Provincial Infectious Diseases Advisory Committee
Public Health Response to Hepatitis C

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Agenda

• Document Overview
  • Purpose & Audience
  • Considerations

• Hepatitis C Virus
  • Virus Overview
  • Transmission & Risks
  • Epidemiology of Hepatitis C in Ontario

• Public Health Considerations

• Document Development Methodology

• Recommendations Overview
Learning Objectives

• Improved understanding of the hepatitis C virus and the epidemiology of hepatitis C in Ontario
• Understand the context for developing the hepatitis C document
• Understand the rationale and process for developing these recommendations
• Review the specific topic areas and recommendations provided by PIDAC’s Public Health Response to Hepatitis C
In Ontario, HCV is associated with the highest burden of any communicable disease & requires public health intervention

This document is intended for:

- Staff in Ontario public health units working in hepatitis C programs
  - It is intended to provide them with current recommendations for responding to hepatitis C
- Resource and policy decision-makers
  - It is intended to provide them with support for policy and resource allocation
- It may also be of interest to other health care providers who work in the field.
Developed in accordance with:

- *Ontario Public Health Standards* and the
- *Sexual Health and Sexually Transmitted Infections Prevention and Control Protocol*

Developed in consideration of the *Ontario Hepatitis C Strategy*

The recommendations in this document were developed by the Provincial Infectious Diseases Advisory Committee (PIDAC) Hepatitis C Working Group

- Based on a review of published and unpublished literature and on the expertise of the working group.
HEPATITIS C VIRUS
Hepatitis C Virus

- It is a flavivirus
- Six different genotypes have been identified so far
- Genotypes 1 to 3 have been found worldwide, and are the main genotypes found in Canada
- Genotype 1 predominating in Canada
- Often asymptomatic for many years
- Treatments are available and successful with associated barriers.
Hepatitis C Virus
Transmission & Risk

• Transmission of hepatitis C occurs via blood-to-blood contact
  • Use of contaminated syringes and other injecting equipment;
  • Sharing of drug inhalation equipment such as straws and pipes;
  • Hemodialysis;
  • Blood transfusion and blood products;
  • Organ transplants;
  • Unsterile acupuncture;
  • Unsterile medical procedures;
  • Unsafe tattoos;
  • Accidental needle-stick exposures among health care workers;
  • Maternal-infant transmission
Hepatitis C Virus Transmission & Risk

• Blood-to-blood contact
  • Most new HCV infections in Ontario are related to unsafe injection drug use practices
  • There is biological and epidemiological evidence for transmission of HCV by non-injection drug use

• Sexual transmission
  • Strongest evidence of transmission is among HIV-positive people, especially HIV-positive men who have sex with men
  • Most studies, although of low quality, suggest the risk of transmission is low in the absence of blood-to-blood exposures.
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EPIDEMIOLOGY
PIDAC Hepatitis C Document
Epidemiology

• Reported incidence of confirmed hepatitis C cases in Ontario by public health unit, 2010

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System database, extracted by Public Health Ontario (05/12/2011). These data are subject to change due to data cleaning initiatives and removal of duplicates.
Reported cases of Hepatitis C Virus in Ontario, 1991 - 2010

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System database, extracted by Public Health Ontario (05/12/2011). These data are subject to change due to data cleaning initiatives and removal of duplicates.
Confirmed Cases of HCV by Sex for Ontario, 1994 – 2010

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System database, extracted by Public Health Ontario (05/12/2011). These data are subject to change due to data cleaning initiatives and removal of duplicates.
Confirmed Cases of HCV by Age Group for Ontario, 1994 - 2010

Source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System database, extracted by Public Health Ontario (05/12/2011). These data are subject to change due to data cleaning initiatives and removal of duplicates.
## Modelled true incidence of HCV in Ontario by sex and exposure category, 2007 - 2011

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<th>Exposure Category</th>
<th>Year</th>
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<tr>
<td></td>
<td>Total</td>
<td>3,470</td>
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</table>

Counts rounded to nearest integer. Columns may not sum to their totals due to rounding.
Source: Dr. Robert Remis, Ontario HIV Epidemiology Monitoring Unit (OHEMU).
Hepatitis C Virus
A Public Health Issue

• There is no vaccine available to prevent hepatitis C

• Infections are prevented through preventing exposures and behaviours linked to transmission

• Hepatitis C can be successfully treated, but barriers exist:
  • High cost
  • Serious side effects
  • Prolonged duration of treatment required
  • Treatment landscape is rapidly changing with new drugs, but high cost will remain a serious issue

• Due to the barriers treatment is often delayed until the benefits of treatment are likely to outweigh the harms.
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METHODS
Methodology

• Literature was searched using the following databases:
  • Ovid MEDLINE, Embase, PsycINFO, EBSCOhost CINAHL Plus, Academic Search Premier, and in some cases SocINDEX

• Years 1950 – 2011

• Only English-language abstracts were reviewed

• For selected topics, the working group also undertook searches of grey literature sources:
  • Unpublished sources
  • Relevant and reliable
  • Mostly government publications from the United Kingdom (U.K.), United States, Canada and Australia.
PIDAC Hepatitis C Document
Methodology

• Article abstracts
  • Reviewed to determine whether the study addressed the question being considered
  • Whether the results were generalizable to Canada

• Full reviews were conducted for selected articles

• Full systematic reviews were not completed
  • Where possible published systematic reviews or other high-quality reviews were used & supplemented since its publication
  • Where no reviews were available, the most relevant studies were considered, summarized in table form, and assessed for individual strength.
Methodology

• Studies were assessed using National Institute for Health and Clinical Excellence (NICE) public health guidance methods used in the U.K.

• The strength of studies is presented using the same approach as NICE and the same ranking system for external validity

• The evidence was summarized and presented at Hepatitis C Working Group meetings

• Discussion and feedback were incorporated into the relevant chapters, and recommendations were determined by consensus.
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Public Health Response to Hepatitis C

RECOMMENDATIONS

OVERVIEW
Surveillance & Testing

- Surveillance data should be used to
  - Examine the association in newly acquired cases
  - Examine the association between HIV/HCV co-infection
  - Plan and evaluate HCV control in Ontario

- Both + and – HCV RNA results should be reported to public health

- Surveillance case definitions should specifically define newly acquired and chronic cases

- Laboratories should provide RNA testing forms with each positive serology report
Surveillance & Testing

• Follow up should be undertaken for all newly reported cases with priority to newly acquired cases if resource limitations exist

• Combine anti-HCV positive tests with previous results to more easily identify newly acquired cases

• HIV or HBV infected individuals should be tested for HCV

• HCV positive individuals should receive publicly funded immunization for hepatitis A & B

• Immunocompromised individuals with exposure risk to HCV should have RNA testing even if anti-HCV is negative.
Screening

- HCV pre and post-test counselling must be provided
- Research should be conducted to determine if birth cohort screening is applicable in Canada
- Those at increased risk of HCV should have access to screening
- Screening can be offered through street outreach, in partnerships with community agencies and harm reduction programs
- PHU should facilitate access to primary care for HCV + individuals
- Individuals with ongoing risk of exposure should be tested at least annually
• Public health units should ensure access to harm-reduction programs including equipment supplied by the Ontario Harm Reduction Distribution Program
• Current drug users or previous drug users should be included in the development, delivery and evaluation of harm-reduction programming
• Public health units should incorporate safer inhalation equipment in their harm-reduction programs
• Clients with a history of illicit drug use or imprisonment should be counselled about their risks and offered testing for HCV, HBV and HIV.
Case Management

• Education/counselling of cases should be ensured
• Attempt to determine new infections, risk factors and investigate possible clusters
• Contact tracing should be done to identify current at risk identifiable contacts & testing offered (this does not require tracing sexual contacts unless there is a history of blood to blood contact)
• HCV cases should be offered testing for HIV & HBV
• HCV cases should be investigated to determine reason for testing, potential source of infection and risk of other STIs
• Pregnancy status needs to be determined – testing of infants should be discussed
• In the instance of a cluster, PHU should complete an investigation.
Public Education & Social Marketing

- Measures should be taken to educate the public about harm reduction to increase acceptance and reduce stigma and discrimination
- Education gaps in secondary schools surrounding blood borne infections should be identified and addressed
- Advocacy for those with HCV for improved low-cost housing, food and income support should take place to improve the health and chances of successful treatment in HCV positive individuals.
Specific Populations

- Access to counselling, testing, treatment and harm-reduction services needs to be ensured among street-involved youth, Aboriginal people, newcomers to Canada and men who have sex with men who are HIV positive
- Data specific to Aboriginal people with HCV should be collected to guide development of appropriate public health programming
- Policies addressing the Social Determinants of Health should be created to improve the health of HCV positive Ontarians
- PHUs should partner with corrections authorities to ensure delivery of appropriate services
- PHUs should partner with local drug-treatment services.
“Living” Best Practice Guidelines

- Inherent delays/lags between publication of guidelines and current state of evidence/practice
- PIDAC committed to guidelines updates every two years
- Dissemination of new evidence could have shorter timeframes:
  - Access to/effectiveness of direct-acting antivirals
  - Screening recommendations
  - Expansion of effective interventions, e.g. safer injection/inhalation facilities
- Crowd-sourcing monitoring of these developments
- Decisions when/how to revise/update the guidelines a collective one
Acknowledgments

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Thank YOU!

QUESTIONS?