



Epidemiology, Biostatistics & Occupational Health
EPIDEMIOLOGY SEMINAR SERIES
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Monitoring the HIV epidemic in Ontario: Methods and findings.

**Monday, 10 June 2013
4:00 pm - 5:00 pm
Purvis Hall,
1020 Pine Ave. West, Room 25**

ALL ARE WELCOME

ABSTRACT:

Background: The HIV epidemic in Ontario has an important impact on morbidity, mortality and health care costs. The central public health challenge is to develop, implement and evaluate primary and secondary HIV prevention programs to control the epidemic. Reliable and timely indicators are critical in evaluating the success of these activities. We undertook a comprehensive program of HIV surveillance and modeling in 1997 to provide policy makers, public health authorities, and community-based organizations with the information they need to develop effective prevention programs. **Methods:** The primary indicators to monitor the epidemic are HIV incidence and prevalence, overall and stratified by exposure category, sex and health region. Supplementary indicators include HIV-related mortality, HIV testing trends, and uptake of prenatal HIV testing. We use multiple data sources to derive indicator estimates, including the HIV diagnostic testing program, reported AIDS cases, HIV-related deaths, and sero-epidemiologic studies in Ontario and elsewhere. Survey data were also used to estimate the size of the at-risk populations. We developed enhanced HIV laboratory surveillance to collect additional data on risk factors for HIV, HIV testing histories and, using specialized HIV incidence assays, identify recent HIV infections among those diagnosed. Finally, we combined the data from multiple sources using triangulation in an iterative spreadsheet model to estimate HIV incidence and prevalence by exposure category and gender for each year from 1978 to 2009. **Results:** 425,000 HIV tests were carried out in Ontario in 2009, of which 1,013 (0.24%) were newly HIV-positive. The majority of HIV-positive tests were among males, men who have sex with men (MSM) and from metropolitan Toronto. HIV-related mortality

decreased 75% since its peak in 1996. Uptake of HIV testing in pregnancy increased markedly since a policy of universal offering of testing was instituted in 1999, with an estimated 98% in 2010. HIV modeling revealed that, as of 2009, 27,400 persons were infected with HIV. 1,535 persons were newly infected in 2009, of whom 45% were MSM. Modeling also revealed persons from sub-Saharan Africa and the Caribbean constituted 19% of prevalent infections, the second most affected group. Other than an outbreak of HIV among injection drug users (IDU) in Ottawa in the 1990s, HIV incidence and prevalence have been relatively low compared to other jurisdictions. However, we observed a nadir in HIV incidence in MSM in 1996 followed by an increase of 60% in the following eight years; since 2004, incidence has remained stable at the higher level. **Discussion:** Access to essentially all HIV diagnostic data in Ontario in a centralized location has been critical to our monitoring efforts. In addition, the Laboratory Enhancement Program continues to provide supplementary information to improve the quality of the diagnostic data and to estimate HIV incidence using specialized serologic assays. The monitoring program has played an important role in guiding HIV control programs. Real-time monitoring of HIV test uptake in pregnancy contributed to its success. The monitoring program confirms our success with respect to HIV infection among IDUs but also provides evidence of our failure to control the epidemic among MSM in Ontario.

BIO:

Dr. Remis received his MD from McGill University in 1972 and completed a rotating internship at the Jewish General Hospital in Montreal. From 1973 to 1980, he worked as a family practitioner in Northern Saskatchewan, in a community clinic (CLSC) near Montreal and in a rural hospital in the Comoro Islands. In 1981, he received a Master of Public Health degree in epidemiology at the Harvard School of Public Health. From 1981 to 1983, he trained in field epidemiology at the Epidemic Intelligence Service, U.S. Centers for Disease Control, Atlanta. In 1984, he was qualified as a Fellow of the Royal College of Physicians and Surgeons of Canada in community medicine and a diplomate of the American Board of Preventive Medicine.

From 1983 to 1996, Dr. Remis coordinated communicable disease prevention and control for the six community health departments on the island of Montreal. Since January 1997, he has worked at the Dalla Lana School of Public Health, University of Toronto under a mandate from the AIDS Bureau, Ministry of Health and Long-Term Care and Public Health Ontario to monitor the HIV epidemic in Ontario. He has published over 80 peer-reviewed articles in the areas of HIV, viral hepatitis, tuberculosis and foodborne illness. His current research interests focus on HIV infection and include surveillance, seroepidemiologic studies, modelling, mother-infant and sexual HIV transmission, and HIV prevention policy and programs. He is currently involved in an epidemiologic study of HIV/STI coinfection among African-Caribbean women and men and homosexual men in Toronto and is planning a study of HIV transmission in the African-Caribbean persons after arriving in Canada.