
Surveillance and Epidemiology Division
Professional Guidelines and Public Health Practice Division
Centre for Communicable Diseases and Infection Control
Public Health Agency of Canada
Outline of Presentation

- Background
- Methodology
- Results
  - HIV prevalence
  - HIV incidence
  - unawareness
- Summary
Estimates team

• Public Health Agency of Canada
  - Qiuying Yang
  - Jessica Halverson
  - Ping Yan
  - Fan Zhang
  - Dena Schanzer
  - Chris Archibald

• University of Toronto
  - Robert Remis

• Provincial partners
Background

- Multiple sources of data on the HIV epidemic in Canada (surveillance, research, anecdotal observation, etc)
- Each is limited and can only provide one perspective on the overall epidemic
- Production of national estimates of HIV prevalence and incidence puts all these perspectives together to form a more comprehensive picture of the overall HIV epidemic in Canada
Methods & References

• Multiple methods used to estimate national HIV prevalence and incidence (the workbook method, an iterative spreadsheet model, and two statistical modelling methods)


Current estimates replace earlier versions

- Estimates published in this summary for years before 2011 replace all previous estimates that we have published concerning HIV prevalence and incidence in Canada.

- This is because new data and methods have allowed an improved analysis of the epidemic and more reliable estimates.
HIV prevalence over time in Canada
### Number of people living with HIV infection in Canada, 2011 and 2008

<table>
<thead>
<tr>
<th>Year</th>
<th>MSM</th>
<th>MSM-IDU</th>
<th>IDU</th>
<th>Heterosexual/Non-endemic</th>
<th>Heterosexual/Endemic</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>33,330 (28,160-38,500)</td>
<td>2,160 (1,520-2,800)</td>
<td>12,040 (9,580-14,500)</td>
<td>12,530 (10,260-14,800)</td>
<td>10,640 (8,780-12,500)</td>
<td>600 (400-800)</td>
<td>71,300 (58,600-84,000)</td>
</tr>
<tr>
<td>%</td>
<td>46.7%</td>
<td>3.0%</td>
<td>16.9%</td>
<td>17.6%</td>
<td>14.9%</td>
<td>0.8%</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>30,000 (25,000-35,000)</td>
<td>2,030 (1,460-2,600)</td>
<td>11,150 (9,000-13,300)</td>
<td>10,900 (8,900-12,900)</td>
<td>9,320 (7640-11,000)</td>
<td>600 (400-800)</td>
<td>64,000 (53,000-75,000)</td>
</tr>
<tr>
<td>%</td>
<td>46.9%</td>
<td>3.2%</td>
<td>17.4%</td>
<td>17.0%</td>
<td>14.6%</td>
<td>0.9%</td>
<td></td>
</tr>
</tbody>
</table>
Estimated range of uncertainty in the number of new infections over time
Estimated number of new infections among various risk groups, by time period (ranges of uncertainty omitted)
### Number of new HIV infections in Canada, 2011 and 2008

<table>
<thead>
<tr>
<th>Year</th>
<th>MSM</th>
<th>MSM-IDU</th>
<th>IDU</th>
<th>Heterosexual/Non-endemic</th>
<th>Heterosexual/Endemic</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>1480</td>
<td>80</td>
<td>435</td>
<td>645</td>
<td>535</td>
<td>&lt;20</td>
<td>3175</td>
</tr>
<tr>
<td></td>
<td>(1060-1900)</td>
<td>(50-110)</td>
<td>(300-570)</td>
<td>(450-840)</td>
<td>(370-700)</td>
<td></td>
<td>(2250-4100)</td>
</tr>
<tr>
<td>%</td>
<td>46.6%</td>
<td>2.5%</td>
<td>13.7%</td>
<td>20.3%</td>
<td>16.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>1470</td>
<td>90</td>
<td>565</td>
<td>670</td>
<td>540</td>
<td>&lt;20</td>
<td>3335</td>
</tr>
<tr>
<td></td>
<td>(1040-1900)</td>
<td>(50-130)</td>
<td>(400-730)</td>
<td>(470-870)</td>
<td>(380-700)</td>
<td></td>
<td>(2370-4300)</td>
</tr>
<tr>
<td>%</td>
<td>44.1%</td>
<td>2.7%</td>
<td>16.9%</td>
<td>20.1%</td>
<td>16.2%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Estimated HIV incidence rate by sex, 2011
Estimated percentage of undiagnosed persons among people living with HIV in 2011, by exposure category

<table>
<thead>
<tr>
<th>Exposure category</th>
<th>Percentage undiagnosed</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSM</td>
<td>20%</td>
</tr>
<tr>
<td>IDU</td>
<td>25%</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>35%</td>
</tr>
<tr>
<td>Overall</td>
<td>25%</td>
</tr>
</tbody>
</table>
Undiagnosed HIV infections

• At the end of 2011, an estimated 25% of the 71,300 individuals living with HIV in Canada were unaware of their infection, which is less than the previous estimate of 26% in 2008.

• However, there were 1,080 more persons living with undiagnosed HIV infection in 2011 compared to 2008.

• This group cannot take advantage of appropriate care and treatment services, nor can they receive counselling to prevent further spread of HIV, until they are tested and diagnosed.
Summary

• HIV prevalence continues to increase due to effective treatment and ongoing transmission

• HIV incidence appears steady in 2011 compared to recent years and remains concentrated among certain key populations
  » the main difference from 2008 was a decrease in the estimated number of new infections attributed to IDU, while the MSM and heterosexual categories were relatively unchanged

• Aboriginal people and people from HIV-endemic countries continue to be over-represented in Canada's HIV epidemic