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Sexually Transmitted Infections (STI) Series

- Session 1: Overview of bacterial STIs
  - January 23, 2017 – 12:00pm to 1:00pm
- Session 2: Chlamydia and gonorrhea
  - February 13, 2017 – 12:00pm to 1:00pm
- Session 3: Infectious syphilis
  - March 20, 2017 – 12:00pm to 1:00pm

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PHO Rounds: STI Series – Session 1

Overview of bacterial sexually transmitted infections

Andrea Saunders
Alanna Fitzgerald-Husek

January 23, 2017

Ontario
Agency for Health Protection and Promotion
Agence de protection et de promotion de la santé

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Context for STI Series

- Epidemiological changes
  - Sustained increases in cases and rates over time
  - Changes in geographical distribution
  - Changes to priority populations
- Availability of new diagnostic methods and subsequent increases in testing volume
- Updated treatment recommendations

Session 1: Overview

- Epidemiology of bacterial STIs
- Risk factors and priority populations
- STI screening
- STI case and contact management
  - Clinical and public health roles
  - Risk reduction counselling
  - Expedited partner therapy

Getting to know you

EPIDEMIOLOGY OF BACTERIAL STIS

Epidemiology of bacterial STIs: International

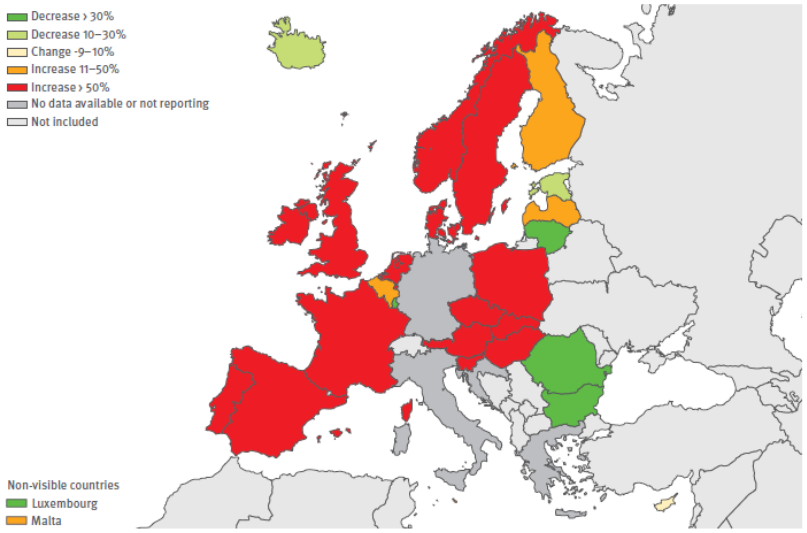
- World Health Organization estimates ~357 million new STIs acquired annually[1]
- Rising prevalence of bacterial STIs continues to be a concern for many countries, particularly within certain key populations
  - United States[2]:
    - 2014 and 2015: consecutive increases in incidence of all three bacterial STIs
    - 2010-2014: ~50% increase in early syphilis among men who have sex with men (MSM)
  - Australia[3]:
    - 2006-2015: among males, >100% increase in gonorrhea incidence and >200% increase in infectious syphilis incidence
      - > 2/3 of infectious syphilis cases are HIV-infected MSM (2011-2014)

1. World Health Organization (2016). Sexually transmitted infections – Fact sheet. August 2016.
2. US Centers for Disease Control and Prevention. Sexually transmitted disease surveillance 2015.
3. Kirby Institute. 2016 Annual surveillance report of HIV, viral hepatitis, STIs.

Epidemiology of bacterial STIs: International

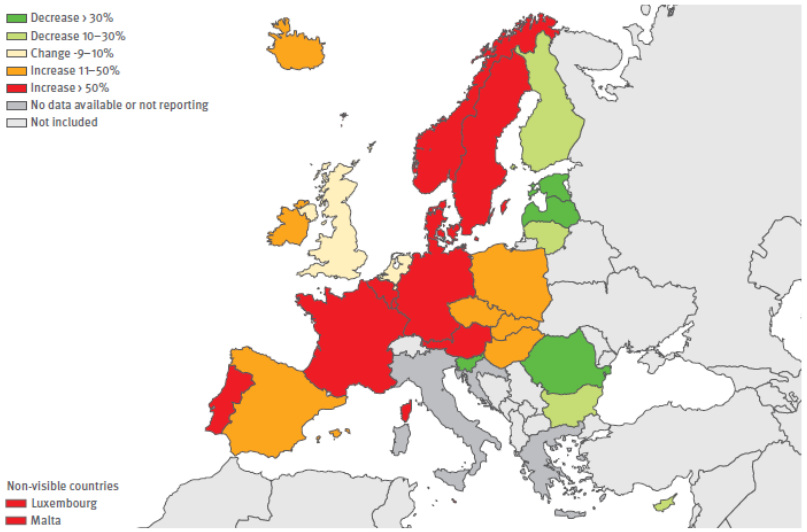
- European Union[4]: 2008-2013
  - 80% increase in gonorrhea incidence; 43% MSM (2013)
  - 50% increase in syphilis incidence in Western Europe

Figure 2.11: Relative change in the number of reported gonorrhoea cases, EU/EEA, 2008–2013



Note: Greece is not included, as a new surveillance system was put in place in 2010, and data are not comparable between the old and the new system.

Figure 3.12: Relative increase or decrease in the number of reported syphilis cases, EU/EEA, 2008–2013



Note: Greece is not included because a new surveillance system was introduced in 2010; data between the old and new systems are incompatible.

4. European Centre for Disease Prevention and Control (2015). Sexually transmitted infections in Europe 2013.

Epidemiology of bacterial STIs: Canada[5]

Chlamydia

- 49.2% increase between 2005 to 2014
- Rates highest among females 15-24 years of age
- In 2014, reported rates in YT, NT, NU, AB, SK, and MB exceeded national average (307.4/100,000)

Gonorrhea

- 61.2% increase between 2005 to2014
- Rates highest among males 20-29 and females 15-24 years of age
- In 2014, reported rates in YT, NT, NU, AB, SK, and MB exceeded national average (45.8/100,000)

Infectious Syphilis

- 95.1% increase between 2005 to 2014
- Rates highest among males 25-29 years of age
- In 2014, reported rates in BC, NU, MB, QC, and NS exceeded national average (6.6/100,000)

5. Public Health Agency of Canada. Report on sexually transmitted infections in Canada: 2013-2014.

What do you think?

STI trends in Ontario

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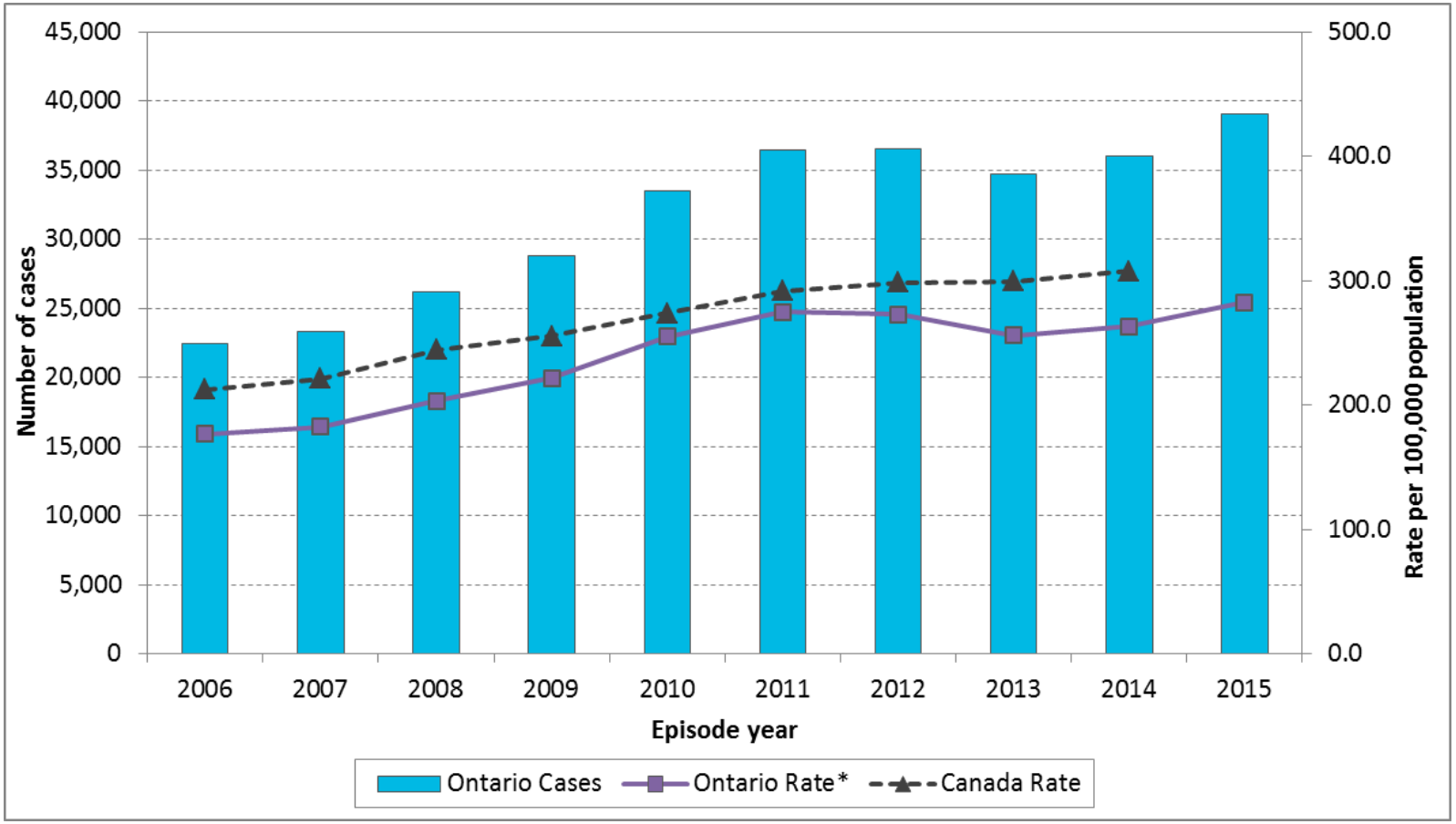
Incidence of chlamydia by year: Canada and Ontario, 2006-2015



Ontario cases: Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS), extracted by Public health Ontario [2016/10/03].
Canadian rates: Public Health Agency of Canada, Canadian Notifiable Disease Section, 2005-2014 received by PHO [2016/12/22].
Population estimates and projections: MOHLTC, Health Analytics Branch, Dates received: 2005-11 [2014/07/03], 2012-14 [2015/11/18], 2015 [2015/03/13].
***Note**: Ontario rates include cases that did not specify gender as male or female.

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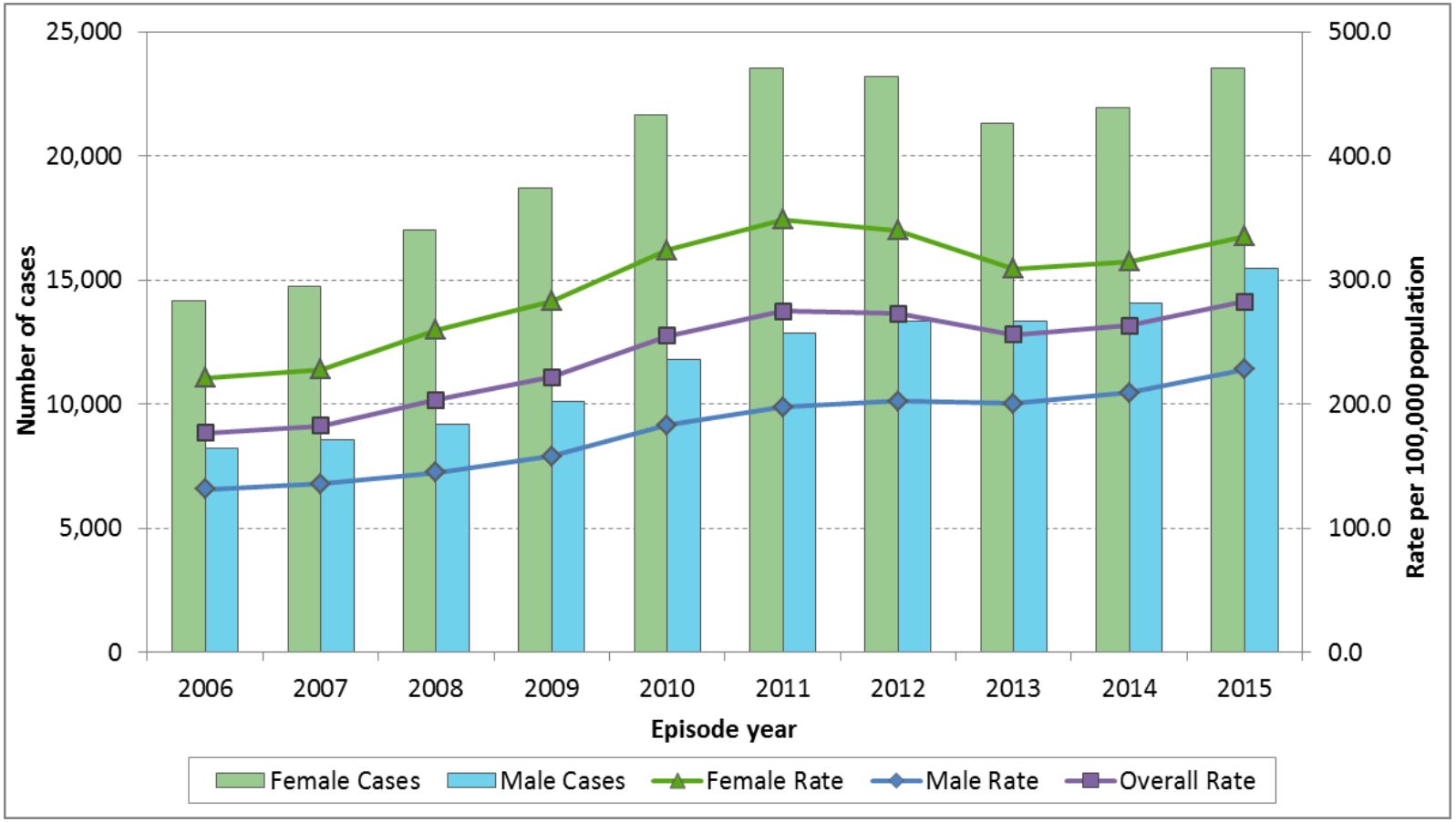
Incidence of chlamydia by sex: Ontario, 2006-2015



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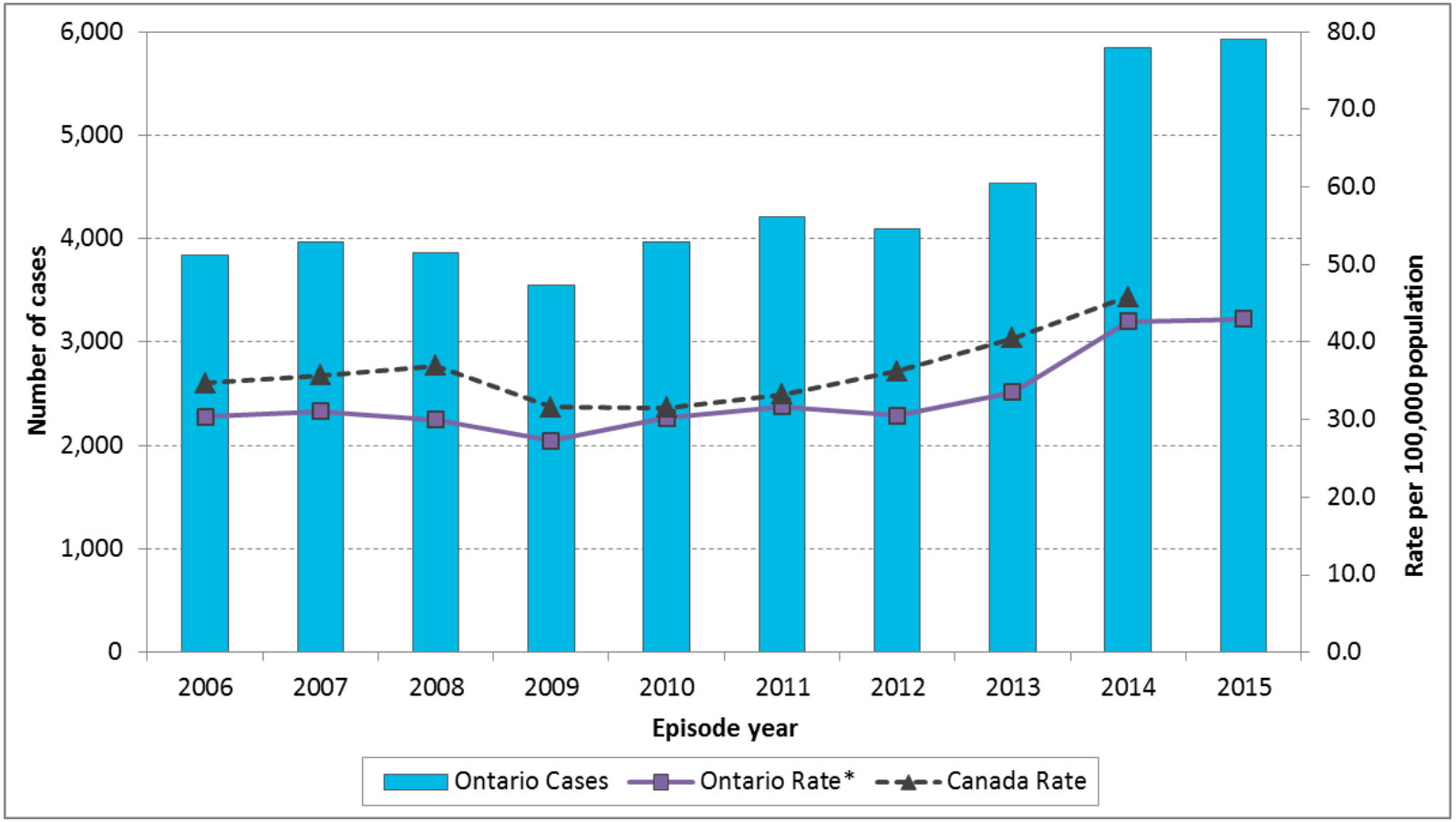
Incidence of gonorrhea by year: Canada and Ontario, 2006-2015



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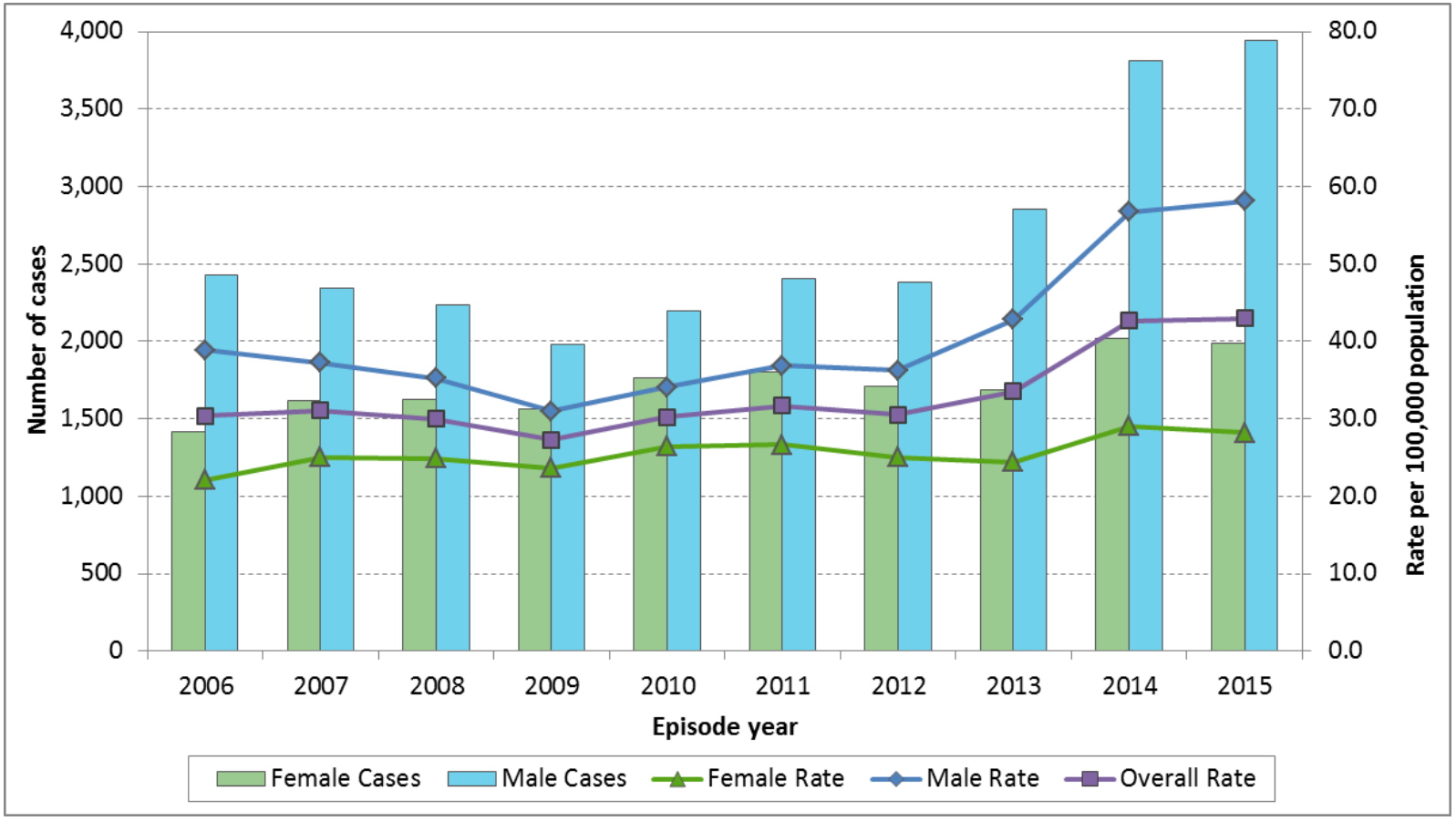
Incidence of gonorrhea by sex: Ontario, 2006-2015



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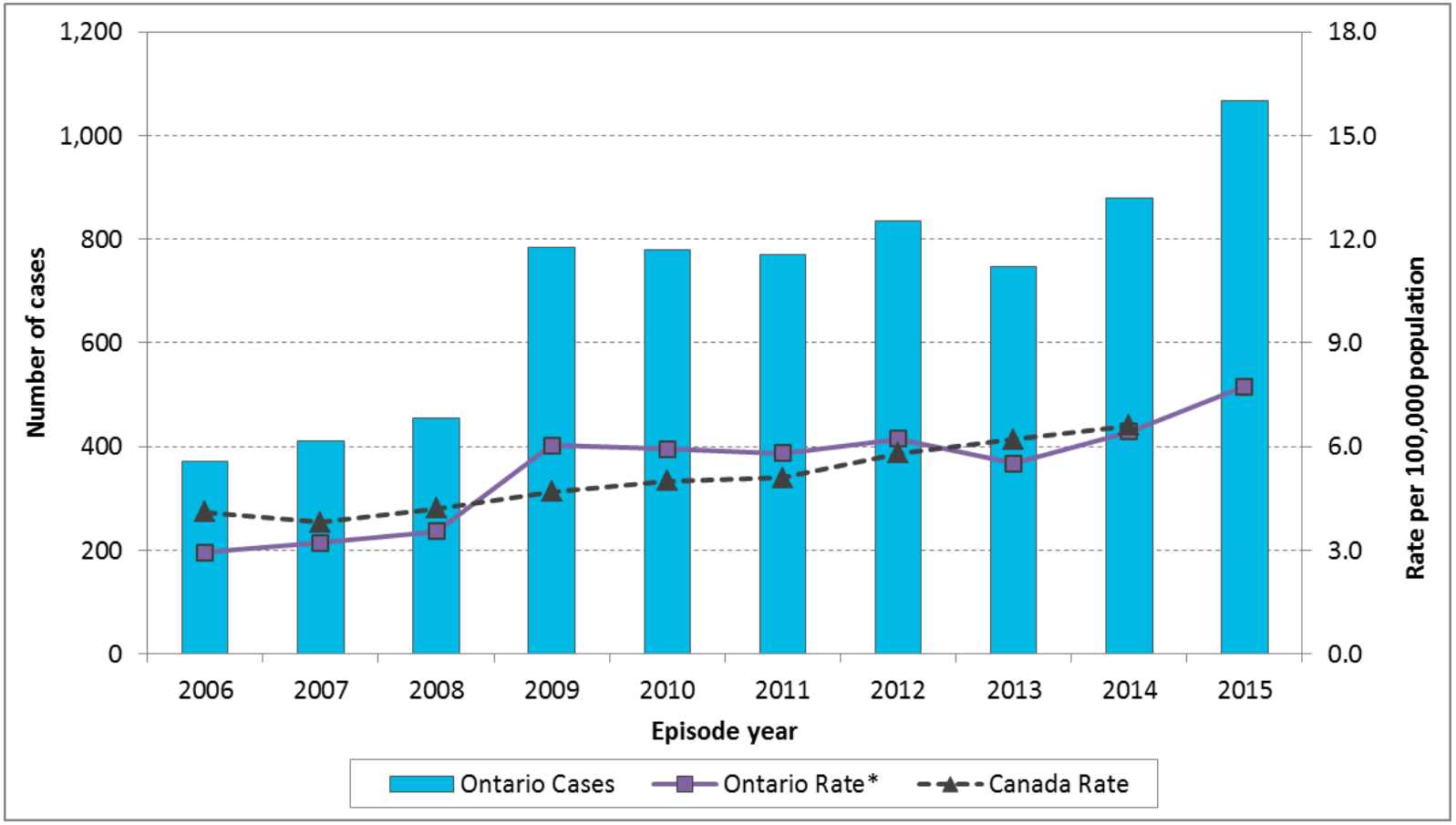
Incidence of infectious syphilis by year: Ontario and Canada, 2006-2015



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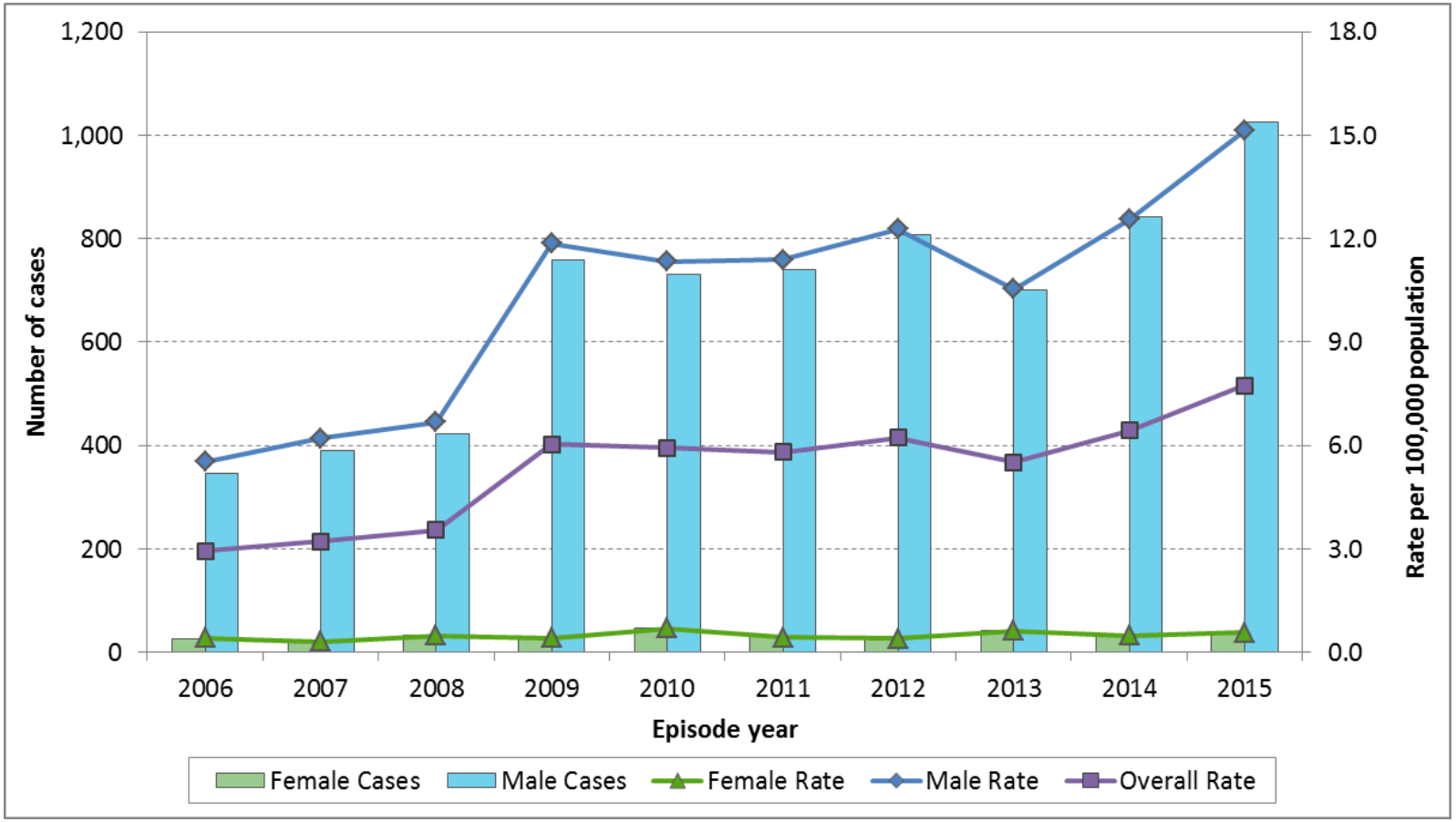

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RISK FACTORS AND POPULATIONS AT RISK

Populations with high rates of STIs in Ontario

- Adolescents and young adults
  - **Chlamydia**: Majority female; incidence highest among those aged 15-24 years
  - **Gonorrhea**: Majority male (~60%); incidence highest among those aged 20 – 29 years
- Men who have sex with men (MSM)
  - **Infectious syphilis**: vast majority male (~95%)
    - ~85% report 'sex with same sex' (of those with risk factor information)
  - **Gonorrhea**: ~40% of male cases report 'sex with same sex' (of those with risk factors)
- HIV infected
  - **Infectious syphilis**: on average, 40% of cases reported between 2006-2015 were HIV co-infected

What do you think?

STI Risk Factors

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Risk factors for chlamydia and gonorrhea, 2011 to 2015

Risk Factor	Chlamydia		Gonorrhea	
	Male (%)	Female (%)	Male (%)	Female (%)
No condom used	72.8	73.8	75.9	76.7
Sex with opposite sex	57.8	66.5	29.3	53.8
New contact in last 2 months	21.2	16.4	23.7	16.7
≥ 1 contact in last 6 months	19.9	13.5	29.4	16.1
Pregnant	n/a	11.2	n/a	10.4
Sex with same sex	9.0	1.2	**38.5**	1.4
Repeat STI	7.1	6.9	6.9	7.0
Anonymous sex	4.1	1.5	6.7	1.9
Condom breakage	3.6	2.8	5.1	5.0
Impaired judgement	3.6	2.5	4.4	3.4
≥ 1 Risk Factor Reported	**74.0**	**73.6**	**74.0**	**65.6**

Source: Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS), extracted by Public health Ontario [2016/10/03].

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Risk factors for infectious syphilis, 2011 to 2015

Risk Factor	Infectious Syphilis	
	Male (%)	Female (%)
Sex with same sex	**85.1**	6.0
No condom used	61.5	**78.5**
≥ 1 contact in last 6 months	42.1	20.8
Co-infection	23.0	0.7
Anonymous sex	17.8	3.4
Repeat STI	15.0	8.1
New contact in last 2 months	14.6	14.8
Sex with opposite sex	9.9	74.5
Bath house	6.8	0.7
Met contact through internet	6.2	2.7
≥ 1 Risk Factor Reported	**93.4**	**85.6**

Source: Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS), extracted by Public health Ontario [2016/10/03].

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STI SCREENING

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Populations identified as priorities for STI screening[6]

Identified priorities

- Those with increased STI rates (sexually active <25 years old; MSM)
- Risk behaviours/practices
  - Sexual: unprotected sex; new sexual contact(s); anonymous sex; multiple partners
  - Substance abuse: use to impairment level; injection drug use; other substance use
- STI history (previous/repeat; co-infection)
- Sexual contact of STI case
- Pregnant

Examples of other individuals/populations who are priorities for STI screening

- Street involved and/or homeless; sex work involvement
- Victim/survivor of sexual assault or abuse
- Others _____

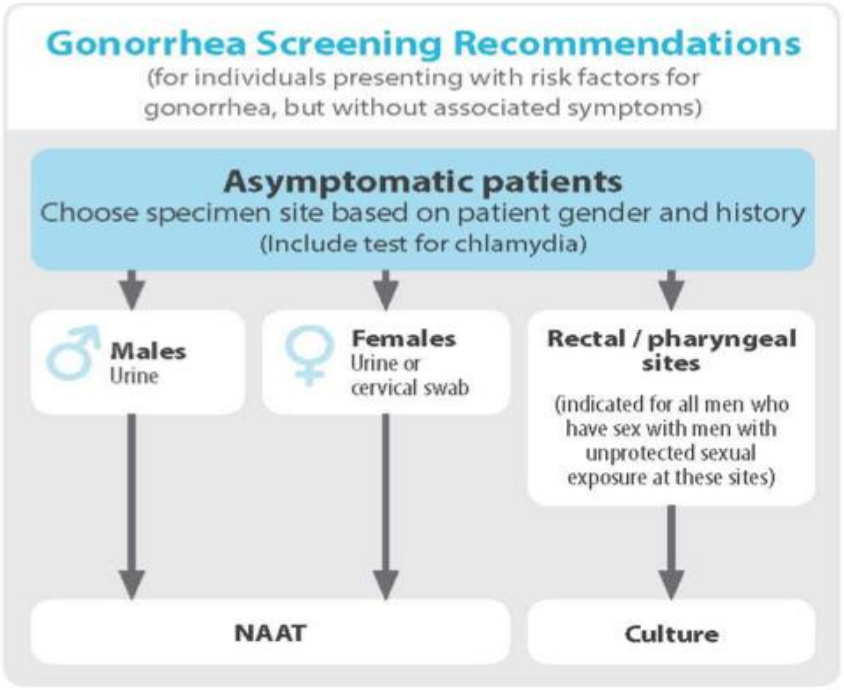
6. Public Health Agency of Canada. Sexually transmitted infections guidelines.

STI screening

- For asymptomatic individuals with risk factors
- Appropriate history and clinical assessment

Gonorrhea and Chlamydia

Screening algorithm for asymptomatic persons[7]



Infectious Syphilis

- Screening with serology

7. Public Health Ontario (2013). Guidelines for testing and treatment of gonorrhea in Ontario

What do you think?

STI Screening

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STI CASE AND CONTACT MANAGEMENT:
CLINICAL AND PUBLIC HEALTH ROLES

STI case and contact management in Ontario[8]

- Case and contact management are key for helping control STIs
- In the context of:
  - STI increases
  - Legislation – STIs are reportable communicable diseases
  - Guidance documents regarding management, prevention
  - Complementary roles for clinicians and public health practitioners
    - Individual patient and population levels
    - Similar end goal of reducing STIs
  - Varying contexts, approaches, challenges across Ontario

8. Ministry of Health and Long-Term Care (2013). Sexual health and sexually transmitted infections prevention and control protocol, 2013 (revised).

Ontario context

- Chlamydia, gonorrhea, and syphilis are reportable under ***Health Protection and Promotion Act (HPPA)***[9]
- **Ontario Public Health Standards (OPHS)** published under HPPA[10]
  - Specifies requirements for boards of health regarding public health programs and services, including STIs
- **Sexual Health and Sexually Transmitted Infections Prevention and Control Protocol, 2013 (Revised)**[8]
  - Provides direction to boards of health on implementation of programs to prevent and control STIs and promote health sexuality for priority populations, cases and contacts.

8. **Mini**stry of Health and Long-Term Care (2013). Sexual health and sexually transmitted infections prevention and control protocol, 2013 (revised).
9. Ministry of Health and Long-Term Care. Health Protecion and Promotion Act, R.S.O. 1990, c.H.7.
10. Ministry of Health and Long-Term Care. Ontario Public Health Standards, Sexual health, sexually transmitted infections, and blood-borne infections (including HIV).

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STI case and contact management in Ontario[11]

- Culturally sensitive, supportive, non-judgemental
- Treatment, counselling, resources/referrals
- Roles for health care provider, public health
- Priorities for contact follow up

11. Ministry of Health and Long-Term Care (2009). Sexually transmitted infections case management and contact tracing best practice recommendations.

Contact tracing

- Informs contacts of their potential exposure and encourages them to seek assessment, testing, appropriate treatment
- Provider and/or patient notification/referral
- Various methods and approaches
- Can be enhanced by:
  - Direct provider/public health follow up
  - Patient-delivered (expedited) partner therapy
  - Provide referral cards or written information to case for contacts
  - Reminders
- Priorities for contact tracing and direct public health follow up

11. Ministry of Health and Long-Term Care (2009). Sexually transmitted infections case management and contact tracing best practice recommendations.

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STI CASE AND CONTACT MANAGEMENT:
RISK REDUCTION COUNSELLING

Client-centred risk reduction counselling

- Working with client to provide information and counselling regarding ways to avoid or minimize risk of STIs
  - E.g. successfully treat current STI, contact follow up, behaviour change

✓ Relevant to the client
✓ Non-judgemental, supportive, empathetic
✓ Tailored to client situation (e.g. appropriate to client's needs/goals, culture, language, sex, sexual orientation, age, educational level)
✓ Discuss specific actions that could work for the client (e.g. abstinence, condom use, limiting number of sex partners, address barriers to modifying sexual practices)

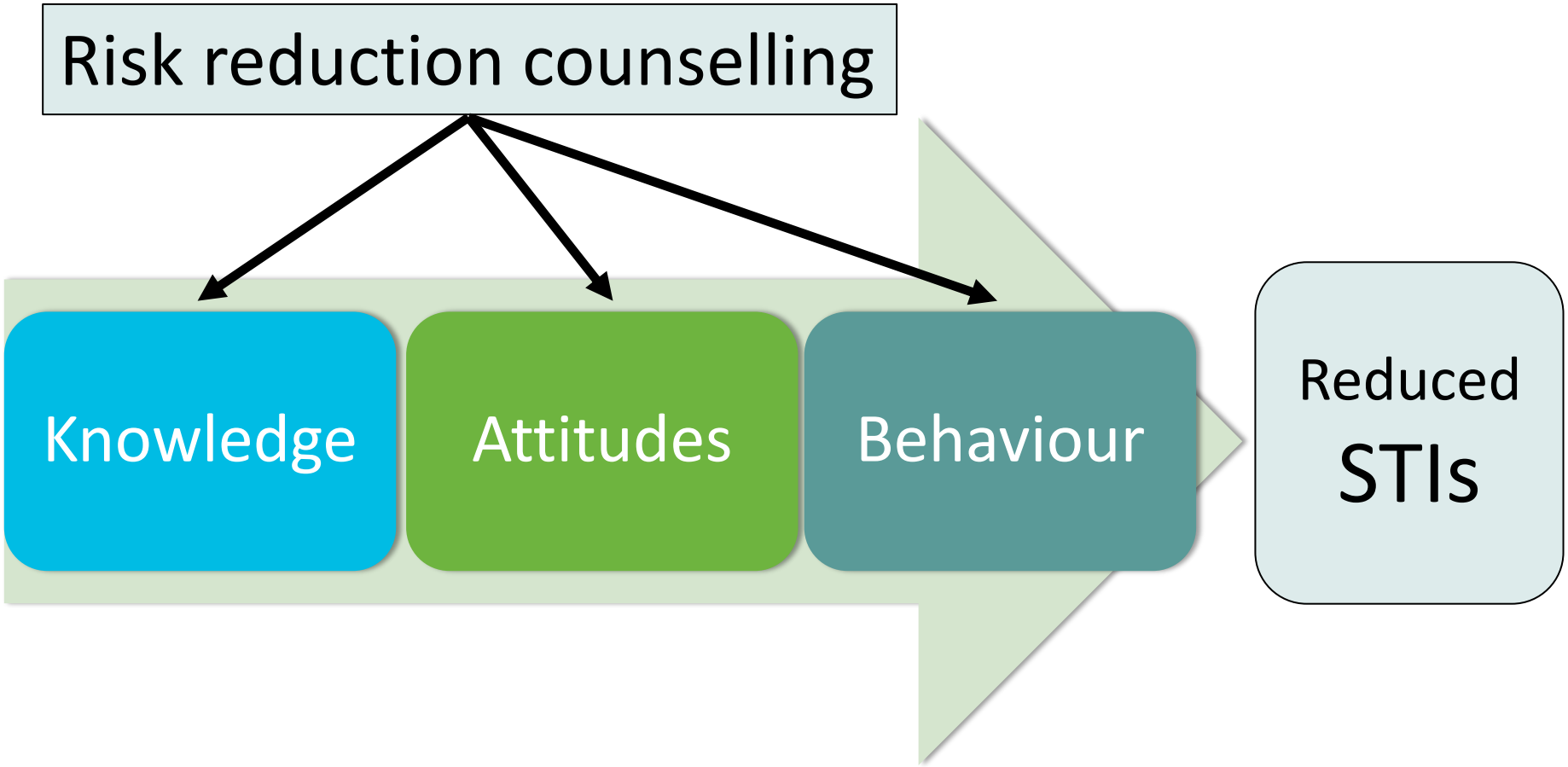
11. Ministry of Health and Long-Term Care (2009). Sexually transmitted infections case management and contact tracing best practice recommendations.

Risk reduction counselling

- Different models and approaches
- Examples of what counselling may include:
  - Educational materials
  - Personalised goal setting
  - Role play and skills training
  - Identify and address barriers to behaviour change
- Examples of how counselling may be delivered:
  - Brief vs. longer intervention(s)
  - Motivational interviewing techniques to facilitate behaviour change
  - Individually, in pairs, groups
  - In-person, via distance

11. Ministry of Health and Long-Term Care (2009). Sexually transmitted infections case management and contact tracing best practice recommendations.

Risk reduction counselling



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Benefits of risk reduction counselling

Can contribute to improvements in:

- Knowledge
- Attitudes
- Behaviours and practice outcomes

Can contribute to reductions in:

- Incidence of unprotected sex
- Number of sexual partners
- Incidence of reinfection
- Treatment non-adherence
- Risk of unintended pregnancy

12. Carrico (2016)
13. Crepaz (2009)
14. Jiwatram-Negrón (2014)
15. Scott-Sheldon (2010)

STI CASE AND CONTACT MANAGEMENT:
EXPEDITED PARTNER THERAPY

Expedited partner therapy (EPT)

- Clinical practice of treating sex partner of person with STI by providing prescriptions or medications for person to take to the exposed partner without a health care provider first examining the partner.
  - Used primarily for contacts of chlamydia cases, and gonorrhea
- May involve:
  - Prescriptions for partners (prescription-EPT)
  - Test kits for partners to mail back
  - Information sheets, referral instructions
  - Telephone consultations with health care providers

11. Ministry of Health and Long-Term Care (2009). Sexually transmitted infections case management and contact tracing best practice recommendations.

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Expedited partner therapy

Some advantages:

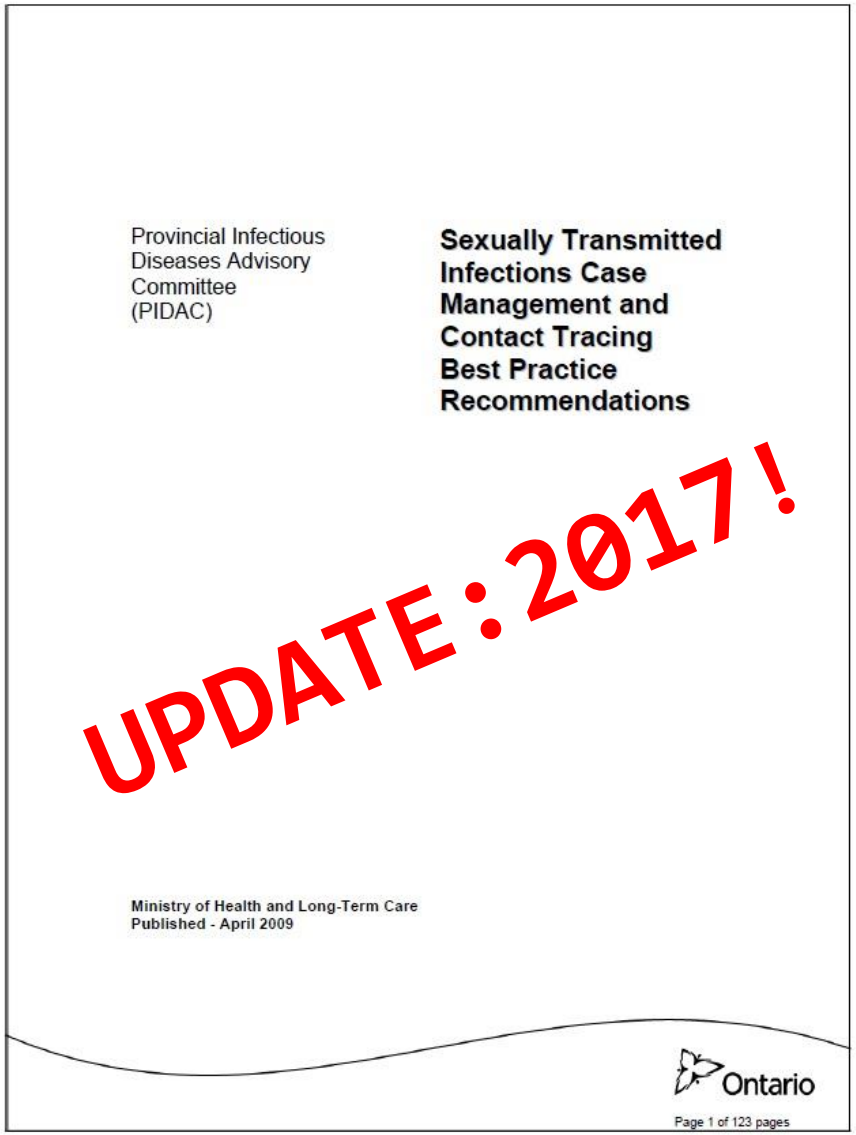
- Can increase proportion of partners treated (especially index patients with reluctant partners)
- More timely treatment of partners
- May reduce reinfections among patients
- Treatment of undiagnosed STIs
- Prevent possible morbidity, complications
- Can provide information and referral instructions

Some challenges:

- Hard to verify treatment completion
- Partner may not seek care, testing
  - Incomplete or inadequate care (e.g. pelvic inflammatory disease)
- May lose counselling opportunity
- GC – first-line treatment = ceftriaxone
- Prospect of antimicrobial-resistant gonorrhea
- Possible allergic reactions or adverse drug events
- Case's concerns about stigma, negative reactions
- Unknown or multiple contacts

16. Ferreira (2013)
11. Ministry of Health and Long-Term Care (2009). Sexually transmitted infections case management and contact tracing best practice recommendations.

Best Practice Recommendations



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Questions?

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Next sessions

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  - February 13, 2017 – 12:00pm to 1:00pm
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