CONFERENCE Highlights

AUGUST 2016 ISSUE

The Canadian Association for HIV Research (CAHR) has promoted excellence in HIV research, including mentorship and career development of investigators entering the field.

CONFERENCE CAHR 2017

26th Annual Canadian Conference on HIV/AIDS Research
April 6-9, 2017
Montreal, Quebec

CONGRÈS DE L'ACRV 2017

26e Congrès annuel canadien de recherche sur le VIH/sida
Du 6 au 9 avril 2017
Montréal (Québec)

HIV Prevention: Local to Global and Back…to the Future

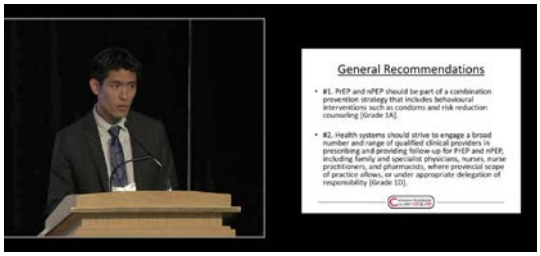
2016 Wainberg Lecture by Dr. Stephen Moses, University of Manitoba

The 2016 Wainberg Lecture was presented by Dr. Stephen Moses, an expert in HIV prevention strategies and program development. With all of the prevention methods available today, he emphasized that it is critical these strategies reach the most at-risk, or key, populations. "HIV transmission is not egalitarian and it's not equitable" he pointed out. Effects on a concentrated epidemic are powerful when efforts are focussed on key populations while generalized epidemics should have efforts focused on key populations in conjunction with the broader population.

Dr. Moses related his experiences working in India, helping to form prevention programs aimed at female sex workers (FSWs). He discussed the importance of some key strategies to the success of the programs, which included partnering with large and experienced NGOs and setting ambitious goals against which to assess progress. He contrasted this against the efforts in Africa, where the epidemics tend to be generalized. There are some striking differences in the prevalence of HIV in FSWs in Africa including gross underestimations of the number of FSWs and their clients. He pointed out that though HIV rates are highest amongst FSWs in many countries in Africa, funding does not increase proportionately. India has invested heavily in prevention in FSW populations and it's making a difference. He urges African countries to do the same. He finished off his talk by discussing his work on voluntary male circumcision programs in Africa, where over 10 million men have now received the procedure.

Table of Contents

The 2016 Red Ribbon Award (which is presented annually by CAHR for outstanding service to the cause of research in HIV/AIDS) was presented to Margaret Ormond, a fixture and a pioneer in the HIV scene in Winnipeg where works as a Research Nurse for many studies and as Executive Director of Sunshine House (a community drop-in and resource centre focusing on harm reduction, population health promotion, and social inclusion).



Symposium: Canadian guidelines on HIV PrEP and nPEP

Several representatives from the committee for development of the Canadian Guidelines on HIV PrEP (pre-exposure prophylaxis) and nPEP (non-occupational post exposure prophylaxis) presented recommendation highlights. Dr. Darrell Tan provided rationale for the guidelines which took an evidence based approach and were graded according to the quality of evidence. Jody Jollimore spoke on the eligibility for PrEP, which included MSM and TGW who have had unprotected anal sex within the last six months, heterosexual sero-discordant couples, and injection drug users. Dr. Cécile Tremblay presented the recommendations on the provision of PrEP, including daily Tenofovir, or Tenofovir as an alternative in MSM on an 'as needed' basis (taken directly before and after sexual activity). Dr. Mark Hull spoke about nPEP eligibility—individuals taking PrEP as prescribed do not need nPEP after possible HIV exposure but those not taking it as prescribed should take nPEP. nPEP is recommended for HIV-individuals who have had exposure within 72 hours that is moderate or high risk. Deborah Yoong discussed the provision of nPEP. Recommendations outlined a standard regimen of antiretrovirals once nPEP is indicated, and a standard regimen for nPEP. She also presented the recommendations for provision and monitoring of patients on nPEP, which included baseline HIV status testing, ongoing status monitoring for those with irregular initial lab results and those showing any signs of negative side effects of nPEP. The panel then fielded questions, concerns and feedback from the audience. The complete document of guidelines will be available once feedback is considered and final edits made.

HIV Vaccines: Maintaining the Momentum

Vaccine Research Plenary

Dr. Marc Ouellette opened the discussion with a review of CIHR's funding for vaccine development projects. He talked about the strategic directions of CIHR and the amount of funding available over the past 5 years. At a workshop in March 2016, CIHR and stakeholders reviewed current investments in vaccine research and identified some of the future priority areas for vaccine research in Canada including novel vaccine strategies, mucosal immunity, and determining correlates of protection. Dr. Jamie Mann then took the stage to talk about strategies of HIV-1 vaccine delivery. He pointed out that each method of administration has its strengths and weaknesses. His research aims to determine the best delivery method. Using the trimeric HIV gp140 immunogen, his study tested intradermal and intramuscular administration combined with electroporation. Concurrent intradermal and intramuscular injections augmented T cell responses and combined with electroporation the effect was enhanced even further. Concurrent DNA vaccine administration plus sub-cutaneous a protein boost increased antibody avidity. Finally, Dr. Gary Kobinger spoke about the development of Ebola virus vaccines that are currently being tested for efficacy in humans. The field experience has strongly influenced the development of the vaccine, and much like a future HIV vaccine, the logistics of administration have to be considered. He pointed out that numerous Ebola vaccines have been considered and studied as candidates and only two have made it through to trials. Thus, if there is to be an HIV vaccine, then many vaccines have to be developed and tested. The floor was opened up for questions from the audience.

PrEP at Age 5: Growing up Fast

Clinical Sciences Plenary presented by Dr. Jared Baeten, University of Washington

Pre-exposure prophylaxis (PrEP) has celebrated its 5th birthday and Dr. Baeten cleverly framed his presentation in the context of a 5 year old child, drawing similarities between expectations we have of each as they reach this age. Dr. Baeten suggests that a 5 year old should 'understand cause and effect'. With PrEP, we now understand that PrEP works, and efficacy relates directly to adherence. It also works in high risk populations. The second characteristic is that 'magical thinking fades'. Dr. Baeten points out that we have strived for perfection when it comes to PrEP, but we don't need to – even moderately good adherence leads to very high levels of protection. We can strive for perfection, but the results are still promising even without it. Thirdly, a child should 'understand the feelings of others'. Studies have shown that taking PrEP reduces anxiety, increases disclosure and fosters trust in sexual relationships—PrEP is wanted by patients and we should respect this. A 5 year old 'becomes more flexible in their thinking'. He suggests that lack of appropriate information, unclear messaging, judgement and discrimination have limited achieving best results and we need change our mindset to maximize PrEP's efficacy. Lastly, a 5 year old 'understands their place in the world'. PrEP offers an option for persons and periods in life when other prevention options may not be enough. It does not appear to increase the amount of risky behaviour and he emphasized that efficacy is not the be-all and end-all of PrEP. He views it as a critical piece of the HIV prevention puzzle.

A Rehabilitation Science Approach to HIV: From Local to Global and Back

Social Sciences Plenary presented by Dr. Stephanie Nixon, University of Toronto

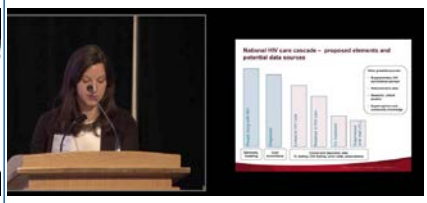
Dr. Nixon set the stage for her presentation by discussing the advent of protease inhibitors in 1996 and their monumental impact on how people live with HIV. Yet, while on anti-retroviral therapy, most people report some kind of impairment, many reporting at least 10 different impairments. Most also report participation restrictions—living with HIV prevents them from doing the things they want to do like volunteering, working or going to school. Dr. Nixon pointed out that now that so many people in the world are on treatment, more than ever, rehabilitation is critical. Yet the old frameworks of rehabilitation do not apply to the episodic nature of disability for someone living with HIV. The system has had to adapt. She discussed how society's view of disability should adapt as well. There has been a significant movement for the rights of people with disabilities, which includes the Convention on the Rights of Persons with Disabilities. This has opened up perspectives on global health research, developed in a way that is equitable and respects the rights of those involved. She shared her realizations of how colonization has affected the way in which research is conducted and encouraged the audience to consider this as well, not only in the research itself but in the way they think about their own research.

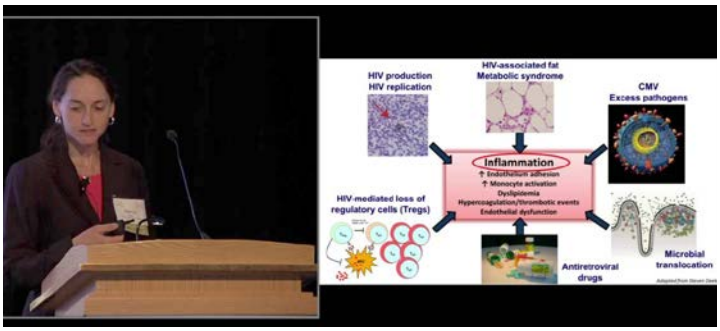
Symposium:
Living longer and living well with HIV: Reaching New Heights in Healthy Ageing

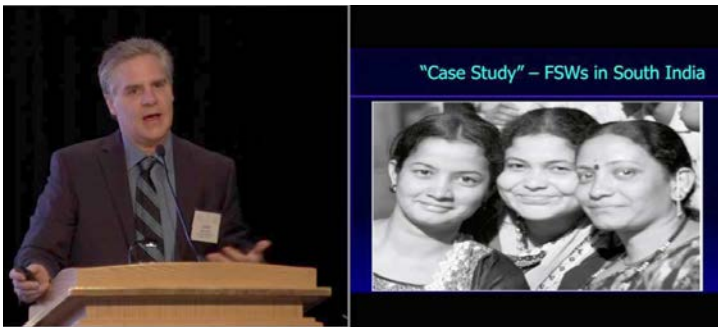
Dr. Patty Solomon, chair of the session, put the discussion in context by introducing the basics of rehabilitation, episodic disability and the Canadian Working Group on HIV Rehabilitation (CWGHR). She also introduced the audience to Henry, a hypothetical case study to keep in mind throughout the symposium. Dr. Richard Harding spoke about some of the comorbidities that are common with those ageing with HIV, emphasizing that what may start as a physical manifestation of symptoms leads to psychological problems and social problems. Without a holistic and person-centred approach to rehabilitation, we are unlikely to improve outcomes. Dr. Stephanie Nixon then discussed the basics of HIV rehabilitation. While doctors think about managing Henry's HIV, rehabilitation looks at his activity level and what kinds of things can be done to improve his quality of life. She pointed out that uncertainty about ageing with HIV can be disabling itself. Mr. Chris Lucas, a Community Member from the Nine Circles Community Health Centre in Winnipeg, spoke of his experience ageing with HIV. He talked about inpatient and outpatient physiotherapy, mentioning that the latter is far too busy to truly serve clients. He spoke of how difficult it can be to juggle all the medical appointments while navigating a system where so many options are available. Darren Brown discussed the rather enviable outpatient program at the Chelsea and Westminster hospital in the UK. He discussed the typical patient profile of his clinic—patients are ageing with HIV, not meeting the recommended activity guidelines, living alone, unemployed, and living with five additional comorbidities. One to one physiotherapy at the clinic has led to significant improvements in mobility, ability to perform activities, reduced depression, anxiety, and pain. He finished his talk by outlining the various methods they use to measure success in rehabilitation. Kate Murzin from CWGHR spoke to the case study of Henry, pointing out that many of the aspects of his identity are invisible in policies around housing and social supports. She discussed the National Coordinating committee on HIV and Ageing (NCC) which aims to coordinate research, disseminate results to the community and tackle barriers for those living with chronic illnesses. The floor was then opened up for questions.

Special Session:
Measuring the National HIV Cascade and the UNAIDS 90-90-90 targets

The panel was chaired by Dr. Marina Klein, who outlined the goals of the session. Claudia Rank from the Public Health Agency of Canada (PHAC) started the presentations by providing an overview of the HIV cascade and indicators for monitoring HIV cases. She talked about the data that PHAC monitors within the cascade and pointed out some of the shortcomings including limited data, regional differences in guidelines and losses to follow up. PHAC is currently working on a national approach to monitoring by involving local health organizations. Dr. Réka Gustafson, a Medical Health Officer from Vancouver Coastal Health, spoke about the regional and local approach to monitoring in Vancouver, BC. She emphasized the importance of collaboration and sharing data between organizations and talked about some considerations for data gathering based on their experiences. She pointed out that monitoring has revealed strengths and flaws in the system of care and until you are monitoring what you are doing, you don't know what you are doing right. Dr. Ryan Meili, a family physician in Saskatoon spoke about his experience with cascade monitoring in Saskatchewan, which is in stark contrast to the data-richness of BC. He shared some of the numbers for SK, though they are not linked provincially and nor collected in a uniform manner. He outlined the 10 steps to achieve 90/90/90 set out in 2015 by SHARE (Saskatchewan HIV/AIDS Research Endeavour). Their goal is to get the various centres of the province and different levels of government on board. Dr. Mark Gilbert, Director of Applied Epidemiology at OHTN, provided data on Ontario's HIV cascade. He highlighted some of the issues which included missing data, data quality and difficulty with the non-linearity of the cascade (people going in and out of treatment etc.). Patti Tait, Family Violence Support Person at the Saskatoon Indian & Métis Friendship Centre, shared her experience working in her community. She argues that though the 90/90/90 is an admirable goal, it is unrealistic for many of the people she knows who are living with HIV and addiction. She shared stories of two people she has worked with and how the system consistently failed to help them break the cycle of addiction. She argued that "Life gets in the way of 90-90-90," and more must be done at ground level before thinking about the lofty goals set out by UNAIDS. Dr. Alex Wong, Dr. Ken Kasper, and Renée Masching then joined the panel and fielded questions and comments from the audience.







Can inflammation in chronic HIV infection be reversed?

Basic Sciences Plenary presented by Dr. Netanya Sandler Utay, University of Texas, Medical Branch

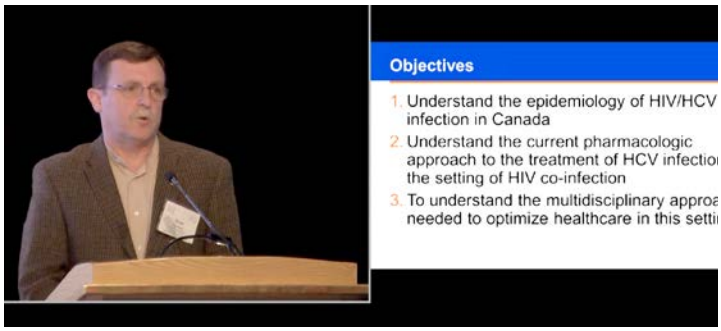
Dr. Sandler Utay's talk focussed on the myriad ways in which researchers are attempting to control chronic inflammation in HIV patients. She described for the audience how HIV establishes infection and the comorbidities associated with chronic inflammation. Research is exploring several avenues to try to reduce inflammation either in acute or chronic infections. Studies show that though interferon can be downregulated in acute infection, it ultimately leads to CD4 depletion and a higher viral burden. She concludes that blocking immune activation in acute infection does not appear to improve clinical outcomes. Some studies are looking at treating chronic infection with mixed results. Dr. Sandler Utay discussed the option of reducing the total viral load, targeting microbial translocation and HIV replication. To date, none of these methods seem to improve CD4 counts or reduce the viral reservoir. She shared the results of the RV254 study, an ongoing study conducted in high risk people seeking an HIV test. If positive, they are treated very early on in acute infection (around 14 days). Most biomarkers of inflammation in these patients decrease during early infection but after 96 weeks, biomarkers do not differ significantly from people undergoing treatment for chronic infection. It appears there is a great deal more to learn about controlling chronic inflammation.

Community Mobilization and Structural interventions in HIV prevention Programs.

Epidemiology and Public Health Science Plenary presented by Dr. James Blanchard, University of Manitoba

Dr. Blanchard provided background on structural interventions and community mobilization, pointing out that there is still a lot of variation in their definitions. While these interventions have been shown to have positive effects, they are rarely accorded sufficient attention in prevention programs. He shared with the audience his experience helping to implement a program for female sex workers (FSWs) in Karnataka, India. In this region, despite a large number of sex workers (80k), there was little outreach for HIV prevention and few FSW collectives. The initiative started out with a series of workshops which brought to light themes of stigma, discrimination, violence and police harassment. Collaboratively, the participants and FSW community leaders worked on how they could address these structural issues and mobilize the community. The fragmented nature of the FSW community was an issue initially, so effort was put into forming networks and getting as many participants as possible in the program. From this increased network, many more women formed or became part of collectives, which served as a base for programing and outreach. Police sensitisation programs, a collaboration between FSW leaders and police representatives, reached many thousand police officers in the state. They also worked with the media in an effort to reduce stigmatization and negative stories about FSWs. Post-implementation, the numbers were positive with increased condom use and HIV testing, a drop in proportion of workers reporting being beaten or raped, and fewer issues with police officers. In the media the number of negative stories about FSWs was reduced by 40% and women were quoted in news stories more often. In his talk, Dr. Blanchard then framed this study in terms of the domains of empowerment—power within; power with; and power over resources. Power within is associated with higher condom use. Power with is associated with greater autonomy, less violence, and service usage. Young women score lower in all domains when community based programs are lacking. Sufficiently funded, community mobilization and structural interventions do make a difference.

Symposium:
The ART of Managing HIV/ HCV Coinfection in the Era of New DAAs



With the advent of direct acting antivirals, treatment for those living with both HIV and HCV has changed substantially. Dr. Curtis Cooper chaired the panel and framed the upcoming presentations in terms of a case study of a patient seeking treatment for HCV. Dr. Brian Conway summarized the statistics on co-infection in Canada, which includes 12 to 15k people. Eighty percent of HIV+ intravenous drug users are infected with HCV. He reviewed clinical trial results and emphasized the importance of delivering medication in the appropriate context — taking into account medical, psychologic, social and addiction related needs. Dr. Pierre Giguère, a clinical pharmacy specialist, spoke about drug-drug interactions (DDIs) between HCV treatments and antiretroviral therapies. He explained the ways in which drug interactions occur and which drugs tend interact using a helpful table. He suggested some strategies to combat DDIs and mentioned some red flags to watch out for. Dr. Giada Sebastiani discussed liver health and toxicity in HIV and HCV co-infected patients. She argues that HIV should be considered a risk factor for Non-Alcoholic Steato Hepatitis and Non-alcoholic Fatty Liver Disease as the incidence is high in these groups compared to the general population. Anti-retrovirals have hepatotoxicity and Dr. Sebastiani discussed interventions including weight loss, glycemic control, vitamin E treatment and a "switching strategy" using Raltegravir. The floor was then opened up for questions from the audience.

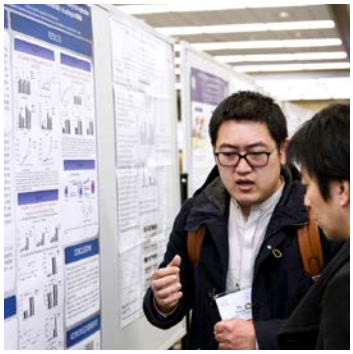
Special Session:
The Future of Manitoba's Global Impact in HIV Research

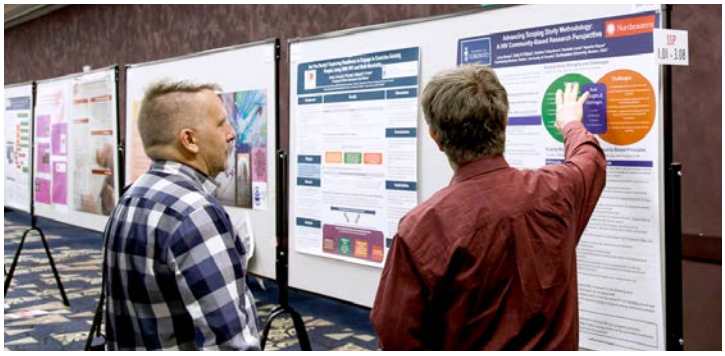
As the host city, this session highlighted several of Manitoba's up-and-coming researchers. First to present was Dr. Thomas Murooka who spoke of a new technology, two-photon intravital microscopy (2PTM), and how it can be used to study immune cells in real time. Using humanized mice, fluorescent HIV reporters and the 2PTM, they have studied HIV infected T-cells and their movement within the lymph nodes. Results show these T-cells retain their motility and could transfer virus from one part of the tissue to another.

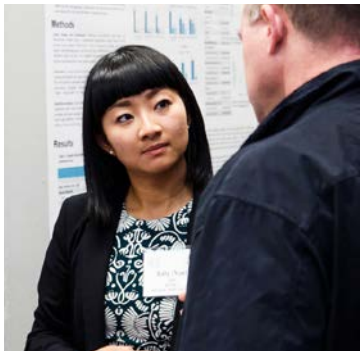
Dr. Javier Mignone spoke next, explaining some of his research projects which are broad in their scope and involve populations in Manitoba, India and Columbia. He pointed out that Manitoba is a perfect place for HIV research as it is small enough for interdisciplinary collaboration and large enough to have many resources, initiatives and organizations in the field. Dr. Yoav Keynan then presented his work on chronic immune activation which appears to be one of the drivers of end-organ failure and premature ageing in people living with HIV. In general, people infected with HIV are more susceptible to lung infections such as pneumonia or tuberculosis. Dr. Keynan summarized one of his research projects which looks at HIV+ patients with lung disease. The study identified unique cytokine profiles in their bronchoalveolar lavage.

Dr. Marissa Becker took the stage to discuss her work on early HIV risk among young sex workers and young women. In sex workers, there is often a delay before self-identifying as a sex worker, though they may still be accepting payment (called a "transitioning period"). Even after identifying as a sex worker, there is an "access gap" before they are reached by prevention programs. Dr. Becker's study in Kenya and Ukraine aims to understand what is happening during these two periods, and works with modellers to understand how these periods may affect the epidemic.

Lastly, Dr. Lyle McKinnon spoke about mucosal inflammation and HIV risk in the setting of Tenofovir gel. His results showed that Tenofovir did not protect if inflammation was present in the vaginal mucosa, with a higher HIV risk associated with increasing amounts of Tenofovir gel used.





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The Canadian Association for HIV Research (CAHR) gratefully acknowledges the companies and organizations which contributed to the 25th Annual Canadian Conference on HIV/AIDS Research (CAHR2016). These generous donations make it possible for CAHR to hold the annual conference.
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