY), and had a mean of 2 viral load tests per year. The mean number of syphilis tests per person per year increased from 0.65 in control to 1.44 in intervention periods. There were 217 new diagnoses of syphilis in total (C: 81; I: 136), for which 147 were cases of early syphilis (C:61; I:86). The detection rate increased from 1.51 per 100PY in control to 2.50 per 100PY in intervention periods, with a corresponding aRR = 1.28 (95%CI 0.73, 2.24; p = 0.40).

Discussion: The implementation of standing orders for syphilis serological testing with HIV viral loads resulted in a modest but statistically non-significant increase in detection of new cases of early infectious syphilis.

Epidemiology and Public Health: **Epidemiology and Surveillance**
Épidémiologie et santé publique : **Épidémiologie et surveillance**

EPH1.01

Epidemiological Correlates of HIV Phylogenetic Diversification Rate in British Columbia

Angela McLaughlin[1, 2], P. Richard Harrigan[3], Tetyana Kalynyak[1], Jinny Choi[1], Jeffrey Joy[1, 3]

1. BC Centre for Excellence in HIV/AIDS, St. Paul's Hospital, Vancouver, BC, 2. School of Population and Public Health, University of British Columbia, Vancouver, BC, 3. Department of Medicine, University of British Columbia, Vancouver, BC

Background: Identifying HIV transmission risk factors can inform the prioritization of health care services. Although phylogenetic clustering of HIV sequences is routinely performed to evaluate characteristics associated with transmission, clusters membership over-simplifies the range of transmission activity across a population. We introduce an alternative method to investigate HIV transmission risk factors in British Columbia (BC), Canada, based on patients' viral diversification rates.

Methods: For 8,103 people living with HIV (PLHIV) in BC in March 2018, we recovered the oldest available HIV protease and RT sequences from the BC Drug Treatment Program database. We inferred 100 bootstrap approximate maximum likelihood phylogenetic trees and for each tip, we calculated its diversification rate as an estimate of its transmission rate. Patient attributes significantly associated with high viral transmission were evaluated using a gamma generalized linear model.

Results: Having a high HIV diversification rate was positively associated with being younger, using injection drugs, having hepatitis C virus, having a high recent viral load, and residing within the Northern BC Health authority (Table 1). In contrast, having ever had AIDS and identifying as black were both significantly associated with lower diversification rates (Table 1).

Conclusions: By identifying risk factors associated with HIV transmission using the viral diversification rate among PLHIV, we can confidently recommend prioritized provision of treatment and prevention services for key groups. Additionally, these analyses highlight that HIV diversification rates can illuminate differences in individuals' transmission activity, regardless of phylogenetic cluster membership.

...2

Table 1: A summary of the adjusted relative risk and significance for patient attributes associated with HIV diversification rate, as estimated using a gamma generalized linear model. Only patients with a detectable viral load within the past 5 years were included.

Attribute	Category	Count	Adjusted Relative Risk (aRR)	aRR 95% CI	P-value
All	…	7837	…	…	…
Sex at birth	Female	1365	…	…	…
	Male	6205	1.12	1.03 - 1.21	0.007
Age group	61 and over	1689	…	…	…
	53-60	2193	1.05	0.97 - 1.14	0.221
	42-52	2306	1.29	1.19 - 1.40	<0.001
	41 and under	1595	1.67	1.53 - 1.83	<0.001
Men who have sex with men	No	2664	…	…	…
	Yes	2983	1.05	0.94 - 1.16	0.367
	Unreported	2105	0.91	0.80 - 1.05	0.177
Injection drug user	No	3971	…	…	…
	Yes	2405	1.31	1.19 - 1.45	<0.001
	Unreported	1376	1.12	1.00 - 1.26	0.055
Hepatitis C virus infection	No	4541	…	…	…
	Yes	2561	1.23	1.13 - 1.34	<0.001
	Unreported	374	0.95	0.83 - 1.09	0.444
Heterosexual activity	No	3764	…	…	…
	Yes	1883	0.98	0.90 - 1.06	0.576
	Unreported	2105	NA	NA	NA
Ethnicity: white	No	1511	…	…	…
	Yes	3251	1.04	0.94 - 1.15	0.446
	Unreported	2990	1.14	1.02 - 1.28	0.018
Ethnicity: first nations	No	3776	…	…	…
	Yes	986	1.05	0.93 - 1.19	0.377
	Unreported	2990	NA	NA	NA
Ethnicity: black	No	4540	…	…	…
	Yes	220	0.62	0.52 - 0.75	<0.001
	Unreported	2990	NA	NA	NA
Health authority of residence at diagnosis	Interior Health	397	…	…	…
	Vancouver Island Health	727	1.01	0.87 - 1.18	0.846
	Fraser Health	1616	1.05	0.92 - 1.20	0.479
	Vancouver Coastal Health	4172	1.1	0.96 - 1.24	0.157
	Northern Health	253	1.31	1.08 - 1.59	0.007
	Unreported	672	0.76	0.63 - 0.91	0.004
Ever had AIDS	No	601	…	…	…
	Yes	875	0.76	0.70 - 0.83	<0.001
Most recent log10(viral load)		7837	1.14	1.11 - 1.17	<0.001

Epidemiology and Public Health: **Epidemiology and Surveillance**
Épidémiologie et santé publique : **Épidémiologie et surveillance**

EPH1.02

HCV, HBV and HIV Syndemics are Associated with Higher Mortality Risk in a Large Population Based Cohort Study

Zahid A. Butt[1], Stanley Wong[2], Carmine Rossi[1], Mawuena Binka[2], Jason Wong[2], Amanda Yu[2], Maryam Darvishian[1], Maria Alvarez[2], Nuria Chapinal[3], Geoff Mckee[2], Mark Gilbert[2], Mark Tyndall[2], Mel Krajden[2], Naveed Z. Janjua[2]

1. University of British Columbia, Vancouver, BC, 2. British Columbia Centre for Disease Control, Vancouver, BC, 3. BC Cancer Agency, Vancouver, BC

Background: HCV, HBV or HIV infections are associated with significant mortality globally, and in North America. Presence of co-infections could be associated with higher morbidity and mortality; however, data on impact of multiple infections is limited. We evaluated the effect of HCV, HBV and HIV co-infections on all-cause mortality compared to individuals negative for all infections in British Columbia (BC), Canada.

Methods: The BC Hepatitis Testers Cohort includes ~1.7 million individuals tested for HCV or HIV, or reported as a case of HCV, HIV, or HBV from 1990-2015 and is linked to administrative healthcare databases. We followed people with HCV, HBV or HIV monoinfections, co-infections, and triple infections from their negative status to date of death or December 31, 2016 to estimate mortality rates. Extended Cox proportional hazards regression was used to estimate hazard ratios (HR) and 95% confidence intervals (CIs) for factors associated with all-cause mortality.

Results: Out of 658,704 individuals that tested for HCV, HBV, HIV infections, there were 33,804 (5.13%) deaths. The highest crude all-cause mortality rate per 1,000 person-years was observed in individuals with HCV/HBV/HIV triple infection (31.3) followed by HCV/HBV (19.4), HCV/HIV (19.2), and HBV/HIV co-infection (15.6), and HCV (12.1), HIV (6.7) and HBV monoinfection (5.1). In multivariable Cox regression analysis, individuals with HCV/HBV/HIV [HR:8.9, 95% CI:8.2-9.7] infections had highest risk of mortality followed by HCV/HIV [HR:4.8, 95% CI:4.4-5.1], HBV/HIV [HR:4.1, 95%CI:3.5-4.8] ,HCV/HBV [HR:3.9, 95%CI:3.7-4.2], HCV [HR:2.6 95%CI:2.6-2.7], HBV [HR:2.2, 95%CI:2.0-2.3]), HIV [HR:1.6, 95%CI:1.5-1.7]. Additional factors associated with mortality included males, problematic alcohol use, material deprivation, diabetes, chronic kidney disease, heart failure and hypertension.

Conclusion: Presence of multiple infections are associated with high mortality risk. In addition, problematic alcohol use, comorbidities and material disadvantage were significantly associated with all-cause mortality. Interventions aimed at prevention and treatment of co-infections alongside other comorbidities could significantly reduce mortality.

Epidemiology and Public Health: **Epidemiology and Surveillance**
Épidémiologie et santé publique : **Épidémiologie et surveillance**

EPH1.03

Prevalence, Trends, and Correlates of HIV Pre-Exposure Prophylaxis (PrEP) Use During Sexual Events by Sexual Minority Men in Montreal, Toronto, and Vancouver

Nathan J. Lachowsky[1], Shenyi Pan[2], Nicanor Bacani[2], Heather L. Armstrong[2], Gbolahan Olarewaju[2], Marc Messier-Peet[3], Herak Apelian[3], Ricky Rodrigues[4], Syed Noor[4], Shayna Skakoon-Sparling[4], David M. Moore[2], Jody Jollimore[7], Gilles Lambert[3], Joseph Cox[5], Daniel Grace[6], Trevor A. Hart[4, 6], the Engage Study Team

1. University of Victoria, Victoria, BC, 2. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 3. Direction Régionale de Santé Publique de Montréal, Montreal, QC, 4. Ryerson University, Toronto, ON, 5. McGill University, Montreal, QC, 6. University of Toronto, Toronto, ON, 7. Community Based Research Centre, Vancouver, BC

Background: Sexual event level analyses can provide granular evidence of the impact of HIV PrEP-use on the sexual behaviour of gay, bisexual, and other men who have sex with men (gbMSM). We examined the prevalence, trends and correlates of sexual event-level HIV PrEP-use among urban gbMSM.

Methods: From 02/2017-08/2018, sexually-active gbMSM ≥16 years of age were recruited through respondent-driven sampling (RDS) in Vancouver, Montreal, and Toronto. Participants self-completed a survey, including questions on their last sexual encounter with up to their five most recent partners in the last 6 months. We used general estimating equations accounting for two levels of clustering (RDS recruitment chain; participant) to evaluate temporal trends (monthly prevalence) and factors associated with event-level PrEP use by the participant and/or partner.

Results: 1901 participants reported 8398 sexual events, of which 24.4% included PrEP-use by the participant and/or their partner. There was a significant increase in event-level PrEP-use (16.9% in 02/2017 and 40.6% in 08/2018, OR=1.09, 95%CI:1.08-1.10). This trend remained significant when stratified by HIV status and city. Compared with HIV-negative gbMSM, HIV-positive gbMSM were less likely to report PrEP-using partners (OR=0.89, 95%CI:0.87-0.92). Compared with HIV-negative seroconcordant partnerships, event-level PrEP-use was more common within serodiscordant partnerships (AOR=1.05, 95%CI:1.01-1.09) and less likely if participant/partner HIV status was unknown (AOR=0.89, 95%CI:0.87-0.90). Compared with Montreal, event-level PrEP-use was higher in Toronto (AOR=1.09, 95%CI:1.04-1.14) and Vancouver (AOR=1.10, 95%CI:1.06-1.14). Event-level PrEP-use was positively associated with poppers use (AOR=1.03, 95%CI:1.01-1.05), gamma-hydroxybutyrate use (AOR=1.04, 95%CI:1.01-1.08), non-romantic partners (e.g., fuckbuddy, AOR=1.09, 95%CI:1.06-1.12), partners met online versus at a bathhouse (AOR=1.03, 95%CI:1.01-1.06), partners with detectable versus unknown viral loads (AOR=1.07, 95%CI:1.01-1.14), and partners with expectations for future sex (AOR=1.07, 95%CI:1.04-1.09).

Conclusions: Event-level PrEP-use increased over time and varied by city. Contextual factors (e.g. substance use, relationship status, conversations about HIV and PrEP status) should inform future health promotion.

Epidemiology and Public Health: **Epidemiology and Surveillance**
Épidémiologie et santé publique : **Épidémiologie et surveillance**

EPH1.04

Prevalence and Correlates of Chlamydia Trachomatis (CT) and Neisseria Gonorrhoeae (NG) Among Gay, Bisexual, and Other Men Who Have Sex with Men (gbMSM) in Montreal

Simonne Harvey-Lavoie[1], Herak Apelian[2], Annie-Claude Labbé[1], Joseph Cox[2, 3], Marc Messier-Peet[2], Erica Moodie[3], Heather Armstrong[4], Syed Noor[5], Gbolahan Olarewaju[4], Ricky Rodrigues[5], Shayna Skakoon-Sparling[5], David Moore[4], Daniel Grace[6], Nathan Lachowsky[7], Trevor Hart[5], Jody Jollymore[8], Gilles Lambert[2]

1. Université de Montréal, Montreal, QC, 2. Direction Régionale de Santé Publique de Montréal, Montreal, QC, 3. McGill University, Montreal, QC, 4. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 5. Ryerson University, Toronto, ON, 6. University of Toronto, Toronto, ON, 7. University of Victoria, Victoria, BC, 8. Community-Based Research Centre for Gay Men's Health, Vancouver, BC

Background: The presence of a sexually transmitted infections (STI) contributes to HIV transmissibility. Among gbMSM tested at sexual health clinics, CT and NG cases have increased during the last decade; however, population-based prevalence data are limited. We provide estimates of CT and NG prevalence among gbMSM in the Greater Montreal area and explore associated factors.

Method: From 02/2017 to 06/2018, sexually-active gbMSM ≥16 years were recruited via respondent-driven sampling (RDS). Participation included HIV/STI testing and a computer-assisted self-interview. Pharyngeal samples were collected by trained nurses; urine and rectal samples by participants. All samples were analyzed by nucleic acid amplification tests using the cobas 4800 CT/NG assay (Roche Diagnostic). Correlates of CT and NG infections were identified through RDS-adjusted logistic regression.

Results: Among these mainly asymptomatic participants (n=1177), RDS-adjusted prevalence proportions (95% CI) for CT infections at rectal, urine, pharyngeal, and for at least one site, were respectively: 2.3%(0.9-3.8), 0.25%(0.13-0.37), 0.2%(0.0-0.5), and 2.7%(1.3-4.2). Similarly, proportions for NG infections were: 2.9%(1.2-4.7), 0.3%(0.5-1.0), 3.7(1.3-6.1), and 5.9%(3.1-8.7). Most CT and NG infections occurred at a single anatomical site. Significant correlates of CT and NG are summarized in table 1.

Conclusion: The prevalence of CT and NG infections appear similar and rather low for urine samples; pharyngeal samples yielded the highest prevalence of NG. STI risk increased based on sexual partner experiences (number of partners, group sex, transactional sex, no main partner) and use of substances (e.g poppers). Targeted and frequent STI screening including all sites should be promoted.

...2

Table 1: Correlates of CT and NG infections1 among sexually active gbMSM of the Greater Montreal area- Results from the Engage Study (n= 1173)

	CT		NG	
Characteristics and behaviours	Univariate[2] OR (95% CI)	Multivariate[3] AOR (95% CI)	Univariate[2] O (95% CI)	Multivariate[3] AOR (95% CI)
Age (years)				
≤ 28	Ref	NS	Ref	NS
≥ 29	0.73 (0.35, 1.54)		**0.55 (0.33-0.90)**	
Self-reported HIV status				
Negative	Ref	NA	Ref	NS
Positive	1.50 (0.55, 3.49)		**2.55 (1.43, 4.41)**	
Self-reported Mental Health in last 6 months				
Good	Ref	NS	Ref	NA
Fair	0.33 (0.05, 1.20)		0.78 (0.34, 1.56)	
Poor	**3.52 (1.40, 7.99)**		2.14 (0.97, 4.30)	
Has a main partner for the past 6 months or more				
Yes	Ref	Ref	Ref	Ref
No	**2.77 (1.23, 7.21)**	**2.30 (1.01, 5.90)**	**1.69 (1.01, 2.94)**	**1.88 (1.04, 3.51)**
Number of sexual partners in last 6 months				
1-4	Ref	Ref	Ref	Ref
5-10	**4.03 (1.53, 11.83)**	**2.79 (1.04, 8.30)**	1.31 (0.62, 2.68)	0.79 (0.34, 1.73)
>10	**8.52 (3.35, 24.53**	2.65 (0.88, 8.70)	**7.52 (4.26, 13.67)**	**2.24 (1.09, 4.66)**
Gave or received money for sex in last 6 months (1 ≥ time)				
No	Ref	Ref	Ref	NS
Yes	**5.59 (2.39, 12.12)**	**3.65 (1.31, 9.48)**	**2.31 (1.08, 4.50)**	
≥ 1 Participation in group sex (≥4 persons) in last 6 months				
No	Ref	Ref	Ref	Ref
Yes	**6.86 (3.33, 14.30)**	**3.55 (1.53, 8.26)**	**7.76 (4.67, 12.98)**	**3.78 (2.04, 7.07)**
≥ 1 previous diagnosis of NG infection in last 12 months				
No	Ref	NS	Ref	NS
Yes	**3.33 (1.44, 7.13)**		**4.76 (2.74, 8.08)**	
≥ 1 time use of crystal meth, ecstasy or speed in last 12 months				
No	Ref	NS	Ref	NS
Yes	**2.17 (1.01, 4.46)**		**2.74 (1.63, 4.56)**	
≥ 1 time use of poppers in last 6 months				
No	Ref	NS	Ref	Ref
Yes	**4.52 (2.20, 9.42)**		**7.24 (4.31, 12.47)**	**3.38 (1.78, 6.49)**
≥ 1 time use of GHB in last 6 months				
No	Ref	NA	Ref	
Yes	1.99 (0.76, 4.54)		**2.82 (1.53, 4.97)**	
≥ 6 glasses of alcoholic beverage on the same event (irrespective of the frequency)				
No	Ref	NA	Ref	
Yes	0.92 (0.45, 1.94)		**1.93 (1.11, 3.51)**	
Has used a psychoactive drug traditionally associated with "chemsex" with at least one of his last 5 sexual partners at last sexual encounter				
No	Ref	NS	Ref	
Yes	**2.71 (1.25, 5.62)**		**3.06 (1.82, 5.09)**	

OR, odds ratio. 95% CI, 95% confidence interval. Statistically significant results are in bold. NS, non-significant. NA, not applicable.

1 At least one positive CT NAAT (n=44) or NG NAAT (n=79) at any of these anatomical sites: pharynx, rectal, urine (using cobas 4800 CT/NG assay from Roche Diagnostic); LGV (+) results were excluded from analysis (n=4).

2Risk factors were first explored using Chi2 tests. Notably, income (less than 20000$), ethno racial identification (French or English Canadian), education (less than post-secondary studies), sexual orientation (gay), were not associated to CT nor NG. Among participants with HIV-negative or unknown status, PreP use past 6 months was strongly associated with NG (not shown in table).

3 RDS-adjusted logistic regression modeling using a quasi-binomial distribution. Proportion of missing data in the final model: CT: 5%; NG: 3 %

Epidemiology and Public Health: **Epidemiology and Surveillance**
Épidémiologie et santé publique : **Épidémiologie et surveillance**

EPH1.05

Estimation of an Individual-level Deprivation Index for HIV/HCV Co-infected Persons in Canada and in Four Provinces

Adam Palayew[1], Alexandra M. Schmidt[1], Sahar Saeed[1], Joseph Cox[1], John Gill[2], Sharon Walmsley[3], Curtis Cooper[4], Alexander Wong[5], Neora Pick[6], Mark Hull[7], Marina B. Klein[1]

1. McGill University, Montreal, QC, 2. Alberta Health Services, Calgary, AB, 3. University Health Network, Toronto, ON, 4. University of Ottawa, Ottawa, ON, 5. University of Saskatchewan, Regina, SK, 6. Oak Tree Clinic, BCWH & Health Centre, Vancouver, BC, 7. University of British Columbia, Vancouver, BC

Background: HIV/HCV coinfected individuals are often marginalized, and of lower socio-economic status, which plays an important role in health outcomes. These factors are difficult to measure and are often constructed using aggregate data failing to capture individual heterogeneity. We developed an individual-level index that encapsulates social, material, and lifestyle variables for participants in the Canadian Coinfection Cohort (CCC).

Methods: We fit a Bayesian factor analysis model based on 8 dichotomous variables: income >$1500/month, education>high school, employment, identifying as homosexual, unstable housing, injection drug use in last 6 months (IDU6m), past incarceration, and self-reported depression measured at baseline CCC visit for all participants. Variables included in the model were selected based on an exploratory data analysis and multiple joint correspondence analyses. We then stratified by province (QC, ONT, BC, and SK) and refit the model. In all models, we estimate severity parameters, which considers how likely an item is reported, discriminatory parameters, denoting the ability of a variable to distinguish index levels, and an individual parameter for everyone, which is the index.

Results: We analyzed 1642 complete cases (of 1842 enrolled participants) for the 8 variables. In the full model, we found incarceration, IDU6m, unstable housing, and depression had the highest values of the discriminatory parameter, suggesting that these variables are positively correlated with the index indicative of higher scores. The person with the highest score had: education ≤ high school, a history of incarceration, IDU6m, was heterosexual, unemployed, with income<$1500, reported depression, and was unstably housed. In contrast, those with the lowest score had the entirely opposite profile. The results of the full model were consistent for the provincial sub-analyses.

Conclusion: We estimated a novel individual-level index incorporating social, material, and lifestyle components which may be useful in studying access to treatment and other health outcomes in HIV/HCV co-infected Canadians.

Epidemiology and Public Health: **Epidemiology and Surveillance**
Épidémiologie et santé publique : **Épidémiologie et surveillance**

EPH1.06

Elevated HCV Reinfection Rates After Cure or Spontaneous Clearance Among HIV-infected and Uninfected Men Who Have Sex with Men

Carmine Rossi, Zahid Butt, Stanley Wong, Amanda Yu, Maria Alvarez, Mel Krajden, Naveed Janjua
BC Centre for Disease Control, Vancouver, BC

Background: Increasing rates hepatitis C virus (HCV) infection associated with ongoing risk activity have been reported after successful cure or viral clearance. We assessed factors associated with reinfection after treatment-induced or spontaneous clearance (SC) in HIV-infected and uninfected men who have sex with men (MSM) in BC.

Methods: We followed HIV-infected and uninfected MSM who achieved sustained virologic response (SVR) to HCV treatment or had SC with ≥1 subsequent HCV RNA measurement in the BC Hepatitis Testers Cohort. Reinfection rates per 100 person-years (PYs) were calculated. Cox regression was used to model adjusted hazard ratios (HRs) and 95% confidence intervals for reinfection.

Results: We identified 1,349 HCV-infected MSM with SVR (n=856) or SC (n=493), of which 349 (26%) were HIV-positive. HIV-infected MSM were more likely to have histories of injection drug use (41% vs. 21%), alcohol use (22% vs. 14%) and mental health disorders (47% vs. 28%), compared to HIV uninfected. 98 reinfections were identified, yielding overall reinfection rate of 1.9 per 100 PY (1.0 for SVR patients and 2.7 for SC). HIV-infected MSM had higher rates of reinfection (3.1 vs. 1.6 per 100 PY) than HIV uninfected individuals. In multivariable analysis, age < 35 years (HR 3.1, 95% CI: 1.2, 8.1), cure through SVR (HR 0.2, 95% CI: 0.1, 0.4), HIV infection (HR 2.0, 95% CI: 1.3, 3.1), problematic alcohol use (HR 2.0, 95% CI: 1.2, 3.3), injection drug use (HR 2.7, 95% CI: 1.6, 4.3) and mental health counseling (HR 0.2, 95% CI: 0.1, 0.4) were independently associated with reinfection. Among HIV-infected, injection drug use (HR 1.9, 95% CI: 0.8, 4.2) was less strongly associated with reinfection.

Discussion: Rates of HCV reinfection remain elevated among HIV-infected and uninfected MSM. Ongoing substance use is driving reinfection among HIV-negative MSM, while sexual transmission may be more important among HIV-positive MSM.

Social Sciences: **Harm Reducation and Substance Use**
Sciences sociales : **Réduction des préjudices et utilisation des substances**

SS1.01

Impact of Historical and Contemporary Biographical Traumas on Methamphetamine Use: A Comparative Analysis of HIV+ and HIV- Sexual Minority Men in the Chemsex Scene

Kara Taylor[1], Graham Berlin[1], Karyn Fulcher[1], Tribesty Nguyen[3], Eric A. Roth[1], Mark Hull[3, 2], Robert S. Hogg[2, 4], David M. Moore[3, 2], Nathan J. Lachowsky[1]

1. University of Victoria, Victoria, BC, 2. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 3. University of British Columbia, Vancouver, BC, 4. Simon Fraser University, Vancouver, BC

Background: Gay, bisexual, and other men who have sex with men (GBM) who use crystal methamphetamine (meth) during sex have significantly elevated HIV rates, engage in riskier sexual behaviours, and report decreased HIV medication adherence. Understanding of motivational factors driving meth use is limited; however, minority stress and life-course theories implicate traumatic events as causal mechanisms that increase substance- and HIV-related harms among GBM.

Methods: We explored the impact of biographical traumas on meth use among HIV-positive and HIV-negative GBM in British Columbia (BC). GBM were recruited from across BC. Eligible participants identified as men, were aged 16 years or older, reported sexual activity with another man and meth use in the previous six months. Recruitment was through known GBM spaces in Vancouver and Victoria and via online apps for MSM. Thirty-four semi-structured in-depth interviews were audio-recorded, transcribed verbatim, and analyzed thematically. Participants were asked about sexual practices, safer sex, sexual health, current and past meth use, and views on available substance use support services.

Results: Participants' median age was 40 years. Half self-reported being HIV-positive. Analysis indicated traumatic experiences as a key theme: thirty-two participants recounted traumatic events during the interview. These included experiencing homophobia during childhood (29%), family rejection (25%), death of a loved one (21%), childhood abuse (18%), and sexual assault in adulthood (18%). For several individuals, traumatic events immediately preceded initial meth use, while all reported sexual assaults occurred during chemsex. Numerous participants expressed the belief that unresolved traumas catalyzed their meth use.

Conclusions: Traumatic experiences were directly and indirectly implicated in participants' meth use, suggesting that interventions for GBM who use meth should address individual experiences of trauma within a contextually appropriate framework. There is a need for upstream preventive interventions and support for young GBM to learn about healthy relationships and coping strategies.

Social Sciences: **Harm Reducation and Substance Use**
Sciences sociales : **Réduction des préjudices et utilisation des substances**

SS1.02

Drug-and Sex-related Harms and "relations of care" Within Peer-based Harm Reduction Among Gay and Bisexual Men Who Party-n-Play

Rusty Souleymanov[1], Fritz Pino[2]

1. University of Manitoba, Winnipeg, MB, 2. University of Regina, Regina, SK

Introduction: As harm reduction education models have recognized, peer-based harm reduction strategies help create effective and culturally appropriate HIV and STI education and prevention activities among gay and bisexual men. This Canadian study examined the drug-and sex-related harm reduction strategies of gay, bisexual, and Two-Spirit men who use drugs and engage in condomless sex (a practice known as Party-n-Play).

Methods: In-depth 1 hour interviews were conducted between October 2016 and January 2017, with 44 gay, bisexual, and Two-Spirit men who lived in Toronto, and who used crystal methamphetamine, GHB, cocaine and other drugs before or during sex with another man during the previous month. Participants were recruited through social media and online postings. Interview data were analyzed using critical discourse analysis.

Results: Participants' narratives highlighted the sense of solidarity, connection, deep concerns, and care for the wellbeing of others, expressed by gay, bisexual, and Two-Spirit men who PNP. The study findings revealed that experienced men who PNP acted as caring peers who performed a variety of functions including friendship and support for other less experienced members, including initiation into new drugs and routes of administration, scoring and teaching others about safer drug use and trouble-shooting in a crisis. Participants therefore capitalized upon naturally occurring strengths in their environments such as their social bonds and friendships with each other, thereby, enacting such "relations of care" within various PNP activities.

Discussion: This study recommends tapping into relations and practices of care of this population, which will be essential to the development of empowerment-based peer harm reduction strategies. Peer-based harm-reduction interventions for gay, bisexual, and Two-Spirit men who PNP require a more nuanced understanding of the ways in which social bonds, friendships, and relations of care may be intertwined with the harms and risks within constructed experiences of PNP.

Social Sciences: **Harm Reducation and Substance Use**
Sciences sociales : **Réduction des préjudices et utilisation des substances**

SS1.03

Harm Reduction and Colour Theory: the Process and Impact of Redesigning a Supervised Injection Service Room at the Dr. Peter Centre

Rosalind Baltzer Turje, Carly Welham, Nicole Parekh
Dr. Peter AIDS Foundation, Vancouver, BC

Issue: Supervised Consumption Services (SCS) reduce the risk of HIV transmission and overdose for people who use drugs, and thus remain an important prevention strategy in the context of an urgent opioid overdose epidemic. Creating a physical SCS setting which is welcoming, comfortable, and appealing to people who use drugs can be challenging within a clinical environment.

Description: Since 2002, the Dr. Peter Centre (DPC) has integrated SCS within a broad range of health care services for people living with HIV, in both the DPC's Day Health Program and 24-hour Nursing Care Residence. During the summer of 2018, the DPC initiated a redesign of the SCS room, led by a DPC art therapist and the DPC Community Advisory Committee on SCS. The redesign included painting the room, installing a wrap-around mural featuring a West Coast nature scene, and hanging air plants within the room, all changes based on the input of people who utilize the space.

Lessons Learned: The cross-sector and collaborative process of drawing from art therapy, colour theory, and lived experience informed the creation of a more calming and engaging space for both service users and providers. Evaluation data has revealed that the redesign has contributed to mitigating the anxiety of visiting an SCS, reducing stigma towards drug use, and avoiding negative triggers while using.

Recommendations: While there is ample research on the impacts of design in health care, there is a knowledge gap around color theory and environmental design in harm reduction settings. Color theory and lived experience can be contradictory due to the highly individual nature of somatic reactions to color, so soliciting feedback from people with lived experience is crucial to creating environments that are inclusive and welcoming for people who use drugs.

Social Sciences: **Harm Reducation and Substance Use**
Sciences sociales : **Réduction des préjudices et utilisation des substances**

SS1.04

Integrated Harm Reduction Services for People Living with HIV in the Residence at the Dr. Peter Centre in Vancouver, Canada

Rosalind Baltzer Turje[1], Martin Payne[1], Silvia Guillemi[3, 4], Sarah Jordan[2], Ryan McNeil[5], Meghan Mullaly[1], Scott Elliott[1], Mark Holland[1]

1. Dr. Peter AIDS Foundation, Vancouver, BC, 2. Vancouver Coastal Health, Vancouver, BC, 3. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 4. University of British Columbia, Vancouver, BC, 5. British Columbia Centre on Substance Use, Vancouver, BC

Issue: In partnership with Vancouver Coastal Health, the Dr. Peter Centre (DPC), an integrated health facility for people living with HIV/AIDS, initiated a project to review the need to offer medical stabilization for serious comorbidities (including substance use disorder) responsive to systemic traumas. This innovative model for residential care incorporates a range of harm reduction strategies and services, offering customized supports to meet the needs of people living with HIV/AIDS who use drugs and experience co-occuring physical and mental health challenges within the context of multiple structural vulnerabilities.

Description: The DPC is the only licensed health care facility in Vancouver to offer integrated supervised injection services (SIS) and supports for substance use, including managed alcohol programs and opioid agonist treatment (OAT). The facility includes a combination of stabilization and long-stay care beds, and supports residents with histories of poor or no engagement with healthcare providers, and structural vulnerabilities such as poverty, housing instability, and food insecurity.

Lessons Learned: The review, evaluation, and implementation of stabilization care for people living with HIV/AIDS has supported a service strategy to remove active substance use as a barrier to access. The residence care team has created an environment that is safe and engaging, and adopts trauma-informed and patient-centered approaches to address the most pressing issue for residents at any given time. The team supports individuals to transition back to their community under the care of their healthcare practitioner with increased social support, or to continue to engage with the DPC for care. To date, 72 individuals have accessed this program and it has expanded to 12 beds.

Recommendations: The evaluation highlighted the need for the continued expansion of integrated stabilization care at the DPC and other HIV/AIDS care facilities, including the continuation of strategies for trauma-informed care, SIS, managed alcohol programs, and expanded OAT.

Social Sciences: **Harm Reducation and Substance Use**
Sciences sociales : **Réduction des préjudices et utilisation des substances**

SS1.05

Engagement in Primary Health Care Among Marginalized People Who Use Drugs in Ottawa, Canada

Claire Kendall[10, 1, 11], Lisa M. Boucher[1, 10], Ahmed Bayoumi[2, 11], Jessy Donelle[3], Alana Martin[4], Dave Pineau[4], Nicola Diliso[4], Brad Renaud[4], Rob Boyd[6], Pam Oickle[7], Zack Marshall[5], Sean LeBlanc[8], Mark Tyndall[9]

1. University of Ottawa, Ottawa, ON, 2. University of Toronto, Toronto, ON, 3. ICES uOttawa, Ottawa, ON, 4. PROUD Community Advisory Committee, Ottawa, ON, 5. McGill University, Montreal, QC, 6. Sandy Hill Community Health Centre, Ottawa, ON, 7. Ottawa Public Health, Ottawa, ON, 8. Drug Users Advocacy League, Ottawa, ON, 9. BC Centre for Disease Control, Vancouver, BC, 10. Bruyere Research Institute, Ottawa, ON, 11. Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, ON

Background: Engagement in primary care is lower among people who use drugs (PWUD) compared to the general population, despite higher comorbidity and more frequent use of emergency departments. We investigated factors associated with primary care engagement among PWUD.

Methodology: The Participatory Research in Ottawa: Understanding Drugs (PROUD) cohort study meaningfully engaged and trained people with lived experience to recruit and survey marginalized PWUD. We linked survey data to provincial-level administrative databases held at ICES. We categorised engagement in primary care over 2 years prior to survey completion (March-December 2013) as: not engaged (<3 outpatient visits to the same family physician) versus engaged (3+ visits to the same family physician). We used multivariable logistic regression to determine factors associated with engagement.

Results: Among 663 participants, characteristics include: median age of 43 years, 76% men, and 67% lived in the lowest two income quintile neighborhoods. Only 372 (56.2%) were engaged in primary care, with a median of 4 (interquartile range 0-10) primary care visits in the year prior to survey completion. Engagement was most strongly associated with: receiving provincial benefits (disability payments (adjusted odds ratio [AOR] 4.14; 95% confidence interval [95%CI] 2.30 to 7.43) or social assistance (AOR 3.69; 95%CI 2.00 to 6.81)), having ever taken methadone (AOR 3.82; 95%CI 2.28 to 6.41), mental health comorbidity (AOR 3.43; 95%CI 2.19 to 5.38), engaging in sex work in last 12 months (AOR 2.02; 95%CI 1.01 to 4.07), and having stable housing (AOR 2.09; 95%CI 1.29 to 3.38).

Conclusion: Despite high comorbidity, engagement in primary care among PWUD was suboptimal. Health care systems seeking to respond to the significant morbidity and acute care use experienced by PWUD should focus on primary care based models with emphasis on improved coordination and integration of opioid substitution treatment with other medical, mental health, and substance use care.

Social Sciences: **Harm Reducation and Substance Use**
Sciences sociales : **Réduction des préjudices et utilisation des substances**

SS1.06

Perspectives of People Who Use Drugs living with and without HIV- on the criminalization of HIV non-disclosure in Vancouver, Canada: A qualitative study

Cara Ng[1], Will Small[1, 3, 4], Andrea Krüsi[2, 5, 7], Rod Knight[1, 6]

1. BC Centre on Substance Use, Vancouver, BC, 2. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 3. Faculty of Health Sciences, Vancouver, BC, 4. Centre for Applied Research in Mental Health and Addiction, Vancouver, BC, 5. Centre for Gender and Sexual Health Equity, Vancouver, BC, 6. Department of Medicine, Vancouver, BC, 7. School of Population and Public Health, Vancouver, BC

Despite recent positive steps towards reducing the reach of criminal law in governing HIV non-disclosure, People Who Use Drugs' (PWUD) perspectives on this issue – a population disproportionately affected by HIV – need to be more meaningfully considered in these discussions. We analyzed data from 60 interviews with HIV-positive (n=30) and negative (n=30) men and women over the age of 18 who use drugs in Vancouver, Canada to explore their perceptions regarding the current HIV non-disclosure legal framework. Participant accounts characterized the framework as based upon stigmatizing understandings about people living with HIV and it was therefore described as being both unjust and a structural driver of HIV stigma. Some participants living with HIV described how the legal framework influenced how they interacted with others, including how they isolated themselves from people not living with HIV. A small number of participants, irrespective of their HIV status, felt the legal framework was justifiable because the threat of punishment could deter HIV risk behaviour. However, as interviews probed these assumptions, it became clear that these arguments were located within both misinformed understandings and stigmatized beliefs about HIV risk and people living with HIV. We conclude by discussing some of the unique challenges and opportunities for resisting the legal framework governing HIV non-disclosure and achieving justice for people living with HIV who use drugs, particularly within the context of accounts that, at times, support the criminalization of non-disclosure based on misinformed understandings about HIV.

***Basic Sciences:* HIV Virology**
***Sciences fondamentales :* Virologie du VIH**

BS2.01

Reconstructing the Recombinant History of the Hiv-1 Group M Pandemic

Abayomi S. Olabode[1], David W. Dick[2], Art F. Poon[1]

1. Department of Pathology & Laboratory Medicine, Western University, London, ON, 2. Department of Applied Mathematics, Western University, London, ON

Recombination is extensive in HIV-1 genomes, which presents a significant challenge for the established nomenclature system where recombinant forms are assumed to be transient or minority variants. In this study, we use community detection methods from dynamic social network analysis to reconstruct the genome-wide distribution of recombination events in the evolutionary history of HIV-1/M.

We obtained n=3,900 near full length (>8,000 nt) HIV-1/M sequences from Genbank and constructed a multiple sequence alignment using a clustering and iterative alignment protocol to filter out regions of low homology. We partitioned this alignment into windows of 500nt at steps of 300nt and computed the pairwise TN93 distance matrix for each, and used the 10% quantile of each window's TN93 distribution as an adaptive thresold to generate window-specific networks. Finally, we used dynamic stochastic block modeling in the R package *dynsbm*to assign subsequences in each window to *K* latent groups, where the optimal *K* was selected by the integrated completed likelihood criterion (ICL).

For n=300 genomes and 28 windows, ICL supported *K*=13 latent groups. We interpreted group transitions between windows as putative recombination breakpoints (bpts); on average, we detected 13.8 bpts/genome (IQR 11-17). We found no significant difference in the number of bpts between SCUEAL-based subtypes and CRFs. The number of bpts increased significantly with year of sample collection (1986-2015), averaging ~1 bpt every 5 years (*P*=1.9e-9). The distribution of group transition rates was strongly L-shaped, with preferential transitions among specific groups.

We propose that dynamic network methods provide a useful framework to study the complexity of recombination in the evolutionary history of HIV-1 group M. Our results confirm that recombination is extensive at the scale of the full genome; despite that, we find significant underlying structure in the global distribution of recombination fragments that may provide an alternative nomenclature.

***Basic Sciences:* HIV Virology**
***Sciences fondamentales :* Virologie du VIH**

BS2.02

Evolution of Nef-mediated CD4, HLA and SERINC5 Downregulation Activity over a Decade of Untreated HIV Infection: A Case Study

Hanwei Sudderuddin[1, 2], Natalie N. Kinloch[1, 2], Steven W. Jin[1], Rachel L. Miller[1], Bradley R. Jones[2, 3], Chanson J. Brumme[2], Jeffrey B. Joy[2, 3], Mark A. Brockman[1, 2], Zabrina L. Brumme[1, 2]

1. Faculty of Health Sciences, Simon Fraser University, Burnaby, BC, 2. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 3. Department of Medicine, University of British Columbia, Vancouver, BC

Background: The HIV-1 accessory protein Nef represents a major target of cellular immune responses and *nef* sequences evolve rapidly within-host. However, the evolution of Nef function during untreated infection remains poorly understood. Nef mediates immune evasion by downregulating CD4 and HLA-I from the infected cell surface, and enhances virion infectivity through downregulation of SERINC5. We perform a longitudinal analysis of Nef genetic and functional evolution over 11 years in an antiretroviral-naïve study participant.

Methods: Using single-genome amplification, we isolated 50 unique plasma HIV RNA Nef sequences at 15 timepoints spanning an 11-year period in this participant. Maximum likelihood phylogenies were inferred. Nef sequences were cloned into the pSELECT-GFP expression vector, sequence-validated and transfected into a CD4+ T-cell line engineered to stably express HLA-A*02. The ability of each Nef clone to downregulate CD4, HLA-A*02, and SERINC5 (co-transfected with Nef) was assessed using flow cytometry, and normalized to the activity of the SF2 Nef strain.

Results: The 50 within-host Nef clones (median 4 clones/timepoint) varied from one another at 36 of 207 (17.4%) Nef codons, and exhibited mean tip-to-tip phylogenetic distances of $4.4e^{-2}$ nucleotide substitutions/site. Within-host Nef clones displayed a relatively narrow range of CD4 downregulation function (median 100.8% [IQR=99.8-102.2%] relative to SF2), while the dynamic ranges of HLA and SERINC5 downregulation (median 86.8% [IQR=73.3-91.5%] and median 92.4% [IQR=82.4-94.5%], relative to SF2 respectively) were wider. Nef-mediated HLA downregulation decreased over the 11 years (R^2=0.12; p=0.013; 1.97% decrease/year). Nef-mediated CD4 downregulation activities also decreased modestly over time (R^2=0.08; p=0.046; 0.64% decrease/year), though no significant changes were observed for SERINC5 downregulation (R^2=0.044; p=0.14).

Conclusions: We observed substantial within-host Nef evolution that was accompanied by modest progressive decreases in HLA and CD4, but not SERINC5 downregulation function. This suggests that the requirements for maintaining immune evasion, but not infectivity enhancement functions, lessen with progressive immunodeficiency.

***Basic Sciences:* HIV Virology**
***Sciences fondamentales :* Virologie du VIH**

BS2.03

Elucidating the Molecular Mechanisms Underlying HIV-1 Nef-Mediated Antagonism of the SERINC5 Restriction Factor

Mitchell J. Mumby[1], Aaron L. Johnson[1], Richard M. Gibson[1], Eric J. Arts[1, 2], Jimmy D. Dikeakos[1]

1. University of Western Ontario, London, ON, 2. Joint Clinical Research Centre, Kampala, Uganda

The recently identified host restriction factor Serine Incorporator 5 (SERINC5) potently restricts progeny HIV-1 virion infectivity by efficiently incorporating into the outer membrane during viral egress. The HIV-1 accessory protein Nef overcomes this anti-viral pressure by triggering the internalization of SERINC5 from the cell surface, effectively preventing virion incorporation and restoring infectivity.

Although the exact mechanism(s) underlying Nef-mediated antagonism of SERINC5 have yet to be fully elucidated, ample evidence suggests similar motifs of Nef are utilized to additionally downregulate CD4 from the cell surface. For instance, both antagonistic functions of Nef require interaction with adaptin protein 2 (AP-2) via the dileucine motif to trigger endocytosis. Here, we sought to characterize how primary isolates 2410 and 2391, both acquired from HIV-1 infected women in Zimbabwe, function to antagonize SERINC5 and CD4. Accordingly, we analyzed the cell surface levels of SERINC5 and CD4 following expression of each isolate. Flow cytometry analysis revealed that 2391 and 2410 robustly downregulated CD4 from the cell surface, consistent with the critical role that Nef functional motifs display in this function. Interestingly, while 2410 was able to facilitate efficient SERINC5 downregulation, 2391 displayed severe antagonistic impairments, despite similar expression levels *in vitro*. These observations suggest HIV-1 Nef utilizes a novel functional motif distinct form CD4 downregulation to antagonize SERINC5. Furthermore, while amino acid sequence alignment revealed both isolates were highly conserved in the globular core and C-terminal region, the N-terminus was considerably divergent. Together, this data supports that a novel functional motif required to antagonize SERINC5 resides within the intrinsically disordered N-terminal loop.

Ultimately, the discovery of a novel Nef functional motif required to antagonize SERINC5 would enable drug development to block such interactions. During acute infection, restriction of virion infectivity could lead to more robust CTL responses, which is known to correlate with slower disease progression.

***Basic Sciences:* HIV Virology**
***Sciences fondamentales :* Virologie du VIH**

BS2.04

Effects of APOBEC3-Mediated Promoter Mutations on HIV-1 Proviral Latency and Latency Reversal Efficiency

Matthew D. Greig, Cindy Lam, Joanne McBane, Martin Pelchat, Marc-Andre Langlois
University of Ottawa, Ottawa, ON

HIV-1 is a lentivirus that forms latently infected memory CD4+ T cell reservoirs that are currently the foremost hurdle in HIV eradication. HIV-1 proviral latency is characterized by the infection of a cell by a replication competent virus that does not produce detectable levels of viral proteins nor the egress of detectable secondary infectious viruses, however is sensitive to induction by certain drugs or following immune stimulation. The majority of proposed latency mechanisms thus far have focused on genomic transcriptional control and chromatin structural remodelling. Over the past two years however, our lab has discovered experimental evidence that host-encoded APOBEC3 (A3) proteins may also play a role in HIV-1 latency. A3 proteins are intrinsic retroviral restriction factors that introduce G-to-A mutations in the viral plus strand DNA during reverse transcription, and are commonly most active during the early stages of infection while Vif levels remain low.

Through co-production of A3 with HIV-1, our lab has generated a library of HIV-1 viruses containing various levels and patterns of A3 mutations in their promoters that result in variable levels of infection and proviral transcription efficiency. These mutated viruses also respond differentially to latency reversal upon exposure to different classes of latency reversing agents (LRAs). To be effective, LRAs must be able to completely reactivate all latent, replication competent proviruses. Here we experimentally demonstrate that some replicative HIV clones with A3-mutated promoters display variable and decreased induction to LRA activation in various cell lines and in human peripheral blood mononuclear cells (PBMCs).

Our results thereby provide the first evidence that antiviral A3 proteins may contribute to HIV-1 persistence and latency. Additionally, this is also the first evidence that mutations in the viral sequence might play a role in HIV-1 latency.

***Basic Sciences:* HIV Virology**
***Sciences fondamentales :* Virologie du VIH**

BS2.05

Mechanistic Insights on the Incorporation of Integrin Alpha 4 Beta 7 into HIV-1 Virions

Jonathan Burnie[1, 2], Laxshaginee Thaya[1], Homaira Hamidzada[1], Christina Guzzo[1, 2]

1. Department of Biological Sciences, University of Toronto Scarborough, Toronto, ON, 2. Cell and Systems Biology, University of Toronto,, Toronto, ON

Integrin alpha 4 beta 7 (a4b7) has become an increasingly significant protein of interest in HIV-1 pathogenesis. A series of *in vivo* studies in SIV-challenged macaques have shown that targeting a4b7 with an anti-a4b7 mAb can protect animals from infection or, even more impressively, elicit long-lasting suppression of viral replication and protection from disease progression in infected animals. Our group recently reported a paradigm shift in the role of a4b7 in HIV-1 infection, with the discovery that the integrin can be incorporated into the external viral envelope, imprinting a gut-homing phenotype to the virus *in vivo.*The incorporation of integrin a4b7 into the HIV-1 virions was invariably evident in all patient samples analyzed (*ex vivo*), with higher levels of incorporation in the acute phase of infection. Furthermore, among a panel of cell surface antigens analyzed, we observed selective incorporation of integrin a4b7, with statistically significant enriched levels of incorporation compared to molecules previously established to be incorporated, such as ICAM-1. Given the significance of a4b7, particularly in the acute phase of infection, along with the observed selectivity for incorporation of a4b7, we sought to further characterize the molecular mechanisms of the selective incorporation of integrin a4b7 into the HIV-1 envelope. We employed a combination of microscopy and flow virometry techniques to identify and quantify the presence of incorporated a4b7 within the virion envelope, as well as to investigate both the viral and cellular determinants required for incorporation. We also observed an impact of virion-incorporated a4b7 on neutralization sensitivity of the virus, with a unique anti-gp120 antibody binding profile on a4b7-positive virions compared to wild type viruses. Collectively, these data aid in better understanding the role of a4b7 incorporation into HIV-1 virions and promotes the development of new therapeutic interventions.

***Basic Sciences:* HIV Virology**
***Sciences fondamentales :* Virologie du VIH**

BS2.06

Mapping the Region on the Hepatitis C Virus Genome to Which miR-122 and Other Small RNA Annealing Promotes Virus Replication

Rasika D. Kunden, Joyce A. Wilson
University of Saskatchewan, Saskatoon, SK

The genome of Hepatitis C Virus (HCV) is 9.6 kb positive sense RNA which contains a polyprotein coding region, a 5'UTR and a 3'UTR. Its efficient replication requires host microRNA (small RNA), miR-122, annealing to two sites on its 5' UTR, but the mechanism by which miR-122 promotes HCV replication is poorly understood.

We recently found that annealing of perfect match siRNAs to HCV 5'UTR can also promote HCV replication as efficiently as miR-122, when siRNA cleavage was abolished, using Ago2 knockout cells (Ago2KO). This finding provided us with a method to test other small RNAs and map the locations on the HCV genome to which small-RNA annealing can promote replication.

To identify regions where small-RNA annealing can promote HCV replication several 19bp siRNAs targeting different sites on the HCV genome were tested. Replication promotion was assessed in Ago2 knockout cells and the activity of miR-122 was blocked using miR-122 antagonist. We found that siRNAs annealing between nucleotides 13 and 44 in HCV 5'UTR, can promote replication, and siRNAs annealing within IRES, NS5B and 3'UTR regions, including other predicted miR122 binding sites, cannot. Efficient replication promotion required a minimum of 15 annealing nucleotides and a 19bp siRNA, that targeted nucleotides 19-37, promoted most efficiently and more effectively than miR-122. Replication promotion efficiency decreased as the siRNA target site moved away from this region, and was abolished if the siRNA target included nucleotide 45.

Thus, we have defined an RNA domain that is influenced by small RNA annealing. RNA Structure prediction analysis of the identified domain suggests that small RNA annealing may modify the HCV genomic RNA. Future studies will characterize how HCV translation, genome stability, RNA structures, and protein binding are modulated by small-RNA annealing that promotes HCV replication to better understand the mechanism by which miR-122 promotes HCV replication.

***Basic Sciences:* HIV Virology**
***Sciences fondamentales :* Virologie du VIH**

BS2.07

Discovery of Novel HIV Inhibitors from Australian Natural Products

Zahra Haq[1], Kah Yean Lum[2], Cole Schonhofer[1], Silven Read[1], Rohan A. Davis[2], Ian Tietjen[1]

1. Simon Fraser University, Burnaby, BC, 2. Griffith Institue for Drug Discovery, Brisbane, QLD, Australia

Background: HIV inhibitors that act by mechanisms which are distinct from existing antiretrovirals can provide novel insights into viral replication and potentially inform development of new therapeutics. We previously tested a library of 252 natural products and identified 6 (2.4%) that potently inhibited HIV replication including bengamide A, an NF-κB antagonist that was effective at nanomolar concentrations. We therefore sought to identify and characterize novel HIV inhibitors from additional natural product sources.

Methods: 527 pure natural product compounds and analogues from the Davis Open Access Library of Compounds Australia were screened for their ability to inhibit HIV in a multi-cycle replication assay using CEM-GXR T cells. Compounds of interest were then assessed for dose-dependent effects on cell viability and ability to suppress induced virus expression in both J-Lat cells, a Jurkat T cell line harbouring an HIV proviral genome, and JurTat cells, which contain an inducible viral Tat protein that drives mCherry reporter expression off a viral LTR.

Results: We identified 40 compounds that blocked at least 50% of HIV replication at 10 µM, for a hit rate of 7.6%. One chemical series, consisting of capillasterin A plus seven analogues, inhibited HIV with EC50s as low as 7.5 µM with no cytotoxicity, consistent with their proposed activities as antagonists of NF-κB signaling. In contrast, a second chemical series exemplified by hopeaphenol, a resveratrol tetramer, blocked HIV with an EC50 < 1 µM. Interestingly, hopeaphenol at sub-micromolar concentrations also suppressed HIV expression induced by PMA or panobinostat in J-Lat cells and Tat-driven mCherry expression in JurTat cells, indicating a post-integration mechanism of action.

Conclusion: We have identified multiple HIV inhibitors from a natural compound library. These results, combined with our previous observations, support that pure natural product libraries are a particularly rich source of novel HIV antivirals.

***Basic Sciences:* HIV Virology**
***Sciences fondamentales :* Virologie du VIH**

BS2.08

Dual Selections with Integrase Inhibitors and Rilpivirine Abrogate the Emergence of HIV-1 Drug Resistance In vitro

Maureen Oliveira[1], Ruxandra-Ilinca Ibanescu[1], Bluma G. Brenner[1, 3, 2]

1. McGill AIDS Centre, Montreal, QC, 2. McGill University, Department of Medicine, Montreal, QC, 3. McGill University, Department of Microbiology and Immunology, Montreal, QC

Background: There has been a paradigm shift towards two-drug coformulations of integrase inhibitors with reverse transcriptase inhibitors for streamlined long-term maintenance therapy. Dolutegravir and rilpivirine have been co-formulated as a once a day maintenance option for suppressed individuals. Cabotegravir has been paired with rilpivirine as a potential long-acting formulation. In this study, we employed cell culture models to shed light on the ability of escape mutants to emerge under prolonged drug pressure.

Methods: Patient-derived clinical isolates were passaged in cord blood mononuclear cells (CBMC) under increasing drug pressure with integrase inhibitors alone and in combination with rilpivirine. Virus outgrowth was monitored by weekly determinations of reverse transcriptase (RT) activity. The progress of single drugs was used as a guide to assess the appropriate drug concentrations for the combination wells. Sequence analysis identified emergent resistant mutations in the RT and integrase regions at weeks 16 and 32.

Results: After 32 weeks, single drug pressure with rilpivirine led to viral escape with two or more mutations along the Y181C, V108I, and E138K pathways. Single drug pressure with dolutegravir, bictegravir or cabotegravir led to the emergence of resistance with single R263K or S153F/Y point mutations. In two cabotegravir selections, viral escape occurred including the Q148R/K. Dual selections with integrase inhibitors and rilpivirine selections abrogated emergent resistance to both drugs Emergent resistance to rilpivirine (Y181C) arose in one dual selection. No mutations in integrase were observed with cabotegravir and rilpivirine in tandem.

Conclusion: Previously, our single drug resistance studies showed that in single drug treatment, cabotegravir may have a weaker genetic barrier than bictegravir or dolutegravir, resulting in the break out of several highly resistant viral escape mutants. Cabotegravir is known to be weakly synergistic with rilpivirine, and in this tissue culture study, the combination shows promising potential for use as a long-acting therapy.

Clinical Sciences: **HIV Prevention and Diagnosis. Barriers and Linkage to Care**
Sciences cliniques : **Prévention et diagnostic du VIH. Obstacles et lien en matière de soins**

CS2.01

Delayed Linkage to HIV Care Among Refugee Late Presenters in Montreal, Quebec

Nadine Kronfli, Blake Linthwaite, Bertrand Lebouche, Joseph Cox, Alexandra de Pokomandy, Charles Frenette, Cecilia Costiniuk, Marina Klein

McGill University Health Centre, Montreal, QC

Background: Refugees represent an increasing proportion of people living with HIV in Canada. We aimed to describe the HIV care cascade for newly-diagnosed refugees referred to the McGill University Health Centre (MUHC), the major referral centre for refugees in Montreal.

Methods: We conducted a retrospective chart review from June 1, 2017 to October 23, 2018. The primary outcome measures were median time (days; interquartile range (IQR)) from: 1) Immigration Medical Examination (IME) screening to notification of diagnosis; 2) Notification to linkage to care (defined as either a CD4 cell count or viral load (VL) measure); 3) Linkage to combination antiretroviral therapy (cART) prescription; and 4) cART prescription to viral suppression.

Results: Overall, 46% (65/142) of refugees were newly diagnosed in Canada. Among these, 58% (38/65) were late presenters (CD4<350), 22% (14/65) presented with advanced HIV (CD4<200), 23% (15/65) presented with high-level viremia (VL>100,000 copies/ml), and 17% (11/65) had baseline antiretroviral resistance to at least one drug. Among those previously diagnosed outside Canada, 71% (55/77) were on cART and 27% (21/77) had detectable VLs at presentation (4/55 on cART). Opportunistic infections were rare in both groups.

Among newly diagnosed refugees, time from IME screening to notification of diagnosis: 29 days [IQR:21;49]; notification to linkage: 6 days [IQR:1.0;18]; linkage to cART prescription: 13 days [IQR:6.0;19]; and cART prescription to viral suppression: 36 days [IQR:29;82]. Overall, 47% of new diagnoses were linked within 30 days, 80% within 60 days and 91% within 90 days from HIV screening. Median time from entry into Canada to viral suppression was 95 days [IQR:68;147].

Conclusions: While the majority (58%) of newly diagnosed refugees were late presenters, only 47% were linked to care within 30 days. Even in a system with a clear care pathway, there is a need to expedite referrals to HIV care following IME screening.

Clinical Sciences: **HIV Prevention and Diagnosis. Barriers and Linkage to Care**
Sciences cliniques : **Prévention et diagnostic du VIH. Obstacles et lien en matière de soins**

CS2.02

A Nurse-Led HIV Pre-Exposure Prophylaxis (PrEP) Program at Cool Aid Community Health Centre (CHC) for Men Who Have Sex with Men (MSM)

Karen Lundgren, Kellie Guarasci

Cool Aid Community Health Centre, Victoria, BC

Background: Gay, bisexual and MSM continue to comprise the greatest number of new HIV diagnosis in BC (BC-CDC, 2016). The complexity of the HIV epidemic among MSM has highlighted the need for broader approaches to HIV prevention. Publicly funded access to PrEP in BC began in 2018. The low barrier MSM STI testing clinic at Cool Aid CHC demonstrates that PrEP can be implemented successfully through a nurse-led program.

Description of model of care/intervention: This novel CHC based Men's STI Testing Clinic is staffed by STI certified practice nurses and run in partnership with AIDS Vancouver Island (AVI). It is advertised through MSM social media sites by the AVI Men's Wellness Coordinator. At the initial visit, clients complete a HIRI-MSM index, a sexual/medical history, required screening and participate in PrEP counseling and education. Physicians review the results and sign the PrEP prescription. Clients without primary care are accepted as patients at the clinic.

Effectiveness: Our innovative non-judgemental, nurse-led model has removed barriers to sexual health screening and enrolled 124 MSM in the PrEP program. Initial PrEP screening showed an STI incidence of 19% and a previous syphilis diagnosis in 15% of those screened. After PrEP initiation STI incidence increased by 7%, highlighting the need for continued safer sex education. There have been no HIV infections amongst PrEP recipients. 20% have discontinued PrEP after approval. 56% of those enrolled felt unable to access PrEP through their physician. 44% of PrEP clients are now linked to primary care at Cool Aid CHC, demonstrating that PrEP can be a tool to prevent HIV transmission in MSM, while engaging patients in primary care and regular STI screening.

Conclusion and next steps: This innovative program increased access to PrEP for MSM, increased STI testing/treatment, helped to prevent HIV transmission and linked clients to primary care.

Clinical Sciences: **HIV Prevention and Diagnosis. Barriers and Linkage to Care**
Sciences cliniques : **Prévention et diagnostic du VIH. Obstacles et lien en matière de soins**

CS2.03

Service Utilization and Multi-disciplinary Care in the Ontario HIV Treatment Network Cohort Study (OCS)

Eliot Winkler[1], Lucia Light[1], Claire Kendall[3, 4], Kelly O'Brien[2], Adrian Betts[5], Joanne Lindsay[6], Abigail Kroch[1, 2]

1. Ontario HIV Treatment Network, Toronto, ON, 2. University of Toronto, Toronto, ON, 3. University of Ottawa, Ottawa, ON, 4. Institute for Clinical Evaluative Sciences, Toronto, ON, 5. The AIDS Committee of Durham, Oshawa, ON, 6. St. Michael's Hospital, Toronto, ON

Background: As recommended by Ontario's Clinical Care Guidelines for HIV, access to multi-disciplinary services (pharmacist, social worker, and dietitian) optimizes clinical management, while empowering people living with HIV to be engaged in their care and act as their own best advocates. Furthermore, access to supplementary health services increases odds of viral suppression and retention in care.

Objectives: To assess the self-reported access of services and multi-disciplinary care in Ontario HIV clinics among participants in the Ontario HIV Treatment Network Cohort Study (OCS) and explore differences based on priority population and severity of depression.

Methods: The OCS is a community-governed, province-wide research study aimed at improving the health and well-being of Ontarians living with HIV. We quantified health service utilization, particularly multi-disciplinary care services, as self-reported by participants in the OCS. Access to multi-disciplinary care services was defined as having seen a pharmacist, social worker, and dietitian in the previous year. We analyzed for differences based on priority population and severity of depression, as measured by a standard depression tool (PHQ-9).

Results: Of 2388 OCS participants, only 4% (n=103) reported accessing multi-disciplinary care services in the previous year. This differed by population, with 12% of Indigenous participants, 8% of participants who inject drugs ($p<0.0001$), 6% of women, 4% of ACB participants and 3% of MSM participants ($p<0.05$) reporting accessing multi-disciplinary care. Across priority populations, the ACB population consistently reported using services less than other priority populations. Participants considered moderate to severely depressed, as measured by the PHQ-9, accessed multi-disciplinary services more than those ranked not depressed to mildly depressed (10% vs. 3%, respectively; $p<0.0001$).

Conclusions: Results suggest that OCS participants experiencing greater need may obtain more access to multi-disciplinary services, but that access remains sub-optimal and may need to be targeted to key priority populations of people living with HIV.

Clinical Sciences: **HIV Prevention and Diagnosis. Barriers and Linkage to Care**
Sciences cliniques : **Prévention et diagnostic du VIH. Obstacles et lien en matière de soins**

CS2.04

Patient Experiences Participating in an Inpatient Needle and Syringe Program

Hannah L. Brooks[1], Stephanie Montesanti[1], Tania Bubela[2], Elaine Hyshka[1]
1. University of Alberta, Edmonton, AB, 2. Simon Fraser University, Burnaby, BC

Background: Needle and syringe programs (NSPs) reduce the risk of HIV amongst people who inject drugs (PWID) and have been widely implemented in community settings. However, NSPs, and most other harm reduction interventions, have a limited presence in acute care settings. This is problematic because PWID experience high rates of hospitalization and often continue to inject during their hospital stay. In 2014, the Addiction Recovery and Community Health team at the Royal Alexandra Hospital in Edmonton, Alberta implemented one of Canada's first inpatient NSPs to prevent HIV and other harms amongst PWID.

Methods: We studied the implementation of the inpatient NSP using a focused ethnographic research design, that included conducting 25 semi-structured qualitative interviews with hospitalized PWID. Interviews prioritized participants' perspectives of and experiences participating in the NSP and their recommendations for improvements, as well as their hospitalization experiences and interactions with hospital staff. The research was conducted in collaboration with a Community Advisory Group consisting of people with lived experience of substance use, homelessness, and hospitalization.

Results: Half of the patients interviewed identified as female and 80% identified as Indigenous. Many patients reported that access to the NSP helped reduce the use of non-sterile injection supplies and provided a means to access safer drug use information. Patients also felt the NSP made their hospital stay more comfortable and facilitated their treatment completion. However, several participants described barriers to accessing supplies. Barriers included anticipation that hospital staff would judge or prematurely discharge them, confiscate their injection supplies or drugs, or modify their medication regimes if they accepted supplies.

Conclusions: This study suggests that an inpatient NSP is feasible and may reduce certain risks associated with injecting drugs while hospitalized. However, barriers to participation remain and further work is needed to facilitate the implementation of harm-reduction in acute care.

Clinical Sciences: **HIV Prevention and Diagnosis. Barriers and Linkage to Care**
Sciences cliniques : **Prévention et diagnostic du VIH. Obstacles et lien en matière de soins**

CS2.05

Loneliness and Stigma Impact Cognitive Function and Mental Health among HIV+ Older Adults in the Positive Brain Health Now (PBHN) Study

Marianne Harris[1, 2], Marie-Josee Brouillette[3], Susan Scott[3], Austin Lam[3], Fiona Smaill[4], Graham Smith[5], Rejean Thomas[6], Lesley K. Fellows[7], Nancy E. Mayo[3]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. University of British Columbia, Vancouver, BC, 3. McGill University Health Centre, Montreal, QC, 4. McMaster University, Hamilton, ON, 5. Maple Leaf Medical Clinic, Toronto, ON, 6. Clinique medicale l'Actuel, Montreal, QC, 7. Department of Neurology and Neurosurgery, McGill University, Montreal Neurological Institute, Montreal, QC

Background: Loneliness and stigma are common experiences for older HIV+ adults. We sought to assess their impacts on cognitive performance and emotional health.

Methods: PBHN is a prospective cohort of HIV+ adults aged ≥35 years. Participants were asked: "Do you find yourself feeling lonely: quite often, sometimes or almost never?" and "To what extent are you bothered by people blaming you for your HIV status?" Cognition was assessed using a computerized battery of cognitive tests (B-CAM) and the perceived deficit questionnaire (PDQ). Proportional odds regression and multiple linear regression were used to analyze associations between loneliness, stigma, and other outcomes, adjusting for age, sex and education. Structural equation modeling was used to estimate the relationships between stigma, cognition and mood. To avoid the confounding effects of gender and race, the stigma analysis was restricted to Caucasian men.

Results: Of 836 participants (85% men; mean age 52), 64% experienced loneliness "sometimes" or "quite often" (Table 1). Loneliness was associated with stigma, poorer cognitive ability, and poorer mental health.

Among 512 Caucasian men (mean age 54), 30% were bothered by HIV-related stigma. Stigma was associated with more cognitive symptoms, poorer cognition, and poorer mental health, especially anxiety.

Conclusions: The associations between loneliness, stigma, cognition, and mental health are complex. While this analysis cannot sort out "causal" relationships, the results support that HIV-related stigma and loneliness both have negative consequences for cognition and emotional health. Interventions to engage people in socially meaningful activities, and to reduce consequences of stigma, should be developed.

Table 1: Distribution of Potential Contributors/Consequences to Loneliness Across Levels of Loneliness (N= 836) (* P <0.001)

	How often do you find yourself feeling lonely?		
	Quite often	**Sometimes**	**Never**
N (%)	148 (17.7%)	383 (45.8%)	305 (36.5%)
% reporting stigma*	21.1%	13.4%	6.0%
B-CAM * (0-40 best)	18.6	19.3	20.8
PDQ * (0-100 worst)	44.0	35.5	27.6
RAND SF-36 * Mental Health Inventory (0-100 best)	47.6	64.8	79.4
HADS depression *(0-14 worst)	8.2	4.9	2.7
HADS anxiety * (0-14 worst)	10.8	7.6	4.8

Clinical Sciences: **HIV Prevention and Diagnosis. Barriers and Linkage to Care**
Sciences cliniques : **Prévention et diagnostic du VIH. Obstacles et lien en matière de soins**

CS2.06

How Comprehensive are Patient-Report Measures of Barriers to Antiretroviral Therapy Adherence Used in Developed Countries? A Review of Instruments

Kim Engler[1], Isabelle Toupin[1], Serge Vicente[2], Sara Ahmed[3], David Lessard[1], Bertrand Lebouché[3]

1. Centre for Outcomes Research and Evaluation, Research Institute of the McGill University Health Centre, Montreal, QC, 2. University of Montreal, Montreal, QC, 3. McGill University, Montreal, QC

Background: People living with HIV (PLHIV) experience many barriers to antiretroviral therapy (ART) adherence, yet there appear to be few comprehensive self-report measures for capturing them. Our team previously published a conceptual framework of ART adherence barriers, based on a synthesis of qualitative studies with PLHIV in developed countries. In this study, we aimed to: 1) identify existing measures of patient-identified barriers to ART adherence, and 2) examine their coverage of this PLHIV-informed conceptual framework.

Methods: We searched four databases for English language, HIV-specific, self-reported instruments published between 1996 and 2018, and used in developed countries. Instruments had to capture barriers from the patient perspective (e.g., reasons for missed doses). With deductive/inductive content analysis, the items of retained instruments were mapped to the conceptual framework which contains 6 themes and 20 subthemes of barriers. We then evaluated instrument breadth (representation of all themes) and depth (representation of all subthemes).

Results: We reviewed 1540 records, retrieving 32 eligible instruments. Thirty-five (8%) items were not mapped, as they either fell beyond the framework's scope or lacked clarity. Average instrument breadth was 4.4/6, while average depth was 7.1/20. Concerning breadth, 84-94% of instruments covered the broad themes of "Lifestyle factors", "Characteristics of ART", "Cognitive and emotional aspects", and "Social and material context". Fewer covered the theme of the "Health experience and state" (66%) and only 22%, the "Healthcare services and system" theme. Most instruments (72-91%) represented the subthemes of "Demands and organization of daily life", "Side effects" and "Affect". Far less addressed the subthemes of "Social relations" (28%), "Acceptance" of HIV (9%), and the "Patient-provider relationship" (6%).

Conclusions: This review offers insight into themes typically covered and omitted in HIV-specific measures of patient-identified adherence barriers. It argues for greater instrument comprehensiveness from the PLHIV perspective, particularly consideration of Healthcare services and system-related factors.

Clinical Sciences: **HIV Prevention and Diagnosis. Barriers and Linkage to Care**
Sciences cliniques : **Prévention et diagnostic du VIH. Obstacles et lien en matière de soins**

CS2.07

Investigating Use of Home and Community Care Services Among Older Adults Living with HIV in British Columbia, Canada

Katrina Koehn[1, 2], Heather Burgess[1], Sharyle Lyndon[1], Michelle Lu[1], Monica Ye[1], Robert S. Hogg[1, 2], Surita Parashar[1, 2], Rolando Barrios[1, 3], Kate A. Salters[1, 2]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. Simon Fraser University, Burnaby, BC, 3. University of British Columbia, Vancouver, BC

Introduction: Over half of people living with HIV in British Columbia (BC) engaged in HIV-care are age ≥50, and the rate of new diagnoses among older adults is increasing. The home and community care system (HCC), including services such as home support, assisted living, and residential care, is integral to supporting individuals as they age. However, little is known about how this care system will support older adults living with HIV (OALHIV). We aimed to characterize OALHIV (defined as those ≥50) who have accessed HCC in BC.

Methods: We employed data from the Seek and Treat for Optimal Prevention of HIV/AIDS (STOP HIV/AIDS) cohort, a linked database including treatment and surveillance records for people living with HIV in the province of BC. Chi-squared and Kruksal-Wallis tests were used to compare OALHIV who did and did not access home support, home nursing, community rehabilitation, residential care, or any type of HCC service. We estimated adjusted odds ratios (aORs) for factors explaining any HCC service use using logistic regression.

Results: This study included 5,603 OALHIV, with 837 (15%) of these accessing any HCC service between 2005-2014. Services most commonly used included home nursing (n=503), community rehabilitation (n=433), home support (n=231), and residential care services (n=103). OALHIV accessing any HCC service were more likely to be female (aOR=1.48, 95% CI=1.17-1.88), have recently visited a general practitioner (aOR=2.17, 95% CI=1.77-2.66), have Indigenous ancestry (aOR=1.37, 95% CI=1.08-1.74), engage in injection-drug related transmission risk behaviours (aOR=1.81, 95% CI=1.51-2.17), and have a higher Charlson co-morbidity index score at baseline (aOR=1.11, 95% CI=1.07-1.15).

Conclusion: Historically marginalized OALHIV are accessing some HCC services, but the extent of potential unmet need for these services requires further research. Efforts to further understand the care trajectories and experiences of OALHIV in HCC should be bolstered as an opportunity to support successful aging.

Clinical Sciences: **HIV Prevention and Diagnosis. Barriers and Linkage to Care**
Sciences cliniques : **Prévention et diagnostic du VIH. Obstacles et lien en matière de soins**

CS2.08

A Publicly Funded, Interdisciplinary PrEP Clinic: Nurse and Pharmacist Driven Protocol

Mike Stuber[1], Lesley Sweeney[1], Tania Diener[1], Maurice Hennink[1], Kathy Lloyd[1], Laurel Stang[1], Cara Benz Tramer[1], Molly Trecker[1], Alex Wong[1, 2]

1. Saskatchewan Health Authority, Regina, SK, 2. University of Saskatchewan, Regina, SK

Background: The recent approval of PrEP across Canada has significantly increased the demand for access. Saskatchewan provides universal access to PrEP at no cost, but prescriber access remains limited. We describe the viability and efficacy of a pilot project to provide PrEP in a manner consistent with Canadian guidelines via a protocol-driven interdisciplinary team led by a pharmacist and public health nurse (PHN).

Methods: A collaborative prescribing agreement was arranged with an infectious disease physician to allow the pharmacist to order laboratory tests and prescribe PrEP. Prior to initiating PrEP, patients are seen by the pharmacist and PHN, and an initial interview is conducted. Baseline laboratory tests are collected. Patients are then tested quarterly prior to prescription renewal. The pilot began in January 2018 with monthly clinics; we report data as of December 2018.

Results: After one year, 105 individuals (all men who have sex with men) had scheduled a clinic appointment, with a median age of 31.0 years, and a mean baseline high incidence risk index (HIRI-MSM) score of 15.6 (SD: 8.36). 43 individuals (41%) self-referred. Baseline screening identified a single case each of gonorrhea and chlamydia, 7 cases of syphilis, and one positive HIV result. At the time of data analysis, 98 of 105 persons booked (93.3%) had been seen for an initial visit, and 92 of 98 (93.8%) seen had received an initial prescription for PrEP. 83 (90.2%) of those who received a prescription were currently on PrEP. No new cases of HIV were reported.

Conclusions: A protocol-driven interdisciplinary team intervention to provide PrEP appears viable and effective, with high retention in care. This model may provide low-barrier and timely access to PrEP, and could be applied when traditional prescriber access is limited.

***Epidemiology and Public Health:* HIV Prevention and Control Programs**
***Épidémiologie et santé publique :* Prévention du VIH et programmes de contrôle**

EPH2.01

Chemsex on PEP: risk behaviours and seroconversion among PEP patients using illicit substances

Joao Carlos G. Oliveira[1], Lorie Guilbault[1], Judith A. Robin[1], Michel Boissonnault[1], Jason Szabo[1, 2], Réjean Thomas[1]
1. Clinique médicale l'Actuel, Montréal, QC, 2. Centre universitaire de santé McGill (CUSM), Montreal, QC

Background: Chemsex is the practice of drug use during sex. This growing habit has raised concerns that intoxication may lead to a greater HIV seroconversion risk. Post-Exposure Prophylaxis (PEP) can be recommended for individuals engaging in chemsex. We aim to describe risk behaviors and investigate associations between chemsex and seroconversion among PEP users.

Methods: We used a retrospective database approach to describe our PEP cohort in regards to prevalence of chemsex practices and HIV conversion risk. To do so, we included men who have sex with men (MSM), ages≥18 and who consulted for PEP from January 2010 to November 2018. Behavioral risk characteristics reflect self-reported activities at baseline and subsequent visits, including drug and condom use during sex. We excluded patients for which information regarding seroconversion was unavailable. The remaining patients were separated into two groups: chemsex (reported sex under the influence of drugs, excluding cannabis or poppers) and non-chemsex. Seroconversion rates were compared between the two groups.

Results: Among 1504 patients who consulted for PEP, 180 (12%) reported chemsex, 428 (29%) reported alcohol consumption only, 118 (13%) used marijuana and/or poppers, 801 (53%) reported no substance use. The chemsex group exhibited increased risks when compared with non-chemsex group including a greater proportion reporting condomless anal sex (92% versus 86%, p <0.05). The proportion of patients reporting chemsex and seroconverting is superior compared with patients no experiencing seroconversion (25% vs. 11%, p<0.01; aOR= 2.23, 95%CI: 1.10-4.60, adjusted by age, risk assessment by physician, education and delay between exposure and consultation).

Conclusion: We found seroconversion among PEP users was associated with chemsex. Given the results and the increase of chemsex among MSM, it is fundamental to develop prevention and counseling tools for this new reality in order to support chemsex users to integrate a corridor of services and adapted care.

***Epidemiology and Public Health:* HIV Prevention and Control Programs**
***Épidémiologie et santé publique :* Prévention du VIH et programmes de contrôle**

EPH2.02

Declining HIV Prevalence in Female Sex Workers (FSWs) at Enrollment in a Large HIV Treatment and Prevention Programme in Nairobi, Kenya (2008-17)

Achieng Tago[1], Festus Muriuki[2], Tabitha Wanjiru[2], Julius Munyao[2], Maureen Akolo[2], Neil Reed[1], Souradet Shaw[3, 4], Lawrence Gelmon[2, 5], Joshua Kimani[2, 5], Lyle R. McKinnon[2, 5, 6]

1. University of Manitoba, Max Rady College of Medicine, Winnipeg, MB, 2. Department of Medical Microbiology, University of Nairobi, Nairobi, Kenya, 3. Centre for Global Public Health (CGPH), University of Manitoba, Winnipeg, MB, 4. Winnipeg Regional Health Authority (WRHA), Winnipeg, MB, 5. Department of Medical Microbiology and Infectious Diseases, University of Manitoba, Winnipeg, MB, 6. Centre for the AIDS Programme of Research in South Africa (CAPRISA), Durban, South Africa

Background: Although HIV incidence is declining, the rate of this decline has been slower than anticipated. Empirical estimates of HIV trends over time in key populations such as FSWs are helpful to understand the evolution of the epidemic, and the effectiveness of scaling up HIV prevention interventions.

Methods: We analyzed time trends in HIV prevalence in the Sex Worker Outreach Program (SWOP), a large PEPFAR-funded program catering to FSWs accessing 7 clinics in Nairobi county during 2008-17. Data were included for all FSWs with a valid age, date of enrolment, and HIV rapid test result (N=33,560). The Mantel-Haenzsel test for trend and independent samples Kruskal-Wallis test were used to analyze time trends for categorical and continuous variables, respectively. Multivariable logistic regression was used to estimate the annual risk of being HIV+ at enrolment, adjusting for several covariates.

Results: HIV prevalence decreased in all age groups over time (P<0.0001), and particularly in FSWs < 25 years of age. HIV prevalence in the latter was 17.5% in 2008-09, 12.2% in 2010-11, 8.3% in 2012-13, 7.3% in 2014-15, and 4.8% in 2016-17, P<0.0001). Over time, FSWs at enrolment were more likely to use condoms, particularly with regular partners, more likely to have been HIV tested prior to enrolment, and reported less frequent history of STI symptoms (P<0.0001). In adjusted analyses, and compared to 2008, significant declines in HIV prevalence were observed for 2012 (aOR 0.73; 95% CI: 0.55-0.98), 2013 (aOR 0.71; 95% CI: 0.54-0.94), 2014 (aOR 0.63; 95% CI: 0.47-0.84), 2015 (aOR 0.67; 95% CI: 0.49-0.86), 2016 (aOR 0.56; 95% CI: 0.41-0.75), and 2017 (aOR 0.45; 95% CI: 0.31-0.66).

Discussion: HIV prevalence at enrolment has declined over 10 years in a programme covering a high proportion of FSWs in Nairobi, Kenya; this decline correlated with the scale-up of HIV prevention and treatment efforts.

***Epidemiology and Public Health:* HIV Prevention and Control Programs**
***Épidémiologie et santé publique :* Prévention du VIH et programmes de contrôle**

EPH2.03

Using HIV Surveillance Data to Re-engage Persons in HIV Medical Care: a Tool for Re-engagement

Johnmark Opondo, Judith Wright, Kimberly Schommer
Saskatchewan Health Authority, Saskatoon, SK

Public Health HIV Case Review: uses population-based data that includes all individuals living with HIV in the health region as reported to public Health, so everyone in database has equal chance of being included on list and followed up/linked/re-engaged in care if defined as “Not-in-Care”.

There are shifting views within health departments and the broader HIV community about the value of using individual-level HIV surveillance data for taking public health action such as linkage to and re-engagement in care. Because of the potential benefits to both individual and public health, many now view these benefits as outweighing the concerns and are calling for broader use of HIV surveillance data, though clearly departments must have safeguards in place to protect individual privacy.

Methodology: To identify patients lost to care, we used the electronic Health Records, to access patient information. We defined “In Care” as having a HIV viral load test conducted within one year of the review date. Patients who did not meet this criteria were defined as “not in care” and alerts were sent to the HIV care provider to re-engage. In cases where the patient could not be traced, other means were used to relocate the client for the purposes of re-engagement.

Results: In 2017, approximately 86% patients were in care (560), and 79% were virally suppressed. After patient lists of those “not in care” were returned to the clinics for follow-up, 41 were re-engaged, six moved out of province and four were deceased. Some of the patients re-engaged have had no contact with medical providers for several years!

Conclusion: Public Health HIV Case Review decreases HIV transmission and Increases the number of PLWH linked to care. Getting people linked and retained in care, impacts their access to drugs and reduces their viral load, which subsequently impacts transmission rates.

***Epidemiology and Public Health:* HIV Prevention and Control Programs**
***Épidémiologie et santé publique :* Prévention du VIH et programmes de contrôle**

EPH2.04

HIV Testing, Treatment and Viral Suppression Among Federal Inmates: 2018

Jonathan M. Smith, Olivia Varsaneux, Teresa Mersereau, Emily Kom
Correctional Service Canada, Ottawa, ON

Background: In support of global targets established by the Joint United Nations Programme on HIV/AIDS (UNAIDS) and the World Health Organization (WHO), Correctional Service of Canada (CSC) has compiled 90-90-90 estimates for the federal inmate population.

Methods: Federal inmates are offered voluntary HIV testing on admission and throughout incarceration. Data for September 2018 collected through CSC's enhanced surveillance system were analyzed to estimate testing uptake, the number of inmates diagnosed with HIV, on treatment, and considered virally suppressed. Results were stratified by Aboriginal status and gender. Statistical significance was calculated using chi-square test at $p < .05$.

Results: Roughly 9 in 10 (88%) of offenders were aware of their HIV status and prevalence was estimated to be 1.0%. Among inmates known to be living with HIV, 93% were on treatment and 94% of those on treatment had achieved viral suppression. The majority of inmates with HIV (84%) were diagnosed prior to incarceration or at admission.

Almost half of inmates living with HIV self-identified as Aboriginal (43%). HIV prevalence was higher among Aboriginal compared to non-Aboriginal inmates (1.48% vs 0.82%, $p < .001$). Of the Aboriginal inmates known to be living with HIV, 94% were on treatment and 92% had achieved viral suppression.

Women made up less then a tenth of all HIV cases (9%). HIV prevalence was significantly higher among women compared to men (1.9% vs 0.93%, $p<0.05$) and the majority of female inmates with a known treatment status were on treatment 92%. A lower proportion of female inmates (80%) had achieved viral suppression compared to male inmates (94%).

Conclusion: Federal inmates are a highly tested population. HIV prevalence is higher among Aboriginal and female inmates. Continued attention to detecting and treating HIV and differences in subgroups is vital to national and global HIV elimination.

***Epidemiology and Public Health:* HIV Prevention and Control Programs**
***Épidémiologie et santé publique :* Prévention du VIH et programmes de contrôle**

EPH2.05

Trajectories of Frequent Methamphetamine Use Among HIV Positive and Negative Gay, Bisexual and Other Men Who Have Sex with Men (gbMSM) in Vancouver

David M. Moore[1, 2], Shenyi Pan[1], Heather L. Armstrong[1], Everett Blackwell[3], Julius Elefante[3], Gbolahan Olarewaju[1], Kiffer G. Card[4], Robert S. Hogg[5], Eric A. Roth[4], Nathan J. Lachowsky[4]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. Faculty of Medicine, University of British Columbia, Vancouver, BC, 3. St. Paul's Hospital, Vancouver, BC, 4. University of Victoria, Victoria, BC, 5. Simon Fraser University, Burnaby, BC

Background: Methamphetamine(MA) is associated with adverse health outcomes for both HIV-negative and HIV-positive gbMSM. We examined factors associated with reductions or cessation in MA use among gbMSM reporting regular MA use in Vancouver.

Methods: gbMSM aged ≥16 years were recruited using respondent-driven sampling (RDS) from February 2012–February 2015. Participants completed a computer-assisted self-interview(CASI) every six months until February 2017. The CASI assessed substance use, sexual behavior, and mental health diagnoses and symptoms. Among gbMSM who reported using MA at least weekly in the previous six months (P6M), we examined factors associated with reporting less frequent or no MA use at subsequent visits using multi-level linear mixed models with generalized estimating equations. Proportions are reported with RDS-adjustments where possible.

Results: We recruited 774 participants of whom, 21.1% (RDS-adjusted) were HIV-positive. The median age was 34. At enrollment, 154 participants (46.1% HIV-positive) reported MA use of whom, 35.7% reported using it at least weekly. In 242 subsequent visits among 206 participants who reported weekly use on at least one occasion, no use or reduced use was reported at 42.6% visits. In multivariable models, participants who reported non-gay identities (AOR=0.50; 95% CI: 0.29-0.88), gammahydyroxybutyrate (GHB) use (AOR=0.22; 95% CI: 0.12-0.42), or who received drugs for sex in P6M (AOR=0.27; 95% CI: 0.14-0.52) were less likely to report reductions in use. Notably, anxiety and depression symptom scores, self-esteem scores, use of other substances (aside from GHB), and HIV serostatus were not associated with reductions in use.

Conclusion: We found that nearly 60% of gbMSM who reported at least weekly MA use continued this level of use over subsequent visits. Non-gay identified MSM, those reporting GHB use, and those receiving drugs in exchange for sex were less likely to report reductions. Additional interventions are needed to assist MA users in reducing or stopping their use.

Epidemiology and Public Health: **HIV Prevention and Control Programs**
Épidémiologie et santé publique : **Prévention du VIH et programmes de contrôle**

EPH2.06

Advancing HIV Implementation Science Research: Using Institutional Ethnography to Examine an Online Sexual Health Service

Daniel Grace[1], Oralia Gómez-Ramírez[2], Cathy Worthington[3], Mark Gilbert[2]

1. Dalla Lana School of Public Health, University of Toronto, Toronto, ON, 2. BC Centre for Disease Control, Vancouver, BC, 3. School of Public Health and Social Policy, University of Victoria, Victoria, BC

Implementation Science has emerged as a dominant frame for funding HIV research and studying how, where, and for whom, evidence-based interventions are taken up in public health practice. Drawing on the critical research tradition of institutional ethnography (IE), this study is a unique examination of knowledge production in public health sciences. IE allows for an understanding of how everyday local practices—from the practices of patients to the work of researchers—are organized by texts or documents of various kinds. IE has a long history of being applied when conducting investigations from the standpoint of people living with HIV. We explicate how our interdisciplinary implementation science research team is applying IE to explore the possible expansion of an internet-based testing service for sexually transmitted infections and blood-borne infections such as HIV and Hepatitis C (STBBI). Many people in Canada face challenges getting tested for STBBIs and *GetCheckedOnline* was created as a "virtual clinic" and implemented by the British Columbia Centre for Disease Control to help improve access as part of the provincial STI clinic system. While significant epidemiological and mixed methods research reveals the important contributions of *GetCheckedOnline* as a public health intervention (e.g., leading to high rates of new testers and positive STBBI test results), questions remain concerning the "how to" of adaption and possible expansion of the program within and outside of BC. We outline how IE: (1) provides a novel frame to understand and conduct community-based implementation science research, (2) enables the conceptualization and mapping of *GetCheckedOnline* as a complex, text-mediated STBBI intervention (e.g., that involves web-based tools for conducting pre-test counseling and the administration of STBBI test requisitions), (3) directs research attention to central contextual factors that must be investigated and empirically traced within and across provinces, including an explication of differential legislative and political environments.

Epidemiology and Public Health: **HIV Prevention and Control Programs**
Épidémiologie et santé publique : **Prévention du VIH et programmes de contrôle**

EPH2.07

Northern Indigenous Health Alliance - Addressing HIV with Cultural Prevention Knowledge

Denise Lambert[1], Natascha M. Okimaw[2]

1. University of Alberta, Onoway, AB, 2. Northern Indigenous Health Alliance, Grande Prairie, AB

Building on the relationships established between three friendship centres in Grande Prairie, High Level, Peace River, and Kimamow Atoskanow Foundation, the only rural based HIV service organization serving First Nations and Metis people in Alberta since 1990, a culturally guided HIV prevention, care, and support project is being implemented. Within the largest geographical area in the province of Alberta inclusive of Treaty 6, Treaty 8, and eight distinct Metis Settlements, the Northern Indigenous Health Alliance has established a project framework for the period covering 2017 to 2022. This community driven project includes cultural prevention knowledge as the foundation, complementing harm reduction and mainstream strategies with a key result relevant to HIV research being the reconciliation of western implementation and program science with Indigenous theory and methods.

Adapting recognized community based research methods with utilization needs of Indigenous stakeholders has established an implementation framework that recognizes the inherent strengths of Indigenous ways of knowing and the need for incorporating translational theory into existing HIV initiatives.

This presentation will outline the cultural process and development of community driven research and project objectives. Examples of distinct Indigenous approaches within a diverse geographical and cultural landscape will be described. Lessons learned about employing the Know Your Status campaign within Indigenous locales will be shared. A critique of current Canadian reconciliation discourse and Indigenization of harm reduction will be provided.

Our findings include Indigenous narratives from Elders, Youth, Persons living with HIV, People who are currently or previously incarcerated, Persons with current or former drug using experience, all who have experienced interactions with colonial systems inclusive of health, justice, education, and social welfare. The early findings of this community driven research identify the need for mutually designed program assessment tools and processes as critical to changing the pathway HIV is taking in our nations.

Epidemiology and Public Health: **HIV Prevention and Control Programs**
Épidémiologie et santé publique : **Prévention du VIH et programmes de contrôle**

EPH2.08

Who Accesses Peer Support at HIV Clinics and Aids Service Organizations? Findings from the Canadian HIV Women's Sexual and Reproductive Health Cohort Study (CHIWOS)

Tracey Conway[1], Rebecca Gormley[2, 3], Melanie Lee[2], Stephanie Smith[1, 8], Mina Kazemi[1], Julia Pandolfo[7, 1], Denise Jaworsky[4], Lu Wang[3], Rosa Balleny[2], Alexandra de Pokomandy[5, 6], Mona Loutfy[1], Angela Kaida[2]

1. Women's College Research Institute, Women's College Hospital, Toronto, ON, 2. Simon Fraser University, Vancouver, BC, 3. British Columbia Centre for Excellence in HIV, Vancouver, BC, 4. Faculty of Medicine, University of British Columbia, Vancouver, BC, 5. Chronic Viral Illness Service, McGill University Health Centre, Montreal, QC, 6. Department of Family Medicine, McGill University Health Centre, Montreal, QC, 7. Department of Anthropology, Stanford University, Stanford, CA, USA, 8. Bruyere Research Institute, Ottawa, ON

Background: Greater and Meaningful Involvement of People living with HIV/AIDS (GIPA/MIPA) principles have been operationalized through peer support programming. However, there is little evaluation of the reach or outcomes of such programs. We assessed awareness and use of peer support among women living with HIV in Canada.

Methods: Data were drawn from baseline survey data from 1,422 women living with HIV (cis- and trans-inclusive) enrolled in the community-collaborative Canadian HIV Women's Sexual and Reproductive Health Cohort Study. Women receiving HIV care in the past year were asked if they were aware of and how frequently they accessed peer support at HIV clinics/AIDS Service Organizations, defined as "Frequently" (≥Monthly), "Infrequently" (<Monthly), "Never," or "Unaware". Bivariable analyses assessed associations between peer support across socio-structural, health, and HIV-related outcomes.

Results: Of 1330 participants, median age was 43 [IQR: 36-51] and 77% had lived with HIV for ≥6 years. Overall, 8% frequently, 28% infrequently, and 12% never accessed peer support, while 52% were unaware of peer support services. Women who frequently accessed peer support had higher prevalence of (1) socio-structural inequity (poverty, food insecurity, <highschool education, injection drug use history, violence); (2) identifying with underserved communities (Indigenous ancestry, LGBTQ); (3) poor physical and mental quality of life and depression; and (4) disclosure challenges ($p<0.05$). Women unaware of peer support services had lower prevalence of viral suppression (78% vs. 83-86%;$p=0.026$) and current ART use (81% vs. 92-97%; $p<0.001$) relative to other groups.

Conclusions: Only one-third of women accessed peer support, and fewer than half were aware of such opportunities. Frequent reliance on peer support appears particularly important for women who enact resilience in contexts of socio-economic marginalization, violence, substance use, and mental health and disclosure challenges. Investing in peer support services within HIV care may be critical to better engage women who are typically underserved.

Social Sciences: **Exploring Knowledge Mobilization and Translation Strategies**
Sciences sociales : **Étude de la mobilisation des connaissances et des stratégies d'application pratique**

SS2.01

Community-led Knowledge Translation and Exchange: Development of the Inaugural Trans Women HIV Research Initiative Conference

Yasmeen Persad[2], Ashley Lacombe-Duncan[1], Angela Underhill[2], Mina Kazemi[2], Heather Wong[3], Monica Brundage[3], Mona Loutfy[4]

1. School of Social Work, University of Michigan, Ann Arbor, MI, USA, 2. Women's College Research Institute, Women's College Hospital, Toronto, ON, 3. University of Toronto, Toronto, ON, 4. Department of Medicine, University of Toronto, Toronto, ON

Background: A growing body of research has documented issues affecting trans women living with HIV (WLWH) in Canada. Gaps remain in healthcare and social services regarding gender-affirming and comprehensive care for trans WLWH, addressable through increased knowledge. Community-led knowledge translation and exchange (KTE) activities have the potential to be culturally-grounded, address the most pressing community needs, and reach those in change-making positions. This presentation details the development and evaluation of the inaugural Trans Women HIV Research Initiative (TWIRI) Conference, a community-led KTE activity.

Methods: We undertook a community-led process of KTE project development whereby Canadian HIV Women's Sexual and Reproductive Health Cohort Study (CHIWOS) community team members (KTE champions) submitted tailored KTE project proposals. Selected KTE champions were matched with academic mentors. KTE champions and mentors received training on KTE theory and project management and subsequently planned and executed their envisioned projects.

Results: In April 2018, a 2-day TWIRI conference was held (Day 1: Trans 101 Education and Training, n=25; Day 2: Research and practice considerations for working with trans WLWH; n=45) in Toronto. Participants represented AIDS-specific and other community-based organizations, and academic, governmental, healthcare, and private industry settings. Participants rated all presented topics as 4 or 5/5 (1-very unhelpful, 5-very helpful), and all would attend another conference on trans WLWH. Qualitative participant feedback called for more trans-led discussions, a greater focus on mental health and trauma-informed care, and more examples of local best practices for working with trans WLWH.

Implications: This community-led KTE strategy resulted in the development of a tailored activity that addressed an underrepresented population (trans WLWH) and reached those with potential to have impact on reducing barriers (health and social service providers, public health officials). Valuable lessons were learned about the need for meaningful community engagement and to build knowledge on pertinent topics (e.g., mental health).

Social Sciences: **Exploring Knowledge Mobilization and Translation Strategies**
Sciences sociales : **Étude de la mobilisation des connaissances et des stratégies d'application pratique**

SS2.02

Online Health Seeking Behaviour and Acceptability of Health Information on Sex-Seeking Apps/ Websites

David J. Brennan, Maya Kesler, Tsegaye Bekele
University of Toronto, Toronto, ON

Intro/Background: Gay, bisexual, and other men who have sex with men (GBM) commonly use the Internet to find sexual partners and look for sexual health information. Little is known about online health information seeking behaviour and whether GBM welcome this information on socio-sexual apps/website.

Methods: GBM age 14+ from Ontario were recruited into the #iCruise study via socio-sexual websites/apps from 07/2017-01/2018. Participants reported online health-seeking behaviours and acceptability of sexual health information appearing as a clickable link/pop-up on socio-sexual websites/apps. Multivariable logistic regressions were used to determine associations between sociodemographic variables and online health-seeking behaviour by HIV status.

Results: There were 910 GBM who were eligible for this baseline data analysis. The majority reported being White (62%), and gay (65%). Being HIV-positive (12%), having university education (44%), and living in a rural area (12%) were also reported. Over two-thirds (69.3%, n=631) reported looking up online health information in the previous 3 months. Among HIV-negative/HIV status unknown participants, online health seeking behaviour was negatively associated with age (50+ vs <29, OR:0.35,95%CI:0.23-0.55) and unknown HIV status (vs. HIV-negative) (OR:0.57,95%CI:0.39-0.84) and positively associated with more education (University vs. High School OR:2.49,95%CI:1.55-4.01). There were no significant associations among HIV-positive GBM. Having health information integrated into sex-seeking apps/websites was endorsed by 79% (agreed/strongly agreed). Acceptability via clickable link of health topics within sex-seeking apps/websites was very high: Closest HIV/STI testing: 96%; ASO website: 93%; Mental health information/resources: 91%; Public health/Government website: 90%; Substance use information/resources: 89%. Acceptability of a pop-up/reminder/notification with sexual health information such as how HIV is spread/how to prevent HIV transmission and safer sex practices to reduce HIV/STI transmission was also very high (86% and 89%, respectively).

Discussion: Acceptability of HIV and sexual health education information being embedded within dating apps/ websites was very high and is currently an underutilized educational platform.

Social Sciences: **Exploring Knowledge Mobilization and Translation Strategies**
Sciences sociales : **Étude de la mobilisation des connaissances et des stratégies d'application pratique**

SS2.03

A Participant-designed Evaluation for Engaging Long-term Survivors of HIV in the Evaluation of an Evening Program to Reduce Social Isolation in Aging Gay Men

Carly Welham[1], Rosalind Baltzer Turje[1], Darren Lauscher[2], Terry Howard[2], Scott Elliott[1], Patrick McDougall[1]

1. Dr. Peter AIDS Foundation, Vancouver, BC, 2. Independent, Vancouver, BC

Issue: The Dr. Peter Centre (DPC) Evening Program is a weekly therapeutic program for gay men aging with HIV. Along with the health complications associated with aging, many men in this group face increased social isolation and food insecurity. The DPC Evening Program offers the opportunity for aging gay men to engage in their health care, enjoy a healthy meal in a social setting, and take part in counselling, art therapy, and music therapy.

Description: Out of a commitment to realizing the GIPA/MEPA principles, we undertook a participant-designed evaluation led by peer researchers to create a more engaging evaluation methodology. Now in our second year of the program, we are evaluating the impacts of the program on social isolation, quality of life, and adherence to HIV treatment. Unique challenges for engaging this population have emerged, particularly as long-term survivors of HIV carry the history of being involved in, and possibly overburdened by, decades of HIV/AIDS research.

Lessons Learned: Participants designed indicators to assess how their quality of life has changed in relation to their mental health, physical health, and feelings of social isolation. This presentation will explore the challenges faced and 'research fatigue' that arose when peer researchers facilitated focus groups to engage long-term survivors of HIV in designing an evaluation framework. As a result of participant feedback, there was significant change to assessing improvements in quality of life that emerged as a result of this evaluation.

Recommendations: The peer-led nature of this evaluation throughout design, data collection, and data analysis was key to ensuring that the evaluation was engaging for participants, sensitive to the history of over-researching HIV/AIDS, and reflective of the lived experiences of participants.

Social Sciences: **Exploring Knowledge Mobilization and Translation Strategies**
Sciences sociales : **Étude de la mobilisation des connaissances et des stratégies d'application pratique**

SS2.04

"This Group is the Best Thing That's Happened to Me": Participatory Evaluation of a Culturally-grounded Health Intervention for HIV-positive Indigenous Women

Doris Peltier[2], Tracey Prentice[1], Visioning Health II BC, Visioning Health II Thunder Bay, Visioning Health II Regina, Visioning Health II SK North, Visioning Health II Toronto, Visioning Health II National Team

1. University of Victoria, Victoria, BC, 2. Canadian Aboriginal AIDS Network, Montreal, QC

Background: Visioning Health II is an Indigenous participatory evaluation and assessment of an arts-informed, strengths-based, culturally-grounded health intervention for HIV-positive Indigenous women in eight sites (BC, AB, SK x 2, MB, ON x 2, QC). We have two goals: 1) to gather data on the meaning of health, culture and gender for HIV-positive Indigenous women, and 2) to develop and test Visioning Health as a health intervention for positive Indigenous women. Here we report on the evaluation results from five completed sites.

Research Design: We engaged 6 to 12 HIV-positive Indigenous women in each site in 40 hours of arts-informed, culturally-grounded group research. Each site was facilitated by one or more HIV-positive Indigenous women, and supported by local Indigenous Knowledge Keepers, a local Indigenous artist, community partners, and the Visioning Health national team. Data sources included pre- and post- project questionnaires to assess impact, three research sharing circles, including one on project evaluation, and an evaluation survey. Cultural activities were woven throughout. The model has two delivery styles: a 5-day retreat or weekly meetings for 10 weeks.

Results: To date, we have completed data collection with 49 HIV-positive Indigenous women in five sites. Three sites chose 5-day retreats and two sites chose 10-week engagement. Art and cultural activities varied. Evaluation results for all sites were overwhelmingly positive: 98% of women (48 of 49) said they would strongly recommend Visioning Health to other HIV-positive Indigenous women. Comments included "I wish it would never end" and "this group is the best thing that's happened to me". Visioning Health is not without its challenges though, including conflict between participants and team members.

Conclusion: The results to date are promising. Visioning Health has been well received by HIV-positive Indigenous women across a variety of settings; however, challenges are to be expected and addressed.

Social Sciences: **Exploring Knowledge Mobilization and Translation Strategies**
Sciences sociales : **Étude de la mobilisation des connaissances et des stratégies d'application pratique**

SS2.05

Snack Chat: a Low-barrier, Community Knowledge Translation Series that Bridges the Gap Between Research and Research Users in an Aids Support Organization

Ji Hyun Choi[1, 2, 3], Carly Welham[2], Beverly Allan[1, 3], Jillian Brown[1, 3], Meghan Mullaly[2], Cathy Puskas[1], Rosalind Baltzer Turje[2], Robert Hogg[1, 3], Patrick McDougall[2]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. Dr. Peter Centre, Vancouver, BC, 3. Canadian HIV Observational Cohort (CANOC) Collaborative Research Centre, Vancouver, BC

Background: The Dr. Peter Centre (DPC) is an HIV health care facility for people living with HIV and with additional health and social vulnerabilities, including mental illness, trauma, addiction, Hepatitis C, physical disabilities, poverty, unstable housing, and limited or no family/social support. DPC clients regularly participate in research studies and have expressed a desire in learning about results and the impacts of the studies. Although there are external public knowledge translation events, social barriers to access such events exist. Following a meeting with a Community Advisory Committee (CAC) at the DPC, we inaugurated Snack Chat, a knowledge translation series that promotes relationship building and reciprocal conversations about research among DPC clients and researchers.

Description: Snack Chat is a series of monthly presentations tailored for DPC clients. The CAC provided guidance on effective presentation methods and research topics of interest to DPC clients. A unique research topic is presented by different researchers who are recruited and coached in presentation and engagement strategies. Guidelines for the researchers include prioritizing questions, discussions, and participant engagement during the presentation, rather than holding a small amount of time for questions at the end. The presentations occur in the DPC living room, and snacks are provided. The familiar and welcoming space is enhanced by the presence of the same consistent representatives from the Canadian HIV Observational Cohort (CANOC) Collaborative Research Centre and the DPC knowledge translation team. Feedback is collected for program evaluation through an anonymous suggestion box.

Progress update: Preliminary observations of the Snack Chat series shows that DPC clients are engaged in the series, and there is a growing level of discussion. Suggestions and positive feedback from participants indicate that Snack Chat presentations are an acceptable and meaningful means of knowledge translation for a community that often experiences barriers to access such events.

Social Sciences: **Exploring Knowledge Mobilization and Translation Strategies**
Sciences sociales : **Étude de la mobilisation des connaissances et des stratégies d'application pratique**

SS2.06

Hiv Prevention Altruism Among Gay, Bisexual, and Other Men Who Have Sex with Men. Examining Engagement in HIV- and Community-related Attitudes and Behaviours

Shayna Skakoon-Sparling[1], Trevor Hart[1, 2], Syed Noor[1], Daniel Grace[2], Joseph Cox[3], Gilles Lambert[4], David Moore[5, 6], Nathan Lachowsky[7], Jody Jollimore[8]

1. Ryerson University, Torontoq, ON, 2. University of Toronto, Toronto, ON, 3. McGill University, Montreal, QC, 4. Direction régionale de santé publique – Montréal, Montreal, QC, 5. British Columbia Centre for Excellence in HIV/AIDS, Vancouver, BC, 6. University of British Columbia, Vancouver, BC, 7. University of Victoria, Victoria, BC, 8. Community-Based Research Centre for Gay Men's Health, Vancouver, BC

Background: Recent evidence suggests that concern for others (i.e. altruism) influences individual decision-making to reduce HIV transmission and avoid sexual risk. HIV prevention altruism (HPA) ranges from preventing passing HIV to one's partners to concern regarding HIV's impact on one's community. Given that HPA may affect the behaviour of gay, bisexual and other men who have sex with men (gbMSM), we investigated how HPA may be predicted by community involvement, attitudes, and sexual behaviours among both HIV-positive and HIV-negative gbMSM.

Methods: Engage is a study in Montreal, Toronto and Vancouver using respondent-driven sampling. A behavioural questionnaire was self-completed by 1,943 sexually active gbMSM, aged 16+. Using preliminary data from pooled Engage participants, we examined attitudes and behaviours associated with scores on the Sexual Communal Altruism Scale (SCAS - a 6 item scale which measures HPA; O'Dell et al., 2008) by fitting multivariable models using a generalized estimating equation, accounting for city and recruiting method related clustering, as well as age, ethnicity, and income.

Results: Participants (mean age=37.13;SD=12.99) were primarily White (71%), gay-identified (81%), Canadian-born (68%) and single (72%). Higher SCAS scores were associated with lower sexual compulsivity (AOR=0.97, 95%CI:0.96-0.99) and fewer male sexual partners over the past 6 months (AOR=0.98, 95%CI:0.97-0.99). However, SCAS scores were not associated with greater involvement in the gay community (AOR=1.09, 95%CI:0.98-1.20) or fewer perceived barriers to condom use (AOR=1.02, 95%CI:0.99-1.05).

Conclusion: These results show that HPA is associated with risk reducing behaviours like fewer sexual partners, as well as protective psycho-social factors, such as lower sexual compulsivity. However, HPA was not associated with gay community involvement or perceived barriers to condom use. These findings offer insight into how HPA impacts HIV risk behaviours among gbMSM. Future research should examine the mediating and moderating effects of HPA on knowledge-attitude-behaviour causal pathways of HIV risk.

Social Sciences: **Exploring Knowledge Mobilization and Translation Strategies**
Sciences sociales : **Étude de la mobilisation des connaissances et des stratégies d'application pratique**

SS2.07

Staying Alive: Bringing Cutting Edge Technology to the Frontline of Supervised Injection Services for People who Use and Inject Drugs

Lynne E. Leonard[1], Rob Boyd[2], Caleb Chepesiuk[1], Wondewassen Gebeyehu[3], Karl Wasslen[3], Candis Lepage[1], Luc Cormier[2], Jeffrey Smith[3]

1. HIV and HCV Prevention Research Team, School of Epidemiology and Public Health, University of Ottawa, Ottawa, ON, 2. Oasis Program, Sandy Hill Community Health Centre, Ottawa, ON, 3. Carleton University, Ottawa, ON

Issue: Supervised injection services (SIS) have been implemented in many Canadian jurisdictions with the objective of providing a safer place to inject with access to HIV- and HCV-related harm reduction materials and programming. However, providing a safer place to inject unsafe drugs is a suboptimal response negating the unacceptable levels of deaths among people who use and inject drugs (PWUD); 9,000 Canadians have died to date from an apparent opioid-related overdose - approximately 75% involved fentanyl-related substances. The vast majority of opioid-related deaths in 2016 (88%), 2017 (92%) and between January and June 2018 (94%) were professionally declared unintentional: the individuals did not intend to die.

Methods: Following a series of focus groups with different populations of PWUD to ensure optimal design and subsequent acceptability, a drug checking service was implemented at an Ottawa SIS. Using a mass spectrometer able to detect 16 toxic compounds, and a droplet of their prepared drug, health service workers provide SIS clients with the results of the substance(s) found in their drug sample **within minutes and** *prior* to use – results on which to base subsequent use of their tested drug.

Results: Data for samples tested in November 2018: among samples described as heroin, 17% contained only pure heroin, 83% contained heroin with fentanyl and fentanyl analogues; among samples described as fentanyl or down, 9% contained only fentanyl, with either/or acrylfentanyl, methoxyacetylfentanyl, furanylfentanyl detected in 91%. Of concern, 50% of samples described as cocaine/crack-cocaine contained an opioid.

Conclusions: In the context of a widespread contaminated drug supply, implementing an efficient speedy drug checking service to provide PWUD with information on which to base their use of the drug is clearly a major harm reduction strategy, particularly when provided in the context of access to HIV- and HVC-related risk reduction materials and health service programming.

Social Sciences: **Exploring Knowledge Mobilization and Translation Strategies**
Sciences sociales : **Étude de la mobilisation des connaissances et des stratégies d'application pratique**

SS2.08

Help-seeking After Experiences of Violence Among Women Living with HIV in Canada: What are We Missing?

Rebeccah Parry[1], Melanie Lee[1], Kath Webster[1], Valerie Nicholson[1], Margarite Sanchez[1], Claudette Cardinal[1], Christina Tom[1], Rebecca Gormley[1, 2], Jenny Li[2], Lu Wang[2], Rosa Balleny[1], Alexandra de Pokomandy[3, 5], Mona Loutfy[4], Angela Kaida[1]

1. Simon Fraser University, Burnaby, BC, 2. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 3. Chronic Viral Illness Service, McGill University Health Centre, Montreal, QC, 4. Women's College Research Institute, Toronto, ON, 5. McGill University, Department of Family Medicine, Montreal, QC

Background: In Canada, approximately 80% of women living with HIV report experiencing violence in adulthood. Experiences of violence compromises mental health, impedes engagement in HIV care, and deters active participation in social and health advocacy. Support for women experiencing violence is critical, however, little is known about factors associated with help-seeking among women living with HIV.

Methods: We used baseline survey data from women living with HIV (≥16 years, cis- and trans-inclusive) enrolled in the Canadian HIV Women's Sexual and Reproductive Health Cohort Study (CHIWOS). Among women reporting experiences of violence in adulthood (including physical, sexual, verbal, and/or controlling violence), we measured the prevalence of help-seeking and frequently accessed sources of support. Multivariable logistic regression assessed independent correlates of help-seeking after experiencing violence. 105 women skipped questions regarding violence, and were excluded.

Results: Of 1,422 women enrolled in CHIWOS, median age was 43 [IQR: 35-50], and 41% identified as white, 29% African/Caribbean/Black, 22% Indigenous, and 7% other ethnicities. Of 1,057 women (80%, 1057/1317) reporting experiencing violence in adulthood, 42% (n=447) reported seeking help to cope with experiences of violence. 70% (n=313) accessed healthcare providers; 55% (n=244) family/friends; and 53% (n=235) non-HIV community organizations.

In adjusted analyses, women who were ever diagnosed with a mental health condition (aOR=2.54 [95%CI 1.91-3.39]), had a history of injection drug use (aOR=1.68 [1.25-2.28]), experienced childhood violence (aOR=1.81 [1.24-2.63]), and experience everyday sexism (aOR=1.02 [1.01-1.03]), had higher odds of help-seeking.

Conclusions: Despite a high prevalence of violence among women with HIV in Canada, fewer than half sought support. Women who experienced mental health challenges, injection drug use, childhood violence, and everyday sexism had higher odds of help-seeking, suggesting that women with co-occurring or syndemic health challenges may seek support for violence through existing support services. Care delivery models should incorporate trauma and violence aware care approaches.

Key Population: **African, Caribbean and Black People**
Populations clés : **Populations africaines, caraïbéennes et noires**

KP1.01

Exploring the Relationship Between Intersectional Stigma, Current Cannabis Use, and Mental Health Among Women Living with HIV in Canada

Carmen H. Logie[1], Ying Wang[1], Mina Kazemi[2], Brenda Gagnier[2], Tracey Conway[2], Shazia Islam[3], Melanie Lee[4], Kerrigan Beaver[2], Angela Kaida[4], Alexandra de Pokomandy[5], Mona Loutfy[2]

1. University of Toronto, Toronto, ON, 2. Women's College Research Institute, Toronto, ON, 3. Alliance for South Asian AIDS Prevention, Toronto, ON, 4. Simon Fraser University, Vancouver, BC, 5. McGill University, Montreal, QC

Background: Canada's recent decriminalization of cannabis raises considerations regarding relationships between stigma, cannabis use and mental health. Compared with men living with HIV, women living with HIV (WLHIV) experience higher prevalence of depression, partly due to intersectional stigma based on race, class and HIV serostatus. Cannabis use as a stigma coping strategy is unexplored. Our objective was to understand associations between intersectional stigma and mental health, and the mediating roles of current cannabis use and social support.

Methods: We implemented a community-based study with WLHIV in Ontario, British Columbia and Quebec. Confirmatory factor analyses (CFA) were conducted to examine latent constructs of intersectional stigma (indicators: HIV-related stigma, gender discrimination, racial discrimination) and mental health (indicators: mental health functioning, depression, PTSD). Structural equation modeling (SEM) using maximum likelihood estimation was used to test the direct effects of intersectional stigma on mental health, and indirect effects via social support and current cannabis use, adjusting for socio-demographic factors.

Results: Among 1422 participants (median age: 42.5 years, IQR=35-50), most were women of colour (29.40% African, Caribbean and Black; 22.36% Indigenous; 7.17% other ethnicities; 41.07% white). One-quarter reported current cannabis use (n=362, 25.89%), one-fifth former use (n=272, 19.46%) and half had never used (n=764, 54.65%). CFA findings revealed good model fit for both latent constructs. SEM results indicate that intersectional stigma has both significant direct and indirect effects on mental health (direct effect: B=-0.371, $p<0.001$; indirect effect: B=-0.072, $p<0.001$). Social support (B=-0.061, $p<0.001$) and current cannabis use (B=-0.010, $p<0.05$) partially mediated this relationship. Fit indices suggest good model fit (CFI=0.981; RMSEA=0.038 (90% CI: 0.03-0.078); SRMR=0.047).

Implications: Intersectional stigma was associated with increased current cannabis use, decreased social support, and poorer mental health. Findings highlight the need for interventions to reduce intersectional stigma, combat social isolation, and support WLHIV who use cannabis as a coping strategy.

Key Population: **African, Caribbean and Black People**
Populations clés : **Populations africaines, caraïbéennes et noires**

KP1.02

Aging and HIV: Identifying the Needs of African, Caribbean, and Black Communities in Canada

Tamar Austin, Colin Johnson
Realize, Toronto, ON

Background: In Canada, African, Caribbean, and Black (ACB) communities are disproportionately affected by HIV. However, ACB communities continue to be underrepresented in current HIV and aging research, leading to programs and resources that may not reflect their needs.

Objective: To identify and explore the needs of ACB communities aging with HIV, and to use the information gathered to develop a resource for community members and practitioners.

Methods: Topics of interest around aging and HIV in ACB communities were identified in consultation with the project advisory committee and through a review of available literature, with special attention paid to the existing gaps in research. This information was used to develop a semi-structured interview guide. Four focus groups were held, two with English-speaking community members, one with French-speaking community members, and one with practitioners. Focus groups were recorded with participants' consent, and key themes were identified.

Results: The literature identified several themes, including the importance of different forms of social support, mental health, and religion to older adults with HIV in ACB communities. In contrast, intersectional forms of stigmatization make aging with HIV and accessing services difficult for ACB community members, who also expressed growing concerns about comorbidities. These topics, and others, including the ways study participants navigate sexual relationships and the need for open communication with partners, were explored with focus group participants.

Discussion: As much of the available literature was based on African-American communities in the United States, the focus groups allowed for a deeper exploration of the needs of Canadian ACB communities. This study was limited by its small sample size, preventing a deeper exploration into the needs of older adults with HIV from diverse communities within Canada's ACB populations. Further research is needed to better understand these needs and inform the development of culturally appropriate resources and programming.

Key Population: **African, Caribbean and Black People**
Populations clés : **Populations africaines, caraïbéennes et noires**

KP1.03

IT TAKES COURAGE: Addressing HIV-related Stigma Within African, Caribbean and Black (ACB) Faith-based and Spiritual Communities

Keresa Arnold

African and Caribbean Council on HIV/AIDS in Ontario (ACCHO), Toronto, ON

Background: In Ontario African, Caribbean and Black (ACB) communities are disproportionately impacted by HIV/AIDS. Research has shown that ACB faith and spiritual leaders (FSLs) can play a key role in reducing stigma. IT TAKES COURAGE is a community-based strategy to address HIV-related stigma by encouraging more welcoming ACB faith-based and spiritual communities. The main objectives were to increase FSLs' understanding of HIV stigma, access to HIV information and their commitment to respond to HIV-related issues.

Methods: Over a period of two years, community consultations in the form of focus groups, document reviews, and key informant interviews were held with FSLs, ACB people living with HIV/AIDS (PHAs), community stakeholders, and Strategy Workers who implement the Ontario HIV/AIDS Strategy for ACB Communities. Fourteen FSLs were recruited to participate in the initial campaign. Resources such as a website, handbook, sermon, and video were developed for dissemination. A mid-point review of the campaign determined that it should be expanded into a broader strategy. As a result, Strategy Workers attended places of worship to facilitate discussions on HIV, stigma and disclosure, while FSLs utilized the resources during their services.

Results: An evaluation of the strategy will begin soon. However, during preliminary conversations, FSLs expressed a shift in perceptions, an increase in knowledge of HIV and their role in reducing stigma. Additionally, seven FSLs volunteered as "Champions" to engage peers and heighten visibility. The positive feedback on the strategy resulted in the hiring of a Coordinator to support the work.

Conclusion: The IT TAKES COURAGE strategy demonstrates the need for HIV awareness initiatives that include FSLs, and highlights that FSLs are amenable to being engaged to help reduce stigma. Increased engagement would likely give FSLs a deeper understanding of the importance of congregants living with HIV having access to treatment and care to achieve viral suppression.

Key Population: **African, Caribbean and Black People**
Populations clés : **Populations africaines, caraïbéennes et noires**

KP1.04

Knowledge Attitudes and Experiences regarding Infant Feeding among Women Living with HIV

Sarah Khan[1], Gladys Kwaramba[2], Medys Kihembo[2], Akram Alyass[1], Stanley Read[3], Mona Loutfy[4], V. L. Kennedy[4], Jay Mcgillivray[2], Ari Bitnun[3], Mark Yudin[2]

1. McMaster University, Hamilton, ON, 2. St Michael's Hospital, Toronto, ON, 3. The Hospital for Sick Children, Toronto, ON, 4. Women's College Hospital Research Institute, Toronto, ON

Background: Among women living with HIV (WLWH), infant feeding can be a challenging to navigate given the differing recommendations globally.

Methods: A pilot study is underway describing infant feeding knowledge, attitudes, and experiences among WLWH. Multiple choice, Likert scale, and open-ended questions were administered to WLWH in pregnancy and postpartum by PRAs. Knowledge of breastfeeding transmission risk was gauged by 4 main questions; knowledge score ranged from a 0 to 10.

Results: Fifteen women completed questionnaires; nine completed both the pregnancy and postpartum questionnaires; three each completed only the pregnancy/postpartum questionnaire. Median age was 35 (range 24-43). Most participants were African (n=12), one Canadian, and two Jamaican. Most participants had one child (70%), and the majority of children were Canadian born (57%). For all Canadian-born babies, exclusive formula feeding was reported. The mean breastfeeding knowledge score was 5.1 (SD 1.8, range 2 to 7). All pregnant participants reported feeling the counselling they received by HIV care providers was sufficient (n=12), however 2/3 postpartum participants needed more information. All women in pregnancy and 10/12 postpartum stated they would not choose to breastfeed, even if it was 'recommended' in Canada, given a finite risk of transmission. The majority of pregnant (n=9) and postpartum participants (n=10) stated they would require a 0% risk of transmission to consider breastfeeding.

Conclusions: Knowledge gaps remain among WLWH. Most participants appear to be risk averse, reporting that they would avoid breastfeeding unless there was no risk of transmission, two participants would choose to breastfeed, an important desire being observed clinically that needs further exploration. Given the scope of this project, the results may not address nuances and emotional issues related to breastfeeding for WLWH that are being examined in other projects. As clinicians, balancing knowledge, attitudes, and experiences of patients is fundamental in infant feeding and HIV.

Key Population: **African, Caribbean and Black People**
Populations clés : **Populations africaines, caraïbéennes et noires**

KP1.05

Sex-Work Drives Immune Quiescence

Genevieve Boily-Larouche[1], Julie Lajoie[1, 2], Kenneth Omollo[2], Julius Oyugi[2, 1], Julianna Cheryiyot[3], Jane Njoki[3], Zulma Rueda[4, 1], Makubo Kimani[2], Joshua Kimani[3, 1, 2], Keith R. Fowke[1, 2, 3]

1. University of Manitoba, Winnipeg, MB, 2. University of Nairobi, Nairobi, Kenya, 3. Partners for Health and Development in Africa, Nairobi, Kenya, 4. Universidad Pontificia Bolivariana, Medellin, Colombia

Introduction: Inflammation and immune activation are risk factors for HIV acquisition. HIV-exposed seronegative (HESN) women from the Pumwani Sex Worker Cohort who are resilient to HIV infection and have an immune quiescent phenotype characterized by very low levels of immune activation and low HIV target cells in the genital mucosa. We have identified that all sex workers from the cohort had reduced levels of mucosal immune activation relative to women not engaged in sex work and that the extent of the decrease correlated duration of sex work. Is sex driving this reduction in immune activation?

Methods: We enrolled HIV uninfected women into a study where their mucosal and systemic immune activation and HIV target cell levels were assessed during active sex work, a four week period of sexual abstinence and then when they returned to sex work. Women newly engaged in sex work (<3 yrs) (New Negatives) (n=36) were compared to HESN (n=33).

Results: A multivariate mixed-effect model showed that among both groups the sexual abstinence and resumption periods were associated with a gradual decline in mucosal migration marker (B7) on systemic T regulatory cells. At the blood, the New Negative group showed increased levels of HIV target cells during the abstinence period while the HESN group showed a reduction in target cell numbers. At the vaginal mucosa, the abstinence period was characterized by an increase in cytokine/chemokine inflammation score in both groups with a return to lower mucosal inflammation upon resumption of sex work.

Conclusion: This study demonstrated that sex work may be driving a reduction in immune activation levels and that HESN women differentially respond to a period of sexual abstinence with a unique immune phenotype that may lower HIV risk.

Key Population: **African, Caribbean and Black People**
Populations clés : **Populations africaines, caraïbéennes et noires**

KP1.06

Social and Economic Hardships Associated with Poor HIV Clinical Outcomes among HIV-Positive African, Caribbean, and Canadian Blacks Living in Ontario, Canada

LaRon E. Nelson[1, 7], Pascal Djiadeu[1], James D. Iveniuk[2, 5], Winston Husbands[3], Wangari Tharao[4], Judith Odhiambo[1, 2, 5], David Absalom[1], Ryan Shannon[6], Liviana Calzavara[2, 5]

1. St Michael Hospital, Toronto, ON, 2. University of Toronto, Toronto, ON, 3. Ontario HIV Treatment Network, Toronto, ON, 4. Women's Health in Women's Hands, Toronto, ON, 5. Dalla Lana School of Public Health, Toronto, ON, 6. Black Coalition for AIDS Prevention, Toronto, ON, 7. Yale School of Nursing, New Haven, CT, USA

Introduction: African, Caribbean and Canadian Blacks (ACB) communities represent 4.7% of the population of Ontario, but account for more than one-third of the HIV prevalence. Hardships are mechanisms by which social processes generate inequitable health outcomes. The purpose of the study was to test the hypothesis that timing of HIV infection and political, economic, social hardships were associated with poor HIV clinical outcomes in a sample of ACB adults living with HIV.

Methods: We used data on ACB adults (n=840) drawn from the Ontario Cohort Study (OCS) of patients from across the province of Ontario. Participants were classified according to the timing of their HIV infection, relative to arriving in Canada. We considered CD_4 count, viral load and global self-rated physical health (dichotomized as poor/fair vs. all else) at time of first interview as indicators of health upon entering care. Descriptive statistics were analyzed using chi-squared tests and Fisher's exact test. Multivariate analyses employed logistic regression, using multiple imputation with chained equations to assuage problems with missing data.

Results: Compared to those for whom timing of infection could not be determined, those who acquired HIV post-immigration were less likely to have an elevated HIV viral load. Those with heterosexually-acquired infections were more likely than MSM to have a low CD_4 count and an elevated HIV viral load. Compared to those who were employed full-time, those not in the labour force, or with an uncertain employment status were more likely to have poor/fair self-rated physical health. Among non-citizens, there were also significant differences in clinical indicators by timing of HIV infection for CD_4 count and viral load.

Conclusion: Hardships are important factors that affect clinical outcomes of ACB people living with HIV. Structural level and policy interventions may be needed to mitigate social and economic hardships that undermine health status.

Key Population: **Sexual and Gender Minorities**
Populations clés : **Minorités sexuelles et de genre**

KP2.01

Substance Use, Condomless Anal Sex, and STI Outcomes Among MSM Who Do and Do Not Use PrEP: Preliminary Results from the Engage Study

Trevor A. Hart[1, 2], Syed W. Noor[1], Shayna Skakoon-Sparling[1], Herak Apelian[3, 4], Daniel Grace[2], Joseph Cox[3], Gilles Lambert[4], Nathan Lachowsky[5], David Moore[6, 7]

1. Ryerson University, Toronto, ON, 2. University of Toronto, Toronto, ON, 3. McGill University, Montréal, QC, 4. Direction régionale de santé publique, Montréal, QC, 5. University of Victoria, Victoria, QC, 6. British Columbia Centre for Excellence in HIV/AIDS, Vancouver, QC, 7. University of British Columbia, Vancouver, QC

Background: Following Health Canada's approval in 2016, use of Pre-Exposure Prophylaxis (PrEP) has increased among gay, bisexual, and other men who have sex with men (GBMSM). However, PrEP users may engage in more condomless anal sex (CAS) while using PrEP. The current study compared the patterns of risk taking behaviours between PrEP users and non-users related to CAS with a male partner, rates of substance use, and STI diagnosis rates.

Methods: As of September 2018, we recruited 1,943 GBMSM aged 16+ via respondent-driven sampling in Montreal (n=1179), Toronto (n=307), and Vancouver (n=457). Using pooled data from HIV-negative/unknown participants (n=1,604), we examined bivariate associations between PrEP use in the last 6 months and HIV risk behaviors (e.g., CAS, substance use before/during sex), as well as the prevalence of STIs. Finally, for significant factors (p<.05) at bivariate level, we fit a series of multivariable models using a generalized estimating equation, accounting for city and recruitment-related clustering.

Results: Participants (median age=33;IQR:27-46) were primarily White (72%), gay-identified (82%), Canadian-born (67%) and single (72%). Around one-sixth (17.1%) of the HIV negative/ unknown participants reported using PrEP at least once in the last 6 months. After adjusting for age, income, race/ethnicity, sexual orientation, relationship status and city, PrEP use was associated with gonorrhea (n=72, aOR=2.58;95%CI:1.31-5.09), chlamydia (n=76, aOR=1.88;95%CI:1.12-3.18), and syphilis (n=176, aOR=2.10;95%CI:1.38-3.20) infections; and with HIV/STI risk behaviors, such as CAS with a male partner in the last 6 months (aOR=4.97;95%CI:3.41-7.24), and substance use before/during sex (aOR=2.46;95%CI:1.82-3.31).

Conclusion: Despite recommendations, uptake of PrEP is lower among urban GBMSM. Fortunately, GBMSM who are using PrEP are protected from HIV, despite CAS, and are having their STIs diagnosed and treated. STI management and risk reduction is needed among PrEP users. Future interventions should work with PrEP users to improve their risk reduction adherence and ensure consistent PrEP use.

Key Population: **Sexual and Gender Minorities**
Populations clés : **Minorités sexuelles et de genre**

KP2.02

Unintended Consequences? Issues in HIVAIDS Epidemiologic Data for Black Cisgender, Same Gender Loving (SGL), Bisexual Men and Trans (BCSGLBT) Populations

LLana James[1], Todd Coleman[2]

1. University of Toronto Faculty of Medicine, Toronto, ON, 2. Wilfred Laurier University, Waterloo, ON

Background: HIV-related epidemiologic data categorizes Black cisgender, same gender loving (SGL), bisexual men, and trans people (BCSGLBT) similarly to Whites. Strong evidence and consensus has emerged decrying this approach. Noting that transphobia, sexism and homophobia's unique intersections with pervasive anti-Black racism produce structurally mediated socio-economic exclusions, known drivers of HIV prevalence, incidence and exposures for Black CSGLBT persons, requiring appropriate epidemiological approaches. Missing data categories create confusion interpreting characteristics of newly diagnosed persons. Furthermore public health, and others are unable to recognize potential biases in e.g. pre-exposure prophylaxis (PrEP) prescribing, exacerbating unintended consequences for Black cisgender, SGL, bisexual men and transgender folks in particular; an issue of paramount importance if equitable and ethical 90-90-90 testing/diagnosis/viral suppression goals; scale-up of PrEP; are to align with the UN Decade for People of African Descent 2015-2024 and the 2017 UN Report of the Working Group of Experts on People of African Descent in Canada recommendations.

Method: Existing population data and HIV epidemiologic reports (including observational studies, where relevant) were reviewed and contrasted against recommended appropriate epidemiologic approaches for collecting, presenting and interpreting HIV epidemiologic data about Canada's Black populations.

Results: Findings reveal poorly constructed and inaccurately interpreted epidemiological information about Black populations in Canada. Calling into question current and future investment decisions for HIV treatment and prevention responses at the regional and population level. Fundamental changes are needed to meet 90-90-90 and PrEP scale up goals for the most impacted population-BCSGLBT relative to size.

Conclusion: Focused on achieving health parity for Canada's most impacted Black populations, our team rectified the gap by producing 1) *At a Glance Epi Fact Sheet: Black Lives, HIV and Wellbeing,* 2) recommendations for collecting, presenting and interpreting data needed to achieve 90-90-90 and PrEP scale-up goals

Key Population: **Sexual and Gender Minorities**
Populations clés : **Minorités sexuelles et de genre**

KP2.03

Missed Clinical Opportunities to Recommend PrEP to Gay, Bisexual and Other Men Who Have Sex with Men (gbMSM) at High Risk of HIV

Amila C. Heendeniya[1], Darrell H. Tan[1, 7], Herak Apelian[2], Gilles Lambert[2], Marc Messier-Peet[2], Trevor A. Hart[3], Daniel Grace[1], Nathan Lachowsky[4], Mark Hull[5], Sharmistha Mishra[1, 7], Joseph Cox[2, 6]

1. University of Toronto, Toronto, ON, 2. Direction régionale de santé publique de Montréal, Montreal, QC, 3. Ryerson University, Toronto, ON, 4. University of Victoria, Victoria, BC, 5. University of British Columbia, Vancouver, BC, 6. McGill University, Montreal, QC, 7. St. Michael's Hospital, Toronto, ON

Background: For pre-exposure prophylaxis (PrEP) to have an impact on the HIV epidemic, a greater engagement by health care providers to increase PrEP access for gbMSM at high risk is needed.

Methods: Engage is an ongoing cross-sectional study recruiting sexually-active gbMSM via respondent-driven sampling (RDS) in Vancouver, Toronto and Montreal. We examined whether PrEP-aware HIV-negative gbMSM who met guideline criteria for PrEP were more likely to be recommended PrEP by clinicians compared to those who did not meet criteria. We further quantified the relationships between receiving such recommendations and several variables including measures of PrEP preparedness. We used RDS-adjusted logistic regression to assess bivariable associations, and multivariable logistic regression to model the relationship between meeting guideline criteria and receiving a recommendation.

Results: Of 1364 eligible participants (median age=31, IQR=26,38), 905 met guideline criteria and were more likely than their counterparts to report receiving recommendations to use PrEP (crude proportion=33.7% vs 16.1%, OR=3.44,95%CI=2.55,4.69). This relationship was maintained in a multivariable model (aOR=3.12, 95%CI=2.27,4.33) including age (aOR=1.02, 95%CI=1.00,1.03), not having a main partner (aOR=1.89, 95%CI=1.44,2.50), being comfortable discussing gay issues with a primary care provider (aOR=1.37, 95%CI=1.03,1.82), having another provider for sexual health issues (aOR=1.44, 95%CI=1.09,1.91), STIs tested ≥twice in the past two years (aOR=3.49, 95%CI=2.59,4.73), and transactional sex (aOR=1.65, 95%CI=1.21,2.25). Those who had received a recommendation were more likely to perceive themselves at high risk to warrant PrEP (OR=3.66, 95%CI=2.83,4.75), have enough PrEP knowledge (OR=2.04, 95%CI=1.59,2.64), be interested in PrEP (OR=2.80, 95%CI=2.08,3.81), and be taking PrEP (OR=4.37, 95%CI=2.96,6.48).

Conclusions: Only one third of gbMSM meeting guideline criteria received recommendations for PrEP, albeit more commonly than other gbMSM. Factors related to sexual risk behaviours and provider characteristics may also play a role in providers' PrEP recommendations. Because such recommendations are associated with greater PrEP readiness and usage, greater clinician engagement is needed.

Key Population: **Sexual and Gender Minorities**
Populations clés : **Minorités sexuelles et de genre**

KP2.04

Stigma, Shame and Solitude in the Suicidality of Gay and Bisexual Men Living with HIV

Olivier Ferlatte[1, 2], John L. Oliffe[2], Henry Wu[2], Travis Salway[2, 3], Aaron Purdie[4], Stacy Leblanc[5], Terry Howard[6], Rod Knight[1, 2]

1. British Columbia Centre on Substance Use, Vancouver, BC, 2. University of British Columbia, Vancouver, BC, 3. British Columbia Centre for Disease Control, Vancouver, BC, 4. Health Initiative for Men, Vancouver, BC, 5. Pacific AIDS Network, Vancouver, BC, 6. GlassHouse Consultants, Vancouver, BC

Purpose: Although gay and bisexual men living with HIV (GBMHIV) are at high risk of suicide, the specific risk factors of this population are poorly understood. We therefore used photovoice to uncover the realities of suicide among GBMHIV.

Methods: We recruited 22 GBMHIV with a past history of suicidality (suicide thoughts or attempts) and provided them with cameras to take photographs of their experiences and perspectives on suicide. Then, we invited them to described their photographs in a one-on-one interview. Interview transcrips and photographs were analyzed thematically.

Results: Our study findings revealed stigma, shame, and solitude as three interconnected themes characterizing suicidality among GBMHIV. Experiences of HIV stigma featured predominantly in the photographs and narratives of the participants, with many describing instances of violence, harassment and rejection due to their HIV status that rendered them hopeless. Specifically, participants described stigmatizing attitudes from potential romantic and sexual partners as particularly hurtful and was a key factor in their suicidality. Many also described experiences in which they had internalized HIV stigma, thereby resulting in subsequent experiences of shame that they related to thoughts of suicide. Many learned to see their HIV infections as a failure which affected their self-worth, leading them to consider suicide. Moreover, to avoid stigma and rejection, men avoided social and romantic situations resulting in social isolation. However, their solitude and lack of social connection weighed heavily on the participants and was described as an important driver of their suicidality.

Conclusion: Our photovoice study provided a unique opportunity for GBMHIV to describe their experience with suicide through photography and revealed three interconnected themes that suggest multiple intervention points. Specifically, the findings of our investigation affirm the need for targeted prevention efforts focused on promoting social connections amid public health efforts to de-stigmatize HIV and mental illness.

Key Population: **Sexual and Gender Minorities**
Populations clés : **Minorités sexuelles et de genre**

KP2.05

Phylogenetic Characterization of Large Transmission Networks Sustaining the HIV Epidemic in MSM

Bluma G. Brenner[1], Nathan Osman[1], Ruxandra-Ilinca Ibanescu[1], Isabelle Hardy[2], Michel Roger[2]
1. Lady Davis Institute - Jewish General Hospital, Montreal, QC, 2. OPTILAB Montreal CHUM, Montreal, QC

Background: Phylogenetic surveillance of the HIV epidemic amongst Men having Sex with Men (MSM) has revealed that large transmission networks (20+ infections/cluster) rose from 13% of new infections in 2004 to 49% of infections in 2016 in Quebec. Identifying and responding to these “active” transmission hubs in close to real-time will have the greatest impact in controlling the epidemic. In this study, we compared the sensitivity and accuracy of different phylogenetic-based methodologies in estimating transmission linkage and mapping epidemic growth in close to real-time.

Methods: First genotypes were obtained from treatment-naïve MSM (n=4029) and heterosexual/intravenous drug user (IDU) (n=1072) groups having subtype B HIV-1 infections, as well as non-B subtype groups (n=1248). Unique non-nominative patient identifiers were assigned based on putative cluster group association, ascertained by Maximum likelihood (ML) methodology (high bootstrap support >97% and short genetic distance <0.015). Growth trajectories dynamics of 40 individual large transmission networks (20+ members/cluster) were compared with the San Diego-based HIV-TRACE (Transmission Cluster Engine) platform, and the Montreal-based Gap (distance-based) and the DM-PhyClus (Bayesian-based) methodologies.

Results: Phylogenetics reveal the role of large transmission networks in the growth of the provincial epidemic in MSM. Heat maps indicated overlap between estimates produced by the different clustering algorithms, Cluster inferences with HIV-TRACE and DM-Phys were rapid, conducive to real-time monitoring of cluster dynamics. In general, putative cluster assignments by HIV-TRACE designated at <1.5% TN93 genetic distance measures paralleled ML-based assigned clusters. Problematic issues arose in resolving and deducing transmission links of individual members within clusters using repeat patient sampling. HIV-TRACE could not resolve two K103N and WT waves for cluster 99 and several different non-B subtypes clusters coalesced.

Conclusions: Phylogenetics can identify “actively” growing transmission hubs although resolving the linkage of individual members within clusters may be imprecise.

Key Population: **Sexual and Gender Minorities**
Populations clés : **Minorités sexuelles et de genre**

KP2.06

Equity in Blood Screening: Gay and Bisexual Men's Views on Reforming Blood Donation Policy in Canada

Daniel Grace[1], Mark Gaspar[1], David Lessard[2], Benjamin Klassen[3], David J. Brennan[8], Barry Adam[4], Jody Jollimore[6], Nathan Lachowsky[5], Trevor A. Hart[7, 1]

1. Dalla Lana School of Public Health, University of Toronto, Toronto, ON, 2. Research Institute of the McGill University Health Centre, Montreal, QC, 3. Simon Fraser University, Burnaby, BC, 4. University of Windsor, Windsor, ON, 5. University of Victoria, Victoria, BC, 6. Community-Based Research Centre, Vancouver, BC, 7. Ryerson University, Toronto, ON, 8. Factor-Inwentash Faculty of Social Work, University of Toronto, Toronto, ON

Researchers and activists have long called for a policy change to blood donation in Canada to end what has been frequently framed as a discriminatory and unjustified ban on all sexually active gay, bisexual, and other men who have sex with men (GBM). To better understand GBM's acceptance of current and possible future blood donation policy for GBM, we conducted 47 in-depth interviews with a diverse sample of GBM in Vancouver, (n=17), Toronto (n=15), and Montreal (n=17). Interviews were coded in NVivo 11 following Grounded Theory. In this analysis we focus on men's preferred policy directions as well as their opinions about a policy change currently being proposed to Health Canada: a 3-month deferral for all sexual activity between men. Most participants were opposed to any deferral period in relation to GBM sexual activity. For many participants, a fair and safe policy would be one that was the "same for everyone". Participants described how they thought several risk factors could be screened for during the blood donation process without the categorical exclusion of all sexually active GBM, and articulated multiple HIV testing-related strategies they believed could be integrated into the blood donation screening process. Participants' opinions about the potential change to a 3-month GBM deferral reflected their general views about deferral policies specific to GBM. We highlight three overarching policy perspectives in relation to this potential policy change: (1) *step in the right direction*, (2) *ambivalence*, and (3) *not an improvement.* An overarching claim was that a change from a 12-month to a 3-month deferral period would not be able to resolve the fundamental issues of fairness and equity affecting current blood screening practices for GBM in Canada. Many participants believed that blood donation policy should be based on more up-to-date scientific evidence concerning risk factor assessment and HIV testing.

Key Population: **People Who Use Drugs**
Populations clés : **Utilisateurs de drogues**

KP3.01

Achieving 90-90-90 Amidst an Ongoing HIV Epidemic - Reasons for Hope and Optimism from Southern Saskatchewan

Molly Trecker[1], Debbie Rodger[1], Dennaye Fuchs[1], Jessica Tourand[1], Michael Stuber[1], Kathy Lloyd[1], Cara Benz Tramer[1], Maurice Hennink[1], Tania Diener[1], Kumudhini Karunakaran[1], Stuart Skinner[1, 2], Alexander Wong[1, 2]

1. Saskatchewan Health Authority, Regina, SK, 2. University of Saskatchewan, Regina, SK

Background: The HIV epidemic in Saskatchewan is unique, characterized by high rates of transmission via injection drug use, and disproportionate representation of persons of Indigenous heritage. Data is urgently needed on program-level interventions which can improve HIV care outcomes in the province. We describe the interventions undertaken in one Saskatchewan HIV clinic and its resultant outcomes.

Methods: The ID Clinic (IDC) at Regina General Hospital provides care for ~500 persons living with HIV (PLWHIV) in southern Saskatchewan. Since early 2014, the IDC has developed and measured program-level interventions to improve HIV care outcomes. These include instituting regular inner-city and correctional outreach clinics, holding regular multidisciplinary case management rounds and daily inpatient review, pairing antiretroviral therapy with opioid substitution therapy when possible, and utilizing electronic health records to proactively track persons off antiretroviral therapy and/or lost to follow-up. The clinic measures quality-of-care indicators including its HIV cascade of care and progress towards 90-90-90 on a quarterly basis.

Results: The IDC has made progress as determined by its HIV care cascade and 90-90-90 measures. As of September 30, 2018, 86.6% of all PLWHIV in the IDC were retained in care, 84.2% were receiving antiretroviral therapy, and 80.1% had a suppressed HIV viral load, meaning that 95.2% of persons on therapy had achieved viral suppression. In comparison with February 26, 2014, when only 66.1% of persons were retained in care, 73.3% were receiving antiretroviral therapy, and 59.6% had a suppressed HIV viral load, meaning that 81.4% of persons on therapy had achieved viral suppression.

Conclusions: The IDC demonstrates improvement in HIV quality-of-care indicators as a cumulative result of various program-level interventions to optimize HIV care over a four-year period, fueling hope for an end to the provincial epidemic. Similar programming may be beneficial in other HIV clinic settings across Saskatchewan.

Key Population: **People Who Use Drugs**
Populations clés : **Utilisateurs de drogues**

KP3.02

Negotiating a United Nations Resolution on Stigma Against People Who Inject Drugs: Reflections on Process and Implications

Nazlee Maghsoudi[1], Michelle Boudreau[2], Kirsten Mattison[2], Richard Elliott[3], Donald MacPherson[4], Dan Werb[5]

1. University of Toronto, Toronto, ON, 2. Health Canada, Ottawa, ON, 3. Canadian HIV/AIDS Legal Network, Toronto, ON, 4. Canadian Drug Policy Coalition, Vancouver, BC, 5. St. Michael's Hospital, Toronto, ON

Background: Stigma contributes to HIV-related harms for people who inject drugs (PWID) by limiting access to the HIV care continuum. Punitive drug policy approaches exacerbate stigma against PWID and create further barriers to preventing HIV acquisition and disease progression. Addressing stigma is therefore critical for global PWID-focused HIV prevention and care efforts. Given the role of the United Nations (UN) in shaping global drug policy, intervening in this policy arena is imperative to addressing stigma.

Description: At the 61st Session of the UN Commission on Narcotic Drugs (CND) in March 2018, Canada introduced the first resolution on stigma and its impact on availability, access, and delivery of health and social services for PWID. Co-authors include members of the Canadian delegation and partners. Despite a fractured consensus on the path forward for international drug policy, Canada and cosponsors were successful in reaching agreed language and the resolution was adopted. However, weakened language resulting from negotiations may mitigate its impact.

Results: Given that language is agreed by consensus at the CND, concessions from the original resolution draft were necessary to achieve its passage. An expanded emphasis on already agreed language as opposed to new language reflects challenges faced in negotiations. Key aspects of the resolution that were maintained include involving drug users in policy and program development, and incorporating awareness of stigmatizing attitudes into national, regional, and international training programs.

Next Steps: While an important step towards addressing stigma against PWID, a critical shortcoming of the resolution is its omission of unnecessarily punitive drug policies as a driver of stigma. Although the UN Office on Drugs and Crime will report on implementation of the resolution in 2020, further efforts are necessary to integrate considerations of stigma in international drug policy development. Developments from the CND in March 2019 will also be shared.

Key Population: **People Who Use Drugs**
Populations clés : **Utilisateurs de drogues**

KP3.03

Rapid Starts to Stop HCV: Same Day Hepatitis C Treatment Starts Enhance Patient Engagement and Follow Up in a Vulnerable, Treatment Naïve Group Living with Hepatitis C

Shawn Greenan[1], George Carruthers[2, 3], Lisa Barrett[2, 4, 5]

1. Health PEI, Charlottetown, PE, 2. Dalhousie University, Halifax, NS, 3. Memorial University of Newfoundland, St. John's, NL, 4. Nova Scotia Health Authority, Halifax, NS, 5. Canadian Centre for Vaccinology, Halifax, NS

Background and Aims: Hepatitis C virus (HCV) elimination requires alternate care models for key populations. Beyond diagnosis, engaging people in HCV treatment that leads to treatment completion and cure is one of the greatest barriers to HCV elimination. Human immunodeficiency virus (HIV) research has demonstrated better HIV and non-HIV health care engagement with rapid, same day treatment start. Our aim is to determine if rapid access to HCV treatment improves engagement in HCV and non-HCV health care.

Method: PEI has a Phase 2 provincial, coordinated HCV elimination program. Patients are identified and referred through the public health department, community providers, or 'bring a friend' strategies. Program staff facilitate baseline blood work, pre-visit drug-drug interaction checks, and book appointments within 1-2 weeks. Treatment naïve patients without contraindications are offered glecaprevir/pibrentasvir at the first visit. Self-reported medication adherence, side effects, SVR12, and attendance at scheduled opioid substitution therapy (OST) clinic visits are recorded.

Results: Patients assessed between February and October 2018 were included. 71/73 (97.2%) treatment naïve individuals started treatment, 67/71 (94.3%) on the first visit. Of those who did not start immediately, 5 had medication interactions requiring adjustment, and 1 person was pregnant. There were 3 discontinuations for non-HCV related medical reasons, and 1 person was lost to follow-up before SVR. To date, all 52 people past the treatment completion date finished treatment, and 23/32 have documented SVR12 (9 people did not have SVR12 bloodwork but completed full treatment course). Importantly, individuals with difficulty attending opioid substitution clinic (OST) appointments before HCV treatment had improved attendance at appointments after HCV treatment start. No safety issues were noted.

Conclusion: Rapid treatment start is safe, and has a very high rate of successful HCV and non-HCV care engagement. Same day, first visit HCV treatment start should be explored as an HCV elimination tool.

Key Population: **People Who Use Drugs**
Populations clés : **Utilisateurs de drogues**

KP3.04

A Two-eyed Seeing Approach to Wholistic Healing and Wellness for People with Drug Use Experience

Candice Norris[1], Willie Ermine[6, 2], Norma Rabbitskin[2, 4], Matthew Fischer[1], April Roberts-Poitras[2], Emily Scotton[1], Kehinde Ametepee[1, 3], Terry Howard[1], Malcolm King[5, 7, 1], Jack Haight[4], Donald Turner[4], Sempulyan S. Gonzalez[1], Alexandra King[5, 1, 4]

1. Indigenous Wellness Research Group, Vancouver, BC, 2. Sturgeon Lake Health Centre, Sturgeon Lake First Nation, SK, 3. Simon Fraser University, Burnaby, BC, 4. Canadian Aboriginal AIDS Network, Vancouver, BC, 5. University of Saskatchewan, Saskatoon, SK, 6. First Nations University of Canada, Prince Albert, SK, 7. Saskatchewan Centre for Patient-Oriented Research, Saskatoon, SK

Purpose: This peer-developed and -led pilot research explores the use of wellness and cultural activities as health and substance use interventions for First Nations and Métis people who use drugs. Community members with lived experience, Elders, researchers and knowledge users, came together in this pilot interventional research using land- and culture-based healing.

Background: Substance use is typically seen by Western society through an individualistic framework, where current health status results from poor decision-making and lifestyle choices, and deemed reparable through individual willpower. However, an Indigenous health determinants framework, which emphasizes structural and sociocultural impacts on health, especially colonization, better explains Indigenous over-representation in substance use and related conditions (e.g., HIV, hepatitis B/C). Indigenous peoples have historically used land-based retreats for wholistic wellness. More recently, these are being explored for their effectiveness in restoring connections and promoting healing in the context of substance use. The Medicine Wheel Spirit Shadow Dance (MWSSD) was developed by people living with HIV, many of whom had a history of substance use, as a wholistic, strengths-based approach to promote self-exploration and healing based on medicine wheel teachings.

Methodology: A land- and culture-based retreat which included the MWSSD, with post-retreat activities, was designed as a healing intervention with contextualization by Knowledge Holders for their specific communities. This was piloted in two sites – a First Nation community in Saskatchewan and an urban Indigenous community in British Columbia. A Two-eyed Seeing multi-pronged evaluation included qualitative analysis of intra- and post-retreat sharing circles, self-reflexivity, and an innovative First Nation self-assessment tool.

Findings: Preliminary findings identified elements of land- and culture-based healing that are effective at restoring and promoting wellness for Indigenous people who use drugs. The MWSSD provides a shame-free space for sharing of and both individual and collective learning from deeply personal narratives.

Key Population: **People Who Use Drugs**
Populations clés : **Utilisateurs de drogues**

KP3.05

Scaling up SCS in Canada: Overdue for a Change

Annie Foreman-Mackey[2], Cecile Kazatchkine[1], Richard Elliott[1], Sandra Ka Hon Chu[1]
1. Canadian HIV/AIDS Legal Network, Toronto, ON, 2. University of Toronto, Toronto, ON

Background: Canada is facing unprecedented rates of overdose fatalities, with 9000 deaths between January 2016 and June 2018. One response to the crisis has been the expansion of supervised consumption services (SCS). 28 SCS are currently operating, marking a significant increase from the two services available in 2016. While this is welcome progress, additional efforts are needed to remove remaining barriers to SCS in Canada and expand access to these life-saving services.

Methodology: In 2018, the Canadian HIV/AIDS Legal Network undertook a research project to explore the current state of SCS in Canada, to monitor legal and policy changes affecting SCS, and to identify facilitators and barriers faced by would-be and current SCS operators. The project involved a literature review and key informant interviews.

Results: In Canada, an exemption from the federal Ministry of Health is necessary to open SCS and protect staff and clients from the risk of prosecution for drug possession. Recently, respondents described better communication with Health Canada, faster turnaround for applications, and some openness to novel SCS designs, including supervised inhalation. Adequate scale-up of SCS continues to be limited, however, by a burdensome application process and a legislative regime that is dependent on the political context.

Conclusions: Normalizing SCS so they can be integrated seamlessly into a comprehensive set of services for people who use drugs was identified as a priority. We propose a framework whereby decisions about authorizing SCS no longer rest at the discretion of the federal government and the conditions to open SCS are eased. This could be done by way of an automatic class exemption from prosecution for any person accessing or working at SCS that meet minimum required conditions. Other measures, including appropriate funding, must also be taken to support rapid and widespread implementation of diverse SCS models across the country.

Key Population: **People Who Use Drugs**
Populations clés : **Utilisateurs de drogues**

KP3.06

Harm Reduction Site Clients Report Barriers to Accessing Supplies and Services in British Columbia

Kristi Papamihali[1], Brittany Graham[1], Christopher Mill[1], Margot Kuo[1], Mohammad Karamouzian[2], Alexis Crabtree[1, 2], Sara Young[1], Jane A. Buxton[1, 2]

1. BC Centre for Disease Control, Vancouver, BC, 2. University of British Columbia, Vancouver, BC

Background: British Columbia (BC) Centre for Disease Control Harm Reduction Services (HRS) supports nearly 300 harm reduction sites found within primary care, public health, not-for-profit, and advocacy settings. As needle distribution has increased – more than 16 million distributed annually across BC – injection drug use-related HIV has decreased with less than 20 new cases in 2016. Since 2012, HRS has worked with community partners in administering a province-wide survey to harm reduction distribution site clients to inform planning and assess service quality. We assess uptake and barriers faced by people who use drugs (PWUD) in accessing harm reduction supplies and services.

Methods: The client survey was distributed to harm reduction site clients over two months in 2018. Quantitative survey data was analyzed using descriptive statistics.

Results: Surveys were completed by 486 harm reduction site clients from 27 community sites. Of respondents who picked up supplies from a site in the past month, more than half attended at least a few times a week. Barriers to accessing supplies included: site not open; site too far; and site not having supplies needed. Of respondents that injected drugs in the past month (n=214), 24% had trouble obtaining unused needles and 13% injected with a needle used by someone else; half had used an overdose prevention site. Of 318 participants that used pipes from harm reduction sites to smoke drugs, 27% used a second-hand pipe and 20% injected when they couldn't find unused smoking equipment.

Conclusions: Harm reduction efforts during the ongoing opioid overdose crisis in BC have primarily focused on safer injection practices but limited safer smoking supplies. The survey identified structural barriers faced by PWUD in accessing services that help them be safer and will inform how services can be made more accessible and acceptable based on client preference and need.

Key Population: **Indigenous Communities**
Populations clés : **Collectivités autochtones**

KP4.01

Doing It Our Way - By Community For Community

Robin Giroux, Shawna Bellerose, DRUM 2 Project team
Driftpile Cree Nation Health Centre, Driftpile, AB

We are a semi-remote, First Nations community located in northern Alberta. We began our work to address HIV in 2008 through a 5-year partnership with CIETcanada, aimed at identifying resilience factors that keep youth safe from acquiring HIV and other blood-borne viruses that resulted in the creation of a shared-care agreement (SCA)with the Northern Alberta HIV clinic to provide services on-reserve, if desired by the person living with HIV. The only problem was that no one was accessing this service. We continued with HIV awareness campaigns in special events and community-wide education throughout the year, however, no one was approaching us to inquire about the SCA. It wasn't until we joined the DRUM project (development of a shared care model that includes HIV, HCV, STBBIs and related mental health and neurology) in 2016 and conducted a Community Readiness survey (adapted by the Canadian Aboriginal AIDS Network from a Colorado University-developed model) that we discovered there was a high level of stigma around HIV and people living with it in our community. This came as a surprise as we believed we had done a good job in raising awareness that would address HIV-related fear and misinformation and related stigma.

In this presentation, we will share how we decided to address the stigma, including our own institutional stigma, by going back to our traditional ways of learning, the role of the Elders, and how we are engaging our community and able to move forward with testing, treatment, and on-going support to individuals living with HIV and their families in a way that is safe and embraces our culture. We will also share how our partnership with DRUM has provided us with important training opportunities and access to western tools, adapted by us that will assist us in tracking and evaluating our process.

Key Population: **Indigenous Communities**
Populations clés : **Collectivités autochtones**

KP4.02

Stamsh Slhanay Lhawat: Warrior Women Healing

Bernice Thompson[1], Candice Norris[1], Sharon Jinkerson-Brass[1], Kehinde Ametepee[1, 2], Terry Howard[1], Alexandra King[3, 1, 2]

1. Indigenous Wellness Research Group, Vancouver, BC, 2. Simon Fraser University, Vancouver, BC, 3. University of Saskatchewan, Saskatoon, SK

Purpose: This study captures the experiences and wisdom of a group of Indigenous women from Vancouver's Downtown Eastside (DTES) in the development of a culture- and land-based, Indigenous-led, wellness program for urban Indigenous women which includes strategies for wellness and prevention of diseases such as HIV, HCV, and other infectious and chronic diseases.

Background: Indigenous women are traditionally the matriarchs and healers in their communities. However, colonization, patriarchy, oppression, trauma and persistent structural inequities have denied many their connection to wellness. While urban Indigenous women have been invisible in health service planning and program development, they remain over-represented among victims of violence and diseases. Indigenous health and primary healthcare researchers have recommended equity-oriented, culturally safe, trauma- and violence-informed care as a wise practice for Indigenous people experiencing health inequities. Few interventions are aimed at improving the health and wellness of Indigenous women and their families through wholistic perspectives based on Indigenous knowledges, spirituality and ceremony.

Methodology: Four sets of Elder-led sequential sharing circles, supplementary conversational interviews and a land-based retreat - all grounded in culture- and land-based activities - were held with 23 Indigenous women who reside in the DTES. Data collection and analyses were guided by Indigenous research methodologies. In addition, research team members and participants were included in the planning of the Nəc̓amat Indigenous Women's Village of Wellness 2018 hosted by Vancouver Coastal Health.

Findings: Based on ongoing analyses, the findings specify the necessity of culture and ceremony, families and meaningful relationships, and the creation of safe spaces for Indigenous women to thrive in their journey to wellness. The underlying impacts of the intersection of colonialism, systemic racism and gender significantly affect their lived realities. Most importantly, these findings reveal the importance of resilience and willingness to lead and direct health programming and services for urban Indigenous women.

Key Population: **Indigenous Communities**
Populations clés : **Collectivités autochtones**

KP4.03

Examining Inuit Knowledge Within Inuit Community-based Participatory HIV Prevention Research

Jenny R. Rand[1], Audrey Steenbeek[1], Debbie Martin[1], Charlotte Loppie[2], Barbara Plested[3]

1. Dalhousie University, Halifax, NS, 2. University of Victoria, Victoria, BC, 3. Colorado State University, Fort Collins, CO, USA

Inuit hold great knowledge, skills, and strength, all of which have sustained their people through some of the most rapid social, economic, and political changes ever experienced by Indigenous Peoples across the world. For Inuit this way of knowing is known as Inuit Qaujimajatuqangit (IQ). Within health research, a shift has occurred and research with Indigenous communities is now expected to recognize (and include) Indigenous knowledge.

An approach to research that claims to create space for upholding Indigenous ways of knowing is community-based participatory research (CBPR). Much of the literature surrounding CBPR strongly promotes this approach as a successful process for collaborative research between University-based researchers and Indigenous communities. However, missing from the literature is research examining CBPR processes and Indigenous knowledge, their alignment, and if and how they work together. To address this gap, using a case study approach and the conceptual framework of Two Eyed Seeing, this case study examined an HIV prevention CBPR project that took place with three Inuit communities across Nunavut.

Aiming to examine the congruency of IQ and CBPR principles, this case study sought to answer questions to determine in what ways these two sets of principles were reflected throughout the research process; what may be some challenges and opportunities of a CBPR project that follows IQ, and what the strengths of IQ as a guide for knowledge creation are.

This case study produced knowledge for Inuit-specific research frameworks that has utility across disciplines. The findings from this research project can help ensure Inuit ways of knowing are explicitly incorporated into research processes and contribute to knowledge for both Inuit communities and university-based researchers to conduct culturally affirming research following Wise Practices for community-driven research.

Key Population: **Indigenous Communities**
Populations clés : **Collectivités autochtones**

KP4.04

Enhanced STBBI Testing at Indigenous Events in Manitoba

Albert W. McLeod[1], Laverne Gervais[2], Stephanie Van Haute[3], Monica Cyr[4], Peetanacoot Nenakawekapo[3], Kim Witges[3], John Kim[5], Alan Turner[6], Bryan Magwood[6]

1. Two-Spirited People of Manitoba, Winnipeg, MB, 2. Ka Ni Kanichihk Inc., Winnipeg, MB, 3. Nine Circles Community Health Centre, Winnipeg, MB, 4. Aboriginal Health and Wellness Centre Inc., Winnipeg, MB, 5. National Laboratory for HIV Reference Services, Winnipeg, MB, 6. Our Own Health Centre, Winnipeg, MB

This workshop will explore the unfolding HIV-STBBI epidemics in the Prairies and describe how Indigenous led responses have increased testing opportunities. Manitoba has the second highest rate of HIV and very high rates of HCV and other STBBI's. In response, the Manitoba HIV-STBBI Collective Impact Network (CIN) was funded by the Public Health Agency of Canada (PHAC) to bring together key cross-jurisdictional stakeholders like community network and health centre leaders, PHAC, FNIHB and Provincial departments to analyze data and prioritize actions to prevent and treat STBBIs. One of CIN's objectives is to double the number of annual HIV tests by 2020.

Current STBBI epi data shows that Indigenous people are disproportionately over-represented and late presentation and access to testing complicates treatment as prevention initiatives. The Collective Impact model supported multidisciplinary collaboration which led to testing opportunities at Indigenous events.

In 2018, Point of Care HIV Testing (POCT) and Dried Blood Spot Testing (DBS) were introduced to two Indigenous events in Manitoba. 29 POCT and 20 DBS tests were completed at the 31st Annual International Two-Spirit Gathering (August 2018); and 23 standard HIV tests were completed during Manitoba's Aboriginal AIDS Awareness Week event at the Neeginan Centre in Winnipeg (December 2018).

Lessons learned:

- The Annual International Two-Spirit Gathering is a culturally-safe response to the HIV pandemic
- Some Indigenous communities are ready to offer POCT and DBS testing
- Two-Spirit gathering participants accepted the testing as normal
- Testing can be delivered in rural/outdoor locations
- The MB HIV-STBBI Collective Impact model supported effective collaboration between diverse sectors and across jurisdictions
- Our Own Health Centre was able to quickly deliver POCT and pay for the test kits from charitable funds
- Manitoba requires a standardized process for events-based testing
- Increased collaboration with American Indian/Alaska Native HIV/AIDS initiatives will benefit Manitoba

Key Population: **Indigenous Communities**
Populations clés : **Collectivités autochtones**

KP4.05

High School Based HIV and Sexually Transmitted Infection (STI) Testing in an Indigenous Community in Canada: Local Solutions to Engage Indigenous Youth and Community

Leslie Ann Smith[1], Jolene Blocka[1], Ibrahim Khan[1], Stuart Skinner[2]

1. Indigenous Services Canada, Regina, SK, 2. University of Saskatchewan, Regina, SK

Background: Big River First Nation (BRFN) is an Indigenous community in Saskatchewan, Canada. Over a four-year period, 106 cases of chlamydia and/or gonorrhea were noted in people aged 15-25. Moreover, the community experienced an HIV outbreak and 98% of the newly diagnosed HIV individuals previously had an STI in high school. Unfortunately, minimal HIV and STI testing is available due to limited access to laboratory services and youth targeted programming. School based HIV and STI testing are challenging due to stigma amongst students, parents and educators, particularly in small communities.

Description: Community health nurses recognized high STI rates of amongst students in community. Nurses engaged community leadership and school educators to raise awareness and address the issue amongst youth. Through community education and engagement sessions, community support was developed to provide testing within the school. Every 3 months testing is provided and 16 testing events have occurred within the schools resulting in 325 individuals tested with 2 new HIV diagnoses. Students are supportive of this approach and initiated a logo competition for the HIV program in BRFN.

Lesson Learned: Strong community leadership, combined with community engagement and HIV education can allow for HIV and STI testing in high schools in Indigenous communities in Canada. This approach results in students' access to education, prevention *and* testing with family support. Normalizing HIV and STI testing and education to support reproductive and overall health can decrease stigma and fear of HIV amongst youth in Indigenous communities.

Conclusions/Next Steps: High School HIV testing can lead to HIV case finding and treatment as well as HIV and STI prevention. Education and awareness for Indigenous youth is crucial to reduce HIV and STI rates for the next generation. Empowering Indigenous youth to knowing their HIV status is vital to awareness and prevention.

***Basic Sciences:* Mucosal and Lymphoid Tissues**
***Sciences fondamentales :* Muqueuses et tissus lymphoïdes**

BS3.01

The Role of Migratory Dendritic Cells in Establishing HIV Dissemination

Wan Koh, Paul Lopez, Ryan Knatiuk, Oluwaseun Ajibola, Umar P. Mohammed, Thomas Murooka
University of Manitoba, Winnipeg, MB

HIV-1 dissemination from the genital mucosal tract to the lymphoid organs is the first critical step towards systemic infection. HIV-1 can disseminate either as free-virus, or it can be transported to lymphoid tissues by migratory cells. Our previous studies strongly argued that the trafficking of cell-associated HIV-1 from the genital mucosa to lymphoid organs played a dominant role in viral spread early after sexual transmission in humanized mice. Here, we further extended these observations by addressing the role of migratory DCs in the capture, retention and transfer of HIV-1 to susceptible $CD4^+$ T cells through *trans*-infection. We modeled the dynamics of DC:HIV and DC:T cell interactions within a 3D collagen matrix that recapitulates the stromal networks of the lymph node.Two-photon microscopy and blocking antibodies were used to characterize (1) the cellular dynamic of HIV capture and retention by DCs, (2) the role chemoattractant receptor-mediated DCs such as S1PR1- and CCR7 play in spreading HIV, and (3) the interaction between HIV-bearing DCs and T cells. We observed that mature DCs rapidly captured HIV-1 on the cell surface, mediated by Siglec-1, and that captured virus rapidly formed dense clusters near the uropodia of migrating DCs. The chemotactic responses of HIV-1 bearing DCs towards lymph node homing chemokines S1P and CCL19/21 were preserved. HIV-bearing DCs engaged in stable contacts with T cells in 3D collagen that led to rapid transmission of viral particles at the contact site. Consistent with this, HIV-bearing DCs transmitted virus was five-fold more efficient at infected T cells compared to cell-free virus. Together, DCs retain their ability to migrate into lymph nodes and engage with T cells to facilitate viral spread. This suggests that blocking the movement of HIV^+DCs out of the genital mucosa may be a novel approach to restrain virus dissemination and limit systemic viremia.

Basic Sciences: **Mucosal and Lymphoid Tissues**
Sciences fondamentales : **Muqueuses et tissus lymphoïdes**

BS3.02

Early Antiretroviral Therapy Controls Viral Infection of Cells of Monocytic Lineage in SIV-infected Rhesus Macaques

Julien Clain, Henintsoa Rabezanahary, Gina Racine, Ghita Benmadid-laktout, Ouafa Zghidi-Abouzid, Jérôme Estaquier

Université Laval, Québec, QC

Although blood monocytes are essential in the replenishment of macrophages in the intestine, it has been shown that splenic monocytes represent a large reservoir of undifferentiated cells that can be mobilized in response to injury. Monocytes are innate sentinels that express CD4 and CCR5, which are important for HIV-1 infection. Several reports have previously indicated that blood monocytes express viral DNA, even under antiretroviral therapy (ART). Interruption of ART is associated with viral rebound indicating the absence of fully eradication of HIV-1, which may persist in tissues. Herein, we addressed the contributing role of splenic monocytes in maintaining viral reservoirs (VRs), which may represent major source of viral dissemination due to the faculty of these cells to recirculate and replenish mucosal tissues.

Rhesus macaques (RMs) were infected with SIVmac251 (20 AID50) and treated at day 4 with a cocktail of antiretroviral drugs. RMs were sacrificed at different time point post-infection, and after ART interruption. In addition to peripheral blood, intestine and spleen were recovered. Cells were stained with specific antibodies and sorted isolating three main myeloid cell subsets based on CD16 and CD14 expressions. Cell-associated viral RNA and DNA were quantified by RTqPCR.

We provide evidences that early ART efficiently controls viral infection of monocytic cells, in all the compartments analyzed. Concomitantly with viral rebound after ART interruption, we observed the early infection of monocytes both in the spleen and intestine, which display not only viral DNA but also viral RNA.

These results indicated that splenic monocyte cell subsets cannot be considered to be major VRs under ART but may contribute to viral dissemination and viral replication once the ART is interrupted.

This work was supported by the Canadian Institutes of Health Research (CIHR), the Canadian HIV Cure Enterprise Grant (CANCURE) and by the Canada Research Chair program.

Basic Sciences: **Mucosal and Lymphoid Tissues**
Sciences fondamentales : **Muqueuses et tissus lymphoïdes**

BS3.03

Genetic Contribution to Vaginal Inflammation and HIV Susceptibility: Novel Role of Zinc Finger Proteins

Paul J. McLaren[1, 2], Naima Jahan[2], Jeffery Tuff[1], Cheli Kambaran[2], Shanelle Gingras[2, 1], Thomas Murooka[3], Lenine Liebenberg[4], Nonhlanhla Yende-Zuma[4], Jo-Ann Passmore[4], Quarraisha Abdool Karim[4], Salim Abdool Karim[4], Lyle R. McKinnon[2]

1. Public Health Agency of Canada, WInnipeg, MB, 2. Department of Medical Microbiology and Infectious Diseases, University of Manitoba, Winnipeg, MB, 3. Department of Immunology, University of Manitoba, Winnipeg, MB, 4. Centre for the AIDS Programme of Research in South Africa, Durban, South Africa

Heightened inflammation in the female reproductive tract, defined by elevated concentrations of pro-inflammatory cytokines, has been reproducibly demonstrated to increase HIV susceptibility and can also negate the efficacy of pre-exposure prophylaxis. Although several extrinsic factors, such as age, sexual behaviour, hormonal contraception use and STIs, have been shown to modulate inflammation, whether extrinsic factors are the sole causes of inflammation within a population is unclear. In this study, we hypothesized that human genetic variability may constitute a key intrinsic factor contributing to variability in inflammation at the female reproductive tract. To address this hypothesis, we performed a pilot genome-wide association study of inflammation in a subset of women who participated in a prospective efficacy trial of a 1% tenofovir gel that collected extensive clinical, demographic and biological data (CAPRISA-004; n=240). After quality control, we tested ~1.9 million human genetic variants for association with inflammation, defined as exhibiting heightened levels of 5 or greater cytokines/chemokines accounting for age, study site, study arm, STIs & reported sex acts. We observed a variant on chromosome 19, rs4932768, with a nominal association with increased risk of inflammation (p=8x10-7). This variant sits near the zinc finger gene ZNF492 within a gene-dense region that contains 9 additional genes of the zinc finger family. Interestingly, this variant is also nominally associated with HIV acquisition (p=0.02) in the subset of women that were infected during the study period. Additionally, a second variant in this same ~ 1megabase region, rs7257322, was also associated with both inflammation (p=7x10-5) and HIV acquisition (p=7x10-4). Zinc finger proteins are a large, diverse family of proteins involved in multiple biological processes, including regulation of gene expression, development and immunity. Through ongoing work, we are exploring the functional impact of these candidate zinc finger genes on regulating inflammation and HIV susceptibility.

Basic Sciences: **Mucosal and Lymphoid Tissues**
Sciences fondamentales : **Muqueuses et tissus lymphoïdes**

BS3.04

Hormonal Contraceptive Alters Vaginal Microbiota and Microenvironment Which may Enhance HIV-1 Susceptibility in a Kenyan Sex Workers Cohort

Jocelyn M. Wessels[1], Julie Lajoie[2], Maeve I. Hay Cooper[1], Kenneth Omollo[3], Allison M. Felker[1], Haley A. Dupont[1], Danielle Vitali[1], Philip V. Nguyen[1], Kristen Mueller[1], Fatemeh Vehedi[1], Joshua Kimani[3], Julius Oyugi[3], Juliana Cheruiyot[4], John N. Mungai[4], Alexandre Deshiere[5], Michel J. Tremblay[5], Tony Mazzulli[6], Jennifer C. Stearns[1], Ali A. Ashkar[1], Keith R. Fowke[2], Michael G. Surette[1], Charu Kaushic[1]

1. McMaster University, Hamilton, ON, 2. University of Manitoba, Winnipeg, MB, 3. University of Nairobi, Nairobi, Kenya, 4. Kenyan AIDS Control Program, Nairobi, Kenya, 5. Laval University, Quebec City, QC, 6. University of Toronto, Toronto, ON

Depot-medroxyprogesterone Acetate (DMPA), a hormonal contraceptive commonly used in Sub-Saharan Africa, is associated with a 1.4-fold increased risk of Human Immunodeficiency Virus (HIV). While the mechanisms of this increased susceptibility remain elusive, an association between increased diversity of the vaginal microbiota and HIV-1 acquisition has been reported. We thus examined the effect of DMPA on the diversity of the vaginal microbiota. In a prospective cohort of female Kenyan sex workers, negative for sexually transmitted infections (STIs), with Nugent Scores <7 (N=58 of 370 screened), women on DMPA had significantly increased diversity of the vaginal microbiota as assessed by 16S rRNA gene sequencing ($P \leq 0.05$). To examine the underlying mechanism correlating DMPA with bacterial diversity, we quantified vaginal glycogen and α-amylase, factors associated with colonization of lactobacilli, bacteria thought to protect against STIs. DMPA use was associated with lower glycogen (2.04±0.42 vs. 5.98±1.72mg/mL; P=0.043), and α-amylase (3.91±1.32 vs. 16.90±3.78mU/mL; P=0.0095). Furthermore, increased vaginal microbiota diversity was correlated with activation of vaginal HIV-1 target cells, as indicated by CCR5 expression on CD4+ T cells (P=0.009). Our results were recapitulated in humanized mice where DMPA treatment was associated with increased diversity of the vaginal microbiota as compared with estradiol treatment (P=0.016). DMPA treatment also suppressed vaginal glycogen as compared to controls ($1.5x10^{-3}$±$9.0x10^{-4}$ vs. $1.1x10^{-2}$±$3.0x10^{-3}$mg/mL; N=10, 8; P=0.017), and increased HIV-1 infection following intravaginal challenge (77% vs. 35%; P=0.014; N=22, 20 respectively). Together these results suggest that DMPA may decrease key metabolic factors necessary for vaginal colonization by certain bacterial species including protective lactobacilli and allow for greater bacterial diversity in the vaginal microbiota. This increased diversity in the vaginal microbiota correlates with activation of HIV-1 target cells, which thus might contribute to enhanced susceptibility to HIV-1 in women using DMPA.

Basic Sciences: **Mucosal and Lymphoid Tissues**
Sciences fondamentales : **Muqueuses et tissus lymphoïdes**

BS3.05

Activation of Innate Immune Responses Against R5 and X4 Tropic HIV-1 in Female Genital Epithelial Cells

Aisha Nazli, Muhammad A. Zahoor, Andrew Rempel, Charu Kaushic
McMaster University, Hamilton, ON

Women constitute more than 50% of the population living with HIV-1 worldwide. The main mode of transmission of HIV-1 in women is through heterosexual transmission. Thus, there is an urgent need to develop strategies to prevent the sexual transmission of HIV-1 through female reproductive tract (FRT).

Epithelial cells in the FRT are the first to encounter HIV-1 and thus act as a first line of defense against HIV-1. Simple columnar epithelial lining of the upper FRT provides HIV-1 an easy access to the underlying $CD4^+$ target cells compared to multilayered squamous epithelia in the lower FRT. There is a consensus that female genital epithelial cells (GECs) do not get infected with HIV-1 likely due to the lack of putative HIV-1 receptors. However, we and others have shown that the GECs respond to HIV-1 by activating innate immune pathways, thus acting as a gatekeeper and providing a first line of defense against invading pathogens such as HIV-1.

We previously reported that GECs lining female upper genital tract activate type I interferon pathway after HIV-1 exposure. In this study we found that various interferon stimulated genes (ISGs) such as ISG15, MX1, OAS1, OAS2, OAS3, BST2, RSDA2 were upregulated in response to HIV-1 exposure. Interestingly, the induction of ISGs by primary GECs was more robust against X4-tropic HIV-1 strain compared to R5-tropic HIV-1 strain indicating that possibly GECs restrict the entry of X4-tropic HIV-1 but are possibly more permissive to entry of R5-tropic HIV-1 in genital mucosa. These studies will provide more insight into the mechanisms of sexual transmission of HIV-1 in the FGT.

Basic Sciences: **Mucosal and Lymphoid Tissues**
Sciences fondamentales : **Muqueuses et tissus lymphoïdes**

BS3.06

Role of Glycosylation on the HIV Transmitted/Founder: Encountering the Lectin Trap in the Recipient Mucosa

Adam A. Meadows[1], Katja Klein[1], Najwa Zebian[1], Spencer Yeung[1], Yingxue Sun[1], Hannah Cheeseman[2], Carole Creuzenet[1], Eric J. Arts[1]

1. University of Western Ontario, London, ON, 2. Imperial College London, London, United Kingdom

Background: During sexual HIV transmission, a single variant out of thousands establishes infection in 75% of cases—termed the transmitted/founder virus (T/F). T/F viruses lack N-linked glycosylation sites along gp120. As lectins in the genital tract bind HIV glycans, we hypothesized that sexual transmission selects for T/F strains with reduced envelope glycosylation to bypass the host lectin binding 'trap'.

Methods: Human cervical and penile tissues were exposed to a mixture of chimeric subtype B viruses, pseudotyped with 20 T/F envs and three envs isolated during chronic infection. After exposing tissue to virus, migratory cells were collected and co-incubated with PM-1 cells (MC+PM1). Both tissue and MC+PM1 cultures were maintained for 2 weeks for viral propagation. Relative abundances of proviral envs were measured using Next Generation Sequencing and compared between tissue and MC+PM1. Surface plasmon resonance was used to measure binding affinity of purified gp120 to DC-SIGN, a cell-surface lectin.

Results: In penile tissue, we observed >3-fold greater replication of acute viruses in MC+PM1 compared to in the tissue (69.8 vs. 16.8%, $p<0.001$), while chronic virus replication was >3-fold greater in tissues compared to MC+PM1 (82.2 vs. 26.7%, $p<0.001$). Similar results were observed in cervical tissue. Further, gp120 binding affinity to DC-SIGN correlated with the viral strain's ability to replicate in tissue ($p=0.018$), but not with ability to replicate in MC+PM1.

Conclusions: In our *ex vivo* model, envs from T/F viruses were more efficient at dissemination via migratory cells, while envs from chronic infection remained in the tissue, a property that correlated with their affinity for the lectin DC-SIGN. This suggests that stronger lectin binding may lead to trapping of some viral strains in tissue, preventing dissemination. As 75% of sexual transmission events result from a single T/F variant with reduced glycosylation, vaccines and preventative strategies should target this property.

Basic Sciences: **Mucosal and Lymphoid Tissues**
Sciences fondamentales : **Muqueuses et tissus lymphoïdes**

BS3.07

Post-Mortem Assessment of the HIV-1 Reservoir Following Medical Assistance in Death

Teslin S. Sandstrom[1, 2], Stephanie C. Burke Schinkel[2], Maria Julia Ruiz[3], Kathleen Busman-Sahay[4], Rosalie Ponte[5], Amélie Pagliuzza[3], Amélie Cattin[3], Tomas Raul Wiche Salinas[3], Syim Salahuddin[5, 6], Petronela Ancuta[3], Christopher Power[7], Jean-Pierre Routy[5], Cecilia Costiniuk[5], Mohammad-Ali Jenabian[6], Jacob D. Estes[4], Éric A. Cohen[8], Nicolas Chomont[3], Jonathan B. Angel[1, 2, 9]

1. Biochemistry, Microbiology & Immunology, University of Ottawa, Ottawa, ON, 2. Ottawa Hospital Research Institute, Ottawa, ON, 3. Université de Montréal, CHUM Research Centre, Montreal, QC, 4. Vaccine and Gene Therapy Institute, Oregon Health and Science University, Portland, OR, USA, 5. Chronic Viral Illness Service and Research Institute, McGill University Health Centre, Montreal, QC, 6. Department of Biological Sciences and BioMed Research Centre, Université du Québec à Montréal (UQAM), Montreal, QC, 7. Department of Medicine (Neurology), University of Alberta, Edmonton, AB, 8. Montreal Clinical Research Institute and Université de Montréal, Montreal, QC, 9. Division of Infectious Diseases, Ottawa Hospital-General Campus, Ottawa, ON

The accurate characterization of HIV reservoirs is key to the development of an HIV cure but hindered by the inability to safely sample deep-tissue reservoirs in persons living with HIV (PLWHIV). Here, we describe a unique opportunity in which a patient (virally suppressed on Lopinavir/r, emtricitabine and tenofovir) requested that his body/organs be donated to HIV research following medical assistance in death (MAiD).

Informed consent to autopsy and tissue collection was obtained prior to MAiD. Autopsy was performed 12hr post-mortem, and tissues were processed by a team of seven individuals from institutions in Ottawa and Montreal. Large tissue sections were obtained from the spleen, liver, lung, intestine (jejunum, duodenum, ileum, colon, rectum), thoracic and abdominal aorta, testes, brain, and lymph nodes (axillar, hilar, mediastinal, mesenteric, inguinal, cervical). Tissues were formalin-fixed or paraffin-embedded for histologic and/or DNAscope analysis, or snap frozen for the quantification of HIV RNA and DNA. Viable cells from the liver, spleen, lungs and lymph nodes were also isolated and cryopreserved for phenotypic analysis and functional assays. Levels of HIV DNA were highest in the lymph nodes (axillar, mediastinal, mesenteric, and hilar), followed by lung, colon, duodenum, liver, spleen and testes. HIV DNA and RNA were also detected within brain frontal cortex and white matter. HIV-DNAscope performed in lymph nodes revealed the presence of HIV-DNA in both $CD3^+$ T-cells and $CD3^-CD68^+CD163^+$ myeloid cells.

Although not without ethical issues, the opportunity to donate tissues/organs following MAiD may provide a sense of fulfillment during an individual's last days of life. Moreover, the ability to collect clinically-relevant information antemortem, as well as to develop a rapid autopsy/tissue processing protocol, are important research considerations. This case therefore represents an opportunity to advance our understanding of HIV reservoirs, while considering the wishes of PLWHIV who would like to contribute to HIV cure research.

***Basic Sciences:* Mucosal and Lymphoid Tissues**
***Sciences fondamentales :* Muqueuses et tissus lymphoïdes**

BS3.08

Reverse Transcript Detection to Evaluate the Contribution of Lymphoid Tissues in Viral Persistence

Henintsoa Rabezanahary, Félicien Moukambi, Gina Racine, Lynda Robitaille, Guadalupe Andreani, Jérôme Estaquier

Centre de Recherche en Infectiologie du CHU de Québec, Université Laval, Québec, QC, Quebec, QC

Whereas antiretroviral therapy (ART) administrated at day 4 suppresses viral replication in the blood and lymph nodes (LNs), ART discontinuation results in viral rebound, indicating the presence of viral reservoirs established early after infection within other lymphoid tissues (1). Although CD4 T cells are the main viral target in lymphoid tissues, the contribution of their subsets in deep tissue which are difficult to reach in humans, to the early establishment of reservoirs have been poorly evaluated (2). The main objective of the present study was to analyse the extent of early viral dissemination focusing on T cell subsets during natural infection and ART-treated rhesus macaques (RMs).

Eighteen RMs infected with SIVmac251 were used. Six of them were treated daily with ART from day 4 post-infection. Cells derived from either spleen, mesenteric and axillary/inguinal LNs were sorted in TFH ($CXCR5^+PD\text{-}1^{bright}$), naïve (TN, $CD45RA^+CCR7^+$), central memory (TCM, $CD45RA^-CCR7^+$), effector memory (TEM, $CD45RA^-CCR7^-$) and terminally differentiated cells (TDT, $CD45RA^+CCR7^-$). Cell-associated SIV reverse transcripts, DNA and RNA were quantified by RT-PCR as well as productive infectious viruses.

We demonstrate that despite ART administration, TEM and TFH $CD4^+$ T cells from the spleen and mesenteric LNs are the main early targets. We demonstrate the presence of reverse transcripts in CD4 T cells of ART-treated SIV-infected RMs suggesting that viral replication may persists in these organs.

Altogether our results supported the hypothesis that the spleen and mesenteric LNs are major reservoirs in ART-treated SIV-infected RMs. Strategy aims to cure HIV-infected individuals need to target these populations and these anatomical sites.

1. Borducchi EN, Nature, 2016 2- James BW, Nature, 2014

Funding : CIHR, CANCURE, CRC program. Fellowships : Laval University (Bourse Pierre-Jacob-Durand and Fonds de recherche sur le Sida), CHU de Québec (Formation Desjardins pour la Recherche et l'Innovation), FRQS.

Clinical Sciences: **HIV in Women, in Pregnancy and Pediatrics**
Sciences cliniques : **Le VIH chez les femmes, pendant la grossesse et en pédiatrie**

CS3.01

Time to Viral Load Suppression and Rebound Among Canadian Infants and Children Initiating cART in the Early Pediatric Initiation of CART Canada Child Cure Cohort (EPIC4) Cohort

Fatima Kakkar[1], Terry Lee[2], Jason Brophy[4], Michael Hawkes[3], Lindy Samson[4], Stanley Read[5], Hugo Soudeyns[1], Ari Bitnun[5], EPIC4 Study Team

1. CHU Sainte-Justine, University of Montreal, Montreal, QC, 2. Canadian HIV Trials Network, University of British Columbia, Vancouver, BC, 3. University of Alberta, Stollery Children's Hospital, Edmonton, AB, 4. University of Ottawa, Children's Hospital of Eastern Ontario, Ottawa, ON, 5. University of Toronto, The Hospital for Sick Children, Toronto, ON

Background: Sustained viral suppression (VS) after early initiation of combination antiretroviral therapy (cART) is a key to limiting the viral reservoir in children. However, the time to VS in children, especially infants, is not well known.

Methods: Using data from the EPIC[4] pediatric HIV cohort, the time to 1) VS (defined as 2 consecutive viral loads (VL) measured undetectable after cART initiation) and 2) Viral rebound (determined as a single VL measure >10 000 copies/ml after VS achieved) were determined using Kaplan Meir survival estimates.

Results: Out of 226 children enrolled in the EPIC[4] cohort, 130 (57.5%) received uninterrupted cART, of whom 52% were initiated on PI-based therapy, 43% on NNRTIs, and 5% on Integrase inhibitors. Overall, 127 (97.7%) achieved VS at any time after treatment initiation. Median time to VS among all children was 0.91years (IQR 0.38-3.01 years), and shortest among older children (>5 years of age) initiating cART, as compared to infants (<12 months of age) (median time 0.43 vs. 1.17 years, p=0.007). Six months after cART initiation, only 16% of infants had achieved VS vs. 62% of older children; this increased to 41% and 71% at 1 year of follow-up respectively. Thirty-six months after cART initiation, 15% of all children who achieved VS had a their first VL rebound; the risk was lowest among infants, and highest among older children (16% vs. 24%. P<0.001), and lowest among those initiated on NNRTI based regimens vs. PI based regimens (11 vs. 17%, p<0.001).

Conclusion: There was a significant difference in viral control according to age at cART initiation, with longer time to both viral load suppression, and subsequent rebound, among infants as compared to older children initiating cART. These results could have implications with respect to strategies to limit the reservoir within the different pediatric age groups.

Clinical Sciences: **HIV in Women, in Pregnancy and Pediatrics**
Sciences cliniques : **Le VIH chez les femmes, pendant la grossesse et en pédiatrie**

CS3.02

Prevention of vertical HIV transmission in Canada : A Canadian Perinatal HIV Surveillance Program Update

Laura J. Sauve[1], Joel Singer[2], Fatima Kakkar[3], Terry Lee[2], Jason Brophy[4], Deborah Money[1], Ariane Alimenti[1], Wendy Vaudry[5], Isabelle Bourcoiran[3], Jeannette Comeau[6], Alexander Wong[7], Ari Bitnun[8], Canadian Perinatal HIV Surveillance Program (CPHSP)

1. Women's Hospital and Health Centre of British Columbia, University of British Columbia, Vancouver, BC, 2. CIHR Canadian HIV Clinical Trials Network, Vancouver, BC, 3. CHU Ste-Justine, Université de Montréal, Montreal, QC, 4. Children's Hospital of Eastern Ontario, University of Ottawa, Ottawa, ON, 5. Stollery Children's Hospital, University of Alberta, Edmonton, AB, 6. IWK Health Centre, Dalhousie University, Halifax, NS, 7. Regina General Hospital, University of Saskatchewan, Regina, SK, 8. Hospital for Sick Children, University of Toronto, Toronto, ON

Objectives: To describe demographics, antiretroviral treatment during pregnancy, and vertical transmission (VT) rates in the Canadian perinatal HIV surveillance cohort of births to women living with HIV (WLWH).

Methods: 23 Canadian centres report annual data, including maternal characteristics, pregnancy combination antiretroviral treatment (cART) and infant outcomes.

Results: There have been 4638 mother-infant pairs since 1990, with 245 infants born in 2017. The geographic distribution has changed over the last decade; in 2017, 32% came from Ontario, 18% from Alberta, 17% each from Saskatchewan and Quebec. Since 1990, overall, 66% of women acquired HIV heterosexually, 23% through injection drug use (IDU) and 1% perinatally; the proportion of IDU has dropped from 36% in 1997 to 21% in 2017. In 2017, 51% of women were Black and 28% were Indigenous. Since 2013, each year there has been an average of 3 perinatally infected infants; VT dropped from 15% in 1997 to 0.8% in 2017. The proportion of pregnant WLWH receiving less than 4 weeks of continuous cART was 22% in 1997, decreasing to a low of 3.7% in 2014 but increasing again to 8.6% in 2017.The percentage who did not receive any cART prior to delivery has been stable over the last 5 years (range 2-4.5%, mean 3.5%). Among the 21 (8.6%) pregnant women who did not receive at least 4 weeks of cART in 2017, there was 1 perinatal transmission. Since 1997, of WLWH receiving greater than 4 weeks cART prior to delivery the VT rate was 0.2% (7/3334).

Conclusions: VT rates of HIV in Canada remain very low but every year there continues to be a substantial proportion of WLWH who receive suboptimal cART pre-delivery and notably a transmission in 2017. Elimination of VT should be achievable in Canada and barriers to adequate access to cART need to be overcome.

Clinical Sciences: **HIV in Women, in Pregnancy and Pediatrics**
Sciences cliniques : **Le VIH chez les femmes, pendant la grossesse et en pédiatrie**

CS3.03

Human Papillomavirus (HPV) Literacy: Perceived Risk among Positive Women Receiving HIV Specialty Care

Joanne D. Lindsay[1], Jennifer Gillis[2], Shazia Islam[3], Winnie Murombedzi[4], Tracey Conway[5], Wangari Tharao[6], Mona Loutfy[5], Claire Kendall[7], Anita Rachlis[2], Beth Rachlis[8], Anita Benoit[5], Mark Yudin[9], Gina Ogilvie[10], Ann N. Burchell[1, 2]

1. Centre for Urban Health Solutions at St. Michael's Hospital, Toronto, ON, 2. University of Toronto, Toronto, ON, 3. Alliance for South Asian AIDS Prevention, Toronto, ON, 4. Positive Living Niagara, Toronto, ON, 5. Women's College Research Institute, Women's College Hospital, Toronto, ON, 6. Women's Health In Women's Hands, Toronto, ON, 7. C.T. Lamont Primary Care Research Group, Bruyère Research Institute, Ottawa, ON, 8. Institute for Clinical Evaluative Sciences (ICES), Toronto, ON, 9. St. Michael's Hospital, Toronto, ON, 10. BC Women's Hospital and Health Centre, Vancouver, BC

Background: Women living with HIV have higher risks, than HIV negative women, for human papillomavirus (HPV)-associated cancers. Through facilitating HPV literacy workshops with positive women's groups locally and internationally, we learned that women have many questions on HPV, cancer screening and prevention. Our objectives were to explore women's knowledge of HPV, their perceived risk for HPV-associated disease, and experiences with cervical cancer screening.

Methods: Using community-based research approaches, we developed a questionnaire exploring knowledge and attitudes regarding HPV, HPV-associated disease and prevention. A Community Advisory Committee reviewed questions prior to implementation among female participants of the Ontario HIV Treatment Network Cohort Study (OCS) during their annual interview. Descriptive statistics are used to analyse women's responses.

Preliminary Results: By November 2018, 287 women completed the module. Almost half (48%) were unfamiliar with HPV. Of those familiar, knowledge gaps remained: 23% did not know that HIV increased their risk for HPV-related cancers; while over a half (56%) did not know that HPV can cause anal cancer, 72% felt they had low risk of anal cancer. On cervical cancer, 19% didn't know their risk while 61% thought they had low/no risk of cervical cancer. 42% had not been cervically screened within the past year, despite clinical guidelines for annual screening. 19% would not feel comfortable disclosing their HIV status when getting a cervical pap, while 20% did not agree that their healthcare provider even recommended an annual pap.

Significance: Quantified HPV knowledge and perceived risk among women living with HIV can inform educational outreach to improve knowledge of primary and secondary prevention of HPV-related cancers. Preliminary results highlight gaps in HPV knowledge and cancer prevention tools among positive women. Updated data is anticipated for spring 2019. Ongoing educational outreach helps guide us in using HPV literacy to improve uptake of existing prevention strategies.

Clinical Sciences: **HIV in Women, in Pregnancy and Pediatrics**
Sciences cliniques : **Le VIH chez les femmes, pendant la grossesse et en pédiatrie**

CS3.04

Practice, Support and Stigma Related to Infant Feeding Among Women Living with HIV in Canada

Isabelle Boucoiran[1], Angela Kaida[3], Lashanda Skerritt[4], Sarah Khan[5], Saara Greene[5], Logan Kennedy[6], Jason Brophy[7], Rosa Balleny[3], Karene Proulx-Boucher[2], Rebecca Gormley[3], Mona Loufty[8], Alexandra de Pokomandy[2]

1. CHU Sainte-Justine, Université de Montréal, Montreal, QC, 2. Chronic Viral Illness Service, McGill University Health Centre, Montreal, QC, 3. Faculty of Health Sciences, Simon Fraser University, Vancouver, BC, 4. Faculty of Medicine, McGill University, Montreal, QC, 5. Dept of Pediatrics, McMaster University, Hamilton, ON, 6. Women and HIV Research Program, Toronto, ON, 7. CHEO, University of Ottawa, Ottawa, ON, 8. Women's College Research Institute, Toronto, ON

Background: Avoidance of breastfeeding by women living with HIV (WLWH) continues to be a strong recommendation in Canada, because maternal antiretroviral therapy does not eliminate HIV transmission through breastmilk, and because infant feeding alternatives are available. This study describes the prevalence of breastfeeding before and after HIV diagnosis. Among women who had an incident livebirth over the follow-up period, we explored experiences of care, support, and stigma related to breastfeeding as a woman living with HIV.

Methods: Data were obtained from the baseline (2013-2015) and 18-month (2015-2017) follow-up surveys of the Canadian HIV Women's Sexual and Reproductive Health Cohort Study (CHIWOS), conducted in Quebec, Ontario, and British Columbia. Women were included if they were cisgender female and reported at least one live birth before of after HIV diagnosis.

Results: Of 913 eligible wave 1 participants, 581 reported ever breastfeeding (63.6%, 95% confidence interval 60.4-66.8%). Of the 393 livebirths that occurred after HIV diagnosis, breastfeeding was reported in 29 cases (4.4%). In contrast, of 1759 livebirths occurring before HIV diagnosis, breastfeeding was reported in 1169 cases (66.5%). Among 67 WLWH who had a live birth between waves 1 and 2, 34 (50.7%) reported access to free formula services, 21 (31.3 %) felt that they received no support regarding infant feeding practices, and 20 (29.8%) were concerned to be identified as a WLWH if they didn't breastfeed.

Conclusion: In CHIWOS, most WLWH have breastfeeding experience, however, breastfeeding was reported in less than 5% of live births after HIV diagnosis. WLWH report a lack of support regarding infant feeding and fear of unintentional HIV status disclosure despite the availability of free formula in most provinces. These results underscore the need for more resources for postpartum WLWH in the current context where breastfeeding avoidance is recommended.

Clinical Sciences: **HIV in Women, in Pregnancy and Pediatrics**
Sciences cliniques : **Le VIH chez les femmes, pendant la grossesse et en pédiatrie**

CS3.05

Higher Burden of Illness and Polypharmacy among Women Living with HIV in the CARMA Cohort

Mira Donaldson[1], Amber R. Campbell[1, 2, 3], Arianne Y. Albert[3], Mahtab Borhani[2], Ariel Nesbitt[1, 2], Helene C. Côté[3, 4], Evelyn J. Maan[2, 3], Neora Pick[2, 3, 5], Melanie C. Murray[2, 3, 5]

1. Department of Medicine, University of British Columbia, Vancouver, BC, 2. Oak Tree Clinic, BC Women's Hospital, Vancouver, BC, 3. Women's Health Research Institute, Vancouver, BC, 4. Department of Pathology and Laboratory Medicine, University of British Columbia, Vancouver, BC, 5. Division of Infectious Diseases, University of British Columbia, Vancouver, BC

Introduction: With combined antiretroviral therapy (cART), HIV-positive persons live longer, but also develop age-related comorbidities. Women living with HIV (WLWH) represent 23% of HIV-positive persons in Canada. Characterizing the burden of comorbid illness and associated medications among WLWH is essential to optimizing care.

Methods: Baseline data from 267 WLWH and 276 HIV-negative women ≥19 years enrolled in the CARMA cohort were examined. Diagnoses and medications were self-reported. Negative binomial regressions tested differences in diagnoses (excluding HIV), and prescribed medications/vitamins (excluding cART) between groups. Logistic regression examined odds of depression/anxiety/panic disorder between groups. Fisher exact tests assessed treatment differences between groups, considering diagnoses with appropriate concomitant medications as treated.

Results: WLWH were younger (median [IQR] 39.9 [33.6-46.9] vs 43.6 [31.8-54.6] years, p=0.01), less educated (40.5% vs 69.6% reached college/university, p<0.001), more likely to currently smoke tobacco (47.9% vs 31.9%, p<0.001), and have income <$15,000/y (49.0% vs 43.1%, p<0.001). Overall, women with income >$15,000/y had fewer comorbidities (IRR [95%CI] 0.85 [0.72-1.00], p=0.045) and medications (IRR [95%CI] 0.69 [0.54-0.89], p=0.003). Although younger, WLWH had 1.5 times more diagnoses (p<0.001), used 1.4 times more non-ART prescribed medications/vitamins (p<0.001), and were 1.9 times more likely to have depression/anxiety/panic disorder diagnosis than HIV-negative women (p=0.001). For the 12 most common diagnoses, similar proportions of WLWH (43.8%) and HIV-negative women (49.1%) were treated. However, WLWH were less likely than HIV-negative women to be treated for asthma (34.3% vs 58.5%, p=0.04) or osteoporosis/osteopenia (66.7% vs 100%, p=0.05).

Conclusion: WLWH have more comorbidities than their HIV-negative peers at a younger age and are more likely to experience negative social-structural factors such as low income, further increasing risk for poor health outcomes. WLWH also experience very high rates of depression/anxiety/panic disorder. Addressing mental health and social determinants of health is required to improve health outcomes among WLWH at any age.

Clinical Sciences: **HIV in Women, in Pregnancy and Pediatrics**
Sciences cliniques : **Le VIH chez les femmes, pendant la grossesse et en pédiatrie**

CS3.06

Caring for Pregnant Women Living with HIV in Saskatoon: a Retrospective Analysis of Primary Care Provided at Westside Community Clinic

McKayla R. Cozart[1], Prosanta Mondal[2], Della Magnusson[3], Kali Gartner[3, 4, 5]

1. College of Medicine, University of Saskatchewan, Saskatoon, SK, 2. Clinical Support Unit, College of Medicine, University of Saskatchewan, Saskatoon, SK, 3. Saskatoon Community Clinic, Saskatoon, SK, 4. Department of Family Medicine, College of Medicine, University of Saskatchewan, Saskatoon, SK, 5. Department of Community Health and Epidemiology, College of Medicine, University of Saskatchewan, Saskatoon, SK

Background: Saskatchewan's rate of HIV amongst women of childbearing age (15-40) is six times higher than the national rate[1]. Women living with HIV in Saskatchewan experience stigma and discrimination when accessing health care, including stigma for possible past or current substance use[2,3]. The Westside Community Clinic (WCC) is a primary healthcare site providing low barrier, interdisciplinary care to people living in Saskatoon's inner city. The clinic aims to provide culturally safe HIV primary care integrated with community-based supports to provide wrap-around care.

Methods: A retrospective chart review was completed for women who accessed prenatal care at WCC between January 2007 and December 2017. Only data from the first pregnancy was included. Kaplan-Meir analysis was used.

Results: Data from 55 women were analyzed. From this sample,45% (n=25) had unstable housing (transitional, homeless, unsafe housing), 81% (n=45) indicated prior or current substance use and 80% (n=44) were on methadone during their pregnancy. Forty percent (n=22) of women presented to the clinic with a viral load <1000 and 84% (n=46) had a viral load <1000 prior to delivery. Women with stable housing obtained an undetectable viral load faster than women with unstable housing (p=0.01). No vertical transmissions occurred.

Discussion: Pregnant HIV+ women accessing care at WCC experience complex social determinants of health, including trauma, poverty and unstable housing. In particular, housing was correlated with time to viral suppression. Despite these barriers, 84% (n=46) women achieved a viral load <1000 before delivery, and no vertical transmissions occured during the period of study. These successes demonstrate the importance of prenatal care that engages wrap-around community support.

Future Directions: Future analyses includes: time to undetectable viral load between first and second pregnancy, and time at engagement in care between first and second pregnancy. Data from these studies will support policy improvements to care and resource distribution.

Clinical Sciences: **HIV in Women, in Pregnancy and Pediatrics**
Sciences cliniques : **Le VIH chez les femmes, pendant la grossesse et en pédiatrie**

CS3.07

Prevalence and Trends of Livebirth and Therapeutic Abortion Among a Community-based Cohort of Women Living with HIV in Canada

Angela Kaida[1], Rebecca Gormley[1, 2], Kate Salters[1, 2], Allison Carter[3], Kath Webster[1], Marvelous Muchenje[4], Deborah Money[5], Lu Wang[2], Julia Zhu[2], Neora Pick[6], Alexandra de Pokomandy[7], Mona Loutfy[8]

1. Simon Fraser University, Vancouver, BC, 2. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 3. Kirby Institute, Sydney, NSW, Australia, 4. Women's Health in Women's Hands, Toronto, ON, 5. University of British Columbia, Department of Obstetrics and Gynecology, Faculty of Medicine, Vancouver, BC, 6. Oak Tree Clinic, British Columbia Women's Hospital and Health Centre, Vancouver, BC, 7. Chronic Viral Illness Service, McGill University Health Centre, Montreal, QC, 8. Women's College Research Institute, Women's College Hospital, Toronto, ON

Background: With 60% of all pregnancies among women with HIV in Canada reported as unintended, comprehensive services are essential to support pregnancy decision-making, inclusive of abortion care. To inform a rights-based sexual and reproductive care model, we assessed the prevalence and trends of therapeutic abortion and livebirth during or after an HIV diagnosis among women with HIV.

Methods: We used self-reported retrospective longitudinal data from baseline and 18-month follow-up visits among 1,422 women enrolled in the Canadian HIV Women's Sexual and Reproductive Health Cohort Study (CHIWOS). Women who reported their biological sex as female and at risk of pregnancy after their HIV diagnosis were included (n=1,144). We assessed the prevalence and age-standardized rate of livebirth and therapeutic abortion (excluding spontaneous abortion) overall and stratified by cART era (≤1999, 2000-2005, 2006-2010, ≥2011), using 2011 Canadian female Standard Population.

Results: Of 1,144 women, 342 (29.9%) reported 622 pregnancies during/after HIV diagnosis. Overall, 80 women (23.4%) reported having a therapeutic abortion, and 104 (16.7%) pregnancies were terminated. Age-standardized rates of livebirth peaked between 2000-2005 (≤1999=39.3/1000 woman-years (95%CI 28.1-50.5); 2000-2005=49.5 (34.3-64.8); 2006-2010=43.4 (33.3-53.4); ≥2011=43.8(30.8-56.8). Comparatively, the age-standardized therapeutic abortion rate overall was 10.8 (95%CI 8.2-13.4) and peaked during the pre-cART era (≤1999=15.6 (7.6-23.6); 2000-2005=8.7 (5.1-12.2); 2006-2010=10.3 (5.9-14.7); ≥2011=8.8 (4.4-13.2). The age-adjusted livebirth rate ratio for ≥2011 vs ≤1999 was 1.114 (95%CI:1.108-1.120,p<0.001); while the age-adjusted therapeutic abortion rate ratio was 0.566 (0.560-0.572,p<0.001).

Discussion: Nearly one in four women with HIV in Canada have had a therapeutic abortion, which appears comparable to the Canadian population. Livebirth rates were higher in the recent cART era (≥2011) relative to the pre-cART era, while the rate of therapeutic abortion was nearly half in recent cART compared with the pre-cART era. Access to cART may contribute to changes in pregnancy decision-making, owing to the accompanying health and HIV prevention benefits.

Clinical Sciences: **HIV in Women, in Pregnancy and Pediatrics**
Sciences cliniques : **Le VIH chez les femmes, pendant la grossesse et en pédiatrie**

CS3.08

Clinical Outcomes of Children with Perinatally Acquired HIV-1 Infection Initiated on Combination Antiretroviral Therapy Within 72 Hours of Birth in the EPIC4 Cohort

Jason Brophy[1], Doris G. Ransy[2], Fatima Kakkar[3], Michael T. Hawkes[4], Lindy E. Samson[1], Terry Lee[5], Stanley E. Read[6], Hugo Soudeyns[7], Ari Bitnun[6], for the EPIC4 Study Group

1. Department of Pediatrics, Children's Hospital of Eastern Ontario, University of Ottawa, Ottawa, ON, 2. Centre de recherche du CHU Sainte-Justine, Montreal, QC, 3. Department of Pediatrics, CHU Sainte-Justine, Université de Montréal, Montreal, Montreal, QC, 4. Department of Pediatrics, Stollery Children's Hospital, University of Alberta, Edmonton, AB, 5. CIHR Canadian HIV Trials Network, Vancouver, BC, 6. Department of Pediatrics, Hospital for Sick Children, University of Toronto, Toronto, ON, 7. Centre de recherche du CHU Sainte-Justine, and Department of Microbiology, Infectiology & Immunology and Department of Pediatrics, Université de Montréal, Montreal, QC

Background: By limiting HIV-1 reservoir size, very early initiation of treatment is thought to be important for achieving HIV-1 remission. We describe the clinical outcomes of children with perinatally acquired HIV-1 infection who were initiated on combination antiretroviral therapy (cART) within 72 hours of birth.

Methods: Children with perinatally acquired HIV-1 infection who were initiated on cART within 72 hours of birth in the Early Pediatric Initiation Canada Child Cure Cohort (EPIC[4]) study were identified and their clinical charts reviewed.

Results: Of 227 children enrolled in EPIC[4], 13 (5.7%) had initiated cART within 72 hours of birth. Six (46.2%) were female. The median age of HIV-1 diagnosis confirmation was 10 days (range 0 – 68). Five (38.5%) achieved sustained virologic suppression (SVS) with their first cART regimen; 6 (46.2%) had at least one virologic failure (n=5) or treatment interruption (n=1), but achieved SVS with a subsequent cART regimen. As judged by the healthcare team, excellent adherence during the first year of life (defined as no missed doses) was observed in 6 children, including all 5 who achieved SVS with their first cART regimen. At latest follow-up, at a median age of 5.0 years (range 0.6 – 16.9 years), 11 (84.6%) had SVS. The cumulative proportion of life with SVS ranged from 0 to 0.97 (median 0.59). Among the 5 children who achieved SVS with their first cART regimen, the age at which VL was first confirmed to be undetectable ranged from 0.18 to 1.45 years (median 0.29).

Conclusions: Only about one-third of children with perinatally acquired HIV-1 infection who were started on cART within 72 hours of birth achieved and maintained SVS with their first cART regimen. As very early effective treatment is needed to limit HIV-1 reservoir size, this may have significant implications for HIV-1 remission prospects.

Epidemiology and Public Health: **Interdisciplinary Epidemiology (Biological, Behavioural and Social) of HIV infection, Including Structural, social and Individual Determinants**

Épidémiologie et santé publique : **Épidémiologie interdisciplinaire (biologique, comportementale et sociale) de l'infection à VIH, y compris les déterminants structurels, sociaux et individuels**

EPH3.01

The Cedar Project: Intergenerational Child Welfare Experiences and HIV Viral Suppression Among Young Indigenous People Who Have Used Drugs

Kate Jongbloed[1], Sherri Pooyak[2], Margo E. Pearce[1], April Mazzuca[1], Wenecwtsin Wayne Christian[3], Richard T. Lester[1], Martin T. Schechter[1], Patricia M. Spittal[1], The Cedar Project Partnership

1. University of British Columbia, Vancouver, BC, 2. Aboriginal HIV & AIDS Community-Based Research Collaborative Centre, Victoria, BC, 3. Splatsin te Secwepemc, Enderby, BC

Background: Wellbeing is eroded when Indigenous children are removed from families as they have been through residential school and child 'welfare' systems. Emerging research demonstrates that child welfare involvement is a central concern for Indigenous people living with HIV, yet it is absent from discussions of the HIV treatment cascade. This study investigated the impact of child welfare on HIV treatment success among young Indigenous people with HIV who have used drugs.

Methods: This longitudinal analysis took place within The Cedar Project involving young Indigenous people who have used drugs in BC. Since 2011 participants living with HIV were given the option of enrolling in The Blanket Program, an individualized, culturally-safe case management approach that connects participants with a Cedar case manager. Generalized linear mixed effects models involving 52 Blanket Program participants tested for relationships between intergenerational child welfare experiences and viral suppression using data collected between 2011-2014. Child welfare involvement included having been apprehended from parents during childhood, and ever having had a child apprehended.

Results: A majority (n=41; 78.8%) of participants had been apprehended from their parents into the child welfare system. Among 43 parents, 26 (60.5%) reported having had at least one of their own children apprehended. In adjusted models, being apprehended (aOR: 0.23; 95%CI: 0.06-0.82) and having a child apprehended (aOR: 0.24; 95%CI: 0.07-0.77) were associated with reduced odds of viral suppression.

Conclusions: To our knowledge, this is the first study to demonstrate statistical links between intergenerational child apprehensions and viral suppression among young Indigenous people with HIV. Participants who had been involved in child welfare as children or as parents were over 75% less likely to be virally suppressed. Respecting Indigenous rights to self-determination over child welfare processes is urgent. Parenting and family connections must be considered a critical part of culturally-safe, healing-centered HIV care.

Epidemiology and Public Health: **Interdisciplinary Epidemiology (Biological, Behavioural and Social) of HIV infection, Including Structural, social and Individual Determinants**

Épidémiologie et santé publique : **Épidémiologie interdisciplinaire (biologique, comportementale et sociale) de l'infection à VIH, y compris les déterminants structurels, sociaux et individuels**

EPH3.02

Bridging the PrEP Gap: Characteristics of Men Who Have Sex with Men That Are Not Trying to Access PrEP but Meet Clinical Recommendations

Herak Apelian[1], Gilles Lambert[1], Erica Moodie[2], Marc Messier-Peet[1], Heather Armstrong[3], Mark Gaspar[5], Ricky Rodrigues[6], Gbolahan Olarewaju[3], Shayna Skakoon-Sparling[6], Syed Noor[6], Nathan Lachowsky[4], Daniel Grace[5], Trevor Hart[6], David Moore[3], Jody Jollymore[7], Joseph Cox[1, 2]

1. Direction Régionale de Santé Publique de Montréal, Montreal, QC, 2. McGill University, Montreal, QC, 3. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 4. University of Victoria, Victoria, BC, 5. University of Toronto, Toronto, ON, 6. Ryerson University, Toronto, ON, 7. Community-Based Research Centre for Gay Men's Health, Vancouver, BC

Background: Canadian guidelines recommend who may benefit from pre-exposure prophylaxis (PrEP). Models of access to health services help conceptualize the access trajectory. Among HIV-negative gay, bisexual, and other men who have sex with men (gbMSM) for whom PrEP is clinically recommended and who were aware of PrEP, we examined correlates of not trying to access PrEP.

Methods: The Engage study recruited sexually-active gbMSM ≥16 years in Montreal (M), Toronto (T), and Vancouver (V) via respondent-driven sampling (RDS). Participation included HIV/STI testing and a computer-assisted self-interview. Bivariate analyses stratified by city were conducted to identify potential correlates of not trying to access PrEP. Factors exhibiting similar relationships (i.e., direction of association) in each city were examined using multivariable logistic regression on pooled data with RDS weights.

Results: Among 1604 HIV-negative participants (M:968, T:245, V:391), 977 met recommendations for PrEP (RDS-adjusted %: M:48.3%, T:51.1%, V:64.4%) and 922 of these were PrEP-aware (M:86.0%, T:94.2%, V:93.1%). Of these (median age:30, range:17-73), 289 tried to access PrEP (M:24.1%, T:18.5%, V:27.1%) and 239 took PrEP (M:19.5%, T:14.8%, V:24.7%) in the past 6 months. Significant correlates of not trying to access PrEP are summarized in table 1.

Conclusion: Approximately half of the sample met clinical indications for PrEP, but less than a third of these tried to access PrEP. Understanding the discrepancy between clinical recommendations of PrEP and perception of risk remains an important step to optimize this HIV prevention strategy. Reducing barriers to medical access and increasing knowledge about PrEP were also identified as intervention strategies.

... 2

Table 1: Correlates of of not trying to access PrEP in the past 6 months among HIV-negative Engage participants for whom PrEP is recommended* and who are aware of PrEP (n=922)

	Univariable: Unadjusted Odds Ratio (95% Confidence Interval)	**Multivariable**: Adjusted Odds Ratio (95% Confidence Interval)**
Sociodemographic characteristics		
Age: <30	1.48 (1.09, 2.00)	
Level of education: less than post-secondary education	1.87 (1.17, 3.06)	
Access to medical services		
Does not have a primary healthcare provider	2.03 (1.48, 2.81)	
Knowledge, attitude and belief about PrEP, HIV treatment and prevention		
Agree or strongly agree with the following statements (ref: neutral, disagree or strongly disagree)		
"I don't feel that I am at high enough risk to use PrEP"	9.93 (6.44, 15.97)	6.15(3.30, 12.14)
"I don't think I can find a doctor that is sensitive and accepting enough of my sexual activities and choices to prescribe PrEP"	4.62 (2.28, 10.97)	4.39 (1.59, 14.87)
"I don't like the idea of being required to go to the regular medical follow-up visits involved in taking PrEP (HIV, STI and other blood tests every 3 months"	4.74 (2.89, 8.28)	2.45 (1.14, 5.60)
"I am afraid that guys being on PrEP will stop using other ways of protecting themselves"	2.48 (1.77, 3.47)	
"I am worried about the short- and long-term side effects of taking PrEP"	1.66 (1.23, 2.26)	
Disagree or strongly disagree with the following statements (ref: neutral, agree or strongly agree)		
"I know where to go to get a prescription for PrEP"	5.42 (3.64, 8.34)	2.92 (1.59, 5.56)
"If I was taking PrEP, I would most likely stop using condoms"	2.93 (2.10, 4.14)	2.88 (1.67, 5.04)
"I know enough about PrEP to tell if it's right for me or not"	2.23 (1.54, 3.30)	2.04 (1.13, 3.76)
"PrEP would allow me to have the sex I want"	2.87 (1.98, 4.25)	
"In your opinion, how effective is PrEP at preventing HIV infection?": moderately, a little or not effective (ref: completely or very effective)	6.35 (4.32, 9.60)	2.81 (1.49, 5.46)
* PrEP is recommended for those who report condomless anal sex within the past 6 months and who have either: a diagnosis of syphilis or rectal bacterial sexually transmitted infection in the past 12 months OR use of nonoccupational postexposure prophylaxis more than once OR an ongoing sexual relationship with an HIV-positive partner with substantial risk of transmissible HIV OR a High-incidence risk index (HIRI) score ≥11 (Tan et al, 2017)		
** The final model was adjusted for city and includes all statistically significant variables from the univariable analyses of the pooled data. The proportion of missing observation in the final model was 8%.		

Epidemiology and Public Health: **Interdisciplinary Epidemiology (Biological, Behavioural and Social) of HIV infection, Including Structural, social and Individual Determinants**
Épidémiologie et santé publique : **Épidémiologie interdisciplinaire (biologique, comportementale et sociale) de l'infection à VIH, y compris les déterminants structurels, sociaux et individuels**

EPH3.03

The Cedar Project: HIV-related Vulnerabilities and Experiences of Racism Among Young Indigenous People Who Have Used Drugs in Prince George and Vancouver, BC

Richa Sharma[1], Sherri Pooyak[2], Wayne Christian[3], David Zamar[4], April Mazzuca[1], Kate Jongbloed[1], Margo Pearce[5], Martin Schechter[1], Patricia Spittal[1], Cedar Project Partnership[6, 7, 8]

1. University of British Columbia, Vancouver, BC, 2. Canadian Aboriginal AIDS Network, Victoria, BC, 3. Splats'in First Nation, Enderby, BC, 4. BC Children's Health Research Institute, Vancouver, BC, 5. BC Centre for Disease Control, Vancouver, BC, 6. Carrier Sekani Family Services, Prince George, BC, 7. Vancouver Native Health, Vancouver, BC, 8. All Nations Hope, Regina, BC

Background: Indigenous scholars have highlighted the role of racism as a key structural determinant in understanding HIV infection among Indigenous peoples in Canada. Few epidemiological studies have addressed racism and HIV-related vulnerabilities among young Indigenous people who have used drugs in British Columbia (BC).

Methods: Cedar Project is a community-driven cohort study involving young Indigenous people who have used drugs in Vancouver and Prince George, BC. This cross-sectional study included data collected between August 2015-October 2016. Measure of Indigenous Racism Experiences (MIRE) interpersonal scale asked participants about their experiences of 'being treated unfairly' because they are Indigenous across nine settings on a 5-point likert scale (Never/Hardly Ever/Sometimes/Often/Very Often). Experiences of interpersonal racism were collapsed into three categories: none, low ('hardly ever'), or high ('sometimes', 'often', or 'very often'). Multinomial logistic regression models examined unadjusted and adjusted associations between variables of interest and racism.

Results: Among 321 participants, 17% (n=55) were HIV+ and 50% (n=162) were HCV+. 79% (n=255) experienced interpersonal racism in at least one setting. 32% (n=102) experienced high interpersonal racism, most commonly from police, staff from government agencies including child welfare, health personnel and in public settings. Experiencing high interpersonal racism was more likely if participants were women (UOR:2.68; 95%CI:1.33-5.41), lived in Prince George (UOR:3.30;95%CI:1.63-6.71), had their child apprehended (UOR:3.14;95%CI:1.43-6.88), denied access to shelter (UOR:2.15;95%CI:1.08-4.31), ever attempted suicide (UOR:2.69; 95%CI:1.27-5.71), recently injected opioids (UOR: 3.42;95%CI:1.14-10.23) and had traditional language spoken at home while growing up (UOR:2.67;95%CI:1.23-5.80). In adjusted analysis, child apprehension remained significantly associated with high interpersonal racism (AOR: 3.58;95% CI:1.40-9.15).

Conclusion: Young Indigenous people who have used drugs experience high levels of racism from staff across key government bodies in BC. Structural reforms rooted in cultural safety, as recommended by the Truth and Reconciliation Commission, are urgently required to address racial discrimination against Indigenous peoples across Canada.

Epidemiology and Public Health: **Interdisciplinary Epidemiology (Biological, Behavioural and Social) of HIV infection, Including Structural, social and Individual Determinants**
Épidémiologie et santé publique : **Épidémiologie interdisciplinaire (biologique, comportementale et sociale) de l'infection à VIH, y compris les déterminants structurels, sociaux et individuels**

EPH3.04

Social Determinants of HIV and other STBBIs for South and Central First Nations Communities in Saskatchewan

Stephanie Konrad[1], Stephanie Ramage-Liu[2], Mustafa Andkhoie[1], Germain Bukassa Kazadi[1], Deborah Kupchanko[1], Ibrahim Khan[1]

1. Indigenous Services Canada, Regina, SK, 2. University of Saskatchewan, Saskatoon, SK

Background: In Saskatchewan, rates of sexually transmitted blood-borne infections (STBBIs) are disproportionately higher among people living in First Nations communities. The social determinants of health refers to the social and economic constructs individuals live in, which play a significant role in influencing the burden of disease. The aim of this project was to identify socioeconomic factors that are associated with a higher burden of HIV, hepatitis C virus (HCV) and chlamydia infections in Saskatchewan First Nations communities.

Methods: An ecological design was used. Confirmed HIV, HCV and chlamydia diagnoses from the Integrated Public Health Information System were aggregated for each community. Five-year average rates from 2014-2018 were calculated for each disease using Indigenous Services Canada population counts. The following socioeconomic factors were obtained from the 2016 Census: employment, average age, marital status, household income, housing suitability, dwelling condition, population density, and social assistance. Separate multivariable linear regression models for HIV, HCV and chlamydia were used to assess the relationship between each disease's log-transformed rates and the socioeconomic factors.

Results: The five-year average rates for HIV, HCV and chlamydia in South and Central First Nations communities were 43, 225, and 1164 cases per 100,000, respectively. In the multivariable analysis, HIV and HCV rates were negatively associated with the average community household income. The rate of chlamydia was negatively associated with the average age of the community, and positively associated with the percentage of unmarried community members.

Conclusions: The findings suggest that among the determinants assessed, the main social determinant influencing HIV and HCV was an economic aspect; chlamydia appeared to be influenced by the social makeup of the community. While not available for this analysis, we acknowledge other Indigenous-specific determinants including colonialism, residential schools, racism and trauma are important to STBBI disparities and should be studied.

***Epidemiology and Public Health:* Interdisciplinary Epidemiology (Biological, Behavioural and Social) of HIV infection, Including Structural, social and Individual Determinants**
***Épidémiologie et santé publique :* Épidémiologie interdisciplinaire (biologique, comportementale et sociale) de l'infection à VIH, y compris les déterminants structurels, sociaux et individuels**

EPH3.05

Changing Landscape of Substance Use in British Columbia: a Shift Towards Intentional Fentanyl Use and Methamphetamine Use

Kristi Papamihali[1], Brittany Graham[1], Christopher Mill[1], Margot Kuo[1], Mohammad Karamouzian[2], Alexis Crabtree[1, 2], Sara Young[1], Jane A. Buxton[1, 2]

1. BC Centre for Disease Control, Vancouver, BC, 2. University of British Columbia, Vancouver, BC

Background: British Columbia (BC) declared a public health emergency in April 2016 in response to a rise in overdose deaths due to increased prevalence of fentanyl-adulterated drugs. BC Harm Reduction Services periodically surveys clients at harm reduction distribution sites to assess substance use trends and uptake of harm reduction services. In February 2015, 13% of respondents reported using fentanyl while urinalysis detected fentanyl in a third. Additionally, methamphetamine use consistently increased from 20% in 2012 to 47% in 2015. We aim to characterize patterns of drug use in BC and associated harms.

Methods: Clients of harm reduction distribution sites across BC completed a survey during summer 2018, which assessed substance use trends. Quantitative survey data were analyzed using descriptive statistics. A urine screen panel was performed by a community laboratory company and linked to survey participant data.

Results: Surveys were obtained from 486 clients and urine samples from 309 participants across BC. Self-reported past-week illicit substance use found 69% used methamphetamine, 49% used heroin, and 43% used fentanyl. Of 183 participants that had fentanyl detected in their urine, 69% reported fentanyl use. Half (52%) of participants reported inhalation/smoking as preferred method of using drugs, 34% injection, and 6% snorting. Accidental opioid overdose in the past 6 months was reported by 19% of respondents, while 14% had experienced a stimulant overdose; 57% reported witnessing an opioid overdose.

Conclusions: Discrepancies between self-reported drug use and urinalysis highlights the unpredictability of illicit drugs and the need for a safe supply. Intentional fentanyl use has tripled over 3.5 years and methamphetamine use continues to increase; these changes in behaviour have important implications when developing strategies and resources to combat the existing overdose crisis. Increased prevalence of these substances and preference for different drug use methods should inform harm reduction programming and safe use education.

Epidemiology and Public Health: **Interdisciplinary Epidemiology (Biological, Behavioural and Social) of HIV infection, Including Structural, social and Individual Determinants**

Épidémiologie et santé publique : **Épidémiologie interdisciplinaire (biologique, comportementale et sociale) de l'infection à VIH, y compris les déterminants structurels, sociaux et individuels**

EPH3.06

Syndemics in MSM: How the Co-occurrence of Health Issues Increase HIV Vulnerability

Pierre-André Marquis[1], Joanne Otis[1], Ken Monteith[2], Frédérick Pronovost[3], Ludivine Veillette-Bourbeau[1], Jessica Caruso[1], Carl Rodrigue[1], Mobilise! study group

1. Université du Québec à Montréal, Montréal, QC, 2. COCQ-SIDA, Montréal, QC, 3. RÉZO, Montréal, QC

Background: The objective is to explore the effect of the co-occurrence of health issues on HIV risk, since it increases the risk of contracting HIV (syndemic approach).

Method: In 2016-2017, MSM in the greater Montreal region completed an online survey (Mobilise!). Data from HIV-negative and HIV-unknown respondents were used (n=816). HIV risk has been defined as having had in the last 12 months at least one condomless anal intercourse, without using neither PEP nor PrEP, with an HIV-unknown partner or an HIV-positive partner with a detectable or unknown viral load. A syndemic score was created based on the presence, or not, of different health issues (psychological distress, at-risk drug use, history of STI, number of partners (≥6, 12 months), violence and discrimination, intimate partner violence and sexual abuse during childhood), for which the score ranges from 0 to 7. Multivariate logistic regressions were performed to quantify how co-occurrence of health issues influence HIV risk.

Results: Few respondents (9%) had at least one at-risk sexual behaviour during the past year and the mean syndemic score was 1.7 (SD=1.4). Results from the multivariate logistic regression indicate that the more health issues a person has, the higher is their probability of having an HIV risk: having one health issue (aOR: 1.4; p=0.506), two (aOR: 2.4; p=0.079), three **(aOR: 3.1; p=0.042)**, four **(aOR: 4.2; p=0.02)**, five **(aOR: 6.7; p=0.006)**. Latent class analyzes are underway to identify the various syndemic profiles and to better understand the interactions between these health problems across different profiles.

Conclusion: These results reinforce the importance of considering MSM health in a broader perspective and expanding HIV prevention intervention beyond at-risk sexual behaviour. Understanding how health issues are interrelated will enable us to better understand the needs of MSM and develop preventive approaches that take into account their overall health

EEpidemiology and Public Health: **Interdisciplinary Epidemiology (Biological, Behavioural and Social) of HIV infection, Including Structural, social and Individual Determinants**
Épidémiologie et santé publique : **Épidémiologie interdisciplinaire (biologique, comportementale et sociale) de l'infection à VIH, y compris les déterminants structurels, sociaux et individuels**

EPH3.07

Prospective Changes in Clinical Outcomes Among People Living with HIV Who Have Previously Achieved Virologic Suppression

Andrea Bever[1], Brittany Bingham[2], Taylor McLinden[1], Lu Wang[1], William Chau[1], Sean Grieve[1], Tim Wesseling[1], Kate Salters[1], David Moore[1], Rolando Barrios[1]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. Vancouver Coastal Health, Aboriginal Health, Vancouver, BC

Background: The STOP HIV/AIDS Program Evaluation (SHAPE) Study is a longitudinal cohort of people living with HIV (PLWH) ≥19 years old in British Columbia (BC), Canada. This descriptive analysis uses baseline survey data (collected January 2016-August 2018) and linked prospective clinical data to examine changes in clinical outcomes after enrolment.

Methods: Eligible participants were virologically suppressed (viral load [VL] <200 copies/mL for ≥3 months) at enrolment, and had ≥1 year of clinical follow-up to assess viral rebound (VL >200 copies/mL for ≥3 months); antiretroviral therapy (ART) adherence (≥80%); and ART interruptions (≥3 months). For ART adherence and interruption outcomes, participants were required to have 80% adherence in the year prior to enrolment. Pearson's chi-square or Fisher's Exact tests and Wilcoxon rank-sum tests were used to compare categorical and continuous variables across clinical outcomes, respectively.

Results: Virologic suppression at enrolment was achieved by 536 (90%) participants. Among those who met the inclusion criteria, only 15 (4%) experienced viral rebound and 24 (7%) had ≥1 treatment interruption during follow-up. In the year following enrolment, 342 (92%) were adherent to ART. In tabular analyses, we observed significant differences (p-value <0.05) in the median or proportion of participants who virologically rebounded for the following variables: age; Hepatitis C diagnosis; incarceration history; homelessness; and income. Differences in ART interruptions were observed for: age; self-reported Indigenous ethnicity; education; incarceration history; homelessness; intravenous drug use; and health authority. For ART adherence, differences were observed for age and Indigenous ethnicity.

Conclusions: Our descriptive findings demonstrate differences in clinical outcomes that should be further examined. Future research may help to identify barriers that contribute to these observed differences in virologic rebound, ART interruptions and adherence in this population. Specifically, we plan to conduct community-driven research to examine contexts and outcomes for Indigenous participants in this cohort.

Epidemiology and Public Health: **Interdisciplinary Epidemiology (Biological, Behavioural and Social) of HIV infection, Including Structural, social and Individual Determinants**

Épidémiologie et santé publique : **Épidémiologie interdisciplinaire (biologique, comportementale et sociale) de l'infection à VIH, y compris les déterminants structurels, sociaux et individuels**

EPH3.08

Relationship Between Social Isolation and Mortality Among People Living with HIV in British Columbia, Canada

Megan E. Marziali[1], Kiffer Card[2, 3], Taylor McLinden[1], Kate Salters[1], Kalysha Closson[4], Lu Wang[1], Jason Trigg[1], Viviane Lima[1, 4], Beverly Allan[1], Robert Hogg[1, 3]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. University of Victoria, Victoria, BC, 3. Simon Fraser University, Vancouver, BC, 4. University of British Columbia, Vancouver, BC

Background: Social isolation is associated with morbidity and mortality in the general population. This study investigates the relationship between social isolation and mortality among a cohort of people living with HIV (PLHIV) in British Columbia (BC), Canada

Methods: Between 2007 and 2010, 1000 PLHIV across BC were recruited via convenience sampling into the Longitudinal Investigation into Supportive and Ancillary Health Services (LISA) study. Inverse probability weighting was employed to account for the potential oversampling of individuals marginalized by socio-structural inequities. Latent class analysis (LCA) was conducted using several indicators of social isolation, including relationship status, quality of social relationships, cohabitation and social satisfaction. Multivariable logistic regression was used to assess the relationship between social isolation class and all-cause mortality.

Results: Three classes of social isolation were identified using LCA. Participants were classified as (1) socially connected (cohabitating, in a relationship, socially satisfied, and have a confidant), (2) minimally isolated (live alone, are single, not socially satisfied, and have a confidant), and (3) socially isolated (live alone, are single, not socially satisfied, and do not have a confidant). Among the 935 participants included in this analysis, 339 (36%) were categorized as socially connected, 508 (54%) were minimally isolated, and 88 (9%) were socially isolated. As of December 31st 2017, there were 228 (24%) deaths recorded among participants. Of these deaths, 67 (29%) occurred in the socially connected class, 136 (60%) in the minimally isolated class, and 25 (11%) in the socially isolated class. After adjustment for confounding, social isolation was found to be associated with mortality (aOR=1.40, 95% CI=1.04-1.90).

Conclusion: Most participants were classified as experiencing some degree of social isolation. In the adjusted analysis, social isolation was a significant predictor of death. This analysis provides support for increased programming targeted towards PLHIV who may be affected by social isolation.

Social Sciences: **Contemplating Complexities**
Sciences sociales : **Regards sur les complexités**

SS3.01

Trust, Culture, and Aging: Learning About Health Needs of Urban Indigenous Women Living/Affected by HIV in Strong Bear Women's Journey

Kerrigan Beaver[1], Angela A. Underhill[1], Andrea Breen[2], Mona Loutfy[1, 3, 4]

1. Women's College Research Institute, Toronto, ON, 2. University of Guelph, Guelph, ON, 3. University of Toronto, Toronto, ON, 4. Maple Leaf Research, Toronto, ON

Background: Through multiple stressors, including impacts of colonization, Indigenous women have become disproportionately affected by HIV. Each Indigenous woman living with/affected by HIV has a unique experience related to their health which may be shaped by their family, healthcare providers, community and/or peers. We engaged urban Indigenous women living with and/or affected by HIV in an Indigenist research method approach (Wilson, 2008) to learn about their personal healthcare journeys.

Methods: Indigenous women affected by/living with HIV were invited to participate in monthly sharing circles led by an Indigenous research coordinator to connect with one another. Sharing circle participants were invited to a drum making retreat in July 2018 that included a short demographic survey and two sharing circles. Sharing circles were recorded, transcribed, and then analyzed using thematic analysis. Participants were then invited to a drum birthing ceremony paired with member checking.

Results: 6 participants (2 ciswomen, 3 two-spirit, 1 preferred not to answer) attended the retreat and ranged in age from 34-56 (1 non-respondent). Important themes that were identified and confirmed by participants included: 1) health as a priority; 2) balancing western and traditional medicine; 3) trust as an essential component of good healthcare, and; 4) a desire for more information regarding healthy aging. Connecting to culture and community (e.g. through drumming circles, smudging, ceremonies) was emphasized as a turning point in participants' healthcare journeys. Most participants described their health in terms of the medicine wheel and discussed achieving health as a lifelong process. Several wanted to receive more health information from their relatives/Elders.

Discussion: Cultural connections contributed to changes in health behaviours for this sample. Regardless of whether traditional or Western medicine was pursued, trust in the person sharing health information was noted as vital. A relational approach to care should be considered.

Social Sciences: **Contemplating Complexities**
Sciences sociales : **Regards sur les complexités**

SS3.02

Longitudinal Analysis of HIV-Risk Factors Comparing Behavioural Bisexual Men to Men Who Only Have Sex with Men in the Momentum Health Study

Eric A. Roth[1], Shenyi Pan[2], Zishan Cui[2], Lu Wang[2], Heather Armstrong[2, 3], Ashleigh Rich[2, 3], Nathan Lachowsky[1], Kiffer Card[1, 4], Gbolahan Olarewaju[2], Paul Sereda[2], David Moore[2], Robert Hogg[2]

1. University of Victoria, Victoria, BC, 2. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 3. University of British Columbia, Vancouver, BC, 4. Simon Fraser University, Vancouver, BC

Background: Recent cross-sectional studies indicate distinctive HIV-risk factors for behavioural bisexual men compared to men who only have sex with men. Using longitudinal data spanning June 2012-July 2015, we compared sexual behaviour, demographic, psychosocial and substance use measures of behavioural bisexual men to other men enrolled in the Momentum Health Study.

Methods: Analysis used SAS 9.4 PROC GLIMMIX to construct a longitudinal generalized linear multivariable mixed model. Sexual behaviour (bisexual or same sex only) was the time-varying dependent variable, defined for each 6-month study visit. Following Bauer and Brennan (2013), we controlled for sexual partner number by analyzing only participants reporting $\geq$2 sexual partners, the minimum number for behavioural bisexual classification versus one for heterosexual and same sex behaviour.

Results: The baseline sample had 628 gay and 58 behavioral bisexual men. Over the study period, 2,725 visits, 1,973 exclusively reporting men and 132 both men and women, were recorded. We excluded 608 which reported $\leq$2 partners, 5 with no partners, and 7 exclusively heterosexual. Multivariable results showed behavioural bisexual men significantly ($p<0.05$) less likely to report condomless anal intercourse (CAI) (aOR=0.15, 95%CI=0.07-0.33), and CAI with sero-discordant/unknown sero-status partners (aOR=0.21, 95%CI=0.11-0.42). They were also younger (aOR=0.97, 95%CI=0.94-1.00), less likely to be HIV+ (aOR=0.45, 95%CI=0.22-0.97) and identify as Asian (aOR=0.07, 95%CI=0.01-0.64). Bisexual men also had lower income (aOR=0.43, 95%CI=0.22-0.83I) and education levels (aOR=0.35, 95%CI=0.20-0.62), and scored lower on a Collective Self-Esteem Scale (aOR=0.88, 95%CI=0.80-0.96), but were significantly more likely to use prescription opioids (aOR=2.53, 95%CI=1.26-5.09), crack/cocaine (aOR=1.74, 95%CI=1.04-2.90), and receive substance use treatment (aOR=2.60, 95%CI=1.22-5.53).

Discussion: Compared to Momentum participants who only had sex with men, behavioural bisexual men from the same study had significantly less high risk sex and their substance use patterns did not reflect drugs associated with HIV seroconversion. Results argue for separate analyses of behavioural bisexual men.

Social Sciences: **Contemplating Complexities**
Sciences sociales : **Regards sur les complexités**

SS3.03

What's Race Got To Do With It?: Symptoms of Anxiety and Depression in Indigenous gbMSM and gbMSM of Colour in Vancouver, Toronto, and Montreal

Gbolahan Olarewaju[1], Shenyi Pan[1], Julia Zhu[1], Heather L. Armstrong[1, 2], Shayna Skakoon-Sparling[4], Herak Apelian[6], Marc Messier-Peet[6], Ricky Rodrigues[4], Ammaar Kidwai[4], Syed Noor[4], Trevor A. Hart[4, 7], Daniel Grace[7], Joseph Cox[5], Gilles Lambert[6], Jody Jollimore[8], Nathan J. Lachowsky[1, 3], David M. Moore[1, 2]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. University of British Columbia, Vancouver, BC, 3. University of Victoria, Victoria, BC, 4. Ryerson University, Toronto, ON, 5. McGill University, Montreal, QC, 6. Direction Régionale de Santé Publique de Montréal, Montreal, QC, 7. University of Toronto, Dalla Lana School of Public Health, Toronto, ON, 8. Community Based Research Centre for Gay Men's Health, Vancouver, BC

Background: Race is a social determinant of health seldom considered when examining mental health among gay, bisexual, and other men who have sex with men (gbMSM) in Canada and gbMSM of colour may be especially vulnerable to mental health challenges as a result of their double minority position. We examined variations in anxiety and depressive symptoms by race/ethnicity among gbMSM.

Methods: From February 2017 to August 2018, gbMSM ≥16 years were recruited through respondent-driven sampling (RDS) in Vancouver, Montreal, and Toronto as part of the Engage study. Participants completed a questionnaire which included the Hospital Anxiety and Depression Scales (HADS) and were grouped based on their response to the question: "What single ethnic group or family background do you **MOST** identify with?". Univariate and mutlivariate logistic regression assessed ethnoracial differences in anxiety and depression symptomology with HADS-scores ≥8 indicating mild to severe symptoms. Estimates are not RDS-adjusted.

Results: Of 1937 gbMSM, 19% and 47% reported depressive and anxiety symptoms respectively. Compared to White gbMSM (Table 1), Latin American gbMSM were less likely to report anxious symptoms (AOR: 0.51; 95%CI: 0.33-0.79) whereas South and South-East Asian were more likely (AOR: 2.68; 95%CI:1.55-4.63). No ethnoracial differences were observed for depressive symptoms in the multivariate analysis. Indigenous gbMSM showed no significant differences in symptoms of anxiety or depression compared to White gbMSM.

Conclusions: Preliminary findings suggest that gbMSM differentially experience mental health challenges. Additional quantitative (i.e., RDS-adjusted) and qualitative research may help clarify how intersectional factors may be contributing to ethnoracial differences observed.

Table 1: Univariate and Multivariate analyses of mild to severe anxiety and depression scores by Race/Ethnicity (n=1937). Note: Age, income, and sexual identity were controlled for in multivariate models

	Anxious Symptoms		Depressive Symptoms	
Ethnicity (reference group: White)	Univariate OR (95% CI)	Multivariate AOR (95%CI)	Univariate OR (95% CI)	Multivariate AOR (95%CI)
Indigenous (n=71)	1.48 (0.90-2.44)	1.22 (0.70-2.14)	1.06 (0.57-1.98)	0.85 (0.42-1.71
African, Caribbean, Black (n=48)	1.09 (0.61-1.97)	0.78 (0.39-1.54)	1.99 (1.04-3.80)	2.07 (0.95-4.48)
Latin American (n=142)	0.62 (0.42-0.90)	0.51 (0.33-0.79)	0.99 (0.62-1.60)	1.29 (0.75-2.20)
West Asian, Arab, North African (n=85)	1.40 (0.88-2.24)	0.99 (0.59-1.69)	1.80 (1.07-3.01)	1.58 (0.86-2.89)
South Asian, South-East Asian (n=75)	2.60 (1.55-4.36)	2.68 (1.55-4.63)	0.82 (0.43-1.59)	0.60 (0.30-1.21)
East Asian (n=78)	1.60 (1.00-2.56)	1.51 (0.91-2.51)	1.00 (0.55-1.81)	0.97 (0.51-1.86)
Other (including "other", Pacific, or mixed race/ethnicity) (n=62)	1.15 (0.66-1.99)	0.88 (0.48-1.63)	1.36 (0.72-2.58)	1.12 (0.51-2.45)

Social Sciences: **Contemplating Complexities**
Sciences sociales : **Regards sur les complexités**

SS3.04

Predictors of Social Isolation Among People Living with HIV in British Columbia, Canada

Megan E. Marziali[1], Taylor McLinden[1], Kiffer Card[2, 3], Kate Salters[1], Kalysha Closson[4], Lu Wang[1], Jason Trigg[1], Viviane Lima[1, 4], Beverly Allan[1], Robert Hogg[1, 3]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. University of Victoria, Victoria, BC, 3. Simon Fraser University, Vancouver, BC, 4. University of British Columbia, Vancouver, BC

Background: Social isolation is associated with negative health outcomes. This study examines predictors of social isolation among people living with HIV (PLHIV) in British Columbia, Canada.

Methods: A total of 996 PLHIV were included in the analytical sample from the Longitudinal Investigation into Supportive and Ancillary Health Services (LISA) study (2007-2010). Populations marginalized by socio-structural inequities, including women, Indigenous persons, and people who use injection drugs, were oversampled. Inverse probability weighting was used to correct for this potential bias. Latent class analysis (LCA) was employed to distinguish classes of social isolation; indicators included quality of social relationships, relationship status, cohabitation, and social satisfaction. Multivariable multinomial logistic regression was used to identify predictors of social isolation.

Results: Using LCA, three social isolation classes were identified: (1) socially connected (cohabitating, in a relationship, socially satisfied, have a confidant) (n=364, 41%), (2) minimally isolated (live alone, are single, not socially satisfied, have a confidant) (n=540, 41%) and (3) socially isolated (live alone, are single, not socially satisfied, do not have a confidant) (n=92, 8%). Predictors of classification into latent isolation classes are outlined in Table 1.

Conclusion: Experiences of recent violence, a mental health diagnosis and an alcohol problem are significant predictors of social isolation. These results can inform future research, examining the potential impact of these factors on this outcome among PLHIV.

... 2

Table 1. Multivariable multinomial logistic regression identifying predictors of social isolation for class (2; minimally isolated) versus class (1; socially connected) and class (3; socially isolated) versus class (1; socially connected).

Variable	Class 2 vs Class 1 aOR (95% CI)	Class 3 vs Class 1 aOR (95% CI)
Gender		
Female	0.82 (0.66, 1.01)	0.47 (0.32, 0.68)
Age	1.03 (1.02, 1.03)	1.01 (0.99, 1.02)
Sexual orientation		
Straight	1.00	1.00
Gay/lesbian	1.03 (0.85, 1.25)	0.37 (0.26, 0.52)
Bisexual/other	0.76 (0.60, 0.97)	0.28 (0.17, 0.47)
Ethnicity		
Caucasian	1.00	1.00
Aboriginal	0.85 (0.70, 1.04)	0.59 (0.40, 0.87)
Other	0.93 (0.75, 1.14)	1.10 (0.77, 1.55)
Stable housing	0.45 (0.37, 0.56)	0.63 (0.45, 0.87)
Education level		
Some high school or less	1.00	1.00
High school or more	0.76 (0.64, 0.90)	1.17 (0.87, 1.58)
Employed	1.11 (0.96, 1.27)	0.77 (0.58, 1.02)
Mental health diagnosis	1.50 (1.31, 1.72)	1.43 (1.12, 1.83)
Depressive symptoms	1.42 (1.23, 1.63)	1.12 (0.87, 1.45)
Current illicit drug use	0.69 (0.60, 0.79)	0.82 (0.64, 1.07)
Ever incarceration	0.60 (0.50, 0.73)	0.55 (0.40, 0.77)
Ever IDU	1.68 (1.38, 2.06)	1.08 (0.77, 1.52)
Current alcohol problem	0.96 (0.83, 1.10)	1.56 (1.22, 2.00)
Recent violence	1.61 (1.28, 2.02)	2.05 (1.41, 2.96)
Perceived neighbourhood cohesion	0.99 (0.99, 1.00)	0.96 (0.95, 0.96)
Adherence >=95% one year after first ARV date	0.64 (0.56, 0.73)	0.75 (0.59, 0.96)
Health authority		
Interior	1.00	1.00
Fraser	2.91 (2.05, 4.13)	0.65 (0.39, 1.09)
Vancouver Coastal	3.77 (2.70, 5.27)	1.01 (0.63, 1.64)
Vancouver Island	2.50 (1.67, 3.73)	0.92 (0.51, 1.67)
Northern	2.81 (1.49, 5.28)	N/A
Acceptance of HIV		
Strongly agree	1.00	1.00
Agree	1.51 (1.32, 1.72)	2.73 (2.12, 3.51)
Neutral	1.13 (0.82, 1.55)	1.14 (0.64, 2.03)
Disagree	1.49 (1.06, 2.10)	0.49 (0.21, 1.14)
Strongly disagree	1.57 (0.80, 3.11)	0.66 (0.17, 2.66)
CD4 at interview date	1.01 (0.98, 1.04)	1.08 (1.03, 1.13)

Social Sciences: **Contemplating Complexities**
Sciences sociales : **Regards sur les complexités**

SS3.05

Prevalence and Correlates of Intimate Partner Violence among a Cohort of Women living with HIV Marginalized by Socio-structural Inequities

Kalysha Closson[1], Andrew Gibbs[2], Taylor McLinden[3], Kate Salters[3], Tian Li[3], Jason Trigg[3], Paula Braitstein[4], Neora Pick[5, 6], Julio S. Montaner[3, 6], Angela Kaida[7], Robert S. Hogg[3, 7]

1. University of British Columbia School of Population and Public Health, Vancouver, BC, 2. South African Medical Research Council, Durban, South Africa, 3. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 4. University of Toronto Dalla Lana School of Public Health, Toronto, ON, 5. Oak Tree Clinic BC Women's Hospital, Vancouver, BC, 6. Faculty of Medicine UBC, Vancouver, BC, 7. Simon Fraser University Faculty of Health Sciences, Burnaby, BC

Background: Globally, intimate partner violence (IPV) has significant health impacts on women, including worsening mental health. Among women living with HIV (WLHIV), few studies have examined the prevalence, consequences (i.e., mortality), and correlates of IPV.

Methods: Using cross-sectional survey data from 251 WLWH enrolled in the Longitudinal Investigations into Supportive Ancillary Health Services (LISA) study from 2007-2010, we examined the prevalence, consequences, and correlates of any IPV (emotional, and/or sexual, and/or physical). IPV was self-reported by asking women if they had experienced any emotional, sexual, and/or physical IPV in their lifetimes. With linked longitudinal clinical data from British Columbia's HIV Drug Treatment Program and mortality captured by the provincial vital statistics registry (up until December 31, 2017), potential correlates of all-cause mortality, including IPV, were examined using multivariable Cox proportional hazards models. Subsequently, potential correlates of IPV were examined using multivariable logistic regression models.

Results: Among the 251 WLHIV in this sample, 150 (60%) reported any IPV in their lifetimes. Sixty-three participants (25%) died during follow-up; 28% of women who experienced any IPV died compared to 20% of women who did not experience IPV. About half (54%) of participants had ever been diagnosed with depression, and 128 (51%) self-reported excessive drinking as defined by the CAGE score. In adjusted models, experiencing IPV did not significantly predict mortality (adjusted hazard ratio [aHR]=1.11, 95% confidence interval [CI]=0.82-1.50). In multivariable logistic models, IPV was associated with depression (adjusted odds ratio [aOR]=1.91, 95% CI:1.09-3.37) and excessive drinking (aOR=2.54, 95% CI=1.40-4.61).

Conclusion: Given the high prevalence of IPV and associations with depression and alcohol use, regular screening and care for IPV in HIV and substance use treatment programs and efforts to ensure trauma and violence aware care are essential for the wellbeing of WLHIV.

Social Sciences: **Contemplating Complexities**
Sciences sociales : **Regards sur les complexités**

SS3.06

Syndemic Factors Associated with Safer Sex Efficacy among Northern and Indigenous Adolescents in the Northwest Territories: Implications for HIV Prevention

Carmen H. Logie[1], Candice Lys[2], Kayley Mackay[2], Nancy Macneill[2], Analaura Pauchulo[1], Abdool Yasseen[1]

1. University of Toronto, Toronto, ON, 2. Fostering Open eXpression Among Youth (FOXY), Yellowknife, NW

Background: Syndemics approaches explore the synergy between large-scale social forces and HIV vulnerabilities, and are particularly salient for the Northwest Territories (NWT) where there are national social (e.g., food insecurity, intimate partner violence [IPV]) and health (sexually transmitted infections) disparities. Safer sex efficacy (SSE) includes knowledge, intention, and relationship dynamics for safer sex negotiation. The objective was to explore syndemic factors associated with SSE among Northern and Indigenous adolescents in the NWT.

Methods: We conducted a cross-sectional survey with an Indigenous sexual health agency with adolescents aged 13-17 in 17 NWT communities. Summary statistics and statistical comparisons were conducted, followed by crude and multivariable regression models, with a canonical link function, to compare factors associated with SSE and within gender stratifications. We conducted post-hoc sensitivity analyses among Indigenous youth.

Results: There were 610 participants (mean age: 14.2 years [SD: 1.5]; 49.5% cisgender women, 48.9% cisgender men, 1.6% transgender persons); three-quarters (n=447; 73.3%) were Indigenous. One-quarter (n=144; 23,6%) reported food insecurity and nearly one-fifth (n=111; 18.2%) IPV. Among young women, food insecurity (β: -1.89[CI: -2.98, -0.80], p=0.001) and IPV (β: -1.31[CI: -2.53, -0.09], p=0.036) were associated with lower SSE in adjusted analyses, and currently dating was associated with increased SSSE (β: 1.17[CI: 0.15, 2.19], p=0.024). Among young men, food insecurity (β: -2.27[CI: -3.39, -1.15), p=0.014) was associated with reduced SSE. Among sexually active participants (n=115), increased SSE was associated with increased condom use among young women (β: 1.40[0.19, 2.61], p=0.024) and men (β: 2.14[0.14, 4.14], p=0.036). No differences emerged by Indigenous identity across analyses.

Conclusions: Food insecurity and IPV emerged as syndemic factors associated with lower SSE—a protective factor associated with condom use among Northern and Indigenous adolescents in the NWT. Poverty and violence compromise Indigenous and Northern youth's sexual agency and in turn contribute to HIV vulnerabilities, requiring urgent attention.

Social Sciences: **Contemplating Complexities**
Sciences sociales : **Regards sur les complexités**

SS3.07

"Weaving Our Wisdoms": Using a Land-Based Approach to Optimize Whole-istic Health Among Indigenous People Living with HIV

Chad Dickie[1], Sandy Lambert[1], Valerie Nicholson[1], Sherri Pooyak[1], Renee Masching[1], Renee Monchalin[2], Stephanie Nixon[2], Marni Amirault[1], Charlotte Loppie[3], Tracey Prentice[4], Andrea F. Mellor[1], Katie N. Webb[1]

1. Canadian Aboriginal AIDS Network, Victoria, BC, 2. University of Toronto, Toronto, ON, 3. University of Victoria, Victoria, BC, 4. University of Ottawa, Ottawa, ON

Background: Indigenous land-based approaches to wellness are gaining broad attention and are increasingly used as wellness interventions with Indigenous People living with HIV/AIDS (IPHAs). The role of IPHAs in developing these wellness interventions, however, has received little attention. The Weaving Our Wisdoms (WoW) project, designed by IPHAs, Indigenous and allied researchers, is developing land-based interventions rooted in Indigenous perspectives of wellness and guided by the wisdom of Indigenous knowledge holders who have been living long-term with HIV. In this presentation, we introduce the concept of HIV Olders, a phrase coined by WoW project IPHAs to refer to IPHA leaders, and outline the characteristics of an HIV Older.

Study Design and Objectives: The WoW project engages four complementary research approaches: community-based research, Indigenous knowledge, decolonizing methods, and two-eyed seeing. Our objective is to develop land-based HIV interventions that are "woven" from Indigenous perspectives of wholistic wellness and the wisdom of HIV Olders. The team's goal is to develop these interventions to support IPHAs in building their leadership and self-care.

Preliminary Results: A land-based team meeting in Bella Bella, BC explored the concept of HIV Olders and land-based healing. Discussions were recorded and combined with field notes to identify key themes including the qualities of an HIV Older, the value of peer-to-peer engagement in the IPHA context and ways that traditional knowledge and ceremony can optimize HIV wellness. This presentation will share these findings and introduce our next phase of research; a Gathering of IPHAs to co-develop a strategy to integrate land-based healing with HIV wellness.

Conclusion: HIV Olders is a living concept; one that will grow alongside our understanding of HIV, the resources available to support wellness living with HIV, and the reconnection to teachings about wellness through the land and through culture.

Social Sciences: **Contemplating Complexities**
Sciences sociales : **Regards sur les complexités**

SS3.08

"I feel really healthy being here": Understanding What "Healthy" Means to Indigenous Women Living with HIV in a Rural Area

Jasmine Cotnam[1], Angela A. Underhill[1], Andrea Breen[2], Mona Loutfy[1, 3, 4]

1. Women's College Research Institute, Toronto, ON, 2. University of Guelph, Guelph, ON, 3. University of Toronto, Toronto, ON, 4. Maple Leaf Research, Toronto, ON

Background: Indigenous women living with HIV (IWLHIV) occupy a complex social positioning that is affected by factors such as colonization, racism, and HIV stigma, as well as the additional responsibilities associated with womanhood (e.g. caregiving). These factors coincide with social and institutional barriers that impact access to healthcare and wellbeing. We drew from community-based and Indigenist (Wilson, 2008) research methods to determine a) the healthcare needs and b) experiences of IWLHIV to inform healthcare delivery.

Methods: An Indigenous research coordinator hosted regular sharing circles with 8-14 IWLHIV from 2015-2017 in Northern Ontario. Participants were then invited to a 3-day drum-making retreat that involved cultural teachings and recorded sharing circles. The sharing circles were transcribed and analyzed using thematic analysis (Braun & Clarke, 2006). Following analysis, we hosted a dialogic member checking lunch.

Results: 6 women (5 cis, 1 trans; age range: 34-58) participated in the sharing circles. The first theme was conceptualizing institutionalized healthcare as a last resort for wellbeing; past discrimination regarding HIV, mental health, drug use, and Indigenous identity were shared. In contrast, wellbeing was discussed as a potential result of connection (to family, culture, community, and healthcare providers). Participants emphasized that connection even in close circles could be challenging due to HIV stigma. Participants used the retreat as an example of good, decolonized, holistic care. The cultural teachings, connections to one another, and high efforts in ensuring comfort contributed to this notion.

Discussion: Findings suggest that conceptualizations of care and what it means to be "healthy" need to be expanded to go beyond Western conceptions of health and illness. Building connections within and outside of healthcare institutions could be an opportunity to support IWLHIV in their healthcare journeys. We conclude by reflecting on lessons learned in this CBR, Indigenist process.

***Basic Sciences:* HIV Latency and Viral Reservoirs**
***Sciences fondamentales :* Latence du VIH et réservoirs de virus**

BS4.01

Discovery and Mechanistic Studies of Novel Suppressors of Tat-mediated HIV Expression

Jennifer Yi[1], Cole Schonhofer[1], Brandon Razooky[2], Jeanne Chiaravalli[3], Brittiny Dhital[3], Marianne Harris[4], J. F. Glickman[3], Zabrina L. Brumme[1, 4], Charles M. Rice[2], Ian Tietjen[1, 2]

1. Simon Fraser University, Burnaby, BC, 2. Laboratory of Virology and Infectious Disease, The Rockefeller University, New York, NY, USA, 3. High-Throughput and Spectroscopy Resource Center (HTSRC), The Rockefeller University, New York, NY, USA, 4. British Columbia Centre for Excellence in HIV/AIDS, Vancouver, BC

Background: Latent reservoirs harbouring dormant, replication-competent proviruses are the main obstacle to HIV eradication. A deep-latency or “block-and-lock”-based approach, which uses Pro-Latency Agents (PLAs) to inhibit viral reactivation even after PLA withdrawal or subsequent proviral stimuli, could theoretically lead to a drug-free HIV remission. The HIV Tat transactivator protein is a key enhancer of latency reversal and viral transcription. However, few PLAs that target Tat-mediated pathways are reported to additionally induce HIV deep-latency, indicating a likely need to discover and develop additional PLAs.

Methods: The Jurkat-derived “JurTat” cell line, which contains an inducible Tat-Dendra protein that in turn drives mCherry expression from an HIV LTR, was used to screen 97,152 compounds from the Rockefeller University HTSRC chemical library at 12.5 µM by high-throughput microscopy. Compounds that selectively inhibited Tat-driven mCherry expression were confirmed for activity by flow cytometry. Compounds of interest were then assessed for potential PLA properties in J-Lat cell lines containing HIV-GFP provirus, infected CEM-GXR T cells, and infected primary cells from HIV-infected donors with long-term suppressed viremia on cART.

Results: We identified 96 compounds which inhibited ≥ 50% of Tat-driven mCherry but not Dendra expression by high-throughput microscopy, of which 5 were selected for further study. The most potent compound, C11, inhibited both latency reversal in J-Lat cells and multi-cycle viral replication in CEM-GXR cells with EC50s of approximately 3.0 µM and without concomitant cytotoxicity. 10 µM C11 and other compound hits further suppressed up to 36% of PMA + ionomycin-induced infectious virus production from PBMCs isolated from 4 HIV-positive donors. Mechanistic studies suggest that C11 inhibits CDK9, a component of the host p-TEFb complex required for Tat-mediated transcription.

Conclusion: We report 5 novel inhibitors of Tat-mediated HIV expression. These compounds can be used to probe mechanisms of HIV transcription and inform ongoing “block-and-lock”-based therapeutic strategies.

***Basic Sciences:* HIV Latency and Viral Reservoirs**
***Sciences fondamentales :* Latence du VIH et réservoirs de virus**

BS4.02

Modest Reduction of IRF-1 in CD4+ Cells Could Potentially be A Novel Strategy for Limiting Systemic Spread of HIV-1 Infection.

Bernard Abrenica[1], Scott Kitchen[2], Thomas Murooka[3, 4], Blake Ball[1, 4], Ruey-Chyi Su[1, 4]

1. JC Wilt Infectious Diseases Research Centre, PHAC, Winnipeg, MB, 2. David Geffen School of Medicine, UCLA, Los Angeles, CA, USA, 3. Dept of Immunology, U of Manitoba, Winnipeg, MB, 4. Dept Medical Microbiology & Infectious Diseases, U of Manitoba, Winnipeg, MB

IRF-1, the first identified member of the interferon regulatory factor (IRF) family of transcriptional regulators is present at low level in all cell types. Its expression is highly induced by HIV-infection and is required for HIV-replication and host antiviral immunity. At the population level, a subset of Kenyan female sex workers (FSWs) who remain seronegative despite frequent exposure to HIV-1 exhibited a lower cellular IRF-1 level than most FSWs who subsequently became seropositive for HIV. We thus tested the hypothesis that maintaining a low level of IRF-1 in CD4-T cells would limit the establishment of HIV-1 infection and prevent HIV-1 transmission, without affecting proper antiviral immunity.

Methods: IRF-1 specific siRNA linked to CD4-binding aptamer (CD4-AsiCs) in 0.5% HEC gel was delivered intravaginally into Immunologically humanized BLT mice (hBLT), which were then infected with replicating HIV-1-GFP. **Results:** IRF-1-specific CD4-AsiCs were taken up by CD4+CD45+ human cells in mesentery lymph node, spleen, thymus, cervical-vaginal and rectal tissues, all with >50% reduction in cellular IRF-1 protein level. Preliminary data showed inhibition of systematic HIV-1 infection (intravaginal challenge) in the hBLT mice exhibiting constitutively reduced IRF-1. There was >70% reduction of HIV-infected cells in vaginal tissue; no detection of p24+ or HIV-GFP+ cells in blood or other tissues examined (n=3) at >2 weeks post-infection, compared to the mock-treatment controls. Furthermore, HIV-1 induced increases in the expression of antiviral gene were similarly observed in the vaginal fluids of both IRF-1-CD4-AsiCs treated and mock-treatment control hBLT mice.

Summary: Vaginal delivery of functional IRF-1-CD4-AsiCs to CD4-expression cells resulted in modest but efficient systematic reduction of cellular IRF-1 protein level and prevention of systematic HIV-1 infection. Hence, IRF-1-CD4-AsiCs could potentially be a novel strategy for limiting systemic spread of HIV-infection.

***Basic Sciences:* HIV Latency and Viral Reservoirs**
***Sciences fondamentales :* Latence du VIH et réservoirs de virus**

BS4.03

Endothelial Cells Promote HIV Infection of Resting CD4+ Cells Expressing Integrins

Catherine Card[1, 2], Bernard Abrenica[2], T B. Ball[2, 1], Ruey-Chyi Su[2, 1]

1. University of Manitoba, Winnipeg, MB, 2. Public Health Agency of Canada, Winnipeg, MB

Background: In contrast to activated CD4+ T cells, isolated resting CD4+ T cells demonstrate resistance to infection *in vitro*. However, resting CD4+ T cells can be infected *in vivo*, suggesting that tissue-derived signals increase HIV permissiveness of these cells. We evaluated the ability of endothelial cells (ECs), which are abundantly present in lymphoid tissue, to promote HIV infection of resting CD4+ T cells and investigated cell homing pathways as a potential mediator of this effect.

Methods: Primary ECs from various tissue sites were evaluated for expression of cell adhesion molecules ICAM-1, VCAM-1 and MAdCAM-1 under steady state and inflammatory conditions. Isolated resting CD4+ T cells were co-cultured with ECs for 24 hours then infected with HIV_{IIIB} *in vitro*. Six days post-infection, CD4+ T cells were analyzed by flow cytometry to measure HIV infection and cellular phenotype.

Results: ECs expressed ICAM-1 at various levels under steady state conditions. Following TNFα stimulation, ICAM-1 and VCAM-1 were upregulated on all ECs. Co-culture of resting CD4+ T cells with ECs promoted productive HIV infection of CD4+ T cells, particularly when ECs were primed with TNFα. Infected (HIV p24+) CD4+ T cells did not become activated but were enriched for cells expressing integrins αLβ2, α4β1 and α4β7, the cognate ligands for ICAM-1, VCAM-1 and MAdCAM-1, respectively.

Conclusions: Endothelial cells promoted infection of resting CD4+ T cells *in vitro*. This enhancement of infection corresponded to expression of cell adhesion molecules on ECs, which were upregulated under inflammatory conditions. CD4+ T cells expressing integrins were enriched among infected cells. Further work will use CAM- and integrin-specific blocking antibodies to further investigate cell homing molecules as mediators of HIV infection of resting CD4+ T cells in this context.

***Basic Sciences:* HIV Latency and Viral Reservoirs**
***Sciences fondamentales :* Latence du VIH et réservoirs de virus**

BS4.04

Novel Insights Into the Integration Site Profiles from Patients Latently Infected with Different HIV-1 Subtype Viruses and from Anatomically Diverse Tissue Reservoirs

Hannah O. Ajoge[1], Hinissan P. Kohio[1], Macon D. Coleman[1], Sean K. Tom[1], Katie L. Bain[1], Emmanuel Ndashimye[1], Richard M. Gibson[1], Charles C. Berry[2], Paul L. Beck[3], Deirdre L. Church[3], John M. Gill[3], Guido van Marle[3], Eric J. Arts[1], Stephen D. Barr[1]

1. Western University, London, ON, 2. University of California San Diego, La Jolla, CA, USA,
3. University of Calgary, Calgary, AB

Anatomical sites harboring latent HIV-1 are key reservoirs established early during infection. Elimination of these reservoirs is essential for eradication of the virus. All integration site analyses to date have focused on subtype B infections, despite comprising ~10% of the infections worldwide. Integration sites of these latent proviruses play critical roles in clonal expansion, persistence and reactivation of latent proviruses. To better understand the genomic environment surrounding HIV-1 proviruses and its contribution to latency in evolutionarily diverse HIV-1, we performed the largest and most comprehensive integration site analysis encompassing previously published data and new data from patients productively and latently infected with HIV-1 subtypes A, B, C and D. We also compared the integration site profiles from different anatomical sites (peripheral blood, brain, esophagus, stomach, duodenum and colon) of infected individuals. Using our newly developed integration site bioinformatics pipeline, we showed significant differences in the integration site profiles among different HIV-1 subtypes and that antiretroviral therapy altered the profile. Profiles from various anatomical sites also differed significantly from each other. The most drastic difference was seen with respect to noncanonical B-DNA (non-B DNA), genomic features we recently identified as novel determinants of integration site selection. Non-B DNA motifs are secondary structures in our genome formed by specific nucleotide sequences that exhibit non-canonical DNA base pairing. Interestingly, we showed that integration sites are enriched in/near guanine quadruplex (G4) motifs and Z-DNA motifs in latently infected individuals. These non-B DNA structures are known to exhibit potent silencing of adjacent genes. We showed that the reactivation potential of proviruses with latency reversal agents also strongly correlated with their proximity to G4 and Z-DNA motifs. Together, our findings implicate non-B DNA as a key factor in integration site targeting by diverse HIV-1 subtypes and the establishment and maintenance of latency in anatomically diverse sites.

***Basic Sciences:* HIV Latency and Viral Reservoirs**
***Sciences fondamentales :* Latence du VIH et réservoirs de virus**

BS4.05

Characterizing Latent HIV Sequences in CD4+ Subsets in Individuals on Long-term cART

Bradley R. Jones[1, 2], Rachel L. Miller[4], Olivia Tsai[4], Bemuluyigza Baraki[4], Natalie N. Kinloch[4], Hanwei Sudderuddin[4], Hawley Rigsby[5], Art F. Poon[3], Remi Fromentin[5], Nicholas Chomont[5], Jeffrey B. Joy[1, 2], Zabrina L. Brumme[1, 4]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. University of Brtish Columbia, Vancouver, BC, 3. University of Western Ontario, London, ON, 4. Simon Fraser University, Burnaby, BC, 5. Université de Montréal, Montreal, QC

Background: The presence of latent HIV in CD4+ T-cells is the main barrier to cure, but our knowledge of the proviral landscapes within naïve, central memory (CM), transitional memory (TM) and effector memory (EM) $CD4^+$ T cells remains incomplete. We characterized the genetic diversity and age distribution of HIV sequences in $CD4^+$ T cell subsets from HIV-infected individuals with long-term viremia suppression on cART.

Methods: We sorted $CD4^+$ T cell subsets from PBMCs collected from 5 participants with a median of 9 years pVL suppression on cART. Using single genome methods we amplified and sequenced Nef proviral DNA from these subsets. After maximum likelihood phylogenetic inference, the Slatkin Maddison test was used to assess whether HIV sequences from these subsets exhibited genetic compartmentalization within-host. For participants showing compartmentalization, relative migration rates between compartments were estimated using a Bayesian structured coalescent model. An additional 385 single-genome plasma HIV RNA sequences collected prior to suppressive cART (from median 11 time points over median 8 years) were available for 4 of the participants; a within-host phylogenetic method was applied to these data to estimate proviral sequence ages.

Results: We isolated 539 Nef proviral sequences from T-cell subsets (424 intact; 347 unique). Within-host latent HIV diversity varied widely (average tip-to-tip patristic distances ranged 0.021-0.12 nucleotide substitutions/site among participants). Two participants exhibited evidence of sequence compartmentalization between the subsets; in these participants, migration rates going out of naïve cells were highest. Proviral age distributions differed quite widely between the 4 participants assessed (median 10.4; max 23 years). In one participant the EM sequences were youngest ($p=0.011$) whereas in another the naïve sequences were the youngest ($p=1.3e^{-6}$).

Conclusions: HIV remission strategies may need to consider the markedly differential genetic composition of latent HIV sequences between hosts, as well as between $CD4^+$ T cell subsets within-host.

***Basic Sciences:* HIV Latency and Viral Reservoirs**
***Sciences fondamentales :* Latence du VIH et réservoirs de virus**

BS4.06

TLR Stimulation Downregulates the Immune Checkpoints LAG3 and PD-1

Colin G. Graydon[1], Monika Kowatsch[1], Allison L. Balasko[1], Julie Lajoie[1, 2], Keith R. Fowke[1, 2, 3]

1. University of Manitoba, Winnipeg, MB, 2. University of Nairobi, Nairobi, Kenya, 3. Partners for Health and Development in Africa, Nairobi, Kenya

Background: Persistent antigen stimulation of lymphocytes during HIV leads to impaired cytokine production and decreased cellular proliferation; this is known as immune 'exhaustion'. Exhausted cells express proteins known as immune checkpoints, such as lymphocyte activation gene-3 (LAG3) and programmed cell death protein-1 (PD-1), that contribute to this dysfunctionality. Toll-like receptor (TLR) stimulation during HIV infection is prevalent, but very little is known about the effects of TLR stimulation on immune checkpoint expression, particularly that of LAG3.

Objective: Determine whether and how TLR stimulation impacts immune checkpoint expression on different T cell subsets.

Approach: We stimulated healthy human PBMC *in vitro* in the presence or absence of TLR agonists including LPS and flagellin.

Results: Flagellin (TLR5 agonist), but not LPS (TLR4 agonist), consistently and significantly downregulated LAG3 and PD-1 expression on the T cell surface, as determined by flow cytometry.

Significance: Immune checkpoint blockade could encompass both arms of a "shock and kill" strategy by reversing latency through increased activation of the reservoir, while simultaneously enhancing immunity. We find that TLR stimulation, which is already being investigated for latency reversal, may also reverse immune exhaustion by reducing expression of immune checkpoints. Our study suggests that potentially LAG3 or PD-1 blockade may not be as effective when TLR agonists are used due to already reduced expression of these proteins. This is especially important for vaccines which may use TLR agonists as adjuvants.

***Clinical Sciences:* ARVs, Reservoirs and Toxicity**
***Sciences cliniques :* Antirétroviraux, réservoirs et toxicité**

CS4.01

Dolutegravir Reduces Cell Proliferation and Increases Mitochondrial Toxicities in a Telomerase Reverse Transcriptase-Expressing Cell Line

Abhinav Ajaykumar[1, 2], Anthony Y. Hsieh[1, 2], Loïc Caloren[1], Connor A. Thompson[3], Judy M. Wong[3], Hélène C. Côté[1, 2]

1. Department of Pathology and Laboratory Medicine, University of British Columbia, Vancouver, BC, 2. Centre for Blood Research, University of British Columbia, Vancouver, BC, 3. Faculty of Pharmaceutical Sciences, and Department of Medical Genetics, Faculty of Medicine, University of British Columbia, Vancouver, BC

Background: The integrase inhibitors (InSTIs) dolutegravir (DTG) and raltegravir (RAL) are increasingly used in first-line cART, but little is known regarding the short- and long-term toxicities of these drugs. Older NRTIs and PIs affect mitochondrial function and increase reactive oxygen species (ROS). Human telomerase reverse transcriptase (hTERT) can translocate to mitochondria, where it protects the organelle and mtDNA from ROS-induced damage. Our objective was to evaluate the potential cellular and mitochondrial toxicities of InSTI-containing cART, and determine whether hTERT modulates adverse drug effects.

Methods: A transformed human fibroblast cell line that utilizes the alternate lengthening of telomeres (ALT) mechanism to maintain telomeres was transduced to express either WT hTERT or mutant hTERT that cannot translocate to mitochondria. The three isogenic ALT cell lines were treated with various cART (1X C_{max}) for nine days, and then allowed to recover in media for six days. Cell viability and proliferation were determined every three days, while changes in mitochondrial mass, membrane potential, ROS and cellular apoptosis were quantified via flow cytometry on days 9 and 15.

Results: At day 9, ALT cells exposed to TDF+FTC+DTG, TAF+FTC+DTG and ABC+3TC+DTG showed significantly reduced cell proliferation compared to corresponding 0.1% DMSO control cells. Further, cells treated with DTG-containing cART showed increases in apoptosis, ROS, mitochondrial mass and membrane potential compared to cells treated with TDF+FTC+RAL or control cells. PI/r (lopinavir)-containing cART also induced apoptosis and ROS. There was no evidence of hTERT-mediated protection against DTG-associated toxicities, however WT hTERT did mitigate PI/r-induced effects. All observed toxicities were reversible upon drug removal.

Significance: InSTIs have excellent clinical tolerance but in this model, DTG induced greater mitochondrial and cellular toxicities than RAL. Furthermore, the mechanism behind DTG toxicity appears different from that of boosted-PIs. Additional investigations are required to determine how these toxicities may affect human health.

Clinical Sciences: **ARVs, Reservoirs and Toxicity**
Sciences cliniques : **Antirétroviraux, réservoirs et toxicité**

CS4.02

Lymphocyte Subset Telomeres are Shorter in HIV Slow Progressors than in HIV Non-Slow Progressors

Anthony Hsieh[1, 2], Beheroze Sattha[1], Nicole Bernard[3], Cécile Tremblay[4, 5], Hélène Côté[1, 2], for the CIHR Team on Cellular Aging and HIV Comorbidities in Women and Children (CARMA)

1. Pathology and Laboratory Medicine, University of British Columbia, Vancouver, BC, 2. Centre for Blood Research, University of British Columbia, Vancouver, BC, 3. Research Institute, McGill University Health Centre, Montréal, QC, 4. Centre de Recherche du Centre Hospitalier de l'Université de Montréal, Montréal, QC, 5. Département de Microbiologie, Infectiologie et Immunologie, Université de Montréal, Montréal, QC

Indications of immune aging, including telomere length (TL) attrition and skewed senescent/proliferative CD8 T cell distributions, likely link HIV with premature age-related comorbidities among people stable on cART. Whether these indicators also exist in HIV slow progressors (SP) is unknown. Our objective was to characterize immune subset TL in SP to determine whether naturally controlling HIV mitigates HIV-associated immune aging. We hypothesized longer TL and fewer senescent CD8 T cells in SP than in cART-controlled HIV non-slow progressors (NSP).

Live PBMCs from NSP, SP, and HIV- participants in the CARMA cohort and Canadian Cohort of HIV+ Slow Progressors were matched 1:1:1 for age and sex. CD4, proliferative (CD28+) CD8, senescent (CD28-) CD8, and B cells were sorted by FACS. TL was measured in sorted subsets containing a sufficient number of cells for multiplex qPCR (~75% of all specimens). Age, sex, ethnicity, and smoking status were considered in multivariable linear models.

Each group included n=55-57 participants aged 17-75y. All NSP (56/57 on cART), and 33/57 SP (2/57 on cART) were viral load undetectable, and their CD4 counts were similar. SP had shorter TL in all four cell subsets compared to both NSP ($P \leq 0.011$) and HIV- ($P \leq 0.004$) participants, after controlling for age, sex, and ethnicity. In similar models, SP CD4:CD8 ratio was lower ($P < 0.001$) and higher ($P = 0.024$) than those of HIV- and NSP participants, respectively. SP CD8 CD28+:CD28- ratio was also lower than that of HIV- participants ($P < 0.001$). Apart from B cell TL, these associations remained in sub-analyses that included only the elite controllers among the SP (n=25-28).

Contrary to our hypothesis, these data strongly imply that cellular aging within lymphocyte subsets may be accelerated among SP compared to HIV+ NSP and HIV- participants. This suggests that there is an immunologic cost for naturally controlling HIV.

Clinical Sciences: **ARVs, Reservoirs and Toxicity**
Sciences cliniques : **Antirétroviraux, réservoirs et toxicité**

CS4.03

Clinical Correlates of HIV-1 Reservoirs in Peripheral Blood of Children with Perinatally Acquired HIV-1 Infection with Sustained Virologic Suppression

Ari Bitnun[1], Doris G. Ransy[2], Jason Brophy[3], Fatima Kakkar[4], Michael T. Hawkes[5], Lindy E. Samson[3], Bayader Annabi[6], Amélie Pagliuzza[7], Jacob-Adams Morand[2], Laura Sauve[8], Nicolas Chomont[6], Stephanie Lavoie[9], John Kim[9], Paul Sandstrom[9], Paul A. Wender[13], Terry Lee[11], Joel Singer[12], Stanley E. Read[1], Hugo Soudeyns[10], for the EPIC4 Study Group

1. The Hospital for Sick Children, Department of Pediatrics, University of Toronto, Toronto, ON, 2. Centre de recherche du CHU Sainte-Justine, Montreal, QC, 3. Department of Pediatrics, Children's Hospital of Eastern Ontario, University of Ottawa, Ottawa, ON, 4. Department of Pediatrics, CHU Sainte-Justine, Université de Montréal, Montreal, QC, 5. Department of Pediatrics, Stollery Children's Hospital, University of Alberta, Edmonton, AB, 6. Centre de recherche du CHU Sainte-Justine, and Department of Microbiology, Infectiology & Immunology, Université de Montréal, Montreal, QC, 7. Centre de recherche du Centre hospitalier de l'Université de Montréal, Montreal, QC, 8. Oak Tree Clinic, Women's Hospital and Health Centre of British Columbia, Department of Pediatrics, University of British Columbia, Vancouver, BC, 9. National HIV & Retrovirology Laboratories, Public Health Agency of Canada, Winnipeg, MB, 10. Centre de recherche du CHU Sainte-Justine, and Department of Microbiology, Infectiology & Immunology and Department of Pediatrics, Université de Montréal, Montreal, QC, 11. CIHR Canadian HIV Trials Network, Vancouver, BC, 12. CIHR Canadian HIV Trials Network, School of Population and Public Health, University of British Columbia, Vancouver, BC, 13. Department of Chemistry and Department of Chemical and Systems Biology, Stanford University, Stanford, CA, USA

Background: HIV-1 reservoir size may have significant implications for eventual achievement of HIV-1 remission. As part of the Early Pediatric Initiation Canada Child Cure Cohort (EPIC[4]) study, HIV-1 reservoirs and correlates in peripheral blood of children who achieved sustained virologic suppression (SVS) ≥5 years were investigated.

Methods: HIV-1 reservoir size was estimated by measuring HIV-1 DNA in peripheral blood mononuclear cells and inducible cell-free HIV-1 RNA in CD4+ T cells by a prostratin analogue stimulation assay. HIV serologic responses were quantified by signal to cut-off ratio (S/CO).

Results: Of 227 enrolled, 69 had SVS ≥5 years (median age 15.5 years [IQR 12.9, 17.6]; median age of effective cART initiation 3.7 years [IQR 1.5, 8.0]; median duration of SVS 9.1 years [IQR 6.9, 12.5]). HIV-1 DNA, inducible cell-free HIV-1 RNA and S/CO correlated directly with age of effective cART initiation (rho=0.51, p<0.001; rho=0.26, p=0.036; rho-0.58 p<0.001) and age when SVS was achieved (rho=0.45, p<0.001; rho=0.25, p=0.036; rho=0.67, p<0.001) and inversely with proportion of life on effective cART (rho=-0.51, p<0.001; rho=-0.32, p=0.009; rho=-0.66, p<0.001) and proportion of life with SVS (rho=-0.42, p<0.001; rho=-0.22, p=0.076; rho=-0.69, p<0.001). Inducible cell-free HIV-1 RNA correlated with HIV-1 DNA, most particularly in children with SVS, without virologic blips, and who achieved SVS with their first cART regimen (rho=0.74, p=0.037 if cART initiated <6 months of age; rho=0.87, p<0.001 if cART initiated ≥6 months of age). S/CO correlated with HIV-1 DNA (p=0.003), but less so with inducible cell-free HIV-1 RNA (p=0.09).

Conclusions: In perinatally infected children, early effective cART can limit HIV-1 reservoir size. The prostratin analogue stimulation assay, with its lower blood volume requirement, could be a valuable method for evaluating inducible HIV-1 reservoirs in children. In addition, standard HIV serologic response may represent a practical surrogate measure of reservoir size in children with perinatally-acquired HIV-1 infection.

Clinical Sciences: **ARVs, Reservoirs and Toxicity**
Sciences cliniques : **Antirétroviraux, réservoirs et toxicité**

CS4.04

Altered Levels of Bioactive Lipids in HIV and Combination Antiretroviral Therapy-Exposed Pregnancy

Kayode Balogun[1], Richard Bazinet[2], Mona Loutfy[3, 2], Mark Yudin[4, 2], Jay MacGillivray[4], Kellie Murphy[5, 2], Sharon Walmsley[1, 2], Lena Serghides[1, 2]

1. University Health Network, Toronto, ON, 2. University of Toronto, Toronto, ON, 3. Women's College Research Institute, Toronto, ON, 4. St. Michael's Hospital, Toronto, ON, 5. Mount Sinai Hospital, Toronto, ON

Background: Pregnant women living with HIV are at an increased risk of developing adverse birth outcomes. The mechanisms that underlie these are not fully understood. Lipid mediators derived from arachidonic acid (ARA) play a pivotal role in pregnancy and fetal development. High levels of ARA and its metabolites, 5-, and 15- hydroxyeicosatetranoic acids (HETE), have been linked to pregnancy complications. Lipid abnormalities are common in people living with HIV (HIV+) and are accentuated in those receiving combination antiretroviral therapy (cART). HIV infection has been linked to overstimulation of the ARA pathways. Our objective was to investigate the effects of HIV infection and cART use during pregnancy on the levels of pregnancy-related bioactive lipids in maternal and cord plasma.

Methods: Maternal plasma (gestational week 33-38) and cord plasma samples were collected from HIV+ (n=55) and HIV-negative (n=40) pregnant Canadian women followed prospectively throughout gestation. We quantified the levels of 60 lipid mediators in maternal and cord plasma using an unbiased, quantitative liquid chromatography tandem mass spectrometry (LC-MS-MS) based lipidomics approach.

Results: Birth weight centiles were lower in the HIV+ compared to the HIV-negative group [median (IQR); 24.3 (8.9–57.0) vs 53.5 (30.8–70.8), p=0.001]. Twenty-two bioactive lipid mediators were significantly different throughout pregnancy between the two groups. Levels of ARA were significantly higher in maternal blood of the HIV+ group [median (IQR); 741.3 ng/mL (522.2–1014) vs 486.4 ng/mL (392.3–679.5), p=0.0002]. The levels of downstream metabolites of ARA 5-, 11-, and 15-HETE were also higher in the maternal blood of the HIV+ group ($p<0.01$), while levels of 5,6-, 8,9-,11, and12- dihydroxyeicosatrienoic acids were lower in the cord blood of the HIV+ group ($p<0.0001$).

Conclusion: Our data suggest that exposure to HIV/cART during pregnancy is associated with lipidomic profile alterations, including overstimulation of the metabolism of pregnancy-relevant bioactive lipids of the ARA pathways.

Clinical Sciences: **ARVs, Reservoirs and Toxicity**
Sciences cliniques : **Antirétroviraux, réservoirs et toxicité**

CS4.05

Switching to Raltegravir and Dolutegravir Is Associated with Weight Gain without Metabolic Changes

Jun Chen[1, 2, 3], Costas Pexos[1, 2], Stephane Isnard[1, 2], Vikram Mehraj[1, 2, 4], Rayoun Ramendra[1, 2], Hongzhou Lu[3], Jean-Pierre Routy[1, 2, 5]

1. Chronic Viral Illness Service, McGill University Health Centre, Montreal, QC, 2. Research Institute of the McGill University Health Centre, Montreal, QC, 3. Department of Infectious Diseases, Shanghai Public Health Clinical Center, Shanghai, China, 4. CR-CHUM, Université de Montréal, Montreal, QC, 5. Division of Hematology, McGill University Health Centre, Montreal, QC

Background: Integrase strand transfer inhibitors (INSTIs) offer new therapeutic option to treating HIV-infection. We assessed whether INSTIs are associated with weight gain and metabolic changes among subjects switching to INSTIs.

Methods: We retrospectively reviewed medical records of all patients that were followed up at McGill University Health Centre in Montreal, between 2008 and 2018. The inclusion criteria were patients who: 1) Switched to antiretroviral therapy containing one of the two most prescribed INSTIs i.e. raltegravir (RAL) or dolutegravir (DTG) for at least one year; 2) Sustained undetectable viral load during follow up. The exclusion criteria were patients with diabetes, hypertension, HCV or HBV co-infection.

Results: A total of 205 participants (75 and 130 switched to RAL and DTG, respectively) who met the inclusion criteria were enrolled. The weight of the participants in both groups did not change during the two years prior switching. However, after switching to INSTIs for one year, patients receiving RAL gained a median of 2.3 kg (95% confidence interval (CI):1.0-3.5, *P*=0.0006), which increased to 4.3kg (95% CI: 1.8-6.8, *P*=0.001) after two years of switching. For patients in DTG group, a marginal increase of weight was observed after one year of switching (0.9 kg, 95% -0.1-2.0, *P*=0.068). After two years, the weight gain in this group increased to 2.3kg (95% 0.3-4.4, *P*=0.028). The weight gain in the RAL group did not significantly differ from the one in the DTG group 2 years after switch (*P*=0.223). Blood glucose, total cholesterol and triglycerides levels among participants in both groups did not changed overtime. Changes in blood glucose and lipid profiles in the RAL groups were comparable to that in DTG group at year 2.

Conclusion: Switching to RAL and DTG is associated with weight gain without metabolic changes.

Clinical Sciences: **ARVs, Reservoirs and Toxicity**
Sciences cliniques : **Antirétroviraux, réservoirs et toxicité**

CS4.06

Epithelial Gut Damage and Microbial Translocation Are Associated with CMV Co-infection in ART treated People Living with HIV

Rayoun Ramendra[1, 2, 3], Vikram Mehraj[1, 2, 4], Stéphane Isnard[1, 2], Franck P. Dupuy[1, 2], Nikola Kokinov[1, 2], Madeleine Durand[4], Carl Chartrand-Lefebvre[4], Cécile Tremblay[4, 5], Jean-Pierre Routy[1, 2, 6], Montréal Primary HIV infection study group, Canadian HIV and Aging Cohort

1. Research Institute of McGill University Health Centre, Montréal, QC, 2. Chronic Viral Illness Service, McGill University Health Centre, Montréal, QC, 3. Department of Microbiology and Immunology, McGill University, Montréal, QC, 4. Centre de Recherche du Centre Hospitalier de l'Université de Montréal, Montréal, QC, 5. Département de Microbiologie, Infectiologie et Immunologie, Université de Montréal, Montréal, QC, 6. Division of Hematology, McGill University Health Centre, Montréal, QC

Background: Despite the success of antiretroviral therapy (ART), people living with HIV (PLWH) still present with CD8 T cell elevation, increased epithelial gut damage, microbial translocation, and increased risk for the development of non-AIDS events. CMV co-infection in PLWH has been previously associated with CD8 T cell elevation and increased risk of cardiovascular and neurocognitive dysfunction. Herein, we investigated whether PLWH with CMV co-infection have increased epithelial gut damage, microbial translocation, and systemic immune activation.

Methods: Study samples were collected in 158 PLWH (126 CMV+ vs. 32 CMV-) compared to 29 uninfected controls (15 CMV+ vs. 14 CMV-). CD4 and CD8 T cell counts, plasma HIV viral load (VL), epithelial gut damage (intestinal fatty acid binding protein I-FABP), microbial translocation (lipopolysaccharide LPS, soluble CD14, and (1->3)-β-D-Glucan (βDG)), B cell activation (total IgG, IgM, and IgA), and inflammatory markers (Kynurenine, Tryptophan, CXCL13, IL-6, and IL-8) were measured.

Results: Median CD4 T cell counts and VL were similar in both CMV-infected and CMV un-infected PLWH. CMV co-infected PLWH had elevated CD8 T cell counts (p=0.004), I-FABP (p=0.03), LPS (p=0.007), βDG (p=0.005), Kynurenine/Tryptophan ratio (p=0.03), CXCL13 (p=0.004), IL-6 (p=0.05), and IL-8 (p=0.05) compared to CMV-uninfected PLWH. These differences persisted in both ART-treated (n=71) and ART-naïve (n=87) PLWH. Such differences were not observed between CMV-infected and CMV-uninfected HIV participants.[SI1]

Conclusion: CMV co-infection was associated with increased epithelial gut damage, microbial translocation, and inflammation in PLWH. CMV co-infection explain in part the persistence of inflammation and increased risk of non-AIDS events despite long-term ART in PLWH.

Epidemiology and Public Health: **Evaluations of Public Health Policies, Programs or Interventions**
Épidémiologie et santé publique : **Évaluation des politiques, programmes ou interventions en santé publique**

EPH4.01

Sexual Health Clinic Nurses Preferred Over Family Physicians for PrEP Delivery

Darrell H. Tan[1, 2, 3], Allison Chris[4], Alexandre Schnubb[2], David C. Knox[5], James Wilton[6], Rita Shahin[4], Arlene Chan[7], Sharmistha Mishra[1, 2, 3], Daniel Grace[8], Tim Rogers[9], Ahmed M. Bayoumi[2, 3], John Maxwell[10], Isaac I. Bogoch[11, 3], Malika Sharma[12, 3]

1. Division of Infectious Diseases, St. Michael's Hospital, Toronto, ON, 2. Centre for Urban Health Solutions, St. Michael's Hospital, Toronto, ON, 3. Department of Medicine, University of Toronto, Toronto, ON, 4. Toronto Public Health, Toronto, ON, 5. Maple Leaf Medical Clinic, Toronto, ON, 6. Ontario HIV Treatment Network, Toronto, ON, 7. Women's College Hospital, Toronto, ON, 8. Dalla Lana School of Public Health, University of Toronto, Toronto, ON, 9. Canadian AIDS Treatment Information Exchange, Toronto, ON, 10. AIDS Committee of Toronto, Toronto, ON, 11. Division of Infectious Diseases, Toronto General Hospital, Toronto, ON, 12. Casey House, Toronto, ON

Background: More providers are needed to deliver PrEP at scale. We examined intentions to seek PrEP from family physicians (FPs) and sexual health clinic nurses (RNs) within an implementation science study on decentralizing PrEP delivery to gay, bisexual and other men who have sex with men (gbMSM).

Methods: Strategy A was a knowledge dissemination intervention in which community organizations distributed info-cards to gbMSM considering PrEP. Men used the cards to view an online module and meet with their FPs, who could use the card to complete an accredited e-module about PrEP. Strategy B was an implementation intervention in which gbMSM could instead access PrEP from sexual health RNs. Participants completed an optional survey at baseline and 6 months. We used descriptive statistics to characterize the sample and logistic regression to identify characteristics associated with intentions to seek PrEP from FPs vs RNs.

Results: Of 156 men completing the baseline survey, median (IQR) age was 31 (25,38) years, 98.7% were cisgender male and 46.5% had a prior bacterial STI. Most (n=106, 68.4%) had a FP, of which only 58.8% were 'out' to them. Of 93 respondents with a FP and wanting to start PrEP, 33.7% vs 66.3% intended to use Strategy A vs B respectively (p<0.0001). In univariable analyses, characteristics associated with intent to approach FPs included being 'out' to that doctor (OR=9.61, 95%CI=2.96,31.21), older patient age (OR=1.04/year, 95%CI=1.00,1.09) and very good/excellent physician communication skills (OR=3.10, 95%CI=1.20,7.97). In multivariable analysis, being 'out' was the only significant predictor (aOR=7.44, 95%CI=1.45,38.27). At 6-months, only 6/31 (19.4%) respondents had pursued Strategy A, while RNs had provided PrEP to 135 men under Strategy B.

Conclusions: Sexual health clinic RNs were preferred over FPs for PrEP. Multiple strategies are needed to increase numbers of PrEP providers, including interventions to help gbMSM feel comfortable disclosing sexual orientation.

Epidemiology and Public Health: **Evaluations of Public Health Policies, Programs or Interventions**
Épidémiologie et santé publique : **Évaluation des politiques, programmes ou interventions en santé publique**

EPH4.02

Making the Case for Physiotherapy: Increasing Equitable Access to Rehabilitation for People Living with HIV

Puja Ahluwalia[1], Kate Murzin[1], Jill Furzer[2]

1. Realize, Toronto, ON, 2. University of Toronto, Toronto, ON

Context: Physiotherapy has a well-known role to play in improving, and maintaining function for people living with chronic health conditions, including people living with HIV (PLWHIV). To date no comprehensive analysis of the costs associated with offering publicly-funded physiotherapy services for PLWHIV has been completed.

Methods: A registered physiotherapist with expertise in HIV and rehabilitation developed a care plan in which regular physiotherapy assessment and, if necessary, treatment, is integrated into routine primary care for PLWHIV, including those with other chronic health conditions. A Health Economist then used this information to develop a four-stage simulation model to follow 10,000 simulated PLWHIV age 50 and older over 32 years. Cost-utility was assessed under four scenarios:

1. Health system costs incurred when no physiotherapy is offered
2. Health system costs when either low or high intensity physiotherapy is offered
3. Health and social costs incurred when no physiotherapy is offered
4. Health and social costs of offering low or high intensity physiotherapy

Results: Under all scenarios, implementation of publicly-funded physiotherapy services was cost-effective. The least cost-effective option – public funding for high intensity physiotherapy - costs only $2,932 per QALY gain. The other scenarios result in both a QALY gain, and cost savings. Cost savings result from prevention of chronic health conditions, prevention of adverse events, and mitigation of health system usage.

Discussion: Physiotherapy for PLWHIV is cost-effective from both a health and societal perspective. Both the government and individual will experience cost savings with publicly-funded physiotherapy. Additionally, as physiotherapy can decrease pain, improve endurance, and have an overall positive impact on quality of life for PLWHIV, this change could improve participation in community.

Implications: *Realize* is connecting with provincial and territorial policy makers to discuss the results of this analysis and advocate for changes to the formulary of insured services for PLWHIV.

Epidemiology and Public Health: **Evaluations of Public Health Policies, Programs or Interventions**
Épidémiologie et santé publique : **Évaluation des politiques, programmes ou interventions en santé publique**

EPH4.03

Preliminary Enrollment Into the Ontario PrEP Cohort Study Includes a Large Number of gbMSM at High HIV Risk

David D. Absalom[1], Ryan Lisk[2], Molly Bannerman[3], Darrell Tan[1, 4, 5]

1. Centre for Urban Health Solutions, St. Michael's Hospital, Toronto, ON, 2. AIDS Committee of Toronto, Toronto, ON, 3. Women and HIV/AIDS Initiative, Toronto, ON, 4. Division of Infectious Diseases, St. Michael's Hospital, Toronto, ON, 5. Department of Medicine, University of Toronto, Toronto, ON

Background: As pre-exposure prophylaxis (PrEP) usage increases, it is important to monitor real-world patient outcomes through longitudinal cohorts. We describe the preliminary enrollees in the Ontario PrEP Cohort study (ON-PrEP).

Methods: ON-PrEP is an open cohort study of HIV-negative individuals using PrEP, including clinical, questionnaire, and laboratory data. Recruitment is ongoing through 10 sites in 6 cities province-wide, complemented by outreach activities with 20 community-based organizations. Target enrollment is n=1250, and includes oversampling of specific Ontario priority populations including 100 African/Caribbean/Black (ACB) individuals, 100 cisgender women and 20 transgender women. We used descriptive statistics to summarize the demographics, HIV risk profile, and perceived HIV risk of the initial cohort participants at baseline.

Results: Of 360 participants enrolled to date, 300 had data available and were included in this analysis. Participants were overwhelmingly gay/bisexual/men who have sex with men (gbMSM, 94%), while those from other priority populations included 20 (6.7%) ACB individuals, 2 (0.7%) cisgender women, and 2 (0.7%) transgender women. Most (79.3%) participants were White and median age was 38 (interquartile range 20-78) years. Among the 282 gbMSM, most (98.2%) met ≥1 Canadian guideline indication for PrEP including testing positive at baseline for syphilis (n=26), rectal gonorrhea (n=19), or rectal chlamydia (n=28); scoring ≥11 on the HIV Incidence Risk Index for MSM (n=238), or recurrent PEP use (n=12). Participants rated their likelihood of acquiring HIV in the next year without PrEP at a median of 39 (interquartile range 20–67) on a scale of 0-100. However, most (46.5%) gbMSM reported feeling only "a little bit concerned" with their current level of HIV risk.

Conclusions: Preliminary enrollment into ON-PrEP includes many gbMSM at high HIV risk, but insufficient numbers of ACB individuals and women. Expanded community-based recruitment strategies are needed to capture the experiences of communities most impacted by HIV in Ontario.

Epidemiology and Public Health: **Evaluations of Public Health Policies, Programs or Interventions**
Épidémiologie et santé publique : **Évaluation des politiques, programmes ou interventions en santé publique**

EPH4.04

Clustering of HIV Acquisition Risk with Attitudes to Prevention: Evaluating the Long-term Impacts of PrEP in the Gay, Bisexual and Men Who Have Sex with Men Community

Michael A. Irvine[1], Travis Salway[2], Troy Grennan[2], Jason Wong[2], Mark Gilbert[2], Daniel Coombs[1]

1. University of British Columbia, Vancouver, BC, 2. BC Centre for Disease Control, Vancouver, BC

Pre-exposure prophylaxis (PrEP) is a prevention tool that has the potential to rapidly decrease the ongoing transmission of HIV. As use of PrEP increases in communities across Canada significant questions remain around its likely long-term impact on new infections and diagnoses. One significant question is how willingness to use PrEP correlates with risk of HIV acquisition and what the long-term impacts of this would be. We explore this question within the British Columbian gay, bisexual and men who have sex with men (GBMSM) population using the 2014 sexual health survey SexNow. We performed a clustering analysis on the survey data to divide the population into categories associated with their reported risk of HIV exposure as well as their reported testing habits and attitudes towards PrEP. Three clusters within the survey were identified. The largest cluster (53%) had a relatively lower rate of sexual encounters (mean 8.7 per year), and were only moderately interested in using PrEP (33.5%). The second largest cluster (35.8%), had the highest number of sexual encounters (mean 22.2), with a higher interest in PrEP than cluster one (41.8%). The smallest cluster (11.2%) had a medium rate of sexual encounter (mean 14.8), and a very high interest in using PrEP (100%). Other cluster characteristics were also explored including age, income and stigmatization.

These clusters were then applied to an infectious disease model in order to determine the outcome of PrEP use based on willingness to use PrEP in the next year or interest in PrEP. The model indicates that 11% (95% credible interval 3% - 14%) of new infections would be averted after five years if all individuals who indicated they were interested in PrEP adopted it. Our results underscore the importance of incorporating behavioural data into models when predicting the impact of future public health interventions.

Epidemiology and Public Health: **Evaluations of Public Health Policies, Programs or Interventions**
Épidémiologie et santé publique : **Évaluation des politiques, programmes ou interventions en santé publique**

EPH4.05

Supporting First Nations Community Implementation of Tracks: Survey of Determinants of HIV and Hepatitis C Among Indigenous Peoples in Canada

Kathleen Lydon-Hassen[1], Mustafa Andkhoie[2], Nnamdi Ndubuka[3], Deborah Kupchanko[2], Ibrahim Khan[2], Leigh Jonah[1], Grace Akinjobi[3], Beverley Missens[4], Amanda Nelson[4], Nadia Lapczak[1], Dana Paquette[1]

1. Public Health Agency of Canada, Ottawa, ON, 2. Indigenous Services Canada, Regina, SK, 3. Northern Inter-Tribal Health Authority, Prince Albert, SK, 4. Participating Community, First Nations Community, SK

Background: Indigenous peoples continue to be over-represented in Canada's HIV epidemic. Indigenous peoples represented 4.9% of Canada's population in 2016 but comprised an estimated 11.3% of new HIV infections that year. The rate of newly diagnosed Hepatitis C was 3 times higher in First Nations communities than the overall Canadian population in 2016. There is a lack of information on factors associated with higher rates, particularly in First Nations communities. Integrated bio-behavioural surveillance systems such as *Tracks: Survey of determinants of HIV and hepatitis C* assess the burden of HIV, hepatitis C, determinants of risk, access to and use of harm reduction, testing and treatment services thereby increasing understanding of the underlying determinants of these infections.

Description: The *Tracks Survey among Indigenous Peoples* (formerly known as *A-Track*) was piloted in 2011 in Regina, Saskatchewan. In 2017-2018, First Nations communities, the Northern Inter-Tribal Health Authority, Indigenous Services Canada and the Public Health Agency of Canada collaborated towards implementing a *Tracks* survey in community settings in Saskatchewan. This unique collaboration was grounded in community involvement, participatory research, community ownership and control of data. An evaluation focussed on survey acceptability during implementation was developed to inform future surveys in similar settings.

Results: From September to November 2018, two Saskatchewan First Nations communities successfully implemented a *Tracks* survey with support from community leadership, community health centres and First Nations and federal public health authorities. Early community engagement, mutual respect, open communication and flexibility were key factors to success. An evaluation report will be shared with all parties. With community agreement, aggregate data will contribute to national estimates of HIV and hepatitis C prevalence.

Conclusion: This first *Tracks* survey implemented by First Nations communities will inform community public health programs and together with lessons learned will help enhance future *Tracks* surveys in Indigenous communities.

Epidemiology and Public Health: **Evaluations of Public Health Policies, Programs or Interventions**
Épidémiologie et santé publique : **Évaluation des politiques, programmes ou interventions en santé publique**

EPH4.06

An Evaluation of the Provincial Infectious Syphilis Partner Notification Program Among Men who Have Sex with Men in British Columbia, Canada

Christine Lukac[1], Theodora Consolacion[2], Venessa Ryan[2], Emma Cumming[2], Geoffrey Ford[2], Bobbi Brownrigg[2], Gina Ogilvie[1, 3], Mark Gilbert[1, 2], Troy Grennan[1, 2], Jason Wong[1, 2]

1. University of British Columbia, Vancouver, BC, 2. BC Center for Disease Control, Vancouver, BC, 3. Women's Health Research Institute, Vancouver, BC

Background: Infectious syphilis rates have been increasing in British Columbia (BC), primarily among gay, bisexual, and other men who have sex with men (gbMSM), among who over 40% are living with HIV. Partner notification (PN) is one strategy to address this increase by ensuring sexual partners are notified of possible exposure, and referred for testing and treatment. We sought to compare the outcomes of patient-initiated versus provider-initiated PN.

Methods: PN of infectious syphilis is centrally coordinated at the BC Centre for Disease Control. We evaluated PN outcomes along a cascade-of-care: the proportion of partners notified, tested or treated, and diagnosed with infectious syphilis. The numerator of each indicator is the denominator of the subsequent indicator where the first denominator is the number of notifiable partners reported. Chi-square tests compared PN outcomes of patient-initiated versus provider-initiated PN.

Results: In 2016, 648 gbMSM were diagnosed with infectious syphilis, of which 568 (88%) discussed PN with providers and 281 (50%) named at least one notifiable partner. 161 (57%) gbMSM chose patient-initiated PN for 235 partners (mean 1.5, standard deviation [SD] 1.0 partners/case), and 179 (64%) gbMSM chose provider-initiated PN for 817 partners (mean 4.7, SD 6.5 partners/case). For patient-initiated compared to provider-initiated PN, a greater proportion of partners were notified of syphilis exposure (211/235 90% vs. 573/817 70%; $P = 1.9x10^{-9}$). There was no difference in the proportion tested or treated (183/211 87% vs. 517/573 90%; $P = 2.0x10^{-1}$), or diagnosed with syphilis (30/183 16% vs. 66/517 13%; $P = 2.7x10^{-1}$).

Conclusion: Patient-initiated and provider-initiated PN showed similar outcomes. However, a greater proportion of partners were notified by patients compared to providers. These findings highlight the need to support both methods of PN to manage increased work load arising from increases in incidence of infectious syphilis.

Social Sciences: **Considering Equity and Policy Development**
Sciences sociales : **Les faits sur l'équité et l'élaboration des politiques**

SS4.01

"Just knowing I don't have hep C makes me feel like a new person": Working Toward Equitable Access to Hepatitis C Treatment Among Indigenous People in Canada

Margo E. Pearce[1], Kate Jongbloed[2], Lou Demerais[6, 3], Wunuxtsin M. Christian[5], Heather MacDonald[4], Richa Sharma[2], Eric Yoshida[2], Neora Pick[7], Patricia M. Spittal[2], Marina B. Klein[8]

1. Canadian HIV Trials Network, Simon Fraser University, McGill University, Vancouver, BC, 2. University of British Columbia, Vancouver, BC, 3. Cedar Project Partnership, Vancouver, BC, 4. Anishnaabeg of Naongashiing, Sudbury, ON, 5. Secwepemc Nation, Cedar Project Partnership, Enderby, BC, 6. Cree/Metis, Vancouver Native Health Society, Vancouver, BC, 7. Oak Tree Clinic, BC Women's Hospital, Vancouver, BC, 8. McGill University Health Centre, Canadian HIV Trials Network,, Montreal, QC

Background: Historical and ongoing impacts of colonization have led to the overrepresentation of Indigenous people impacted by substance use and HCV infection in Canada. It is critical to ensure Indigenous people's equitable access to new DAA HCV treatments. Identifying culturally-safe, healing-centred approaches that support the wellbeing of Indigenous people living with HCV is an essential step toward this goal.

Methods: Forty-five semi-structured interviews were carried out with Indigenous participants from the Cedar Project (n=20, Vancouver & Prince George, BC) and the Canadian Coinfection Cohort (n=25, Vancouver, Sudbury, ON, Regina, SK). In addition, 10 HCV treatment providers were interviewed (n=4 BC, n=4 ON, n=2 SK). Interpretive description identified themes to inform clinical approaches and public health programming. Themes and related recommendations were validated by Indigenous health experts and those with lived experience prior to coding and re-contextualization.

Results: Among HCV-affected participants, 60% were women, the median age was 36 years, 71% were living with HIV/HCV co-infection, 47% were using injection drugs at the time of the interview, and 27% had received DAA HCV treatment and been cured. Among HCV treatment provider participants, 60% were women, the median age was 47 years, the median number of years treating HCV was 18, and 40% were specialists. All participants' recommendations expanded understandings of systemic and individual barriers to HCV treatment. Three broad themes were identified: 1) understand colonization as a determinant of health and wellness among Indigenous people affected by HCV; 2) create and maintain trust within treatment provider-patient relationships; 3) identify, build, and strengthen community circles of care.

Conclusion: There are several pragmatic ways to integrate Truth and Reconciliation as well as Indigenous concepts of whole-person wellness into the HCV continuum of care. HCV treatment providers have an opportunity to create greater equity and support long-term wellness of Indigenous patients.

Social Sciences: **Considering Equity and Policy Development**
Sciences sociales : **Les faits sur l'équité et l'élaboration des politiques**

SS4.02

Contraceptive Choice Among Women Living with HIV and HIV Negative Women in the CARMA Cohort Study (CTN277)

Chadni Khondoker[1, 2], Angela Kaida[3], Amber R. Campbell[1, 2, 4], Anna Marquez[2], Emilie Russell[5], Helen C. Cote[6, 7], Chelsea Elwood[2, 6, 8], Neora Pick[2, 6, 9], Arianne Albert[6], Evelyn Maan[6], Jerilynn C. Prior[5], Jason Brophy[10], Melanie C. Murray[2, 6, 9]

1. Department of Integrated Sciences, University of British Columbia, Vancouver, BC, 2. Oak Tree Clinic, BC Women's Hospital, Vancouver, BC, 3. Faculty of Health Sciences, Simon Fraser University, Vancouver, BC, 4. Department of Experimental Medicine, University of British Columbia, Vancouver, BC, 5. Faculty of Medicine, University of British Columbia, Vancouver, BC, 6. Women's Health Research Institute, BC Women's Hospital, Vancouver, BC, 7. Department of Pathology & Laboratory Medicine, University of British Columbia, Vancouver, BC, 8. Department of Obstetrics and Gynecology, University of British Columbia, Vancouver, BC, 9. Division of Infectious Disease, University of British Columbia, Vancouver, BC, 10. Children's Hospital of Eastern Ontario, University of Ottawa, Ottawa, ON

Background: An estimated 60% of pregnancies among women living with HIV (WLWH) in Canada are unintended. Supporting WLWH to prevent unintended pregnancy is critical for improving maternal health and preventing perinatal HIV transmission. Hormonal contraceptive use is lower among WLWH compared to HIV-negative women; reasons for this being largely unexplored. We measured and compared the prevalence of overall contraceptive use and estrogen-containing contraceptives (ECC) use among WLWH and HIV-negative women. We then examined relation of comorbidities, drug contraindications, and smoking with reported contraceptive method.

Methods: Contraceptive use in the last month was compared between 83 WLWH and 62 HIV-negative women, aged 16-49, sexually active, and enrolled in the CARMA cohort from 2012-2017. We measured and compared proportion of women with concomitant drug interactions, medical comorbidities, and smoking that may influence prescribing of ECC. Fisher's exact test was used to compare characteristic distribution stratified by HIV status.

Results: Compared to HIV-negative women, WLWH were older (median [IQR)] 39 [34-43] vs 31 [23-41] years; p=0.003), less likely to have post-secondary education (37% vs 73%; p=0.0002), and more often had income ≤$15,000/year (49% vs 30%; p=0.006), or smoked tobacco (41% vs 15%; p=0.0008). Additionally, WLWH had more frequently undergone tubal ligation (16% vs 1%; p=0.02). Use of hormonal contraceptives (levonorgestrel-releasing intrauterine system, progestin-only, ECC) was similar (30% vs 32%; p=0.9), however, WLWH less often used ECC (4% vs 21%; p=0.002). WLWH experienced more contraindications to ECC compared with HIV-negative women (58% vs 13%; p=0.0001), such as current smoking when >35 years old (30% vs 6%; p=0.0003) or having a drug contraindication (all antiretroviral-related) to ECC (29% vs 0%; p=0.0001).

Conclusions: Lower ECC use among WLWH may be related to higher prevalence of smoking and drug contraindications. Findings support a need for healthcare providers to regularly discuss pregnancy desires and contraceptive options with WLWH.

Social Sciences: **Considering Equity and Policy Development**
Sciences sociales : **Les faits sur l'équité et l'élaboration des politiques**

SS4.03

Scales of (In)Justice: Visual Representations of Women's Experiences in Light of the Aggressive Criminalization of HIV Non-disclosure in Canada

Saara Greene[1], Alison Symington[2], Marvelous Muchenje[3], Jasmine Cotnam[4], Kristin Dunn[1], Peggy Frank[5], Shelly Glum[6], Rebecca Gormley[5], Allyson Ion[1], Valerie Nicholson[5], Sheila Nyman[1], Apondi J. Odhiambo[7], Krista Shore[1], Mary Vaccaro[1], Angela Kaida[5]

1. McMaster University, Hamilton, ON, 2. Independent Researcher, Toronto, ON, 3. Women's Health in Women's Hands, Toronto, ON, 4. Canadian Aboriginal AIDS Network, Halifax, NS, 5. Simon Fraser University, Burnaby, BC, 6. Saskatchewan Health Authority, Saskatoon, SK, 7. University of Toronto, Toronto, ON

Background: Inherent in the application of sexual assault law that criminalizes HIV non-disclosure are assumptions that non-disclosure is an objectifying assault, and criminalization will protect women and advance gender equality. Women, ART, and the Criminalization of HIV (WATCH) is a community arts-based research study that explored how the criminalization of HIV non-disclosure impacts the lives of women living with HIV.

Methods: Between June 2016 and May 2017, seven Body Mapping workshops were held with 48 women from Ontario, Manitoba, Saskatchewan and British Columbia. At each workshop, participants created a Body Map through a facilitated process and connected the images on their Body Maps with personal stories and reflections through sharing circles. Engaging in a feminist participatory analysis process, the WATCH team analysed the visual and narrative data to understand the images that women used to convey their thoughts and experiences of the criminalization of HIV non-disclosure.

Results: Images of scales of justice, judges, and gavels emerged as dominant visual images and conveyed the view that criminalization of HIV-nondisclosure places a disproportionate burden of sexual responsibility on women, is experienced as an additional weapon of violence, is disempowering, and exacerbates fear of disclosure. A critical consequence is that women felt forced to refrain from sexual relationships, because of fear of judicial and/or interpersonal violence. Criminalization was experienced as part of the overall surveillance and inequality that women living with HIV face.

Conclusions: While most advocacy challenging the law has predominantly focused on HIV-related science, WATCH demonstrates that appealing to the objectives of gender equality and protection from gender-based violence provides a further avenue for advocacy. Moving beyond public health arguments to more feminist, women-centered advocacy, and drawing on the collective stories of women who participated in WATCH, can draw attention to this critical issue and help to advance advocacy efforts.

Social Sciences: **Considering Equity and Policy Development**
Sciences sociales : **Les faits sur l'équité et l'élaboration des politiques**

SS4.04

"I found my voice": Acts of Resilience and Resistance to the Criminalization of HIV Non-disclosure Among Women Living with HIV in Canada

Angela Kaida[5], Saara Greene[1], Krista Shore[1], Valerie Nicholson[5], Marvelous Muchenje[7], Alison Symington[4], Jasmine Cotnam[1], Kristin Dunn[1], Shelly Glum[2], Margeret Frank[5], Rebecca Gormley[5, 6], Allyson Ion[1], Apondi Odhiambo[3], Mary E. Vaccaro[1], Sheila Nyman[1]

1. McMaster University, School of Social Work, Hamilton, ON, 2. Saskatoon Health Region, Positive Living Program, Saskatoon, SK, 3. University of Toronto, Dalla Lana School of Public Health, Toronto, ON, 4. Independent Researcher, Toronto, ON, 5. Faculty of Health Sciences, Simon Fraser University, Burnaby, BC, 6. British Columbia Centre for Excellence in HIV/AIDS, Vancouver, BC, 7. Women's Health in Women's Hands Community Health Centre, Toronto, ON

Background: In Canada, sexual assault laws are used to criminalize people who do not disclose their HIV status to partners prior to sex that presents a "realistic possibility of transmission." Women, ART, and the Criminalization of HIV (WATCH) is a community arts-based study that was developed in response to evidence that the law is out of touch with women's lives and to understand how women living with HIV demonstrate resilience and resistance to the law.

Methods: Between June 2016 and May 2017, seven Body Mapping workshops were held with 48 women from Ontario, Manitoba, Saskatchewan, and British Columbia. At each workshop, participants were guided through a facilitated process of visual art exercises to create a Body Map. Images on their Body Maps were connected to personal stories through sharing circles. The WATCH team analysed the visual and narrative data through a feminist participatory analysis process to understand women's experiences of resilience and resistance in the context of the criminalization of HIV non-disclosure.

Results: Resilience and Resistance emerged as dominant themes across all of the Body Maps. Narratives and visual images conveyed the view that women enact resilience through familial support, culture, and spirituality in concert with self-care and advocacy (for self and peers). The women's resilience fostered their active resistance to the law, enacted through educating themselves and community outreach. Acts of resistance then further strengthened their resilience, and collectively contributed to women envisioning a better future for themselves and other women living with HIV.

Conclusion: Narratives reveal that women enact resilience and resistance to *protect themselves* from the injustice of the law and multiple other forms of oppression. Findings underscore the critical need for feminist, participatory, strengths-based advocacy concerning the law, which honours that women's resilience and resistance supports them to thrive in their journey of living with HIV.

Social Sciences: **Considering Equity and Policy Development**
Sciences sociales : **Les faits sur l'équité et l'élaboration des politiques**

SS4.05

Beyond HIV: Is time for an LGBTQ+ Health Equity Strategy?

Cameron McKenzie[1], Nick Mulé[2], Maryam Khan[1]

1. Wilfrid Laurier University, Kitchener, ON, 2. York University, Toronto, ON

This study is a comparative content analysis of the Ontario Ministry of Health and Long-Term Care's (MOHLTC) website and the websites of each of the 14 Local Health Integration Networks (LHINs) in 2009 and 2017. It evaluates the amount and type of online content concerning LGBTQ+-specific health needs. To further contextualize our findings, we also conducted seven semi-structured interviews with Ministry bureaucrats. Our analysis revealed a persistent emphasis on HIV/AIDS risk containment in the LGBTQ+ community over the two periods. We also found very little LBGTQ+-specific content on the LHINs' website in both periods, with two notable exceptions in 2017.Although the Ministry and LHINs claim to use population health/SDH philosophy, we found disconnections between this stated commitment and the actual polices and delivered programs and services. Furthermore, the Ministry's broad policy approach appeared to show less emphasis on SDH in 2017 than it did in 2009. We argue that he LGBTQ+ community experiences health inequities that are linked to the social determinants of health (SDH). These health equities are rarely addressed in policy and program and their full extent is likely not fully understood. We argue that to promote healthy equity, the MOHLTC needs to acknowledge inequalities and intervene through political and social mechanisms that extend beyond HIV. We further argue that a provincial/federal LGBTQ+ Health Strategy may provide one such mechanism.

Social Sciences: **Considering Equity and Policy Development**
Sciences sociales : **Les faits sur l'équité et l'élaboration des politiques**

SS4.06

Indigenous HIV Leadership: Preliminary Findings from a Scoping Review

Randy Jackson[1], Aaron Li[1], Jasmine Cotnam[2], Renee Masching[2], Donald Turner[2], Marni Amirault[2], Michael Parson[3], Tracey Prentice[4], Tara LaRose[1], Trevor Stratton[2], Doris Peltier[2], Kerrigan Beaver[2], Peetanacoot Nenakawekapo[2], Jack Haight[2], Danita Wahpoosewyan[2], Priscilla Bilsborrow[2], Renee Boucher[2]

1. McMaster University, Hamilton, ON, 2. Canadian Aboriginal AIDS Network, Vancouver, BC, 3. Dalhousie University, Halifax, NS, 4. University of Victoria, Victoria, BC

Background: The call for the greater involvement of people living with AIDS (GIPA) in responding to HIV has long been a guiding principle in the HIV/AIDS movement. Indigenous community leaders have critiqued GIPA as 'ill fitting' towards mobilizing Indigenous leadership. As part of a larger project exploring ways leadership can be approached holistically through Indigenous worldviews, we report on findings from a scoping review of Indigenous approaches to leadership in the HIV/AIDS movement.

Methods: Drawing on community-based research (CBR) approaches, we carried out a scoping review of all peer reviewed literature published between 1990 and 2018. With community represented in all phases: (1) We developed search terms (n=42 terms across three broad categories describing Indigenous, HIV/AIDS and leadership); (2) in consultation with a librarian, we identified six databases (e.g., Proquest, Web of Science, etc.); (3) our search strategy involved an iterative approach against which our inclusion criteria (i.e., article is focused on Indigenous peoples, on HIV and AIDS, and on leadership) was used to assess each abstract returned by at least two reviewers; and (4) we employed a descriptive-analytic framework, drawing on principles of participatory analysis, and performed a thematic review of the selected articles (n=12).

Findings: Our scoping review focused on exploring Indigenous peoples living with HIV and their involvement in the HIV movement. Results overwhelmingly highlight contributing back to community as a reason for leadership—providing individuals with a lived sense of purpose. In this respect, the personal characteristics of leaders include having confidence; possessing humility; espousing a community rather than an individual focus; and recognizing the importance of traditional culture and ways of being. Barriers to leadership include experiences of stigma, colonialism, and loss of identity.

Conclusion: Results of this study suggest that Indigenous leadership and training or mentorship programs might accommodate Indigenous conceptualizations of leadership.

Basic Sciences: **Antivirals, Microbicides and Mechanisms of HIV Resistance**
Sciences fondamentales : **Antiviraux, microbicides et mécanismes de résistance au VIH**

BSP1.01

Exploring the Contribution of A49G/P in Combination with R263K in HIV-1 Integrase to the Development of Resistance Against DTG, RAL, EVG, and BIC

Mark Goring[1, 2], Hanh T. Pham[1, 3], Thibault Mesplede[1, 3]

1. McGill AIDS Centre-Lady Davis Institute, Montreal, QC, 2. Department of Medicine, Division of Experimental Medicine, Faculty of Medicine, McGill University, Montreal, QC, 3. Department of Microbiology and Immunology, Faculty of Medicine, McGill University, Montreal, QC

HIV-1 integrase strand transfer inhibitors (INSTIs), which include raltegravir (RAL), elvitegravir (EVG), dolutegravir (DTG), and now bictegravir (BIC), are the latest class of antiretroviral drugs to gain widespread use against HIV-1 infection in western countries. Of this class, DTG and BIC both display an improved genetic barrier against the development of resistance compared with earlier INSTIs. Resistance in HIV-1 infected children and adolescents can develop due to treatment toxicities, noncompliance, and limited alternative treatments. IMPAACT P1093 was a phase I/II dose-finding study of DTG plus optimized background regimen in treatment-experienced children and adolescents that evaluated pharmacokinetics, safety, tolerability, and antiviral efficacy. A case study presented by Vavro et al., evaluated a highly treatment-experienced 12-year-old patient who was prenatally infected and met virologic failure at week 32, while using DTG plus tenofovir disoproxil (TDF) and emtricitabine (FTC). Pre-treatment genotyping detected an I84V substitution in protease, however, no resistance mutations were found in reverse transcriptase. Although INSTI-naïve at treatment switching, the patient accumulated a number of known INSTI resistance substitutions by week 136 (E138E/A/K/T, S147S/G, and R263K) as well as additional substitutions about which little is known, including A49G. In a separate study, A49P was determined to be involved in a novel resistance pathway against DTG in a highly treatment-experienced patient receiving salvage therapy. In this study, we evaluate the impact of the A49G and A49P substitutions, with and without R263K, on resistance to DTG, RAL, EVG, and BIC.

Basic Sciences: **Antivirals, Microbicides and Mechanisms of HIV Resistance**
Sciences fondamentales : **Antiviraux, microbicides et mécanismes de résistance au VIH**

BSP1.02

Comparison and Optimization of anti-HIV RNAs for HIV Gene Therapy

Robert J. Scarborough[1, 2], Ryan P. Goguen[1, 2], Camille M. Malard[1, 2], Olivier Del Corpo[2, 3], Anne Gatignol[1, 2, 3]

1. McGill University, Department of Microbiology and Immunology, Montreal, QC, 2. Lady Davis Institute for Medical Research, Montreal, QC, 3. McGill University, Department of Medicine, Division of Experimental Medicine, Montreal, QC

Background: Genes directing the production of anti-HIV RNAs could be introduced into an HIV infected person's cells to control HIV replication in the absence of drug therapy. While several anti-HIV RNAs have been identified, there is limited data on their comparative efficacy and toxicity. There is also a need to identify optimal promoter sequences for their expression in patient cells.

Methods: Genes expressing anti-HIV ribozymes, decoy RNAs, short hairpin (sh) RNAs and U1 interference (U1i) RNAs were compared for effects on HIV production in HEK293T cells and HIV replication in SupT1 cells. Effects on cell metabolism in HEK293T cells and cell growth in SupT1 cells were also compared. Anti-HIV shRNAs were also expressed from different RNA polymerase III promoters (U6, 7SK and H1) and their effects on HIV production and metabolite profile in in HEK293T cells were compared.

Results: Anti-HIV shRNA and U1i RNA candidates were more efficacious compared to ribozyme and decoy candidates at inhibiting HIV production and replication. While no significant effects of anti-HIV RNA candidates were observed on cell metabolism in HEK293T cells, some candidates had negative effects on cell growth in SupT1 cells. Expression of anti-HIV shRNAs from 7SK and U6 promoters resulted in more efficacious inhibition of HIV production compared to the H1 promoter. All promoters produced RNAs with different start and end sites, with the U6 promoter providing the highest percentage of expected transcripts.

Conclusion: Our results demonstrate that shRNAs and U1i RNAs represent the most efficacious groups of anti-HIV RNAs for use in HIV gene therapy. Results from our promoter analysis also demonstrate that the expression of anti-HIV RNAs can be optimized through the use of alternative promoters.

***Basic Sciences:* Biomarkers and Diagnostics**
***Sciences fondamentales :* Biomarqueurs et diagnostics**

BSP2.01

Repeated False Positive HIV Testing Leading to Unnecessary Antiretroviral Therapy in an Individual Self-administering Anabolic Steroids

Alexander Wong[1, 2], Jessica Minion[1], Amanda Lang[1], Maurice Hennink[1], Tania Diener[1], Stephanie Lavoie[3], John Kim[3]

1. Saskatchewan Health Authority, Regina, SK, 2. University of Saskatchewan, Regina, SK, 3. National Microbiology Laboratory, Winnipeg, MB

Background: Recommended screening algorithms for HIV in Canada incorporate the use of a fourth-generation combination HIV antigen/antibody test followed by a confirmatory HIV-1/HIV-2 differentiation immunoassay. We report the case of an individual using anabolic steroids with false-positive HIV testing who rapidly initiated ART and treated unnecessarily for over four months.

Case Summary: A 27 year-old male developed dysuria and urinary hesitancy in late 2017, with no identified risk factors for HIV acquisition other than heterosexual contact. He was found to be positive for gonorrhea in November 2017, with non-reactive HIV screening at this time. Repeat HIV testing in January 2018 revealed an indeterminate HIV result (ADVIA Centaur®) but a non-reactive Geenius™ assay. Repeat HIV screening in late February 2018 was positive for HIV-1 and confirmed by Geenius™. He was started on antiretroviral therapy (E/C/F/TAF) on the same day he was seen in clinic, and an HIV viral load done on this day did not detect HIV RNA. Repeat positive tests were drawn in March and April 2018. On further questioning, the patient revealed the ongoing use of oral and injected bodybuilding supplements beginning in July 2017 which included testosterone, aromatase inhibitors (exemestane), and anabolic-androgenic steroids (trenbolone enanthate) obtained via the Internet.

Further testing was submitted to the National Microbiology Laboratory including the sample from late February 2018 which was negative on Genscreen™ HIV-1 Ag Assay and Fujirebio Inno-LIA® HIV-I/II score. Pro-viral HIV DNA testing submitted in July 2018 was negative, confirming an initial false-positive result. Antiretroviral therapy was discontinued 133 days after initiation.

Conclusions: The specificity of the ADVIA Centaur® screening and Geenius™ confirmatory immunoassay warrant clinical attention, as the potential consequences of inappropriate diagnosis and treatment of HIV are significant. Clinicians should be aware that the use of anabolic steroids may play a role in altering HIV testing results.

***Basic Sciences:* : Biomarkers and Diagnostics**
***Sciences fondamentales :* Biomarqueurs et diagnostics**

BSP2.02

Performance, Usability and Acceptance of the Blood-based INSTI HIV Self Test in High and Low HIV Prevalence Populations

Richard Galli[1], Hugues Loemba[2]

1. bioLytical Laboratories Inc, Richmond, BC, 2. University of Ottawa, Ottawa, ON

Background: HIV self-testing is an emerging approach for effectively reaching the undiagnosed in key populations and other people at high risk for HIV infection. The objective of this study, conducted in three sub-Saharan Africa countries, was to determine the accuracy, usability and acceptance of the blood-based INSTI HIV Self Test (INSTI) in the hands of intended users.

Methods: Field studies were conducted in Kenya (n=476), South Africa (n=900) and the Republic of Congo (n=506) under separate ethics review board approvals in 2017-2018. Participants were recruited from urban and village settings, and were asked to conduct the INSTI HIV Self Test in the presence of a non-interacting observer. For accuracy, self-test results obtained by the participant were compared to national algorithm 4th generation HIV enzyme immunoassay (EIA) results. For usability and acceptance, participants were scored on procedure performance and label comprehension. Satisfaction levels were measured through questionnaires. A subset of participants interpreted results of contrived INSTI test devices showing a range of positive, negative and invalid results.

Results: Positive percent agreement between INSTI and EIA was 98.99-100% and negative percent agreement was 98.15-100% across the three studies. Usability scores for critical procedure steps ranged from 95.6-96.85%. 95.7-98.5% of participants indicated they would use this test again. Success rate of participants forming a free-flowing blood drop improved from 85.5% (Kenya) to 97.0% (Congo) after successive package insert (PI) iterations. 96.4-100% of study participants correctly interpreted strong positive, negative and invalid INSTI results. Interpretation of weak positive results improved from 34.07% (Kenya study) to 94.4% (Congo) after PI revisions.

Conclusions: The INSTI HIV Self Test is accurate, easy to perform and highly acceptable in the hands of intended users, and as a result became the first blood-based HIV self test to be prequalified by the World Health Organization, in November 2018.

***Basic Sciences:* Biomarkers and Diagnostics**
***Sciences fondamentales :* Biomarqueurs et diagnostics**

BSP2.03

Exploratory, Descriptive Analysis of Soluble Immune Analytes at Diverse Mucosal Sites

Edward Kankaka[1], Ronald M. Galiwango[1], Yoojin Choi[1], Avid Mohammadi[1], James Nnamuteete[1], Sanja Huibner[1], Rupert Kaul[2], Jessica L. Prodger[3]

1. Rakai Health Sciences Program, Kalisizo, Uganda, 2. University of Toronto, Toronto, ON, 3. University of Western Ontario, London, ON

Background: Mucosal inflammation is associated with increased risk of HIV-1 acquisition. The use of secreted biomarkers to measure mucosal inflammation is attractive, since secretions can be collected non-invasively and repeatedly, while biomarker quantification can be performed using simple ELISA-based assays. However, sample volumes limit extent of analyte assessment, and many cytokines associated with vaginal HIV acquisition are largely undetectable at other mucosal sites (i.e. foreskin), limiting cross-study comparisons and biological inference. This descriptive study quantified a large panel of soluble immune biomarkers across diverse mucosal sites to serve as a reference for future studies.

Methods: Participants were HIV-uninfected individuals from Canada and Uganda. Males from Rakai (Uganda) provided swabs from foreskin (n=16), urethra (n=4), and anus (n=4) that were re-suspended in ultra-pure PBS. Site-specific swab eluent was pooled to make sufficient volume to assess all 136 analytes without further dilution. In Toronto (Canada), cervical secretions were collected by SoftCup and diluted 1:10. Samples were assessed in duplicate using the MesoScale Discovery platform. Analyte concentrations were visualized by concentration heatmap with unsupervised hierarchical clustering (Fig1).

Results: Analyte detection (>=10-fold LLOD) varied between mucosal sites, with urethral swabs having the most detectable analytes (41.6% >=10-fold LLOD), followed by cervix (29.4%), foreskin (28.5%), and anal swabs (19.9%). Mucosal secretions contained higher concentrations of numerous analytes previously not studied in the context of genital inflammation and HIV-1, including epithelial integrity markers (e.g. YKL-40, MMP-9). Also, several cytokines previously used to score vaginal inflammation had low detection at other mucosal sites (e.g. MIP1□, MIP-1□, IP-10).

Concusions: Several previously under-studied analytes in mucosal secretions could be useful for the assessment of mucosal inflammation and HIV acquisition risk.

***Basic Sciences:* Eradication Strategies Towards an HIV Cure**
***Sciences fondamentales :* Stratégies d'éradication, vers un remède contre le VIH**

BSP3.01

Radiolabelled Human Monoclonal Antibody to Glycoprotein 41 as a Novel Treatment for HIV/AIDS

Ravendra Garg[1], Kienna Mills[1], Kevin J. Allen[1], Miroslaw K. Gorny[2], Joan W. Berman[3], Ekaterina Dadachova[1]

1. University of Saskatchewan, Saskatoon, SK, 2. New York University School of Medicine, New York, NY, USA, 3. Albert Einstein College of Medicine, New York, NY, USA

HIV/AIDS is a major global threat to public health. Currently treatment with combined anti-retroviral therapy (cART) has significantly improved the life expectancy of HIV-infected individuals. However, cART fails to eliminate the long-lived reservoir of latent HIV-infected cells; therefore, virus continues to cause damage both systemically and to the central nervous system (CNS). Many cART regimens are ineffective in eradicating HIV infection in the brain due to the strict regulation for the entry of molecules by the blood brain barrier (BBB). Radioimmunotherapy (RIT) relies on antigen-specific monoclonal antibodies (mAbs) for targeted delivery of lethal doses of ionizing radiation to infected cells. Previously, we have demonstrated that 2556 human antibody to HIV gp41 when conjugated with ^{213}Bismuth (^{213}Bi) radioisotope selectively killed HIV-infected cells in vivo and in vitro. ^{225}Actinium (Ac) and ^{177}Lutetium (Lu) are two other clinically proven radioisotopes for cancer treatment. Hence, in this study we have conjugated 2556 mAb with three different radioisotopes (^{213}Bi, ^{225}Ac and ^{177}Lu) and compared their ability to kill HIV-infected human peripheral blood mononuclear cells (PBMCs). Human PBMCs were isolated from normal healthy volunteers and infected with HIV-1. The chronically infected PBMCs were treated with different concentrations of ^{213}Bi-2556 (4-20 µCi), ^{225}Ac-2556 (20-100 nCi) and ^{177}Lu-2556 (4-50 µCi) mAb. After three days of treatment, ^{213}Bi- and ^{177}Lu-conjugated 2556 mAb killed HIV-infected PBMCs and reduced virus production in a dose-dependent manner, whereas, ^{225}Ac-2556 showed minimal effect. In future, we will use a human *in vitro* BBB model to assess the ability of these conjugated mAbs to penetrate the BBB and to kill the HIV infected PBMCs in the brain compartment of the BBB model. This study will provide a novel treatment option for the eradication of HIV-1 infection and may also be useful for treatment of drug-resistant HIV strains.

***Basic Sciences:* HIV Latency and Viral Reservoirs**
***Sciences fondamentales :* Latence du VIH et réservoirs viraux**

BSP4.01

Discovery and Mechanistic Study of Novel Suppressors of Post-Integrated HIV Expression from African Natural Products

Cole Schonhofer[1], Jennifer Yi[1], Kerstin Andrae-Marobela[2], Alan Cochrane[3], Zahra Haq[1], Amelie Pagliuzza[4], Berhanu M. Abegaz[5], Rohan A. Davis[6], Nicolas Chomont[4], Zabrina L. Brumme[1, 7], Mark A. Brockman[1, 7], Ian Tietjen[1]

1. Simon Fraser University, Burnaby, BC, 2. University of Botswana, Gaborone, Botswana, 3. University of Toronto, Toronto, ON, 4. University of Montreal - CR-CHUM, Montreal, QC, 5. African Academy of Sciences, Nairobi, Kenya, 6. Griffith University, Brisbane, QLD, Australia, 7. British Columbia Centre for Excellence in HIV/AIDS, Vancouver, BC

Background: While current HIV therapies suppress viremia in patients, the presence of latent reservoirs that harbour replication-competent proviruses precludes HIV elimination. One proposed strategy for drug-free remission, frequently termed “Block-and-Lock”, involves use of Pro-Latency Agents (PLAs) that durably suppress viral reactivation from latency, even in the presence of proviral stimuli. However, PLAs that definitively cause a “Block-and-Lock” phenotype are rare and early in development, indicating a likely need for additional PLAs.

Methods: We screened 181 compounds from the pan-African Natural Products Library (pANAPL) for inhibitors of HIV-1 replication using CEM-GXRs, an HIV-1 LTR-driven GFP-reporter cell line. We used J-Lat cells latently infected with an HIV-NL43Δenv/ΔnefGFP provirus to test for PLA activity. HIV Tat protein-dependant and independent reporter cell lines and other *in vitro* assays were used to explore PLA mechanisms. Finally, we examined PLA activity in primary cells from HIV-infected donors with long-term suppressed viremia on cART.

Results: We identified a series of structurally similar flavonoids that inhibit HIV replication and block latency reversal at low micromolar concentrations. Effective flavonoids selectively antagonized viral Tat and/or viral RNA splicing-dependent pathways, suggesting multiple antiviral targets related to post-integrated HIV expression. Flavonoids further selectively inhibited upstream host kinases in enzymatic assays in a manner consistent with their antiviral target profiles. Interestingly, we also identified a subset of flavonoids that promote latency reversal but synergize with only a subset of known latency-reversal agents, suggesting that they may additionally function as histone deacetylase inhibitors.

Conclusion: We identified a series of flavonoids that potently inhibit HIV latency reversal. Their ability to block multiple pathways of post-integrated HIV expression underscores their potential as therapeutic agents. By analyzing the specific structural differences that convey each activity, we can potentially design more specific PLAs.

***Basic Sciences:* HIV Virology (Viral and Host Factors)**
***Sciences fondamentales :* Virologie du VIH (Facteurs liés au virus et à l'hôte)**

BSP5.01

Expression of MDM2 in Macrophages Promotes the Early Post-entry Steps of HIV-1 Infection Through Inhibition of p53

Yann Breton[1], Vincent Desrosiers[1], Michel Ouellet[1], Michel J. Tremblay[1, 2]

1. Centre de recherche du CHU de Québec-Université Laval, Québec, QC, 2. Département de microbiologie-infectiologie et immunologie, Faculté de médecine, Université Laval, Québec, QC

Background: Macrophages play an important role in the establishment and propagation of HIV-1 infection. Upon exposure to HIV-1, only a small proportion of macrophages are productively infected. Transcriptomic analyses were performed to compare infected and bystander populations and revealed MDM2 as a positive regulator of HIV-1 infection in macrophages. MDM2 is an E3 ubiquitin ligase involved in the DNA damage response and regulates the turnover of various proteins, including p53.

Methods: Monocyte-derived macrophages (MDMs) were transfected with target-specific siRNAs and exposed to a fully competent R5 HIV-1 virus expressing a small GPI-anchored reporter (HSA). In some experiments, MDMs were treated with Nutlin-3, a chemical inhibitor of the MDM2-p53 interaction, before being infected. Infection was measured by flow cytometry for HSA expression and by qRT-PCR for the evaluation of replication intermediates.

Results: MDM2 knockdown induced a reduction in the proportion of productively infected macrophages as measured by HSA reporter expression, associated with a decrease in HIV-1 reverse transcription and integration. Similar results were observed upon MDMs exposition to Nutlin-3. As expected, knockdown or inhibition of MDM2 resulted in a significant increase in the expression of p53-induced genes, including p21 (*CDKN1A)*, and a reduced level of phosphorylated/inactivated SAMHD1 at the time of infection.

Conclusions: Altogether, our results indicate that the resistance to HIV-1 integration associated with MDM2 silencing requires the activation of p53. Experiments using the chemical inhibitor Nutlin-3 suggest that the observed resistance to HIV-1 results from the release/activation of p53 and not the absence of MDM2 *per se*. The MDM2 expression level and the p53 activation state influence the amount of active SAMHD1 and are therefore important factors in the overall susceptibility of MDMs to HIV-1 infection. Identification of viral cofactors regulated by MDM2 will bring a new understanding of signaling events controlling HIV-1 replication in macrophages.

***Basic Sciences:* HIV Virology (Viral and Host Factors)**
***Sciences fondamentales :* Virologie du VIH (Facteurs liés au virus et à l'hôte)**

BSP5.02

Genetic Regulation of Gene Expression Differences in Inflammatory Cells and Its Impact on HIV Susceptibility

Shanelle N. Gingras[1, 2], Jeffrey Tuff[1], Naima Jahan[2], Paul C. Jankowski[3], Lyle R. McKinnon[2], Paul J. McLaren[1, 2]

1. JC Wilt Infectious Diseases Research Centre, Winnipeg, MB, 2. Department of Medical Microbiology and Infectious Diseases, University of Manitoba, Winnipeg, MB, 3. Department of Science, University of Manitoba, Winnipeg, MB

An inflammatory profile characterized by heightened expression of inflammatory cytokines in circulation and at the female genital tract increases the risk of HIV acquisition. The Centre for AIDS Programming in South Africa (CAPRISA)–004 HIV prevention trial showed that women with an inflammatory profile had both an increase in susceptibility to HIV infection and a substantial decrease in the effectiveness of a preventative microbicide gel against HIV. Environmental, behavioural and demographic factors such as; sexually transmitted infections, condom use, age, and hormonal contraception are known to influence inflammation, however these do not fully explain the observed increase in susceptibility to HIV infection. To address potential intrinsic host causes of inflammation, we are investigating whether genetic variants contribute to inter-individuals variability in inflammation through their control of gene expression. Women who seroconverted within the CAPRISA-004 trial and exhibit an inflammatory profile (cases) will be compared to women who remained HIV negative and do not exhibit an inflammatory profile (controls). We have obtained inflammatory cell fractions, i.e. monocytes and dendritic cells, from 32 cases and 32 controls from peripheral blood mononuclear cells stimulated by interferon-b, lipopolysaccharide or left unstimulated. This will give us approximately 80% power to detect genes with at least 2.5 fold difference between groups. RNA will be extracted from these subsets and we will perform RNA sequencing to assess transcriptional differences between cases and controls and stimulation conditions. Genome-wide genotype data will be obtained from the same individuals and differentially expressed genes will be assessed for genetic regulation using an expression quantitative trait locus framework. Variants that significantly associate with increased inflammatory gene expression will be further tested for an impact on HIV susceptibility in independent samples. Through this project, we will address what impact host genetic background has on inflammatory cell function and its relevance to HIV susceptibility.

***Basic Sciences:* HIV Virology (Viral and Host Factors)**
***Sciences fondamentales :* Virologie du VIH (Facteurs liés au virus et à l'hôte)**

BSP5.03

IFITM3 and SERINC5 Act in Concert to Inhibit HIV-1 Entry

Saina Beitari[1, 2], Andrés Finzi[2, 3], Chen Liang[1, 2, 4]

1. Lady Davis Institute For Medical Research, Montréal, QC, 2. Department of Microbiology and Immunology, McGill University, Montréal, QC, 3. Centre de Recherche du CHUM Département de Microbiologie, Infectiologie et Immunologie, Université de Montréal, Montréal, QC, 4. Department of Medicine, McGill University, Montréal, QC

A group of HIV restriction factors have been identified in the past two decades which inhibit distinct steps of HIV-1 replication. Among these anti-HIV-1 factors, both interferon inducible transmembrane protein (IFITM3) and serine incorporator 5 (SERINC5) inhibit HIV-1 entry. We and others have found that IFITM3 and SERINC5 get into HIV-1 particles and impair virus infectivity. In addition, IFITM3 also deters HIV-1 entry when expressed in the virus target cells. We further reported that HIV-1 Env can change and thus overcome the inhibition by IFITM3 and SERINC5. However, HIV-1 also uses Nef to antagonize SERINC5 by downregulating SERINC5 from the cell surface thus preventing its incorporation into HIV-1 particles, likely because presence of SERINC5 in HIV-1 particles sensitizes HIV-1 Env to the inhibition by neutralizing antibodies. With the aim to further compare the responses of primary HIV-1 Env proteins to the inhibition by IFITM3 and SERINC5, we have tested a large panel of Env clones and found distinct profiles of susceptibility to IFITM3 and SERINC5, further demonstrating that these two restriction factors differentially impair the entry function of HIV-1 Env, i.e. one Env clone can be sensitive to IFITM3 but resistant to SERINC5 and vice versa. In agreement with this observation, IFITM3 and SERINC5 together generate much stronger inhibition of HIV-1 infectivity compared to each of these two factors alone. We also found that IFITM3 is able to increase the levels of SERINC5 in HIV-1 particles in the presence of Nef. Together, our study demonstrates a concerted anti-HIV-1 action by SERINC5 and IFITM3 to achieve an effective control of HIV-1 entry.

***Basic Sciences:* : HIV Virology (Viral and Host Factors)**
***Sciences fondamentales :* Virologie du VIH (Facteurs liés au virus et à l'hôte)**

BSP5.04

Interferon Alpha Subtype-specific Suppression of HIV-1 Infection in vivo

Kerry J. Lavender[1, 3], Kathrin Gibbert[2], Tyson Woods[3], Jacob Piehler[4], Ali Gawanbacht[5], Janis Muller[5], Jan Munch[5], Mirko Trilling[2], Sandra Francois[2], Erik Van Dis[3], Ronald J. Messer[3], Katie Phillips[3], Brent Race[3], Mario Santiago[6], Karin E. Peterson[3], Jens Verheyen[2], Kim J. Hasenkrug[3], Ulf Dittmer[2]

1. Department of Biochemistry, Microbiology and Immunology, University of Saskatchewan, Saskatoon, SK, 2. Institute for Virology, University Hospital Essen, University of Duisburg-Essen, Essen, Germany, 3. Laboratory of Persistent Viral Diseases, Rocky Mountain Laboratories, NIAID, NIH, Hamilton, MT, USA, 4. Department of Biology, University of Osnabrück, Osnabruck, Germany, 5. Institute of Molecular Virology, Ulm University Hospital, Ulm, Germany, 6. Department of Medicine, University of Colorado, Denver, Aurora, CO, USA

All 12 subtypes of human interferon alpha (IFN-α) bind the same receptor, but recent results have demonstrated that they elicit unique host responses and display distinct efficacies in the control of different viral infections. The IFNα2 subtype is currently in HIV-1 clinical trials, but it has not consistently reduced viral loads in HIV$^+$patients and is not the most effective subtype against HIV *in vitro*. We and others have demonstrated both *in vitro*[1]and *in vivo*[2,3] that the human IFNα14 subtype has very potent anti-HIV activity whereas IFNα2 does not. In both post exposure prophylaxis and treatment of established infections, IFNα14, but not IFNα2, significantly suppressed HIV-1 replication and proviral loads. Furthermore, HIV-induced immune hyperactivation, which is a prognosticator of disease progression, was reduced by IFNα14 but not IFNα2. Whereas ineffective IFNα2 therapy was associated with CD8$^+$ T cell activation, successful IFNα14 therapy was associated with increased intrinsic and innate immunity, including significantly higher induction of tetherin and MX2, increased APOBEC3G signature mutations in HIV proviral DNA, and higher TRAIL$^+$NK cell frequencies. Additionally, repeated treatment with IFNα14 did not result in IFNα resistance nor did therapy produce negative immunological sequelae after treatment cessation as demonstrated with human IFNα2 use in SIV-infected macaques.[4] In contrast, treatment with IFNα14 resulted no additional loss of CD4$^+$T cells and in a lower frequency of both co-receptor expressing and activated CD4$^+$T cell targets for HIV-1 infection as well as fewer CD8$^+$T cells expressing exhaustion and apoptotic markers. These results identify IFNα14 as a potent new therapeutic and demonstrates the importance of evaluating the antiviral efficacy of individual IFNα subtypes against the specific virus being treated.

[1]*Harper et al. PLoS Pathog. 2015 11(11):e1005254,* [2]Abraham et al. *Oncotarget. 2016 7(48):78412-78420,* [3]Lavender et al. J. Virol.*2016 90(13):6001-13,* [4]Sandler et al. *Nature. 2014 511(7511):601-5.*

***Basic Sciences:* HIV Virology (Viral and Host Factors)**
***Sciences fondamentales :* Virologie du VIH (Facteurs liés au virus et à l'hôte)**

BSP5.05

Interaction entre IL-32α et NPM1: Un impact potentiel sur la réplication du VIH

Rémi Bunet[1], Sarah M. Zaidan[1], Etienne Larouche-Anctil[1], Hardik Ramani[1], Mohamed Sylla[1], Sarah Nahle[3], Annie Chamberland[1], Carl Chartrand-Lefebvre[1], Petronela Ancuta[1, 2], Jean-Francois Gauchat[3], Robert C. Kaplan[4], Alan Landay[5], Madeleine Durand[1], Nicolas Chomont[1], Mohamed El-Far[1], Cécile Tremblay[1, 2]

1. Centre de Recherche du Centre Hospitalier de l'Université de Montréal, Montréal, QC, 2. Département de microbiologie, infectiologie et immunologie, Université de Montréal, Montréal, QC, 3. Département de pharmacologie et physiologie, Université de Montréal, Montréal, QC, 4. Albert Einstein College of Medicine, New York, NY, USA, 5. Rush University Medical Center, Chicago, IL, USA

Introduction : L'interleukine 32 est une cytokine pro inflammatoire nouvellement étudiée dont l'expression est augmentée dans l'infection par le VIH. Premièrement décrite comme une cytokine antivirale, des études récentes sur ses multiples isoformes montrent des rôles différentiels de ces dernières dans l'infection par le VIH (l'isoforme IL-32γ augmente l'infection, mais pas l'isoforme IL-32α). De plus, nos résultats montrent que lorsque des cellules T CD4 sont activées et traitées avec IL-32α, une augmentation de la production d'IL-10 (anti-inflammatoire) est observée alors que le traitement par IL-32γ provoque une augmentation de l'IL-6 et de l'IFNγ (inflammatoires). Ces différents profils nous ont conduit à étudier les interactions des isoformes d'IL-32 avec de potentiels partenaires cellulaires afin de comprendre les mécanismes sous-jacents.

Méthodologie : Plusieurs anticorps commerciaux disponibles contre les isoformes d'IL-32 ont été testés par Western Blot pour déterminer leurs potentiels de reconnaissance d'IL-32 en conditions natives. L'interaction d'IL-32α avec les protéines cellulaires a été réalisée lors de co-immunoprécipitations. Le résultat a été séquencé par spectrométrie de masse.

Résultat : Les westerns blots réalisés ont permis d'assurer la capacité des anticorps à fixer IL-32α en conditions natives. Les résultats des co-immunoprécipitations séquencés par spectrométrie de masse ont mis en évidence des partenaires cellulaires de l'IL-32α. Certains sont connus pour leur capacité à lier certaines protéines du VIH, c'est le cas de la nucléophosmine (NPM1). NPM1 est une protéine aidant à la localisation de la protéine régulatoire Tat du VIH afin d'assurer la transcription virale.

Discussion : La liaison d'IL-32α avec NPM1 pourrait entrainer une séquestration de cette dernière et donc impacter négativement la réplication du VIH. Des études sont en cours afin de valider cette dernière hypothèse.

***Basic Sciences:* HIV Virology (Viral and Host Factors)**
***Sciences fondamentales :* Virologie du VIH (Facteurs liés au virus et à l'hôte)**

BSP5.06

Protective Effect of Probiotic Bacteria and Estrogen in Preventing HIV-1 Mediated Barrier Breakdown in Female Genital Tract Epithelial Cells

Sara Dizzell[1], Aisha Nazli[1], Gregor Reid[2], Charu Kaushic[1]

1. McMaster University, Hamilton, ON, 2. Western University, London, ON

Approximately 40% of global HIV-1 transmission occurs in the female genital tract (FGT) through heterosexual transmission. Epithelial cells lining the FGT comprise the first barrier to HIV-1 entry. The functions of these cells are influenced by female sex hormones and the mucosal microbiota. Previous studies have suggested that certain hormonal contraceptives or a dysbiosis of the vaginal microbiota may enhanced HIV-1 acquisition in the FGT. We examined the effects of female sex hormones and lactobacilli on primary genital epithelial cell (GEC) barrier functions and innate immune responses. Two probiotic strains of *Lactobacillus*: *L. reuteri* (RC-14) and *L. rhamnosus* (GR-1), in the presence or absence of the female sex hormones estrogen, progesterone, or contraceptive medroxyprogesterone acetate were tested on confluent GEC monolayers in the presence or absence of HIV-1. Barrier integrity, cell viability and innate inflammatory factors were assessed in GEC monolayers after different treatments. Probiotic lactobacilli enhanced epithelial barrier function and reduced leakage regardless of hormone treatment in GEC monolayers and even ameliorated HIV-1 mediated barrier disruption. GEC monolayers grown in presence of estrogen showed a reduction in HIV-1 mediated leakage and downregulated of HIV-1 mediated pro-inflammatory cytokines. Enhanced barrier function and decreased inflammation correlated with decrease in HIV-1 infection and replication. These studies provide an insight into how local microenvironment in the genital microenvironment can affect HIV-1 infection in the FGT.

***Basic Sciences:* HIV Virology (Viral and Host Factors)**
***Sciences fondamentales :* Virologie du VIH (Facteurs liés au virus et à l'hôte)**

BSP5.07

Visualization and Characterization of Host Proteins within the HIV-1 Envelope

Jonathan Burnie[1, 2], Homaira Hamidzada[1], Laxshaginee Thaya[1], Christina Guzzo[1, 2]

1. Department of Biological Sciences, University of Toronto Scarborough, Scarborough, ON, 2. Cell and Systems Biology, University of Toronto, Toronto, ON

The low abundance and high variability of the HIV-1 envelope glycoprotein has vastly hindered efficacious vaccine design for decades and presents a major hurdle to an HIV cure. The myriad of selectively enriched host proteins that are incorporated into the HIV envelope during viral budding may mitigate this challenge by providing additional targets on the viral surface. The cellular proteins ICAM-1, integrin alpha 4 beta 7 (α4β7) and HLA-DR are often enriched in the viral envelope and can outnumber or be in molar excess of gp120. The incorporation of these proteins can alter pathogenesis and enhance infectivity; while the viral determinants for the selective uptake of ICAM-1 have been elucidated, the mechanism behind the uptake of α4β7 and HLA-DR are unknown. Virion incorporated α4β7was previously shown to remain functionally active in the HIV membrane, with a strong propensity to direct the homing of virions to the gut mucosa in mice. Interestingly, targeting α4β7 with siRNA has led to decreased levels of infection *in vitro,* while several macaque studies employing an anti-α4β7 antibody treatment have led to protection from infection, decreased viral replication and temporary suppression of replication after treatment withdrawal. These striking results demonstrate the need for more information on how HIV hijacks and employs cellular proteins to its advantage. Here, we used the cutting-edge technique flow virometry to investigate the abundance and distribution of α4β7 on unique virion subsets. We corroborated these results with virion capture assays, western blots and electron microscopy. Phenotyping viral subsets and quantitating host proteins within single HIV particles may provide new insights on the role of virion-bound cellular proteins *in vivo* and new directions for mechanistic studies on selective host protein acquisition by HIV-1 virions.

Basic Sciences: **Host Genetics and Viral Evolution**
Sciences fondamentales : **Génétique de l'hôte et évolution virale**

BSP6.02

Phylogenetic Measures of Indel Rate Variation Among the HIV-1 Group M Subtypes

John Palmer, Art Poon
Western University, London, ON

Insertions and deletions (indels) in the HIV-1 envelope glycoprotein gp120 play a significant role in the evolution of HIV pathogenesis and transmission fitness. While substitution rates in HIV-1 are well characterized by standard phylogenetic models, there is a lack of quantitative measures of indel rates in HIV-1. Here we report results from a dated-tip phylogenetic analysis of gp120 sequences to estimate indel rates for 7 subtypes and CRFs of HIV-1 group M.

We obtained and processed 26,359 HIV-1 gp120 sequences from the Los Alamos National Laboratory HIV Sequence database, limited to one sequence per patient. After filtering for sequence length (>1,400 nt) and sampling dates, we extracted the conserved and variable regions from the remaining 6,605 sequences by pairwise alignment. We used FastTree2 to reconstruct phylogenies from the alignment of concatenated conserved regions, and used least-squares dating (LSD) to rescale the resulting trees in time. We estimated indel rates for each variable region and subtype by fitting a binomial-Poisson model to length discordance in sequences related by cherries.

Indel rate estimates ranged from 3e-5 to 1.5e-3/nt/year and varied significantly among variable regions and subtypes; e.g., rates were significantly lower for subtype B. Variable regions V1, V2 and V4 accumulated significantly longer indels irrespective of subtype, and we found evidence of positive selection for indels affecting N-linked glycosylation sites in V1/V2. Further, we observed that indel sequences were substantially enriched for G and depleted for T relative to the flanking sequences.

Our results comprise the first phylogenetic measures of indel fixation rates in HIV-1 gp120 across subtypes and variable regions, and identifies novel and unexpected patterns for further investigation. Focusing on cherries reduces the time frame for purifying selection to mask indels, but a similar methodology can be adapted to elucidate indel origination rates from within-host sequence datasets.

Basic Sciences: **Host Genetics and Viral Evolution**
Sciences fondamentales : **Génétique de l'hôte et évolution virale**

BSP6.03

Identification of a Novel Region Associated With Control of HIV-1 Disease in Individuals of African Ancestry

Riley H. Tough[1, 2], David M. Tang[1], Paul J. McLaren[1, 2]

1. National HIV and Retrovirology Laboratory, Public Health Agency of Canada, Winnipeg, MB, 2. Department of Medical Microbiology and Infectious Diseases, University of Manitoba, Winnipeg, MB

HIV is an obligate, intracellular pathogen which requires a combination of host machinery and viral factors to establish a life-long infection. Two host proteins, CCR5 and HLA, have been implicated as key determinants of HIV susceptibility and pathogenesis through genome-wide association studies (GWAS) in European populations. Recently, our group has performed a GWAS of host genetic factors that regulate viral load in 3,100 individuals of African ancestry. This analysis uncovered a previously unidentified locus of host control that associates with a viral load decrease of ~0.3logs and overlaps two coding genes, *CHD1L* and *PRKAB2*. The top associated single nucleotide polymorphism (SNP) at this locus is rs77029719 ($p = 6.26x10\text{-}9$, $\beta = -0.30$) and is only present in African populations with allele frequencies ranging from 5-13% depending on ancestry and geography. Analysis of genetic variants with a p-value of < 0.001 in the region using Variant Expression Predictor (VEP) have identified no changes to the coding sequence of these genes but identified 5 regulatory region variants in strong LD. A majority of these regulatory variants map to *CHD1L* which is involved in DNA repair and mediates chromatin relaxation. Comparing genetic variants from the viral load GWAS with those from the Gene-Tissue Expression Database (GTEx) shows that increased gene expression of *CHD1L* and *PRKAB2* in whole blood overlaps with decreased viral load. Ongoing functional work will specifically test the role of each of these genes in impacting HIV replication. Greater understanding of how *CHD1L* and/or *PRKAB2* interact with HIV can guide development of novel therapeutics.

Basic Sciences: **Immunology of HIV and Vaccines**
Sciences fondamentales : **Immunologie du VIH et vaccins**

BSP7.01

The Effect of Depot Medroxyprogesterone Acetate (DMPA) on the Mucosal Immune System in the Female Genital Tract: Implications for HIV Risk

Julie Lajoie[1, 2], Kenneth Omollo[2], Jocelyn Wessels[3], Juliana Cheruiyot[4], Joshua Kimani[2, 4], Julius Oyugi[2], Charu Kaushic[3], Keith R. Fowke[1, 2, 4]

1. University of Manitoba, Winnipeg, MB, 2. University of Nairobi, Nairobi, Kenya, 3. McMaster University, Hamilton, ON, 4. Partner for Health and Development in Africa, Nairobi, Kenya

Background: Depot medroxyprogesterone acetate (DMPA) is an injectable progesterone-based contraception that is used worldwide. However, the possibility that DMPA increases risk of HIV acquisition has been raised and is a major global health concern. Therefore, determining how DMPA might impact the female genital tract immune system is important.

Method: We recruited 29 HIV negative female sex workers (FSW) and 30 HIV uninfected non-FSW (low-risk) using DMPA and 25 FSWs and 30 low risk women not using hormonal contraception (no HC). Blood and cervico-vaginal samples were collected from all the participants.

Results: In the no HC groups, we observed that FSW have a lower state of immune activation at their genital tract than the low-risk women. We also observed that FSW had lower proportion of CD4+CCR5+ T cells ($p=0.03$) and lower expression of CD69 ($p<0.0001$) and CD38 ($p=0.03$) on their CD4+ t cells. However, those differences disappeared when FSW used DMPA. Indeed, among FSW and low-risk using DMPA, the level of immune activation at the genital tract was similar between groups. When comparing the low risk women on DMPA versus low risk women on no HC, those using DMPA had higher proportion of resident T cells (CD4+CD69+ $p=0.01$) and activated T cells (CD4+CD38+ $p=0.005$).

Conclusion: This study demonstrated that among low risk women, the use of DMPA increased genital immune activation. Furthermore, while involvement in sex work resulted in decreased genital immune activation, the use of DMPA eliminated this effect. This study has an important public health impact as it illustrates that DMPA may increase HIV risk among at-risk women.

Basic Sciences: **Immunology of HIV and Vaccines**
Sciences fondamentales : **Immunologie du VIH et vaccins**

BSP7.02

Analyzing Functionality and Exhaustion of Invariant Natural Killer T Cells: Implications for HIV Immune Dysfunction

Allison L. Balasko[1], Monika Kowatsch[1], Colin Graydon[1], Julie LaJoie[1], Keith R. Fowke[1, 2, 3]

1. University of Manitoba, Winnipeg, MB, 2. University of Nairobi, Nairobi, Kenya, 3. Partners for Health and Development in Africa, Nairobi, Kenya

Background: Invariant Natural Killer T (iNKT) cells are innate lymphocytes bridging the innate and adaptive immune systems as one of the first responders critical in combatting viral infection. In HIV infection, our lab has shown expression of lymphocyte activation gene 3 (LAG-3), an inhibitory checkpoint marker, is increased on iNKTs, correlating with decreased cell functionality. To further characterize this dysfunction, both cytokine and proliferation assays must be optimized. Traditionally, iNKT stimulation has been achieved by α-GalCer, a CD1d-restricted lipid antigen used to activate iNKT cells. However, we have shown the PBS-57-loaded NIH tetramer, used to stain iNKTs for identification, also stimulates iNKTs in both cytokine and proliferation assays.

Hypothesis: We hypothesize the tetramer will not only stain and identify iNKT cells, but also stimulate iNKTs via the PBS-57 α-GalCer analogue cell binding, providing a reliable stimulation independent of CD1d-specific antigen presentation.

Methods: In HIV-negative donors, we have optimized both multi-hour cytokine and multi-day proliferation assays to assess iNKT functionality and exhaustion through either α-GalCer or PBS-57-tetramer stimulation.

Results: iNKTs have been successfully activated with 40.2% IFN-γ production after 10hr α-GalCer stimulation, versus 58.2% via the PBS-57-tetramer. A 13-day proliferation time course showed an average iNKT fold-expansion of 8.4, 107.1, 256.0 and 814.9 by α-GalCer stimulation on day 6, 8, 10 and 13 respectively, versus 10.1, 136.4, 209.9 and 937.5 by PBS-57-tetramer. Expression of LAG-3 and PD-1 inhibitory checkpoint markers have also been assessed over multi-day iNKT proliferations, with 79.15% LAG-3 and 88.75% PD-1 expression on Day 10 of an α-GalCer stimulation. Future goals are now to apply blockades targeting LAG-3 and PD-1 to assess functional restoration during optimized iNKT stimulations.

Significance: The long-term goal of this project is to restore iNKT cell function by implementing LAG-3 and/or PD-1 blockades, restoring the overall immune system strength in HIV-positive individuals.

Basic Sciences: **Immunology of HIV and Vaccines**
Sciences fondamentales : **Immunologie du VIH et vaccins**

BSP7.04

Intrinsic Immunity to HIV-1 and Other Immunodeficiency Viruses

Stephen Patrick, Tyson B. Follack, Linda Chelico

University of Saskatchewan, College of Medicine, Department of Biochemistry, Microbiology, and Immunology, Saskatoon, SK

One of the key features of intrinsic immunity to viral infection and replication in humans are restriction factors. Restriction factors serve as an inhibitor to viral replication, as well a barrier to cross species viral transmission. HIV originated from the Simian Immunodeficiency Virus (SIV) and SIV had to evolve mechanisms to overcome human restriction factors to cross the zoonotic transmission barrier. The crossover of chimpanzee SIV to humans created HIV-1 and the crossover of Sooty Mangabey SIV to humans created a the less pathogenic HIV-2. HIV accessory proteins such as Viral infectivity factor (Vif) allowed these viruses to overcome the natural host barrier. Vif functions to counteract the effects of the APOBEC3 restriction factor family. This project had two research areas that examined (1) which APOBEC3 enzymes formed the strongest barrier to Sooty Mangabey SIV and (2) if there were person to person differences in this barrier, based on APOBEC3 expression levels. Thus, our goal was two-fold, to determine the decrease in infectivity that human APOBEC3s imposed on unadapted Sooty Mangabey SIV and quantify the levels of expression of specific APOBEC3s in peripheral blood mononuclear cells harvested from healthy patients. We found that despite Sooty Mangabey SIV Vif being able to partially degrade human APOBEC3 enzymes, that the remaining APOBEC3F, APOBEC3G, and APOBEC3H could partially suppress Sooty Mangabey SIV replication, consistent with efficient cross species restriction. This led to the hypothesis that person to person variation in APOBEC3 expression may have resulted in a pathway to human infection and adaptation, if certain individuals had low APOBEC3 activity. We found that variance in the ability to restrict HIV-1 was found between donors. Altogether the research suggests that person to person variation in APOBEC3 restriction factors may result in lower barriers to cross species transmission and that this should be investigated further.

***Basic Sciences:* Molecular Mechanisms of Co-Infections**
***Sciences fondamentales :* Mécanismes moléculaires des coinfections**

BSP8.01

Validation of Recall Antigen Responses in a Kenyan Population

Monika M. Kowatsch[1], Julius Oyugi[1, 2], Natasha Hollett[1], Lucy Mwangi[2], Julianna Cheruiyot[3], Joshua Kimani[1, 2, 3], Julie Lajoie[1, 2], Keith R. Fowke[1, 2, 3]

1. University of Manitoba, Winnipeg, MB, 2. University of Nairobi, Nairobi, Kenya, 3. Partners for Health and Development in Africa, Nairobi, Kenya

Background: HIV affects the immune response to recall antigens by inducing T cell dysfunction even after ART initiation. Our group has a long-standing relationship with a cohort in Kenya to assess HIV resistance and prevention, therefore, it is important to develop recall antigen assays suitable for Kenyan populations. Human Papilloma Virus (HPV) is a mucosal and epidermal pathogen that induces warts and genital cancer in epithelial cells. HPV infection is twice as common among individuals living with HIV. HPV is a good candidate for assessing recall antigen responses during HIV infection, however, no such assay is commercially available. While many HPV subtypes exist, the E2 protein remains highly conserved making it ideal for our assay.

Hypothesis: HPV E2 peptide pool will elicit T cell immune memory responses in both Canadian and Kenyan populations.

Methods: PBMCs from 10 Canadian and 10 Kenyan donors were stimulated for 12 hours with two peptide pools; control CEF peptides from Cytomegalovirus, Epstein Barr Virus, Influenza virus and 10 HPV peptides from the E2 protein. PBMCs were then stained for cytokine detection by flow cytometry. Marker expression was assessed on bulk CD4+ and CD8+ T cells as well as central memory (CD45RA-CCR7+) and effector memory (CD45RA-CCR7-) T cells using flow cytometry. A two-fold response over background was considered positive.

Results: Both CEF and HPV peptide pools elicited CD8+ central and effector memory T cell responses. 70% of our Canadian donors and 60% of our Kenyan donors responded to HPV by producing at least one cytokine (IL-2, IFN-γ, TNF-α). IFN-γ was the most sensitive detection method across both populations.

Conclusion: The E2 HPV peptide pool elicits recall antigen responses in central and effector memory T cells in both Canadian and Kenyan populations. Suggesting our assay would be useful in assessing HIV-induced immune dysfunction across many populations.

Basic Sciences: **Other**
Sciences fondamentales : **Autres**

BSP9.01

Increased Epithelial Density of Foreskin T cells in Men with Penile Anaerobes Associated with HIV-Risk

Lane Buchanan[1], Cindy M. Liu[1], Rupert Kaul[2], Aaron AR Tobian[1], Alison G Abraham[1], Godfrey Kigozi[3], Ronald M. Galiwango[3], Daniel Park[1], Jessica L. Prodger[1]

1. University of Western Ontario, London, ON, 2. University of Toronto, Toronto, ON, 3. Rakai Health Sciences Program, Kalisizo, Uganda

Background: Circumcision reduces HIV-risk in heterosexual men by an unknown mechanism. We have previously shown that specific taxa of anaerobic bacteria in the uncircumcised penile microbiome are associated with chemokine production and HIV-risk. Penile anaerobes may increase HIV-risk by triggering local inflammation resulting in recruitment of HIV-susceptible immune cells to the tissue surface. We thus evaluated the association between T cell density/location in the foreskins and penile anaerobes.

Methods: This analysis was nested in a previous cross-sectional study of 88 HIV-negative heterosexual men undergoing elective circumcision in Rakai, Uganda. Foreskin T cell density was compared between men with high abundance of seroconversion-associated anaerobes (n=6) and low overall bacterial load (n=6). DNA was extracted from sub-preputial swabs and absolute abundances of penile bacteria were estimated as the log10 16S rRNA gene copies/swab by pan-bacterial real-time PCR and sequencing of the 16S rRNA V3V6 region. T cell densities in the epidermis and dermis of frozen tissue sections from both the inner and outer foreskin were quantified using immunohistochemistry (CD3) and ImageJ.

Results: Men with high abundance of seroconversion-associated anaerobes had a high density of T cells in their inner foreskin, but not in the outer aspect. In comparison, T cells were near absent in men with low bacterial abundance. While high T cell densities were observed in both the inner epidermis (495.8 vs 40.1 cells/mm2, p=0.09) and inner dermis (103.5 vs 2.2 cells/mm2, p=0.03), the increase was 4.5-fold greater in the epidermis.

Discussion and Conclusions: High abundance of seroconversion-associated bacteria on the -penis was associated with a localized increase of T cells in the inner foreskin, driven predominantly by infiltration into the epithelium. The presence of HIV-susceptible cells close to the tissue surface may explain increased HIV-risk. Further studies are warranted to determine the phenotype of infiltrating T cells.

Basic Sciences: **Other**
Sciences fondamentales : **Autres**

BSP9.02

Polymorphisms of the Cytidine Deaminase APOBEC3F Have Different HIV-1 Restriction Efficiencies

Nazanin Mohammadzadeh, Tyson B. Follack, Robin P. Love, Linda Chelico
University of Saskatchewan, Saskatoon, SK

The APOBEC3 enzyme family are host restriction factors that induce mutagenesis of HIV-1 proviral genomes through the deamination of cytosine to form uracil in nascent single-stranded (-)DNA. HIV-1 suppresses APOBEC3 activity through the HIV-1 protein Vif that induces APOBEC3 degradation. Here we compared two common polymorphisms of APOBEC3F. We found that although both polymorphisms have HIV-1 restriction activity, APOBEC3F 108A/231V can restrict HIV-1 ΔVif up to 4-fold more than APOBEC3F 108S/231I and is partially protected from Vif-mediated degradation. This resulted from higher levels of steady state expression of APOBEC3F 108A/231V. Individuals are commonly heterozygous for the APOBEC3F polymorphisms and these polymorphisms formed in cells, independent of RNA, hetero-oligomers between each other and with APOBEC3G. Hetero-oligomerization with APOBEC3F 108A/231V resulted in partial stabilization of APOBEC3F 108S/231I and APOBEC3G in the presence of Vif. These data demonstrate functional outcomes of APOBEC3 polymorphisms and hetero-oligomerization that affect HIV-1 restriction.

Basic Sciences: **Other**
Sciences fondamentales : **Autres**

BSP9.03

Smoking and High HIV Viremia Damage Mitochondrial DNA and May Accelerate mtDNA Aging

Adam S. Ziada[1, 2], Meng Ying Lu[1, 2], Jarke Ignas-Menzies[3], Anthony Y.Y. Hsieh[1, 2], Beheroze Sattha[1], P. Richard Harrigan[4], Steve Kalloger[1], Hélène C.F. Côté[1, 2, 5], and the CIHR team grant on cellular aging and HIV comorbidities in women and children (CARMA)

1. Department of Pathology and Laboratory Medicine, University of British Columbia, Vancouver, BC, 2. Centre for Blood Research, University of British Columbia, Vancouver, BC, 3. Department of Mechanical Engineering, University of British Columbia, Vancouver, BC, 4. Department of Medicine, University of British Columbia, Vancouver, BC, 5. Women's Health Research Institute, Vancouver, BC

HIV+ individuals experience accelerated aging. The accumulation of somatic mitochondrial DNA (mtDNA) mutations is thought to be a marker of aging and has been implicated in several age-associated diseases seen prematurely in HIV+ individuals. Current theories of aging describe both *de novo* mutations, and the clonal expansion of pre-existing mutations, as potential mechanisms for the accumulation of mtDNA mutations. In this study, we hypothesized that somatic mtDNA substitutions (≤2% frequency), which may represent *de novo* mutations, and heteroplasmic mtDNA substitutions (>2%), that may result from clonal expansion, would increase with older age, tobacco smoking and HIV infection.

Participants in this cross-sectional CARMA cohort study were HIV+ (n=92) and HIV-negative (n=72) women and girls aged 1-62 years, hepatitis C and B negative, and current or never smokers. Blood mtDNA substitution mutation rates/10Kb were quantified via next generation sequencing with primer-IDs. Univariate associations between mtDNA measures (occurrence of heteroplasmy and somatic mtDNA mutation rates) and age, smoking, or HIV were examined, along with potential confounders, prior to multivariable modeling.

In a model of adult participants (n=139) that included age, smoking status, and HIV status, being older (p=0.003) and having a peak HIV viremia ≥100 000 copies/ml (vs. HIV-) (p=0.045) were independently associated with higher somatic mtDNA mutation frequency. Among all participants (n=164), mtDNA heteroplasmy was associated with older age (p=0.006) and being a current smoker (p<0.001) but not with HIV+ status. An interaction was observed between age and smoking whereby heteroplasmy increased in non-smokers (p=0.004) but decreased in current smokers (p=0.025) with age.

Exposure to high HIV viremia may contribute to increased mtDNA mutations and accelerated aging in some HIV+ individuals. Importantly, smoking seemed to promote the clonal expansion of mutations rather than increase *de novo* mutations – consistent with the knowledge that smoking promotes age-related diseases.

Basic Sciences: **Other**
Sciences fondamentales : **Autres**

BSP9.04

miR-122 Promotion of Hepatitis C Virus Genome Translation is Extremely Important at the Initial Stage of Viral Infection

Mamata Panigrahi, Joyce A. Wilson
University of Saskatchewan, Saskatoon, SK

The liver-specific microRNA miR-122 plays an important role in positively modulating the Hepatitis C Virus (HCV) life cycle. It is known to promote viral stability, translation, and replication, however, the exact role of miR-122 in this process is not fully understood. Work from our lab demonstrated that, unlike the wild-type HCV genome, some full-length RNAs with mutations in the 5' UTR and bi-cistronic HCV replicons containing an additional IRES can replicate at low rates in miR-122-deficient cells. In this study, we hypothesize that miR-122 promotion of virus translation functions to establish virus replication and is important at the beginning of infection. We have observed that the mutations in the 5'UTR that support miR-122-independent replication also have an enhanced genome translation efficiency. These findings suggest that an altered translation can allow the virus to replicate independent of miR-122, and also support the role of miR-122 in regulating HCV translation. Analysis of cells supporting miR-122-independent HCV replication by microscopy and flow cytometry revealed efficient replication (similar to miR-122-dependent replication) in a small number of cells, instead of low-level replication in all cells. These results suggest that establishment of replication in a high proportion of cells requires miR-122, but for genomes capable of miR-122-independent HCV replication, establishment of an efficient infection is achieved in only a small number of cells. Our recent studies also revealed that the requirement for miR-122 is more important at the beginning to establish an infection, however, once the infection is established, it appears to play a less potent role in the maintenance of the infection. Hence, we suggest that a successful HCV infection requires an initial enhanced translation to reach a threshold of viral protein expression and genome replication, and miR-122 may play a crucial role at the initial stage of infection by promoting viral translation.

Basic Sciences: **Other**
Sciences fondamentales : **Autres**

BSP9.07

A Phylogenetic Approach to Prioritizing HIV Transmission Clusters

Jeffrey B. Joy[1, 2], Angela McLaughlin[1], Jinny Choi[1], Chanson J. Brumme[1], Julio S. Montaner[1, 2]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. Department of Medicine, University of British Columbia, Vancouver, BC

Background: As we near the United Nations 90-90-90 target for elimination of HIV/AIDS by 2020 it is increasingly difficult to both identify new HIV diagnoses and locate remaining pockets of ongoing HIV transmission, particularly in well managed epidemics. Phylogenetic analyses of HIV-1 sequence data can be used to identify groups of infected individuals at high risk of HIV infection. These groups are candidates for targeted public health interventions. However, public health officials may be faced with a large number of actively growing clusters, limited personnel time and resources to intervene with, and lack a quantitative framework for how to prioritize these clusters for intervention. In this study traditional phylogenetic clustering is combined with a lineage level phylogenetic diversification rate to provide a novel method for prioritizing transmission clusters of urgent current concern.

Methods: Phylogenetic transmission clusters (based on a tip-to-tip distance cut-off) and cluster mean, median and maximum diversification rates (a proxy for transmission rates) were inferred from a distribution of 1,000 bootstrap trees recovered under an approximate maximum likelihood model framework from the baseline HIV pol sequences from >9,000 people living with HIV in British Columbia, Canada. We jointly analyze these metrics to determine which clusters display the highest diversification (transmission) rates and compare this with public health data.

Results: Results reveal that inferred phylogenetic transmission clusters which display significantly higher lineage level diversification rates are also independently identified as clusters of urgent current concern by public health data.

Conclusions: The combination of phylogenetic clustering and lineage level diversification rates, which are both feasible to compute in a short time scale even with large datasets, may allow public health agencies to increase the specificity with which they provide interventions to communities and groups who most urgently need them and may also be predictive of clusters undergoing further rapid growth.

Clinical Sciences: **Adherence**
Sciences cliniques : **Respect du traitement**

CSP1.01

LOST & FOUND: Effectiveness of an Clinic-Based Intervention to Re-engage HIV-positive Patients Identified as Out of Care

Joseph Cox[1, 2, 3], Blake Linthwaite[2], David Lessard[2], Kim Engler[2], Bertrand Lebouché[1, 2, 4], Nadine Kronfli[1, 2, 5]

1. McGill University Health Centre, Montreal, QC, 2. Research Institute-McGill University Health Centre, Montreal, QC, 3. Department of Epidemiology, Biostatistics and Occupational Health, McGill University, Montreal, QC, 4. Department of Family Medicine, McGill University, Montreal, QC, 5. Department of Medicine, McGill University, Montreal, QC

Background: Individual- and population-level consequences result from being out of HIV care (OOC). We implemented a clinic-based intervention, Lost & Found, to identify OOC patients for re-engagement. We report on intervention effectiveness.

Methods: The McGill University Health Centre cares for ~2500 patients living with HIV. Since April 2018, we identified OOC patients using clinical factors (e.g., HIV viral load (VL)) and time since last appointment, to categorize as high-, intermediate and low-risk for poor health outcomes. Nurse-led re-engagement efforts (e.g., patient phone calls) were documented. We present both interim data on OOC patients and intervention effectiveness.

Results: As of October 2018, 47% (1143/2446) of patients were identified as potentially OOC. Among these, 282 (25%) were truly OOC; the remainder: not OOC (304; 27%), care elsewhere (519; 45%), deceased (25; 2%), or unknown (13; 1%). While most true OOC patients (269/282; 95%) received a contact attempt, 50/269 (19%) were unreachable. Of the 219 contacted, 101 (46%) re-engaged, 31 (14%) had upcoming appointments, 21 (10%) did not present for appointments, 53 (24%) received a message/did not respond, and 13 (6%) requested no ongoing care. In total, re-engaged patients were OOC for a median of 319 days. High-risk OOC patients required more contact attempts and 29% (5/17) had detectable VLs at re-engagement (Table 1).

Conclusions: A quarter of patients were identified as truly OOC and 60% were re-engaged following contact. While several attempts were necessary for re-engagement, more than one in ten had detectable VLs at presentation, underscoring the importance of re-engagement strategies.

Table1: Characteristics of re-engaged HIV-positive patients identified as out of care

	Overall	High-risk[1]	Intermediate-risk[2]	Low-risk[3]
N re-engaged (%)	101	17 (17%)	75 (74%)	9 (9%)
CD4 at re-engagement, median [IQR]	461 [311, 654]	114 [57, 457]	461 [357, 744]	654 [547, 845]
VL at re-engagement, median [IQR]	<40 [<40, 98]	6477[68, 53926]	<40 [<40, <40]	<40 [<40, <40]
Detectable VL at re-engagement, n (%)	13 (13%)	5 (29%)	7 (9%)	1 (1%)
Number of days from last visit to re-engagement, median [IQR]	319 [231, 479]	210 [160, 343]	315 [242, 445]	504 [427, 583]
Number of days from first contact attempt to re-engagement, median [IQR]	44 [27, 71]	47 [30, 66]	47 [27, 80]	31 [14, 48]
Number of contact attempts, median [IQR]	2.0 [1.0, 2.7]	5.0 [2.0, 5.0]	2.0 [1.0, 3.0]	1.0 [1.0, 2.0]

Notes:[1]CD4 <100 cells/µL (irrespective of VL)***OR***CD4 100-200 cells/µL + VL>40 copies/mL***OR***New patient (1st visit within one year of today)
[2]CD4 100-300 cells/µL + VL < 40 copies/mL***OR***CD4>200 cells/µL+ VL > 40 copies/mL***OR***Non-ART polypharmacy (>5 non-ARVs)***OR***Hx of chronic HCV infection (HCV RNA+)***OR***Youth (<25 yrs old)***OR***CD4 nadir <200 cells/µL.
[3]CD4 >300 cells/µL+VL < 40 copies/mL

Clinical Sciences: **Adherence**
Sciences cliniques : **Respect du traitement**

CSP1.02

Uptake of HIV Non-occupational Post-exposure Prophylaxis Among Sexual Assault Cases

Lolade Shipeolu, Katherine Muldoon, Kari Sampsel, Allegra Drumm, Farriss Blaskovits, Tara Leach
University of Ottawa, Faculty of Medicine, Ottawa, ON

Non-occupational post-exposure prophylaxis (nPEP) programs offer anti-HIV medication to prevent HIV infection following high-risk exposures. Healthcare providers offer nPEP to sexual assault (SA) survivors with high or unknown risk of HIV transmission. Yet, not all patients eligible for nPEP opt to begin the medications despite Ontario's coverage. This study determined the number of SA cases presenting for hospital-based emergency care and examined the uptake of nPEP among high-risk cases.

A retrospective analysis was conducted using clinic information from the Sexual Assault and Partner Abuse Care Program (SAPACP) at The Ottawa Hospital (Jan-1-2015 to Jan-20-2018). Patients were included in the analyses if they presented for care within 72h following a SA and were 16 years and older. Descriptive analyses assessed the number of cases eligible for nPEP and those who started nPEP. Bivariable/multivariable logistic regression modelling assessed factors most strongly associated with starting nPEP using odds ratios (OR), adjusted OR (AOR), and 95% confidence intervals (CI).

The SAPACP saw 1376 patients, 765(56%) were SA cases, 394(53%) were eligible for nPEP and 251(64%) started nPEP. The median age was 23 (IQR:19-30), 360(91%) cases were women. There were 68(17%) cases who arrived by ambulance, 70(18%) assaults occurring outdoor, and 229(58%) assaults involving a known assailant. The highest odds of starting nPEP occurred among cases that occurred outdoors (AOR:2.18, 95% C1:1.18-4.04). The lowest odds of starting nPEP were observed among female cases (vs. male/trans) (AOR:2.7, 95% CI:0.10-0.72), those who arrived by ambulance (AOR:0.55, 95% CI:0.32-0.96), and those with a known assailant (AOR:0.59, 95% CI:0.38-0.92).

Access to nPEP is part of comprehensive clinical care for SA survivors. The results demonstrate a high volume of hospital-based SA cases with an nPEP uptake rate of 64%. The lowest odds of nPEP uptake occurred among cases with female survivors, arrival via ambulance, and those with a known assailant.

Clinical Sciences: **Clinical Trials and Observational Studies of Antiretrovirals and Other HIV Therapies**
Sciences cliniques : **Essais cliniques et études d'observation des antirétroviraux et autres thérapies anti-VIH**

CSP2.01

Safety and Efficacy of Doravirine/3TC/TDF in Treatment-Naïve HIV-1 Infected Adults with Transmitted NNRTI Resistance Mutations

Alex Wong[1], Deborah Goldstein[2], Josep Mallolas[3], Edwin DeJesus[4], Margaret Johnson[5], Jean-Michel Molina[6], Anton Pozniak[7], Anthony Rodgers[8], Valerie Teal[8], Deborah Hepler[8], Sushma Kumar[8], Peter Sklar[8], George J. Hanna[8], Carey Hwang[8], Cyrus Badshah[8], Hedy Teppler[8]

1. Saskatchewan Health Authority, Regina, SK, 2. Whitman-Walker Institute, Washington, DC, USA, 3. University of Barcelona, Barcelona, Spain, 4. Orlando Immunology Center, Orlando, FL, USA, 5. Royal Free Hospital, London, United Kingdom, 6. University of Paris Diderot, Paris, France, 7. Chelsea and Westminster Hospital, London, United Kingdom, 8. Merck & Co., Inc., Kenilworth, NJ, USA

Background: Doravirine is a novel NNRTI with *in vitro* activity against HIV-1 variants with the most commonly transmitted NNRTI resistance mutations. This study evaluated the efficacy and safety of DOR/3TC/TDF, a fixed-dose combination tablet of doravirine 100mg, lamivudine 300mg, and tenofovir disoproxil fumarate 300mg, once daily, in treatment-naïve adults with HIV-1 infection and NNRTI resistance.

Methods: Phase II, multicenter, open-label, single-arm study of DOR/3TC/TDF QD in adults with screening HIV-1 RNA ≥1000 copies/mL, $CD4^+$ T-cells ≥100/mm^3, a single NNRTI resistance mutation (prespecified as RT K103N or Y181C or G190A), and no genotypic resistance to study drugs. Primary endpoint was proportion of participants achieving HIV-1 RNA <50 copies/mL at Week 48. Enrollment was halted due to inability to recruit the planned 60 participants in a reasonable timeframe.

Results: Ten participants (8 with K103N, 2 with G190A) were enrolled and treated; median age was 32.5 years, and most participants (8/10) were male. Baseline median CD4+ T-cells were 408/mm^3 (range 213–607) and median HIV-1 RNA was 17,281 copies/mL (range 1,366–295,604). Two participants discontinued before Week 48: one with protocol-defined virologic failure due to treatment non-adherence, and one lost to follow-up. HIV-1 RNA <50 copies/mL was achieved in all participants who completed Week 48, with mean increase from baseline in CD4+ T-cells of 132/mm^3. Six participants reported drug-related adverse events. No adverse event led to treatment discontinuation.

Conclusions: Although the targeted enrollment was not reached, efficacy was observed in participants with NNRTI mutations K103N or G190A. DOR/3TC/TDF was well-tolerated in this population.

This research was funded by Merck & Co., Inc., Kenilworth, NJ, USA.

Clinical Sciences: **Clinical Trials and Observational Studies of Antiretrovirals and Other HIV Therapies**
Sciences cliniques : **Essais cliniques et études d'observation des antirétroviraux et autres thérapies anti-VIH**

CSP2.02

Ten Year Experience of Dual Antiretroviral Therapy (ART)

Kathy K. Lee[1], Hartmut B. Krentz[1, 2], John M. Gill[1, 3]

1. Southern Alberta Clinic, Calgary, AB, 2. University of Calgary, Faculty of Medicine, Calgary, AB, 3. University of Calgary, Faculty of Medicine, Dept of Microbiology and Infectious Diseases, Calgary, AB

Objective: To describe the clinical characteristics and response of ARV-experienced patients switching to post-HAART dual therapy over the last decade.

Methods: Observational qualitative analysis of patients switching to and remaining on dual therapy (i.e. two ARV drugs) for at least 4 months between 2009/01/01-2019/01/01 were analyzed. Regimen type, length, reasons for switching to dual therapy, HIV-1 RNA (viral load) before switch and most recent VL, CD4 counts at switch and most recent, and current ARV status were determined.

Results: The proportion of patients on dual therapy increased from 1.2% in 2009 to 4.5% in 2018; 94 patients switched from triple to dual therapy. Median age was 53.5 years; median time on antiretrovirals before switch was 12.6 years [IQR 5.7-19.2]. The most commonly used regimens were: dolutegravir/rilpivirine (31%), darunavir/r*/etravirine (22%), dolutegravir/lamivudine (12.8%), darunavir/r*/dolutegravir (8.5%), and lopinavir/r*/raltegravir (7.4%). Median time on dual therapy was 35.6 months [IQR 19.7-55.2]. The three most common reasons for selecting dual therapy were: i) mitigating adverse effects and limiting toxicities from long term drug class exposure, ii) simplification strategy for once daily dosing and decrease pill burden/size to improve adherence, and iii) giving highly ARV-experienced patients treatment options who had limited choices due to their high genotype resistance profile. 71% of patients were suppressed before switch, 88% remained suppressed. Median CD4 counts at switch were 451/mm^3 and 529/mm^3 at latest count. Nineteen patients switched back to triple therapy; 5 due to resistance and 3 due to adherence issues resulting in viral failure.

Conclusion: The introduction of newer drugs with more durability and better tolerability gives opportunity to being able to switch to dual therapy. Highly treatment experienced patients with limited antiretroviral options due to adverse effects or genotype resistance were able to maintain undetectable viral loads with dual therapy for a median of 3 years.

*boosted ritonavir

Clinical Sciences: **Clinical Trials and Observational Studies of Antiretrovirals and Other HIV Therapies**
Sciences cliniques : **Essais cliniques et études d'observation des antirétroviraux et autres thérapies anti-VIH**

CSP2.03

A Phase 3, Randomized, Controlled Trial of Bictegravir based B/F/TAF vs DTG/ABC/3TC in Treatment-Naïve Adults at Week 96

Jonathan Angel[1], Jason Brunetta[2], David Wohl[3], Yazdan Yazdanpanah[4], Axel Baumgarten[5], Amanda Clarke[6], Debbie Hagins[7], Moti Ramgopal[8], Xuelian Wei[9], Kirsten White[9], Sean Collins[9], Hal Martin[9]

1. The Ottawa Hospital, Ottawa, ON, 2. Maple Leaf Medical Clinic, Toronto, ON, 3. University of North Caorlina, Chapel Hill, NC, USA, 4. Hopital Bichat Claude Bernard, Paris, France, 5. Zentrum für Infektiologie Berlin Prenzlauer Berg, Berlin, Germany, 6. Royal Sussex County Hospital, Brighton, United Kingdom, 7. Chatham Care Center, Savannah, GA, USA, 8. Midway Immunology Center, Ft. Pierce, FL, USA, 9. Gilead Sciences, Inc, Foster City, CA, USA

Bictegravir (B), a potent INSTI with a high barrier to resistance, is coformulated with emtricitabine (F) and tenofovir alafenamide (TAF) as the Health Canada-approved single-tablet regimen B/F/TAF. We report Week (W) 96 results from an ongoing phase 3 study comparing B/F/TAF to coformulated dolutegravir, abacavir, and lamivudine (DTG/ABC/3TC) in treatment- naïve adults starting treatment. Primary outcome at W48 HIV-1 RNA <50c/ml by FDA snapshot demonstrated noninferior virologic responses, similar bone and renal profiles, and no viral resistance.

HLA-B*5701-negative adults, without HBV and with estimated glomerular filtration rate (eGFR) ≥50 mL/min were randomized 1:1 to receive blinded B/F/TAF (50/200/25 mg) or DTG/ABC/3TC (50/600/300 mg) with matching placebos QD. In addition to the primary outcome, secondary outcomes included HIV-RNA <50 c/mL at W96 and noninferiority was assessed with 95% confidence intervals. Other outcomes included safety (adverse events [AEs], bone and renal safety).

At W96, B/F/TAF (n=314, including 18 participants from Canada) was noninferior to DTG/ABC/3TC (n=315, including 15 participants from Canada): 87.9% vs 89.8%, respectively, achieved HIV-1 RNA <50 c/mL (difference -1.9%, p=0.45). No participant had emergent resistance to study drugs. Most common AEs overall were nausea (11% B/F/TAF, 24% DTG/ABC/3TC, p<0.001), diarrhea (15%, 16%), and headache (13%, 16%). No participant discontinued B/F/TAF due to AEs; 5 (2%) discontinued DTG/ABC/3TC due to AEs (1 after W48). Treatment-related AEs occurred in 28% B/F/TAF vs 40% DTG/ABC/3TC (p=0.002); most common was nausea (6%, 17%. p<0.001). At W96, mean % changes in spine and hip BMD were small and similar between groups; median change in eGFR was significantly less with B/F/TAF, while median % changes from baseline in proteinuria were similar.

At W96, B/F/TAF was virologically noninferior to DTG/ABC/3TC, with no viral resistance or safety-related discontinuations. B/F/TAF was well tolerated with less nausea than DTG/ABC/3TC and similar bone and renal safety.

Clinical Sciences: **Clinical Trials and Observational Studies of Antiretrovirals and Other HIV Therapies**
Sciences cliniques : **Essais cliniques et études d'observation des antirétroviraux et autres thérapies anti-VIH**

CSP2.04

Efficacy and Safety of E/C/F/TAF in HIV-Suppressed Participants Aged ≥65 Years: A Pooled Analysis of Two Phase 3 Trials

Franco Maggiolo[1], Giuliano Rizzardini[2], Federico Pulido[3], Gracia Maria Mateo[4], Jean-Michel Molina[5], Edmund Ong[6], Yongwu Shao[7], Susan Chuck[7], Ian McNicholl[7], Moupali Das[7], Harout Tossonian[8], Richard Haubrich[7]

1. Azienda Ospedaliera Papa Giovanni XXIII, Bergamo, Italy, 2. Luigi Sacco Hospital, Milano, Italy, 3. Hospital 12 de Octubre, Madrid, Spain, 4. Hospital de Sant Pau, Barcelona, Spain, 5. Hospital Saint-Louis, Paris, France, 6. Royal Victoria Infirmary, Newcastle Upon Tyne, United Kingdom, 7. Gilead Sciences Inc., Foster City, CA, USA, 8. Gilead Sciences Canada Inc., Mississauga, ON

Understanding safety and efficacy of antiretroviral(ARV) agents in older adults living with HIV is increasingly important; thus, we evaluated the efficacy and safety of E/C/F/TAF in individuals < and ≥65 years of age.

In two international, multicenter, Phase 3 trials, ARV-experienced participants with HIV RNA <50 copies/mL were randomized 2:1 to receive: 1) E/C/F/TAF for 48 weeks or continued ABC/3TC-based regimen for 24 weeks followed by a delayed switch to E/C/F/TAF for another 24 weeks (292-1823) or, 2) E/C/F/TAF or continued TDF-based regimen for 48 weeks (292-1826). This pooled analysis of the E/C/F/TAF arms evaluated efficacy (HIV-1 RNA <50 copies/mL, FDA snapshot analysis) and safety through Week 48 for participants categorized by age (< and ≥65 years).

Of 293 participants, 74 participants were ≥65 years (median age, 69), 81% were male, 89% were White, median CD4 was 608 cells/mm3 compared to 219 participants <65 years (median age, 51), 88% male, 85% White, and median CD4 651 cells/mm3. Baseline third agents included NNRTI 60% (175/293), INSTI 25% (73/293), or boosted PI 15% (45/293).

At W48, HIV RNA<50 copies/mL was 89% in each age group. An HIV RNA≥50 copies/mL was seen in 1 (0.5%) and 0 participants <65 and ≥65, respectively; no participant had virologic failure with resistance. W48 CD4 count was not significantly different between age groups. Adverse event (AE) profile was similar between both groups. There were no discontinuations of E/C/F/TAF due to a renal or bone AEs. Median change from baseline in eGFR was -3.0 mL/min in the <65 subgroup compared to -1.2 mL/min in the ≥65. Urine albumin:creatinine, urine beta-2-microglobulin:creatinine, and urine retinol binding protein:creatinine ratios all improved more in the ≥65 than in younger participants.

The W48 efficacy and safety data support the switch to E/C/F/TAF in HIV-infected, treatment experienced, HIV-1 RNA suppressed people ≥65 years old.

Clinical Sciences: **Clinical Trials and Observational Studies of Antiretrovirals and Other HIV Therapies**
Sciences cliniques : **Essais cliniques et études d'observation des antirétroviraux et autres thérapies anti-VIH**

CSP2.06

The Impact of Integrase Strand Inhibitors on Creatine Kinase Levels in Antiretroviral-Naïve People Living with HIV

Beverly Allan[1], Janet Raboud[3, 4], Jason Trigg[1], Wendy Zhang[1], Marina Klein[6], Sharon Walmsley[7], Deborah Kelly[8], Alex Wong[9], Curtis Cooper[10], Mona Loutfy[11], Rejean Thomas[12], Stephen Sanche[13], Abigail Kroch[14], Robert Hogg[1, 5], Tony Antoniou[2], for the Canadian Observational Cohort (CANOC) Collaboration

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. St. Michael's Hospital, Toronto, ON, 3. Dalla Lana School of Public Health, Toronto, ON, 4. Toronto General Hospital Research Institute, Toronto, ON, 5. Simon Fraser University, Burnaby, BC, 6. Research Institute of McGill University Health Centre, Montreal, QC, 7. University Health Network, Toronto, ON, 8. Memorial University of Newfoundland, St. John's, NL, 9. Regina Qu'Appelle Health Region, Regina, SK, 10. Ottawa Hospital Research Institute, Ottawa, ON, 11. Maple Leaf Medical Clinic, Toronto, ON, 12. Clinique medicale l'Actuel, Montreal, QC, 13. Saskatchewan HIV/AIDS Research Endeavour, Saskatoon, SK, 14. The Ontario HIV Treatment Network, Toronto, ON

Background: Because of their safety and efficacy, integrase strand inhibitor (INSTI)-based regimens are preferred starting treatments for people living with HIV (PLHIV). However, raltegravir (RAL) has been associated with marked creatinine kinase (CK) elevations and rare muscle toxicity in clinical practice. Whether dolutegravir (DTG) or elvitegravir (EVG) are associated with CK elevations is unknown. We compared changes in CK levels between antiretroviral naïve patients initiating treatment with DTG or EVG relative to RAL among participants in the in the Canadian Observational Cohort (CANOC).

Methods: We conducted a retrospective cohort study of antiretroviral naïve people with HIV in the CANOC collaboration who had started an INSTI-based regimen. We used Cox proportional hazard models to compare the risk of grade 2 or higher CK elevations (defined as ≥1.6 x upper limit of normal [ULN], ULN=170 U/L) between those initiating DTG/EVG and those initiating RAL. The model was adjusted for age, sex, race, risk category, province and year of antiretroviral therapy (ART) initiation.

Results: We studied 1,358 patients who had started an INSTI-based regimen, of whom 615 had at least one CK follow-up. Of the 209 patients who had a RAL-based regimen at initiation, 120 had a grade 2 or higher CK elevation (57.4%) and of the 406 patients who had a DTG/EVG-based regimen at initiation, 183 had a grade 2 or higher CK elevation (45.1%). After multivariable regression, there was no difference in time to elevated CK between those initiating DTG/EVG and RAL (aHR [DTG/EGV initiation]= 1.09, CI=0.86-1.39, vs. initiating RAL [referent]).

Conclusions: There was no evidence of a difference in time to elevated CK in people with HIV initiating DTG- or EVG-based treatment relative to those initiating RAL.

Clinical Sciences: **Clinical Trials and Observational Studies of Antiretrovirals and Other HIV Therapies**
Sciences cliniques : **Essais cliniques et études d'observation des antirétroviraux et autres thérapies anti-VIH**

CSP2.07

Comparison of Dolutegravir- and Elvitegravir-Based Antiretroviral Therapy for Antiretroviral Naïve Patients

Beverly Allan[1], Janet Raboud[3, 4], Wendy Zhang[1], Jason Trigg[1], Marina Klein[5], Sharon Walmsley[6], Deborah Kelly[7], Alex Wong[8], Curtis Cooper[9], Mona Loutfy[10], Rejean Thomas[11], Stephen Sanche[12], Abigail Kroch[13], Robert Hogg[1, 14], Tony Antoniou[2], for the Canadian Observational Cohort (CANOC) Collaboration

1. BC-CfE, Vancouver, BC, 2. St. Michael's Hospital, Toronto, ON, 3. Dalla Lana School of Public Health, Toronto, ON, 4. Toronto General Hospital Research Institute, Toronto, ON, 5. Research Institute of McGill University Health Centre, Montreal, QC, 6. University Health Network, Toronto, ON, 7. Memorial University of Newfoundland, Saint John's, NL, 8. Regina Qu'Appelle Health Region, Regina, SK, 9. Ottawa Hospital Research Institute, Ottawa, ON, 10. Maple Leaf Medical Clinic, Toronto, ON, 11. Clinique medicale l'Actuel, Montreal, QC, 12. Saskatchewan HIV/AIDS Research Endeavour, Saskatoon, SK, 13. The Ontario HIV Treatment Network, Toronto, ON, 14. Simon Fraser University, Burnaby, BC

Background: Dolutegravir (DTG) and elvitegravir (EVG) are commonly used integrase strand inhibitor (INSTI)-based regimens. However, the comparative effectiveness of these agents is unknown. We compared the impact of initiating these drugs on viral suppression in the Canadian Observational Cohort (CANOC).

Methods: We conducted a retrospective cohort study of antiretroviral naïve patients in the CANOC collaboration initiating an INSTI-based regimen between January 2000 -December 2016. We used Cox proportional hazard models to compare time to virologic suppression (defined as VL < 50 copies/mL on two occasions at least 30 days apart) between DTG and EVG-based treatment. We adjusted models for age, sex, race, risk category, province and year of antiretroviral therapy initiation.

Results: We identified 1,149 participants who had started either DTG (n = 650) or EVG (n = 499) of whom 1,134 had at least one follow-up viral load. Patients who had a DTG-based regimen at initiation were more likely to be Caucasian (46.4% vs. 38.5%), to have initiated antiretroviral therapy after 2014 (76.4% vs. 42.5%) and to be older, than patients who initiated with a EVG-based regimen and were less likely to be hepatitis C co-infected (9.4% vs. 13.0%) than patients who initiated with a EVG-based regimen. After multivariable regression, there was no difference in time to viral suppression between those initiating DTG and EVG (adjusted hazard ratio [DTG initiation]= 1.08, CI=0.94-1.24, vs. initiating EVG [referent]).

Conclusions: There was no evidence of a difference in time to viral suppression among antiretroviral-naive people with HIV initiating DTG- or EVG-based antiretroviral therapy.

Clinical Sciences: **Clinical Trials and Observational Studies of Antiretrovirals and Other HIV Therapies**
Sciences cliniques : **Essais cliniques et études d'observation des antirétroviraux et autres thérapies anti-VIH**

CSP2.08

Switch to Doravirine/Lamivudine/Tenofovir Disoproxil Fumarate (DOR/3TC/TDF) Maintains Virologic Suppression Through 48 Weeks in the DRIVE-SHIFT Trial

Princy Kumar[1], Margaret Johnson[2], Jean-Michel Molina[3], Giuliano Rizzardini[4], Pedro Cahn[5], Markus Bickel[6], Josep Mallolas[7], Yan Zhou[8], Cristiana Morais[8], Sushma Kumar[8], Peter Sklar[8], George J. Hanna[8], Carey Hwang[8], Wayne Greaves[8], Kathleen Squires[9], for the DRIVE-SHIFT Study Group

1. Georgetown University, Washington, DC, USA, 2. Royal Free Hospital, London, United Kingdom, 3. University of Diderot and Hopital Saint-Louis, Paris, France, 4. Fatebenefratelli Sacco Hospital, Milan, Italy, 5. Fundacion Huesped, Buenos Aires, Argentina, 6. Infektiologikum, Frankfurt, Germany, 7. University of Barcelona, Barcelona, Spain, 8. Merck & Co., Inc., Kenilworth, NJ, USA, 9. Thomas Jefferson University, Philadelphia, PA, USA

Background: Doravirine is a novel NNRTI with demonstrated efficacy in treatment-naïve adults with HIV-1.

Methods: This open-label, active-controlled, non-inferiority (NI) trial evaluated once-daily DOR/3TC/TDF vs current therapy in adults with HIV-1 virologically suppressed for ≥6 months on 2 NRTIs plus a boosted PI, boosted elvitegravir, or NNRTI. Participants were randomized (2:1) to start DOR/3TC/TDF on Day 1 (immediate switch, ISG) or after 24 weeks (delayed switch, DSG). The primary endpoint was the proportion of participants with HIV-1 RNA <50 copies/mL (FDA snapshot; NI margin -8%), with primary comparison between ISG Week 48 and DSG Week 24, and secondary comparison between groups at Week 24. The proportion with HIV-1 RNA ≥50 copies/mL was also analyzed (FDA snapshot; NI margin 4%).

Results: 670 participants (447 ISG, 223 DSG) were treated (84.5% male, 76.4% white, mean age 43.3 years). At Week 24, 93.7% of ISG vs 94.6% of DSG had HIV-1 RNA <50 copies/mL (difference -0.9% [-4.7%, 3.0%]), and 1.8% of each group had HIV-1 RNA ≥50 copies/mL. At Week 48, 90.8% of ISG maintained HIV-1 RNA <50 copies/mL (difference -3.8% [-7.9%, 0.3%] vs DSG at Week 24), and 1.6% of ISG had HIV-1 RNA ≥50 copies/mL. In the ritonavir-boosted PI stratum, mean changes in fasting LDL-C and non-HDL-C at Week 24 were significantly lower (p<0.0001) in ISG vs DSG (table).

Conclusions: A once-daily single-tablet regimen of DOR/3TC/TDF demonstrated non-inferior efficacy and acceptable safety compared to continuing therapy, and is an option for maintaining viral suppression in patients considering a change in therapy.

... 2

Table 1:

DRIVE-SHIFT Phase 3 Trial: Efficacy & Safety Outcomes					
Efficacy (FDA Snapshot Approach)	DOR/3TC/TDF QD (ISG) N=447		Baseline Regimen (DSG) N=223		ISG minus DSG
ISG vs DSG, Week 24	n	(%)	n	(%)	Difference (95% CI)
HIV-1 RNA <50 copies/mL	419	(93.7)	211	(94.6)	-0.9 (-4.7, 3.0)
HIV-1 RNA ≥50 copies/mL	8	(1.8)	4	(1.8)	-0.0 (-2.3, 2.3)
ISG Week 48 vs DSG Week 24	n	(%)	n	(%)	Difference (95% CI)
HIV-1 RNA <50 copies/mL	406	(90.8)	211	(94.6)	-3.8 (-7.9, 0.3)
HIV-1 RNA ≥50 copies/mL	7	(1.6)	4	(1.8)	-0.2 (-2.5, 2.1)
Safety Outcomes, Week 24	DOR/3TC/TDF QD (ISG) N=447		Baseline Regimen (DSG) N=223		ISG minus DSG
Lipids, Change from Baseline (PI+rtv Stratum)	Mean Change (95% CI)		Mean Change (95% CI)		Difference (95% CI)
Fasting LDL-C (mg/dL)	-16.5 (-19.4, -13.7)		-1.9 (-6.5, 2.6)		-14.6 (-18.9, -10.4)
Fasting non-HDL-C (mg/dL)	-24.7 (-28.3, -21.2)		-1.3 (-6.2, 3.6)		-23.0 (-28.0, -18.1)
Adverse Event (AE) Summary	n	(%)	n	(%)	Difference (95% CI)
One or more AE	308	(68.9)	117	(52.5)	16.4 (8.6, 24.2)
Drug-related[†](DR) AE	87	(19.5)	5	(2.2)	17.2 (13.0, 21.5)
Discontinued due to AE	11	(2.5)	1	(0.4)	2.0 (-0.2, 4.0)
Discontinued due to DR AE	7	(1.6)	0	(0.0)	1.6 (-0.1, 3.2)

[†]Determined by the investigator to be related to study treatment.

ISG = Immediate Switch Group; DSG = Delayed Switch Group. Baseline Regimen = ritonavir or cobicistat-boosted PI, or cobicistat-boosted elvitegravir, or NNRTI, each administered with two NRTIs.

Clinical Sciences: **Clinical Trials and Observational Studies of Antiretrovirals and Other HIV Therapies**
Sciences cliniques : **Essais cliniques et études d'observation des antirétroviraux et autres thérapies anti-VIH**

CSP2.09

Doravirine/Lamivudine/Tenofovir DF continues to be Non-Inferior to Efavirenz/Emtricitabine/Tenofovir DF: Week 96 Results of the DRIVE-AHEAD Trial

Chloe Orkin[1], Kathleen Squires[2, 7], Jean-Michel Molina[3], Paul Sax[4], Wing-Wai Wong[5], Otto Sussmann[6], Gina Lin[7], Sushma Kumar[7], George J. Hanna[7], Carey Hwang[7], Elizabeth Martin[7], Hedy Teppler[7]

1. Royal London Hospital, London, United Kingdom, 2. Thomas Jefferson University, Philadelphia, PA, USA, 3. University of Diderot and Hopital Saint-Louis, Paris, France, 4. Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA, 5. Taipei Veterans General Hospital, Taipei, Taiwan, 6. Asistencia Cientifica de Alta Complejidad S.A.S., Bogota, Colombia, 7. Merck & Co., Inc., Kenilworth, NJ, USA

Background: Doravirine (DOR) is a novel NNRTI. In the phase 3 DRIVE-AHEAD trial in HIV-1 infected treatment-naïve adults, DOR demonstrated non-inferior efficacy to efavirenz (EFV) and favorable profiles for neuropsychiatric tolerability and lipids at 48 weeks. We present data through week 96.

Methods: DRIVE- AHEAD (Clinical Trials Registration: NCT02403674) is a phase 3, multicenter, double-blind, non-inferiority trial that compared DOR with EFV. Eligible participants were HIV-1 infected treatment-naïve adults with pre-treatment HIV-1 RNA ≥1,000 c/mL. Participants were randomized (1:1) to a fixed-dose regimen of DOR 100mg, lamivudine 300mg and tenofovir disoproxil fumarate 300mg (DOR/3TC/TDF) QD or EFV 600mg, emtricitabine 200mg and TDF 300mg (EFV/FTC/TDF) QD for up to 96 weeks. The efficacy endpoint of interest at week 96 was HIV-1 RNA <50 c/mL with predefined non-inferiority margin of 10%. Safety endpoints of interest included pre-specified neuropsychiatric adverse events and mean change from baseline in fasting lipid levels at week 96.

Results: 734 participants randomized, 728 received drug and were included in analyses (mean age 33 yr, 85% male, 48% white, 19% black, 34% Hispanic). At week 96, HIV-1 RNA <50 c/mL was achieved by 77.5% of DOR/3TC/TDF recipients vs 73.6% of EFV/FTC/TDF recipients (difference 3.8%, 95%CI [-2.4, 10.0]). No additional phenotypic resistance to DOR was observed between weeks 48 and 96. Dizziness, sleep disorders/disturbances, altered sensorium, and rash were less frequent in DOR/3TC/TDF recipients than in EFV/FTC/TDF recipients. Fasting LDL-C and non-HDL-C increased in the EFV/FTC/TDF group but not in the DOR/3TC/TDF group, while change in total cholesterol/HDL-C ratio was similar.

Conclusions: Week 96 results support non-inferiority of DOR/3TC/TFD to EFV/FTC/TDF established at Week 48 with no additional DOR resistance between week 48 and 96. DOR/3TC/TDF was well-tolerated with fewer neuropsychiatric and rash events and favorable lipid profile compared with EFV/FTC/TDF.

Clinical Sciences: **Co-infections (including HCV, HBV, HPV, Syphilis, TB)**
Sciences cliniques : **Coinfections (y compris VHC, VHB, papillomavirus, syphilis, tuberculose)**

CSP3.01

Legionella and HIV co-infection in a Colombian Cohort

Breanne M. Head[1], Adriana Trajtman[1], Kathryn Bernard[2], Tamara Burdz[2], Christopher Graham[1], Ann K. Brassinga[1], Lázaro Vélez[3], Zulma V. Rueda[4], Yoav Keynan[1]

1. University of Manitoba, Winnipeg, MB, 2. Public Health Agency of Canada, Winnipeg, MB, 3. Universidad de Antioquia, Medellin, Colombia, 4. Universidad Pontificia Bolivariana, Medellin, Colombia

Background: Due to lack of clinical suspicion, poor diagnostics, and increased co-infection rates, HIV-associated *Legionella* infections are underreported. Consequently, we sought to determine the frequency of *Legionella* infections in HIV-associated pneumonia and the clinical outcome for patients with these co-infections using a Colombian cohort.

Methods: We conducted a retrospective study using bronchoalveolar lavage (BAL) from HIV and pneumonia co-infected individuals hospitalized at a single centre in Medellin, Colombia between February 2007 and April 2014. BAL DNA was assayed for *Legionella* (*Legionellaceae, L. anisa*, *L. bozemanae*, *L. micdadei, L. pneumophila* and *L. pneumophila* serogroup 1) using real-time PCR (qPCR). qPCR methodology was validated using standard culture techniques. Disease severity was determined using information from a patient database (length of hospital stay, clinical laboratory results, complications and eventual outcome).

Results: Of the 47 HIV and pneumonia-infected BAL samples available for this study, majority were from males (80.9%), non-smokers (59.4%), and highly immunosuppressed individuals. In-hospital diagnoses consisted of *Mycobacterium tuberculosis* (40.4%), *Pneumocystis jirovecii* (31.9%) and other (27.7%). Seventeen BAL were positive for *Legionella* and included *L. anisa* (35.3%), *L. bozemanae* (23.5%), *L. pneumophila* (17.6%), and *L. micdadei* (11.8%). No *L. pneumophila* serogroup 1 was detected in our study. *Legionella*-positive individuals had significantly more complications ($p < 0.04$), higher mortality rates ($p = 0.02$) and were rarely administered empirical anti-*Legionella* therapy while in hospital.

Conclusions: *Legionella* can frequently be found in the BAL of HIV and pneumonia co-infected patients however, current diagnostics, which are primarily geared towards *L. pneumophila* serogroup 1, may not be appropriate for use in the South American context. Clinicians should be aware of the possible presence of *Legionella* in HIV-associated pneumonia and the potential complications that can arise due to these co-infections. If further investigations support these findings, this could change the way that community-acquired pneumonia is managed in immunocompromised HIV-infected individuals.

Clinical Sciences: **Co-infections (including HCV, HBV, HPV, Syphilis, TB)**
Sciences cliniques : **Coinfections (y compris VHC, VHB, papillomavirus, syphilis, tuberculose)**

CSP3.02

Safety and Efficacy of a Single Tablet Daily Dosing Regimen for HIV-HCV Co-infection

Mary-Anne Doyle[1], Terry Lee[2], Joel Singer[2], Angela Crawley[1], Marina Klein[3], Curtis Cooper[4]

1. The Ottawa Hospital, Ottawa, ON, 2. University of British Columbia, Vancouver, BC, 3. McGill University, Montreal, QC, 4. The Ottawa Hospital - University of Ottawa, Ottawa, ON

Historically, HIV-HCV treatment has been characterized by harsh medication side effects, complex dosing schedules, challenging drug-drug interactions and poor HCV SVR.

Participants on suppressive HIV ARV and genotype 1 HCV infection were switched to single tablet daily dosed elvitegravir/cobicistat/emtricitabine/tenofovir alafenamide (ECF/TAF) and one month thereafter initiated single tablet daily dosed ledipasvir-sofosbuvir (LPV-SOF) for 12 weeks. ECF/TAF was continued during HCV treatment and for 12 weeks post HCV treatment.

25 participants were enrolled, 24 initiated ECF/TAF (one withdrew consent prior to dosing), 23 initiated and completed LPV-SOF (one discontinued ECF/TAF after 6 days). 23 were assessed 12 weeks following HCV treatment for SVR. Mean age was 55.2 (7.5), 24 were male, 19 were white and 19 reported IDU as the mode of HIV and HCV exposure. 86% were genotype 1a-infected, mean HCV RNA level was 6.33 x 10^6 and mean transient elastography score was 8.3 (7.0) kPa (3 cirrhotic). The mean CD4 count was 579 (223) cells/µL. Mean adherence to HCV medications was 98% and HIV ranged from 95-99% over the 7 month study duration. HIV undetectability was achieved in 95% of participants over the course of observation. 19 of 23 participants cleared HCV RNA by week 4 of LPV-SOF treatment, all cleared by week 12 and all achieved SVR. Mean CD4 count increased to 673 (361) cells/µL ($p=0.04$) and transient elastography score declined to 5.7 (1.8) kPa ($p<0.001$) by week 12 post HCV treatment. 51 adverse events in 19 of 25 participants were reported. No SAE (n=2) was related to study medication. Only one event was deemed definitely related to study drug (HIV RNA breakthrough in participant with remote history of multiple ARV class resistance inadvertently enrolled).

This two tablet daily HIV-HCV regimen is well tolerated, safe, avoids DDIs, maintains HIV suppression and is highly curative of HCV.

***Clinical Sciences:* Co-infections (including HCV, HBV, HPV, Syphilis, TB)**
***Sciences cliniques :* Coinfections (y compris VHC, VHB, papillomavirus, syphilis, tuberculose)**

CSP3.03

Ledipasvir-Sofosbuvir Induces Metabolic Changes in HIV-HCV Co-infection: Results of CTN289

Mary-Anne Doyle[1], Terry Lee[2], Joel Singer[2], Angela Crawley[1], Marina Klein[3], Curtis Cooper[1]

1. The Ottawa Hospital - University of Ottawa, Ottawa, ON, 2. University of British Columbia, Vancouver, BC, 3. McGill University, Montreal, QC

Background and Aims: We evaluated the metabolic effects of a 12-week HCV antiviral treatment with ledipasvir-sofosbuvir (LPV-SOF) in HIV-HCV co-infection after switching to elvitegravir/cobicistat/emtricitabine/tenofovir alafenamide (ECF/TAF).

Methods: Participants were switched to single tablet daily dosed ECF/TAF and one month later initiated LPV-SOF for 12-weeks. Metabolic measures were assessed at baseline and at week 4, week 12 and 12-weeks post-treatment.

Results: 23 participants initiated and completed LPV-SOF treatment. All 23 achieved SVR12. Participants were predominantly male (55.2 years (SD 7.5)) and were mostly infected with genotype 1a (86%). At baseline, the mean HOMA-IR score was 3.25 (+/- 4.67), with 43.5% of patients having a HOMA-IR>2.0. While there was no statistically significant difference in mean HOMA-IR 12-weeks post-treatment [3.05 (SD 6.30]), fewer participants had a HOMA-IR >2.0 (6/21, 28.5%). There was no effect of treatment on HbA1c during the study period. LDL-C and total cholesterol increased during treatment and were significantly higher 12-weeks post-treatment [mean change total cholesterol 0.46 mmol/L (p=0.02), LDL-C 0.62 mmol/L, (p<0.001)]. There was no difference in HDL 12-weeks post-treatment. There was a statistically significant decrease in ApoA1 and ApoA2 12-weeks post-treatment [ApoA1 -237.2 mcg/ml, p=0.02, ApoA2 12 weeks -40 mcg/ml, p=0.05] but no effect on other apolipoproteins at any time points. Fibrosis scores by transient elastography were lower 12-weeks post-treatment [mean change -2.85 kPa (SD 6.15, p<0.001)].

Discussion: Eradication of HCV with LPV-SOF in HIV-HCV co-infection following a switch to E/C/F/TAF is well-tolerated and did not negatively impact glucose metabolism. As demonstrated in other studies, HCV clearance was associated with increases in total cholesterol and LDL-C and decreases in ApoA1 and ApoA2 but had no effect on HDL-C or triglycerides or other apolipoproteins. These results provide further evidence that HCV replication influences lipid metabolism and highlights the need for further research to better understand this interaction.

Clinical Sciences: **Co-infections (including HCV, HBV, HPV, Syphilis, TB)**
Sciences cliniques : **Coinfections (y compris VHC, VHB, papillomavirus, syphilis, tuberculose)**

CSP3.04

Profile of Patients with Chronic HCV Infection initiating DAA Treatment in Canada based on Risk for HCV Transmission: The Real-World C-RESPECT Study

Brian Conway[1], Dan Smyth[2], Rejean Thomas[3], Alex Wong[6], Giada Sebastiani[4], Curtis Cooper[5], Hemant Shah[7], Estelle Bene[8], Ritesh Kumar[9], Ted Watson[8]

1. Vancouver Infectious Disease Centre, Vancouver, BC, 2. Centre for Research, Education and Clinical Care of At-Risk Populations (RECAP), Moncton, NB, 3. Clinique L'Actuel, Montreal, QC, 4. McGill University Health Centre, Montreal, QC, 5. The Ottawa Hospital, Ottawa, ON, 6. Saskatchewan Health Authority, Regina, SK, 7. University Health Network, Toronto, ON, 8. Merck Canada Inc., Kirkland, QC, 9. Merck & Co., Inc., Kenilworth, NJ, USA

Background: The incidence of Hepatitis C virus (HCV) infection is higher in certain risk groups, including men who have sex with men (MSM) and people who inject drugs (PWID), identified as Core Transmitters (CT). Herein, we describe the disease parameters, clinical and social characteristics of Core Transmitters (e.g. MSM and PWID) vs. non-Core Transmitters (non-CT) treated with direct-acting antiviral therapy in routine Canadian practice as part of the C-RESPECT study.

Methods: C-RESPECT is an ongoing, prospective, observational study of HCV-infected patients treated with DAAs. In this analysis, patients enrolled between March 2017 and September 2018 were included.

Results: A total of 236 participants (CT: 131 [31 HIV Co-infected]; non-CT: 105 [4 HIV Co-infected]) were included in this analysis. Baseline demographics and characteristics among CT and non-CT patients are shown in Table 1. Overall, significant differences were observed between groups in age, socioeconomic status, food/housing security, ever having been incarcerated, genotype, current smoking, BMI, and fatigue score. The most common comorbidities were chronic pain (CT: 24.4%; non-CT: 18.1%), non-alcoholic fatty liver disease (CT: 4.6%; non-CT: 15.2%), and diabetes (CT: 4.6%; non-CT: 10.5%).

Conclusion: Significant differences exist at the time of DAA initiation in the profile of CT and non-CT patients being treated for HCV infection. Future analyses will compare response to therapy between these groups with an emphasis on factors associated with non-response. Long-term follow-up of CT patients is ongoing to evaluate the incidence and correlates of HCV re-infection post-SVR12.

... 2

Table 1: Patient Demographics and Characteristics at Baseline by Group

Parameter	CT n=131	Non-CT n=105	p-Value
Age: years, mean (SD)	45.0 (11.5)	56.3 (10.1)	<0.001 (S)
Male gender, n (%)	87 (66.4%)	77 (73.3%)	0.251 (P)
Caucasian, n (%)	107 (81.7%)	88 (83.8%)	0.107 (F)
Patient currently on income assistance, n (%)	96 (73.3%)	51 (48.6%)	<0.001 (P)
Currently insecure about food/housing, n (%)	48 (36.6%)	24 (22.9%)	0.020 (P)
Ever incarcerated, n (%)	77 (58.8%)	35 (33.3%)	<0.001 (P)
Smoker, n (%)	109 (83.2%)	48 (45.7%)	<0.001 (P)
Illicit drug use, n (%)	104 (79.4%)	30 (28.6%)	<0.001 (P)
BMI, kg/m^2, mean (SD)	26.3 (6.5)	25.7 (6.1)	0.008 (W)
Previous HCV infection, n (%)	17 (13.0%)	19 (18.1%)	0.263 (P)
Patient genotype, n (%)			
1a	58 (44.3%)	46 (43.8%)	0.040 (F)
1b	7 (5.3%)	14 (13.3%)	
3	50 (38.2%)	23 (21.9%)	
4	1 (0.8%)	2 (1.9%)	
Mixed	2 (1.5%)	2 (1.9%)	
Other	4 (3.1%)	1 (1.0%)	
Missing	9 (6.9%)	17 (16.2%)	
Hepatic fibrosis assessment performed, n (%)	102 (77.9%)	78 (74.3%)	0.607 (P)
Fatigue severity score, mean (SD)	41.8 (14.6)	34.6 (15.6)	0.001 (W)

Clinical Sciences: **Co-infections (including HCV, HBV, HPV, Syphilis, TB)**
Sciences cliniques : **Coinfections (y compris VHC, VHB, papillomavirus, syphilis, tuberculose)**

CSP3.05

HCV-Infected Individuals have Higher Prevalence of Comorbidity and Multimorbidity

Curtis Cooper[1, 2], Chrissi Galanakis[2], Jesse Donelle[2], Rob Boyd[3], Jeff Kwong[5], Lisa Boucher[4], Claire Kendall[1]

1. The Ottawa Hospital - University of Ottawa, Ottawa, ON, 2. Ottawa Hospital Research Institute, Ottawa, ON, 3. Sandy Hill Community Health Centre, Ottawa, ON, 4. Bruyère Research Institute, Ottawa, ON, 5. University of Toronto, Toronto, ON

Background: 1-2% of Canadians are hepatitis C (HCV)-infected. The liver-specific complications of HCV are established but the extra-hepatic comorbidity, and the relationship with HCV treatment, is less well known. Our objective was to describe comorbidity for people with HCV and the relationship between comorbidity and HCV treatment in the pre- and post-direct acting antiviral (DAA) era.

Methods: All adults with HCV at The Ottawa Hospital Viral Hepatitis Program as of April 1, 2017 were linked with Ontario health administrative data at ICES and age and sex matched to 5 Ottawa area residents for comparison. ICES algorithms were used to identify the prevalence of mental and physical health comorbidities, as well as multimorbidity (2+ comorbidities). Direct age-sex standardized rates were calculated for both cohorts and comparisons made by HCV treatment era.

Results: The mean age of both cohorts was 54.5 years (SD 11.4), 65% were male, 4% were HIV co-infected and 26% of people with HCV had liver cirrhosis. 47% received DAA treatment and 57% were cured. After accounting for age and sex differences, the HCV cohort had greater multimorbidity (prevalence ratio (PR) 1.38, 95% confidence interval (CI) 1.20 to 1.58) and physical-mental health multimorbidity (PR 2.71, 95% CI 2.29 – 3.20) compared to the Ontario cohort. Specifically, prevalence ratios for people with HCV were significantly higher for asthma (1.32), cancer (1.76), chronic obstructive pulmonary disease (2.42), diabetes (1.32), renal failure (2.92), mood and anxiety disorders (2.22), substance use disorder (26.50) and liver failure (6.63). Interferon-based treatment uptake was poor among those 18-35 years with mental health and substance abuse conditions but improved in the DAA era.

Conclusion: People with HCV have higher prevalence of comorbidity and multimorbidity compared to the Ontario population. In our cohort, HCV treatment uptake improved for patients with mental health comorbidity in the DAA era.

***Clinical Sciences:* Co-infections (including HCV, HBV, HPV, Syphilis, TB)**
***Sciences cliniques :* Coinfections (y compris VHC, VHB, papillomavirus, syphilis, tuberculose)**

CSP3.06

T Cell Subset Telomeres and Immune Aging in People with Chronic Viral Coinfections

Anthony Hsieh[1, 2], Beheroze Sattha[1], Neora Pick[3, 4, 5], Melanie Murray[3, 4, 5], Hélène Côté[1, 2, 4], for the CIHR Team on Cellular Aging and HIV Comorbidities in Women and Children (CARMA)

1. Pathology and Laboratory Medicine, University of British Columbia, Vancouver, BC, 2. Centre for Blood Research, University of British Columbia, Vancouver, BC, 3. Oak Tree Clinic, BC Women's Hospital, Vancouver, BC, 4. Women's Health Research Institute, Vancouver, BC, 5. Department of Medicine, Division of Infectious Disease, University of British Columbia, Vancouver, BC

People living with cART-controlled HIV and coinfected with other chronic/latent viruses have higher risk for age-related diseases compared to HIV-monoinfected individuals. We investigated how chronic/latent viral infections affect immune aging markers including shorter proliferative CD8 (pCD8) T cell telomere length (TL) and lower proliferative:senescent CD8 (pCD8:sCD8) T cell ratio.

pCD8 and sCD8 T cells were FACS-sorted by CD28 using PBMCs from CARMA cohort participants. TL was measured in sorted subsets containing sufficient cell numbers for multiplex qPCR (~58% of all specimens). Infection status for HIV, HBV, HCV, and CMV was determined by clinical history and/or serology. The chronic/latent viral burden was considered as 0, 1, 2, and ≥3 of any viruses.

Among 189 participants, 33, 108, 10, 47, 113 and 25 were positive for none (controls), HIV, HBV, HCV, and CMV (21 missing CMV data), and ≥3 viruses, respectively. Most (83%) HIV+ participants were undetectable and ~45% of HCV+ participants were RNA-negative. Higher number of viruses was univariately associated with decreasing pCD8:sCD8 ratio ($P<0.0001$) and shorter pCD8 TL ($P=0.004$), with a noteworthy effect towards shorter sCD8 TL ($P=0.077$). Compared to no viruses, ≥1 virus was associated with lower pCD8:sCD8 ratio ($P\leq0.001$) and shorter sCD8 TL ($P\leq0.047$), while 2 viruses was associated with shorter pCD8 TL ($P=0.005$), independent of age and sex. Both HIV ($\beta=-0.22$, $P<0.001$) and CMV ($\beta=-0.26$, $P=0.036$) were independently associated with a lower pCD8:sCD8 ratio, but HBV and HCV were not. Only CMV showed a significant independent association with shorter pCD8 TL ($\beta=-0.28$, $P=0.036$), with HCV infection ever as the second strongest signal ($\beta=-0.18$, $P=0.069$).

Living with higher chronic/latent viral infection burden is associated with poorer immune profile, likely related to persistent/repeated CD8 T cell stimulation. Our data highlight the potential value of treating and/or developing vaccines where feasible for chronic/latent viruses, including CMV, in people with HIV.

Clinical Sciences: **Co-infections (including HCV, HBV, HPV, Syphilis, TB)**
Sciences cliniques : **Coinfections (y compris VHC, VHB, papillomavirus, syphilis, tuberculose)**

CSP3.07

Providers' Views on Barriers and Facilitators of Bacterial STI Testing Among Gay, Bisexual and Other Men Who Have Sex with Men (MSM) Who are Living with or at Risk of HIV

Ann N. Burchell[1, 7], Jayoti Rana[1, 7], Charie Guiang[1], Rita Shahin[2], Jason Brunetta[3], Leo Mitterni[4], Darrell H. Tan[1, 3, 7], Jean Bacon[5], Mark Gilbert[6], Dionne Gesink[7], Ramandip Grewal[1, 7], Carmen Logie[7], Anna Yeung[1], Ryan Lisk[8]

1. St. Michael's Hospital, Toronto, ON, 2. Toronto Public Health, Toronto, ON, 3. Maple Leaf Medical Clinic, Toronto, ON, 4. Hassle Free Clinic, Toronto, ON, 5. Ontario HIV Treatment Network, Toronto, ON, 6. BC Centre for Disease Control, Vancouver, BC, 7. University of Toronto, Toronto, ON, 8. ACT, Toronto, ON

Objective: Bacterial STI testing is a necessary component of sexual health care for MSM living with and at risk for HIV. Guidelines recommend testing at least once a year or more often if at ongoing risk. As part of a larger mixed methods study with the overall goal to prioritize new STI testing interventions, our aim was to determine barriers and facilitators to offering bacterial STI testing to MSM according to healthcare providers in Toronto.

Methods: In 06/2018-07/2018, we circulated invitations for an online, anonymous survey to an estimated 172 providers in Toronto. Providers were eligible if they provided care for ≥1 MSM per week and were involved in the decision-making process in providing a STI test (e.g., taking sexual histories, ordering tests).

Results: Of 93 respondents, 68% worked in primary care, 32% worked in public health/sexual health clinics, 70% were physicians and 30% were nurses or other allied health professionals. Most (67%) saw between 1-10 MSM clients per week. Among respondents working in primary care (n=63), barriers to offering testing "sometimes" or more often were: insufficient consultation time (64%), difficulty introducing testing during unrelated consultations (52%), forgetting to offer testing (46%), patient reporting no sexual activity (30%) and patient refusal (25%). Among all respondents, preferred practice changes to improve testing were: express testing/fast-track testing services (89%), provider alerts when patients are due for testing (87%), self-collected specimen sampling by patients (84%), standing orders for tests (79%), and nurse-led STI testing (78%). Primary care providers were more in favour of provider alerts whereas providers at sexual health clinics favoured patient reminders.

Discussion: Among those whose practice incorporated sexual health care for MSM, providers were in favour of initiatives to simplify and expedite bacterial STI testing (including self-collection of samples), prompts/reminders for testing, and expanding testing delivery to other healthcare professionals.

Clinical Sciences: **Complications of Antiretroviral Therapy**
Sciences cliniques : **Complications des thérapies antirétrovirales**

CSP4.01

Integrase Strand Transfer Inhibitor (INSTI) Associated Weight Gain in HIV+ Patients: A Review of the Literature

Alisha Merali[2], Michelle M. Foisy[1]

1. Northern Alberta Program, Alberta Health Services, Edmonton, AB, 2. University of Alberta, Faculty of Pharmacy & Pharmaceutical Sciences, Edmonton, AB

Background: Although INSTIs are generally well tolerated, weight gain has been reported in literature and observed in clinical practice. This may significantly impact patient adherence and contribute to comorbidities such as cardiovascular disease. The objective is to summarize available evidence regarding the use of INSTIs and associated weight gain.

Methods: A literature review from Dynamed, EMBASE, PubMed, Medline, Google Scholar and conference abstracts (to Dec/18). Search terms included INSTI, dolutegravir (DTG), elvitegravir/cobicistat (EVG/c), raltegravir (RAL), HIV, and weight gain. Studies in both treatment naïve and experienced adults on INSTI-based regimens that investigated and/or commented on weight gain were included.

Results: A total of 17 studies were included: 7 retrospective observational cohorts, 5 prospective/randomized, 4 prospective/non-randomized, and one case series. Nine studies included ART naïve patients, 2 were switch studies in suppressed patients and the remainder observational cohorts in ART experienced patients. The type of INSTI was not defined in 5 studies; the remaining studies included RAL (8), DTG (8) and/or EVG/c (4). The follow-up time ranged from 24 weeks to 8 years. Most studies reported significant increases in measured parameters including changes in body weight, body mass index (BMI), body fat composition (5) and/or waist circumference. Mean/median weight gain with INSTIs ranged from 2.8 kg (RAL, EVG/c) to 5.6 kg (DTG) (excluding case series). Other predictors of weight gain included female gender, younger age, Black/Hispanic ethnicity, abacavir coadministration, high baseline viral load/low CD4+ count, and hypertension/diabetes. Most studies did not control for potential confounders such as diet, exercise, menopause, and concurrent medications.

Conclusion: A modest weight gain is associated with INSTIs. Monitoring patients for weight gain, secondary metabolic complications and ART nonadherence is recommended. More research is required to identify the mechanism and clinical significance of weight gain, risk factors, contribution of other antiretrovirals, and the impact on cardiovascular health/diabetes.

Clinical Sciences: **Early Treatment, Reservoirs, and Cure**
Sciences cliniques : **Traitement précoce, réservoirs et remède**

CSP5.01

Optimization of Lentiviral Vector Gene Delivery Systems for Use in HIV Gene Therapy

Camile Malard[1, 2], Robert Scarborough[1, 2], Anne Gatignol[1, 2, 3]

1. Lady Davis Institute for Medical Research, Montréal, QC, 2. Department of Microbiology and Immunology, McGill University, Montréal, QC, 3. Department of Medicine, McGill University, Montréal, QC

Background: Although combination antiretroviral therapy can prevent the progression of HIV infection to AIDS, it cannot cure the infection, due to the persistence of latent viral reservoirs. A hematopoietic stem cell (HSC) transplant from a resistant donor to an infected individual has led to the only documented cure of an established HIV infection. However, compatible resistant donors are rare and allogeneic transplants are associated with high mortality rates. Alternatively, a patient's HSCs could be modified *ex vivo* to express molecules that inhibit HIV replication, then transferred back to the patient where they could serve as a renewable source of HIV-resistant immune cells.

Objective: While HIV-1-based lentiviral vectors (LVs) are the leading gene delivery tool in HIV gene therapy, recent clinical trials have been hampered by low HSC transduction, in part because anti-HIV-1 molecules can inhibit HIV-1-based LV production. Our goal is therefore to improve LV transduction of HSCs, as well as to overcome anti-HIV RNA-mediated inhibition of LV production.

Results: We have recently developed a system to compare the production and transduction efficiency of LVs generated using different lentiviral *gag-pol* genes with the goal of increasing HSC transduction during gene therapy. We have also demonstrated that anti-HIV RNA-mediated inhibition of LV production can be decreased by using a hybrid feline (F)IV-HIV based LV system.

Conclusion: By comparing the ability of different *gag-pol* genes to generate high titres of effective LVs, we hope to enhance gene delivery for both HIV gene therapy and various other gene therapy applications. Additionally, we have shown that non-HIV based LV systems have the potential to be used to deliver anti-HIV RNA genes. Our results provide insights that will be helpful when designing and selecting optimal LV delivery systems for gene therapy clinical trials, and specifically for HIV gene therapy.

Clinical Sciences: **HIV and Aging and Comorbidities (including CVD, Osteoporosis, Neurocognitive Effects)**
Sciences cliniques : **Le VIH, le vieillissement et les comorbidités**

CSP6.01

Global Deficit Score (GDS) in Persons Living with HIV (PLHIV) and Mild Neurocognitive Disorder (MND)

Marianne Harris[1, 2], Sofia Stover[3], Aiko Yamamoto[2, 4], Wendy Zhang[1], Jenny Li[1], Silvia Guillemi[1, 2], Ging-Yuek R. Hsiung[2]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. University of British Columbia, Vancouver, BC, 3. Hospital Juan A. Fernandez, Buenos Aires, Argentina, 4. Providence Health Care, Vancouver, BC

Background: Neurocognitive symptoms cause concern among aging PLHIV. Neuropsychological (NP) testing is the gold standard for diagnosing MND, but analysis of NP data is complex. One approach to using NP results for research purposes is converting them to a GDS, which summarizes overall cognitive performance.

Methods: PLHIV with cognitive symptoms not readily explained by another diagnosis were comprehensively assessed in an HIV Neurology specialty clinic. Those requiring further cognitive evaluation underwent NP testing. NP results were summarized using a GDS; GDS $\geq$0.5 was considered to indicate impairment. Categorical variables were compared between participants with GDS $\geq$0.5 and those with GDS <0.5 using chi-squared test, and continuous variables using Wilcoxon rank sum test.

Results: NP results were available for 42 men and 2 women, median age 53 years (Q1-Q3 48-58), all receiving antiretroviral therapy (ART). GDS was $\geq$0.5 (impaired) in 26 (59%) and <0.5 (unimpaired) in 18 (41%). HIV Dementia Scale (HDS) $\leq$14 and $\leq$10 were associated with GDS $\geq$0.5 ($p<0.001$ and $=0.027$, respectively), but MoCA $\leq$25 was not ($p=0.16$). GDS was not associated with gender, ethnicity, prior AIDS, hepatitis C, current plasma viral load, duration of HIV or ART, current or nadir CD4, MRI white matter scores, BMI, VACS, or Framingham scores ($p>0.1$ for all). GDS $\geq$0.5 was not more frequent among the 13 participants receiving efavirenz or an integrase inhibitor than among the 31 who were not ($p=0.65$).

Conclusions: Among 44 HIV+ adults with cognitive symptoms, 41% did not have evidence of a global deficit on NP testing, although milder deficits in individual cognitive domains may have been present. MND in PLHIV is likely multifactorial; we were unable to identify any single HIV- or comorbidity-related factor associated with MND in our analysis. HDS may be a more sensitive measure of overall cognitive impairment than MoCA using given cutoff scores.

Clinical Sciences: **HIV and Aging and Comorbidities (including CVD, Osteoporosis, Neurocognitive Effects)**
Sciences cliniques : **Le VIH, le vieillissement et les comorbidités**

CSP6.02

Evaluating the Feasibility and Impact of a Yoga Intervention on Cognition and Balance in People Living with HIV: Protocol for a Randomized Pilot Trial

Adria Quigley[1], Kelly O'Brien[2], Marie-Josee Brouillette[3], Marilyn MacKay-Lyons[1]

1. Dalhousie University, Halifax, NS, 2. University of Toronto, Toronto, ON, 3. McGill University, Montreal, QC

Background and Objectives: People living with HIV (PLWH) are grappling with increasingly complex health issues, including cognitive and physical impairments. Yoga is an effective form of exercise and mindfulness-based stress reduction across many clinical populations. However, no randomized controlled trials (RCTs) have evaluated the impact of yoga on cognitive and physical function among PLWH. Our primary aim is to determine the feasibility of a yoga intervention in order to lay the groundwork for a full-scale RCT among PLWH. Our secondary aim is to compare the effects of yoga versus control on cognition, physical performance, quality of life, medication adherence, and mental health outcomes.

Methods: We propose a pilot RCT with two parallel groups comparing yoga versus control. We will recruit 25 PLWH (≥35 years) from community and health organizations in Halifax, NS. After baseline assessment with blinded assessors, participants will be randomly assigned to the yoga or control group using a random computer generator. Participants in the yoga group will engage in supervised 60-minute group-based yoga sessions 3 times weekly for 12 weeks at a yoga studio. Monthly smudging ceremonies will take place prior to class commencement. Participants in the control group will maintain their current physical activity levels throughout the study. Changes in outcome variables will be examined between groups using Wilcoxon-Mann-Whitney tests and within groups using Wilcoxon signed rank tests. A priori adherence and satisfaction criteria will be met if participants attend ≥70% of the yoga sessions and if ≥70% are satisfied with the intervention as determined by a post-participation questionnaire.

Implications: This pilot RCT will be the first to investigate the feasibility and effect of a yoga intervention on cognitive and physical outcomes in PLWH. This work will inform the feasibility of further investigation in terms of capacity-building, participant recruitment and retention, and assessment and intervention protocols.

Clinical Sciences: **HIV and Aging and Comorbidities (including CVD, Osteoporosis, Neurocognitive Effects)**
Sciences cliniques : **Le VIH, le vieillissement et les comorbidités**

CSP6.03

Very Early Onset of an Immune Aging Phenotype in Hiv: Implications for Aging Co-Morbidities

Chad Poloni[1], Andreas Giannakis[2], Louise Gilbert[2], Line Dufresne[2], Julian Falutz[2], Christos Tsoukas[2]
1. McGill University, Montreal, QC, 2. McGill University Health Centre, Montreal, QC

Background: Despite successful antiretroviral treatment (ART) and CD4+ T-cell recovery, people living with HIV (PLWH) manifest persistent and profound immune dysregulation characteristic of the Immune Risk Phenotype (IRP). This phenotype is associated with increased morbidity and mortality in the HIV uninfected elderly (>80 years old). The IRP consists of a low CD4:CD8 T-cell ratio, an expanded population of CD8+CD28- T cells and cytomegalovirus (CMV) seropositivity. Little is known regarding the prevalence and clinical significance of the IRP in those with HIV. Preliminary data suggest that this profile in PLWH is associated with increased risk of non-communicable aging related complications. It is unknown at what age the overlap in immunological phenotypes between normal aging and HIV infection occurs. PLWH have a higher prevalence of CMV infection and are more likely to develop an IRP at an earlier age than do uninfected individuals. We therefore undertook a cross-sectional study to determine if the IRP was present at a younger age in PLWH compared to age-matched seronegative controls.

Methods: A total of 188 HIV-ve controls, without aging comorbidities (diabetes mellitus, cardiovascular disease), chronic infections or inflammatory diseases and 318 PLWH were recruited. PLWH were on HIV suppressed on ART for a minimum time of 24 months. All individuals had HIV and CMV serologic screening and T-cell phenotyping for CD4, CD8 and CD28. Participants were classified as IRP+ or IRP– in HIV+ and HIV-ve groups. The onset of the IRP was documented by decade of age. Group comparisons (t-test) and trend analyses were carried out.

Results: Of the 188 HIV negative individuals, 7 were IRP+ (3.7%), while 88 were IRP+ among the 318 HIV infected individuals (27.7%) $p < 0.001$.

Conclusion: This study demonstrates that the IRP becomes more prevalent with age and is also more common and occurs at a younger age in PLWH.

Clinical Sciences: **HIV in Children and Adolescents**
Sciences cliniques : **Le VIH chez les enfants et les adolescents**

CSP7.01

Children's Perceptions of HIV Cure Research: an Early Pediatric Initiation of Combination Antiretroviral Therapy Canada Child Cure Cohort (EPIC4) End of Study Assessment

Fatima Kakkar[1, 2], Doris Ransy[1], Silvie Valois[2], Suzanne Taillefer[2], Robert Reinhard[3], Jason Brophy[4], Hugo Soudeyns[1], EPIC4 Study Team

1. CHU Sainte-Justine, University of Montreal, Montreal, QC, 2. Centre d'Infectiologie Mère-Enfant, Montreal, QC, 3. Public & Global Health Consultant, Vancouver, QC, 4. Univeristy of Ottawa, Children's Hospital of Eastern Ontario, Ottawa, ON

Background: While the field of pediatric HIV cure research has expanded in recent years, little is known about participants' perceptions and comprehension of such research. The objective of this study was to document children's experiences of participating in a study of HIV reservoir.

Methods: The EPIC[4] study is a national prospective cohort study of the HIV reservoir in Canadian children. At enrollment, written informed consent was obtained from parents, and assent from children. At their last study visit 4 years after enrollment, participants at one site (CHU Sainte-Justine) were asked to complete a standardized questionnaire about their experience. For children who remained undisclosed of their HIV status, this was completed by a parent.

Results: By December 2018, 23 of 42 participants had completed the questionnaire: 16 adolescents (age range 15-22 years), and 7 adult parents of children (age range 7-14 years). Overall, 13% could not explain the study's purpose, 52% mentioned HIV research, and 35% alluded to research towards a cure (to "find a cure", "eliminate HIV completely"); none mentioned the word "reservoir." When asked why they chose to participate, 78% explained they wanted to help others living with HIV; other common answers included spending extra time with the clinic team (57%) and the financial compensation provided (48%). While 61% said there was nothing negative about their experience, 18% listed the blood draws ('too much" or "too painful"), and 21% listed other reasons. All responded that they would participate if the study continued.

Conclusion: Despite a standardized informed consent/assent process at enrollment, not all participants recalled study objectives at conclusion. These results suggest the need for ongoing knowledge translation efforts with pediatric participants and their parents throughout the course of a long-term study. Further probing of participation experiences may also help guide future cure study design and patient engagement.

Clinical Sciences: **HIV in Children and Adolescents**
Sciences cliniques : **Le VIH chez les enfants et les adolescents**

CSP7.02

Cognitive, Adaptive, and Academic Skills in 5 ½ year-old HIV-Exposed Uninfected Children Exposed Pre- and Perinatally to Antiretroviral Medications

Mary Lou Smith[1], Stanley E. Read[2], Ari Bitnun[2]

1. Dept. of Psychology, University of Toronto & Neurosciences and Mental Health Program, Hospital for Sick Children, Toronto, ON, 2. Dept. of Pediatrics, University of Toronto & Division of Infectious Diseases, Hospital for Sick Children, Toronto, ON

Background: There are emerging, but conflicting data, on the potential adverse effects of in utero and perinatal exposure to antiretroviral medications (ARVs) on neurocognitive development. Our objective was to compare neurocognitive development of HIV-exposed uninfected children (HEUs) exposed in utero and perinatally to ARVs with age- and sex-matched controls.

Methods: Standardized measures of intelligence, adaptive behaviour (communication, socialization, motor and daily living skills) and early academic skills (reading, spelling, mathematics) were administered. HEUs were recruited from the SickKids HIV Clinic; controls were recruited through community advertisements. Significance was set at $p < 0.01$ to adjust for multiple comparisons.

Results: A total of 165 HEUs and 58 controls were included. The mean age in both groups was 5.5 years, range 4.1-7.2; 48% of HEUs and 38% of controls were male. The majority of participants were from single-parent families who immigrated from Africa (HEU 59%; controls 19%), the Caribbean (HEUs 10%; controls 24%) and South and Southeast Asia (HEU 10%; controls 19%). Mean neurocognitive scores for both groups were within normal limits. However, HEUs scored significantly below those of controls on IQ, adaptive function, math and reading (all p values ≤ .007) but not on spelling. In multiple regression analyses, adjusting for language spoken at home (English, other), maternal education and maternal region of origin, group membership (HEUs vs. controls) remained significant for all measures except reading and spelling. Maternal education and language spoken at home were not significant predictors for any of the outcomes, although maternal region of origin was related to reading and spelling scores.

Conclusion: In utero and perinatal exposure to ARVs may place children at risk for subtle deficits in cognitive, adaptive and academic skills. The development of HEU children should be monitored to determine if and when such differences appear and to identify the need for interventions.

***Clinical Sciences:* HIV in Women and in Pregnancy**
***Sciences cliniques :* Le VIH chez les femmes et pendant la grossesse**

CSP9.01

Validation of Self-reported Combination Antiretroviral Therapy (cART) Regimens in a Multi-site Canadian Cohort of Women Living with HIV

Nadine Kronfli[1], Angela Kaida[2], Jenny Li[3], Clara Wang[3], Alie Pierre[1], Melanie Lee[2], Becky Gormley[2, 3], Paul Sereda[3], Nadia O'Brien[1], Karène Proulx-Boucher[1], Danièle Rouleau[4], Mona Loutfy[5], Alexandra de Pokomandy[1]

1. McGill University Health Centre, Montreal, QC, 2. Simon Fraser University, Burnaby, BC, 3. British Columbia Centre for Excellence in HIV/AIDS, Vancouver, BC, 4. Université de Montreal, Montreal, QC, 5. Women's College Research Institute, Toronto, ON

Background: We sought to assess the validity of self-reported cART regimens, CD4 counts and HIV viral loads among women living with HIV in British Columbia (BC) and Quebec (QC), Canada.

Methods: Questionnaire data from Wave 1 (2013-2015) of the Canadian HIV Women's Sexual and Reproductive Health Cohort Study (CHIWOS) was linked with clinical databases from the BC Centre for Excellence in HIV/AIDS and the Réseau d'Information Scientifiques du Québec. Self-reported cART was assessed by asking: "Which antiretrovirals are you currently taking?" We measured sensitivity, specificity, and positive and negative predictive values (PPV, NPV) of self-reported values for each antiretroviral agent, and the accuracy of self-reported cART, most recent CD4 counts (<200, 200-500, or >500 cells/mm^3) and viral loads (<50, >50 copies/mL) according to clinical databases.

Results: Of 1422 CHIWOS participants, we excluded women from Ontario (n=490), not currently on cART (n=247), who did not know their cART regimens (n=71), and who could not be linked to clinical databases (BC n=2/356;QC n=163/353), leaving n=449 for analyses. Twenty percent reported taking a single-tablet regimen, 41% two-pill, 22% three-pill, and 17% ≥four-pill regimens; 91% of cART regimens had three active agents. Overall, 78.8% (95%CI 74.8-82.5) self-reported their complete cART regimen accurately. Accuracy decreased with a higher number of active agents and pill burden. The accuracy of self-reported CD4 counts and viral loads were 80.8% (95%CI 76.6-84.5) and 92.4% (95%CI 89.5-94.7), respectively. The overall sensitivity, specificity, PPV and NPV per cART agent were 91.3% (95%CI 89.9-92.6), 98.1% (95%CI 97.7-98.4), 92.4% (95%CI 91.0-93.6) and 97.8% (95%CI 97.4-98.1), respectively.

Conclusions: Self-reported antiretroviral agents strongly predicted accurate cART regimens among Canadian women living with HIV. Accuracy of self-reported CD4 counts and viral loads was also very good. Self-reported cART, CD4 counts and viral loads are valid measurement methods in research when clinical or laboratory data are unavailable.

Clinical Sciences: **HIV in Women and in Pregnancy**
Sciences cliniques : **Le VIH chez les femmes et pendant la grossesse**

CSP9.03

Development of an Animated Video that Explains the Risk of HIV Transmission via Breastmilk, Through Extensive Stakeholder Consultation

Nicci Stein[2], Sarah Crawley[4], Molly Bannerman[5], Sarah Khan[8], Wangari Tharao[6], Logan Kennedy[7], Jean Bacon[9], Holy Gauvin[10], Haoua Inoua[11], Precious Maseko[12], David McLay[13], Vibhuti Mehra[14], Jason Brophy[3], Lena Serghides[1]

1. Toronto General Research Institute, Toronto, ON, 2. The Teresa Group, Toronto, ON, 3. CHEO, Ottawa, ON, 4. University of Toronto, Toronto, ON, 5. WHAI, Toronto, ON, 6. WHIWH, Toronto, ON, 7. Women's College Hospital Research Institute, Toronto, PE, 8. McMaster University, Hamilton, ON, 9. OHTN, Toronto, ON, 10. Elevate NWO, Thunder Bay, ON, 11. AIDS Committee of Ottawa, Ottawa, ON, 12. ACCHO, Toronto, ON, 13. CATIE, Toronto, ON, 14. AIDS Committee of York Region, Richmont Hill, ON

The World Health Organization recommends exclusive breastfeeding for women living with HIV (WLWH) receiving antiretrovirals, although breastfeeding is not recommended in high-resource countries, including Canada. This is because in high-resource settings formula and clean water are generally available, and the chances of infant mortality from illnesses that breastmilk can provide protection for is much lower. The basis for the Canadian recommendation is that the risk of potential transmission of HIV to the baby through breastmilk is greater than the zero-risk alternative of formula. Due to the complex values and views surrounding infant feeding, and increased discussions among the HIV community where the message of U=U for sexual transmission is being embraced, the need for knowledge translation tools that can accurately inform parents about HIV transmission through breastmilk are needed.

Through iterative consultation with researchers, service providers, pediatricians, social workers, peer support workers, and most importantly WLWH, we developed a video and discussion guide to help facilitate these discussions between service providers, peer educators, and WLWH. The video explains: (1) cell-associated and cell-free virus, and their significance in breastmilk HIV transmission; (2) that antiretrovirals reduce cell-free virus, but cannot eliminate cell-associated virus; (3) taking antiretrovirals, and having a low viral load, reduces the risk of HIV transmission through breastmilk; (4) immune cells in breastmilk can harbor cell-associated virus and pose a risk for HIV transmission, even in the context of an undetectable viral load; (5) breast-care and antiretroviral adherence is important in reducing transmission risk. This video is available in English, French and will be translated to other languages needed for families affected by HIV.

This presentation will include viewing of the video and discussion on the implications for practice.

Clinical Sciences: **HIV in Women and in Pregnancy**
Sciences cliniques : **Le VIH chez les femmes et pendant la grossesse**

CSP9.04

Tenofovir Alafenamide VS Tenofovir DF in Women: Pooled Analysis of 7 Clinical Trials

Sharon Walmsley[1], Nisha Andany[10], Indira Brar[2], Cynthia Brinson[3], Catherine M. Creticos[4], Debbie Hagins[5], Ellen Koenig[6], Claudia T. Martorell[7], Cristina Mussini[8], Susan Guo[9], Ya-Pei Liu[9], Lauren Temme[9], Devi SenGupta[9], Moupali Das[7]

1. Toronto General Hospital, Toronto, ON, 2. Henry Ford Health System, Detroit, MI, USA, 3. Central Texas Clinical Research, Austin, TX, USA, 4. Howard Brown Health Center, Chicago, IL, USA, 5. Chatham County Health Department, Savannah, GA, USA, 6. Instituto Dominicano de Estudios Virologicos, Santo Domingo, Dominican Republic, 7. The Research Institute, Springfield, MA, USA, 8. Azienda Ospedaliera Universitaria Policlinico, Modena, Italy, 9. Gilead Sciences, Inc., Foster City, CA, USA, 10. Sunnybrook Health Sciences Centre, Toronto, ON

Globally, the majority of people living with HIV are cis-women, who are underrepresented in clinical trials. We therefore evaluated the efficacy and safety of TAF vs. TDF for ART initiation or switch in 779 women.

Data from 7 randomized, double-blind trials (2 in treatment-naïve adults, 5 in virologically suppressed adults) through W96 were analyzed. All participants who initiated or switched to TAF-based regimens (elvitegravir/cobicistat/emtricitabine [FTC]/TAF, rilpivirine/FTC/TAF, FTC/TAF, or bictegravir/FTC/TAF) were compared with those who initiated or continued TDF-based regimens. Virologic suppression (VS; HIV-1 RNA <50 c/mL) rates at W96 were determined by FDA snapshot analysis. Bone mineral density (BMD) and the renal tubular biomarkers urine beta-2-microglobulin (B2m):creatinine (Cr) ratio and retinol binding protein (RBP):Cr ratio are reported.

A total of 779 cis-women (n=429 TAF, n=350 TDF), primarily women of color (67% black or Hispanic/Latina; 45% black and 25% Hispanic/Latina) were enrolled. Treatment-naïve women (WTN) had a median age of 37, with median HIV-RNA 4.47 log10 c/mL and CD4 365 cells/mm3. Women with VS (WVS, median age 47) with median CD4 count of 711 cells/mm3. Of WTN, 86% (TAF) and 85% (TDF) achieved VS (p=0.71) at W96. VS was maintained in 86% of WVS switching to TAF and 85% continuing TDF (p=0.99). Overall TAF and TDF were well-tolerated. Discontinuation due to adverse event/death was 0% (TAF) vs. 1.6% (TDF) in WTN and 1.3% (TAF) vs. 2.2% (TDF) in WVS. At W96 there was less impact on renal biomarkers in WTN initiating TAF- vs TDF-based regimens (p<0.001) and decreases in BMD were smaller (p<0.001). Women switching from TDF to TAF experienced decreases in tubular proteinuria (p<0.001) and improvements in BMD (p<0.001) at W96.

These pooled data from 7 studies demonstrate significant bone and renal biomarker safety advantage for initiating therapy with or switching to TAF compared to TDF in women.

Clinical Sciences: **HIV in Women and in Pregnancy**
Sciences cliniques : **Le VIH chez les femmes et pendant la grossesse**

CSP9.05

Primary Care for Women Living with HIV in Saskatoon: A Pilot Project Exploring Women's Views at Westside Community Clinic

Veronica Hammer[2], Kali Gartner[1, 3]

1. Department of Family Medicine, College of Medicine, University of Saskatchewan, Saskatoon, SK, 2. College of Medicine, University of Saskatchewan, Saskatoon, SK, 3. Saskatoon Community Clinic, Saskatoon, SK

According to Ministry of Health data from 2016, the rates of HIV in Saskatchewan are over two times the national average, at 14.5 per 100,000. That same year, 170 people were diagnosed with HIV in the province, with 75 being female, which is a 25% increase from 2015. Even given this prevalence, however, there is still a significant gap in knowledge amongst community members and some healthcare professionals, which only serves to perpetuate the stigma surrounding HIV/AIDS. To address this, researchers decided to highlight the illness experiences of HIV-positive women in Saskatoon, in an effort to educate Westside Community Clinic (WSCC) staff and healthcare providers, as well as the community at large. Using Participatory Action Research (PAR) and Meaningful Involvement of People Living with HIV/AIDS (MIPA) frameworks, we conducted two semi-structured focus groups in a private room at WSCC. Study participants (N =12) were women who self-identified as being diagnosed with HIV and having accessed some form of care at the clinic. Results from the first focus group were member checked at the second, and researchers used line-by-line coding and discussed quotations from the focus groups that best represented the major themes that were generated. Overall, the women expressed a greater need for HIV education in the community, and the importance of support groups being provided by the healthcare system for this patient population was stressed. A comparison between clinical and hospital care arose, where stigma was often felt in a hospital setting and thus deterred the women from seeking care. The results generated from our study showcase a need for further education surrounding HIV, a need for accessible support systems for these women, and the importance of safe healthcare environments for all people living with HIV.

Clinical Sciences: **HIV Prevention**
Sciences cliniques : **Prévention du VIH**

CSP10.01

Public Knowledge During an HIV Outbreak in Halifax: are People Aware of and Willing to Take PrEP?

Barbara Goodall[3], Jordan Boudreau[1], Natalie Mishreky[1], Thomas Brothers[1], Forrest Gallagher[1], Ryan Booth[1], Emma Mailman[1], Lisa Barrett[1, 2, 3]

1. Dalhousie University, Halifax, NS, 2. Canadian Centre for Vaccinology, Halifax, NS, 3. Nova Scotia Health Authority, Halifax, NS

Introduction: In July 2018, there were 25 new HIV seroconversions in 6 months compared to 15 in 2017. These infections occurred in people who use drugs, within a discrete geographic area of Halifax. PrEP (Pre-exposure prophylaxis) has been publicly funded in NS since July 2018, however there has been no uptake among the most at risk individuals. The barriers to access were unclear.

Purpose: Determine self-perceived risk of HIV transmission, awareness of prevention methods, and PrEP knowledge in a high incidence region.

Methods: Using an ethics approved questionnaire, 210 individuals were surveyed. Questionnaires were collected from pedestrians within the geographic area of the outbreak. Participants were asked a series of "Yes" or "No" questions about their (1) awareness of PrEP, (2) self-perceived risk of contracting HIV, (3) knowledge of HIV prevention methods, and (4) willingness to use a daily medication to reduce HIV risk. The aggregate questionnaire responses were reported as percent answering "Yes" or "No" to each question.

Results: 40/210 individuals self-identified as "at-risk" for HIV infection, 100% (40/40) of these individuals were aware of an HIV prevention method, 52% (21/40) were aware of PrEP, and 90% (36/40) would consider PrEP if told they were at high risk of HIV infection. 170/210 individuals self-reported as "not-at-risk" for HIV infection, 94% (160/170) were aware of an HIV preventative method, 29% (49/170) were aware of PrEP, and 81% (138/170) would consider PrEP if told they were at high risk of HIV infection.

Conclusion: Less than 20% of individuals surveyed in this high incidence area consider themselves at risk of HIV infection. Willingness to use a daily medication to reduce the risk of contracting HIV was high among all participants, however awareness of PrEP was low. These findings support efforts to increase harm reduction, as well as specific community awareness and PrEP prescribers.

Clinical Sciences: **Mental Health Issues that affect HIV Positive Persons**
Sciences cliniques : **Problèmes de santé mentale qui affectent les personnes séropositives au VIH**

CSP11.01

Impact of Brain Health on Work Status and Productivity in People with HIV

Marie-Josée Brouillette[1], Lesley K. Fellows[2], Réjean Thomas[4], Marianne Harris[3], Fiona Smaill[5], Graham Smith[6], Nancy E. Mayo[1]

1. Research Institute of the McGill University Health Centre, Montreal, QC, 2. Montreal Neurological Hospital and Institute, Montréal, QC, 3. BC Center for Excellence, Vancouver, BC, 4. Clinique médicale l'Actuel, Montreal, QC, 5. Special Immunology Services, McMaster University, Hamilton, ON, 6. Maple Leaf Medical Clinic, Toronto, ON

Background: The work experience of people living with HIV has received little attention. This study aimed to identify factors contributing to work status and productivity.

Methods: The data from this study came from the inaugural visit of 856 people enrolled in the Brain Health Now study. Information on work and potential contributing factors were analysed cross-sectionally using relative risk regression. People were classified as working if the identified their major daily activity as working, worked at last 6 hours per week and reported that they worked for pay. Work quality was measured using the Stanford Presenteeism Scale (SPS).

Results: The results are presented in Table 1. Of the 847 people with work information, 423 (50%) were classified as working, for a mean time of 35 hours per week (SD: 14; median: 38; maximum: 100); 366 of these workers contributed information on productivity. Non-workers were on average 3 years older than workers and more likely to have high school education or less. Work status and productivity were explained by physical variables including limitations in physical functioning, poor self-rated health and low energy. Emotional distress was more strongly associated with decreased productivity than work status. Poor cognition, both measured (B-CAM) and self-reported (PDQ), were important in explaining work status and productivity.

Discussion: Physical and cognitive limitations explained work status and productivity. In contrast, emotional factors did not impact work status but did productivity. These findings are an important step towards the development of interventions to optimize work performance in people with HIV.

... 2

Table 1. Factors Influencing Work Status and Work Productivity

	Work Status		
	Not working (n=423) Mean (SD)/N (%)	**Working (n=424) Mean (SD)/N (%)**	**Difference /RR (95% CI)**
Age	54.6 (8.5)	51.2 (7.6)	
Duration of HIV (years)	18.1 (8.0)	15.6 (7.7)	
Men/Women	354/69 (83.5%/16.3%)	363/60 (85.8%/14.2%)	1.1 (0.9, 1.3)
Education			
University or above	107 (38.9%)	168 (61.1%)	Referent
College/Technical	132 (47.1%)	146 (52.9%)	1.2 (1.0, 1.4)
High school only or less	169 (64.8%)	92 (35.2%)	1.7 (1.4, 2.1)
Self-rated Health			
Health Poor or Fair	93 (22.5%)	30 (7.3%)	2.2 (1.6, 3.1)
Symptoms			
SF-36 PFI (0-100) [Norm: 82.3]	74.7 (23.1)	88.4 (16.1)	-13.8 (-16.5, -11.0)
Energy (none or little)	76 (18.5%)	26 (6.3%)	2.1 (1.5, 2.9)
Pain (moderate to very severe)	170 (41.5%)	92 (22.4%)	1.6 (1.4, 1.9)
Emotional distress (MHI > 60)	160 (37.7%)	130 (30.7)	1.2 (1.0, 1.4)
Cognition			
B-CAM (0-35, higher is better)	18.3 (4.5)	21.1 (4.5)	-2.8 (-3.4, -2.2)
PDQ (0-100; higher is worse)	37. 4 (18.2)	31.0 (16.8)	6.4 (4.0, 8.8)
Productivity (Presenteeism- 0-100, Higher is Better) N=366			
	Mean (SD)/		
	N (%)	β (SE)*	
Self-rated Health			
Excellent	62 (15.1%)	Referent	
Very good	175 (42.7%)	-5.6 (2.1)	
Good	143 (34.9%)	-13.6 (2.2)	
Fair or Poor	30 (7.3%)	-14.9 (3.4)	
Symptoms			
Energy (none or little)	26 (6.3%)	-18.3 (3.2)	
Pain (moderate to very severe)	92 (22.4%)	-7.3 (1.8)	
Emotional distress (MHI < 60)	130 (30.7%)	-17.9 (1.4)	
Cognition			
B-CAM	**21.1 (4.5)**	**1.03 (0.17)**	
PDQ (0-100, higher is worse)	**31.0 (16.8)**	**-0.56 (0.04)**	
PDQ: Impairment Range	**48 (11.4%)**	**-18.5 (2.2)**	
***β/SE = t (critical value 1.95); B-CAM= Brief Cognitive Ability Measure; PDQ=Perceived Deficits Questionnaire.**			

Clinical Sciences: **Resistance**
Sciences cliniques : **Résistance**

CSP12.01

Feasibility of HIV Drug Resistance Genotyping from Dried Plasma Spots Obtained from Frozen Material in a Resource-Limited Setting

Olivia H. Tsai[1], Birkneh T. Tadesse[2], Hope R. Lapointe[3], Bemuluyigza Baraki[1], Natalie N. Kinloch[1], Chanson J. Brumme[3], Eleni Aklillu[4], Zabrina Brumme[1, 3]

1. Simon Fraser University, Burnaby, BC, 2. Hawassa University, Hawassa, Ethiopia, 3. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 4. Karolinska Institute, Stockholm, Sweden

Background: Pre-therapy HIV drug resistance genotyping is critical to guide first-line regimen selection for pediatric infections in limited-ARV settings. However, capacity to perform this testing is often lacking, and financial and logistic barriers prohibit the shipping of frozen plasma for testing elsewhere. We investigate the use of dried plasma spots (DPS) from frozen specimens for resistance testing of HIV-infected children in Ethiopia.

Methods: Plasma from 10 ARV-naïve participants of the EFV Pediatric Dose Optimization Study (EPDOS), collected 3-12 months prior and stored at -80˚C, were spotted onto filter paper (~50 µL/spot) and shipped at room temperature. Plasma viral loads (pVL) ranged from 2.2-6.3 (median 5.0) $\log_{10}$ copies/mL. Nucleic acids were extracted from four DPS (two/extraction) using a Purelink kit without RNAse treatment (Invitrogen) and the NucliSENS EasyMag (bioMérieux). Protease and codons 1-234 of Reverse Transcriptase were amplified by nested RT-PCR using primers capable of amplifying multiple HIV clades, and Sanger sequenced. Genotype interpretation was performed using the Stanford Drug Resistance Database.

Results: Amplification was successful for 9/10 participants using both extraction methods; the sole failure occurred in a participant with the lowest pVL. Eight participants harbored subtype C; one harbored an A/C recombinant. Sequences from the same participant clustered as expected phylogenetically. NucliSENS and Purelink-derived sequences differed by a median 0 (max 7) full nucleotide differences, and an additional median 19 (max 40) differences due to nucleotide mixtures. NucliSENS-derived sequences featured significantly more nucleotide mixtures than Purelink ones (p=0.038), and replicate NucliSENS sequences differed from one another by only a median 0 full and 8 partial nucleotide differences. Three children harbored NNRTI resistance; in two of these cases the NucliSENS sequence contained one mutation not detected in the Purelink sequence.

Conclusions: *:* Drug resistance genotyping can reliably be performed using DPS from frozen plasma, with NucliSENS as the preferred extraction method.

Clinical Sciences: **Resistance**
Sciences cliniques : **Résistance**

CSP12.02

Long Term B/F/TAF Switch Efficacy in Patients with Archived Preexisting Resistance

Bertrand Lebouché[1], Kristen Andreatta[2], Madeleine Willkom[2], Ross Martin[2], Silvia Chang[2], Hui Liu[2], Ya-Pei Liu[2], Hiba Graham[2], Hal Martin[2], Kirsten White[2]

1. McGill University, Montreal, QC, 2. Gilead Sciences, Inc, Foster City, CA, USA

Studies 1844 and 1878 demonstrated non-inferior efficacy of switching suppressed HIV-1-infected adults to bictegravir/emtricitabine/tenofovir alafenamide (B/F/TAF) versus continuing dolutegravir/abacavir/lamivudine (DTG/ABC/3TC) or boosted protease inhibitor (PI)-based regimens. Here, we present resistance analyses and virologic outcomes after 2 years of B/F/TAF treatment.

Archived preexisting HIV-1 drug resistance was assessed by historical genotypes (documented resistance to study drugs was exclusionary) and retrospective baseline proviral DNA genotyping (participants with resistance to study drugs detected post-randomization were allowed to remain on study). Virologic outcomes were based on last available on-treatment HIV-1 RNA.

Altogether, 572 participants were switched and treated with B/F/TAF for a median of 108 weeks. Pre-switch reverse transcriptase (RT) genotypic data were available for 78% (447/572) of B/F/TAF-treated participants; integrase data were available for 55% (314/572). Preexisting primary NRTI resistance (-R), NNRTI-R, and INSTI-R substitutions were observed in 16% (71/447), 21% (93/447), and 1.9% (6/314), respectively. High frequencies of NRTI-R substitutions M184V/I (9.8%, 44/447) and thymidine analog mutations (TAMs; 8.5%, 38/447) were detected by DNA genotyping. Substitutions associated with resistance to the NNRTI rilpivirine (RPV) were observed in 9.6% (43/447). At the time of analysis, 99% (564/572) of B/F/TAF-treated participants were suppressed (HIV-1 RNA <50 copies/mL), including 95% (42/44) with archived M184V/I, 95% (36/38) with TAMs, 98% (42/43) with RPV-R, and 100% (6/6) with INSTI-R. There was no resistance development in B/F/TAF-treated participants through week 48, and no participants met criteria for resistance testing after week 48.

Preexisting RT resistance was common among suppressed participants switching to B/F/TAF, notably RPV-R and previously unidentified M184V/I and TAMs. High rates of virologic suppression were observed in the overall and drug resistant populations through 108 weeks of B/F/TAF treatment with no resistance development, indicating that B/F/TAF is a durable switch option for suppressed patients, including those with evidence of these pre-existing NNRTI and NRTI resistance.

Clinical Sciences: **Substance Use and HIV**
Sciences cliniques : **Toxicomanies et VIH**

CSP13.01

The Art of Conversation: Feasibility and Acceptability of a Pilot Peer Intervention to Help People Living with HIV and Complex Needs Transition from Hospital to Community

Andrew D. Eaton[1], Soo Chan Carusone[2], Shelley L. Craig[1], Erin Telegdi[2], John W. McCullagh[3], David McClure[3], Walter Wilson[3], Leonardo Zuñiga[3], Kevin Berney[3], Galo F. Ginocchio[5], Gordon A. Wells[3], Michael Montess[6], Adam Busch[3], Nick Boyce[4], Carol Strike[7], Ann Stewart[5]

1. Factor-Inwentash Faculty of Social Work, University of Toronto, Toronto, ON, 2. Casey House, Toronto, ON, 3. AIDS Committee of Toronto, Toronto, ON, 4. Ontario Harm Reduction Network, Toronto, ON, 5. St. Michael's Hospital, Toronto, ON, 6. Department of Philosophy at York University, Toronto, ON, 7. Dalla Lana School of Public Health at the University of Toronto, Toronto, ON

Background: Hospital discharge can result in discontinuity of care, non-adherence to medications, and other negative outcomes, especially for people living with HIV who face complex medical and psychosocial issues (e.g., ART adherence challenges, problematic substance use). Interventions delivered as partnerships between peers (i.e., living with HIV and substance use experience) and clinicians are recommended in policy to improve the transition from clinical to community-based care.

Aim: To pilot a three-pronged peer-based intervention for people living with HIV who self-report ART adherence challenges, use substances, and will be discharged from hospital, as a partnership between an HIV hospital and a community-based HIV organization (CBHO).

Methods: Intervention components were: a) pre-discharge goal-setting (ART adherence, substance use, self-identified goal) with a clinician; b) pre-discharge meeting with an HIV+ peer; and c) nine post-discharge phone calls between peer and participant, once/day for three days then once/week for six weeks. Feasibility was measured through engagement level and connection to the partner CBHO. Acceptability and potential impact were assessed through participant interviews at three times (pre-intervention, post-intervention, 6-week follow-up).

Results: Seventeen people consented to participate in the recruitment period of 01/04/2017 to 31/03/2018: predominately male (59%), average age 49 (SD=11), average of eight comorbidities (SD=3), and mostly using cocaine (47%) and opioids (29%). Most participants completed pre-discharge goal-setting and peer meeting (n=13), noting the helpfulness of these components in interviews. Phone calls were a challenge following discharge; four people were lost-to-follow-up and half of the nine completers missed at least one call. All completers connected with service at the partner CBHO.

Conclusion: This study presents two intervention components – pre-discharge goal setting and peer meeting – that show preliminary promise at easing the discharge transition for people living with HIV and complex needs. Additional research is needed to explore post-hospital discharge peer support for this population.

Clinical Sciences: **Substance Use and HIV**
Sciences cliniques : **Toxicomanies et VIH**

CSP13.02

Cannabis Consumption in People Living with HIV: Reasons for Use, Secondary Effects and Opportunities for Health Education

Cecilia Costiniuk[1], Zahra Saneei[1], Syim Salahuddin[1], Joseph Cox[1], Jean-Pierre Routy[1], Sergio Rueda[2], Sara J. Abdallah[3], Dennis Jensen[3], Bertrand Lebouche[1, 5], Marie-Josee Brouillette[1], Marina Klein[1], Jason Szabo[1], Charles Frenette[1], Andreas Giannakis[1], Mohammad-Ali Jenabian[4]

1. Chronic Viral Illness Service, Room D02.4110, Montreal, QC, 2. Institute for Mental Health Policy Research, Centre for Addiction and Mental Health, Toronto, ON, 3. Department of Kinesiology and Physical Education, McGill University, Montreal, QC, 4. Department of Biological Sciences and BioMed Research Centre, University of Quebec at Montreal, Montreal, QC, 5. Department of Family Medicine, McGill University, Montreal, QC

Introduction: Amongst people living with HIV (PLWH) in the modern antiretroviral (ARV) era, little is known about the reasons for cannabis use, related modes of administration, effectiveness for symptom relief or undesirable effects. Our aim was to conduct an exploratory study to identify potential areas for further evaluation and intervention.

Materials and Methods: From January-June 2018, health care providers at the Chronic Viral Illness Service in Montreal asked their patients about cannabis use during routine visits. Patients reporting cannabis use were invited to complete a 20-minute coordinator-administered questionnaire. Questions related to patterns of use, modes of administration, reasons for use, secondary effects and HIV health-related factors.

Results: Of 104 PLWH reporting cannabis use, median age was 54 years[Interquartile Range(IQR) 46,59], 13% were female, and 42% were HIV-Hepatitis C co-infected. Median CD4 count was 590 cells/mm^3[IQR 390, 821], 95% of participants were on ARVs and 88% had suppressed viral loads. Reported cannabis use was: more than once daily (32%); daily (25%); weekly(22%); monthly (17%); and rarely (2-3 times per year; 6%). Most participants (97%) smoked dry plant cannabis. Other modes included vaping (12%), capsules(2%), edibles(21%) and oils(12%). Common reasons for cannabis use were for pleasure(68%) and to reduce anxiety(57%), stress(55%) and pain(57%). Many participants found cannabis “quite effective” or “extremely effective”(45%) for symptom-relief. Secondary effects included feeling high(74%), increased cough(45%), paranoia(22%), palpitations(20%) and increased anxiety(21%). Over two-thirds indicated that secondary effects were not bothersome at all. Most participants (68%) rarely missed doses of their ARVs while 27% missed occasionally (1-2 times per month).

Conclusion: Many PLWH use cannabis to self-treat psychological and/or physical symptoms. Most rate cannabis as quite effective for symptom relief. While many participants experience secondary effects, most are not bothered by these symptoms. Health-care providers should be prepared to answer questions about cannabis given stated reasons for use.

Clinical Sciences: **Substance Use and HIV**
Sciences cliniques : **Toxicomanies et VIH**

CSP13.03

Evaluating Harm Reduction Services for People Living with HIV Who Use Substances: Perspectives of Healthcare Workers in Vancouver and Toronto, Canada

Bill O'Leary[1, 2], Carol Strike[1], Sagar Rohailla[1], Matthew Barnes[1], Patrick McDougall[3], Rosalind Baltzer Turje[3], Karen de Prinse[2], Nicole Schaefer-McDaniel[1], Soo Chan Carusone[2]

1. University of Toronto, Toronto, ON, 2. Casey House, Toronto, ON, 3. Dr. Peter Centre, Vancouver, BC

Background: There is strong empirical support linked to harm reduction (HR) programs and services reducing the negative outcomes associated with substance use. HR is now becoming increasingly recognized and utilized across a range of healthcare services.

Aims: To explore frontline healthcare workers (HWs) experiences and perspectives on the benefits and challenges of providing HR programming and care to People Living with HIV.

Methods: A 20 question survey, inclusive of open-ended questions and quantitative rating scales, was completed by HWs at two HIV/AIDS dedicated facilities in Canada implementing HR services.

Findings: A total of 64 HWs participated in the survey, with an average of 6.2 years (range: 0.5 to 18) of experience in HR programs. HWs identified healthcare system engagement and building positive client relationships as key outcomes for evaluation of HR programs. Personal and inter-team related dynamics were highlighted as challenges experienced when utilizing HR in the provision of care. The absence of clear procedures and policies were identified by HWs as barriers to effective implementation of HR programming.

Conclusions: The results of this published study (https://www.cogentoa.com/article/10.1080/2331205X.2018.1461005) can be utilized to inform, establish, and guide HR programs, services, and policy development to ensure the delivery of quality care.

Clinical Sciences: **Substance Use and HIV**
Sciences cliniques : **Toxicomanies et VIH**

CSP13.04

The Delivery of Healthcare Services to People Living with HIV Who Use Drugs: Who Makes the Rules?

Bill O'Leary[1, 2], David J. Brennan[1], Soo Chan Carusone[2], Adrian Guta[3], Rachelle Ashcroft[1], Carol Strike[1]
1. University of Toronto, Toronto, ON, 2. Casey House, Toronto, ON, 3. University of Windsor, Windsor, ON

Background: People living with HIV who use drugs (PLWHWUD) are hospitalized at much higher rates than the general population and report receiving poor care. The overall experience of the hospital admission is influenced by the practice and decision making of healthcare providers (HPs). There is little discussion in the research literature that articulates the perspective of HPs that deliver care to this population.

Methods: Semi-structured interviews were conducted with HPs on in-patient hospital units in Toronto and Ottawa, Canada. Thematic analysis was used to understand the rules and resources utilized and identified by HPs that positively and negatively influence healthcare delivery during the hospital admission of PLWHWUD. Interviews were audio-recorded and transcribed verbatim.

Results: 26 HPs participated (physicians, nurses, dietician, pharmacists, and social workers). Most participants stated that no explicit hospital rules, policies, or guidelines existed to support them in accounting for drug use when making treatment decisions and/or addressing on-site drug use. The formal and informal training of HPs in combination with unsubstantiated knowledge of 'addictions treatment' is translated into implicit rules that guide care delivery for PLWHWUD.

Conclusion: Implicit rules are often made explicit in matters such as treatment decisions, behavioural contracts, and, with instances of on-site drug use, the discharge process. The translation of HPs practice experience into action is the foundation for implicit rules being applied to, and guiding of, healthcare delivery for PLWHWUD; implicit rules are at the crux of informal systemic practices within the hospital. The lack of explicit approaches/guidelines that acknowledge the unique care needs of PLWHWUD result in implicit rules and actions that may negatively impact care delivered to PLWHWUD.

Epidemiology and Public Health: **Evaluations of Public Health Policies, Programs or Interventions**
Épidémiologie et santé publique : **Évaluation des programmes, des politiques et des interventions en santé publique**

EPHP1.01

Shifting the Offer: The Success of Provider-Initiated Point-of-Care HIV Testing in a Canadian Primary Healthcare Setting

Candis Lepage[1], Cecilia McClellan[3], Caleb Chepesiuk[1], Rob Boyd[2], Lynne Leonard[1]

1. School of Epidemiology and Public Health, University of Ottawa, Ottawa, ON, 2. Sandy Hill Community Health Centre, Ottawa, ON, 3. Public Health Agency of Canada, Ottawa, ON

Background: An estimated 21% of Canadians living with HIV are unaware of their HIV-positive status, contributing to unknowing HIV transmission and delaying access to care and treatment. Alternative approaches including routine, provider-initiated point-of-care (POC) HIV testing may provide opportunities to reach undiagnosed populations.

Objective: To determine the acceptability of the routine offer of provider-initiated HIV POC testing in the Health Services Program of the Sandy Hill Community Health Centre (SHCHC).

Methods: Research staff approached patients visiting SHCHC for primary care appointments and offered an HIV POC test and questionnaire which included a self-assessment of the patient`s experience with HIV POC testing and perception on future HIV testing.

Results: Between January 15 and February 8, 2018, 95 patients were approached with the offer of HIV POC testing. Thirty-one patients accepted the offer, of whom 45% had never undergone testing for HIV. Among patients who accepted the offer for their first HIV test, 86% (n=12) had visited SHCHC within the last year and had met with their primary care provider for an annual average of 8 appointments.

Offering HIV POC testing at a primary care setting was successful in providing patients with HIV-related knowledge. The majority (57%) of individuals who accepted the offer agreed or strongly agreed that they obtained new HIV knowledge through the pre and post-test counseling. Additionally, patients who accepted the offer were more likely to report a willingness to engage in future HIV testing compared to patients who declined the offer (45% vs. 30%, $p = 0.045$).

Conclusion: Shifting HIV testing from a risk-based assessment to a routine, provider-initiated offer demonstrates the potential to successfully engage people who are unaware of their HIV status, minimizes missed opportunities for linkage to HIV care, increases knowledge of HIV transmission and acquisition, and may help normalize the offer of HIV testing.

Epidemiology and Public Health: **Evaluations of Public Health Policies, Programs or Interventions**
Épidémiologie et santé publique : **Évaluation des programmes, des politiques et des interventions en santé publique**

EPHP1.02

Re-linkage to HIV Care in Saskatchewan First Nations Communities: Experience from the First Annual HIV Public Health Review

Stephanie Konrad, Jennifer Mirasty, Dawn Garner, Deborah Kupchanko, Carolyn Cyr, Mustafa Andkhoie, Germain Bukassa Kazadi, Ibrahim Khan

Indigenous Services Canada, Regina, SK

Background: Client engagement and retention in HIV care has been shown to be a vital component in reducing the risk of HIV transmission. As such, there is growing acknowledgment of public health's role in identifying and supporting HIV clients not in care. To ensure people living with HIV have access to HIV care and the opportunity for viral suppression, Indigenous Services Canada conducted their first systematic Annual HIV Public Health Review.

Methods: The review included HIV diagnoses from 2004-2017 that were reported in South and Central First Nations communities though the Integrated Public Health Information System. The last viral load (VL) test in 2017, the last antiretroviral (ARV) dispensation in 2017, and the most recent address of the client were collected to identify people living with diagnosed HIV (PLWHIV) that were presumed not to be in care. 'Not in care' was defined as not having a viral load test in the 2017 calendar year. Clients meeting the criteria were referred to nurses in First Nations communities or other jurisdictions (based on the clients' most recent address) to link the clients to HIV care and/or other services.

Results: 84% of PLWHIV were identified as in care, while the remaining 16% were presumed 'not in care'. Of those in care, 70% were virally suppressed, 23% had a VL greater than 200 copies/mL though they had ARVs dispensed within the previous 3 months, and 6% had a VL >200 copies/mL and no ARVs dispensed in the previous 3 months.

Conclusion: The first annual review resulted in an established procedure for using data to identify and support HIV clients re-engage in care. Follow-up outcomes of this review will be assessed in early 2019. In collaboration with First Nations communities and Community Health Nurses, this initiative aims to support the best client and public health outcomes.

Epidemiology and Public Health: **Evaluations of Public Health Policies, Programs or Interventions**
Épidémiologie et santé publique : **Évaluation des programmes, des politiques et des interventions en santé publique**

EPHP1.03

An Evaluation of the Impact of CATIE's Services and Resources for People Working in HIV and Hepatitis C in Canada

Erica Lee[1], Laurel Challacombe[1], Tina Sahay[2], Tim Rogers[1], Laurie Edmiston[1]

1. CATIE, Toronto, ON, 2. Health Promotion Consulting Group/Logical Solutions, Toronto, ON

Background: CATIE strengthens Canada's response to HIV and hepatitis C by bridging research and practice. We connect healthcare and community-based service providers with the latest science, and promote good practices for prevention and treatment programs.

As Canada's official knowledge broker for HIV and hepatitis C, CATIE provides up-to-date, accurate and unbiased information.

Methods: In 2018, CATIE conducted a national online survey of people working in HIV and hepatitis C including public health, healthcare, not-for-profit organizations and government, to assess the overall success of our complement of services and resources in knowledge exchange and mobilization. The survey was designed to evaluate CATIE's reach, frequency of use, relevance, usefulness and effectiveness. Frequency descriptives were compiled from 1,656 respondents from across Canada who completed the survey.

Results: CATIE is reaching its intended audiences. Respondents came from a diverse array of organizations working in HIV, hepatitis C, sexually transmitted infections and harm reduction – most of whom (87%) work from an integrated STBBI approach. Collectively these organizations provide a full range of HIV and hepatitis C services across Canada.

Respondents report that CATIE's services and resources are relevant to their work/needs (97%); increase their knowledge of HIV (95%), hepatitis C (93%) and new developments, best practices and other evidence-informed program innovations (94%); and increase their capacity to respond to the needs of their community (95%).

Ninety-seven percent report using information from CATIE to educate diverse stakeholders and 79% report CATIE's services and resources have contributed to program or service improvement/performance or helped to shape policy and decision-making. Respondents provided over 400 examples of how CATIE's services and resources have changed their policies, practices and programming.

Conclusion: Respondents feel CATIE is meeting their knowledge exchange needs and expectations. CATIE continues to effectively support and impact HIV and hepatitis C work in Canada.

Epidemiology and Public Health: **Evaluations of Public Health Policies, Programs or Interventions**
Épidémiologie et santé publique : **Évaluation des programmes, des politiques et des interventions en santé publique**

EPHP1.05

Trends in Motivation and Setting for HIV Testing among Clients Newly Diagnosed with HIV in British Columbia following Release of 'From Hope to Health'

Theodora Consolacion[1], Mark Hull[2, 4], Robin Yates[3], Monica Durigon[1], Geoffrey Ford[1], David Moore[2, 4], Troy Grennan[1, 4], Mark Gilbert[1, 4], Mel Krajden[5, 4], Jason Wong[1, 4]

1. BC Centre for Disease Control, Vancouver, BC, 2. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 3. BC Ministry of Health, Victoria, BC, 4. University of British Columbia, Vancouver, BC, 5. BC Centre for Disease Control Public Health Laboratory, Vancouver, BC

Background: In December 2012, British Columbia released *From Hope to Health (FHTH).* One focus within *FHTH* was to expand and routinize HIV testing, supported by recommendations from the Office of the Provincial Health Officer. Indeed, HIV testing increased from 223,300 episodes in 2013 to 337,900 in 2017. We evaluated the motivation and setting for HIV testing that resulted in a new diagnosis of HIV from 2013 (when the case report form first included these questions) to 2017.

Methods: We examined differences in gender, exposure group, and year of diagnosis on the reason for, the setting of, and who initiated the HIV test for all clients newly diagnosed with HIV (see Table). We assessed trends over time using Cochran-Armitage tests.

Results: Of the 1,193 new HIV diagnoses, 438 (37%) reported the HIV test was a routine test, 613 (51%) reported the provider offered the test, and 1086 (91%) reported the test was conducted in a healthcare setting. There was an increasing trend for people diagnosed with HIV to be tested in a healthcare setting ($p<0.001$), particularly among men who have sex with men (MSM) ($p<0.001$) and people who inject drugs (PWID) ($p<0.001$). There was no trend in reporting the HIV test was a routine test or that it was offered by the provider among those who had a new HIV diagnosis.

Conclusion: Expansion of HIV testing may be increasing the proportion of HIV diagnosed in healthcare settings, particularly for MSM and PWID who are at higher risk for HIV.

... 2

Table 1

	2013	2014	2015	2016	2017
New HIV Diagnoses Gender n (%)	265	261	241	240	186
Male	234 (88.3)	215 (82.4)	204 (84.7)	203 (84.6)	167 (89.8)
Female	31 (11.7)	44 (16.9)	37 (15.4)	37 (15.4)	17 (9.1)
Transgender	--	2 (0.8)	--	--	2 (1.1)
Exposure n (%)					
Men who have sex with men	154 (58.1)	153 (58.6)	137 (56.9)	145 (60.4)	127 (68.3)
Personwho inject drugs	25 (9.4)	26 (10.0)	17 (7.1)	16 (6.7)	18 (9.7)
Heterosexual exposure	68 (25.7)	65 (24.9)	69 (28.6)	59 (24.6)	30 (16.1)
Other/No identified risk/Unknown	18 (6.8)	17 (6.5)	18 (7.5)	20 (8.3)	11 (5.9)
Test Setting n (%)					
Healthcare setting[1]	226 (85.3)	228 (87.4)	223 (92.5)	232 (96.7)	177 (95.2)
Community setting[2]	32 (12.1)	24 (9.2)	15 (6.2)	1 (0.4)	5 (2.7)
Other setting[3]	7 (2.6)	9 (3.5)	3 (1.2)	7 (2.9)	4 (2.2)
Who Initiated Testing n (%)					
Provider offered test	136 (51.3)	128 (49.0)	137 (56.9)	120 (50.0)	92 (49.5)
Client requested test	103 (38.9)	110 (42.2)	86 (35.7)	83 (34.6)	77 (41.4)
Unknown/Other	26 (9.8)	23 (8.8)	18 (7.5)	37 (15.4)	17 (9.1)
Reason for Testing[4]n (%)					
Recent risk event or exposure	54 (20.4)	36 (13.8)	30 (12.5)	29 (12.1)	26 (14.0)
Routine test (screening including prenatal)	96 (36.2)	90 (34.5)	95 (39.4)	90 (37.5)	67 (36.0)
Symptoms compatible with HIV infection	57 (21.5)	62 (23.8)	53 (22.0)	41 (17.1)	39 (21.0)
Notified as a contact	41 (15.5)	32 (12.3)	29 (12.0)	26 (10.8)	14 (7.5)
Diagnosed with another infection	15 (5.7)	17 (6.5)	22 (9.1)	23 (9.6)	19 (10.2)

Healthcare setting includes clinic, hospital, facility, and doctor's office;[2] Community setting includes outreach and peer setting;
[3] Other setting includes research study, insurance testing, in a correctional facility, online testing, and unknown.
[4] Clients may report multiple reasons for testing. Counts reflect at least this specific reason was chosen. Percentages do not add up to 100.

Epidemiology and Public Health: **Evaluations of Public Health Policies, Programs or Interventions**
Épidémiologie et santé publique : **Évaluation des programmes, des politiques et des interventions en santé publique**

EPHP1.07

PrEP Uptake in Ontario Remains Far Below Guideline Recommendations Despite Favourable Policy Changes

Darrell H. Tan[1, 2, 3], Thomas Dashwood[3], James Wilton[4], Abigail Kroch[4], Tara Gomes[5, 6], Diana Martins[5]

1. Division of Infectious Diseases, St. Michael's Hospital, Toronto, ON, 2. Centre for Urban Health Solutions, St. Michael's Hospital, Toronto, ON, 3. Department of Medicine, University of Toronto, Toronto, ON, 4. Ontario HIV Treatment Network, Toronto, ON, 5. Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, ON, 6. IC/ES, Toronto, ON

Background: The number of individuals meeting guideline indications for PrEP in Ontario exceeds 30000. We estimated the total number of PrEP users in Ontario, and evaluate the impact of key policy changes on PrEP uptake.

Methods: We used IQVIA drug dispensation data from 2044 retail pharmacies in Ontario (representing 64% of prescriptions) to extrapolate population-level tenofovir disoproxil fumarate/emtricitabine (TDF/FTC) use, stratified by age, sex, region, prescriber type and payer type, between 07/2015 and 06/2018. We developed an algorithm to infer whether TDF/FTC was for PrEP, hepatitis B therapy (HBV), post-exposure prophylaxis (PEP) or antiretroviral therapy (ART). We used interventional autoregressive integrated moving average (ARIMA) models to examine the impact of four intervention dates on PrEP use: 1=Health Canada regulatory approval (02/2016), 2= generic TDF/FTC availability and Ontario Drug Benefit formulary listing (09/2017), 3=publication of Canadian PrEP/PEP guidelines (11/2017), 4=OHIP-Plus drug coverage for those aged<25 years (01/2018).

Results: Of an estimated 8948 TDF/FTC dispensations in the year 07/2017-06/2018, there were 40 for HBV, 387 for PEP, 4324 for ART and 4037 for PrEP. PrEP use peaked among those aged 30-39, and was 38.4-fold greater among men than women; 66.9% was in Toronto. The majority was prescribed by family physicians (68.8%) followed by infectious diseases specialists (14.5%), and most prescriptions were covered by private (71%) rather than public insurers. Monthly PrEP dispensations increased 692% over the study period, from 219 in 07/2015 to 1,735 in 06/2018. Significant increases were seen in association with Health Canada approval ($p<0.001$) and the introduction of generics/public drug formulary listing ($p=0.01$). Among those aged <25, significant increases were observed with Health Canada approval ($p<0.001$), guideline publication ($p=0.0004$) and OHIP-Plus ($p=0.008$).

Conclusions: PrEP use has risen in Ontario in association with multiple policy changes, but remains far below the amount recommended in guidelines.

Epidemiology and Public Health: **Evaluations of Public Health Policies, Programs or Interventions**
Épidémiologie et santé publique : **Évaluation des programmes, des politiques et des interventions en santé publique**

EPHP1.08

Knowledge, Attitudes and Prescribing Practices for Human Papillomavirus Vaccine in Males: A National Survey of Canadian Healthcare Providers

Kevin Zou[1], Ann Burchell[3], Gina Ogilvie[4], James Wilton[2], Troy Grennan[2]

1. UBC Faculty of Medicine, Vancouver, BC, 2. BC Centre for Disease Control, Vancouver, BC, 3. St. Michaels Hospital, Toronto, ON, 4. BC Women's Hospital, Vancouver, BC

Background: Human papillomavirus (HPV) is responsible for over 90% of anal cancers – a malignancy disproportionately impacting men who have sex with men (MSM), particularly those living with HIV. Recognizing the importance of health-care provider (HCP) recommendation in vaccine uptake, we sought to characterize the attitudes and willingness of Canadian HCP to recommend HPV vaccine to males.

Methods: A 32-item online survey assessing the knowledge, attitudes and prescribing practices of Canadian HCP on HPV vaccination in males was administered to Canadian HCP from 10/2017 to 04/2018. Logistic regression was used to identify correlates for universal recommendation of HPV vaccine to males.

Results: 343 HCPs completed the survey: 208 (61%) nurses, 95 (28%) physicians, and 39 pharmacists (11%), of whom 158 (46%) considered themselves experts in STI care. 201 (62%) indicated that they would recommend Universal HPV vaccination to males, regardless of age, sexual orientation, and HIV serostatus. Of those favoring targeted male vaccination, 111 (78%) selected MSM under the age of 26 as a priority target population. Multivariable modeling indicated that self-reported expertise in STI care was associated with higher likelihood of universal vaccine recommendation (OR 2.19; 95% CI 1.27-3.78) and being a family physician (versus a nurse) was associated with a lower likelihood of recommendation (OR 0.33; 95% CI 0.14-0.75). HCP-identified barriers to vaccine recommendation included: lack of universal cost coverage (81%), gaps in MSM-specific HCP knowledge (42%), and inadequate time for discussion during patient visits (29%).

Conclusions: Although reassuring that the majority of Canadian HCPs surveyed support vaccination of MSM, this study highlights the importance of continuing to build the evidence base for HPV vaccination in MSM so that evidence-based guidelines can be developed and a stronger case for public funding of HPV vaccination in MSM can be made.

Epidemiology and Public Health: **Evaluations of Public Health Policies, Programs or Interventions**
Épidémiologie et santé publique : **Évaluation des programmes, des politiques et des interventions en santé publique**

EPHP1.09

Men Who Have Sex with Men (MSM) Prefer Self-Collection of Samples for Sexually Transmitted Infections (STI's) at a Vancouver Sexual Health Clinic

Mark Hull[1, 2], David Hall[2], Cameron Bye[2], Glenn Doupe[2], Nancy Chow[3], Misty Bath[2], John Harding[2], Reka Gustafson[2]

1. BC Centre For Excellence In HIV/AIDS, Vancouver, BC, 2. Vancouver Coastal Health, Vancouver, BC, 3. Providence Health Care, Vancouver, BC

Background: MSM may face barriers to sexual health care, including lack of comfort with providers collecting specimens for STI testing. Self-collection of swabs may improve client comfort, and increase adherence to screening recommendations. We undertook to evaluate client preferences for sample collection at an MSM-focused sexual health clinic in Vancouver.

Methods: Sequential clients attending for routine STI testing were offered participation in a prospective survey between May 2018 and June 2018. Individuals were asked to report preferences for client vs. nurse driven sample collection. Proportion of positive samples were compared between those who underwent self-collection vs. provider collection of STI swabs.

Results: Overall 164 individuals participated, with median age 30, (range 19 – 89 years) and 132 (80%) undertaking self-collection of rectal swabs. For those undertaking self-collection n=111 (84%) reported feeling more comfortable performing swabs themselves, however only 1 individual would have refused sample collection if self-collection was not allowed. For those who preferred nursing collection, n=9 (28%) were unsure about how to collect a rectal sample. Amongst participants, overall incidence rate of rectal gonorrhea was 6.7/100 person-years, and 10.3/100 PY for rectal CT. No difference was seen in proportion tested positive by self collection vs. provider collection (17% vs. 15%, p= 0.808).

Conclusions: MSM attending a sexual health clinic preferred to collect their own rectal swabs. Rates of positive tests were similar between those who undertook self-collection and those who had provider collected samples. Routine self-collection may improve adherence to screening for STI amongst MSM.

Epidemiology and Public Health: **Evaluations of Public Health Policies, Programs or Interventions**
Épidémiologie et santé publique : **Évaluation des programmes, des politiques et des interventions en santé publique**

EPHP1.10

The Perspectives of People who Inject Drugs on the Use of Drug Checking Services at Supervised Injection Services

Lynne E. Leonard[1], Rob Boyd[2], Candis Lepage[1], HIV and HCV Prevention Research Team[1]

1. HIV and HCV Prevention Research Team, School of Epidemiology and Public Health, University of Ottawa, Ottawa, ON,
2. Oasis Program, Sandy Hill Community Health Centre, Ottawa, ON

Issue: Implementation of supervised injection services (SIS) is one sanctioned response to reduce engagement in HIV- and HCV-related risk practices among people who inject drugs (PWID). As SIS gain traction in Canada, it is essential that these services are responsive to the reality of a pan-Canadian contaminated drug supply driving the unacceptable number of deaths among PWID.

Extracting data from the Ottawa *SurvIDU/ITrack* study conducted between October and November 2018, we report PWID perspectives on the use of a unique drug checking service using a mass spectrometer at the Sandy Hill Community Health Centre SIS.

Methods: Participants were reached through recruitment cards at front-line service agencies and by PWID community leaders. Individual interviews with consenting PWID encompassed drug use questions including use and opinions of Ottawa SIS, and reasons for use and non-use of the drug checking service.

Results: Of the 251 PWID completing interviews: 57 had accessed the drug checking service, of whom 48 provided reasons for their use. The reason reported by the greatest proportion (30%) was to check their drug quality/contents; specifically checking to see if their drug contained fentanyl was reported by 12%. Using the service to see if their upper contained an opiate was reported by 15%.

126 participants provided a reason for service non-use: no knowledge of the service was reported by the greatest proportion (32%), feeling no need to test their dug was reported by the next highest proportion (15%).

Conclusions: Perspectives on the drug checking service from a diverse population of PWID are essential to drive scale-up. Reasons for non-use are potentially modifiable through enhanced promotion of the service, its objectives, and harm reduction importance. In re-visioning promotion, dissemination of PWID-validated reasons for use will be key to heightening acceptance and understanding among those not yet accessing the service.

Epidemiology and Public Health: **Evaluations of Public Health Policies, Programs or Interventions**
Épidémiologie et santé publique : **Évaluation des programmes, des politiques et des interventions en santé publique**

EPHP1.11

Community Perspectives on Ideal Bacterial STI Testing Services for Gay, Bisexual and Other Men Who Have Sex with Men (MSM) in Toronto, Canada

Ann N. Burchell[1, 2], Dionne Gesink[2], Carmen Logie[2], LaRon Nelson[1], Jayoti Rana[1, 2], Susan Wang[2], Ryan Lisk[3]

1. St. Michael's Hospital, Toronto, ON, 2. University of Toronto, Toronto, ON, 3. ACT, Toronto, ON

Objective: Bacterial STI testing is a necessary component of sexual health care for MSM living with and at risk for HIV. Guidelines recommend testing at least once a year or more often if at ongoing risk. As part of a larger mixed methods study with the overall goal to prioritize new STI testing interventions for implementation, our aim was to learn men's perspectives regarding how best to optimize STI testing services for MSM in Toronto.

Methods: In 2017 we conducted 4 focus groups, two with HIV-positive cis-identified men (n=16), one with HIV-negative cis-identified men (n=8), and one with trans-identified men (n=3). A peer recruiter promoted the study via social media. Participants discussed reasons why men in Toronto may or may not undertake STI testing and barriers/facilitators to STI testing. Focus groups were audio-recorded, transcribed verbatim, and analysed using narrative thematic analysis.

Results: Major themes centred around deficits in existing clinic contexts and ways to improve them, options for testing services outside of clinics, integration with healthcare, and compassionate care. Men desired accessible locations/hours; minimal wait times; express/streamlined testing; improved clinic atmosphere/ambience; and minimal crowding/interaction in waiting rooms. Suggested alternatives included online/home testing; routinizing testing with other services; pharmacies; and clinics at sex-based venues, schools, workplaces, and ASOs. Some men desired more healthcare continuity in the context of STI testing, and spoke of needs for linkages to primary/HIV care with providers who are welcoming to MSM and transmen. Men consistently underlined the need to minimize STI-related stigma with compassionate, professional, and non-judgemental care.

Discussion: Men offered concrete and practical solutions for improving existing services. Their views may also guide efforts to implement new strategies such as online testing. Optimal STI testing would offer variety and choice in the range of testing options available, and would be part of person-centred, LGBT-affirming care.

***Epidemiology and Public Health:* HIV prevention and control programs - Implementation and Program Science**
***Épidémiologie et santé publique :* La prévention du VIH dans les populations clés - mise en œuvre et science des programmes**

EPHP2.01

HIV and Pregnancy E-learning for Professionals

Jackie Eaton, Jody Shynkaruk
Saskatchewan Prevention Institute, Saskatoon, SK

The rate of individuals testing positive for human immunodeficiency virus (HIV) in Saskatchewan is more than double the Canadian average. Of the 177 new cases of HIV diagnosed in 2017 in Saskatchewan, 62 were in females (Saskatchewan Ministry of Health, Population Health Branch, 2018). The majority of the female cases (85%) were identified in females of childbearing age (15-45 years), highlighting the importance of efforts to reduce the risk of vertical (mother-to-child) transmission of HIV.

With appropriate care and treatment, including the use of combination antiretroviral therapy (cART), the risk of vertical transmission is less than 1%. As a result, more women living with HIV are making the choice to have children. Women who are living with HIV may be faced with extra challenges when they discover they are pregnant, are pregnant and discover they are living with HIV, or are considering having a baby while living with HIV. Some women will face stigma and discrimination because of their choices. It is vital that services and programs are delivered in a knowledgeable, non-judgemental, and unbiased fashion to help ensure that pregnant women remain engaged in care.

In an effort to increase the knowledge of health and allied health professionals and community-based professionals, the Saskatchewan Prevention Institute and SHARE (Saskatchewan HIV/AIDS Research Endeavour) have partnered to create an e-learning project focused on HIV and pregnancy. Topics include HIV 101, harm reduction, support during pregnancy, testing, treatment, labour and delivery, case examples, and links to additional resources. This poster presentation provides an overview of the e-learning project.

Epidemiology and Public Health: **HIV prevention and control programs - Implementation and Program Science**
Épidémiologie et santé publique : **La prévention du VIH dans les populations clés - mise en œuvre et science des programmes**

EPHP2.02

One Year of Population-based HIV Pre-exposure Prophylaxis (PrEP) in British Columbia (BC): Program Uptake and Participant Characteristics

Junine Toy[1], Mark W. Hull[1], Jason Trigg[1], Paul Sereda[1], Viviane Lima[1], Katherine Lepik[1], Silvia Guillemi[1], David Moore[1], David Hall[2], Rolando Barrios[1, 2], Julio S. Montaner[1]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. Vancouver Coastal Health Authority, Vancouver, BC

Background: The BC Centre for Excellence in HIV/AIDS centralized HIV PrEP program was launched January 2018. PrEP is available at no cost to qualifying BC residents deemed at high risk of HIV infection according to BC PrEP Guidelines. We describe program uptake and participant characteristics in the first year.

Methods: Persons enrolled in the BC PrEP program between 1-Jan-2018 through 31-Dec-2018 were characterized by demographics and program qualifying HIV acquisition risk factor(s).

Results: A total of 3275 persons enrolled in the first 12 months of the program, with a monthly uptake of median (range) 228 (165-445) clients. Median (Q1-Q3) age was 34 (28-45) years, with 3223 (98%) male, 22 (0.7%) transgender female, and 15 (0.5%) female participants. Most clients resided in Vancouver (61%) or Greater Vancouver (84%), while 2% lived in a rural location. Clients received care at a sexual health clinic (46%), HIV-focused primary care clinic (18%), HIV referral clinic (6%), or general medical or other setting (30%). Most enrollees (81%) reported no previous use of PrEP. Participants were predominantly men who have sex with men (MSM) or transgender women with HIV incidence risk index (HIRI)-MSM ≥10 (88%) (See Table). More than one risk factor for HIV acquisition was reported in 27%, including 530 clients (16%) with HIRI-MSM ≥10 and prior rectal bacterial sexually transmitted infection or infectious syphilis.

Conclusion: The fully-subsidized, population-based BC PrEP program saw rapid uptake in the first 12 months, predominantly by at-risk MSM residing in Greater Vancouver who had not used PrEP previously.

... 2

Table: BC PrEP Program ClientRisk Factor(s) for HIV Acquisition

PrEP clients enrolled 1-Jan-2018 to 31-Dec-2018	**N=3275**
Risk factor(s) for HIV Acquisition*	**n (%)**
Men who have sex with men, transgender women	
HIV Incidence Risk Index (HIRI)-MSM≥10	2894 (88)
HIRI-MSM 10-24	2066 (63)
HIRI-MSM≥25	828 (25)
Rectal bacterial sexually transmitted infection (STI) or infectious syphilis	689 (21)
Recurrent non-occupational post-exposure prophylaxis (NPEP) use	109 (3)
HIRI-MSM≥10 + rectal bacterial STI or infectious syphilis	530 (16)
HIRI-MSM≥10 + recurrent NPEP use	60 (2)
HIV-positive sexual partner**	206 (6)
Heterosexual men and women who have an HIV-positive sexual partner**	18 (0.6)
Persons who inject drugs who have an HIV-positive injecting partner**	6 (0.2)
Other risk factors	26 (0.8)
*More than one risk factor per client may be reported **Partner not receiving stable antiretroviral therapy and/or viral load not <200 copies/mL	

Epidemiology and Public Health: **HIV prevention and control programs - Implementation and Program Science**
Épidémiologie et santé publique : **La prévention du VIH dans les populations clés - mise en œuvre et science des programmes**

EPHP2.03

Investigating Factors Associated with Sub-optimal HIV Testing Frequency Among Gay, Bisexual, and Other Men Who Have Sex with Men (gbMSM) at High Risk for HIV Living in Montreal

Marc Messier-Peet[1], Herak Apelian[1], Erica Moodie[2], Joseph Cox[1, 2], Trevor A. Hart[3], Daniel Grace[4], David Moore[5], Nathan Lachowsky[6], Jody Jollimore[7], Ricky Rodrigues[3], Shayna Sparling[3], Syed Noor[3], Gbolahan Olarewaju[5], Heather Armstrong[5], Gilles Lambert[1]

1. Direction Régionale de Santé Publique de Montréal, Montreal, QC, 2. McGill University, Montreal, QC, 3. Ryerson University, Toronto, ON, 4. University of Toronto, Dalla Lana School of Public Health, Toronto, ON, 5. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 6. University of Victoria, Victoria, BC, 7. Community-Based Research Centre, Vancouver, BC

Background: HIV testing is a key component of effective HIV prevention. Quebec STBBI screening guidelines recommend gbMSM who regularly engage in high-risk behaviours to undergo HIV testing every 3-to-6 months. We investigated factors associated with not being tested for HIV in the past six months (P6M) among high-risk gbMSM who self-reported HIV-negative/unknown status.

Methods: Engage-Montreal recruited sexually active cisgender and transgender men ≥16 years via respondent-driven sampling (RDS). Participants at high-risk for HIV were defined as having a HIRI-MSM score ≥ 11. A model of access to health-services was utilised to describe factors related to HIV testing. Factors associated with not being tested for HIV (P6M) were identified through logistic regression. Results are RDS-adjusted.

Results: Of 1179 Engage-Montreal participants, 968 (RDS-adjusted: 86%) were HIV-negative. 682 (61% of HIV-negatives) were considered at high-risk for HIV; among these, 64% felt the need for HIV testing (P6M) and 44% were tested for HIV (P6M). Factors associated with not being tested (P6M) are reported in Table 1.

Conclusion: Over half (56%) of high-risk gbMSM were not tested for HIV (P6M). Factors associated with not testing for HIV (P6M) included not knowing HIV testing recommendations, not having a primary healthcare provider, being non-cisgendered, identifying as English- or French-Canadian, and reporting good mental health. Previously identified barriers to HIV testing were not found to be associated with suboptimal testing, such as age, education, income, anticipated discrimination, and cost. Undertaking efforts to increase knowledge of optimal HIV testing frequencies among high-risk gbMSM appears important.

... 2

Table 1: Factors associated with<u>not</u>being tested for HIV in the past 6 months *Among participants with self-reported HIV-negative or unknown status,with a HIRI-MSM Score of 11 or more (**N= 682**)*		Univariable Models[1]		Multivariable Model[1,2]	
		OR	95% C.I.	OR	95% C.I.
Knowledge of testing recommendations	*Disagrees or strongly disagrees with the statement:* *"I know enough about HIV testing recommendations to tell how often I should be tested"*	4.06	2.44, 6.99	4.42	2.59, 7.82
Primary health care provider	*Does not have a primary health care provider*	1.71	1.26, 2.33	2.15	1.52, 3.06
Gender	*Identifies as trans-man, gender-queer / nonconforming, two-spirit or other*	1.72	1.06, 2.81	2.04	1.15, 3.64
Ethnicity	*Most identifies as English-Canadian or French-Canadian*	1.92	1.41, 2.61	1.74	1.06, 2.90
Mental health Status	*Reported that in the past six months, their mental health in general was excellent, very good, or good*	1.40	1.01, 1.95	1.73	1.21, 2.49
Country of birth	*Born in Canada*	1.86	1.36, 2.55	1.32	0.78, 2.22
Sexual Orientation	*Does not identify as gay*	1.92	1.41, 2.61	0.94	0.60, 1.46
Assessment of current HIV risk	*Self-assesses their current risk of getting HIV asvery unlikely, unlikely or somewhat likely*	1.57	0.94, 2.69		
Education	*Highest level of education completed: high school or less*	1.34	0.92, 1.97		
Obligations to disclose HIV status if tested positive	*Agrees or strongly agrees with the statement:* *"I don't want to be obliged to disclose my status to future sexual partners if I test positive."*	1.31	0.96, 1.80		
Knowledge of where to get an HIV test	*Agrees or strongly agrees with the statement:* *"I don't know where to get an HIV test"*	1.30	0.74, 2.26		
Income	*Annual income of $20,000 or less*	1.28	0.95, 1.73		
Shame related to HIV testing	*Agrees or strongly agrees with the statement:* *"I feel ashamed about needing to get tested for HIV."*	1.29	0.73, 2.27		
Age	*30 years old and younger*	1.09	0.80, 1.49		
Perceived inability to cope with positive HIV diagnosis	*Agrees or strongly agrees with the statement:* *"I could not deal with knowing I am HIV-positive."*	1.02	0.73, 1.42		
Worries about discrimination if tested HIV positive	*Agrees or strongly agrees with thestatement:* *"I am worried about being discriminated against if I test positive"*	0.80	0.54, 1.17		
Cost of HIV testing	*Agrees or strongly agrees with the statement:* *"There are times when I didn't get tested for HIV because of the costs associated."*	0.75	0.51, 1.10		

1Factors were explored using RDS-adjusted logistic regression using a quasi-binomial distribution. Factors that were significantly associated with not being tested (P6M) in univariable analyses were included in the multivariable model.

22 observations were excluded from the multivariable model due to missing values.

Epidemiology and Public Health: **HIV prevention and control programs - Implementation and Program Science**
Épidémiologie et santé publique : **La prévention du VIH dans les populations clés - mise en œuvre et science des programmes**

EPHP2.04

Beliefs and Practices Underlying "undetectable = uninfectious" in a Study of Serodiscordant Couples Enrolled in the Canadian National Positive Plus One Study

Sandra L. Bullock[1], Liviana Calzavara[1], Joshua Mendelsohn[2], Darrell Tan[3], Ann Burchell[3], Jean-Pierre Routy[4], Bertrand Lebouché[4], Amrita Daftary[4], Dan Allman[1], Tamara Thompson[5], Ted Myers[1], Renée Masching[7], Brian Conway[6], The Positive Plus One Team

1. University of Toronto, Toronto, ON, 2. Pace University, New York, NY, USA, 3. St Michael's Hospital, Toronto, ON, 4. McGill University, Montreal, QC, 5. Western University, London, ON, 6. Vancouver Infectious Disease Centre, Vancouver, BC, 7. Canadian Aboriginal AIDS Network, Halifax, NS

Background: "*Undetectable=uninfectious*" is endorsed by many in the HIV community; yet controversy remains and many advise condom use. We examined whether the behaviors of people in serodiscordant relationships are consistent with the U=U message. Do couples use condoms at a lower rate when the positive partner's viral load is undetectable (uVL)?

Methods: Participants were recruited from 143 Canadian ASOs and clinics to participate in a survey of serodiscordant couples. Both partners were invited to participate. Participants reported the uVL status of the HIV-positive partners, and their agreement with the U=U statement: *"when a person's VL is undetectable, they can safely have intercourse without a condom.*" Analyses included descriptive statistics and ordered logistic regression.

Results: We recruited 540 people in 388 current HIV-serodiscordant relationships; 195 relationships were male-male, 172 were male-female, 21 involved other gender identities. Sexual activity over prior 3-months varied: 16% reported no sex; 9% reported no intercourse; and condoms were used: always (22%), sometimes (26%) or never (27%) by the remainder. uVL was reported by 83% of couples. Half (47%) agreed with the U=U statement, 26% disagreed, and 23% were neutral. Heterosexuals were more likely to disagree than same-sex male partners (31% v. 21%; p=0.03); there were no differences by HIV status (p=0.13) or uVL (p=0.2). Adjusting for sociodemographics, there was an interaction between uVL and agreement with the U=U statement. The predicted probability of condom use was decreased only for partners with an undetectable VL who also endorsed the U=U statement, compared to others (AOR=0.19, 95%CL=0.07-0.52).

Conclusions: Although 83% reported uVL, only half of serodiscordant partners agreed with U=U. Couples with uVL are less likely to use condoms if they agree that U=U. Further investigation of decision making around VL and condom use is warranted, especially to assess relationship complexity as VL changes over time.

Epidemiology and Public Health: **HIV prevention and control programs - Implementation and Program Science**
Épidémiologie et santé publique : **La prévention du VIH dans les populations clés - mise en œuvre et science des programmes**

EPHP2.05

Prescribers of HIV Pre-Exposure Prophylaxis (PrEP) in British Columbia (BC) in the First Year of the Provincial Program

Junine Toy[1], Mark W. Hull[1], Jason Trigg[1], Paul Sereda[1], Viviane Lima[1], Katherine Lepik[1], Silvia Guillemi[1], David Moore[1], David Hall[2], Rolando Barrios[1, 2], Julio S. Montaner[1]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. Vancouver Coastal Health Authority, Vancouver, BC

Background: The centralized BC Centre for Excellence in HIV/AIDS PrEP program was launched in January 2018. PrEP is available at no cost to qualifying BC residents at high risk of HIV infection according to BC PrEP guidelines. Any licensed prescriber may prescribe PrEP, regardless of practice setting or HIV care and treatment experience. We characterize prescribers who participated in the first year of the BC PrEP Program.

Methods: Healthcare providers who prescribed PrEP through the provincial program between 1-Jan-2018 through 31-Dec-2018 were characterized by location, prior HIV treatment prescribing experience, and PrEP client volume.

Results: In the 12 months after launch, 545 unique prescribers for 3275 PrEP clients were identified. All health authorities were represented, with approximately half of prescribers located in Vancouver Coastal Health and 7% in a rural location (See Table). Overall, 287 prescribers (53%) had no prior HIV care and treatment experience. Providers at sexual health or HIV-focused practice settings (n=39) prescribed PrEP for 69% of program participants. These prescribers had median (Q1-Q3) 20 (5-46) clients while providers in general and other practice settings (n=506) had median 1 (1-2) PrEP clients.

Conclusions: The BC PrEP program has involved more than 500 prescribers across the province, with and without prior HIV management experience. Most prescribers practice in general medical settings and follow a small number of clients, while prescribers who practice in sexual health or HIV-focused clinics carry a higher patient volume.

Table: BC PrEP Program Prescribers and Clients by Health Authority

	6 months (30-Jun-2018)		12 months (31-Dec-2018)	
	PrEP Prescribers N=351	**PrEP Clients N=1955**	**PrEP Prescribers N=545**	**PrEP Clients N=3275**
	n (%)	n (%)	n (%)	n (%)
Health Authority				
Vancouver Coastal	176 (50)	1392 (71)	255 (47)	2256 (69)
Vancouver Island	67 (19)	178 9)	101 (19)	293 (9)
Fraser	55 (16)	297 (15)	94 (17)	564 (17)
Interior	40 (11)	55 (3)	69 (13)	108 (3)
Northern	16 (5)	27 (1)	31 (6)	46 (1)
Rural location	17 (5)	40 (2)	38 (7)	73 (2)
Prescribers may practice in >1 Health Authority				

Epidemiology and Public Health: **HIV prevention and control programs - Implementation and Program Science**
Épidémiologie et santé publique : **La prévention du VIH dans les populations clés - mise en œuvre et science des programmes**

EPHP2.06

High Adherence to the Four Weeks Prophylaxis After Sexual Exposure to HIV (PEP) in a Montreal Clinic

Joao Carlos G. Oliveira[1], Lorie Guibault[1], Judith A. Robin[1], Michel Boissonnault[1], Jason Szabo[1, 2], Réjean Thomas[1]

1. Clinique médicale l'Actuel, Montréal, QC, 2. Centre universitaire de santé McGill (CUSM), Montreal, QC

Background: Clinique médicale l'Actuel offers non-occupational post-exposure prophylaxis (nPEP) since 2001. We aim to describe the characteristics of our cohort and investigate the major determinants related to PEP completion, measured by treatment adherence assessment at the week 4 follow-up (FU).

Methods: All patients recorded to have started PEP between 2010 and 2018 were included in this prospective cohort study. Treatment was considered as completed when the patients came back for a follow-up HIV screening visit after 4 weeks. Patients included were thus assessed at baseline and then followed at week 4. The decision to treat was based on risk evaluation by the physician. The determinants were analyzed by multiple logistic regression.

Results: Among 1217 consultations for PEP, 1171 patients (96%) were male, 775 (64%) had a university degree, and the median age was 36 years (IQR: 27-42); 752 (62%) consultations were for a first PEP and 1159 (95%) occurred after a moderate/severe risk of exposure to HIV (anal intercourse in 1040 (86%)). The partner was casual in 1178 cases (97%). In 539 cases (44%), patient was intoxicated (alcohol or drugs). The most often used regimen was a combination of TVD-RAL (n=996; 82%). 591 (49%) patients complained of adverse effect to the antiretroviral drugs (ARV) and 1167 (96%) patients completed the follow-up at week 4. The only significant determinant of optimal adherence was the level of education. Patients with a university degree were more prone to complete their treatment than those without (aOR= 2.19, 95% CI: 1.22-3.95), adjusted by sex, age and regimen prescribed.

Conclusion: PEP is an effective way to help prevent the transmission of HIV. We observed a high adherence to ARV-PEP in our cohort. These results demonstrate the importance of emphasizing counseling with all the patients in order to achieve maximum effectiveness for completion of treatment.

Epidemiology and Public Health: **HIV prevention and control programs - Implementation and Program Science**
Épidémiologie et santé publique : **La prévention du VIH dans les populations clés - mise en œuvre et science des programmes**

EPHP2.07

The Impact of HCV SVR from Direct Acting Antiviral and Interferon-based Treatments on Mortality in a Large Population Based Cohort Study

Naveed Z. Janjua[1, 2], Stanley Wong[1, 2], Carmine Rossi[1, 2], Amanda Yu[1], Zahid A. Butt[1, 2], Mawuena Binka[1], Maryam Darvishian[1, 2], Maria Alvarez[1], Hasina Samji[1], Mark Tyndall[1, 2], Mel Krajden[1, 2], The BC Hepatitis Testers Cohort Team

1. BC Centre for Disease Control, Vancouver, BC, 2. University of British Columbia, Vancouver, BC

Background: We evaluated the effect of sustained virologic response(SVR) from direct acting antiviral(DAA) and interferon-based treatments on mortality reduction among those with and without cirrhosis in a large population based cohort in Canada.

Methods: We used data from the BC Hepatitis Testers Cohort, which includes ~1.3 million individuals tested for HCV since 1990, linked with data on medical visits, hospitalizations, prescription drugs and mortality. Patients who received DAAs or interferon treatments were followed from the end of last treatment to death or December 31, 2017. We assessed all-cause mortality risk among those who did and did not achieve SVR by treatment type by multivariable Cox proportional hazard models.

Results: Of 14,033 eligible individuals, 5,169 received DAAs while 8,864 received interferon-based treatments and were followed for a median of 2.0[range:0.4-4.2] and 9.5 [range:0.4-18.6] years, respectively. 4765 (93%) achieved SVR with DAAs and 6538 achieved SVR with interferon based treatment. Among DAAs treated patients, the mortality rate was 15.8/1000 person-yr(PY) in the SVR and 103.2/1000 PY in the no-SVR groups(P<0.001), with higher rates among those with cirrhosis (SVR: 41.6, no-SVR: 198.0/1000 PY). In multivariable model, compared to no-SVR from interferon, SVR from DAA and interferon based treatments resulted in similar mortality reductions(adjusted hazard ratio (aHR) DAA= 0.24, 95%CI:0.2-0.3 and HR interferon: 0.2, 95%CI:0.18-0.22). In model by cirrhosis status, the reduction in mortality was similar among those with cirrhosis in both DAA (aHR=0.28, 95%CI: 0.2-0.4), and interferon(aHR=0.29, 95%CI:0.21-0.39) treated individuals and was lower than those without cirrhosis (DAA-aHR=0.23, 95%CI:0.19-0.29/ Interferon-aHR=0.19, 95%CI:0.17-0.22).

Conclusion: Both DAA and interferon-based SVR substantially reduces all-cause mortality, with lower reductions in those with cirrhosis. These results also indicate that early treatment could further improve survival. These findings support the population-level benefits of DAA treatment scale-up to reduce HCV related mortality in support of the WHO disease elimination goals.

Epidemiology and Public Health: **HIV prevention and control programs - Implementation and Program Science**
Épidémiologie et santé publique : **La prévention du VIH dans les populations clés - mise en œuvre et science des programmes**

EPHP2.08

Factors that Influence the Acceptance of Pre-Exposure Prophylaxis for HIV in High-risk patients in Saskatoon

Stanley I. Enebeli, Johnmark Opondo, Anne Leis, Prosanta Mondal

University of Saskatchewan, Saskatoon, SK

Background: HIV rates in Saskatchewan are twice the Canadian average. Pre-exposure prophylaxis (PrEP) for HIV prevention is a new intervention in Saskatchewan and they are lots of opportunities where PrEP maybe beneficial in approaching the HIV epidemic. This study explored factors associated with the acceptance of PrEP for HIV in high-risk patients in Saskatoon.

Methods: A cross-sectional self-administered survey of 141 patients of the Public Health services sexual health clinic saskatoon was conducted during October – November 2018. Interest in taking PrEP to reduce the risk of HIV infection was the dependent variable while sociodemographic factors, perceptions about PrEP, injection drug use and risky sexual behaviours were the independent variables. Chi-square and Wilcoxon tests were used for univariate analysis. We performed multivariable logistic regression for adjusted analysis.

Results: Prior to participating in this study, 34% of respondents had heard of PrEP and 66% had not. Overall, half (49.56%) of our respondents indicated interest in taking PrEP. Adjusted analysis indicated that individuals who had not heard of PrEP, were worried about the side effects of PrEP, who perceive themselves to be at little risk of HIV exposure and who believed that they still required condom as PrEP does not protect against sexually transmitted infections were 84% (P=0.01), 83% (P=0.01), 99% (P<0.0001) and 98% (P=0.001) respectively, less likely to be interested in taking PrEP to reduce their risk of HIV infection. Adjusted analysis also revealed that for every increase in the number of sex partners by one, an individual is 48% (P=0.03) more likely to be interested in PrEP.

Conclusion: Perceptions about PrEP in high-risk patients influence the acceptance of this preventive medication. Our findings highlight the need for more research targeted at identifying the most effective interventions, programs and policies to increase the uptake of PrEP in high-risk patients.

Epidemiology and Public Health: **HIV prevention and control programs - Implementation and Program Science**
Épidémiologie et santé publique : **La prévention du VIH dans les populations clés - mise en œuvre et science des programmes**

EPHP2.09

Offering of HIV Point-of-Care Testing by Pharmacists in a Regina Community Pharmacy

Stuart Skinner[1], Susanne Nicolay[2], Christie Matechuk[3], Michael Stuber[4]

1. Indigenous Wellness Research Community Network, Regina, SK, 2. Queen City Wellness Pharmacy, Regina, SK, 3. Saskatchewan Health Authority, Regina, Regina, SK, 4. University of Saskatchewan, Regina, SK

Introduction: Saskatchewan's HIV rate, twice the national rate since 2007, was 15.4/100,000 in 2017. HIV testing is integral to diagnosis/access to care; reported rates of HIV testing in SK remain inadequate. Local barriers to accessing HIV testing includes access to laboratory services, primary care providers and follow-up.

While pharmacists in Saskatchewan are not able to perform HIV tests, they are easily accessible health care providers. Pharmacists provide an important link for people living with/at-risk for HIV and may facilitate access to HIV testing and reinforce rationale to know one's HIV status. They may be the provider that clients are most comfortable with/whom they see most regularly.

In December 2018, a community pharmacy, also dispensing methadone and suboxone (OST), began offering HIV POCT to all clients > 18, planning a 100% offer rate.

Methodology: Pharmacists obtain consent, provide pre-test counselling, are trained in HIV POCT and deliver results. Reactive tests are reported to the local Medical Health Officer, per provincial requirements. Clients later confirmed HIV-positive, receive support/follow up from Public Health and Infectious Diseases Clinic teams, together with pharmacists.

Basic demographics, self-reported HIV testing history, risks and follow-up are recorded. Feasibility/acceptability feedback for pharmacists and clients is documented.

Results: Three months of data will be shared. Acceptability and feasibility of HIV testing via a community pharmacy will be discussed.

Conclusion: Access to HIV testing across Saskatchewan presents challenges, especially for individuals without a primary care provider. Pharmacists are accessible to many, providing a viable link to health care. Reducing barriers to testing by collaborating with pharmacists brings positive outcomes, including expanded HIV knowledge, access to screening and timely diagnosis, with linkage to supportive, low-barrier care.

This presentation explores opportunities for HIV testing in non-traditional settings, where practice-based evidence may support expansion of qualified providers able to offer/perform HIV testing in Saskatchewan.

Epidemiology and Public Health: **Indigenous HIV prevention and control programs - Implementation and Program Science**

Épidémiologie et santé publique : **Programmes de prévention et de contrôle du VIH chez les Autochtones - mise en œuvre et science des programmes**

EPHP3.01

Development of an Evaluation Framework for the Expansion and Implementation of the 'Know Your Status' Program on Several Saskatchewan First Nations Communities

Adam Clay[1], Stephanie Konrad[3], Mamata Pandey[1], Susanne Nicolay[7], Cara Spence[4], Marina Klein[5], JoLee Sasakamoose[6], Stuart Skinner[1, 2], KYS Community Partners

1. Saskatchewan Health Authority, Regina, SK, 2. University of Saskatchewan, Regina, SK, 3. First Nations and Inuit Health Branch, Saskatchewan Region, Department of Indigenous Services Canada, Regina, SK, 4. University of Saskatchewan, Saskatoon, SK, 5. McGill University Health Centre, Montreal, QC, 6. University of Regina, Regina, SK, 7. Wellness Wheel, Regina, SK

Background: Know Your Status (KYS) is a community-designed and community-led program to manage HIV. KYS is based on partnerships between First Nations and care providers. The success of the program has been documented in the establishing communities of Big River First Nation and Ahtahkakoop Cree Nation. The program is being expanded to new communities and to include HCV care. HIV-related programs need to be understood in the social and cultural context in which it occurs. As a result, culturally-appropriate strategies to evaluate, expand and implement KYS in new communities are being explored.

Methods: A series of consultative meetings have occurred between communities, service providers and researchers. The first meeting was launched by a day of ceremony which was attended by community members, Elders, care providers and researchers. The goal of meetings was to discuss the implementation of KYS programming and associated research evaluating its effectiveness.

Results: The six communities currently engaged in this project are keen to expand HIV and HCV programs in their communities. Due to variations in existing social, cultural and health programs in each community, a 'one-size-fits-all' approach to implementation and evaluation is not possible. However, strength-based measures have been broadly supported. The Culturally Responsive Framework has been adopted. University-based financial, administrative and ethics oversight of research occurring on-reserve has been identified as inappropriate by some communities.

Conclusions: Effective partnerships have been developed. Ceremony and consultation has allowed for the team to find and utilize the strengths of Western and Indigenous approaches. Utilizing these strengths, we will continue to refine the expansion and evaluation of KYS.

Epidemiology and Public Health: **Indigenous HIV prevention and control programs - Implementation and Program Science**
Épidémiologie et santé publique : **Programmes de prévention et de contrôle du VIH chez les Autochtones - mise en œuvre et science des programmes**

EPHP3.02

Assessing the Effects of an Arts-based HIV/AIDS Education Workshop for Indigenous Youth

Rachel Landy

Memorial University of Newfoundland, St. John's, NL

Arts-based initiatives have become increasingly popular for HIV prevention and education with Indigenous youth; however, there is a paucity of research on their implementation and effectiveness. The aim of this study was to evaluate Indigenous youths' HIV/AIDS knowledge and attitude change after participation in an arts-based HIV/AIDS education workshop.

Eleven self-identifying Indigenous youth, ages eleven to seventeen, attended a 3.5-day participatory filmmaking workshop hosted as part of a community-based study examining the use of the arts in HIV/AIDS prevention with Indigenous youth in Labrador. Participatory filmmaking, an art form chosen by community youth, was used to engage participants and facilitate dialogue about HIV/AIDS, sexual health, and health in general. A mixed methods approach was used to assess knowledge and attitude change. Participants completed pre and post-test survey before and after the workshop. Approximately two weeks later, youth participated in in-depth interviews about their experiences. Using content analysis, interview transcripts were analyzed for themes related to HIV/AIDS knowledge and attitude change.

Participants' knowledge and attitudes about HIV/AIDS improved after the workshop. Their HIV/AIDS knowledge and attitudes scores improved by 21.7% (Mean difference (M) = 3.9; 95% CI 2.8- 5.0) and by 18% (M = 1.8; CI 95% 0.7-2.9) respectively after the workshop. Analysis of the interview transcripts revealed that the participants: 1) learned what HIV is; 2) learned how HIV is transmitted; 3) learned about stigma; 4) operationalized new knowledge; 5) learned about boundaries/healthy relationships; and 6) attributed their knowledge and attitude change to the environment created through participatory filmmaking.

These findings suggest that participatory filmmaking is a promising strategy for HIV/AIDS education with Indigenous youth. Improving HIV/AIDS knowledge and attitudes among Indigenous youth is an essential component of addressing the overrepresentation of Indigenous youth in the HIV/AIDS pandemic in Canada.

Epidemiology and Public Health: **Indigenous HIV prevention and control programs - Implementation and Program Science**
Épidémiologie et santé publique : **Programmes de prévention et de contrôle du VIH chez les Autochtones - mise en œuvre et science des programmes**

EPHP3.03

Increasing and Destigmatizing HIV and Hepatitis C Testing in Saskatchewan First Nation Communities through Community Led Liver Health Days

Susanne Nicolay[1], Stuart Skinner[2], Darlene Bryant[3], Connie Wishnevetski[4]

1. Indigenous Wellness Research Community Network, Regina, SK, 2. University of Saskatchewan, Regina, SK, 3. Cote First Nation, Kamsack, SK, 4. Indigenous Services Canada, Kamsack, SK

Introduction: Increasing access to Hepatitis C (HCV) and HIV testing in First Nation communities is required to end co-occurring HIV and HCV epidemics in Saskatchewan. HCV and HIV rates in Saskatchewan are 60.2 and 15.4/100,000 respectively; 2-times higher than 2017 national rates. Access to care, testing and treatment is limited in these communities. Stigma around STBBI testing creates further challenges. In response, First Nation Communities and Wellness Wheel providers collaborated to host 'Liver Health Events' (LHEs) to promote awareness/education, peer mentorship, testing and linkage to HIV/HCV and liver care.

Methodology: Cote First Nation and Wellness Wheel clinicians developed LHEs in response to HIV and HCV rates. The community guides services available at each event, provides a safe space for and promotes the event, and community, peers and providers work together in delivering the event. Services offered at events have included STBBI testing, fibroscans, immunizations, education, food, pharmacist medication reviews, and peers who share their lived-experiences. An Elder is available to start the day in a good way. Basic demographics, self-reported history of STBBI testing, liver health and STBBI risk factors, and testing are recorded. Follow-up and/or referrals are managed together with community health teams and/or the Wellness Wheel, a mobile outreach clinic.

Results: From June to December 2018, Cote First Nation held two LHEs and one nurse-led follow-up event. 125 individuals were seen and screened at these three LHEs. Outcomes on the number of people counseled, screened, engaged/re-engaged into HIV/HCV care, and those who initiated HIV and/or HCV treatment will be presented.

Conclusion: LHEs, as community-led initiatives, are successfully implemented with First Nations communities. These events are an effective strategy to reduce HIV/HIV-related stigma, improve community and local provider knowledge about these conditions. LHE also improve access to screening, timely diagnosis and linkage to supportive and holistic treatment in community.

Epidemiology and Public Health: **Indigenous HIV prevention and control programs - Implementation and Program Science**
Épidémiologie et santé publique : **Programmes de prévention et de contrôle du VIH chez les Autochtones - mise en œuvre et science des programmes**

EPHP3.04

The Cedar Project WelTel mHealth Study: Effect of mHealth on HIV Viral Suppression Among Young Indigenous People Who Have Used Drugs

Kate Jongbloed[1], Sherri Pooyak[2], Margo E. Pearce[1], David Zamar[3], April Mazzuca[1], Richard T. Lester[1], Martin T. Schechter[1], Patricia M. Spittal[1, 3], The Cedar Project Partnership

1. University of British Columbia, Vancouver, BC, 2. Aboriginal HIV/AIDS Community-Based Research Collaborative Centre (AHA Centre), Victoria, BC, 3. BC Children's Hospital Research Institute, Vancouver, BC

Background: Indigenous people living with HIV remain marginalized from the HIV cascade of care. As a result, tailored culturally-safe interventions to support engagement in HIV care are urgently required. This study assessed the effect of an mHealth (mobile phones for health) program on viral suppression among young Indigenous people living with HIV who have used drugs in British Columbia.

Methods: The Cedar Project WelTel mHealth study was nested within the Cedar Project cohort involving young Indigenous people who have used drugs in Vancouver and Prince George. A structured mHealth initiative connected 52 Cedar participants living with HIV with Case Managers via a mobile phone/plan and weekly two-way text messaging. A pre-post design compared repeated measures of viral suppression prior to (January 2011-August 2014) and during (September 2014-January 2016) the program. Generalized linear mixed effects models determined associations between receiving mHealth and viral suppression.

Results: More than half of participants were women (n=32; 61.5%) and less than half lived in Prince George (n=25; 48.1%). At baseline, 40 (85.1%) reported being on antiretroviral therapy and 24 (47.1%) were virally suppressed. Receiving mHealth was associated with an odds ratio (OR) of 2.09 (95%CI: 1.15-3.79) for viral suppression, compared to the pre-program period. Higher (vs. lower) mHealth engagement was associated with an OR of 4.48 (95%CI: 1.07-18.85) for viral suppression during the program. Stratifying by city, receiving mHealth remained significantly associated with viral suppression in Prince George (aOR: 3.68; 95% CI: 1.39-9.81) but not Vancouver (aOR: 1.38; 95%CI: 0.64-2.96). Stratifying by sex, receiving mHealth remained significantly associated with viral suppression among women (aOR: 2.90; 95%CI: 1.32-6.34) but not men (aOR: 1.34; 95%CI: 0.54-3.34).

Conclusion: The Cedar Project WelTel mHealth program may be effective in supporting viral suppression among young Indigenous people living with HIV who have used drugs.

Epidemiology and Public Health: **Interdisciplinary Epidemiology (Biological, Behavioural and Social) of HIV infection, including structural, social and individual determinants**

Épidémiologie et santé publique : **Épidémiologie interdisciplinaire (biologique, comportementale et sociale) de l'infection au VIH et déterminants structurels, sociaux et individuels**

EPHP4.01

Social Support is Associated with a Lower Likelihood of HIV Treatment Interruptions in British Columbia, Canada

Tim Wesseling[1], Andrea Bever[1], Taylor McLinden[1], Lu Wang[1], William Chau[1], Brittany Bingham[2], Sean Grieve[1], Kate Salters[1], David Moore[1], Janice Duddy[3], Rolando Barrios[1]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. Vancouver Coastal Health, Aboriginal Health, Vancouver, BC, 3. Pacific AIDS Network, Vancouver, BC

Background: Avenues for social connectivity are increasingly important for people living with HIV (PLWH) and research has not adequately evaluated how social support may improve clinical outcomes in addition to known psychosocial benefits. This study investigates the relationship between social support and antiretroviral therapy (ART) treatment interruptions (TIs) among PLWH in British Columbia (BC), Canada.

Methods: We analyzed baseline survey data (collected January 2016-August 2018) from the STOP HIV/AIDS Program Evaluation (SHAPE) Study: a longitudinal cohort of PLWH ≥19 years old in BC. Social support was self-reported using the 19-item Medical Outcomes Study Social Support Survey (MOS-SSS). Participants were required to be on ART at enrolment and have ≥1 year of follow-up to ascertain the outcome (≥1 TI, defined as ≥90 days off ART), which was derived from a linkage to prospective clinical data. Multivariable logistic regression quantified the relationship between social support and TIs. A change-in-estimate approach was used to select potential confounding variables.

Results: Among 470 SHAPE participants who met the inclusion criteria for this analysis, the median MOS-SSS score was 64.5 (Q1-Q3: 43.4-84.2). The median MOS-SSS score among those with ≥1 TI was 50 (Q1-Q3: 38.2-71.1), compared to a median score of 65.8 (Q1-Q3: 46.1-85.5) among those who did not experience any interruptions. After adjustment for gender, self-reported Indigenous ethnicity, intravenous drug use, and sexual activity (past year), higher MOS-SSS score was negatively associated with experiencing TIs (adjusted odds ratio=0.842 per 10-unit increase, 95% confidence interval=0.745-0.952).

Conclusions: Among PLWH on ART in BC, social support is negatively associated with TIs. Since social support is integral to promoting social, emotional and physical well-being, our findings suggest the importance of considering and evaluating interventions that foster social support for achieving optimal ART adherence in this setting. Future research must consider social support success factors among specific population groups.

Epidemiology and Public Health: **Interdisciplinary Epidemiology (Biological, Behavioural and Social) of HIV infection, including structural, social and individual determinants**

Épidémiologie et santé publique : **Épidémiologie interdisciplinaire (biologique, comportementale et sociale) de l'infection au VIH et déterminants structurels, sociaux et individuels**

EPHP4.02

Barriers to HIV Care Among Francophone African Caribbean and Black (ACB) Immigrant People Living with HIV in Canada: a Scoping Systematic Review

Pascal Djiadeu[1, 6], Joseph Nguemo[2], Chantal Mukandoli[3], Judith Odhiambo[1, 2, 5], David Lightfoot[1], Lawrence Mbuagbaw[4], LaRon E. Nelson[1, 6, 5]

1. St Michael Hospital, Toronto, ON, 2. Daphne Cockwell School of Nursing, Ryerson University, Toronto, ON, 3. Toronto People with AIDs Foundation (PWA), Toronto, ON, 4. Department of Health Research Methods, Evidence and Impact, McMaster University, Hamilton, ON, 5. Yale School of Nursing, New Haven, CT, USA, 6. Centre for Urban Health Solutions, St Michael's Hospital, Toronto, ON

Introduction: Language is a social determinant of health. Addressing social determinants of health are paramount to successful progression along the HIV care continuum. Canada is a bilingual country with French and English as official languages. There are few studies to date that have focused on the impact of being a French-speaking linguistic minority on the HIV care continuum. The primary objective of this scoping systematic review of the literature is to evaluate existing gaps in access to HIV care among French-speaking people living with HIV in Canada. Our primary outcome is health care services availability and access for French speaking people living with HIV.

Methods and analyses: Our scoping systematic review will draw on a systematic search of published literature, both quantitative and qualitative studies published on French-speaking individuals' health care and HIV status in Canada, with particular emphasis on the Province of Ontario. We will conduct our search in MEDLINE, the Excerpta Medica Database (EMBASE), the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Web of Science, EBSCO and Google Scholar for work published between 1990 and 2018. Identified articles will be screened in duplicate and full text articles of relevant studies will be retrieved. Data will also be extracted by two researchers working independently. Our findings will be reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA).

Conclusion: This scoping sytematic review will answer important questions related to access to care for Francophone HIV infected ACB living in Canada. Furthermore, this review will evaluate the impact of intersectionality, the French language, race and HIV stigma on ACB accessibility to HIV care. The findings of this scoping systematic review will have implications for health policy and practice in the provision of care to Francophone HIV-infected and affected ACB immigrants and Canadians.

Epidemiology and Public Health: **Interdisciplinary Epidemiology (Biological, Behavioural and Social) of HIV infection, including structural, social and individual determinants**

Épidémiologie et santé publique : **Épidémiologie interdisciplinaire (biologique, comportementale et sociale) de l'infection au VIH et déterminants structurels, sociaux et individuels**

EPHP4.03

Distribution and Characterization of Prescription Drug Plans within a Prospective Clinical Cohort of People Living with HIV in Manitoba

Leigh M. McClarty[1], Souradet Y. Shaw[1], Christine Bibeau[2], Laurie Ireland[3], Ken Kasper[4, 5], Yoav Keynan[4, 5, 1], Carla Loeppky[6, 1], Claire Kendall[7], Marissa Becker[1, 4, 5]

1. Department of Community Health Sciences, University of Manitoba, Winnipeg, MB, 2. LHIV Community Scholar, Winnipeg, MB, 3. Nine Circles Community Health Centre, Winnipeg, MB, 4. Department of Medical Microbiology and Infectious Diseases, University of Manitoba, WInnipeg, MB, 5. Department of Internal Medicine, University of Manitoba, Winnipeg, MB, 6. Manitoba Health, Seniors and Active Living, Winnipeg, MB, 7. Bruyère Research Institute, Ottawa, ON

Introduction: Given the exceptionally high cost of antiretroviral medications (ARVs), the availability of a comprehensive prescription drug plan for people living with HIV (PLH) is crucial to ensure equitable healthcare and outcomes across Canada. Currently, Manitoba does not have a universal drug plan, resulting in notable disparities in out-of-pocket expenses experienced by PLH who choose to be on treatment.

Methods: Clinical data from a cohort of 890 people living with HIV in Manitoba were reviewed. Preliminary descriptive analyses pertaining to out-of-pocket expenses associated with drug plans are presented. Data analyses are ongoing; by time of presentation, further in-depth analyses will be available, including a multivariate examination of the ways in which different drug plans are associated with HIV-relevant clinical outcomes.

Results: Drug program data from 2017 were available for 674 participants; 307 (45.5%) were responsible for out-of-pocket expenses related to their ARVs (Table 1). Of 637 participants with viral load (VL) data available, 12.4% had an unsuppressed VL in their last test, but 76.0% (n=60/79) with unsuppressed VL had no out-of-pocket expenses. Bivariate analyses indicate a significant association between out-of-pocket drug expenses and VL suppression (χ^2=18.7, p<0.001).

Discussion: An equitable healthcare system should include a universal drug plan. In Manitoba, out-of-pocket drug expenses are disproportionately experienced by older, and male, participants and those living in Winnipeg. A counterintuitive relationship between out-of-pocket expenses and VL suppression emerged in preliminary analyses. More nuanced analyses will shed more light on how drug plans are associated with clinical outcomes among cohort participants.

... 2

Table 1. Characteristics of cohort participants experiencing out-of-pocket expenses related to HIV treatment

	Out-of-pocket drug costs,n(%)		Total, N (%)
	No 367	Yes 307	674
Age range (years)			
18-24	5 (1.4%)	1 (0.3%)	6 (0.9%)
25-39	90 (24.5%)	48 (15.6%)	138 (20.5%)
40-64	259 (70.6%)	214 (69.7%)	473 (70.2%)
≥65	13 (3.5%)	44 (14.3%)	57 (8.5%)
Sex			
Male	225(61.3%)	258 (84.0%)	481(71.4%)
Female	142 (38.7%)	49 (16.0%)	191 (28.3%)
Geography			
Living in Winnipeg	280 (76.3%)	265 (86.3%)	545 (80.9%)
Living outside of Winnipeg	87 (23.7%)	42 (13.7%)	129 (19.1%)
Ethnicity			
Indigenous	246 (67.0%)	16 (5.2%)	262 (38.9%)
European/white	85 (23.2%)	210 (71.2%)	295 (43.8%)
Sub-Saharan African/Caribbean/black	30 (8.2%)	54 (64.3%)	84 (12.5%)
Other	6 (1.6%)	27 (8.8%)	33 (4.9%)
Pharmaceutical drug plan			
Federal scheme			
Canadian Forces Health Services	2 (0.5%)	0 (0%)	2 (0.3%)
Non-Insured Health Benefits	200 (54.5%)	0 (0%)	200 (29.7%)
Provincial scheme			
Employment and Income Assistance	140 (38.2%)	0 (0%)	140 (20.8%)
Manitoba Pharmacare	0 (0%)	173 (56.4%)	173 (25.7%)
Other scheme			
Private insurance	0 (0%)	129 (42.0%)	129 (19.1%)
Corrections	7 (1.9%)	0 (0%)	7 (1.0%)
Out of province drug plan	0 (0%)	2 (0.7%)	2 (0.3%)
No insurance	0 (0%)	3 (1.0%)	3 (0.5%)
Clinical trial	9 (100%)	0 (0%)	9 (1.3%)
Industry-funded “compassionate access” program	9 (2.5%)	0 (0%)	9 (1.3%)
Last VL in 2017 (copies/mL)			
Mean (SD)	8,988.5 (60,608.2)	17,347.4 (364,965.8)	
Median (IQR)	0 (30.7)	0 (0)	
Suppressed (≤200)	279 (82.3%)	279 (93.6%)	558 (87.6%)
Not suppressed (>200)	60 (17.7%)	19 (6.4%)	79 (12.4%)

Epidemiology and Public Health: **Interdisciplinary Epidemiology (Biological, Behavioural and Social) of HIV infection, including structural, social and individual determinants**

Épidémiologie et santé publique : **Épidémiologie interdisciplinaire (biologique, comportementale et sociale) de l'infection au VIH et déterminants structurels, sociaux et individuels**

EPHP4.04

HIV Status Disclosure During Sex: A Longitudinal Event-Level Analysis of Gay, Bisexual and other Men who have Sex with Men (GBM)

Leo Rutherford[1], Terry Howard[2, 3], Everett D. Blackwell[2], Lu Wang[4], Nicanor Bacani[4], Heather L. Armstrong[4, 5], Gbolahan Olarewaju[4], Eric A. Roth[1], Robert S. Hogg[4, 6], David M. Moore[4, 5], Nathan J. Lachowsky[1, 4]

1. University of Victoria, Victoria, BC, 2. Momentum Health Study Community Advisory Board, Vancouver, BC, 3. GlassHouse Consultants, Vancouver, BC, 4. British Columbia Centre for Excellence in HIV/AIDS, Vancouver, BC, 5. University of British Columbia, Vancouver, BC, 6. Simon Fraser University, Burnaby, BC

Background: Undetectable=Untransmittable (U=U) and pre-exposure prophylaxis (PrEP) campaigns may have changed discussions of HIV status. We sought to examine temporal trends and factors associated with not having discussed HIV status with sexual partners.

Methods: Prospective cohort data were collected from 09/2014-02/2017 from sexually-active Metro Vancouver GBM recruited using respondent-driven sampling (RDS). Participants completed study visits every six months, providing event-level data on their last sexual encounter with up to their five most recent partners. Stratified by HIV status, we used four-level mixed effects models (RDS recruitment chain; participant; visit; event) to evaluate temporal trends (6-month periods) and factors associated with awareness of sexual partner's HIV status (i.e. unknown HIV status versus seroconcordant).

Results: 481 participants completed 1303 visits reporting on 3786 sexual events (29.7% from self-reported HIV-positive GBM). Overall, the proportion of sexual events with unknown HIV status partners decreased over time (31% to 22%; OR=0.90, 95%CI:0.82-0.99). This trend was driven by HIV-negative participants (42% to 19%; OR=0.78, 95%CI:0.70-0.88) as HIV-positive participants reported a significant increase in sexual events with an unknown HIV status partner (11% to 27%; OR=1.21, 95%CI:1.01-1.44). HIV-positive participants who reported an unknown HIV status partner were more likely to be <30 years (OR=5.43, 95%CI:1.29-22.82) and prefer to bottom (versus top, OR=3.19, 95%CI:1.36-7.50). HIV-negative participants reporting an unknown HIV status partner (compared with seroconcordant partner) were more likely to self-assess high HIV acquisition risk (OR=1.91, 95%CI:1.13-3.22), and less likely to report PrEP use (OR=0.49, 95%CI:0.26-0.91), condomless receptive (OR=0.36, 95%CI:0.25-0.53) and condomless insertive (OR=0.36, 95%CI:0.26-0.51) anal sex.

Conclusions: Having an unknown HIV status partner decreased over time for HIV-negative GBM, but increased for HIV-positive GBM. Unknown status partners were more common among younger HIV-positive GBM who preferred to bottom. Public health interventions should consider combination education, stigma reduction, and sexual communication interventions in a PrEP and U=U era.

Epidemiology and Public Health: **Interdisciplinary Epidemiology (Biological, Behavioural and Social) of HIV infection, including structural, social and individual determinants**

Épidémiologie et santé publique : **Épidémiologie interdisciplinaire (biologique, comportementale et sociale) de l'infection au VIH et déterminants structurels, sociaux et individuels**

EPHP4.05

Identifying Barriers of Access and Retention in Opioid Agonist Treatment in British Columbia

Kristi Papamihali[1], Brittany Graham[1], Christopher Mill[1], Margot Kuo[1], Mohammad Karamouzian[2], Alexis Crabtree[1, 2], Sara Young[1], Jane A. Buxton[1, 2]

1. BC Centre for Disease Control, Vancouver, BC, 2. University of British Columbia, Vancouver, BC

Background: Opioid use disorder (OUD) has been one of the key drivers of the ongoing opioid crisis in Canada. Opioid agonist treatment (OAT) for OUD has been associated with a reduction in overdose deaths and risks associated with injection drug use. In British Columbia (BC), expansion of OAT for OUD has included scale-up of primary care training programs; development of evidence-based guidelines recommending buprenorphine/naloxone as preferred first-line treatment; and removing prescribing restrictions. However, initiation and retention in OAT remains low, while overdose events and deaths continue to rise. We aim to recognize barriers in OAT access and retention in OAT identified by clients of harm reduction sites across BC.

Methods: A paper questionnaire with close-ended and open-ended questions was used to survey harm reduction site clients across BC between May and August 2018. Quantitative survey data were analyzed using descriptive statistics. Qualitative survey data were summarized using thematic analysis.

Results: Of 486 participating harm reduction site clients, 35% had taken methadone treatment in the past 6 months, 14% buprenorphine/naloxone, 10% hydromorphone (any form), and 4% slow-release oral morphine. Of 245 respondents that tried to access OAT, 24% reported difficulties including: unable to find a prescribing physician (38%); prescription stopped due to positive urine test (19%); and worry about being stigmatized at the clinic (19%). 24% of respondents reported discontinuing OAT in the past 6 months. Thematic analysis identified the primary reason for OAT discontinuation was difficulty adhering to strict prescription pick-up and appointment times, commonly associated with subsequent use of illegal drugs. Additional themes included challenges with transportation/travel, relapse out of necessity/convenience, and finding OAT ineffective.

Conclusions: Structural barriers and stigma towards people who use substances continue to limit OAT initiation and retention. Client-informed low-barrier, accessible treatment is necessary to improve accessibility of OUD care and services.

Epidemiology and Public Health: **Interdisciplinary Epidemiology (Biological, Behavioural and Social) of HIV infection, including structural, social and individual determinants**

Épidémiologie et santé publique : **Épidémiologie interdisciplinaire (biologique, comportementale et sociale) de l'infection au VIH et déterminants structurels, sociaux et individuels**

EPHP4.07

How Different Are Invisible and Visible Disabilities in HIV?

Mehmet Inceer

Mcgill University, Montreal, QC

HIV infection has evolved from an infectious disease to a chronic disease in the post-cART era. As people with HIV live into their senior years, they accumulate health challenges both from aging and from HIV. Disability is one of the results of aging and of living with a chronic disease, but these disabilities are not always visible.

The objective is to estimate the prevalence of impairments, activity limitations, and participation restrictions in people living with HIV and the effect of age and sex on these disabilities. Data came from the Positive BHN study, a Canadian cohort of older people living with HIV. The BHN cohort was fully characterized on measures under the framework of the International Classification of Functioning, Disability, and Health model. Binary indicators of disabilities were generated based on self-reported problems and logistic regression was used to assess the contribution of age and sex to the frequency of disability.

A total of 858 men and women (723 men, 135 women) were enrolled in the BHN study. The mean age of the men was 53.3 (SD:8.3) and the women was 50.5 (SD:7.5) years.

The prevalent invisible disabilities were pain, fatigue, low mood, negative body image, low self-esteem, low sleep quality, cognitive problems, planning and organization challenges, symptoms of depression and anxiety, fatigue, and pain.

The prevalence visible disabilities were physical capacity, engagement in physical activities and usual roles, restrictions in social activities performing physically demanding activities, climbing several flights of stairs, bending, kneeling, or stooping, lifting and carrying.

People 60+ had the lowest rates of invisible disabilities and the highest rates of visible disabilities. Women reported higher rates of disabilities, invisible or visible, than men.

As most of the disabilities are actionable, behavioural and rehabilitative interventions should be considered as part of front-line therapy to change this disability profile.

Epidemiology and Public Health: **Data and Methodological Science: Use of Administrative Data, New Tools and other Novel Data Sources in HIV Prevention and Control Programs**

Épidémiologie et santé publique : **Science des données : Utilisation des données administratives, nouveaux outils de mesure, autres sources originales de données dans les programmes de prévention du VIH et de lutte**

EPHP5.01

A Systematic Review of the Geospatial Barriers to Antiretroviral Initiation, Adherence and Viral Suppression Among People Living with HIV

Kiffer G. Card[2], Nathan J. Lachowsky[2], Keri Althoff[3], Katherine Schafer[4], Robert Hogg[1]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. University of Victoria, Victoria, BC, 3. John Hopkins University, Baltimore, MD, USA, 4. Wake Health, Winston-Salem, NC, USA

Background: Following the emergence of antiretroviral therapy (ART), Treatment as Prevention (TasP) and "treatment for all" have become the cornerstone of both HIV clinical care and secondary HIV prevention in many jurisdictions. However, despite the efficacy of treatment-based programs and policies, structural barriers to ART initiation, adherence, and viral suppression have the potential to reduce TasP effectiveness. These barriers have been studied using Geographic Information Systems (GIS). While previous reviews have examined the use of GIS for HIV testing – an essential antecedent to clinical care – to date, no reviews have summarised the research with respect to other ART-related outcomes.

Methods: Using the PubMed database, the present review identified studies published in 2016 or earlier that leveraged GIS to examine the barriers to ART initiation, adherence, and viral suppression. Our overall goal was to understand how GIS has been used (and might continue to be used) to better study TasP outcomes. Joanna Briggs Institute criteria were used for the critical appraisal of included studies.

Results: In total, 33 relevant studies were identified, with the majority conducted in North America. Most studies were of sufficient quality. However, a high degree of variation in methodologies makes between-study comparisons difficult. Nevertheless, when taken together, our included studies highlight geospatial variation in ART success and inequitable distribution of HIV care in racially segregated, economically disadvantaged, and, by some measurement methods, increasingly rural areas.

Conclusions: Results from this review highlight the salient relationship between social geography and TasP implementation as well as the need for creating responsive healthcare systems that can not only monitor the geospatial variation of HIV-related outcomes but respond to changing patterns. We discuss implications for the implementation of biomedical preventions strategies with respect to the predominant models of ART distribution in Canada.

Epidemiology and Public Health: **Data and Methodological Science: Use of Administrative Data, New Tools and other Novel Data Sources in HIV Prevention and Control Programs**

Épidémiologie et santé publique : **Science des données : Utilisation des données administratives, nouveaux outils de mesure, autres sources originales de données dans les programmes de prévention du VIH et de lutte**

EPHP5.02

Developing an Administrative Data Case-Definition for HIV Diagnoses: a Population-based Study from Manitoba, Canada

Souradet Y. Shaw[1], Leigh M. McClarty[1], Christine Bibeau[2], Laurie Ireland[2], Ken Kasper[3, 4], Yoav Keynan[3, 4], Carla Loeppky[5], Claire Kendall[6], Marissa L. Becker[1, 3, 4]

1. Department of Community Health Sciences, University of Manitoba, Winnipeg, MB, 2. Nine Circles Community Health Centre, Winnipeg, MB, 3. Manitoba HIV Program, Winnipeg, MB, 4. Department of Family Medicine, University of Manitoba, Winnipeg, MB, 5. Manitoba Health, Seniors, and Active Living, Winnipeg, MB, 6. Bruyere Institute, University of Ottawa, Ottawa, ON

Introduction: Epidemiological studies using administrative data to define health conditions have demonstrable utility for informing public health action. This study describes the development of HIV case-definitions using population-based administrative data from Manitoba.

Methods: HIV case-definitions were constructed from data housed in physician claims, hospital discharge, pharmaceutical dispensations, and laboratory test databases. ICD-9/10 diagnoses were used where appropriate. The gold standard was composed of people living with HIV reported to public health surveillance from 2009-2015, and a random selection of Manitobans who screened for chlamydia/gonorrhea, and had no evidence of HIV infection. Performance was assessed using sensitivity, specificity, positive/negative predictive value (PPV & NPV), and Youden's index. Cases identified by HIV case-definitions, and those reported to public health surveillance were compared using annualized incidence and multivariable logistic regression models. Adjusted odds ratios (AOR) and 95% confidence intervals (95% CI) are reported. Age group (reference: 20-29 years), sex, and year were included in models.

Results: Two or more HIV diagnoses in two years in physician claims, or in hospital discharge abstracts; or 14 or more HAART dispensations in two years; or one positive HIV laboratory diagnosis had the best overall performance [Youden's index (0.706)]. Sensitivity was 82.3% (95%CI: 79.1%-85.5%), specificity: 86.8% (95%CI: 84.9%-88.7%), PPV: 74.1% (95%CI: 70.6%-77.6%), and NPV: 91.4% (95%CI: 89.8%-93.1%). Using this case-definition, 587 HIV diagnoses were identified from 2009 to 2015 [annualized incidence: 7.4/100,000 persons (95%CI: 6.8-8.1)]. Annualized incidence calculated from surveillance data was 7.7/100,000 persons (95%CI: 7.1-8.3). The HIV case-definition was at higher odds of identifying older PLWH ($AOR_{60+years}$: 1.7; 95%CI: 1.02-2.82).

Conclusion: Our study is the first in Manitoba to develop a case-definition for HIV diagnoses using administrative data. The best-performing case-definition underestimated incidence; since HIV is under-reported, a more sensitive case-definition is recommended. Administrative data case-definitions can serve a complementary role alongside routinely-collected surveillance data.

Epidemiology and Public Health: **Data and Methodological Science: Use of Administrative Data, New Tools and other Novel Data Sources in HIV Prevention and Control Programs**

Épidémiologie et santé publique : **Science des données : Utilisation des données administratives, nouveaux outils de mesure, autres sources originales de données dans les programmes de prévention du VIH et de lutte**

EPHP5.03

Examining Differential Success in Participant Recruitment Using Respondent-Driven Sampling (Rds) in a Canadian Multi-site Study of gbMSM

David M. Moore[1, 2], Lu Wang[1], Heather L. Armstrong[1], Nicanor Bacani[1], Shayna Skakoon-Sparling[3], Syed Noor[3], Nathan J. Lachowsky[4, 1], Joseph Cox[4], Gilles Lambert[5], Daniel Grace[6], Jody Jollimore[7], Gbolahan Olarewaju[1], Marc Messier-Peet[4], Ricky Rodrigues[3], Trevor Hart[3]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. Faculty of Medicine, University of British Columbia, Vancouver, BC, 3. Ryerson University, Toronto, ON, 4. McGill University, Montreal, QC, 5. Direction régionale de santé publique -Montréal, Montreal, QC, 6. University of Toronto, Toronto, ON, 7. Community Based Research Centre, Vancouver, BC

Background: The Engage Study launched in February,2017 in Montreal and Vancouver and May,2017 in Toronto, using respondent-driven sampling(RDS). We examined seed and participant characteristics, as well as motivation for participation by city to understand variations in recruitment success.

Methods: All sites initiated recruitment with 30 seed participants(seeds), followed by adding more seeds if needed. We examined characteristics of seeds versus early recruits (recruitment waves 1-3) and later-wave recruits for each study site. We described the proportion of seeds who recruited ≥1 participant(productive seeds) and participants in terms of their reported gbMSM social network size, motivation for study participation and from whom they received study invitations. Proportions are not RDS-adjusted.

Results: Recruitment began with 27 seeds in Montreal, of which 78% were productive. Vancouver recruited 81 seeds(64% productive) and Toronto recruited 55 seeds (55% productive). Montreal enrolled an average of 69 participants per month, Vancouver, 24 per month and Toronto ,19 per month. The median reported social network size was 30 in Montreal (Q1-Q3 15-80); 35 (Q1-Q3 15-100) in Vancouver and 50 (Q1-Q3 20-100) in Toronto. Across cities, seeds reported that their main reasons for participation were interest in sexual health/HIV or gay men's issues(see Table). Only 8-11% of participants reported financial motivation for participation. Most early recruits reported receiving their study invitation from a friend.

Conclusion: We found few differences to explain the differences in recruitment success. Study participants in Montreal reported smaller network sizes and lower incomes. However, financial incentives were not a motivating factor for many Engage participants.

... 2

Table:

Variable	Montreal (N=1173)			Vancouver (N=457)			Toronto (N=307)		
	Seeds (N=27)	Early Recruits (N=218)	Later Recruits (N=928)	Seeds (N=81)	Early Recruits (N=269)	Later Recruits (N=107)	Seeds (N=55)	Early Recruits (N=177)	Later Recruits (N=75)
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Age									
Under 30	**11 (40.7)**	**78 (35.8)**	294(31.7)	**33(40.7)**	**107 (39.8)**	52 (48.6)	**15 (27.3)**	**61 (34.5)**	46 (61.3)
30 to 44	9 (33.3)	86 (39.4)	324(34.9)	25(30.9)	95 (35.3)	45 (42.1)	24 (43.6)	89 (50.3)	23 (30.7)
45 and over	7 (25.9)	54 (24.8)	310(33.4)	23(28.4)	67 (24.9)	10 (9.3)	16 (29.1)	27 (15.3)	6 (8.0)
Person of colour									
No	21 (84.0)	178 (84.8)	796 (89.2)	58(72.5)	205 (77.9)	80 (75.5)	36 (66.7)	130 (74.3)	60 (85.7)
Yes	**4 (16.0)**	**32 (15.2)**	**96 (10.8)**	**22(27.5)**	**58 (22.1)**	26 (24.5)	**18 (33.3)**	**45 (25.7)**	**10 (14.3)**
Annual income									
< $30000	**13 (48.1)**	**135 (61.9)**	524 (56.5)	**31(38.3)**	**121 (45.0)**	47 (43.9)	**19 (34.5)**	**74 (41.8)**	43 (57.3)
$30000 - $59999	11 (40.7)	59 (27.1)	292 (31.5)	30(37.0)	82 (30.5)	34 (31.8)	24 (43.6)	62 (35.0)	20 (26.7)
≥$60000	3 (11.1)	24 (11.0)	112 (12.1)	20(24.7)	66 (24.5)	26 (24.3)	12 (21.8)	41 (23.2)	12 (16.0)
Sexual identity									
Gay	**20 (74.1)**	181 (83.0)	749 (80.7)	**67(82.7)**	232 (86.2)	93 (86.9)	**35 (63.6)**	142 (80.2)	58 (77.3)
Bisexual	2 (7.41)	10 (4.6)	85 (9.2)	6(7.4)	11 (4.1)	4 (3.7)	4 (7.3)	3 (1.7)	3 (4.0)
Other	5 (18.5)	27 (12.4)	94 (10.1)	8(9.9)	26 (9.7)	10 (9.3)	16 (29.1)	32 (18.1)	14 (18.7)
Self-reported HIV status									
HIV Negative	20 (74.1)	158 (72.5)	684 (73.7)	**56(69.1)**	209 (77.7)	88 (82.2)	34 (61.8)	131 (74.0)	61 (81.3)
HIV Positive	**4 (14.8)**	**40 (18.3)**	**152 (16.4)**	**19(23.5)**	**39 (14.5)**	**8 (7.5)**	**18 (32.7)**	**38 (21.5)**	**6 (8.0)**
Unknown	3 (11.1)	20 (9.2)	92 (9.9)	6(7.4)	21 (7.8)	11 (10.3)	3 (5.5)	8 (4.5)	8 (10.7)
Number of male anal sex partners P6M (Median and IQR)	6 (1-10)	2 (1-6)	3 (1-8)	5 (2-10)	3 (1-7)	4 (2-10)	5 (1-15)	4 (1-12)	2 (1-11)
Reason for study participation									
Interested in sexual health and HIV	10 (37.0)	59 (27.1)	299 (32.2)	23(28.4)	89 (33.1)	29 (27.1)	15 (27.3)	62 (35.0)	26 (34.7)
Interested in gay men's issues	8 (29.6)	41 (18.8)	184 (19.8)	29(35.8)	56 (20.8)	22 (20.6)	13 (23.6)	30 (16.9)	14 (18.7)
Friend/partner wanted me to participate	7 (25.9)	27 (12.4)	99 (10.7)	4 (4.9)	34 (12.6)	18 (16.8)	5 (9.1)	20 (11.3)	10 (13.3)
Wanted to help the community	1 (3.7)	62 (28.4)	226 (24.4)	21(25.9)	61 (22.7)	22 (20.6)	18 (32.7)	47 (26.6)	19 (25.3)
Mostly interested in the $50 incentive	1 (3.70)	26 (11.9)	107 (11.5)	4 (4.9)	27 (10.0)	16 (15.0)	4 (7.3)	17 (9.6)	4 (5.3)
None of the above	0	3 (1.4)	13 (1.4)	0	2 (0.7)	0	0	1 (0.6)	2 (2.7)
Given participation voucher by:	2 (7.4)	64 (29.4)	254 (27.4)	10 (12.3)	66 (24.5)	31 (29.0)	4 (7.3)	53 (29.9)	25 (33.3)
Partner	0	**116 (53.2)**	464 (50.0)	22 (27.2)	**167(62.1)**	66 (61.7)	17 (30.9)	**124(70.1)**	45(60.0)
Friend	3 (11.1)	57 (26.1)	272 (29.3)	11 (13.6)	48 (17.8)	18 (16.8)	7 (12.7)	28 (15.8)	14 (18.7)
Acquaintance	**22 (81.5)**	9 (4.1)	34 (3.7)	**44(54.3)**	16 (5.9)	7 (6.5)	**31(56.4)**	5 (2.8)	5 (6.7)
Other									

Epidemiology and Public Health: **Data and Methodological Science: Use of Administrative Data, New Tools and other Novel Data Sources in HIV Prevention and Control Programs**

Épidémiologie et santé publique : **Science des données : Utilisation des données administratives, nouveaux outils de mesure, autres sources originales de données dans les programmes de prévention du VIH et de lutte**

EPHP5.04

Reporting on Patients 'Disengaging from Care'. Who is Actually 'Lost to Follow-Up' (LTFU)?

Hartmut B. Krentz[1], Paul McPhee[1], Gordon Arbess[2], Linda Jackson[2], Sean Rourke[1]

1. Center for Urban Health Solutions, Toronto, ON, 2. Family Health Team, St Michael's Hosptial, Toronto, ON

Introduction-Retention in care remains essential for good health outcomes. However, identifying who is retained or disengaged remains problematic. Efforts to relink disengaged patients to care may be inefficient if these patients are truly not disengaged. As part of the *Linkage to and Retention in Care Project* at St. Michael's Hospital (SMH) in Toronto, we report on the number of patients followed at the Family Health Team (SMHAFHT) initially listed as LTFU (Lost to Follow-up) and then determined their current engagement status.

Methods- All HIV+ patients previously followed at SMHAFHT as of 4/23/2018 who were not seen by any staff member in the previous 12 months were listed as LTFU. Using detailed chart review and consultation with physician/staff, the patient's status (i.e. transferred, discharged, moved, deceased, disengaged) was recorded.

Results-22% of all patients living with HIV followed at SMHAFHT were initially identified as LTFU. After chart review, 10.7% of these patients had remained active, 5.4% had been discharged from service, 2.1% were duplicate records, 1.1% were never a patient, 0.3% were found to be HIV negative; 3.7% had an indeterminate status. Overall, 43.1% were reclassified as 'de-engaging' from care for known reasons including 26.7% transferring to another HIV care center, 7.2% moved out of the area, 8.3% were deceased and 1% had been deported.The remaining 33.6% represent 'actual' LTFU patients. Removing the patients with 'known' and/or administrative reasons from patients with 'unknown' reasons for dis-engaging reduces the percentage from 22% to 7.4%; nearly 1 in 12 patients are LTFU.

Conclusion- Identifying accurately the status of patients engaged or not engaged in care remains important to allow more targeted and effective interventions for those truly LTFU. Once identified, outreach tracking and contacting LTFU patients can be accomplished. Understanding why people disengage in care is an ongoing goal of this study.

Epidemiology and Public Health: **Data and Methodological Science: Use of Administrative Data, New Tools and other Novel Data Sources in HIV Prevention and Control Programs**

Épidémiologie et santé publique : **Science des données : Utilisation des données administratives, nouveaux outils de mesure, autres sources originales de données dans les programmes de prévention du VIH et de lutte**

EPHP5.06

Mental Health Diagnoses in a Population-based Cohort of People Living with HIV

Mia D. Kibel[1], Anthony Wu[1], Kalysha Closson[1], Martin St-Jean[1], Megan Marziali[1], Nanditha Ni Gusti Ayu[1], Kate Salters[1], Taylor McLinden[1], Oghenowede Eyawo[1], Thomas Patterson[2], David Moore[1], Julius Elefante[3], Ronald Joe[4], Rolando Barrios[1], Viviane Lima[1], Robert S. Hogg[1]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. University of California San Diego, San Diego, CA, USA, 3. University of British Columbia Department of Medicine, Vancouver, BC, 4. Vancouver Coastal Health Research Institute, Vancouver, BC

Background: Mental health (MH) disorders are a major cause of comorbidity for people living with HIV (PLHIV). Linked administrative health data are a powerful but potentially under-utilized source of information on MH disorders in this population.

Methods: The Comparative Outcomes And Services Utilization Trends (COAST) Study is a population-based cohort examining health outcomes and service use among all known PLHIV in British Columbia. We examined MH-related International Classification of Diseases (ICD) 9/10 codes from 1996-2013 in outpatient physician and hospital-based administrative claims data. Expert physicians were consulted to understand how these codes are used in practice. We grouped MH diagnostic codes into: (1) Mood and/or anxiety disorders (MD/AD); (2) Psychotic disorders; (3) Substance use-related disorders (SUD); (4) Personality disorders; and (5) Other. We tabulated the frequency (n [%]) of at least one occurrence of MH-related codes, by unique code and category.

Results: Of the 13,907 PLHIV in our sample, 11,507 (83%) had at least one MH diagnostic code. MD/AD codes were most prevalent (n=10,287, 74%), followed by SUD codes (n=6969, 50%), psychotic disorder codes (n=1943, 14%), and personality disorder codes (n=1874, 13%). Half (6911, 50%) of PLHIV in our sample had codes in ≥2 distinct categories, most commonly MD/AD and SUD (n=5896, 42%). MD/AD and SUD codes were most often assigned by general practitioners, while psychotic disorder and personality disorder codes were most often assigned by psychiatrists.

Conclusions: Developing and validating case-finding algorithms to identify MH disorders among PLHIV in population-based administrative datasets is a major area of future work.

... 2

People Living with HIV in BC with Multiple ICD-9/-10 Diagnostic Codes for Mental Health (MH) Conditions, by Unique Code & Category* N = 13907

Individuals with multiple unique ICD- 9/-10 MH diagnostic codes	Frequency N (%)
1 unique MH diagnostic code	1960 (14%)
2 unique MH diagnostic codes	1840 (13%)
3 unique MH diagnostic codes	1507 (11%)
≥4 unique MH diagnostic codes	6200 (45%)
Individuals with ICD-9/-10 diagnostic codes for MH conditions in multiple categories*	
MH diagnostic codes in only 1 category	4596(33%)
MH diagnostic codes in 2 categories	3925(28%)
MH diagnostic codes in 3 categories	1860(13%)
MH diagnostic codes in 4 categories	819 (6%)
MH diagnostic codes in 5 categories	307 (2%)
* MH Code Categories include: 1) Mood and/or anxiety disorders; 2) Psychotic disorders; 3) Substance use-related disorders; 4) Personality disorders; 5) Other.	

Epidemiology and Public Health: **Epidemiology and Public Health**
Épidémiologie et santé publique : **Épidémiologie et santé publique**

EPHP6.01

Patterns of Hepatitis C Virus (HCV) Testing in a Clinical HIV Cohort in Ontario, Canada, 2000-2015

Nasheed Moqueet[1], Ramandip Grewal[1], Toni Mazzulli[2, 3], Curtis Cooper[4], Sandra L. Gardner[5], Irving E. Salit[6], Abigail Kroch[7], OHTN Cohort Study Team, Ann N. Burchell[1]

1. Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, ON, 2. Mount Sinai Hospital, Toronto, ON, 3. Public Health Ontario, Toronto, ON, 4. The Ottawa Hospital-Division of Infectious Diseases, Ottawa, ON, 5. Dalla Lana School of Public Health, University of Toronto, Toronto, ON, 6. Toronto General Hospital Research Institute (TGHRI), Toronto, ON, 7. The Ontario HIV Treatment Network, Toronto, ON

Background: Individuals with HIV are vulnerable to HCV acquisition via injection drug use (IDU), blood, and condomless anal sex. HIV care provides an opportunity for HCV screening and treatment with curative HCV therapies.

Methods: Data was collected at 9 specialty HIV clinics participating in the OHTN Cohort Study (2000-2015) using chart abstractions, annual interviews and record linkage with Public Health Ontario Laboratories. Among those not previously diagnosed with HCV, we estimated the annual proportions tested (serological/RNA tests) per year. We identified correlates of annual testing using generalized estimating equations (GEE). In repeat testers (atleast two HCV tests and >=2 years of follow-up), we calculated inter-test intervals (ITI), overall and by subgroups.

Results: As of 2015, 92.5% of 4828 participants had atleast one HCV test**.** The proportion (95% CI) tested annually increased from 13.2% (11.8%, 14.8%) in 2000 to 41.1% (39.3%, 43.0%) in 2015 (linear test for trend, p<0.0001).

HCV testing was more common among those with behavioral or sexual risk factors (any IDU, ever positive for syphilis, being MSM). (**Table 1**). 63.5% of those with 2 years of follow-up had >=2 HCV tests: Median (Interquartile range) ITI, 41.14 weeks (16.43, 101.00). The ITI was shortest in those with any IDU: 28.57 weeks (13.00, 73.14) vs. no IDU: MSM 42.71 (17.00, 97.43); females 55.71 (21.86, 154.29); non-MSM males 62.00 (21.64, 186.71).

Conclusion: Annual HCV testing increased over time with higher testing among those with reported risk factors (sexual or IDU). Future directions include examining differences in ITI.

... 2

Table 1. Selected correlates of annual testing for Hepatitis C virus (HCV) from included HIV-positive participants in the OHTN Cohort Study, 2000-2015: results from generalized estimating equations (GEE)

	Unadjusted Proportion ratio (95%CI)	Adjusted Proportion ratio (95%CI)
Each additional calendar year[a]		
Pre-DAA (2000-2011)	0.98 (0.98, 0.99)	1.00 (0.99, 1.00)
Post-DAA (2012-2015)	1.17 (1.16, 1.19)	1.19 (1.17, 1.20)
Any injection drug use[b]		
No	Referent	Referent
Yes	1.53 (1.44, 1.63)	1.41 (1.32, 1.50)
MSM		
Non-MSM	Referent	Referent
MSM	1.21 (1.15, 1.28)	1.15 (1.07, 1.24)
Ever positive syphilis test		
No	Referent	Referent
Yes	1.29 (1.22, 1.36)	1.17 (1.10, 1.24)
Age, by decade	0.89 (0.87, 0.91)	0.89 (0.87, 0.92)
Sex		
Female	Referent	Referent
Male	1.20 (1.12, 1.28)	1.06 (0.97, 1.15)
Ethnicity/race		
White	Referent	Referent
Black	0.94 (0.87, 1.01)	0.95 (0.88, 1.02)
Aboriginal/Indigenous	1.12 (1.02, 1.22)	1.03 (0.95, 1.11)
Region		
Rural/out of province/unknown	Referent	Referent
Urban	1.19 (1.09, 1.30)	1.01 (0.93, 1.11)
Education		
High school or less	Referent	Referent
Post secondary	1.13 (1.06, 1.19)	1.09 (1.03 1.15)
Duration of HIV, by decade	0.86 (0.83, 0.89)	0.84 (0.81 0.88)

a. Calendar time was modeled as a linear spline with a knot at 2011. In text, results of overall linear test of trend were reported. Results were similar when calendar time was modeled differently (quadratic term, cubic spline, spline with knots at 2006 and 2011).

b. With recent IDU, results similar: Adjusted proportion ratio (95% CI): 1.47 (1.31, 1.66)

DAA: direct-acting antivirals; CI: confidence interval; MSM: men who have sex with men; OHTN: Ontario HIV Treatment Network.

Epidemiology and Public Health: **Epidemiology and Public Health**
Épidémiologie et santé publique : **Épidémiologie et santé publique**

EPHP6.02

HIV Status and Earlier Syphilis Stage Predictive of Ocular Syphilis in British Columbia, Canada: A Case-control Study, 2010-2018

Hasan Hamze[1], Venessa Ryan[2], Emma Cumming[2], Christine Lukac[1], Jason Wong[2, 3], Troy Grennan[2, 1]

1. University of British Columbia Faculty of Medicine, Vancouver, BC, 2. BC Center for Disease Control, Vancouver, BC, 3. University of British Columbia School of Population and Public Health, Vancouver, BC

Background: The incidence of syphilis has been increasing worldwide in the last 20 years, and continues to disproportionately impact those living with HIV. Alongside this increase, several jurisdictions have reported increasing incidence of ocular syphilis (OS). If untreated or treatment is delayed, OS can lead to permanent blindness. We sought to assess characteristics of OS cases in British Columbia (BC), Canada, and identify risk factors that may be associated with OS diagnosis.

Methods: This case-control study compared OS cases to matched syphilis controls (1:4 ratio) diagnosed in BC between January 2010 – March 2018. Demographic and clinical data were extracted from the provincial sexually transmitted infection database. Risk factors of OS were assessed using logistic regression. Variables were included in the final multivariable model if significant at the p ≤0.05 level.

Results: Between 2010-2018, 5681 syphilis cases were diagnosed in BC, including 61 (1.1%) diagnosed with OS. The proportion of syphilis cases with OS increased from 0.48% in 2010 to 2.99% in 2018 (P=0.04). Among OS cases, median age was 47 years and 88.5% were male. The most common ophthalmologic diagnosis was panuveitis (44.3%). At the time of syphilis diagnosis, 50.8% of OS cases were HIV-positive compared to 25.8% of controls (P<0.001). HIV-positive OS cases had higher viral loads (42.9% vs 79.7% were suppressed; P=<0.001) and lower CD4 counts (470 vs 615 cells/$mm^{3;}$ P=0.014) than HIV-positive controls. Predictors of OS included primary/secondary stage of syphilis (odds ratio [OR] 4.06; 95% confidence interval [CI] 1.52-10.8), early latent stage of syphilis (OR 3.71; 95%CI 1.39-9.95), and HIV-positive serostatus (OR 2.49; 95%CI 1.27-4.88).

Conclusions: OS incidence increased over the study period, a finding consistent with other jurisdictions. These findings highlight the importance of vigilance for OS, particularly those in the early stages of syphilis and those living with HIV, to avoid diagnostic and treatment delays.

Epidemiology and Public Health: **Epidemiology and Public Health**
Épidémiologie et santé publique : **Épidémiologie et santé publique**

EPHP6.03

Low Uptake of Direct-Acting Antivirals in a Large HIV/HCV Co-Infected Cohort in Southern Saskatchewan

Sarah Craddock[1, 2], Dennaye Fuchs[1], Molly Trecker[2], Kathy Lloyd[2], Cara Benz Tramer[2], Maurice Hennink[2], Tania Diener[2], Kumudhini Karunakaran[1], Stuart Skinner[1, 3], Alexander Wong[1, 3]

1. Infectious Diseases Clinic, Saskatchewan Health Authority, Regina, SK, 2. Population and Public Health, Saskatchewan Health Authority, Regina, SK, 3. Department of Medicine, University of Saskatchewan, Regina, SK

Background: The HIV epidemic in Saskatchewan is unique, characterized by high rates of transmission via injection drug use and subsequent co-infection with HIV and hepatitis C virus (HCV). Unrestricted access to direct-acting antiviral therapy (DAAs) for HCV in co-infected persons was instituted in Saskatchewan in early 2017. We describe baseline demographics and clinical data for a large HIV/HCV co-infected cohort from southern Saskatchewan.

Methods: The ID Clinic (IDC) at Regina General Hospital provides care for the majority of persons in southern Saskatchewan living with HIV. A large proportion of these persons were/are HCV co-infected. Descriptive statistics are used to characterize the demographic and clinical characteristics of this co-infected cohort, including those treated with DAAs versus those yet to be treated.

Results: 282/486 (55.8%) active HIV+ individuals in the IDC are HCV antibody positive, 163 (57.8%) of which are men. The median age of this cohort was 40 years (range 19-70), and the median age in women was significantly lower than men (36 versus 44 years, $p<0.001$). 203/486 (74.9%) self-reported Indigenous/Métis heritage. 79/282 (28.0%) spontaneously cleared their HCV infection. Of the remaining 203 persons with HCV viremia, only 78 (38.4%) have been prescribed DAAs for HCV. Of these, 61/78 (78.2%) achieved HCV cure, 11/78 (14.1%) are currently on or have completed therapy and are awaiting results, and 6/78 (7.7%) have either relapsed or re-infected post-therapy. Of 125/203 (61.6%) persons viremic with HCV who remain DAA naïve, 68 (54.4%) had their most recent HIV viral load in 2018 less than 200 copies/mL, suggesting reasonable adherence to HIV therapy.

Conclusions: A high number of persons with HIV/HCV co-infection in southern Saskatchewan remain DAA naïve, despite open access to DAA therapy in Saskatchewan for over 1.5 years. System-level interventions are required to improve DAA uptake in persons living with HIV/HCV co-infection in this cohort.

Epidemiology and Public Health: **Epidemiology and Public Health**
Épidémiologie et santé publique : **Épidémiologie et santé publique**

EPHP6.04

Drug-related Deaths Among Hepatitis C Positive and Negative People in British Columbia (BC), Canada

Hasina Samji[1, 2], Amanda Yu[1], Carmine Rossi[1], Jason Wong[1], Mark Gilbert[1], Maria Alvarez[1], Stanley Wong[1], Mawuena Binka[1], Maryam Darvishian[1], Mark Tyndall[1], Mel Krajden[1], Naveed Janjua[1], Zahid A. Butt[1]

1. British Columbia Centre for Disease Control, Vancouver, BC, 2. Simon Fraser University, Burnaby, BC

Background: The recent opioid overdose epidemic threatens to derail mortality reductions from curative direct antiviral agents. An estimated 70% of HCV seroconverters in British Columbia (BC) reported injecting drug use in the past 12 months; this population is also at risk of death from drug overdose. We identified drug-related deaths (DRDs) among those with and without HCV in BC.

Methods: We used data from the BC Hepatitis Testers Cohort, which includes all individuals tested for HIV, HBV and HCV in BC from 1990 to 2015 linked to prescription drug, medical visit, hospitalization, cancer and mortality information. We examined rates per 100,000 person-years (PY) in DRDs and liver-related deaths by year and compared trends over time in deaths due to selected opioids including fentanyl from 2010 to 2016.

Results: Of 1,355,902 individuals in the cohort 5.3% (71,721) were HCV+ and 94.7% (1,284,181) were HCV-. 131,300 deaths were recorded of which 13.3% (17,477/131,300) were among HCV+ individuals; 19.1% (3,339/17,477) of these deaths were DRDs compared to 3.1% (3,569/113,823) of deaths among HCV- individuals. Among HCV+ individuals, the proportion of deaths attributable to drugs increased from 15% (135/893) in 2010 to 27% (348/1272) in 2016. In 2017, the rate of DRDs among HCV+ individuals was 5.5 per 100,000 PY compared to 2.5 per 100,000 PY for liver-related mortality. The majority (88%) of DRDs occurred among people who inject drugs (PWID) – the proportion was higher among HCV+ PWID (90%) compared to HCV- PWID (84%). Since 2013, the proportion of deaths attributed to synthetic opioids has increased among individuals with HCV+ and HCV-, while the contribution of natural and semisynthetic opioids to DRDs have declined.

Conclusion: Our results indicate a steep increase in the rate of DRDs and deaths due to synthetic opioids among HCV+ and HCV- PWID.

Epidemiology and Public Health: **Epidemiology and Public Health**
Épidémiologie et santé publique : **Épidémiologie et santé publique**

EPHP6.05

Hiv-Related Risk, Prevention and Testing Practices Among Canadian Gay Bisexual and Other Men Who Have Sex with Men (gbMSM): Results from a Large National Online Survey

Dana Paquette[1], Barry Adam[2], Martin Blais[3], David Brennan[4], Trevor A. Hart[5], Nathan Lachowsky[6]

1. Public Health Agency of Canada, Ottawa, ON, 2. Ontario HIV Treatment Network, Toronto, ON, 3. Université du Québec à Montréal, Montreal, QC, 4. University of Toronto, Toronto, ON, 5. Ryerson University, Toronto, ON, 6. University of Victoria, Victoria, BC

Background: In Canada, gbMSM continue to be disproportionately affected by STBBIs. National-level information on risk and prevention factors is crucial for guiding the planning of public health interventions. The European Men's Internet Survey (EMIS 2017) collected data from gbMSM living in 50 countries, including Canada, from October 2017 to January 2018. This analysis provides an overview of Canadian EMIS 2017 participants.

Methods: In Canada, the Public Health Agency of Canada supported the EMIS survey in collaboration with gbMSM community engaged researchers. This online survey asked about socio-demographics, sexual practices and drug use, and STBBI-related needs and interventions. Inclusion criteria were: living in one of 50 countries and territories; identifying as a cisgender man or a transman; and sexually attracted to men or having had sex with men. Descriptive analysis was conducted on Canadian data.

Results: The Canadian sample size was 5,473. 76% identified as gay, and 2.4% as transmen. 20.7% were born outside of Canada, and 3.8% were Indigenous. While 51.7% indicated they would use PrEP if it was available and affordable, 8.4% had ever taken PrEP. Of the HIV negative men using PrEP, 91.3% had condomless anal sex with casual partners in the previous year, compared with 71.5% of men with an HIV negative or unknown status, and not using PrEP. In the previous year, 62.5% tested for HIV and 24.8% had a full STI screening. 3.2% received a syphilis diagnosis in the previous year, 1.5% ever received a hepatitis C diagnosis and 9% an HIV diagnosis. For men who were HIV-positive, 99.1% were currently taking ART, and of those, 96.7% had an undetectable viral load.

Conclusion: This descriptive analysis fills a gap in national-level information on gbMSM. Further studies are needed to better understand trends in new prevention technologies, and their impact on STBBIs.

Epidemiology and Public Health: **Epidemiology and Public Health**
Épidémiologie et santé publique : **Épidémiologie et santé publique**

EPHP6.06

Sexual Health Behaviour and Service Use Among GBTMSM in the Region of Waterloo, Ontario Canada: Findings from the OutLook Situational Assessment

Todd A. Coleman[1], Eric M. Armstrong[1, 6], Grace Bermingham[5], Colin Boucher[3], Ruth Cameron[3, 1], Simon Coulombe[1], Charlie Davis[1], Victor LeFort[3], Kathy Luu[1, 7], Tom Ragonetti[1], Jeremy Steffler[4], Robb Travers[1], Sue Weare[1], Ciann Wilson[1], Michael Woodford[2]

1. Wilfrid Laurier University, Waterloo, ON, 2. Wilfrid Laurier University, Kitchener, ON, 3. AIDS Committee of Cambridge, Kitchener, Waterloo, and Area, Kitchener, ON, 4. Rainbow Community Council, Waterloo, ON, 5. Region of Waterloo Public Health, Waterloo, ON, 6. University of Toronto, Toronto, ON, 7. University of Waterloo, Waterloo, ON

Background: Gay, bisexual, trans, and other men who have sex with men (GBTMSM) remain disproportionately affected by HIV/AIDS compared to heterosexuals. Prevention strategies have changed enormously in the past decade (e.g. greater availability of point-of-care testing and recent increases in GBTMSM using Pre-Exposure Prophylaxis (PrEP)). Information relevant to GBTMSM outside of larger metropolitan cities is often unavailable, creating dissonance in health prevention/promotion efforts not based on lived experiences of those targeted.

Methods: The OutLook Study is a community-based research project initiated by communities and allies that gathered survey information from lesbian, gay, bisexual, transgender and queer (LGBTQ) people in the Region of Waterloo, Ontario. The survey asked about social support, LGBTQ community connections, and detailed questions to GBTMSM (n=269) about sexual behaviours, access to sexual health services, and opinions/knowledge about issues relevant to GBTMSM (e.g. HIV disclosure). Results will better inform local outreach and education. Analytic multivariable regression was used to explore various outcomes (e.g. HIV testing, knowledge of Pre-Exposure Prophylaxis, and HIV-related sexual risk behaviour). Selected findings are presented.

Results: Higher level of HIV-related sexual risk behaviour was associated with recent HIV testing (within the past 6 months versus never having tested or tested more than 6 months ago), as was more frequent mobile app use to search for sex. Greater sexual risk behaviours were associated with travelling outside the Region of Waterloo for sex, as was accessing sex parties and saunas/baths for sex. Using logistic regression methods, individuals who were categorized as high risk had more interest in taking PrEP compared to those at lower risk.

Conclusions: These results provide socio-demographic and community-specific characteristics to consider when conducting local HIV prevention in the Region of Waterloo and other provincial and/or national bodies working towards understanding local issues for GBTMSM.

Epidemiology and Public Health: **Epidemiology and Public Health**
Épidémiologie et santé publique : **Épidémiologie et santé publique**

EPHP6.07

Switch from Protease Inhibitor to Dolutegravir with Prior Virologic Failure or Suboptimal Therapy

Mohamed N. Sangaré[1, 7], Jean-Guy Baril[2], Alexandra de Pokomandy[3], Claudie Laprise[4], Réjean Thomas[5], Marina Klein[3], Cécile Tremblay[6], Louise Laporte[7], Zoe Greenwald[5], Costa Pexos[3], Nima Machouf[2], Madeleine Durand[6], Helen Trottier[1, 7]

1. Université de Montréal, Montréal, QC, 2. Clinique de médecine urbaine du Quartier latin, Montréal, QC, 3. Chronic Viral Illness Service, McGill University Health Centre, Montréal, QC, 4. Division of Cancer Epidemiology, McGill University, Montréal, QC, 5. Clinique Médicale L'Actuel, Montréal, QC, 6. Department of Microbiology, Infectious Diseases and Immunology, Université de Montréal., Montréal, QC, 7. Sainte Justine University Hospital Center, Montréal, QC

Background and objective: The virological impact of switching patients with prior virologic failure (VF) or prior suboptimal combination antiretroviral therapy (cART) from a boosted protease inhibitor (PI/r) based regimen to a dolutegravir (DTG) based cART remains uncertain. The objective of this study was to compare the virologic outcome and documented prior VF or exposition to suboptimal mono or dual (NRTI) therapy who switched to DTG with 2 NRTIs compared to patients who remained on PI/r with 2 NRTIs.

Materials and methods: Data collected through routine clinical monitoring of people living with HIV in the Montreal Cohort were analyzed (n=10,448). We included all people with prior VF or exposure to suboptimal therapy, and virologically suppressed for at least 6 months on a PI/r-based cART after July 1st2013. Cox regression modelling was used to compare the incidence rate of VF among the two groups. For patients who switched to DTG, the index date was the date of the switch while for patients who continued PI/r, the index date was July 1st,2013 or the date they started their therapy with PI/r with 2 NRTIs if therapy was started after 2013. Virologic outcome was defined as two consecutive VL >50 copies or one VL>50 copies/ml if last VL available. Crude and adjusted Hazard ratios (HR) were estimated.

Results: Among 634 patients eligible, 216 were switched to DTG+2NRTI and 418 remained on their PI/r + 2NRTI regimen. Overall, VF was observed in 2.3% of patients who switched to DTG and in 12.50% of those who continued PI/r +2 NRTIs.The crude HRs (2.28 (95%CI: 0.88-5.89)) showed no statistically significant difference risk of virological failure among patients who stayed on their current therapy compared to those who switched to DTG. After adjustment the association remains not statistically significant (adjusted HR= 1.60 (95%CI: 0.61-4.20)).

Epidemiology and Public Health: **Epidemiology and Public Health**
Épidémiologie et santé publique : **Épidémiologie et santé publique**

EPHP6.08

Hepatitis C Knowledge and Treatment Willingness in Individuals Admitted to the Urban Health Unit at St Paul's Hospital

Christina Botros, Valeriya Zaborska, Sylvain Lother, Monica Ye, William Chau, Mark Hull
University of British Columbia, Vancouver, BC

Introduction: Direct acting antivirals (DAA) offer simple, safe, and effective treatment for chronic hepatitis C virus (HCV) infection. Initiating treatment in high-risk individuals during hospital admission could result in improved health outcomes and reduced transmission. Individual knowledge regarding HCV transmission, and treatment results in increased likelihood to engage in treatment. We sought to examine HCV knowledge gaps, treatment willingness, and possible barriers to initiating HCV treatment in high risk individuals with HCV infection.

Methods: We conducted a cross-sectional survey study evaluating HCV knowledge, treatment willingness, and barriers to initiating treatment among individuals admitted to the Urban Health and Infections Unit at St-Paul's hospital. Demographics, medical history, reason for admission, and patient outcomes were collected by chart review. HCV knowledge was assessed using true/false statements, while treatment willingness was assessed using a Likert scale.

Results: Out of 60 participants, 93% reported injection drug use in their lifetime, and 90% within the past month. HIV-coinfection occurred in 43% of participants, with 69% of those patients on HIV treatment at admission. Among participants, HCV knowledge was generally high. 83% were aware of HCV transmission routes and 68% were aware of DAAs. Out of the HCV naïve treatment patients, 75% agreed or strongly agreed to at least consider treatment within the following year. Self-identified barriers to treatment included perceptions of substance use prohibiting treatment (11.7%), being too sick to be treated (15%) and fear of the treatment side effects (16.7%). The main identified facilitators to treatment were getting support for substance use (10%) and learning more about HCV (10%).

Conclusion: Among hospitalized high-risk individuals with HCV, knowledge of HCV was generally high, while treatment willingness was moderate. To overcome barriers to HCV treatment, enhanced support for substance use and educational programs to enhance knowledge of current HCV treatments during inpatient admission should be considered.

Epidemiology and Public Health: **Other**
Épidémiologie et santé publique : **Autres**

EPHP7.01

The Impact of Geographic Location on HIV Viral Suppression and Mortality among People Who Use Injection Drugs

Ji Hyun Choi[1, 2], Taylor McLinden[1, 2], Kiffer Card[1, 2], Jenny Li[2], Yue Ma[2], Cathy Puskas[2], Viviane Lima[2], Denise Jaworsky[3], Mona Loutfy[4], Beverly Allan[1, 2], Jillian Brown[1, 2], Robert Hogg[1, 2]

1. Canadian HIV Observational Cohort (CANOC) Collaborative Research Centre, Vancouver, BC, 2. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 3. University of Northern British Columbia, Prince George, BC, 4. Women's College Research Institute, University of Toronto, Toronto, ON

Background: Urban areas have a high concentration of HIV-related services for people who use injection drugs (PWUID). Service availability and social determinants of health associated with rural living could affect clinical and health outcomes for HIV-positive PWUID. We examined the impact of geographic location on viral suppression and mortality among HIV-positive PWUID enrolled in the Canadian Observational Cohort (CANOC).

Methods: With data collected from CANOC for antiretroviral naïve PWUID aged ≥18 years who initiated therapy between 01-Jan-2000 and 31-Dec-2016, we used Cox proportional hazards models to examine the relationship between geography (urban, rural, unknown) and time to initial viral suppression (two consecutive viral load measurements <50 copies/mL) and all-cause mortality. Geographical location was defined as rural if the second digit of the postal code equaled zero. Covariates included gender (male, female, transgender), sexual orientation, ethnicity, province (BC, NL, ON, QC, SK), age, baseline viral load, number of viral load tests per year, and antiretroviral therapy regimen (non-backbone class combinations).

Results: Of 11,748 CANOC participants, 2,144 (18%) HIV-positive PWUID were included in this analysis; 1,561 (73%) lived in urban settings, 110 (5%) in rural settings, and 473 (22%) in unknown geographic locations. After adjustment, rural residence was associated with viral suppression relative to urban residence (adjusted hazard ratio [aHR]: 1.27, 95% confidence interval [CI]: 1.03-1.56). Relative to urban living, increased mortality was not associated with rural residency, however having an unknown address was (aHR=0.84, 95% CI=0.69-1.03, aHR=1.29, 95% CI=1.16-1.43, respectively).

Conclusions: Rural residence was associated with viral load suppression and not with increased mortality among HIV-positive PWUID. Increased mortality associated with individuals of unknown address suggests a need to investigate avenues to better support homeless or transient individuals. Future research is planned to investigate the relationship between urban/rural geography and health outcomes using further refined geographic categorizations.

Epidemiology and Public Health: **Other**
Épidémiologie et santé publique : **Autres**

EPHP7.02

Canadian HIV Care Settings as Patient-Centered Medical Homes (PCMH)

Claire E. Kendall[1, 2, 3], Esther S. Shoemaker[1, 2, 3], Janessa Porter[1], Ron Rosenes[1], Christine Bibeau[1], Lisa M. Boucher[1, 2], Philip Lundrigan[1], Sean B. Rourke[4, 5], Shabnam Asghari[6], Clare E. Liddy[1, 2]

1. C.T. Lamont Primary Health Care Research Centre, Bruyere Research Institute, Ottawa, ON, 2. Faculty of Medicine, University of Ottawa, Ottawa, ON, 3. ICES, Toronto, ON, 4. Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, ON, 5. Department of Psychiatry, University of Toronto, Toronto, ON, 6. Center for Rural Health Studies, Discipline of Family Medicine, Faculty of Medicine, Memorial University of Newfoundland, St. John's, NL

Background: For people living with HIV taking continuous antiretroviral therapy, HIV is now considered as a complex chronic condition often managed in primary care settings. The Patient-Centred Medical Home (PCMH) is a model to deliver such comprehensive, coordinated, and integrated primary care. We assessed the alignment of Canadian HIV care settings with the PCMH.

Methods: We conducted a mixed-methods study with representatives from HIV care settings across Canada. We used the PCMH assessment tool modified for the Canadian context and a semi-structured interview guide. The clinical attributes of HIV care settings and PCMH scores were collected and compared between primary care and specialist care settings.

Results: Twenty-two settings completed the survey (51% response rate) and 12 participated in follow-up interviews. Care settings had a mean PCMH score of 8.06/12 (SD=1.53), indicating that the basic elements of each PCMH domain have been implemented, but with room for improvement. We found no differences between HIV primary care and specialist care settings. Continuous team-based healing relationships had the highest score (mean=9.2, SD=2.15), and quality improvement strategy had the lowest score (mean=7.19, SD=2.26). The themes that arose from the qualitative interviews included: endorsement of the principles of the PCMH by all care settings; organizational structures of settings located in hospitals facilitating the implementation of the PCMH through existing technology; patient advisory boards; accessible care services; and dissonance between complex care needs and existing organizational structures in some settings, including high patient loads, limited clinic hours, and lack of electronic medical records (EMR).

Conclusion: HIV care in Canada is well aligned with the PCMH model, irrespective of composition of care settings. We propose the need for improvements in the use of EMR, quality improvement initiatives, and accessible mental health services to achieve better care delivery and health outcomes among people living with HIV in Canada.

***Epidemiology and Public Health:* Other**
***Épidémiologie et santé publique :* Autres**

EPHP7.03

Aging with HIV vs Aged with HIV: Profiling Adults Diagnosed with HIV After Age 50 in British Columbia

Katrina Koehn[1, 2], Kate A. Salters[1, 2], Wendy Zhang[1], Michelle Lu[1], Viviane D. Lima[1, 3], Martin St. Jean[1], Ni Gusti Ayu Nanditha[1, 3], Sean Grieve[1], Tim Wesseling[1], Robert S. Hogg[1, 2], Rolando Barrios[1, 3]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. Simon Fraser University, Burnaby, BC, 3. University of British Columbia, Vancouver, BC

Introduction: Older adults diagnosed with HIV after age 50 may be characteristically different than long-term survivors of HIV who are over 50. This study explores the population of people living with HIV (PLHIV) diagnosed at age ≥50 and describes engagement in the cascade of care.

Methods: We employed data from the STOP HIV/AIDS provincial cohort, a linked database including treatment and surveillance records for PLHIV in British Columbia. Chi-squared and Wilcoxon Rank Sum Tests were used to compare participants age ≥50 who were diagnosed at ≥50 versus <50. Excluding participants with <18 months of follow-up, we characterized the engagement of older PLHIV diagnosed at ≥50 over time using the STOP HIV/AIDS cascade of care.

Results: We identified 1463 PLHIV diagnosed at ≥50 between 2000-2014. Compared to those diagnosed at <50, PLHIV diagnosed at ≥50 were more likely to have acquired HIV via heterosexual sex (17.6% versus 9.1%, $p<0.001$), but less likely to have a CD4 count <200 cells/mm^3 at ART initiation (40.2% versus 57.2%, $p<0.001$). The number of PLHIV diagnosed at ≥50 increased from 399 to 1007 between 2000 and 2014 (see Table 1). The greatest attrition across the cascade for PLHIV diagnosed ≥50 is in retention to care (attrition of 19% in 2014).

Conclusions: There is a growing number of PLHIV diagnosed at ≥50, and unadjusted analyses reveal differences between this group and those diagnosed at <50. These differences prompt further investigations on potential gaps in HIV care for PLHIV diagnosed at ≥50.

... 2

Table 1: Cascade of care over time for PLHIV diagnosed at 50+ with 18+ months of follow-up (n=1463) from 2000-2014 in BC

	Diag-nosed	Linked			Retained			On ART			Adherent			Suppressed		
Year	N	N	% of Total	% leak-age	N	% of Total	% leak-age	N	% of Total	% Leak-age	N	% of Total	% Leak-age	N	% of Total	% Leak-age
2000	399	348	87	13	232	67	33	179	77	23	151	84	16	107	71	29
2001	444	393	89	11	275	70	30	191	69	31	165	86	14	125	76	24
2002	500	451	90	10	331	73	27	219	66	34	186	85	15	137	74	26
2003	571	521	91	9	381	73	27	254	67	33	212	83	17	162	76	24
2004	641	588	92	8	423	72	28	283	67	33	254	90	10	211	83	17
2005	700	652	93	7	480	74	26	339	71	29	307	91	9	264	86	14
2006	755	700	93	7	537	77	23	396	74	26	348	88	12	293	84	16
2007	804	742	92	8	575	77	23	450	78	22	405	90	10	333	82	18
2008	865	806	93	7	621	77	23	515	83	17	481	93	7	392	81	19
2009	910	852	94	6	686	81	19	582	85	15	536	92	8	438	82	18
2010	957	892	93	7	709	79	21	628	89	11	580	92	8	476	82	18
2011	999	925	93	7	729	79	21	674	92	8	615	91	9	479	78	22
2012	1038	967	93	7	774	80	20	722	93	7	671	93	7	541	81	19
2013	1048	981	94	6	792	81	19	746	94	6	684	92	8	566	83	17
2014	1007	957	95	5	774	81	19	742	96	4	676	91	9	599	89	11

Epidemiology and Public Health: **Other**
Épidémiologie et santé publique : **Autres**

EPHP7.04

The Canadian Observational Cohort (CANOC): Canada's Largest Multi-province Study of People Living with HIV on Antiretroviral Therapy

Taylor McLinden[1], Nic Bacani[1], Beverly Allan[1], Yue Ma[1], Curtis Cooper[2], Mona Loutfy[3], Kate A. Salters[1], Abigail Kroch[4], Deborah V. Kelly[5], Marina B. Klein[6], Sharon L. Walmsley[7], Alexander Wong[8], Paul Sereda[1], Jason Trigg[1], Oghenowede Eyawo[1], Jillian Brown[1], Robert S. Hogg[1], Canadian Observational Cohort (CANOC) Collaboration

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. University of Ottawa, Ottawa, ON, 3. Women's College Research Institute, Toronto, ON, 4. The Ontario HIV Treatment Network, Toronto, ON, 5. Memorial University of Newfoundland, St. John's, NL, 6. McGill University, Montreal, QC, 7. University Health Network, Toronto, ON, 8. University of Saskatchewan, Regina, SK

Background: The Canadian Observational Cohort (CANOC) is a longitudinal study of people living with HIV (PLHIV) on antiretroviral therapy (ART). This descriptive profile overviews the updated CANOC dataset (2000-2016).

Methods: At enrolment, CANOC participants must have a documented HIV infection, reside in Canada, be ≥18 years of age, and be ART naïve. Select demographic and clinical variables were summarized using N (%) for binary/categorical variables or median (Q1-Q3) for continuous variables.

Results: Between January-2000 and December-2016, CANOC enrolled 11,748 participants, contributing a median of 5.59 years (2.49-9.18) of follow-up time. Participants were enrolled in five provinces: 51% in British Columbia, 30% in Ontario, 17% in Quebec, 1% in Saskatchewan, and 1% in Newfoundland and Labrador. Most participants were men (83%) and Caucasian (52%). Nine percent were African/Caribbean/Black, 7% were Indigenous, 14% were of other ethnicities, and 18% had missing information on this variable. Regarding HIV acquisition risk groups, 40% were men who have sex with men (MSM), 17% were persons who inject drugs (PWID), 4% were both MSM-PWID, 14% were in other categories (blood transfusion, heterosexual, vertical transmission), and 25% had missing information. Twenty-four percent of participants were lost to follow-up (≥18 months with no visit) and 10% died. The distribution of ART initiation era was: years 2000-2003 (18%), 2004-2007 (22%), 2008-2011 (31%), and 2012-2016 (29%). Among the 10,060 participants followed for ≥1 year, 77% had achieved HIV viral suppression (two consecutive measures <50 copies/mL) within their first year. Lastly, 24% of participants had been co-infected with hepatitis C virus in their lifetimes; 4% had missing information.

Conclusion: CANOC is the largest multi-province study of PLHIV on ART in Canada. Moving forward, we will continue to leverage CANOC's large sample size, considerable duration of follow-up, and geographic representation to generate novel evidence that may improve the clinical care of PLHIV.

Epidemiology and Public Health: **Other**
Épidémiologie et santé publique : **Autres**

EPHP7.06

Trends in New HIV Diagnoses in Ontario and Impact of 'out-of-province' Diagnoses

Ashleigh Sullivan[4], Juan Liu[5], James Wilton[3], Michelle Murti[5, 2], Abigail Kroch[1, 2]

1. Ontario HIV Treatment Network, Toronto, ON, 2. University of Toronto, Toronto, ON, 3. The British Columbia Centre for Disease Control, Vancouver, BC, 4. Public Health Agency of Canada, Toronto, ON, 5. Public Health Ontario, Toronto, ON

Surveillance data on new diagnoses are used by front-line service providers to prioritize and measure the success of HIV prevention initiatives. However, new diagnoses are not the same as new infections. Diagnosis trends can be influenced by changes in testing; and new diagnoses in Ontario include individuals who were initially diagnosed (and likely became infected) with HIV elsewhere and moved to the province and tested again ('out of province' diagnoses). Removing 'out-of-province' diagnoses may provide insight into trends in new infections.

Despite a decrease in the number of new diagnoses in Ontario over the early part of the past decade, the number of diagnoses has increased each year since 2013. Between 2013 and 2017, the number of new HIV diagnoses increased from 784 to 916 (a 17% increase). The majority of new diagnoses in 2017 were among males (78.6%) and the most common priority populations were gay, bisexual and other men who have sex with men (59.1%) followed by African, Caribbean and Black (29.3%); Women (21.4%); people who use injection drugs (10.4%) and Indigenous people (3.2%).

Information on testing and diagnosis history was available for about half of new diagnoses. When removing 'out-of-province' diagnoses, the trend in diagnoses was unchanged (compared to trends in all diagnoses) until the year 2016 when - instead of continuing to increase - the number decreased to 797 diagnoses in 2017. The trends in diagnoses by priority populations changes with removal of 'out-of-province' diagnoses.

These analyses suggest that the overall increase in diagnoses from 2016 to 2017 was due to an increase in 'out-of-province' diagnoses, rather than testing or new infections. The increase in diagnoses between 2013 and 2016 requires further investigation. The treatment of 'out-of-province' diagnoses varies across jurisdictions, further warranting caution when comparing new diagnosis trends between jurisdictions within Canada and internationally.

***Epidemiology and Public Health:* Other**
***Épidémiologie et santé publique :* Autres**

EPHP7.07

Lipohypertrophy, a Preliminary Estimate of the Prevalence in an Urban Canadian HIV Clinic

Lorie Guilbault, João C. Guedes, Blanca Gomez, Claude Gagné, Réjean Thomas, Jason Szabo
Clinique médicale L'Actuel, MONTREAL, QC

Background: Lipohypertrophy is a central visceral fat accumulation syndrome often accompanied by metabolic complications and concomitant to HIV. Although its development is multifactorial, it was previously assumed that protease inhibitors were implicated. With new integrase inhibitor-based regimens, it is presumed that the new antiretroviral therapies do not lead to these pathophysiological changes.

Methods: We used our retrospective database to describe the proportion of patients who met one of the most evident clinical criteria for lipohypertrophy: waist circumference (WC) greater than 95 cm in men and greater than 94 cm in women. Socio-demographics and basic biochemistry profile of individuals were compared using chi-square with 95% confidence intervals. Co-variates include years living with HIV, years on antiretroviral treatment, treatment combinations, hepatic and renal function and lipid profile.

Results: 378 patients had their waist measured at least once. The prevalence of lipohypertrophy was 44%. Patients experiencing lipohypertrophy had mean age (55.5 vs. 48.2, $p<0.01$), mean of years living with HIV (16.6 vs. 13.9, $p<0.01$), mean of years on antiretroviral treatment (12.9 vs. 11.1, $p<0.05$), mean weight (87.6 vs. 70.7, $p<0.01$) and mean of BMI (29.0 vs. 23.7, $p<0.01$) superior compared with patients without lipohypertrophy. Most prescribed treatment regimens are two NRTI + one INI (49%), two NRTI + one PI (13%) and two NRTI + one NNRTI (9%). Patients experiencing lipohypertrophy had bilirubin average (12,8 µmol/L vs. 10.5 µmol/L; $p<0.05$), abnormal glomerular filtration(6.7% vs. 2.4%, $p<0.05$), and abnormal Ratio Chol/HDL (24.7% vs. 14.4%, $p=0.02$) superior compared with patients without lipohypertrophy.

Conclusion: Anthropomorphic measurements of a small sample of our cohort have shown that almost half of the tested patients could still be suffering from lipohypertrophy. Although WC is insufficient in itself to diagnose, when coupled with the metabolic anomalies, it certainly shows that HIV-associated lipodystrophy is still a concern regardless of regimen changes.

Epidemiology and Public Health: **Other**
Épidémiologie et santé publique : **Autres**

EPHP7.09

Development and Internal Validation of a Cognitive Reserve Index for People with HIV

Navaldeep Kaur, Lesley K. Fellows, Marie-Josée Brouillette, Nancy Mayo
McGill University, Montreal, QC

Introduction: Cognitive reserve is reflected in the disparity between a given degree of brain pathology and its clinical manifestations. In the neuroHIV literature, it has most often been operationalized using traditional indicators including education, occupation and IQ. The effects of cognitive and social activities, which might be more amenable to intervention, have not received much attention. The purpose of this study was to develop an index of cognitive reserve based on the extent to which specific indicators of reserve associate with high level of cognitive functioning. We also estimated the extent to which indicators of cognitive reserve associate with measures of everyday functioning.

Methods: The dataset for this study was obtained from the Positive Brain Health Now study (N=856), a Canadian cohort of people living with HIV. Potential cognitive reserve indicators captured in this cohort include education, occupation, engagement in cognitively stimulating activities and social support. Cognitive ability was measured with the Brief Cognitive Ability Measure (B-CAM). A cognitive reserve index was formulated using beta weights based on multivariate logistic regression. The index was internally validated against B-CAM, Perceived Deficits Questionnaire (PDQ), and Stanford Presenteeism Scale (SPS) in the same cohort.

Results: In this sample, education, occupation, games, travel and social network contributed to the index and were assigned weights of 4, 1.5, 3, 4.5 and 5, respectively. As expected, B-CAM [$\beta = 0.4$; 95% CI: 0.3 to 0.5] was predicted by the index. The index also predicted measures of everyday functioning including self-reported cognitive symptoms and work productivity.

Conclusion: This work adds to the evidence that cognitive reserve protects against cognitive impairment in HIV. Reserve also shielded work productivity in this cohort. This index will require validation in an external sample.

Epidemiology and Public Health: **Other**
Épidémiologie et santé publique : **Autres**

EPHP7.10

Maternity Care Services for Women Living with Hiv

Esther S. Shoemaker[1, 2, 3], Stephanie Smith[1], Mona Loutfy[3, 4, 5], Christine Bibeau[1], Steven Hawken[3, 6, 7], Liz Darling[3, 8], Mark Walker[7, 9, 10], Claire E. Kendall[1, 2, 3]

1. C.T. Lamont Primary Health Care Research Centre, Bruyère Research Institute, Ottawa, ON, 2. Department of Family Medicine, University of Ottawa, Ottawa, ON, 3. ICES, Toronto, ON, 4. Women's College Research Institute, Toronto, ON, 5. Department of Medicine, University of Toronto, Toronto, ON, 6. School of Epidemiology, Public Health and Preventive Medicine, University of Ottawa, Ottawa, ON, 7. Clinical Epidemiology Program, Ottawa Hospital Research Institute, Ottawa, ON, 8. Department of Obstetrics and Gynecology, McMaster University, Hamilton, ON, 9. Department of Obstetrics, Gynecology and Newborn Care, The Ottawa Hospital, Ottawa, ON, 10. Department of Obstetrics and Gynecology, University of Ottawa, Ottawa, ON

Background: The incidence of HIV infections among women is increasing in Canada and the majority of these women are of reproductive age. Continuous treatment with antiretroviral therapy improves the life expectancy of women living with HIV and enables them to become pregnant without transmitting the virus to their infants. As such, pregnancies are increasing in this population. Studies report higher rates of adverse neonatal outcomes compared to women without HIV; however, little is known about the healthcare service use and health outcomes of women living with HIV and how their service use relates to health outcomes. The objective of our study is to describe, assess and evaluate maternity service use and outcomes for women living with HIV in Ontario, Canada.

Methods: We are conducting a retrospective population-level observational study using linked health administrative databases at ICES in combination with the Ontario data of the Canadian HIV Women's Sexual and Reproductive Health Cohort Study (CHIWOS). Participants are all women living with HIV who were pregnant and gave birth in Ontario, Canada, between 2000 and 2018. We will use multivariable regression to determine the association between sociodemographic and clinical variables and rates of maternal morbidity and labour and birth interventions. Service use and health outcomes will be compared to a 5:1 cohort of non-HIV women who are pregnant and give birth, matched to delivery date.

Result: We anticipate identifying factors associated with poor maternal health outcomes.

Conclusion: HIV specific knowledge is limited in the broader healthcare system and might lead to an overuse of maternity care services and clinical interventions. Our results will inform the maternity care service use and health outcomes of women living with HIV in order to help design quality maternity care delivery strategies for women living with HIV.

Epidemiology and Public Health: **Process Advances and Lessons Learned in Complex or Community-based Public Health Research**

Épidémiologie et santé publique : **Progrès des processus et leçons tirées dans les recherches complexes ou communautaires en santé publique**

EPHP8.01

Strategies Utilized by Community-Based Service Providers to Support People Living with HIV Experiencing Neurocognitive Issues

Renato (Rainier) M. Liboro[1], Sean B. Rourke[2, 3, 4], Francisco Ibañez-Carrasco[2, 3], Andrew Eaton[4], Daniel Pugh[3, 5], Claudia Medina[6, 7], Allan Rae[8], Lori E. Ross[1, 4], Paul A. Shuper[1, 4]

1. Centre for Addiction and Mental Health, Toronto, ON, 2. Centre for Urban Health Solutions, St. Michael's Hospital, Toronto, ON, 3. Universities Without Walls, Toronto, ON, 4. University of Toronto, Toronto, ON, 5. Sherbourne Health, Toronto, ON, 6. Latinos Positivos, Toronto, ON, 7. Prisoners' HIV/AIDS Support Action Network, Toronto, ON, 8. Crossing Genres, Toronto, ON

Background: HIV-Associated Neurocognitive Disorders (HAND) and other causes of cognitive issues experienced by people living with HIV (PLWH) continue to be *public health concerns* in developed countries. PLWH who experience cognitive issues increasingly require support and mental health services from community-based service providers. The aim of our qualitative study was to identify strategies providers employed to support PLWH experiencing cognitive issues.

Methods: We formed a Community Advisory Board comprised of PLWH experiencing cognitive issues *and* service providers to gain their input at every stage of our research process. We interviewed 33 providers from 22 AIDS service organizations across Southwestern and Central Ontario to determine the strategies they used to support PLWH experiencing cognitive issues. We conducted thematic analysis to establish key themes from the interview data.

Results: We identified 3 types of strategies: a) intrapersonal, b) interpersonal, and c) organizational. Intrapersonal strategies involved learning and staying informed about HAND and other causes of neurocognitive challenges. Interpersonal strategies included providing practical assistance, information, peer/professional counselling, and/or referrals to PLWH. Organizational strategies included: a) creating dedicated support groups within their own organization for PLWH experiencing cognitive issues; b) partnering with other organizations with support and/or mental health services not available within their own organization; and c) advocating for greater access to local primary care, support, and mental health services, as well as services with expertise and experience working with PLWH, in the community.

Conclusion: There is a great need for more education about HAND among providers. Despite this, providers adapted and utilized evidence-informed strategies previously established for addressing non-HAND, HIV-related issues to support PLWH with cognitive challenges. Through future collaborative efforts, it is likely that empirically investigating/testing, developing, and customizing these strategies to address HAND and other causes of HIV-associated cognitive issues will produce better support and mental health outcomes for PLWH.

Epidemiology and Public Health: **Process Advances and Lessons Learned in Complex or Community-based Public Health Research**

Épidémiologie et santé publique : **Progrès des processus et leçons tirées dans les recherches complexes ou communautaires en santé publique**

EPHP8.02

Building a Patient-Provider Toolkit: Using Community-based Research to Improve Health Care Experiences in Regina and Prince Albert

Farzana Ali[1], Sugandhi del Canto[2], Starla Lachance[1], Kelly Husack[3], Jann Ticknor[4], Barb Bowditch[5], Mary Ermine-Bear[5], Lauren Cardinal[5], Michael Schwandt[1], Linda Chelico[1], Patti Tait[6]

1. University of Saskatchewan, Saskatoon, SK, 2. Saskatchewan HIV/AIDS Research Endeavour, Saskatoon, SK, 3. University of Toronto, Toronto, ON, 4. All Nations Hope Network, Regina, SK, 5. Access Place, Saskatchewan Health Authority, Prince Albert, SK, 6. Elizabeth Fry Society, Saskatoon, SK

Background: It is well-documented that people living with HIV (PLWH) often experience barriers to accessing and staying engaged with care, which can be compounded by stigma from past or present drug use, as well as institutional racism.

Objectives: To create a patient-provider toolkit that supports PLWH and their care providers to optimize health outcomes for PLWHs in urban Saskatchewan.

Methods: A phased, iterative community-based research (CBR) study was designed to distill experiences and recommendations from PLWH, their kin, clinicians, and allied professionals in Prince Albert and Regina, Saskatchewan. Grounded theory informed thematic analyses from semi-structured interviews and focus groups were member-checked through community fora. Development of the toolkit reflects specific recommendations collected.

Results: From the interviews (n=42 participants) and five focus groups (n=38 participants), four grand themes emerged: Non-judgmental relationships, quality of care, increased accessibility, and integrated health services. Data from three focus groups with family and caregivers (n= 20), and two with care professionals (n= 18) emphasized systemic challenges affecting how care was provided to PLWH. Challenges include lack of transportation, government funding, and stigma around drug use. Feedback from the fora aligned with the recommendations generated from the interviews and focus groups. The toolkit is comprised of targeted resources for specific audiences and directly reflects the recommendations. Three major aspects of the toolkit include: rrecommendation-graphics depicting shared health care ownership for both PLWH and their care professionals; presentation templates, and info-postcards that emphasize action-oriented recommendations at the individual level to support both patients and providers.

Conclusion: This CBR study reaffirmed the complex practice and life realities of practitioners and PLWH. Many structural challenges create barriers, yet, all participants in the study identified individual strategies and skills to help bridge challenges. There is a shared responsibility for both practitioners and PLWH to foster respectful relationships.

Epidemiology and Public Health: **Process Advances and Lessons Learned in Complex or Community-based Public Health Research**

Épidémiologie et santé publique : **Progrès des processus et leçons tirées dans les recherches complexes ou communautaires en santé publique**

EPHP8.04

Dried-Blood Spot HIV and Hepatitis C Virus (HCV) Testing Uptake in Community-Based Bio-Behavioural Research

Aidan Ablona[1, 3], John Kim[2], Stéphanie S. Lavoie[2], Rob Higgins[3], Nathan J. Lachowsky[3, 4]

1. University of British Columbia, Vancouver, BC, 2. National Laboratory for HIV Reference Services, Winnipeg, MB, 3. Community-Based Research Centre for Gay Men's Health, Vancouver, BC, 4. University of Victoria, Victoria, BC

Background: Rapid and low-barrier methods of biological sampling are beneficial for venue-based, bio-behavioural research and surveillance. Ongoing monitoring of HIV and HCV community-level prevalence is critical in informing programming and policy priorities. We examined the uptake of optional dried-blood spot (DBS) sampling for HIV and HCV testing in a national community-based study of gay, bisexual, and other men who have sex with men (GBMSM).

Methods: The Sex Now 2018 survey was a cross-sectional non-nominal GBMSM health survey administered in-person at 16 LGBTQ Pride festivals across Canada from June to September 2018. In addition to completing socio-demographic and behavioural paper-and-pen questionnaires, participants were invited to provide an optional DBS sample for HIV and HCV testing. Participants who provided DBS samples were able to opt-in to receive their HIV and HCV test results by providing contact information, a password, and their participant ID number.

Results: Of 3634 total participants in Sex Now 2018, 85% (n=3106) provided DBS samples for HIV and HCV testing. Positivity among DBS samples was 7% for HIV and 0.3% for HCV. Among DBS samples provided, 2% were insufficient for HIV testing and 4% were insufficient for HCV testing. The option to return results was a unique and novel opportunity for community-based bio-behavioural research and was taken up by the majority of participants.

Conclusion: Sex Now 2018 represents the largest cross-sectional survey using DBS as a bio-specimen collection device. Both HIV and HCV positivity were relatively low in this sample. Future analyses will determine undiagnosed infections. DBS sampling had reasonably high uptake, and the majority of DBS samples provided sufficient specimen for laboratory testing. Venue-based, population-specific HIV and HCV surveillance may benefit the use of DBS sampling with the option to return participants' results as a rapid and reproducible bio-specimen collection method.

Social Sciences: **Behavioral and Social Intervention Research**
Sciences sociales : **Recherche en intervention sociale et comportementale**

SSP1.01

Successes and Challenges of a Community-Based Intervention Research: Phénix, an Intervention to Improve Sexual Health of gbMSM

Ludivine Veillette-Bourbeau, Joanne Otis, Martin Blais, Jessica Caruso

Université du Québec à Montréal, Montréal, QC

Background: Created in 2006, Phénix is an intervention for gbMSM, which combines the adoption and maintenance of HIV and STI risk reduction strategies, without compromising their sexual well-being. Since 2015, the program is being updated to integrate a combination HIV prevention approach.

Method: To produce a validated version of Phénix, an implementation analysis was performed. A logbook was completed by the facilitators after each workshop and evaluative plenaries were conducted with the facilitators and participants after the implementation period.

Results: Following extensive community consultations (qualitative interviews, workshops) to identify the needs of organizations and participants, an advisory committee of former facilitators and participants was created and actively involved in the program's redesign. Phénix was offered to 81 participants in 10 community organizations across Quebec. All organizations that were represented in the advisory committee have subsequently implemented the program; it seems like their participation in the development of activities had a motivating and facilitating effect, combined with high levels of individual commitment towards the program. Despite various efforts, the implementation of the program was mainly based on the willingness of facilitators to offer it and the organizational capacity to do so (e.g. allowing enough time for community workers to facilitate the program, availability of a cozy premise, recruitment capacities). The implementation analysis revealed some difficulties that might jeopardize its sustainability: lack of time, staff turnover (one-third of trained facilitators left their positions during implementation) and budget cuts.

Conclusion: In order for the Phénix program to be offered once the research is over, it needs to be supported by the organizations and integrated into their strategic orientations, so that its implementation is not based solely on the will of the stakeholders. To counter difficulties related to staff turnover, training will be offered in the form of videos made available online (programmephenix.com).

Social Sciences: **Behavioral and Social Intervention Research**
Sciences sociales : **Recherche en intervention sociale et comportementale**

SSP1.02

Measuring Disability Internationally: Assessing Properties of the HIV Disability Questionnaire (HDQ) Developed in Canada with Adults Living with HIV in the United Kingdom

Kelly K. O'Brien[1, 4], Darren Brown[2], Bryony Simmons[3], Marta Boffito[2], Rachel Aubry[1], Nneka Nwokolo[2], Richard Harding[4]

1. University of Toronto, Toronto, ON, 2. Chelsea and Westminster Hospital NHS Foundation Trust, London, United Kingdom, 3. Imperial College London, London, United Kingdom, 4. King's College London, London, United Kingdom

Objectives: The HIV Disability Questionnaire (HDQ) is a patient-reported outcome measure developed from the perspectives of people living with HIV (PLWH) in Canada to describe the presence, severity and episodic nature of disability. However, the ability of the HDQ to measure disability in other international contexts is unknown. Our aim was to assess the measurement properties of the HDQ with PLWH in the United Kingdom (UK).

Methods: We recruited PLWH from an HIV hospital clinic in London, UK. We administered the HDQ paired with seven criterion measures. We calculated median and interquartile ranges (IQR) for HDQ disability presence, severity and episodic scores. For internal consistency reliability, we calculated Cronbach's alpha (α) and Kuder-Richardson-20 (KR-20) statistics for disability and episodic scores, respectively (>0.80 considered acceptable). For precision, we calculated the smallest detectable change (SDC) for each HDQ severity domain. For construct validity, we tested 36 *a priori* hypotheses assessing correlations between HDQ and criterion measure scores (>75% confirmed hypotheses demonstrated construct validity).

Results: Of the 243 participants, all were men, median age 40 years, and19% living with ≥2 concurrent health conditions. Highest disability presence and severity scores were in the uncertainty domain. Cronbach's alpha for the severity scale ranged from 0.85 (95%CI: 0.80-0.90) in the cognitive domain to 0.93 (95%CI: 0.91-0.94) in the mental-emotional domain. The KR-20 statistic for the episodic scale ranged from 0.74 (95%CI: 0.66-0.83) in the cognitive domain to 0.91 (95%CI: 0.89-0.94) in the uncertainty domain. The SDC ranged from 7.3-15.0 points for the difficulties with day-to-day activities and cognitive symptoms domains, respectively. Thirty of the 36 (83%) construct validity hypotheses were confirmed.

Conclusions: The HDQ possesses internal consistency reliability and construct validity with varied precision when administered to community-dwelling men living with HIV in London, UK. Future research should examine international comparisons of disability among PLWH.

Social Sciences: **Behavioral and Social Intervention Research**
Sciences sociales : **Recherche en intervention sociale et comportementale**

SSP1.03

Participation in a Community-Based Exercise (CBE) Intervention among Adults Living with HIV: Characteristics of Participants and Engagement in CBE

Kelly K. O'Brien[1], Rachel Aubry[1], Patty Solomon[2], Aileen M. Davis[1, 3], Ada Tang[2], Ahmed M. Bayoumi[1, 4], Soo Chan Carusone[5], Kate Murzin[6], Ken King[7], Mehdi Zobeiry[8]

1. University of Toronto, Toronto, ON, 2. McMaster University, Hamilton, ON, 3. University Health Network, Toronto, ON, 4. St. Michael's Hospital, Toronto, ON, 5. Casey House, Toronto, ON, 6. Realize, Toronto, ON, 7. Community Member, Toronto, ON, 8. YMCA of Greater Toronto, Toronto, ON

Objective: Community-based exercise (CBE) can help manage health-related challenges associated with HIV, multimorbidity and aging; however, it is unknown how CBE translates into the 'real world' setting. Our aim was to describe characteristics of adults living with HIV who engaged in a six-month CBE intervention and their participation in the intervention.

Methods: Adults living with HIV were recruited from community-based organizations, clinics, and the YMCA in Toronto. After an 8-month baseline monitoring phase, participants engaged in a 6-month (25 week) CBE intervention involving exercise 3 times per week, with a weekly supervised personal coaching session at the YMCA. Participants completed a self-reported demographic questionnaire at baseline. We documented loss to follow-up and reasons for withdrawal throughout. We described characteristics of participants using frequencies (percent) and medians (interquartile (IQR) range) for categorical and continuous data, respectively. We measured adherence to the weekly coaching sessions using a log completed by the fitness instructor.

Results: Of 120 participants enrolled, 80 initiated the intervention. The majority were men (90%), with a median age of 51 years (IQR: 45,60), median year of diagnosis in 1998 (IQR: 1988,2007), and median number of 4 concurrent health conditions (IQR: 2,7). Sixty-seven (84%) participants who initiated, completed the intervention. Reasons for non-completion (n=13) included loss to follow up (38%), health reasons (31%), and dissatisfaction with the study (23%). Participants (n=80) attended a median number of 17 (68%) out of 25 weekly coaching sessions (IQR: 9,19). Twenty-nine participants (36%) extended their coaching sessions beyond 25 weeks due to coaching changes (41%), methodological issues (17%), health reasons (14%), and travel (14%).

Conclusion: The majority (84%) of participants who initiated, completed the CBE intervention. Factors that influenced retention and adherence to the weekly coaching sessions highlight the potential episodic health with HIV, and methodological issues important to address in future intervention research.

Social Sciences: **Behavioral and Social Intervention Research**
Sciences sociales : **Recherche en intervention sociale et comportementale**

SSP1.04

Feasibility of a Smartphone Health Monitoring Application to Capture Individual-Level Behaviors in HIV+ Persons

Teena Thomas Vattukalathil[1], Dennaye Fuchs[2], Dominik Werber[2], Sarah Craddock[2], Holly Graham[1], Cindy Feng[1], Maurice Hennink[2], Tania Diener[2], Nathaniel Osgood[1], Alexander Wong[2, 3]

1. University of Saskatchewan, Saskatoon, SK, 2. Saskatchewan Health Authority, Regina, SK, 3. University of Saskatchewan, Regina, SK

Background: Many persons living with HIV (PLWHIV) in Saskatchewan struggle with complex social and medical needs which create barriers to optimal HIV cascade outcomes; to date, there remains limited understanding of these barriers and interventions best suited to overcoming them. We describe a pilot feasibility study utilizing smartphone technology designed to understand individual-level behavioral patterns amongst PLWHIV in southern Saskatchewan.

Methods: Ethica is a smartphone based health monitoring application. According to study-specific configuration, it captures various sensor data and surveys, including ecological momentary assessments (EMAs), which can be geotagged and may include photos and audio recordings. To assess the feasibility of utilizing Ethica for PLWHIV, we recruited 15 PLWHIV from southern Saskatchewan with a variety of backgrounds into a 6-month pilot study. 20 EMAs ("questions") were developed alongside patient advisors and community-based representatives. Smartphones were provided to participants requiring one.

Results: : 15 persons were recruited, of which 10 were provided smartphones and data plans. 4 lost their phones within days of study entry, one lost their phone after 126 days, and one withdrew after 139 days due to survey fatigue. The remaining 9 persons completed the study. Participants completed an average of 7.81 EMAs/day; 80% of participants completed at least 20% of their EMAs within one day of issuance, and over 90% recorded location data at least 8% of their total study duration, meeting pre-specified feasibility criteria. 11 participants were highly involved, responding to at least 40% of EMAs within a day, providing location data greater than 60% of the time, and responding to 8.42 EMAs/day.

Conclusions: A large scale study using smartphone technology to capture behavioral patterns amongst PLWHIV is feasible and may support customized individual-level interventions to improve clinical outcomes for PLWHIV difficult to retain in care. Further engagement with patient advisors and community-based stakeholders is planned.

Social Sciences: **Behavioral and Social Intervention Research**
Sciences sociales : **Recherche en intervention sociale et comportementale**

SSP1.06

Usage of a Tailored Web-Based Intervention for People Living with HIV: Preliminary Data Analysis

José Côté[1, 2], Sylvie Cossette[1], Pilar Ramirez-Garcia[1], Catherine Worthington[3], Alexandra de Pokomandy[4], Joyal Miranda[5], Patricia Auger[2], Geneviève Rouleau[2]

1. Université de Montréal, Montréal, QC, 2. Centre de recherche du CHUM, Montréal, QC, 3. University of Victoria, Victoria, BC, 4. McGill University, Montréal, QC, 5. Ryerson University, Toronto, ON

Background: Virtual and on-demand interventions are accessible and represent a promising method to support health-related behavioral changes. *TAVIE en santé,* a tailored web-based intervention, was developed to support people living with HIV (PLHIV) in the adoption of healthy behaviors including being physically active, adopting a healthy diet and quitting smoking. The added value of this type of intervention can be significant if the targeted population engage in the intervention.

Objective: To present preliminary data regarding the usage of a tailored web-based intervention among PLHIV.

Methods: In an online randomized control trial across Canada (CTN288), participants from the experimental group were invited by email to consult the intervention. The content and number of sessions (2, 4 or 6) was tailored to each user based on their level of intention towards behavioral change. Personalized reminder emails were sent to encourage participation in the sessions. The extent of usage (number of sessions attended) was automatically recorded for each participant.

Results: To date, 56 PLHIV were invited to take part in the intervention. The majority of participants were men (89.3%) with a mean age of 47.0 years (range 24-72). Regarding intervention length, 23.2% had a tailored intervention of 2 sessions, 62.5% had 4 sessions and 14.3% had 6 sessions. As for the extent of usage, more than half the participants (69.6%) logged in at least once. However, only a few (19.6%) completed all their sessions.

Conclusion: These preliminary results highlight an initial interest in the intervention and a low usage past the first session in a tailored web-based intervention supporting behavioral change. Compared with other health-related challenges they face, it is possible that PLHIV do not perceive lifestyle behavioral changes as a topic imperative to their health. Different strategies to optimize engagement in the intervention are being implemented. Recruitment and data collection are ongoing.

Social Sciences: **Behavioral and Social Intervention Research**
Sciences sociales : **Recherche en intervention sociale et comportementale**

SSP1.07

Do Peer-led Self-management Interventions Improve Adherence to Antiretroviral Therapy Among People Living with HIV? A Systematic Review

Lisa M. Boucher[1, 2], Clare Liddy[2, 1], Ariana Mihan[2], Claire Kendall[2, 1, 3]

1. University of Ottawa, Ottawa, ON, 2. Bruyere Research Institute, Ottawa, ON, 3. Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, ON

Background: Adherence to antiretroviral therapy (ART) is essential to reduce morbidity and mortality among people living with HIV (PLWH). However, adherence remains suboptimal, and PLWH may benefit from more self-management strategies to cope with the complexities of chronic illness. Peer-led self-management programs are helpful for other chronic conditions, but impact for PLWH is unclear. The peer-led aspect of these interventions may be particularly helpful for marginalized groups living with HIV. Our objective was to identify the impact of peer-delivered self-management interventions on adherence and other patient-reported outcomes (PROs) among PLWH.

Methodology: MEDLINE, Embase, PsycINFO, PubMed, and CINAHL databases were searched for English language publications from 1996 to March 2018, with two reviewers conducting all screening and included studies consisting of controlled interventions. Articles were also hand searched, risk of bias was assessed, and narrative syntheses were outlined.

Results: Thirteen studies met the inclusion criteria (10 conducted in the United States, one each in Australia, South Africa, and Spain). Most studies were randomized controlled trials, with one having a quasi-experimental design, and three reported as pilot studies. Findings demonstrate unclear effectiveness for peer-led self-management interventions improving adherence to ART, however evidence was limited with only seven studies measuring this outcome and some risk of bias. A variety of PROs were measured – most commonly depression, quality of life, and self-efficacy – with limited consistent findings.

Conclusion: Future methodologically rigorous and well-reported studies are needed to strengthen the evidence regarding effects of peer-led self-management interventions on adherence to ART and PROs among PLWH. Specific gaps to be addressed include more focus on disadvantaged populations living with HIV, longer-term outcome assessment, and measuring a broader array of outcomes including through qualitative evaluation. This work is useful for researchers, policy makers, and public health organizations involved in delivering or evaluating these programs for PLWH.

Social Sciences: **Combining Prevention Strategies: Social Science Perspectives**
Sciences sociales : **Combinaison des stratégies de prévention : perspectives des sciences sociales**

SSP2.01

Stigma, the Media, and Pre-exposure Prophylaxis for HIV Prevention: Observations for Enhancing Knowledge Translation and Resisting Stigma in the Canadian Context

Kiffer G. Card[3, 1], Blake W. Hawkins[2], Leili Mortazavi[2], Aidan Gregory[2], Keng H. Ng[2], Nathan Lachowsky[3]

1. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 2. University of British Columbia, Vancouver, BC, 3. University of Victoria, Victoria, BC

Background: Pre-Exposure Prophylaxis (PrEP) is an effective HIV prevention strategy. Yet, stigmatizing attitudes towards PrEP are a barrier to its implementation across Canada and its uptake among key populations. This analysis aimed to examine how the media discussed, combatted, and reinforced stigma about PrEP prior to its inclusion in several Canadian provincial healthcare plans.

Methods: To identify relevant sources we searched the Canadian Newsstream and Daily Xtra (Canada's gay news source) databases for terms related to PrEP from 2008 to 2016. Articles were identified and coded by three reviewers using an inductive thematic approach based on a collaboratively generated codebook with 8 primary themes: Descriptions, Regulations, Efficacy, Awareness, Side Effects, Accessibility, Adherence, and Stigma. Inter-correlations, comparisons between mainstream and LGBT media sources, and prevalence trends were quantitatively examined for each theme. Articles with content related to PrEP stigma were critically analyzed using a grounded approach.

Results: In total,101 media articles were published about PrEP. Of these, 36.3% included mentions of PrEP stigma. LGBT sources were more likely than mainstream sources to have included content coded as relating to PrEP stigma ($p=0.02$). In LGBT media sources, PrEP stigma was correlated with discussions of side-effects ($p<0.05$). The number of articles related to PrEP stigma was highest in 2016, though the word count for PrEP related stigma codes was highest in articles published in 2014. Thematically, we found that uncertainty regarding PrEP, and neo-liberal attitudes towards sexual responsibility were major foci of included articles. While most articles were written from a "pro-PrEP" angle, stigmatizing views were often heavily featured, which might increase uncertainty in lay-readers.

Conclusions: Our results provide insight into the media's role in the diffusion of novel biomedical innovations. Furthermore, they highlight the need for greater collaboration between researchers and journalists in order to improve the public's understanding of emerging science.

Social Sciences: **Criminalization, Law and Policy**
Sciences sociales : **Criminalisation, droit et politique**

SSP3.01

"They look at you like you're contaminated": How HIV-related Stigma and Power Dynamics Shape HIV Care Access for Incarcerated Women Living with HIV in a Canadian Setting

Margaret Erickson[1], Kate Shannon[1, 2, 3], Flo Ranville[1], Bronwyn McBride[1], Ruth E. Martin[2, 3], Karen Kinvig[4], Neora Pick[3, 4], Andrea Krüsi[1, 2]

1. Center for Gender and Sexual Health Equity, Vancouver, BC, 2. School of Population and Public Health, University of British Columbia, Vancouver, BC, 3. Department of Medicine, University of British Columbia, Vancouver, BC, 4. Oak Tree Clinic, BC Women's Hospital and Health Centre, Vancouver, BC

Background: HIV-related stigma significantly impacts the health of people living with HIV and creates barriers to access and retention in care. Women living with HIV (WLWH) who are incarcerated face considerable gender disparities across HIV outcomes. This qualitative study investigates how HIV-related stigma within prison settings shapes care and wellbeing for incarcerated WLWH.

Methods: Drawing from SHAWNA *(Sexual Health and HIV/AIDS: Women's Longitudinal Needs Assessment),* a longitudinal community-based research project in Metro Vancouver, we conducted qualitative interviews with a sub-set of 19 cis and trans WLWH incarcerated at local jails and various provincial correctional facilities in Western Canada within the last 5 years. Experienced peer and community researchers conducted semi-structured interviews exploring factors that shape incarceration trajectories among WLWH. Using participatory analysis and socio-ecological frameworks, transcripts were coded in NVivo.

Results: Participants' narratives show that within correctional facilities, experiences of HIV-related stigma are closely linked to feelings of shame, isolation and interruptions to the continuum of care among WLWH. Institutionalized stigma is reproduced through various mechanisms, including medication dispensing procedures that can compromise privacy. Stigma is further reinforced through the power imbalances within correctional facilities, whereby many WLWH remain uncertain about their confidentiality and whether their medical information is shared with correctional officers. Despite ongoing efforts by HIV specialist physicians and supports for incarcerated WLWH, internalized and anticipated stigma shapes many participants' wellbeing, including decisions to withhold their HIV status from healthcare staff upon arrival at prison, compromising access to HIV treatment during incarceration.

Conclusion: Amid ongoing efforts to improve healthcare delivery within Canadian correctional facilities, these findings have important implications for the provision of safe and supportive HIV care for incarcerated WLWH. Increased programming focused towards reducing HIV-related stigma in prison alongside improved communication regarding the confidentiality of medical information are critical to strengthening current efforts within correctional healthcare.

Social Sciences: **Criminalization, Law and Policy**
Sciences sociales : **Criminalisation, droit et politique**

SSP3.03

Arguments Justifying Criminalisation of HIV Nondisclosure

Jeffrey P. Aguinaldo, Mina Ly, Rachel Meiorin, Felicia Scavuzzo-Munro
Wilfrid Laurier University, Waterloo, ON

Since its inception, HIV nondisclosure law has undergone significant revisions thanks to the hard won achievements of HIV/AIDS activism. However, an enduring commitment to the criminalisation of HIV nondisclosure remains despite a widespread understanding that HIV nondisclosure law has profound negative consequences for people living with HIV/AIDS (PHAs). The purpose of this poster is to explore the arguments used to justify the criminalization of HIV nondisclosure. The poster seeks to understand how these arguments are marshalled in Canadian news print media and how they are constructed rhetorically to achieve their ongoing persuasive effects. This poster developed from The HIV, Health, and Interaction Study and seeks to understand the broader social and political context that informs the lives of PHAs.

Methods: Our ongoing data collection has developed a data corpus (n=972) consisting of Canadian newspaper coverage (1989 to present) related to criminal charges for HIV non-disclosures and the transmission (or risk) of HIV in Canada. We utilized Proquest, Factiva, and LexisNexis Academic databases, as well as, individual newspaper websites to identify relevant data. The newspaper articles analysed for this poster include local news, editorials, opinion pieces, and letters to the editors about criminal cases surrounding HIV nondisclosure and transmission in Canada. The corpus excludes cases of non-sexual transmission, professional non-disclosure, and blood donation cases. Our analysis is best characterised as thematic analysis and borrows analytic insights from discursive analysis.

Findings and Implications: We identified three main arguments used: (1) criminalisation of HIV nondisclosure serves to protect the public, (2) criminalisation of HIV nondisclosure promotes sexual consent, (3) criminalisation of HIV nondisclosure compels individual responsibility. We discuss how these arguments reinforce broader ideological assumptions about HIV/AIDS, the marginalisation of PHAs, and the stigmatisation of HIV/AIDS. Finally, we consider how these arguments retain their rhetorical persuasiveness and how they might be resisted.

Social Sciences: **Criminalization, Law and Policy**
Sciences sociales : **Criminalisation, droit et politique**

SSP3.02

Ending Unjust HIV Prosecutions: Making Progress Through Community Advocacy and Scientific Expertise

Richard Elliott[1, 2], Nicholas Caivano[1, 2], Cécile Kazatchkine[1, 2], Alex McClelland[3, 2], Chad Clarke[2], Léa Pelletier-Marcotte[4, 2], Neil Self[5, 2], Valerie Nicholson[5, 2], Ryan Peck[6, 2]

1. Canadian HIV/AIDS Legal Network, Toronto, ON, 2. Canadian Coalition to Reform HIV Criminalization, Toronto, ON, 3. Concordia University, Montreal, QC, 4. COCQ-sida, Montreal, QC, 5. Positive Living Society of BC, Vancouver, BC, 6. HIV & AIDS Legal Clinic Ontario, Toronto, ON

Background: On World AIDS Day 2016, in response to years of community advocacy, the federal Minister of Justice and Attorney General committed to examining the "overcriminalization of HIV" in Canada.

Description: Community advocates, including legal experts and PLHIV, engaged with Justice Canada in the course of its study, while simultaneously developing a national Community Consensus Statement calling for various measures to limit HIV criminalization. Justice Canada's report, released on World AIDS Day 2017, reflects several key conclusions advanced by community. Throughout 2018, advocates continued to press for action.

Results: On World AIDS Day 2018, the federal Attorney General announced an official directive to the Public Prosecution Service of Canada, stating that federal prosecutors:

- "shall not prosecute HIV non-disclosure cases where the person living with HIV has maintained a suppressed viral load, i.e., under 200 copies per ml of blood, because there is no realistic possibility of transmission;"
- "shall generally not prosecute HIV non-disclosure cases where the person has not maintained a suppressed viral load but used condoms or engaged only in oral sex or was taking treatment as prescribed, unless other risk factors are present, because there is likely no realistic possibility of transmission;" and
- "shall prosecute HIV non-disclosure cases using non-sexual offences, instead of sexual offences, where non-sexual offences more appropriately reflect the wrongdoing committed, such as cases involving lower levels of blameworthiness."

Next Steps: This directive is a significant achievement by advocates, but only applies to federal prosecutors, who handle prosecutions in the 3 territories. Advocacy continues for directives from provincial Attorneys General, whose Crown attorneys prosecute criminal offences in the 10 provinces. Provincial directives should at least adopt the limits on criminalization set out in the federal directive. Federal Criminal Code amendments remain necessary to preclude any use of sexual assault charges to address alleged HIV non-disclosure.

Social Sciences: **Critical Social Theory: Advancements (in Understanding the HIV Epidemic)**
Sciences sociales : **Théorie sociale critique : Progrès dans la compréhension de l'épidémie de VIH**

SSP4.02

The Dissonant AIDS Patient: Stigma and Forced Forgetting and Remembering

Francisco Ibanez-Carrasco

Centre for Urban Health Solutions, St Michael Hospital, Toronto, ON

Following critical social theory on HIV related stigma, social memory, and patient empowerment, I offer grounded theorizing of remembering and forgetting HIV/AIDS as components in perpetuating HIV stigma. In social sciences and education (ranging from prevention to social media campaigns such as U=U), one imperative is to remember the catastrophe of AIDS (e.g., remember to disclose, to adhere, and to mourn, which aligns with exceptionalism and, at its worst, with a prevalent culture of victimhood). On the other hand, the opposite imperative is to "forget" AIDS (which aligns with normalization). At the crossroads, we encounter a non-universal and diverse patient *suffering* from cultural dissonance.

Methods: to theorize this crossroad of memory and forgetting, I utilize a phenomenological lens—*autopathography*— and examine the paradox of "lived experience," 20+ years of community-grounded AIDS scholarship and activism in Canada, which forces me to constantly a) forget AIDS to become part of the "new normal" and enter into intellectual, social and sexual relationship with new generations (e.g., devoid of 1980s queer AIDS politics), and b) remember the plague, its effects on us, on me, as an queer Latino AIDS patient since 1986, educator (e.g., for a new generation of researchers through my pedagogical work in Universities Without Walls, www.uwow.ca), scientist (e.g., leading a CIHR funded HIV-stigma study in Canada and research on neurocognitive difficulties), non/fiction author, and in the public and sexual "appearances" of my beleaguered and often silenced/criminalized kinkster AIDS body.

Results: This remembering/forgetting tension puts the "AIDS patient" in untenable double-binds such as the barebacker (illegal/criminal/reproachable) cum U=U joyous adept (backed by scientific evidence, the good patient). I rely on Connerton's theory that individuals/groups need to forget the past (e.g., the perceived/enacted/anticipated stigma) in order to *constitute a new identity*. I propose strategies to *live in the middle* to advance patient-empowerment.

Social Sciences: **Critical Social Theory: Advancements (in Understanding the HIV Epidemic)**
Sciences sociales : **Théorie sociale critique : Progrès dans la compréhension de l'épidémie de VIH**

SSP4.01

Preliminary Observations from The HIV, Health, and Interaction Study

Jeffrey P. Aguinaldo
Wilfrid Laurier University, Waterloo, ON

PHA's self-reported reasons, collected through semi-structured interviews and surveys, for disclosing their HIV status to family and sexual partners are well documented in the literature. However, the reliance on retrospective data has inadvertently focussed attention almost exclusively on intentioned, deliberate, and otherwise premeditated disclosures. Very little is known about the interactional conditions that make relevant HIV (and its disclosure), and, equally, non-PHAs role in the production of those conditions. The HIV, Health, and Interaction Study (The H2I Study) is a three-year multi-site study that combines the analytic methodology of conversation analysis with critical social science perspectives on HIV/AIDS. The study asks: How is HIV made relevant in everyday interactions?

Methods: The H2I Study is based on the collection and analysis of actual interactions to understand how HIV and other health statuses are occasioned during the course of those interactions. The study started with the collection of interactions involving PHAs on talk show interviews, reality television, and Youtube videos (of actual interactions). The study is now actively recruiting PHAs to collect up to 100 recorded hours of everyday (i.e., naturalistic) telephone conversations. The data corpus will be analysed using conversation analysis.

Findings: Preliminary findings suggest that, while often occasioned during talk about sex and health, one's HIV status is sometimes also made relevant during seemingly benign conversational topics and are occasioned implicitly by specific interactional practices and assumptions upon which those practice are based.

Implications: By identifying how HIV is made relevant in interaction, the proposed study demonstrates how HIV (negative) status is presupposed in everyday interactions and how this norm forms the backdrop that marginalises PHAs. Research findings of this type could potentially shift policy discussions from the pervasive presupposition that 'PHAs fail to disclose' to the interrogation of the tacit assumption that 'one is HIV negative unless one discloses'.

Social Sciences: **Critical Social Theory: Advancements (in Understanding the HIV Epidemic)**
Sciences sociales : **Théorie sociale critique : Progrès dans la compréhension de l'épidémie de VIH**

SSP4.03

Researching a New Movement by Canadians Living with HIV Through an Anti-oppressive, Positive-people Centered Perspective: Implications on Theory and Practice

Christian S. Hui[1, 2]

1. Ryerson University, Toronto, ON, 2. Canadian Positive People Network, Ottawa, ON

Background: Utilizing an anti-oppressive approach to research, a co-founder of CPPN (a nascent network formed by Canadians living with HIV) conducted a GIPA-centerd study to 1) explore the challenges and opportunities as faced by this new PLHIV movement to reassert PLHIV back to the forefront of the national HIV response; and 2) establish key factors to inform the strengthening the young network.

Methods: The researcher developed an original theoretical framework, the "Positive People Centred Perspective", by integrating GIPA with theories on anti-oppressive social work practice, social movement, and citizenship and rights to situate the HIV response amidst the interlinkages of power and oppression, social activism, systems and structures, and reearch. The study utilized purposive sampling and conducted 5 qualitative one-on-one "activist dialogue" interviews with diverse Canadian activists living with HIV to represent key populations affected by the current epidrmic. Interviews were transcribed and thematically analyzed . Results were member-checked for accuracy.

Results: Challenges facing Canadian PLHIV include: neoliberal professionalization of the sector, need to re-imagine GIPA, and the shifting of the epidemic to key populations groups. Recommendations to strengthen the network include championing the right agenda and challenging oppression, neo-colonialism, racism, structural violence and whiteness. Institutional considerations include making proactive commitments to create policies on equity, inclusion, anti-oppression and non-discrimination. For minoritized and key population groups, true equity means working anti-oppressively and in culturally-safe ways to support their specific goals and objectives within the network's broader agenda.

Conclusions: An anti-oppressive, positive-people centered perspective to researching a Canadian PLHIV-led movement has shed new light on how the HIV response can be theorized and researched and practcie be influenced. Such approach encourages "Wunishka"/awakening in how researchers can better address the changing needs of PLHIV, key populations and the sector as a whole while honouring the lived experiences of diverse groups of PLHIV.

Social Sciences: **Diverse Experiences of Living with HIV**
Sciences sociales : **Vivre avec le VIH, expériences diverses**

SSP5.01

Individual and Interpersonal Determinants of Sexual Satisfaction Among People Living with HIV

Andréanne Leclerc, Mathieu Philibert, Ludivine Veillette-Bourbeau, Joanne Otis
Département de sexologie, Université du Québec à Montréal, Montréal, QC

Background: People living with HIV (PLHIV) are less likely to be sexually satisfied than seronegative people. We aimed to identify individual and interpersonal determinants of sexual satisfaction among PLHIV.

Method: Data were collected from MAYA, a longitudinal study documenting the quality of life of PLHIV through structured interviews where participants were enrolled in clinics and community organizations in the Montreal area. Sexual satisfaction of participants over the last two weeks was dichotomized into “sexually satisfied” (satisfied more than half the time) and “sexually dissatisfied” (satisfied half the time or less). Multivariate logistic regression was performed to identify factors associated with sexual satisfaction.

Results: At the initial time point (T_0), for 631 PLHIV, 19.9% were women, 38.4% were heterosexual, the mean HIV duration was 9.8 years and 43.1% were sexually satisfied. Multivariate analyses suggest sexual satisfaction at T_0 to be associated with the following protective factors: positive attitude regarding last CD4 or viral load results, higher CD4 cell count, lower viral load, higher frequency of penetrative sex, satisfaction towards frequency of sexual relationships and higher social functioning. Sexual dissatisfaction is associated with the following risk factors: fear of sexual rejection and sexual risk taking. For a better understanding of factors predicting sexual satisfaction among PLHIV, longitudinal analyses are in progress.

Conclusion: : These results provide insights to professionals from various domains of practice who intervene with PLHIV, namely sexologists, for an ecological perspective-based promotion of sexual satisfaction (e.g. access and adherence to treatment promote undetectable viral load, which can reduce sexual rejection and thus promote sexual satisfaction if the sexual partner understands that the transmission risk is negligible). Given the therapeutic advances for HIV treatment in the last decades, it is time to reinforce the sex-positive narrative by emphasising on sexual satisfaction rather than on risk taking.

Social Sciences: **Diverse Experiences of Living with HIV**
Sciences sociales : **Vivre avec le VIH, expériences diverses**

SSP5.02

The Tangle of HIV Disclosure, Stigma and Housing: Supporting Self-Determination of People Living with HIV (PLHIV)

Madeline Gallard[1], Janice Duddy[1], Janet Madsen[1], Mona Lee[1], Joanna Tulloch[2], Catherine Worthington[2], Darren Lauscher[1]

1. Pacific AIDS Network, Vancouver, BC, 2. University of Victoria, School of Public Health and Social Policy, Victoria, BC

Background: *Positive Living, Positive Homes* (PLPH) is a community-based research study examining the relationship between health and housing of adults living with HIV in British Columbia (BC), Canada. The objective of this analysis was to explore the processes surrounding HIV disclosure in housing situations, and experiences of stigma and discrimination.

Methods: Using longitudinal qualitative methods, between June 2015 and October 2017, 99 adults living with HIV in three BC sites (Greater Vancouver, Kamloops and Prince George) participated in baseline semi-structured interviews, with a follow-up interview after approximately one year. During the initial interviews, participants mapped their current living spaces, generated personal health/housing timelines, and answered in-depth questions on housing, HIV, and overall wellbeing. Follow-up interviews reported changes over the year, and renewed timeline and mapping as needed.

Results: During baseline interviews, many participants discussed a tension surrounding disclosure of their HIV status and how it impacted their housing and use of services. Some participants described feeling pressured to disclose (implicitly *and* explicitly) their HIV status in order to access some services and housing, putting them at risk of stigmatization and discrimination; others acknowledged that disclosure on their own terms allowed them to access opportunities and services. Disclosure and the experience of HIV stigma and discrimination was experienced differently depending on where people lived, for instance, participants in Vancouver vs. Kamloops. These themes were reaffirmed in follow-up interviews for participants who reported changes in their housing, health, social life, and service use.

Conclusions: Services need to support PLHIV's self-determination regarding HIV disclosure. Options such as integrated services or portable housing subsidies may allow PLHIV more control over disclosure and their experience of stigma and discrimination. There is also a need to ensure that PLHIV understand their rights and do not feel obligated to disclose their HIV status when accessing housing.

Social Sciences: **Diverse Experiences of Living with HIV**
Sciences sociales : **Vivre avec le VIH, expériences diverses**

SSP5.03

Enhancing Intercultural Understanding, Social Connections and Peer Capacities Amongst Diverse Asians living with HIV: An Ontario Positive Asians (OPA+) Example

Christian S. Hui[1, 2], Sucre Li[1], Shaz Islam[3], Andrew Miao[2]

1. Ontario Positive Asians (OPA+), Toronto, ON, 2. Asian Community AIDS Services, Toronto, ON, 3. Alliance for South Asian AIDS Prevention (ASAAP), Toronto, ON

Background: Recognizing the need that Asians PLHIV wish for culturally-safe spaces to convene without focusing on HIV as the core subject, Ontario Positive Asians (OPA+) is implementing a pilot-series of 6 peer-led, inter-cultural exchange series (IES) workshops which focus on: 1) enhancing the intercultural understanding amongst diverse groups of East, Southeast, South, and West Asians living with HIV; 2) creating room for peer-based learning and capacities amongst members; and 3) reducing social isolation and facilitating readiness in community engagement amongst Asian PLHIV.

Methods: The workshop series and evaluation method were developed in conjunction with the OPA+ Advisory Committee. Pre- and post- workshop evaluation surveys are given to Asian PLHIV participants to provide feedback on the workshops and the peer facilitators for summative evaluation, as well as opportunities for the OPA+ Coordinator and OPA+ Peer Leader to engage process evaluation through the implementation process.

Results: Although the results are not generalizable due to the small sample sizes, based on evaluation received from each workshop (n ranges from 11 to 15 per workshop), results from Wilcoxon Signed-RankTest suggests statistically significant improvements were gained in the domains of 1) enhancement in inter-cultural understanding of other Asian cultures; 2) sense of social connection; 3) peer-based learning. Qualitative data indicates Asian PLHIV value and wish for the sustainability of such forms of culturally-safe, intercultural, peer-led spaces.

Conclusions: OPA+ has successfully implemented a new pilot learning series which enhances intercultural understanding peer-based learning and strengthens social connection amongst Asians living with HIV from diverse Asian cultural backgrounds. The pilot has focused on improving the holistic well-being and community belonging of its members through creating culturally-safe opportunities for peers to engage in peer-led intercultural exchage. Our approach may serve as a useful blueprint in engaging PLHIV with diverse experiences in fundable programming on areas besides biomedical health.

Social Sciences: **Innovations in Community-Based and Patient-Oriented Research**
Sciences sociales : **Innovations en recherche communautaire et axée sur le patient**

SSP6.01

Filmed Simulation to Train Peer Researchers in Community-Based HIV Research

Andrew D. Eaton

Factor-Inwentash Faculty of Social Work, University of Toronto, Toronto, ON

Peer researchers share identities and/or experiences with a study population. Their involvement is crucial to community-based research (CBR) with people living with HIV, however there is a lack of attention to training peer researchers. Meaningful engagement of peer researchers can maximize community impact, yet peers often join studies with no prior research experience. As such, thoughtful approaches to capacity-building are needed.

A blended learning (multimodal) training curriculum for peer researchers in CBR has been developed; its key component is the use of filmed simulation. Simulation, or role-play exercises where learners apply skills to real-world scenarios, is a hallmark of health education. When filmed, the learning experience from simulation can be enhanced through multiple viewings, allowing for more opportunities for self-reflection and feedback.

In three instances, HIV-positive peer researchers were filmed during simulation and then watched their simulation to reflect on their performance. Peer researcher feedback from the activity was that it accommodated multiple learning styles (e.g., learning best through practice, listening, or seeing,) helped refine verbal and non-verbal interview skills, and allowed for practical application of theory. The activity can also benefit academic researchers, who can see interview guides in practice and refine accordingly prior to data collection. This activity can also add some degree of consistency to qualitative research methods such as interviews, which can be difficult to standardize when multiple interviewers are involved. Filmed simulation can also helps community-based research teams strive for equity, as this activity allows peer and academic researchers to view simulations together; such equitable participation may mitigate the power imbalance of feedback conversations of unrecorded simulation.

This presentation will discuss the educational benefits of filmed simulation for peer researchers, the reciprocal benefits that academic researchers may gain from the activity, and practical considerations for implementation of this activity in community-based HIV research.

Social Sciences: **Innovations in Community-Based and Patient-Oriented Research**
Sciences sociales : **Innovations en recherche communautaire et axée sur le patient**

SSP6.02

Concept Mapping as a Tool to Foster Participation in the Formative Stage of a Community-Based Research Project: The PANACHE Sub-Study

Kate Murzin[1, 2], Dean Behrens[2], Charles Parchem[2], Beth Rachlis[2, 3, 4], Ronald Rosenes[2], Sharon Walmsley[2, 4, 5], on behalf of the PANACHE Catalyst Grant Team

1. Realize, Toronto, ON, 2. PANACHE Catalyst Grant Team, Toronto, ON, 3. IC/ES, Toronto, ON, 4. University of Toronto, Toronto, ON, 5. Toronto General Hospital Research Institute, Toronto, ON

Background: Concept mapping is a participatory process that helps distill diverse perspectives on an issue into a shared framework for action. The *Preferences and Needs for Aging Care among HIV Elders in Canada* (PANACHE) catalyst grant team utilized this methodology to engage community members in developing a preliminary data collection framework for a community-based research (CBR) project.

Objective: To evaluate participant perspectives on concept mapping as a tool for multi-stakeholder engagement in the formative stage of CBR in the context of HIV.

Methods: Community stakeholders (older people living with HIV (PLHIV), clinicians, researchers and front-line service providers) were invited to participate in concept mapping, including online brainstorming, sorting, and rating activities, and an in-person interpretation session, as part of a larger process to plan a CBR project assessing the needs and preferences of older Canadian PLHIV. Participants' perceptions of concept mapping were assessed through an anonymous follow-up survey.

Results: In total, 36 individuals participated in concept mapping and 31 (86%) completed the follow-up survey. Most identified as PLHIV (58%). Most respondents reported: concept mapping was an inclusive way of developing a CBR tool (82%); satisfaction with the outcomes (82%); and a clear sense of how outputs would be used to advance the PANACHE project (82%). Responses were inconsistent regarding the implementation of concept mapping activities, such as understanding the instructions provided, reasonableness of the time required to participate, and the mix of stakeholders involved.

Discussion: In general, participants experienced concept mapping positively, however, divergent opinions, especially about the 'messiness' of interpreting the maps as a group, were evident in respondents' open-ended feedback. Some felt this process fostered open dialogue and creativity, while others found it overly restrictive or confusing. Lessons learned around implementation challenges, including a short timeframe to complete online activities and an inexperienced facilitator, could improve future exercises.

Social Sciences: **Innovative Programming and Policy**
Sciences sociales : **Programmation et politiques innovatrices**

SSP7.01

Considering Cultural Safety to Optimize Patient Wellness

Caitlin Johnston, Shannon Krell, Neora Pick
BC Women's Hospital + Health Centre - Oak Tree Clinic, Vancouver, BC

Background: More than 30% of women living with HIV in Canada identify as Indigenous. The national HIV cascade of care tells us that Indigenous women continue to experience barriers to care and treatment. BC Women's Hospital + Health Centre's Oak Tree Clinic (OTC) and Indigenous Health (IH) have partnered to improve patient experience by implementing culturally safe practices. Positive patient experience supports engagement in care, ARV adherence, and overall wellness.

Methods: Consultations were conducted with patients and Elders, as well as with regional and provincial partners in HIV care. Several strategies to enhance cultural safety were explored. A work plan to respond to recommendations from consultations was developed using the Provincial Health Service Authority's Indigenous Cultural Safety Strategy.

Results: A Cultural Safety Equity Walk-Through exercise led by an Elder and patient representative was conducted to critically examine OTC's clinical space as well as some of its forms and processes. A committee was formed to prioritise and address recommendations resultant of the walk.

Partnerships were sought with local First Nations and organizations within whose territories OTC operates.

Monthly education sessions, co-facilitated by IH and OTC, were initiated in October 2018. Sessions are required for OTC staff but are open to staff and providers at BC Women's and others. Education sessions cover a variety of topics related to Indigenous Cultural Safety in healthcare practice and include presentations from community partners.

Conclusion: Adopting culturally safe practice improves patient engagement in care. Staff, provider, and patient participation have been crucial and feedback, thus far, has been positive. Conversations around cultural safety are ongoing; we recognize that this is a continuous process of learning and self-reflection that does not end with a few activities or physical changes. We recommend other programs and services consider implementing culturally safety practices to support improvements in patient health outcomes.

Social Sciences: **Innovative Programming and Policy**
Sciences sociales : **Programmation et politiques innovatrices**

SSP7.02

HIV and/or Hepatitis C and Diabetes: Co-morbidities Affecting HIV Positive People - A Tip of an Iceberg

Rounak F. Khan, Amanda Flecher
Canadian Treatment Action Council, Toronto, ON

Introduction: The burden of diabetes, and prediabetes, is rapidly increasing in people living with HIV who are on antiretroviral therapy (ART). Long-term ART use is associated with complications. Age-related comorbidities, and diseases like diabetes, appear to be an emerging threat to this population. Managing services to address the treatment and care needs of those living with the co-morbidities of a diabetes and HIV diagnosis, or diabetes with an HIV and hepatitis-C co-infection, is complex, challenging, and can lead to significant barriers to accessing treatment.

The Canadian Treatment Action Council (CTAC) has carried out a pan- Canadian literature review, environmental scan, focus groups with people living with HIV and diabetes and qualitative interviews of service providers in order to make policy recommendations that will inform program/service delivery regarding treatment for diabetes, HIV co-infection, and other co-morbidities.

Methods: The literature review highlighted existing knowledge available. Search criteria included Canadian peer-reviewed literature, grey literature produced in Canada, and international peer-reviewed resources. Qualitative interviews were carried out with front line service providers across Canada and focus groups (urban and rural) were carried out in Ontario.

Results: The literature review has revealed challenges that include:

- Interpersonal and structural barriers
- Treatment access barriers : drug interactions and economics
- Lack of healthcare professionals versed in treating patients with a co-morbidity
- Treatment fatigue

Qualitative Data showed that knowledge and capacity to support co morbidities needs to be strengthened and intertwining programs for diabetes, and HIV and diabetes with an HIV and hepatitis-C co-infection, needs to be widely introduced.

“only thinking of HIV, everything falls off”; *“very little money for healthy food options”*

Conclusion: The literature review, environmental scan and qualitative data has identified best practices, gaps, and policy recommendations around increasing access to diabetes treatment to meet the needs of HIV positive people living with other co-morbidities.

Social Sciences: **Innovative Programming and Policy**
Sciences sociales : **Programmation et politiques innovatrices**

SSP7.03

Addressing Gaps to Innovative HIV/STBBI Testing Strategies in Canada

Jami Neufeld

National Collaborating Centre for Infectious Dieases, Winnipeg, MB

HIV and sexually transmitted and blood borne infections (STBBI) continue to be significant public health threats in Canada despite being preventable and treatable. Many STBBI are also curable. Canada has endorsed measurable global targets to reduce HIV & STBBI by the years 2020 and 2030. Early detection through testing will be necessary along with connection to treatment and management to prevent onward transmission. Technologies that simplify testing or increase accessibility by expanding testing settings can contribute to early identification of HIV/STBBI beyond the reach of traditional laboratories or clinics and have greater ability to reach key populations. Despite successful and significant use of innovative testing in the United States, Europe, and internationally, innovative testing strategies are not widely used in Canada.

The National Collaborating Centre for Infectious Diseases (NCCID) is working to translate and broker knowledge regarding implementing innovative testing strategies for maximum reach and impact. NCCID conducted a scoping review of new technologies and has partnered with key organizations to identify gaps through three testing innovation sessions, participation in a National Task Force for STBBI Testing, and a webinar series in partnership with CATIE and REACH 2.0 to explore HIV/STBBI testing innovations in non-traditional settings.

Project results have progressed from gap analysis to identification of knowledge needs and stakeholders and is now moving in partnership towards action plans and solutions to implement innovative HIV/STBBI testing strategies. Gaps identified at programmatic, regulatory, and policy levels will be presented. Evaluations of sessions and webinars have been positive and drive future collaborations.

Next steps will include working with provincial governments and organizations to pursue action plans for the implementation of innovative testing approaches as one of the strategies for increasing access to HIV/STBBI testing to reach global elimination targets.

Social Sciences: **Innovative Programming and Policy**
Sciences sociales : **Programmation et politiques innovatrices**

SSP7.04

Public Health – Primary Care "Shared-Care Model" for Increased Suburban and Rural Access to HIV Pre-Exposure Prophylaxis (PrEP) in the Fraser Health Region of British Columbia

Aamir Bharmal, Christopher Buchner, Cheryl A. Prescott, Sherry Baidwan, Angela Matson, Heather Winnichuk
Fraser Health Authority, BC Population Public Health Sexual Health and Blood Born Infections, Surrey, BC

Background: Since January 2018, PrEP has been publically funded in BC with the majority of access through targeted sexual health clinics in Vancouver. Residents within the Fraser Health region of BC are dispersed across a vast geography comprised of smaller communities where there is insufficient demand to warrant targeted PrEP clinics. There are also barriers to accessing PrEP in suburban and rural settings due to a lack of prescribers.

Objective: Improve access to PrEP in suburban and rural settings in the Fraser Health Region through shared care service delivery between public health (sexual health clinics) and primary care.

Methods: Working with local family physician organizations (Divisions of Family Practice), physician champions for prescribing PrEP were identified. Focus groups were conducted with physicians to identify mechanisms to support access to PrEP. Subsequent working group sessions between physician champions and Public Health were used to refine a model of shared care between sexual health clinic RNs and family physicians.

Results: A shared care model was developed which supports the interface between sexual health clinics and physician offices which prescribe PrEP. The majority of care, including testing and counselling, is coordinated through sexual health clinics. Physicians are responsible for reviewing labs, providing prescriptions and meeting the patient once within the first three months of starting PrEP. Continued dispensing and ongoing assessments are completed by sexual health RNs.

Challenges identified included extensive resources required to coordinate services, information sharing and lab results across different electronic medical record platforms and between different clinical sites.

Conclusion: A shared model of care can support physician champions and improve PrEP access in settings where there are limited prescribers available. Successful scale-up of this model requires investment in clinical coordination given that care is delivered across different clinical sites and between different electronic medical record platforms.

Social Sciences: **Innovative Programming and Policy**
Sciences sociales : **Programmation et politiques innovatrices**

SSP7.05

Project Peer: Uncovering the Impact of GIPA/MEPA and the Wise Practices of Informal and Formal Supports

Andre Ceranto[1], Lori Chambers[2], Christopher Cumby[3], Ana Sophia Demetrakopoulos[4], Greg Harris[3], Alan Li[5, 6], Marvelous Muchenje[7], Caroline Ploem[8], James Watson[9]

1. Casey House, Toronto, ON, 2. McMaster University, Hamilton, ON, 3. Memorial University of Newfoundland, St. John's, NL, 4. AIDS Bereavement and Resiliency Program of Ontario, Toronto, ON, 5. Regent Park Community Health Centre, Toronto, ON, 6. Ontario Health Treatment Network, Toronto, ON, 7. Women's Health in Women's Hands, Community Health Centre, Toronto, ON, 8. Dalhousie University, Halifax, NS, 9. St. Michael's Hospital, Toronto, ON

Background: Little is known about effective organizational practices, training, and policies to sustain the involvement of People living with HIV Engaged in Employment Roles (PEERs) in the HIV sector and whether existing support initiatives embody the greater involvement and meaningful engagement of people living with HIV (GIPA/MEPA) principles in practice. Despite efforts to implement and operationalize GIPA/MEPA within AIDS service organizations (ASOs) and allied organizations, people living with HIV remain among the least involved in program planning, implementation, and research compared to their allied counterparts, and receive minimal support to build their capacity and contribute meaningfully in their roles. The purpose of Project PEER is to identify available formal and informal support practices for PEERs and whether or not they have access to them, best practices, note gaps and challenges in support provision, and determine the extent of GIPA/MEPA implementation in supports for peers.

Methodology/Methods: Using a Community-Based Participatory Action Research framework, two surveys were designed in both French and English to better understand the perceptions of PEERs and Executive Directors on the availability of formal and informal support services at their organizations. The surveys were developed through extensive consultation with the community, made up of people living with HIV/AIDS and those who work in ASOs, complemented by the Project PEERs interdisciplinary research team.

Results/Findings: We present data from the 2018 pilot study which surveyed 13 Executive Directors and 14 PEER respondents at Canadian ASOs to explore their perceptions of support services for PEERs. Practice and policy implications and next steps in our research process will be discussed.

Social Sciences: **Innovative Programming and Policy**
Sciences sociales : **Programmation et politiques innovatrices**

SSP7.06

Test for One, Test for All Approach Applied to Event-Based Testing

Kim Witges[1], Stephanie Van Haute[2], Monica Cyr[3]

1. Nine Circles Community Health Center, Winnipeg, MB, 2. The Manitoba HIV Program, Winnipeg, MB, 3. Aboriginal Health and Wellness Center, Winnipeg, MB

Outbreak numbers of Sexually Transmitted and Blood Borne Infections (STBBIs) have increased throughout Manitoba, leading to a need for innovative screening programs to help detect new and long term carriers of STBBIs and perhaps most notably, HIV. For years, clients new to care with the Manitoba HIV Program have consistently presented late to care, resulting in poorer personal health outcomes and concern for onward transmission. In Manitoba, the success of awareness campaigns is stirring communities to advocate access to testing beyond traditional clinic settings. Health care providers and policy makers are being asked to consider where people organically gather as an opportunity to bring testing to the people. Typically, event-based testing relies on technologies such as rapid tests or more recently, dried blood spot to perform Hepatitis and HIVscreening outside of the clinic setting. These technologies have many advantages, however the reliance on point of care testing (POCT) is expensive, limited in that it only screens for HIV and is not considered best practice for STBBI screening. Event-based testing in urban areas have the potential to be fully-comprehensive, mobile testing opportunities that test for all STBBIs and include dialogue how the connection to primary care can be facilitated.

Most recently, in Winnipeg where event-based testing was organized, 23 participants were offered a choice of: Insti-HIV POCT, dried blood spot sampling, or serology to test for HIV, Hepatitis C and syphilis; all 23 participants opted for serology as their preferred method for testing. Lessons learned from this event demonstrated that comprehensive, event-based mobile testing which utilize existing testing technologies and infrastructure, could be a sustainable strategy supported by provincial health programs. This would allow for the reliance on, and financial resources for alternative testing methodologies such as POC testing to be reallocated to non-urban settings where resources are often limited.

Social Sciences: **Intersecting Identities and HIV Contexts**
Sciences sociales : **Identités et VIH : contextes en croisement**

SSP8.02

Exploring the Experiences of Provincial Correctional Nurses and their Interactions and Thoughts about their Clients living with or at risk for HIV

Anthony de Padua

University of Saskatchewan, Prince Albert, SK

It is well known that HIV rates in correctional facilities are higher than in the general public, but what is not well known are the experiences of correctional nurses caring for these individuals and those who are at high risk for contracting HIV. This original study takes place in Saskatchewan and up to four provincial correctional nurses share their experiences and stories. Narrative inquiry (Clandinin & Connelly) is the research methodology used and the relational nature of this methodology has led to a richness of stories.

This presentation discusses the challenges of engaging nurses in corrections and introduces a set of focused results. These results include: nurses' thoughts on working with Indigenous clients; challenges with a lack of resources; differences between nurses and administration priorities; and perspectives of these nurses on the gaps and strengths that will improve the health care of clients living with or at risk for HIV. The presenter will also suggest directions for change that may benefit the audience.

Social Sciences: **Other**
Sciences sociales : **Autres**

SSP9.01

Is Peer Leadership Engagement Associated with Awareness of the HIV Prevention Benefits of Art? A Cross-sectional Analysis of Women Living with HIV in Canada in the UequalsU Era

Angela Kaida[1], Tracey Conway[3], Rosa Balleny[1], Julia Pandolfo[3, 9], Denise Jaworsky[5], Lu Wang[4], Rebecca Gormley[1, 4], Carmen Logie[6], Mina Kazemi[3], Wangari Tharao[7], Adriana Carvalhal[10], Karene Proulx-Boucher[2], Alexandra de Pokomandy[2, 8], Mona Loutfy[3]

1. Simon Fraser University, Vancouver, BC, 2. Chronic Viral Illness Service, McGill University Health Centre, Montreal, QC, 3. Women's College Research Institute, Women's College Hospital, Toronto, ON, 4. British Columbia Centre for Excellence in HIV, Vancouver, BC, 5. Department of Medicine, University of British Columbia, Vancouver, BC, 6. Factor-Inwentash Faculty of Social Work, University of Toronto, Toronto, ON, 7. Women's Health in Women's Hands Community Health Centre, Toronto, ON, 8. Department of Family Medicine, McGill University Health Centre, Montreal, QC, 9. Stanford University, Stanford, CA, USA, 10. University of Toronto, Toronto, ON

Background: Although many women living with HIV benefit from peer-led programs, few studies focus on peer leaders. In this Undetectable=Untransmittable (UequalsU) era, we assessed the prevalence of peer leadership engagement and whether such engagement is associated with knowledge of the HIV prevention benefits of an undetectable viral load with sustained use of antiretroviral therapy (ART).

Methods: We used baseline survey data of 1,422 women living with HIV (trans-inclusive) enrolled in the community-collaborative Canadian HIV Women's Sexual and Reproductive Health Cohort Study (CHIWOS). Women who received HIV medical care in the past year were asked if they were aware of, and how frequently they engaged in peer leadership at HIV clinics and/or AIDS Service Organizations ("Frequently" (≥Monthly), "Infrequently" (<Monthly), "Never," or "Unaware"). Awareness of ART prevention benefits was measured by asking: "How do you think taking ART changes your risk of transmitting HIV?", defined as "makes the risk a lot lower". Multivariable ordinal logistic regression assessed associations.

Results: Of 1,330 women, median age was 43 [IQR: 36-51]; 77% had lived with HIV for ≥6 years. Overall, 8% frequently, 22% infrequently, and 12% never engaged in peer leadership, while 57% were unaware of opportunities. Women engaged in peer leadership (frequently or infrequently) were more likely to be aware of the HIV prevention benefits of ART, compared with women who never engaged, or were unaware of such opportunities (70%, 55%, 66%, respectively;p=0.004). In adjusted analyses, women who frequently engaged in peer leadership had significantly higher odds of understanding the HIV prevention benefits of ART (aOR:1.36; 95% CI:1.06-1.75).

Conclusions: Women living with HIV who engaged in peer leadership had significantly higher odds of being aware of the HIV prevention benefits of ART, UequalsU's cornerstone message. Less than one-third of women engaged in peer leadership, signalling an important direction for HIV research and programming.

Social Sciences: **Other**
Sciences sociales : **Autres**

SSP9.02

Codevelopment of a Digital Simulator to Strengthen Relational Competencies Among Nurses Working with People Living with HIV on Antiretroviral Therapy

Geneviève Rouleau[1, 4, 5], Jérôme Pelletier[2, 4], José Côté[1, 3, 5], Marie-Pierre Gagnon[7, 8], Rock Lévesque[6], Valérie Martel-Laferrière[5, 6], SimforHealth

1. Research Chair in Innovative Nursing Practices, Montréal, QC, 2. Université du Québec à Rimouski, Montréal, QC, 3. Faculty of Nursing, Université de Montréal, Montréal, QC, 4. Faculty of Nursing, Université Laval, Montréal, QC, 5. University of Montreal Hospital Research Centre, Montréal, QC, 6. University of Montreal Hospital Centre, Montréal, QC, 7. the University Hospital Center of Quebec-Laval University Research Centre, Quebec, QC, 8. The Canada Research Chair on Technologies and Practices in Health, Faculty of Nursing, Université Laval, Quebec, QC

Background. One of the core competencies of nurses working with people living with HIV (PLWH) is supporting them in taking their antiretroviral therapy (ART). Since there are few educational interventions targeting the development of this competency, we designed a digital simulator featuring a virtual patient having difficulty taking ART, thereby allowing nurses to consolidate the relational competencies required in such situations.

Objectives. This presentation describes the process of codeveloping this simulator and provides a demonstration.

Methods. A collaborative, reflexive and iterative approach made it possible to codevelop the simulator. The development of the simulator involved several steps: establishing a partnership with a company specialized in digital healthcare simulations and with clinical experts, creating a working committee, preparing the script, designing and validating the 3D elements, recording the narrations, and validating the clinical content. The working committee used a consensual process and drew on expert recommendations, the results of our qualitative study and the spirit of motivational interviewing to codevelop the digital simulator.

Results. The development stage lasted 14 months. The digital simulator includes an introductory video on the project's background, an electronic patient record, a glossary and a simulated situation. This simulated situation includes preprogrammed dialogues between the nurse and patient, interspersed with 14 quizzes and feedback to encourage interactivity and the application of the relational competencies.

Conclusion. With a view to professional development, nurses will have the opportunity to try this digital simulator, informed by experiential, theoretical and empirical knowledge, and thereby help evaluate it. If the nurses' relational competencies are enhanced, then the quality of the therapeutic relationship between nurse and patient may benefit and, ultimately, this can have positive repercussions on the health of PLWH.

Social Sciences: **Other**
Sciences sociales : **Autres**

SSP9.03

Understanding the Experiences of Testing, Treatment, Disclosure and Living Well with HIV: Perspectives of People Living with HIV in Manitoba

Patricia O. Ukoli[1, 2], Simms Simms[1], Ken Bristow[1], Mike Payne[2], Stephanie Van Haute[2], Laurie Ringaert[2], Gayle Restall[1]

1. University of Manitoba, Winnipeg, MB, 2. Nine Circles Community Health Centre, Winnipeg, MB

Background: To develop actions that reduce HIV-related stigma and discrimination in Manitoba, a research partnership between individuals and communities affected by HIV, service providers, researchers, and policymakers aimed to understand experiences of HIV stigma and discrimination through the administration of the People Living with HIV Stigma Index (Stigma Index) (UNAIDS et al., n.d).

Objectives: Obtain the perspectives of people living with HIV about challenges and opportunities related to: 1) HIV testing and treatment, 2) disclosure, and 3) supports, services, systems and policy changes for living well with HIV.

Methods: Adults living with HIV were recruited through organizations and networks. Peer research assistants conducted interviews with participants. Several Stigma Index questions asked participants to describe experiences with testing, treatment, disclosure and living well with HIV. Open-ended responses were audio-recorded, transcribed verbatim and analyzed using inductive qualitative methods.

Results: : Thirty–nine (39) participants (54% male), completed the open-ended question from the Stigma Index. A commonly reported challenge to HIV testing and diagnosis was fear of test results, often related to perceived lack of widespread awareness of HIV facts and risk of criminalization. Challenges to treatment included complex medication regimes, the costs of medications and healthy living. Participants described disclosure as having both risks and benefits. Some participants felt that avoiding disclosure helped avoid stigmatization. Other participants felt it was important for people to disclose their HIV positive status publicly to increase social awareness of HIV. Some participants described making different disclosure decisions over time and across situations. Importantly, participants offered suggestions for living well with HIV across personal, organizational and institutional levels.

Conclusions: Participants living with HIV in Manitoba identified common challenges and provided suggestions for improving testing, treatment retention and living well with HIV. The Manitoba Collective Impact Network can utilize these findings to develop strategies that reduce HIV-related stigma and discrimination.

Social Sciences: **Other**
Sciences sociales : **Autres**

SSP9.04

To Switch Or Not To Switch: Developing a Discrete Choice Survey To Understand HIV Patients' And Physicians' Preferences Towards Daily Pills or Monthly Injections

Erin Arthurs[1], Cindy P. Garris[2], Katelyn Cutts[3], Frank A. Spinelli[2], Hannah Collacott[4], Gustavo C. Verdier[5], Bertrand Lebouché[6], Sebastian Heidenreich[4]

1. GlaxoSmithKline, Mississauga, ON, 2. ViiV Healthcare, RTP, NC, USA, 3. Evidera, Bethesda, MD, USA, 4. Evidera, London, United Kingdom, 5. ViiV Healthcare, Laval, QC, 6. Centre for Outcomes Research & Evaluation, Research Institute of the McGill University Health Centre, Montreal, QC

Rationale: Improvements in antiretroviral therapy (ART) have resulted in near normal life expectancies for many HIV patients but necessitates close adherence to daily oral combination therapy in order to maintain long-term undetectability, that may be burdensome to some. An alternative long acting injectable (LAI) regimen of cabotegravir plus rilpivirine is in late stages of development (Phase 3) which will allow for monthly administration of ART and offer potential improvements in long-term adherence. With high rates of efficacy and an acceptable safety profile for this regimen demonstrated in virologically suppressed HIV patients (Phase 2), it is timely to explore preferences for switching from oral to injectable ART.

Objectives: Develop and test the validity of a discrete choice experiment (DCE) eliciting patients' and physicians' preferences for switching from a current oral to a LAI ART in US and Canada.

Methods: A literature review was conducted to identify attributes of ART and develop surveys utilizing a DCE approach to elicit preference for ART. The selected treatment attributes for the DCE include dosing frequency, risk of side effects, dosing flexibility, and food restrictions. These attributes and their varying levels are presented in a series of choice tasks. Patients are first asked to select their primary treatment challenge (eg. lifestyle conflicts, anxiety, disclosure concerns, polypharmacy, non-adherence or none). With this treatment challenge in mind, patients choose between staying on their current ART, switching to another oral ART or switching to injectable ART. Physicians are also asked to consider these treatment challenges and respond with treatment choices.

Implications: Combining a DCE with treatment challenge scenarios is a novel approach to understand treatment preferences. Prior to fielding the main survey, cognitive interviews were conducted with patients and physicians, followed by a quantitative pilot study, to confirm robustness and validity of the DCE design. These results will follow.

Social Sciences: **Social, Structural and Systemic Drivers of HIV**
Sciences sociales : **Moteurs sociaux, structurels et systémiques du VIH**

SSP10.01

Effectively Communicating HIV Media Messages Involves Engaging a Broad Audience

Pake Newell, Geoffrey S. Navara
Trent University, Peterborough, ON

Media has significant influence on how individuals living with and at risk of Human Immunodeficiency Virus (HIV) care for their health. To explore the link between HIV related media messaging and related health behaviours, an online survey investigated 129 individuals' access to and perceptions of HIV related media, with 13 then taking part in follow up semi-structured interviews. People living with HIV, people at risk of HIV, and general population groups differed on a number of HIV media access variables, including the amount of time spent interacting with HIV related media, forms of media accessed (e.g., social, mainstream, etc.), and its perceived effects on their HIV related attitudes and behaviours. Follow up interviews explored these differences, finding that participants differentiated between mainstream media, including past stigmatizing new coverage, and relatively more recent social media platforms as having distinct uses, effects, and histories.

Participants described recent HIV related media as less stigmatizing and more factual than the past media, but noted that mainstream media coverage of HIV related topics has decreased over time and focused on medicalize topics. Most HIV media is now distributed via social media platforms and accessed by a relatively small group of HIV specialist viewers. Social media's ability to target specific groups enables messages to be efficiently tailored and delivered to priority populations who are at an increased risk of HIV, but leave a broader audience relatively unexposed to HIV related media and information. Nonetheless, mainstream coverage of HIV related issues in mass media can enhance message effectiveness, even when the messaging is targeted to a specific population. This has implications on the communication strategies used for HIV health messages and suggests that HIV related media targeted toward a broader, more general audience continues to play an important role in HIV health communication alongside targeted, population-specific messaging.

Social Sciences: **Social, Structural and Systemic Drivers of HIV**
Sciences sociales : **Moteurs sociaux, structurels et systémiques du VIH**

SSP10.02

The MB HIV-STBBI Collective Impact Network: Wuniska our Relationships and Systems to Make HIV-STBBI Impact

Laurie Ringaert[1], Mike Payne[1], John Kim[2], Albert Mcleod[3], Linda Larcombe[4], Gayle Restall[4], Stephanie Van Haute[5], Tammy Reimer[1], Shelly Smith[6]

1. Nine Circles CHC, Winnipeg, MB, 2. Public Health Agency of Canada, Winnipeg, MB, 3. Two Sprited People of MB, Winnipeg, MB, 4. University of Manitoba, Winnipeg, MB, 5. MB HIV Program, Winnipeg, MB, 6. MB Government, Winnipeg, MB

Manitoba has Canada's second highest rate of HIV and very high rates of HCV and other STBBI's where indigenous people are disproportionately over-represented. The Manitoba HIV-STBBI Collective Impact Network (the Network) was established in 2016 and brings together a diverse group of stakeholders to address system issues through relationship building, deliberative dialogues, research/evaluation, knowledge translation, policy and practice changes and capacity building. We believe this to be the first collective impact network to address HIV and STBBI's in Canada. Since 2016, we have been growing our relationships with, communities, community-based organizations, researchers, Indigenous organizations, policy makers, practitioners and people with lived experience.

OurVision: to eliminate HIV-STBBI's as a public health threat by 2030 and ensure that those who live with them live well in Manitoba. Our Mission: We are a network of innovators working collectively to transform the landscape of HIV-STBBI's in Manitoba. Funding primarily by the PHAC and REACH.

We are seeing the conference theme of Wuniska: optimism, renewed energy, passion and action occurring as a result of the Network. We are seeing: innovative research/evaluation occurring to understand system gaps or to test established solutions in the Manitoba context; innovative strategies being piloted as a result of teams of stakeholders coming together to try out novel policy and practice changes for addressing prevention, testing and linkage to care; more attention to culturally safe/responsive approaches; and capacity building with people with lived experience; we are having new people and organizations/departments/agencies asking to participate and we are seeing new cross provincial/territorial border partnerships developing as STBBI's do not contain themselves in artificial geographical borders.

In this session, we will discuss why the system change/collective impact approach has been critical to our success, implementation process, key activities, the evaluation results, lessons learned and our strategies for moving forward.

Social Sciences: **Social, Structural and Systemic Drivers of HIV**
Sciences sociales : **Moteurs sociaux, structurels et systémiques du VIH**

SSP10.03

Social, Clinical and Behavioral Determinants of HIV Infection and HIV Testing among Black Men in Canada: A Classification and Regression Tree Analysis

LaRon E. Nelson[2, 4], Apondi J. Odhiambo[2, 1], Martez Smith[2, 3], Sameer Kushwaha[2, 5], David Absalom[1], Pascal Djiadeu[1], Winston Husbanda[1], Wangari Tharao[1], Ting Sa[1], Nanhua Zhang[1], Rupert Kaul[1]

1. University of Toronto, Dalla Lana School of Public Health, Toronto, ON, 2. St Michael's Hospital, Centre for Urban Health Solutions, Li Ka Shing Knowledge Institute, Toronto, ON, 3. University of Rochester, School of Nursing, Rochester, NY, USA, 4. Yale University, School of Nursing, New Haven, CT, USA, 5. University of Toronto, Faculty of Medicine, Toronto, ON

Background: Black men bear a disproportionate burden of health disparities increasing their vulnerabilities to HIV. The Social Determinants of Health (SDH) framework provides a useful tool for understanding various factors contributing to HIV disparities among Black men. The purpose of this analysis was to determine the combinations of social, clinical and behavioural factors that predict current HIV infection and HIV testing.

Methods: We conducted a secondary analysis of data collected descriptive epidemiological study of Black men (N=460) in Toronto. The KALI study was conducted at three community health in Toronto. We constructed binary regression trees to predict HIV infection and HIV testing history using factors of age, STI history, condom use, and the number of sexual partners. Branches of the tree were pruned according to the complexity parameter (CP) that corresponded with the lowest cross-validation error.

Results: Among participants in the study, 64.68% were born outside of Canada, 82% of men participant were heterosexual (MSW) and 18% were MSM. Among MSM, 37% were refugee claimants while 41% of MSW was landed/permanent resident. We found that being younger than 24 years was the major predictor for HIV testing, followed by recent condom non-use (85% risk). Among those 24 years or older, having 2 or more male sexual partners was predictive of HIV testing (89% risk). We also found that having > 5-lifetime male sexual partners was the major predictor for HIV infection (46.7% risk), followed by being older than 23 years. Among those with <5-lifetime sexual partners, a history of syphilis infection was predictive of HIV infection (40% risk).

Conclusion: The understanding of the combinations of social and behavioural factors that are most predictive of current HIV infection and HIV testing will help improve HIV prevention and care continuum among Black men in Canada.

Social Sciences: **Women and HIV**
Sciences sociales : **Les femmes et le VIH**

SSP11.01

Barriers to Care for Women Living with HIV in New Brunswick and Nova Scotia

Priscilla Medeiros
McMaster University, Hamilton, ON

Women living with HIV face a number of significant challenges when navigating health and social services in the existing referral network in New Brunswick and Nova Scotia. An array of social and health system barriers, including a lack of familiarity with new forms of care and support services, meeting eligibility criteria for access to care, lack of care provider knowledge, precarious finances, and distrust of service systems are some of the challenges women living with HIV face when trying to access care and support services. Rather, women rely on community-based programs to meet their most basic needs and improve their health outcomes.

The collected stories of women who are HIV-positive (n=10) and employees of AIDS service organizations (n=39) in this study not only illustrate the connections between poverty and barriers-to-care, but also underscore the broader inequities that affect their quality of life and leave them struggling to meet their health priorities after diagnosis. Taking place in the two provinces from 2014 to 2015, the purpose of this project was to bring into view the structural inequities that continue to affect women's quality of life. Findings reveal not only how central a role AIDS service organizations play in their lives (e.g., access to food vouchers, transit tickets or monthly passes, and sources of emergency fund), but also the need for a women-centered approach to care to better address their physical, emotional, mental, sexual and reproductive wellness.

Social Sciences: **Women and HIV**
Sciences sociales : **Les femmes et le VIH**

SSP11.02

A Community of Care for Women Living with HIV in New Brunswick and Nova Scotia

Priscilla Medeiros
McMaster University, Hamilton, ON

Women living with HIV navigate a complex, sometimes contradictory, landscape of health and social services to manage their health in New Brunswick and Nova Scotia. For this reason women living with HIV have come to depend on community-based HIV organizations to help them steer the existing care continuum to meet their housing, income and employment support, health care, and food security needs, by and large, while simultaneously facing the risk of losing assistance programs they have come to rely on after diagnosis.

The use of interviews and geographical information software (GIS) documents the stories of women who are HIV-positive (n=10) and employees of AIDS service organizations (n=39) in this study navigating change across the care continuum in the two provinces. GIS visualizes the most common referrals and community resources women access to meet their diverse needs and identifies essential services that are missing to improve women's quality of care. Findings reveal an overwhelming interest for women-only programs focused on the management of HIV, caregiving, reproductive and sexual health, health needs related to aging and menopause, and HIV disclosure to spouses and family members, expansion of peer-to-peer outreach in the two provinces, and strengthening of community referrals to meet the diverse health priorities of the population.

Social Sciences: **Women and HIV**
Sciences sociales : **Les femmes et le VIH**

SSP11.04

Planning the Implementation of a Web-Based Nursing Intervention (TAVIE-Woman™): How Do HIV-positive Women and Healthcare Providers Perceive Barriers and Facilitators?

José Côté[1, 2, 7], Geneviève Rouleau[1, 3, 7], Isabelle Boucoiran[4], Alexandra de Pokomandy[5], Catherine Laurent-Sédillot[1, 7], Karène Proulx-Boucher[5], Kenneth Monteith[6], Patricia Auger[1, 7], Marc-André Reid[1, 7]

1. Research Chair in Innovative Nursing Practices, Montréal, QC, 2. Faculty of Nursing, Université de Montréal, Montréal, QC, 3. Faculty of Nursing, Université Laval, Quebec, QC, 4. Sainte-Justine University Hospital Center, Montréal, QC, 5. McGill University Health Centre, Montréal, QC, 6. Coalition des organismes communautaires québécois de lutte contre le sida, Montréal, QC, 7. University of Montreal Hospital Research Centre, Montréal, QC

Background: Four web-based sessions of a virtual nursing intervention named TAVIE-Woman™ were designed to support women living with HIV (WLWH) in taking their antiretroviral treatment (ART). Planning the implementation of TAVIE-Woman™ in clinical settings and in community-based organizations needs a concerted approach that values the experience of members of the community and stakeholders.

Objective: To explore the experience of WLWH who consulted TAVIE-Woman™ and the perspectives of healthcare providers (HCP) regarding the barriers and facilitators of implementing TAVIE-Woman™ in clinical settings.

Methods: We conducted an exploratory qualitative study among WLWH followed at two urban university hospitals in Quebec or attending community-based organizations. We invited women to consult TAVIE-Woman™ and collected data through participant observation, semi-structured interviews (among women) and focus groups (with HCP).

Preliminary Results: To date, six WLWH participated in TAVIE-Woman™ and completed the interviews. They perceived the content as useful and appreciated getting personalized information; they found that the video-based testimonies of WLWH and life stories accurately represent their daily reality. They would recommend: to make TAVIE-Woman™ accessible for all women starting ART, to integrate other topics (e.g. sexuality, aging with HIV) and to get a logbook to write down their personal information and their goals. Six HCP participated in the focus group. They mentioned barriers and facilitators towards TAVIE-Woman™ implementation related to: technology (e.g.: eLiteracy), profile of WLWH (e.g. hard-to-reach populations such as migrants), their own attitude and willingness to recommend it, organizational readiness and resources.

Conclusion: Adherence to ART still remains a concern for many women. TAVIE-Woman™ is one avenue by which an intervention can provide tailored education and reliable quality information. With the intention of embedding TAVIE-Woman™ in professional practice and in WLWH healthcare trajectories, a better understanding of barriers and facilitators as perceived by key actors seems essential to plan implementation.

Social Sciences: **Women and HIV**
Sciences sociales : **Les femmes et le VIH**

SSP11.05

Digging Deep: Examining the Root Causes of HIV and AIDS Among Aboriginal Women

Mackenzie Jardine, Jen L. Billan
University of Saskatchewan, Regina, SK

Background: This study identifies the services used by HIV positive Indigenous women, the barriers to accessing health care, the influence of systemic racism and intergenerational trauma on health outcomes, recommendations for care, the desire among Indigenous women to learn, and the tremendous capacity for resilience demonstrated through direct quotations from the participants.

Research Question: The purpose of this study was to understand the root causes of HIV among Indigenous women, the role of colonization and intergenerational trauma in determining health outcomes and HIV rates, and the degree to which services available to HIV positive Indigenous women are culturally appropriate.

Methods: The methodologies used for this project included community-based participatory research, Indigenous story-telling and mutual learning. Qualitative data from one-on-one interviews was analyzed using NVivo, SPSS software and the Collective Consensual Data Analytic Procedure (CCDAP). The use of community-based research navigators was critical to creating trusting relationships with the participants as these relationships continue today. Culture and ceremony were woven throughout the project.

Results: Using the CCDAP process, community-based research navigators, research assistants, and academics found nine themes within the interviews. These themes include recommendations for care, positive health care experience, negative emotions and experiences, addictions and related diseases/treatment, related health issues and co-morbidity, barriers to accessing health care, intergenerational effects of colonization, kinship support and motivation, and resilience and strengths. Qualitative data, direct quotations from the participants, and quantitative data from the surveys will be presented.

Conclusion: The research findings indicate that HIV and HCV positive Indigenous women have a strong desire to learn, would like to be more involved in care, treatment, and support, and would benefit from integration of cultural teachings into care. Despite existing barriers to care, Indigenous women continue to support one another and their families. Several sources of resilience are demonstrated by the participants.

Social Sciences: **Women and HIV**
Sciences sociales : **Les femmes et le VIH**

SSP11.06

Mental Health of newcomer HIV,TB Women 45 + Older Adult

Chantal N. Mukandoli

PWA(Toronto's People AIDS Foundation), Toronto, ON

Background: Women 45 + newcomer HIV+TB older Adult are facing mental health issues because misundertood the stystem after been accepted .Because of canadian law all the people who claim refugee need immigration test in three different categories, HIV,TB and Syphilis.The problematic cause mental health of women newcomer 45+ HIV+ TB Stigma is because they receive the news of disease without counselling. women with serious mental illness have higher morbidity and mortality .

Method: We create social group in safe places for women living with HIV and have experience of living with TB to come together to learn .The support session provided a safe place where women can speak about mental health issues ,medication, and accessing services and program.It is a place to empower and interact with each other and build each other capacity and knowlegde of HIV, TB stigma its related issues.They gain a sence of family and connection through cookig ,designer, knitting and other subject that women can bond, and learn.Peer support who run these groups received training in supporting and mentoring as home base care provider and facilitator.

Result: This project engaged 60 HIV+ 45 + TB stigma group exercises and skills capacity building activities at workshops. The workshop were hosted in Toronto (n=30),London Ontario (n=20) and Ottawa (n=10) all workshop took place between March and june 2018 ,each lasting 6.5 hours The workshop participants identify themselves as follows 72% as female ,28% as transwomen and they age range was 45-65 87% identify as female, 13% identify as transwomen attend the group session.

Conclusion: We are confident that social group for womens living with HIV,TB help to seek services ,reduce isolation and promote adhrence .Meaningful Involvement is more that inviting women at decision making tables but also addressing stigma and other personnal barriers that women might have.

Social Sciences: **Diversities of Sexual Expression: Identities and Contexts**
Sciences sociales : **Diversité des expressions sexuelles : identités et contextes**

SSP12.01

The Health of Women Raped During the Rwandan Genocide in 1994, Infected by HIV/AIDS, Stigmatized,Discriminated, Disabled and Poor

Chantal N. Mukandoli

African In Parternership Against AIDs), Toronto, ON

Background: The Rwandan genocide of 1994 was a truly traumatic and horrifying event. It was on of the most brutal acts of murder even committed .Over the course of 100 days from April 6 to July 16 1994, an estimates 1 million Tutsi and some moderate Hutu were slaughtered in the Rwandan genocide. The official government of Rwanda number of those killed in the genocide was very high level .During this period of terrible slaughter,more than 6 men,women and children were murdered every day. This brutally efficient killing was maintained for more than 3 months.

Method: In twelve years 1,003,227 individual Hutu in 1,958.634 cases of genocide of those ,approximately 840.824 Hutu were convicted. The UN estimate the number killed as 800.000 ,Rwandan government estimate 1,074,017 on the basis of the estimate of 1 million people killed in 100 days .(6 peoples in 60 minutes in 24 hours in 100 days) is 864,000 peoples.

Result: Between 250.000 and 500.000 who were raped in 1994 during genocide were infected with HIV and AIDS. This resulted from a systematic and planned use of rape HIV+ men as weapon of war and genocide. More than 67% women were raped in 1994 during the genocide and 33 % were murdered.

Conclusion: The health of women who was raped during the genocide 1994 in Rwanda because she is vulnerable, stigmatized, discriminated, mental health issues, trauma, poverty and insecure living circumstances, including unprotected housing, she need support and assistance (treatment, trauma counselling, shelter, and food)for make her to maintain her health and living longer.

Social Sciences: **Engaging (with) Communities in HIV Research**
Sciences sociales : **Participation des collectivités à la recherche sur le VIH**

SSP13.01

A Community-Based Portrait about Access to Treatment and Care through their Medical and Personal Paths of People Living with HIV in Quebec

Océane Apffel Font

Portail VIH/sida du Québec, Montreal, QC

Au Québec, la réalité de l'accès au traitement demeure plus compliquée que celle qui est divulguée dans les discours scientifiques et publics. La cascade de soins n'est pas une ligne droite mais un continu de barrières qui ne peut être expliquée que par les personnes qui vivent avec le VIH (PVVIH). En essayant de comprendre le vécu des PVVIH on pourra appréhender les besoins réels de l'accès aux soins et avancer, vers un Québec, un Canada et un monde sans sida ni VIH.

L'objectif est d'identifier tous les éléments présents dans le parcours qui mène et accompagne le traitement : les craintes, les barrières structurelles et économiques, les besoins oubliés, les interlocuteurs inattendus et ceux qui n'ont pas été présents lors que le besoin se présentait. L'objectif ultime est donc celui d'obtenir des récits qui permettront analyser les besoins réels des PVVIH au Québec ainsi qu'améliorer leurs connaissances sur l'accès au traitement et aux soins.

Les principes GIPA ont permis de préparer la collecte de données avec la participation active de la communauté. Les entretiens approfondis qualitatifs sur le terrain avec les PVVIH sont l'outil privilégiée pour dresser ce portrait. Après 22 entretiens qualitatifs et un focus group avec des intervenants les données ont été analysées à travers une méthodologie de théorie enracinée qui a permis une analyse centrée sur le terrain et les intersectionnalités présentes dans la problématique.

Les résultats préliminaires montrent une préoccupation par rapport aux vieillissement et à l'isolement qui a des liens avec l'accès et la compréhension des services sociaux et de santé de la province. Ils permettent aussi d'envisager l'importance de partager la totalité des résultats auprès des personnes participantes et le reste d'organismes du milieu VIH afin d'envisager, ensemble, une réflexion pour adapter à la réalité québécoise les services offerts à cette communauté.

Social Sciences: **Engaging (with) Communities in HIV Research**
Sciences sociales : **Participation des collectivités à la recherche sur le VIH**

SSP13.02

Lessons Learned from Canada's Supervised Consumption Service Providers Teleconference

Patrick McDougall, Carly Welham, Meghan Mullaly, Rosalind Baltzer Turje, Scott Elliott
Dr. Peter AIDS Foundation, Vancouver, BC

The Dr. Peter AIDS Foundation opened Canada's first SCS within a healthcare facility in 2002, and now organizes the SCS/OPS Service Providers Teleconference. This bilingual, monthly teleconference is a national network for interdisciplinary SCS/OPS service providers to share information and promising practices related to SCS/OPS, as well as substance use and HIV. To date, this Community of Practice has engaged 52 different individuals from 50 organizations across 20 Canadian cities. We have rapidly become national knowledge brokers, acting as a bridge between the fields of HIV/AIDS and harm reduction, and between individual community-based organizations.

This knowledge exchange forum assists communities in building their capacity to offer SCS/OPS by sharing lessons learned, challenges, and promising practices. The format of these monthly discussions involves introductions where each participating organization shares information on the services they offer, as well as a recent success or challenge they have encountered. We dedicate time to discussing key populations and emerging issues, which have included assisted injection, inhalation services, preventing overdoses in washrooms, integrating SCS/OPS into housing facilities, and drug testing.

This unique community of practice is a space where practitioners can share strategies for addressing challenges related to topics including overcoming practice barriers, peer engagement, building community relationships, and trauma informed approaches, as well as to coordinate a national response to advocate on issues related to HIV treatment and prevention, as well as drug policy. New and prospective service providers can build off the experience of other organizations offering SCS/OPS, and gain knowledge of multiple SCS/OPS models for enhanced HIV treatment and prevention service provision.

Social Sciences: **Engaging (with) Communities in HIV Research**
Sciences sociales : **Participation des collectivités à la recherche sur le VIH**

SSP13.04

Recreational Sports League Participation and Impacts Among Gay, Bisexual, and Other Men Who Have Sex With Men in Metro Vancouver

Nathan J. Lachowsky[1, 2], Gordon A. Wells[3], Jody Jollimore[4], Shenyi Pan[2], Justin Barath[2], Heather L. Armstrong[2, 5], Gbolahan Olarewaju[2], Eric A. Roth[1], David M. Moore[2, 5], Robert S. Hogg[2, 6]

1. University of Victoria, Victoria, BC, 2. British Columbia Centre for Excellence in HIV/AIDS, Vancouver, BC, 3. AIDS Committee of Toronto, Toronto, ON, 4. Community Based Research Centre Society, Vancouver, BC, 5. University of British Columbia, Vancouver, BC, 6. Simon Fraser University, Burnaby, BC

Background: Recreational sport leaguesby and for marginalized sexual and gender communities may be an untapped resource for intervention to improve community health. We sought to examine the prevalence and factors associated with gay sports league participation among gay, bisexual, and other men who have sex with men (GBM) in Metro Vancouver.

Methods: Prospective cohort data were collected from 02/2012-07/2018 from sexually-active Metro Vancouver GBM recruited using respondent-driven sampling (RDS). Every six months participants completed study visits, including self-completed surveys with questions on gay community involvement and social support (i.e. Lubben Social Network Scale), including gay sport league participation in the past 6 months. We used three-level mixed effects models (RDS recruitment chain; participant; visit) to conduct multivariable logistic regression to evaluate factors associated with playing in a gay sports league.

Results: Of 774 participants, approximately 1 in 10 (10.8%) participated in gay sports leagues in any given study period. In univariable analyses, playing sports was less likely among GBM who were HIV-positive (OR=0.59, 95%CI:0.35-0.98), Indigenous (OR=0.28, 95%CI:0.09-0.90), or lived outside Vancouver (OR=0.39, 95%CI:0.22-0.69). Playing sports was not associated with sexual identity (p=0.750) or being “out” (p=0.937). In multivariable analysis, participants who played sports were more likely to be <30 years versus 45+ (AOR=2.56, 95%CI:1.44-4.57), report $60,000+ versus <$30,000 annual income (AOR=2.16, 95%CI:1.21-3.85), report higher levels of social support (AOR=1.08, 95%CI:1.01-1.14), attend gay bars/clubs at least monthly versus not (AOR=3.87, 95%CI:2.07-7.23), and attend gay groups/meetings at least monthly versus not (AOR=3.38, 95%CI:2.06-5.54); sport players were less likely to report always using condoms (AOR=0.39, 95%CI:0.22-0.69), but no more likely to report other seroadaptive prevention practices (all p>0.05).

Conclusions: Combination HIV prevention interventions could maximize social and physical health benefits for sport participants. Further research should examine possible barriers to sport participation (e.g. based on HIV status, income, race/ethnicity, age, and location).

Social Sciences: **Gay, Bisexual and other Men who have Sex with Men (MSM)**
Sciences sociales : **Guais, bisexuels et autres hommes ayant des relations sexuelles avec des hommes (HARSAH)**

SSP14.01

Examining Resilience and Building Capacity Among Middle-Aged and Older Men Who Have Sex With Men: A Community-Based Research Collaboration

Renato (Rainier) M. Liboro[1], Tammy C. Yates[2], Francisco Ibañez-Carrasco[3, 4], Andrew Eaton[5], Daniel Pugh[4, 6], Lori E. Ross[1, 5], Paul A. Shuper[1, 5]

1. Centre for Addiction and Mental Health, Toronto, ON, 2. Realize, Toronto, ON, 3. Centre for Urban Health Solutions, St. Michael's Hospital, Toronto, ON, 4. Universities Without Walls, Toronto, ON, 5. University of Toronto, Toronto, ON, 6. Sherbourne Health, Toronto, ON

Despite being part of a population at increased risk for acquiring HIV, many men who have sex with men (MSM) aged 40 years and older (≥40y/o) have remained HIV-negative since the start of the epidemic. Among HIV-positive ≥40y/o MSM, many have exhibited resilience against HIV/AIDS not only by surviving its clinical and social impacts, but also by living full lives; fiercely advocating for their rights and needs; and supporting programs devoted to ending HIV/AIDS. The Public Health Agency of Canada (2013) has identified investigations involving older MSM, and strengths-based studies focused on HIV/AIDS, as priority areas in need of further research.

To address these gaps, we intend to examine in our CIHR-funded project the resources, strengths, and protective factors ≥40y/o MSM have that make them resilient against HIV/AIDS, as well as build capacity among ≥40y/o MSM. ≥40y/o MSM will be meaningfully involved in our project in three ways. As study participants, they will share with us input based on their lived/work and other significant experiences. As Community Advisory Board members, they will provide us guidance that will take into consideration the needs of ≥40y/o MSM during our entire research process. As staff peer researchers, three racially diverse ≥40y/o MSM will be recruited, hired, and involved in all project stages. As part of our research protocol, peer researchers will be trained in the principles and practices of Community-Based Research, the conduct of qualitative one-on-one interviews, the DEPICT model for participatory qualitative health promotion research analysis (Flicker & Nixon, 2014), and the creation of knowledge mobilization products by experienced trainers from the Universities Without Walls.

In this presentation, we will describe the details of our research protocol (i.e., meetings, consultations); highlight the challenges and lessons learned from our capacity building efforts; training-related feedback from our peer researchers; and recommendations for future initiatives.

Social Sciences: **Gay, Bisexual and other Men who have Sex with Men (MSM)**
Sciences sociales : **Guais, bisexuels et autres hommes ayant des relations sexuelles avec des hommes (HARSAH)**

SSP14.02

Survival as Resistance: Exploring Expressions of Resilience and Agency in Older HIV-Positive Gay Men's Healthcare Experiences

Hannah Kia, Daniel Grace, Carol Strike, Lori E. Ross
University of Toronto, Toronto, ON

Background: During the 1980s and 1990s, gay men living with HIV were critical in establishing community-based networks of HIV care and advocacy, often against contexts of profound stigma and discrimination pervading mainstream health systems. Accordingly, this group of sexual minority men has, based on its history of social and political action, been recognized for its past resilience and agency. This paper is among the first to outline empirical examples of this group's present day expressions of resilience and agency within healthcare systems.

Methods: 16 Toronto-based HIV-positive gay men, ages 50 and over, participated in 1-1.5 hour in-depth semi-structured interviews in which they were asked to discuss their healthcare experiences. Using a grounded theory approach known as situational analysis, we analyzed interview transcripts to generate themes and construct theory on older HIV-positive gay men's healthcare experiences. We drew upon the literature on resilience and agency to identify empirical examples of these phenomena across our findings.

Findings: We found recurrent narrative accounts of older HIV-positive gay men's resilience and agency in the healthcare experiences of our participants, which we organized into three primary categories. First, the men discussed constructing identity-affirming counter-discourses, often in their interactions with healthcare providers, to challenge negative stereotypes about aging HIV-positive gay men that they would commonly encounter in their experiences with health systems. Second, many described their contemporary contributions to community-based networks of HIV care as deliberate acts of resistance against often stigmatizing mainstream systems of care. Finally, several participants described capitalizing on their visibility as survivors of the HIV epidemic to effect change across healthcare.

Discussion: Expressions of resilience and agency are critical in shaping older HIV-positive gay men's healthcare experiences. We outline several implications of this finding for research, policy, and practice in the area of HIV and aging.

Social Sciences: **Gay, Bisexual and other Men who have Sex with Men (MSM)**
Sciences sociales : **Guais, bisexuels et autres hommes ayant des relations sexuelles avec des hommes (HARSAH)**

SSP14.04

Redefining At-risk Anal Sex in the Era of Biomedical Prevention

Ludivine Veillette-Bourbeau[1], Joanne Otis[1], Ken Monteith[2], Frédérick Pronovost[3], Jessica Caruso[1], Mobilise! study group

1. Université du Québec à Montréal, Montréal, QC, 2. COCQ-SIDA, Montréal, QC, 3. RÉZO, Montréal, QC

Background: HIV prevention messages destined for MSM highlight the effectiveness of PEP, PrEP and undetectable viral load strategies. However, most studies still rely on the determinants of condomless anal sex without regards to these other strategies.

Method: In 2016-2017, MSM in the greater Montreal region completed an online survey (Mobilise!). Data on HIV-negative and HIV-unknown respondents were used (n=816). To measure at-risk anal sex, two dependant variables were created: A) condomless anal sex with an HIV-unknown or HIV-positive partner; B) anal sex without using a condom, PEP or PrEP, with an HIV-unknown partner or an HIV-positive partner with a detectable or unknown viral load in the last 12 months. Multivariate logistic regressions have been performed to identify determinants of at-risk anal sex according to each measure.

Results: Using measure A (condomless anal sex), results indicate that 24% of respondents have had at-risk anal sex, compared to 9% when using measure B (anal sex without using a condom, PEP, PrEP or undetectable viral load). Multivariate analyzes show that determinants of at-risk anal sex are slightly different between the two measures. For measure A, determinants are: being of unknown HIV status (aOR: 2.9; p=0.003), having had an STI (aOR: 2.4; p=0.005), having had 6 partners or more in the last 12 months (aOR: 3.7; p<0.0001), using PrEP (aOR: 17.5; p<0.0001) and taking into account undetectable viral load as a risk reduction strategy (aOR: 24.9; p<0.0001). For measure B, determinants are: being of unknown HIV status (aOR: 3.4; p=0.003) and having had 6 partners or more (aOR: 3.7; p=0.001).

Conclusion: To produce evidence-based measurement of at-risk anal sex, all effective risk reduction strategies should be considered. Interventions should promote effective methods, especially PrEP, and regular testing with MSM who have had 6 partners or more in the last 12 months.

Social Sciences: **Gay, Bisexual and other Men who have Sex with Men (MSM)**
Sciences sociales : **Guais, bisexuels et autres hommes ayant des relations sexuelles avec des hommes (HARSAH)**

SSP14.05

Understanding Mental Health Service Access Among Gay, Bisexual, and Other Men Who Have Sex with Men (gbMSM) in Montréal, Toronto, and Vancouver

Ricky Rodrigues[1], Shayna Skakoon-Sparling[1], Syed Noor[1], Mark Gaspar[2], Herak Apelian[3], Marc Messier-Peet[3], Heather Armstrong[4], Gbolahan Olarewaju[4], Jody Jollimore[5], Joseph Cox[3], Gilles Lambert[6], Nathan Lachowsky[7], David Moore[4, 8], Daniel Grace[2], Trevor A. Hart[1, 2]

1. Ryerson University, Toronto, ON, 2. University of Toronto, Toronto, ON, 3. McGill University, Montreal, QC, 4. British Columbia Centre for Excellence in HIV/AIDS, Vancouver, BC, 5. Community-Based Research Centre for Gay Men's Health, Vancouver, BC, 6. Direction régionale de santé publique – Montréal, Montreal, QC, 7. University of Victoria, Victoria, BC, 8. University of British Columbia, Vancouver, BC

Background: Gay, bisexual, and other men who have sex with men (gbMSM) disproportionately experience poor mental health outcomes. These disparities are associated with an increased risk of HIV infection among HIV-negative/unknown gbMSM and poorer adherence to antiretroviral therapy among HIV-positive gbMSM. As such, it is important to address mental health among gbMSM.

Methods: A cross-section of gbMSM aged 16+ were recruited via respondent-driven sampling (RDS) in Montréal, Toronto, and Vancouver for the Engage study. Using descriptive statistics of preliminary, non-RDS-adjusted data from pooled participants who reported poor mental health in the past six months, we examined experiences across a cascade of access to mental health services.

Results: Of 1911 participants, 25.4% reported fair or poor mental health. Among those reporting poor mental health (N=148), 91.2% felt the need to access mental health services and 73% tried to access services, but only 60.1% received services. Participants who received services were on average 34.9 years old, had mild depression and moderate anxiety, and were largely HIV-negative (83.1%). The majority (59.5%) reported an annual income of less than $30,000 and the average financial strain score was high (2.31/3). Mental health services were received primarily from a family doctor (72%), counsellor (57.3%), or psychiatrist (50.6%) and usually for free (77.5%). Despite this, 46% reported that it was difficult to obtain services, and a third (33.7%) reported little to no satisfaction with services.

Conclusion: Although gbMSM report poor mental health, less than two thirds successfully access mental health services. GbMSM have difficulty accessing services. They primarily access no-cost services and experience limited satisfaction. More work is needed to better connect gbMSM with effective services that address their mental health needs, which have been shown to affect HIV-related health outcomes in other research.

Social Sciences: **Gay, Bisexual and other Men who have Sex with Men (MSM)**
Sciences sociales : **Guais, bisexuels et autres hommes ayant des relations sexuelles avec des hommes (HARSAH)**

SSP14.06

Knowledge and Attitudes Around Syphilis and Syphilis Pre-Exposure Prophylaxis (PrEP) Among Men Who Have Sex with Men in Vancouver: A Qualitative Study

Ronita Nath[1, 2], Troy Grennan[1, 2], Robin Parry[1], Fahmy Baharuddin[1], James Connell[1], Jason Wong[1, 3], Daniel Grace[4]

1. British Columbia Centre for Disease Control, Vancouver, BC, 2. Faculty of Medicine, University of British Columbia, Vancouver, BC, 3. School of Population and Public Health, University of British Columbia, Vancouver, BC, 4. Dalla Lana School of Public Health, University of Toronto, Toronto, ON

Objectives: In British Columbia, Canada, syphilis is at record-high rates, with over 80% of cases in 2017 seen in gay, bisexual, and other men who have sex with men (GBM). The epidemic is of particular concern for those living with HIV, since syphilis may lead to more serious complications in this population. We sought to inductively explore syphilis-related knowledge, and attitudes around biomedical prevention options for syphilis in an age of HIV pre-exposure prophylaxis (PrEP), with the goal of informing effective strategies to address the syphilis epidemic.

Methods: We conducted in-depth, semi-structured individual interviews with a heterogeneous sample of GBM, including men living with HIV and/or with a history of syphilis. Our interviews focused on participants' knowledge around syphilis and perceptions regarding syphilis PrEP. Interviews were audio-recorded, transcribed verbatim, and analyzed using Grounded Theory.

Results: Twenty-five GBM were interviewed (64% white; median age: 43 years). Four overarching themes emerged regarding men's views about syphilis. First, syphilis-related knowledge differed according to HIV and syphilis serostatus. Second, competing ideas emerged regarding men's concerns about syphilis. While our participants expressed concern about getting syphilis, they also described the importance of sexual intimacy and pleasure. Third, many participants said that bacterial STIs were not perceived to be particularly alarming; preventing HIV infection remained a primary concern for many. Finally, although syphilis PrEP was appealing to some, participants were concerned about antibiotic resistance, cost, and side effects.

Conclusions: Concern for syphilis appeared low among GBM. Our participants tended to organize their safer sex strategies around HIV, not syphilis. Although syphilis-related knowledge was relatively high among GBM living with HIV and those with a prior syphilis diagnosis, this knowledge did not appear to be associated with increased condom use. This work highlights the importance of examining other potential acceptable prevention solutions, such as syphilis PrEP.

Social Sciences: **Gay, Bisexual and other Men who have Sex with Men (MSM)**
Sciences sociales : **Guais, bisexuels et autres hommes ayant des relations sexuelles avec des hommes (HARSAH)**

SSP14.07

PrEP on the Prairies: A Collaborative Model for Community-Based HIV Prevention

Rachel Loewen Walker[1], Heather Hale[2]

1. OUTSaskatoon, SASKATOON, SK, 2. Saskatoon Sexual Health, Saskatoon, SK

In larger cities, PrEP clinics and initiatives are common, but in smaller centres the PrEP landscape can look quite different. These differences are not due to lack of intent, but rather lack of resources, reduced anonymity, and even differences in local policies and politics. This presentation will outline the experiences of Saskatoon's first PrEP clinic, providing insights into the provision of such services in smaller cities and rural environments. First opened in June of 2018, Saskatoon's PrEP clinic is entirely community-initiated, run, and supported. Specifically designed to meet the needs of the LGBTQ2S community, the monthly clinic operates out of OUTSaskatoon, a queer community centre, is staffed by a volunteer physician and supported by Saskatoon Sexual Health. In line with research indicating that community-run HIV initiatives have positive impact on uptake and prevention, this presentation will discuss the efficacy of a community-run PrEP clinic in relation to the HIV epidemic in Saskatchewan and across the prairies. As well, we will discuss the benefits of cross-sector collaboration as it enables smaller centres to leverage resources in the development of needed services. Lastly, we will highlight some of the successes and difficulties thus far as well as look at the demographic profile of the population served.

Social Sciences: **Gay, Bisexual and other Men who have Sex with Men (MSM)**
Sciences sociales : **Guais, bisexuels et autres hommes ayant des relations sexuelles avec des hommes (HARSAH)**

SSP14.08

Cardiovascular Disease among Bear-identified Gay, Bisexual, and other Men who have Sex with Men (gbMSM) in Vancouver: Notice to Family Doctors

Marcus Greatheart[1], Heather L. Armstrong[1, 2], Shenyi Pan[2], Justin Barath[2], Kiffer G. Card[3], Everett Blackwell[4], Robert S. Hogg[2, 5], Eric A. Roth[6], Nathan J. Lachowsky[2, 3], David M. Moore[1, 2]

1. Faculty of Medicine, University of British Columbia, Vancouver, BC, 2. British Columbia Centre for Excellence in HIV/AIDS, Vancouver, BC, 3. School of Public Health and Social Policy, University of Victoria, Victoria, BC, 4. Momentum Health Study Community Advisory Board, Vancouver, BC, 5. Faculty of Health Sciences, Simon Fraser University, Vancouver, BC, 6. Department of Anthropology, University of Victoria, Victoria, BC

Introduction: "Bears" are a self-identified subculture of gay men typically characterized as heavier and hairier than normative male ideals. For many, this identity provides important social and sexual connections; however, large body mass may impart adverse health risks. We investigated how Bear identity may be associated with cardiovascular disease (CVD), among a sample of gbMSM living in Vancouver.

Methods: From 02/2012-02/2015, we used respondent-driven sampling (RDS) to recruit MSM aged ≥16 years. In 03/2015 we added questions regarding subculture identification. Participants also completed a nurse assessment of body mass index (BMI) and medical history including CVD (coronary artery disease/angina, congestive heart failure, stroke) or CVD risk factors (hypertension, hyperlipidemia). Logistic regression was used to determine factors associated with CVD/CVD risk factors among Bears and non-Bears, stratified by BMI ≥ and <30. Analyses are RDS-adjusted.

Results: Of 541 participants who completed the subculture identity questions, 161(29.8%) identified as "Bears". 29.2% of Bears reported CVD compared with 14.2% of non-Bears ($p<0.001$). In multivariable analysis, CVD/CVD risk factors were more likely among MSM who were >40 years, daily smokers, taking prescription medications, living in greater Vancouver (vs. downtown), earning ≥$60,000 vs. <$30,000, and who had BMI ≥30 and some preexisting medical conditions. HIV-seropositivity was not associated with CVD in multivariate analysis (Table).

Discussion: Bears with high-BMI may be especially at risk for CVD. Family doctors should be aware that high-BMI male patients who identify as Bears may be reluctant to lose weight. Alternative management strategies should be considered.

... 2

Table 1. Likelihood of CVD or CVD risk factors among gbMSM

		Univeriable		Multivariable	
N=541	N (RDS%)	OR	95%CI	aOR	95%CI
Bear and BMI category					
Bear BMI ≥30	48 (8.1)	Ref		Ref	
Bear BMI <30	113 (20.9)	0.45	0.21, 0.97	0.37	0.13, 1.05
non-Bear BMI ≥30	19 (2.5)	1.43	0.42, 4.83	3.95	0.85, 18.47
non-Bear BMI <30	361 (66.7)	0.25	0.13, 0.48	0.28	0.11, 0.69
Age					
<40 years	322 (57.4)	Ref			
≥40 years	219 (42.6)	**6.72**	**4.15, 10.88**	**6.21**	**3.38, 11.40**
Neighbourhood					
Downtown Vancouver	270 (52.8)	Ref		Ref	
Elsewhere Vancouver	166 (26.1)	**0.38**	**0.21, 0.71**	**0.71**	**0.33, 1.53**
Greater Vancouver	105 (21.2)	1.44	0.89, 2.35	3.27	1.69, 6.34
Income					
<$30,000	320 (65.4)	Ref		Ref	
$30,000-$59,999	151 (23.7)	1.03	0.61, 1.74	1.28	0.66, 2.47
≥$60,000	70 (10.9)	**3.80**	**2.13, 6.78**	**5.36**	**2.54, 11.32**
HIV Status					
HIV-negative	380 (69.7)	Ref		Not selected	
HIV-positive	161 (30.3)	**1.68**	**1.09, 2.59**		
Takes Rx Medication	179 (31.2)	**2.21**	**1.44, 3.39**	**2.10**	**1.18, 3.74**
Daily Smoker	114 (21.4)	1.43	0.89, 2.31	**2.03**	**1.11, 3.71**
History of:					
Diabetes	15 (3.2)	**16.38**	**4.95, 54.18**	**6.17**	**1.27, 29.04**
Chronic kidney disease	4 (1.7)	**12.09**	**2.68, 54.55**	**21.61**	**3.76, 124.31**
Stomach ulcers	24 (5.1)	**3.13**	**1.42, 6.88**	**5.23**	**1.86, 14.68**
Enlarged prostate	13 (2.4)	**4.68**	**1.52, 14.44**	**4.99**	**1.22, 20.49**
Cancer	27 (3.5)	**3.53**	**1.40, 8.92**	Not selected	
Hepatitis C	41 (9.1)	1.44	0.73, 2.82	Not selected	

Social Sciences: **Gay, Bisexual and other Men who have Sex with Men (MSM)**
Sciences sociales : **Guais, bisexuels et autres hommes ayant des relations sexuelles avec des hommes (HARSAH)**

SSP14.09

How Gay, Bisexual, and Two-Spirit Men Seek Drug Use and Condomless Sex on The Internet: Implications for HIV Interventions

Rusty Souleymanov
University of Manitoba, Winnipeg, MB

Introduction: Research has shown that websites and mobile apps are important spaces for gay and bisexual men who seek drug use and condomless sex (a practice known as Party-n-Play/PNP). Developing online-based HIV prevention interventions for gay and bisexual men who seek PNP online and who are at risk of acquiring HIV and other STIs may require an understanding the role of online technologies in the lives of these men. This Canadian study examined how and why gay and bisexual men navigate online venues to seek PNP.

Methods: In-depth 1 hour interviews were conducted between October 2016 and January 2017, with 44 gay, bisexual, and Two-Spirit men who lived in Toronto, and who used crystal methamphetamine, GHB, cocaine, ketamine, MDMA/ecstasy or poppers before or during sex with another man during the previous month. Participants were recruited through social media and online postings. Interview data were analyzed using critical discourse analysis.

Results: For gay and bisexual men who PNP, the use websites and apps allowed them to anonymously seek out certain drug- and sex-related practices that may elevate exposure to HIV without being stigmatized. The study uncovered that discourses afforded by the infrastructures of online technologies offered new sexual arrangements for PrEP-using gay and bisexual men who PNP. The findings also showcased how websites and apps facilitated the formation of new identities among HIV-undetectable gay and bisexual men who PNP.

Discussion: HIV prevention and care interventions should consider the implications of the fact that online technologies may be starting to offer new tools to discursively explore, manage, or re-define sexual and drug-related risk practices and HIV-positive identities. Future research should focus on how the relationality and attachments between gay and bisexual men who PNP are continuously being affected by the proliferation of online technologies.

Social Sciences: **Gay, Bisexual and other Men who have Sex with Men (MSM)**
Sciences sociales : **Guais, bisexuels et autres hommes ayant des relations sexuelles avec des hommes (HARSAH)**

SSP14.10

Gay, Bisexual and Men Who Have Sex with Men (GBM)'s Interactions with Online Outreach Workers and Health Topics Discussed

David J. Brennan, Maya Kesler, Tsegaye Bekele

University of Toronto, Toronto, ON

Intro/Background: As the Internet is increasingly becoming a platform for sexual health education, gay, bisexual and other men who have sex with men (GBM) are having greater interactions with online outreach workers but little is known about the content or their assessment of these interactions.

Methods: Recruitment of GBM aged 14+ into the #iCruise study occurred across Ontario from 07/2017-01/2018 via socio-sexual websites/apps. Participants reported details about the interactions they had with online outreach workers including what health topics were discussed and gave an assessment of the interaction via Likert scale questions.

Results: A total of 910 GBM who completed baseline data collection for #iCruise were eligible for this analysis. Half of participants (49%) reported being under age 30, 62% White, 65% gay-identified, 12% HIV-positive, 44% with some University education, and 12% living in rural areas. Among the sample, nearly 10% (9.7%, n=88) reported having ever interacted with an online outreach worker: 37 (42%) reported one interaction, 38 (43%) reported 2-5 interactions and 8 (9%) reported 6+ interactions; 5 (6%) unsure. Healthy sex (34%) and HIV/STI testing (e.g., where to get tested; 34%) were the most popular topics discussed, followed by HIV/STI prevention (27%), PrEP (19%), HIV/STI transmission risk (17%), HIV/STI treatment and care (13%), condoms (11%) and lube (11%). When rating the outreach interaction, GBM reported: it was easy to understand (92%), gay/bisexual friendly (88%), relevant to gay/bisexual guys (87%), "didn't make me feel bad about myself" (79%), applicable (72%), and the interaction had fully answered their question (74%). Over half of the participants reported the information was trans friendly (56%) and relevant to trans guys (52%).

Discussion: A significant minority of GBM had interactions with online outreach that covered a wide range of health topics. These interactions were generally very positive and rated understandable, applicable, and inclusive.

Social Sciences: **Indigenous Health**
Sciences sociales : **Santé des Autochtones**

SSP15.01

Exploring Factors of HIV and HCV Prevalence Among First Nations, Métis and Inuit Communities Living in Precarious Condition in Montreal

Gilbert Emond[1], Carrie Martin[2], Cécile Tremblay[3], Sylvain Beaudry[6], Sandra Trifa[4], 'Rose-Marie Genest[4], Faisca Richer[5]

1. Concordia University, Montreal, QC, 2. CAAN, Montreal, QC, 3. Centre de Recherche de l'Université de Montréal (CRCHUM), Montréal, QC, 4. CLSC Métro, CIUSS Centre-Ouest-de-l'Île-de-Montréal, Montréal, QC, 5. McGill University, Montréal, QC, 6. independent researcher, Montréal, QC

Objectives: To explore prevalence factors of HIV and HCV among First Nations, Métis and Inuit (FNMI) Communities living in Montreal who are in precarious conditions.

Methodology: Over 2018, *Étude Rencontre – Encounter Study* nurses met 200 participants from FNMI Communities present in shelters, Indigenous Native Friendship Centre and Montreal downtown day centres. Encounters included consent, interview, HIV counselling, blood sample and HIV rapid test offer, STI testing; standard tests results: two weeks later. Treatments and follow ups offered when required. Preliminary results (n=180), base of this abstract, were shared with FNMI responsible persons. FNMI population in precarious condition in Montreal is estimated to 900 of the 20 000 indigenous people residents in Montreal, this means actual results are based on a high sample rate with limited precision of statistics, numbers should be considered for their range only.

Results: Most of Indigenous population in Montreal are first generation and represent less than 1% of total population; Indigenous homeless people represent 10% of homeless and half of participants (51%) are Inuit. Overrepresentations are important while "safety net" against disorganization for Indigenous people newly in town is limited, particularly around health issues. Majority of participants report past with sexual violence (47%) and time in jail (83%). Positive results to HIV are at 6,4% (95%CI 3.6%-11.1%), prevalence of HCV is at 21%.

Conclusion: HIV and HCV prevalence are similar to Montreal homeless, to Toronto Indigenous homeless population, lower than statistics for Indigenous in Prairies and BC cities and higher than Montreal general population. Indigenous origins are important factors linked to living in precarious conditions; however, living in precarious conditions, not directly Indigenous origins, is factor linked to HIV and HCV higher prevalence. Recommendations propose to have unique inclusive venues identified to FNMI people cultures and practices for support, health and social services in Montreal.

Social Sciences: **Indigenous Health**
Sciences sociales : **Santé des Autochtones**

SSP15.03

Ikajurniq: An Inuit Cascade of Care Framework for Sexually Transmitted and Blood Borne Infections

Savanah Ashton, Sipporah Enuaraq, National Inuit Sexual Health Network
Pauktuutit Inuit Women of Canada, Ottawa, ON

Introduction: Inuit in Canada are experiencing high rates of sexually transmitted and blood-borne infections (STBBIs). While there is limited Inuit-specific statistical information, we know that chlamydia, gonorrhea and syphilis rates in Inuit regions are high. A central approach to reducing STBBIs among Inuit communities is the development of effective methods to increase the number of Inuit being tested, diagnosed and treated before they spread infection to others.

Methods: At its inaugural meeting in November 2017, the National Inuit Sexual Health Network, made up of sexual health experts and community representatives, developed an Inuit-specific STBBI Cascade of Care framework called Ikajurniq – meaning “the act of helping”.

Results: Ikajurniq builds on best practices in prevention and treatment of STBBIs in Canada, while recognizing both the particular challenges and the known enablers in reaching, testing and treating Inuit with STBBIs in northern communities.

Conclusions: Inuit experience high rates of STBBIs and face particular challenges in completing the testing and treatment journey. The enablers described in Ikajurniq can greatly increase the number of Inuit who successfully navigate the STBBI cascade of care.

Social Sciences: **Indigenous Health**
Sciences sociales : **Santé des Autochtones**

SSP15.04

Uncontacted Brazilian Indigenous Peoples: The 2019 Announced Genocide Under Bolsonaro's Administration

Alberto Carneiro Barbosa de Souza
Wilfrid Laurier University, Waterloo, ON

In Brazil, it is estimated that the total indigenous population comprises 896 thousand individuals, divided in 305 ethnicities and 274 languages. However, the Indigenous HIV epidemiological profile is under reported by both Public Health agencies and academic researches. The first case of seropositivity for HIV officially reported in the Brazilian indigenous population was registered in 1987 in the state of Mato Grosso. In 2014 the incidence in indigenous peoples for HIV infections accounted for only 0,4% of the total notifications in the country, a sub notification data due to racism and discrimination against the "Originated Peoples", similar to Canadian "First Nations".

Considering the relevance of discussing HIV/AIDS among Indigenous populations and the challenges in studying this theme, this presentation aims to summarizing the scientific production related to HIV/AIDS amongst indigenous populations in Brazil and most importantly, alert the HIV/AIDS research community in Canada about the newly elected president Mr. Bolsonaro's genocide agenda by displacing many uncontacted Originated Peoples off their land in order to transforming the Amazon into commodities for export, impacting on the HIV prevention among Indegenous,

This presentation is justified for the urgency of research production on this theme with the purpose of engendering reflections on the available information and contributing to future research in Canada about HIV/AIDS vulnerability among Indigenous peoples in the Americas.

After an extensive literature review using LILACS, PUBMED and VHL, I propose the following questions for this presentation: 1) To what extent do we count on scientific evidence from the literature published on HIV/AIDS about the indigenous population in Brazil in the last 5 years ? and 2) What would be the impact of the Mr. Bolsonaro's announced genocide in 2019 among the Originated Peoples' HIV/AIDS vulnerability in the Brazilian Amazon and what can Canadian HIV research community do about it?

Social Sciences: **Indigenous Health**
Sciences sociales : **Santé des Autochtones**

SSP15.05

Designing a Culturally Safe and Appropriate mhealth Program for Indigenous People Living with HIV

Amber R. Campbell[1, 2, 3], Valerie J. Nicholson[2, 4], Sandy Lambert[2, 5], Patrick L. Hill[6], Helene C. Cote[3, 7], Piotr Klakowicz[9], Christy Sutherland[10], Grant W. Edmonds[11], Neora Pick[2, 3, 8], Melanie C. Murray[2, 3, 8]

1. Division of Experimental Medicine, University of British Columbia, Vancouver, BC, 2. Oak Tree Clinic, BC Women's Hospital, Vancouver, BC, 3. Women's Health Research Institute, BC Women's Hospital, Vancouver, BC, 4. Canadian Aboriginal AIDS Network, Vancouver, BC, 5. DUDES Club, Vancouver Native Health Society, Vancouver, BC, 6. Department of Psychological and Brain Sciences at Washington University in St. Louis, St. Louis, MO, USA, 7. Department of Pathology and Laboratory Medicine, University of British Columbia, Vancouver, BC, 8. Division of Infectious Disease, Department of Medicine, University of British Columbia, Vancouver, BC, 9. Vancouver Native Health Society, Vancouver, BC, 10. Portland Hotel Society Clinic, Vancouver, BC, 11. Oregon Research Institute, Eugene, OR, USA

Introduction: WelTel is a bidirectional text-messaging program that improves adherence to antiretroviral therapy in people living with HIV (PLWH). However, the promise of WelTel relies on individual's ability and tendency to engage with the service, working best for those actively engaging with the program. Health psychology suggests examining sense of purpose, conscientiousness, and agreeableness to predict who engages in healthier lifestyles. Measuring personal disposition is simple and rapid, and could be used to personalize adherence supports. However, there is minimal research on personal disposition and health in Indigenous communities of Canada.

Methods: We are collaborating with Indigenous Elders and community to ensure the cultural safety and appropriateness of both the WelTel study design, and a study to validate measures of personal disposition among Indigenous communities of Vancouver, BC. Elders and healthcare providers assessed questionnaires and Elders designed Indigenous spiritual health questions to include. Two Sharing Circles were held to gain community input on WelTel program and questionnaire design, one with Indigenous women living with HIV (n=8), and one with Indigenous men living with HIV (n=10). Each Sharing Circle was designed and guided by Elders, voice recorded for transcription, and visually recorded via infographics.

Results: Indigenous PLWH expressed value in WelTel, stating that WelTel is accessible, empowers autonomy in health care, improves medication adherence, and may assist in regaining and strengthening connections with care providers, family, and community. Sharing Circles led to three main actions: amendment of the planned WelTel program and questionnaires to ensure cultural safety, creation of visual knowledge translation pieces, and hiring of two Indigenous PLWH as Peer Research Assistants to facilitate conducting questionnaires.

Conclusion: Community collaboration will act to create a feasible and culturally safe mHealth adherence program for Indigenous PLWH in Vancouver, BC. Indigenous community involvement builds capacity by empowering ownership and accessibility of the research.

Social Sciences: **Indigenous Health**
Sciences sociales : **Santé des Autochtones**

SSP15.06

Accessing Healthcare Services and Supports: The stories of 13 Straight and Two-Spirited identified Males Living with HIV in Ontario, Canada

Sean A. Hillier
York University, Toronto, ON

Background: In 2014-2015 Indigenous peoples represented 17.5% of all HIV infections in Canada, yet accounted for only 4.3% of the population. In 2008 in Ontario (ON), Indigenous people accounted for an estimated 3.2% of people living with HIV, while comprising 2.4% of the population. This research study sought to assess the efficacy of funding and services for HIV/AIDS services within ON First Nations (FN) communities. This presentation will focus on the experiences of straight and two-spirited identified males to understand how access to services and care has impacted this understudied group.

Methods: ON FN people living with HIV/AIDS (n=29) participated with 13 identifying as a straight or two-spirited male. Using the Indigenous based method of storytelling, participants were asked five open-ended questions related to their use of and access to healthcare services. Stories were transcribed and analyzed using Nvivo to bring forward common themes from each story. Transcriptions form re-written stories, detailing the life and experiences of the participants and their experiences of living with HIV/AIDS and accessing care.

Results: All participants experienced issues with access to care and supports. Participants (n=9) were forced to leave their northern communities, either permanently or temporally, due to limited access to care. HIV related stigma (straight men being labeled as gay) played a role in access to prevention, testing, and care. All straight identified participants indicated difficulties with accessing HIV education and understanding their own HIV status. Straight males identified a lack of services and supports geared toward their unique needs and concerns. Historical traumas and violence were a central theme to these men's stories.

Conclusions: There is a pressing need for culturally competent and relevant HIV prevention measures and education that takes into account the unique needs and wants of straight men not traditionally targeted within interventions and the care continuum.

Social Sciences: **Indigenous Health**
Sciences sociales : **Santé des Autochtones**

SSP15.07

Wellness Wheel, Inc. The Delivery of Primary and Chronic Diseases Care, and Communicable Disease Services to Indigenous Communities in Saskatchewan

Stuart Skinner[1], Susanne Nicolay[2], Jolee Saskamoose[2], Bonnie Richardson[1], Cara Spence[1], Mamata Pandey[3], Carla Crozier[2], Adam Clay[3], Stephanie Konrad[2]

1. University of Saskatchewan, Saskatoon, SK, 2. Wellness Wheel, Regina, SK, 3. Saskatchewan Health Authority, Regina, SK

Chronic and communicable diseases disproportionately affect Indigenous people in Saskatchewan both on- and off- reserve. Provision of equitable access to care is required to remove barriers to care and effectively engage Indigenous peoples in the care, treatment, and management of the chronic and/or communicable diseases individuals experience.

The Wellness Wheel (WW) care model has been implemented in more than 10 sites over the past 8 years, directly serving 19 First Nation communities. This multi-disciplinary, integrated services care model links services from central urban settings to remote and on–reserve communities in a 'hub and spoke' model. Community-led, WW provides culturally safe, holistic care in northern First Nations communities, in partnership with the Saskatchewan Ministry of Health, Public Health Agency of Canada, and Indigenous Affairs (formerly First Nations Inuit Health Branch) and Health Canada.

This new healthcare delivery model focuses on chronic disease and is evidence-based in order to:

- Align with Indigenous ways of a strengths-based, wellness approach rather than the traditional Western model of care that focuses on deficits and illness/disease.
- A shift from an "infectious disease model" to a "chronic disease model" to improve disease screening, immunization, antiviral uptake and virologic suppression rates.
- Enhance model of care for HIV and Hep C with a patient-led approach rather than disease-led approach
- A shared care model, where physicians, nurses and First Nation communities work together in a more cost-effective method to increase service uptake and patient and community customization, in turn resulting in a more culturally appropriate, culturally safe health care service
- Provide outreach and virtual clinics to augment centrally provision of services.

This presentation will describe the WW care model, and report on the successes and challenges of the model, including stakeholder recommendations on the sustainability of the model.

Social Sciences: **Indigenous Health**
Sciences sociales : **Santé des Autochtones**

SSP15.08

Inuit Community HIV Prevention, Education & Screening: Collaboratively Adapting a Community Driven and Culturally Responsive Tool to Gauge Community Readiness

Jenny R. Rand[1], Audrey Steenbeek[1], Ashlee-Ann Pigford[2], Tracy O'Hearn[2], Marni Amirault[3], Janet Curran[1], Igah Sanguya[4], Diane Sammurtok[5], Renee Masching[3], Barbara Plested[6], Pamela Jumper Thurman[6]

1. Dalhousie University, Halifax, NS, 2. Pauktuutit Inuit Women of Canada, Ottawa, ON, 3. Canadian Aboriginal AIDS Network, Dartmouth, NS, 4. Government of Nunavut, Health, Clyde River, NU, 5. Government of Nunavut, Health, Arviat, NU, 6. Colorado State University, Fort Collins, CO, USA

Using a partnership approach, our research team comprised of community members across Inuit Nunangat and representatives from the Canadian Inuit HIV/AIDS Network (CIHAN), Pauktuutit, Inuit Women of Canada, the Canadian Aboriginal AIDS Network (CAAN), and Dalhousie University, endeavored to adapt the Community Readiness Model (CRM) for use with Inuit communities.

The CRM is a nine-stage, multi-dimensional model that facilitates change and prepares communities for better integration of an intervention. The model's success is in part attributed to the fact that it matches the intensity of prevention/intervention efforts to a community's level of readiness, thus attending to local realities within the community.

This study sought to answer question related to: How the CRM may best be adapted and used to measure Inuit community readiness to engage in HIV/AIDS education, prevention and screening; the community readiness levels of the partnering communities; and what HIV/AIDS education, prevention and screening strategies would work for remote Inuit communities at their respective levels of readiness.

This study builds directly on priorities outlined by Inuit communities and is facilitated through strong long-term partnerships ensuring community-driven and culturally appropriate processes throughout the project. Additionally, this study is grounded in Inuit Qaujimajatauqangit (IQ) and adds to the increasing knowledge surrounding Inuit research methodologies and Inuit health research.

Reporting on activities done to date, this presentation will demonstrate that as this project continues it is a growing example of work being done within Inuit Nunangat that is community-led and culturally responsive in addressing HIV/AIDS in Inuit communities. Findings will be disseminated with Inuit communities through community-identified means, and through a dissemination workshop so that communities across Inuit Nunangat will be able to use the model to determine factors that impact readiness for HIV prevention interventions and help to develop plans for action.

Social Sciences: **Indigenous Health**
Sciences sociales : **Santé des Autochtones**

SSP15.09

"Women Healing Living the Good Life": Reflections on Conducting Research from a Decolonizing Lens

Adina Lakser[1], Carey Sinclair[2], Laverne Gervais[3], Marissa Becker[1], Sharon Bruce[1]
1. University of Manitoba, Winnipeg, MB, 2. Ndinawe, Winnipeg, MB, 3. Ka Ni Kanichihk, Winnipeg, MB

"Women healing living the good life" is the name this Manitoba-based project received through ceremony with our Knowledge Keeper, Carey Sinclair, and Elders. This name highlights the project's commitment to healing, ceremony, community building and spirituality. The project is part of a larger national cohort study (Canadian HIV Women's Sexual and Reproductive Health Cohort Study – CHIWOS) that aims to assess the availability, uptake and effect of women-centered HIV and AIDS services. The overall purpose of the Manitoba-based project is to inform development of services for Indigenous women living with HIV. Partners are Ka Ni Kanichihk, Sisters of Fire, Nine Circles Community Health Centre, Manitoba Harm Reduction Network, Manitoba HIV Program and the University of Manitoba.

Over the past three years, the project has included an environmental scan of Manitoba HIV-related services, an arts-based data generation event, knowledge exchange activities, and developing a framework for Indigenous women HIV services. Aside from its goals of informing service development, the project also focuses on processes including: operating from and applying a decolonizing lens; conducting research that is led by and is meaningful to those most affected by HIV; and proceeding in a way that honours the dignity and spirit of all those involved. Research team meetings have included much discussion and reflection on how to develop, implement and evaluate research conducted "in a good way".

This presentation will address the context and application of a decolonizing lens in HIV research action, incorporating spirituality and ceremony in meaningful and multi-layered ways, and the gifts and challenges of centering our work around the experiences and stories of Indigenous women living with HIV. We will highlight the goals, successes, and lessons learned in attempting to authentically do research that operates from a decolonizing lens.

Social Sciences: **Indigenous Health**
Sciences sociales : **Santé des Autochtones**

SSP15.10

Relationship Quality and Unmet Service Needs Among Indigenous Canadians in HIV-serodifferent Relationships: Results from the National Positive Plus One Study

Sandra L. Bullock[1], Renée Masching[2], Liviana Calzavara[1], Joshua Mendelsohn[3]

1. University of Toronto, Toronto, ON, 2. Canadian Aboriginal AIDS Network, Halifax, NS, 3. Pace University, New York, NY, USA

Background: While Indigenous persons are overrepresented in the Canadian HIV epidemic, little is known about their HIV-serodifferent relationship status and quality, and the association with HIV-related health and social support needs. Quality of life, including relationship satisfaction, is known predictors of health status.

Methods: Positive Plus One is the first Canadian national mixed-methods study of HIV-serodifferent relationships. Participants were recruited from 145 ASOs and clinics across the country, including 26 Indigenous-focused organizations. Relationship satisfaction was measured with the short form of the Investment Model (IM) Scale, and sexual satisfaction on a 5-point Likert scale. We provide a description of the Indigenous participants' relationship quality, HIV-related health status, health service use, and unmet relationship-support needs.

Results: 613 people from across Canada completed an on-line and telephone survey about their HIV-serodifferent relationships. Sixty participants self-reported as Indigenous (65% HIV-positive, 35% HIV-negative). Among the Indigenous sub-sample, mean relationship length was 4.6 years. Of HIV-positive partners; 85% were on ART, and 76% of those report an undetectable viral load. Participants self-reported a mean of 3.9/5 (SD 1.05) on the IM scale; 67% reported they were satisfied/very satisfied with their sexual relationship. However, 28% of participants felt their relationship was in trouble due to HIV, often in early stages of the relationship. Asked if they had participated in relationship counselling since the onset of serodifferent status, 18% had, while 40% had not but would have liked to.

Conclusions: Many Indigenous participants in HIV-serodifferent relationships reported good relationship quality; however, HIV-related challenges affected many and there was an expressed need for relationship support. An important limitation of this study was the exclusion of those not linked-to-care. Participants were recruited through ASOs and clinics, demonstrating that those linked to support and care can have positive relationships in the context of HIV.

Social Sciences: **Indigenous Health**
Sciences sociales : **Santé des Autochtones**

SSP15.11

miyo-pimâtisiwin iyiniw-iskwênâhk (Good Health/Living Among Indigenous Women): Visioning Women-Centred Health Services for Indigenous Women Living with HIV

Jaqueline Anaquod, Carrie Bourassa, CHIWOS Research Team
University of Saskatchewan, Morning Star Lodge, Regina, SK

Background: Women living with HIV use many services to support and to improve their health and well-being. The purpose of this study is to understand the perspectives of women living with HIV on the availability, value, and meaning of Women-centred HIV care services. The proposed research explores the narratives of what contributes to their health needs being Indigenous women living with HIV through a photovoice project. This research aims to explore strength based factors, through the use of photovoice, that contribute to positive health outcomes for Indigenous women living HIV in Treaty 4 & 6 Territories.

Methods: Indigenous methodologies of Storytelling and Sharing Circles were used in this mixed qualitative approach and one non-Indigenous approach being Photovoice. Photovoice, an empowering community-based research strategy, was utilized and the women in this project were asked to go into the community and take pictures of their understandings of their health to answer 4 questions as it pertains to them personally: 1) How do you feel about your health status?; 2) How do you feel about the health care you are receiving now?; 3) How do you envision your ideal health care?; 4) How do you envision your ideal health?

The project recruited 8 Indigenous women living with HIV and completed the research process over 2 days. The Women were asked to capture pictures of items, objects, and landscapes that signify Women-centred HIV care services. Through pictures and story-telling through Sharing Circles the Women defined and spoke about their understandings of Women-centred HIV care services, the use of these services and whether they found them accessible, and about the value of these services in their lives.

Results: Collective Consensual Data Analytic Procedure is an Indigenous grounded data analysis process that will be utilized. The findings from this project will be discussed at CAHR 2019.

Social Sciences: **People Who Use Drugs and HIV**
Sciences sociales : **Le VIH et les utilisateurs de drogues**

SSP16.03

Food as Harm Reduction: the Intersection of Food Security, Food Access and Harm Reduction Services for People Living with HIV Who Use Drugs

Christiana Miewald[2], Eugene McCann[2], Cristina Temenos[3], Alison McIntosh[2], Patrick McDougall[1], Meghan Mullaly[1], Rosalind Baltzer Turje[1]

1. Dr. Peter Centre, Vancouver, BC, 2. Simon Fraser University, Vancouver, BC, 3. Northeastern University, Boston, MA, USA

Background: The Food as Harm Reduction (FaHR) study explored the role food provision plays in reducing harms associated with illicit drug use. Specific research objectives were to: determine how and when access to food (or lack thereof) impacts the health and well-being of People Living with HIV (PLWH) who use drugs; document how PLWH who use drugs navigate their environment in order to access food and harm reduction resources; and highlight the importance of safe and supportive food sites as a means to reducing the nutritional harms of drug use.

Methodology: Working with academic and community researchers from Simon Fraser University and the Dr. Peter Centre (DPC), Peer Research Associates surveyed 60 PLWH who use illicit drugs in Vancouver, Canada in 2015. Mapping enhanced qualitative interviews.

Results: 88% of respondents experienced some level of food insecurity. 70% said that in the past 12 months, they did not eat enough because of drug use. Additionally, 77% of all respondents said drug use did affect their diet, including when, where, and what they ate. All respondents used some form of food assistance, the most commonly used programs being the DPC, the Positive Outlook Program, and the AIDS Vancouver food bank. Mapping and qualitative interviews indicated that participants felt that drug use affected their diet, and that food resources were critical sites for accessing nutrition and other needed services.

Conclusion: Study findings indicate that continued support for food programs serving PLWH who use drugs are critical for maintaining health and well-being. Study recommendations are for organisations to provide food for PLWH who use drugs in spaces where they feel safe and supported, and acknowledge the physical and psychological barriers of drug use. This means flexibility in meal provision, providing healthy yet palatable meals, and including access to other supports in conjunction with food.

Social Sciences: **People Who Use Drugs and HIV**
Sciences sociales : **Le VIH et les utilisateurs de drogues**

SSP16.04

Chemsex Complications: Sexual Health Knowledge, Access, and Behaviours for HIV-positive and HIV-negative Sexual Minority Men Who Use Crystal Methamphetamine

Kara Taylor[1], Graham Berlin[1], Karyn Fulcher[1], Tribesty Nguyen[2], Eric A. Roth[1], Mark Hull[2, 3], Robert S. Hogg[3, 4], David M. Moore[2, 3], Nathan J. Lachowsky[1]

1. University of Victoria, Victoria, BC, 2. University of British Columbia, Vancouver, BC, 3. BC Centre for Excellence in HIV/AIDS, Vancouver, BC, 4. Simon Fraser University, Vancouver, BC

Background: HIV disproportionately affects gay, bisexual men and other men who have sex with men (GBM), especially those who engage in chemsex. However, HIV prevention and care interventions for GBM often fail to consider social norms and structural factors impacting this population. We examined the experiences and opinions of GBM involved in chemsex across British Columbia (BC) regarding safer sex knowledge, behaviours, and health and supportive services.

Methods: We conducted 34 semi-structured qualitative interviews with GBM aged 16+ in BC who recently engaged in meth-facilitated chemsex. Participants were asked about their sexual health, sexual practices and safer sex; their past and current meth use, and views of available support services. Interviews were audio-recorded, transcribed verbatim and thematically analyzed.

Results: Participants' median age was 40 years. Seventeen participants (50%) self-reported being HIV-positive. The impact of intersectional structural stigmas and social isolation on participants' ongoing meth use and resulting decreased safer sex adherence emerged as a key theme in the analysis. The influence of social isolation (particularly connectivity and intimacy between men) on meth use was particularly notable for participants who were rejected from their gay community for meth use and bisexual and other-identified MSM who lacked a queer community. Many participants noted a lack of GBM-specific support services, and alienation from existing services due to intersectional structural stigmas. Frequency of meth use and length of chemsex sessions decreased safer sex adherence, including the use of pre- or post-exposure prophylaxis, thereby increasing HIV transmission risk.

Conclusions: Lacking GBM-focused health and support services, social isolation, and experiences of intersectional stigmas created a matrix of HIV risk and ongoing problematic substance use for this population. Results suggest that these factors should be addressed in the development of feasible community-driven interventions to both reduce HIV incidence and lessen the impact of meth use among GBM.

Social Sciences: **People Who Use Drugs and HIV**
Sciences sociales : **Le VIH et les utilisateurs de drogues**

SSP16.05

Developing a Peer Engagement Strategy for Fraser Health Authority

Erica Thomson[1], Sherry Baidwan[2], Angeza Mohammed[1]

1. Fraser Health Authority, Surrey, BC, 2. Fraser Health Authority, White Rock, BC

Background: People who use substances (PWUS) experience stigma and discrimination when accessing health-care resulting in poor retention in care and negative health outcomes. However, there is strong evidence that empowering people with lived/living experience (peers) to inform policy and service delivery improves engagement in care. In Fraser Health, it is widely recognized that peer engagement is best practice, but service provider knowledge and skills in effectively engaging PWUS are limited. Furthermore there was no formal strategy to support effective engagement with PWUS in the delivery of key health services including substance use treatment, overdose prevention, and HIV treatment.

Objective: Develop a strategy to increase the meaningful engagement of peers in Fraser Health by creating peer engagement opportunities and embedding peer involvement at multiple levels by 2021.

Approach: Based on best practice recommendations, consultations and several dialogues with diverse groups of PWLE at federal and provincial levels, we drafted a mission statement, vision, values and high level strategy for peer engagement at Fraser Health. To validate the collective voice, a forum with a diverse group of 27 local PWLE, including drug user organizations, peer service providers, family members and recovery communities was held. Four themes were explored, which informed the final strategy document, which has been endorsed by Senior Leadership of Population and Public Health at Fraser Health.

Next Steps: The strategy will be implemented over the next three years, laying the foundation for peer engagement across the region. Key streams of work include developing and disseminating educational materials for service providers (how to have safe and supportive relationships with peers) and for peers (to build capacity and expertise to facilitate mutually meaningful engagement), developing or amending policies and procedures to support effective peer involvement and working with partner organizations to enhance their capacity to effectively engage with PWLE.

Social Sciences: **People Who Use Drugs and HIV**
Sciences sociales : **Le VIH et les utilisateurs de drogues**

SSP16.06

The Patients Have a Story to Tell; Informed Consent for People who use Illicit Opiates

Jane McCall[1], Vera Caine[1], J C. Phillipa[2], Andrew Estefan[3]

1. University of Alberta, Edmonton, AB, 2. University of Ottawa, Ottawa, ON, 3. University of Calgary, Calgary, AB

This paper discusses the ethical issues that arise when seeking informed consent from people who use illicit opiates. There is a significant discourse in the literature that opines that people who use illicit opiates are unable to provide informed consent due to withdrawal symptoms and cognitive impairment as a result of opioid use. This paper outlines the ethical issues that have been discussed in relation to this issue, reviews the findings of a study in which staff were asked their opinions about their patients' ability to provide informed consent and discusses the issues that arise when patients are not allowed to consent to research.

Social Sciences: **The Health of African, Caribbean and Black Communities**
Sciences sociales : **La santé des collectivités africaines, caraïbéennes et noires**

SSP17.04

Preliminary Findings from Real-Talk: Exploring The Sexual Health Literacy of Young Black MSM in Toronto, Ontario

Nakia Lee-Foon

Dalla Lana School of Public Health-University of Toronto, Toronto, ON

Background: Minimal research exists on young Black MSM (BMSM) uptake of sexual health information and how sexual and social contexts impact their sexual health literacy (SHL). Sexual health literacy—an individual's sexual health knowledge and ability to apply this knowledge within sexual and social contexts—informs individuals' sexual and healthcare decision-making practices. Given this research gap and considering young BMSM HIV-positive rates continue to surpass the total size of Black populations in provinces such as Ontario, collecting substantive knowledge on these youths' SHL is imperative.

Study Aim: In order to identify ways to further enhance sexual healthcare services for BMSM, the study aims to explore the state of SHL among BMSM in Toronto, Ontario. The sub-aims are: 1) what are BMSM's sources of sexual health information?; 2) how do BMSM evaluate the information obtained from these sources?; and 2) how is this information applied in these men's everyday lives?

Methods: Sixteen, one-on-one semi-structured interviews have been conducted with young (15-29 years), gay (n=11), queer (n=1), pansexual (n=2), heterosexual (n=1), non-identified (n=1) participants who live in Toronto, Ontario thus far. The interviews are digitally recorded and transcribed verbatim. As per Charmaz's grounded theory methodological approach, the transcripts have been thematically analyzed in tandem with data collection.

Preliminary Results: Key themes that have emerged thus far are: 1) The internet as a primary, yet often unverified source of sexual health information; 2) a lack of awareness about U=U; and 3) the need for more culturally and LGBT+ sensitive sexual healthcare programs across Toronto

Conclusion: The preliminary results denote that BMSM have sexual health literacy. However, this literacy is often learned and supported not through the sexual healthcare services and programs but from other, potentially non-factual sources. Additional research must continue to explore these youths' SHL in order to further enhance the services and programs.

Social Sciences: **The Health of African, Caribbean and Black Communities**
Sciences sociales : **La santé des collectivités africaines, caraïbéennes et noires**

SSP17.05

Social Context and HIV Vulnerabilities Among Self-Identified Heterosexual Men in Windsor and Essex County

Francisca Omorodion[1], Neema Jangu[2]

1. University of Windsor, Windsoe, ON, 2. weSpeak Windsor Site Team, Windsor, ON

This paper examines how heritage norms and beliefs interact with social structures to influence the experiences of self-identified heterosexual African, Caribbean and Black men (16 and above) and their HIV vulnerabilities in Windsor and Essex County, Canada. weSpeak conducted semi-structured interviews with 11 men and identified five themes using NVIVO analysis: patriarchy, sex/sexuality, family socialization, community expectations/belonging, and religious belief. These norms and beliefs reproduce straight/heterosexual, hegemonic/Black masculinity, homophobic attitudes, economic power/autonomy and gendered division of labor, which in turn increase their HIV vulnerabilities.. These findings context and challenge hegemonic masculinity, discrimination, marginalization and racism faced by ACB men in Canada.

Social Sciences: **Trans identities and Communities**
Sciences sociales : **Identités et communautés trans**

SSP18.01

A Mixed-Methods Investigation of The HIV Care Cascade Among Transgender Women with HIV in Canada

Ashley Lacombe-Duncan[1, 2], Greta R. Bauer[3], Carmen H. Logie[2, 4], Peter A. Newman[2], Mostafa Shokoohi[3], Emma S. Kay[1], Yasmeen Persad[2], Nadia O'Brien[5], Angela Kaida[7], Alexandra de Pokomandy[5, 6], Mona Loutfy[4, 8]

1. University of Michigan, School of Social Work, Ann Arbor, MI, USA, 2. Factor-Inwentash Faculty of Social Work, University of Toronto, Canada, ON, 3. Epidemiology and Biostatistics, Schulich School of Medicine & Dentistry, The University of Western Ontario, London, ON, 4. Women's College Research Institute, Women's College Hospital, Toronto, ON, 5. Chronic Viral Illness Service, McGill University Health Center, Montreal, QC, 6. Department of Family Medicine, McGill University, Montreal, QC, 7. Faculty of Health Sciences, Simon Fraser University, Burnaby, BC, 8. Department of Medicine, University of Toronto, Toronto, ON

Background: Transgender (trans) women living with HIV (WLWH)'s engagement in the HIV care cascade has been underexplored, particularly in universal healthcare settings like Canada. This study sought to describe the HIV care cascade and barriers and facilitators to HIV care cascade engagement for trans WLWH in Canada.

Methods: This convergent parallel, mixed-methods study drew on cross-sectional quantitative data from 50 trans WLWH in the Canadian HIV Women's Sexual and Reproductive Health Cohort Study (CHIWOS) and qualitative semi-structured interview data from a sub-sample of 11 participants. Descriptive analyses were used to describe proportions of trans WLWH at five steps of the HIV care cascade (ever accessed HIV care; received any HIV care in the past year; currently use ART; are adherent to ART; self-report an undetectable viral load), and bivariate analyses to determine associations between hypothesized barriers/facilitators and HIV care cascade outcomes. Framework analysis was used to describe barriers and facilitators to HIV care engagement. Quantitative and qualitative data were then compared and contrasted.

Results: Gaps were seen in antiretroviral therapy (ART) outcomes (current ART use: 78%; ≥95% adherence among those currently taking ART: 67%). Number of years living with HIV was positively associated with HIV care cascade engagement. Factors associated with worse outcomes included: health-related quality of life, depressive and post-traumatic stress disorder symptoms, barriers to access to care, trans and HIV-related stigma, and housing insecurity. Qualitative findings converged and expanded on how physical health, and social and structural marginalization, influence trans WLWH's engagement in HIV care. Qualitative findings elaborated on the importance of ART-related factors in impeding or facilitating engagement, including concerns about feminizing hormone-ART drug-drug interactions.

Implications: Mixed methods findings reveal how trans WLWH experience barriers common to other people living with HIV, and also experience unique barriers as a result of trans and HIV experiences.

Social Sciences: **Youth and Adolescents**
Sciences sociales : **Jeunes et adolescents**

SSP19.01

The SHOUT Project: A Culturally Appropriate HIV, Hep C, and other STBBI Prevention Intervention for Youth and Young Adults

Heather Hale[1], Rachel Loewen Walker[2]

1. Saskatoon Sexual Health, Saskatoon, SK, 2. OUTSaskatoon, Saskatoon, SK

This presentation will share insights gained in the creation and implementation of the SHOUT Project in Saskatoon, Saskatchewan. The SHOUT Project is a community alliance between OUTSaskatoon and Saskatoon Sexual Health which aims to increase awareness and uptake of safer sex and drug using practices to prevent the transmission of HIV, hepatitis C and related sexually transmitted and blood-borne infections (STBBI) among lesbian, gay, bisexual, transgender, queer, and two spirit (LGBTQ2S) youth ages 14-29. This will be achieved through the development of youth-centered educational materials (e.g., zines, online webpages and digital storytelling), peer-led educational sessions, youth testing clinics, and presentations for school staff, healthcare providers and community partners. The project will train youth to develop educational tools (e.g., zines, online webpages and digital storytelling) that will inform peers from priority populations (LGBTQ2S youth ages 14-29) on available testing and prevention options, improve sexual health and reduce stigma. In addition, the project will organize peer-led educational sessions with a focus on sexual health, leadership skills, and empowerment for the priority populations. Finally, the project will provide presentations to school staff, healthcare providers and community partners to increase their knowledge of available tools and resources that encourage sexual health practices among youth from priority populations. Special attention will be paid to the importance of community collaboration, and youth-led programming.

Author Index

C

D

E

F

G

H

I

L

M

N

O

P

Q

R

S

Y

Z