



Public Health Updates for Halton Physicians: Focus on Syphilis

# Syphilis – Are you ready?

May 27, 2021



halton.ca ☎ 311

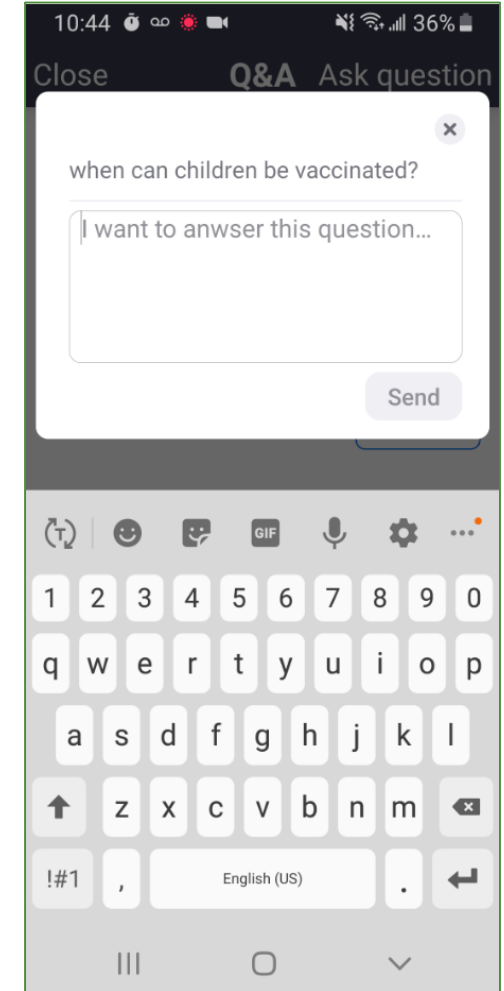
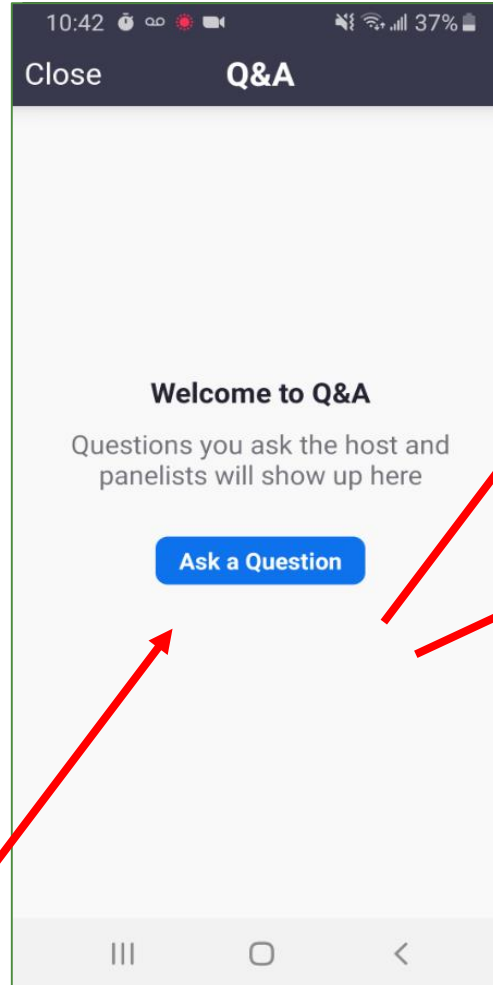


# Agenda

- Syphilis is on the rise in Halton – Dr. Joanna Oda, Associate Medical Officer of Health
  - Local context
- Keynote speaker – Dr. Dale Kalina
  - Diagnosis
  - Treatment
  - Follow up
- Question & Answer Session



# Housekeeping



Use the Q&A function to ask, vote or comment on a question



# Learning Objectives

By the end of this session, participants will be able to:

- Describe local Syphilis trends
- Follow the Canadian Guidelines on STIs for the diagnosis, treatment and follow up of Syphilis.

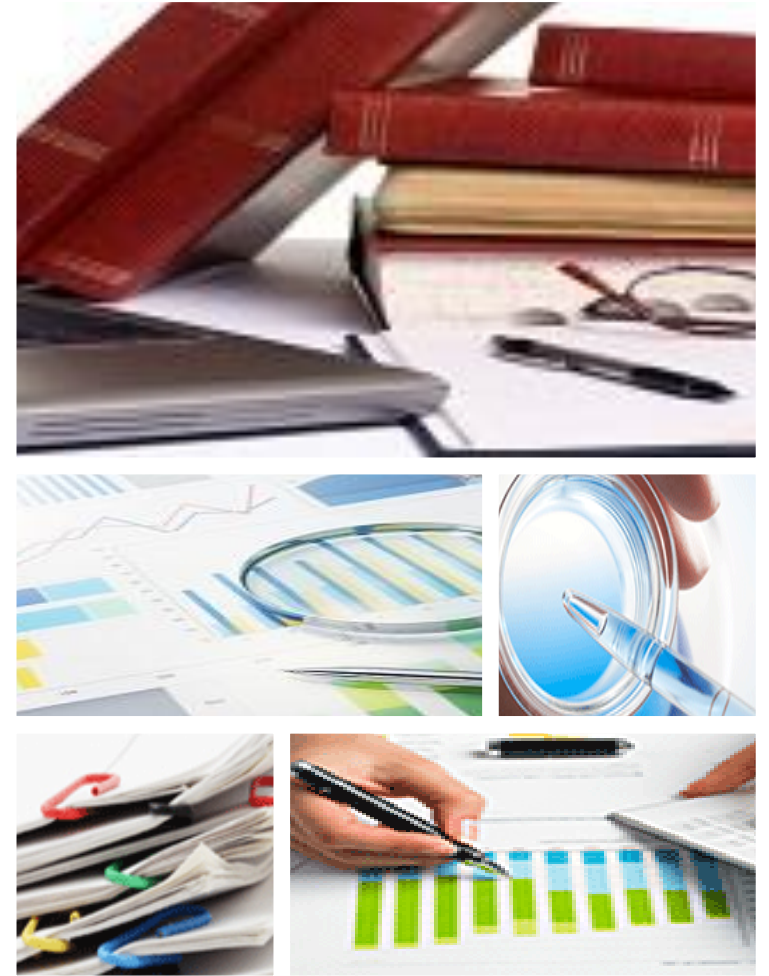
Overall series learning objective:

- By attending the Public Health Updates for Halton Physicians series, participants will be able to identify and discuss relevant and recent information about approaches to the prevention, diagnosis and management of key public health issues impacting their family medicine practice in both rural and urban settings.



# Mitigating Potential Bias

All data, resources and recommendations presented are based on current scientific literature and data.



# Disclosure of Financial Support

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- This program is hosted and organized by Halton Region Public Health.
- I am a paid employee with Halton Region Public Health.
- **Potential for conflict(s) of interest:**
  - Halton Region Public Health receives funding from the Province of Ontario who also provides funding for public health research, programs and resources that may be discussed today.



# Who diagnoses Syphilis

Diagnosing  
Provider

92%

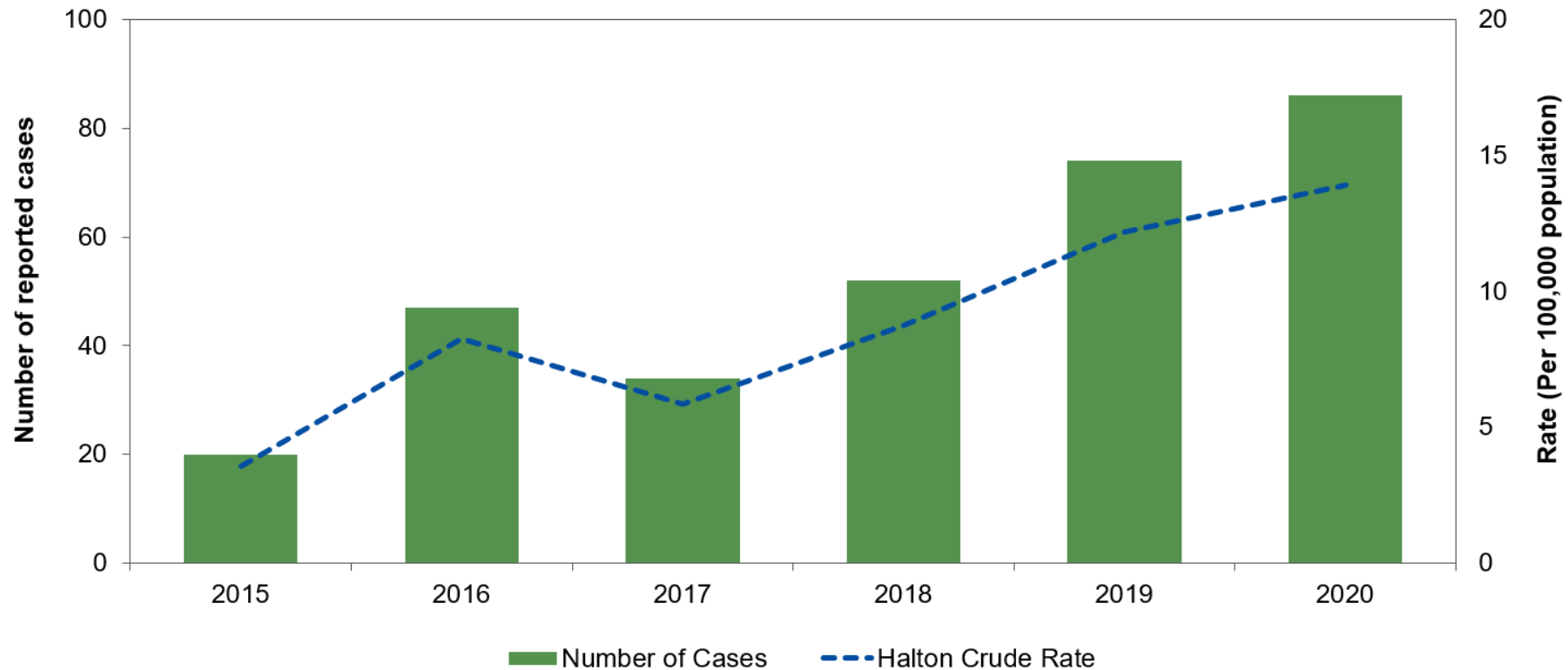
of syphilis cases in  
Halton were tested and  
diagnosed by a private  
health care provider in  
2020

8%

were tested  
and diagnosed  
by Public  
Health

# Syphilis

## Trends over time



Number and crude rate (per 100,000 population) of syphilis cases, Halton residents, 2015-2020

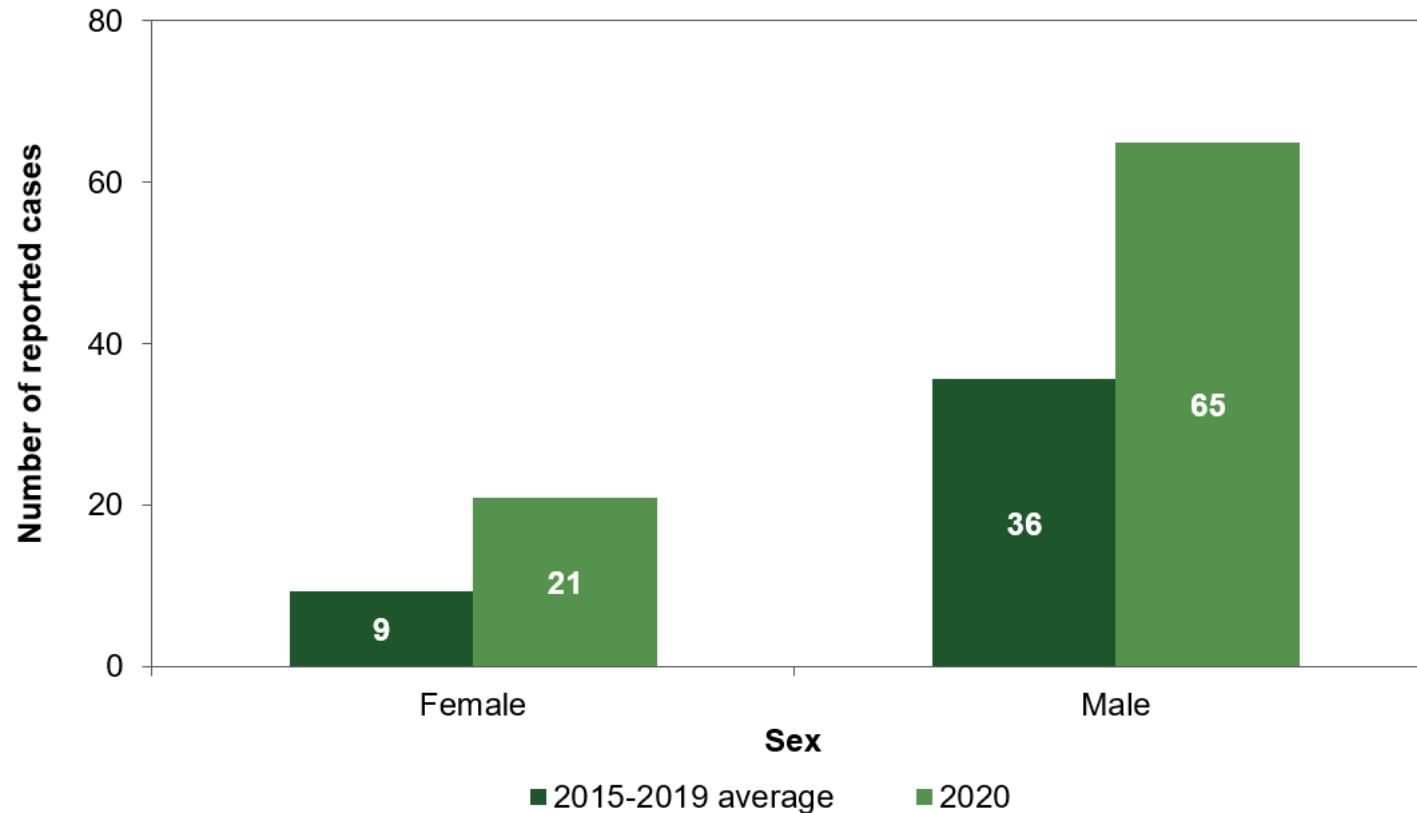


Sources: Ontario Ministry of Health and Long-Term Care, Integrated Public Health System database, extracted by Public Health Ontario [May 6, 2021]. Population Estimates [2015-2017], IntelliHEALTH, Ontario Ministry of Health and Long-Term Care, extracted May 6, 2021. Population projections [2018-2020], IntelliHEALTH, Ontario Ministry of Health and Long-Term Care, Health Analytics Branch, extracted April 4, 2021. Excludes early congenital syphilis cases.



# Syphilis

## Number of cases, by sex

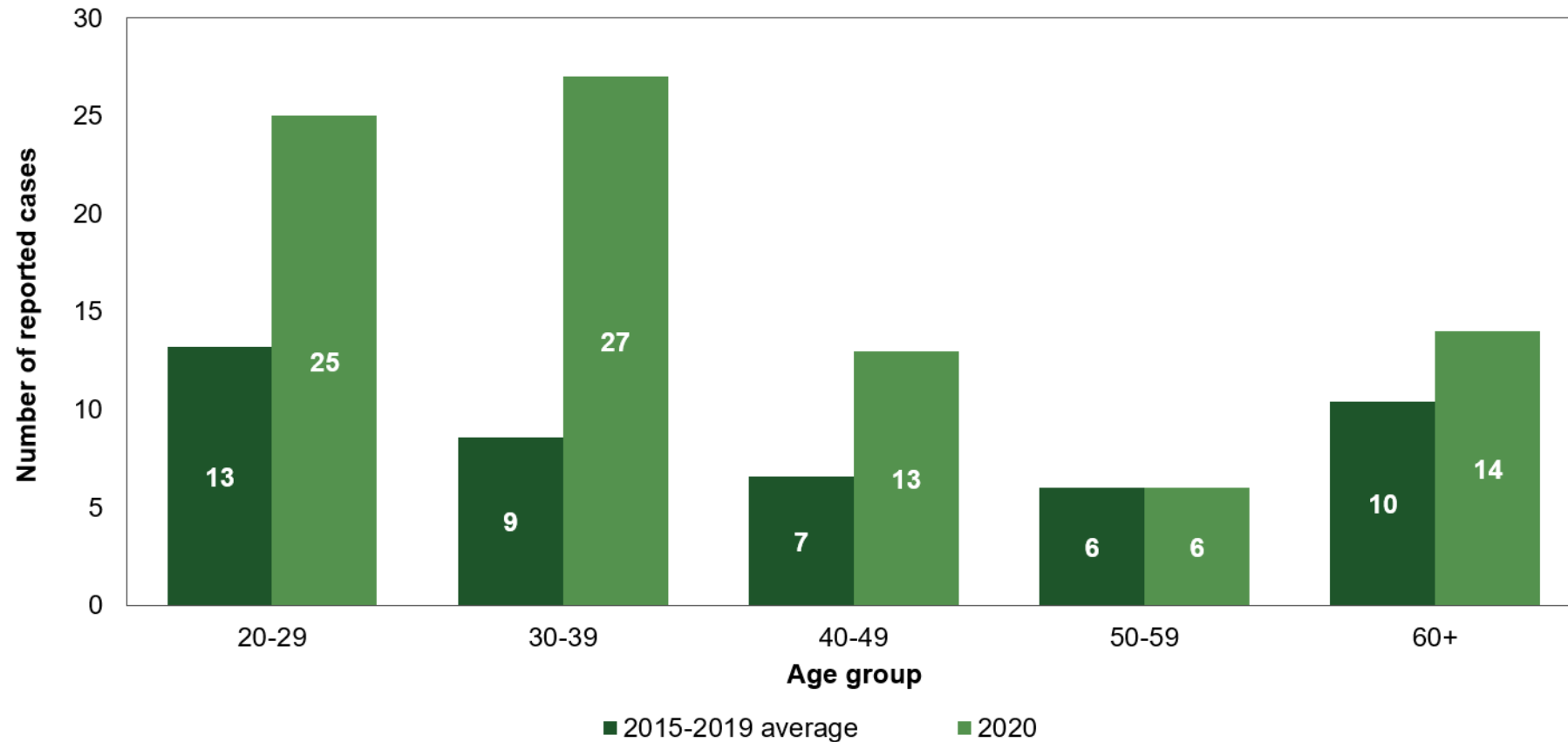


Number of syphilis cases, by sex, Halton residents, 2015-2020

Source: Ontario Ministry of Health and Long-Term Care, Integrated Public Health System database, extracted by Public Health Ontario [May 6, 2021]. Excludes cases with unknown sex. Excludes early congenital syphilis cases.

# Syphilis

## Number of cases, by age



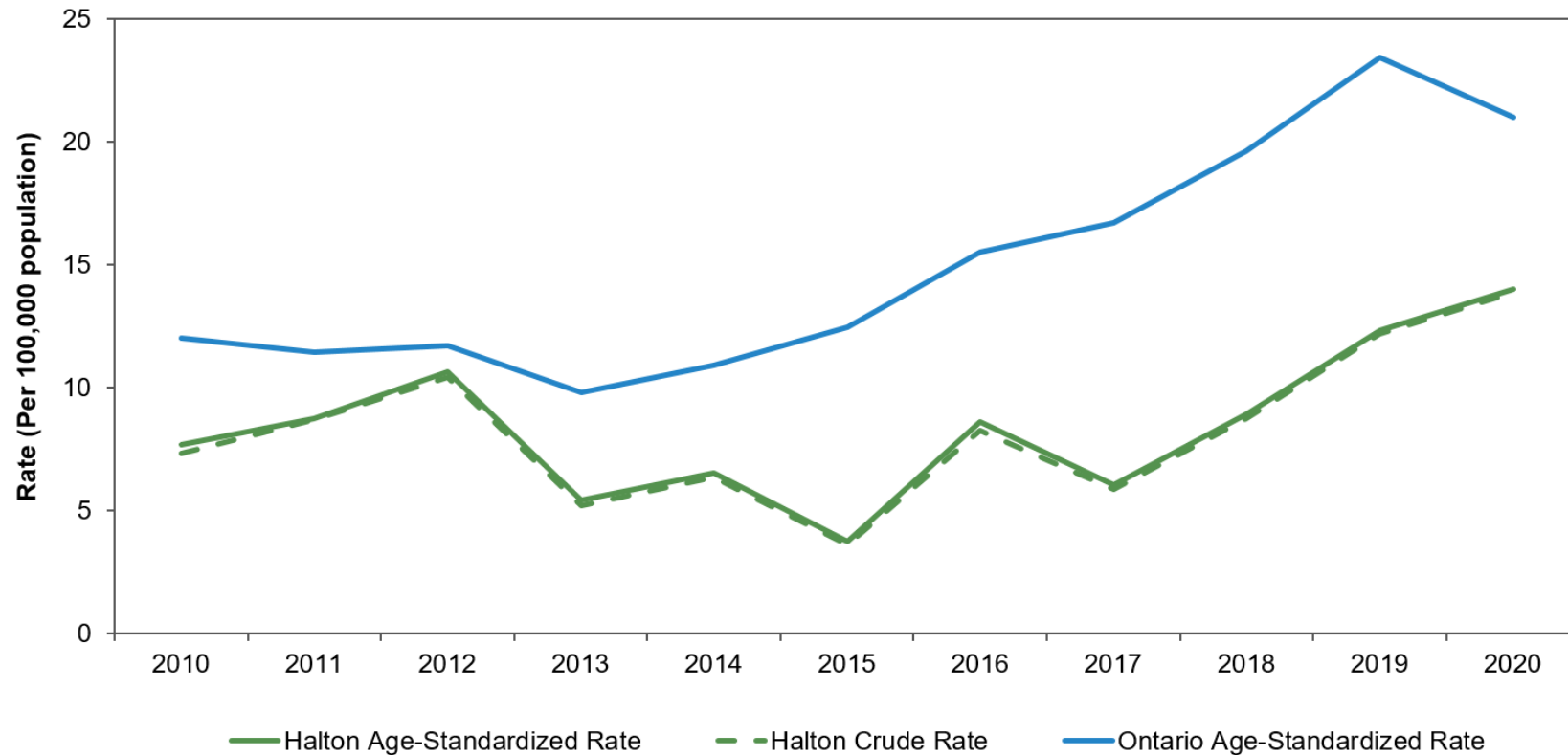
Number of syphilis cases, by age group, Halton residents, 2015-2020

Source: Ontario Ministry of Health and Long-Term Care, Integrated Public Health System database, extracted by Public Health Ontario [May 6, 2021]. Excludes cases with unknown age. Excludes early congenital syphilis cases.



# Syphilis

## Age-adjusted trends, Halton and Ontario



**Syphilis crude and age-standardized incidence rates (per 100,000), Halton residents compared to Ontario, 2010-2020**



Sources: Halton and Ontario data: Ontario Ministry of Health and Long-Term Care, Integrated Public Health System database, extracted by Public Health Ontario [May 6, 2021]. Population Estimates [2010-2017], IntelliHEALTH, Ontario Ministry of Health and Long-Term Care, extracted May 6, 2021. Population projections [2018-2020], IntelliHEALTH, Ontario Ministry of Health and Long-Term Care, Health Analytics Branch, extracted April 4, 2021. Excludes cases with unknown age. Excludes early congenital syphilis cases.

# Benefits of diagnosing and treating Syphilis

- For individuals
  - Prevent symptoms and sequelae related to syphilis
  - Decrease risk of HIV transmission and acquisition
  - Decrease risk of late (tertiary) complications
- For communities
  - Reduce transmission to others including sexual transmission and mother-to-child
  - Screening and early diagnosis of contacts





# First line Syphilis treatment for HCPs

- The preferred treatment for Syphilis is Bicillin LA - Penicillin G Benzathine, 2.4 million units
- Treatment has to be long acting (LA)
- HCPs can order from Halton Public Health
- [halton.ca/physicians](http://halton.ca/physicians) > Sexual Health Clinics
- Or call us at 905-825-6000 ext 4548



## STI TREATMENT ORDER FORM Chlamydia/Gonorrhea/Syphilis

FAX this form to: 905-333-0971

Infection	Antibiotic	Dosage	Packaging	# doses requested	Lot # / Expiry date (to be completed by Public Health)
Chlamydia	<del>Azithromycin</del>	1 g PO	Azithromycin 250 mg x 4 tablets		
Gonorrhea	Ceftriaxone <b>PLUS</b> Azithromycin	250 mg IM <b>PLUS</b> 1 g PO	Ceftriaxone Sodium for injection BP 0.25 g vials, Lidocaine <del>HCl</del> 1% USP 5 mL ampules ( <b>reconstitute with only 0.9 mL</b> ), <b>PLUS</b> Azithromycin 1g (as above)		
Syphilis	Penicillin G <del>benzathine</del>	2.4 mu IM <small>Please see link to Canadian Guidelines on STIs for syphilis staging and dosage.</small>	Penicillin G <del>benzathine</del> 1.2 mu x 2 <b>Plus</b> 21 gauge, 1.5" needle tips x 2		




Ordering Physician:		
Address:		
Phone:	Direct line:	Fax:

For information on the treatment of Gonorrhea search "gonorrhea guidelines public health Ontario" or visit [www.publichealthontario.ca](http://www.publichealthontario.ca)

For information on the Canadian guidelines on sexually transmitted infections search "Canadian guidelines on sexually transmitted infections" or visit [www.canada.ca/en/public-health/services/infectious-diseases/sexual-health/sexually-transmitted-infections/canadian-guidelines](http://www.canada.ca/en/public-health/services/infectious-diseases/sexual-health/sexually-transmitted-infections/canadian-guidelines)



# Syphilis – Public Health follow up

<b>Open</b>	Public Health receives positive lab report for syphilis and opens case investigation
	Public Health uses Ministry guidance to determine whether to initiate case management and sends a surveillance form to the testing HCP for completion
	Form provides details regarding risks, reason for testing, staging and treatment. This information is required by the Ministry to inform surveillance and by Public Health to inform case and contact management
	Public Health follows up with all cases of Infectious syphilis and their contacts to confirm treatment and partner notification
<b>Close</b>	PHU confirms that post treatment serology will be completed by testing HCP and closes case investigation



Dr. Dale Kalina, MD MBA FRCPC

Infectious Disease Physician

Medical Director Infection Prevention and Control – Joseph Brant Hospital

# Syphilis

Dale R Kalina, MD MBA FRCPC

May 27 2021

Halton Public Health



# QR Codes



# Disclosures

- **Faculty:** McMaster University Division of Infectious Diseases
- **Relationships with financial sponsors:**
  - **Speakers Bureau/Honoraria:**
    - Burlington Dental Academy
    - Probus Club of Burlington
    - Gerrie Electric
    - No honoraria:
      - Rotary Club Burlington
      - CTV, CBC, Global, CHCH YourTV Halton
  - **Consulting Fees:** Appleby College, FaceDrive, Shaping Minds in Healthcare
  - **Other:**
    - Employee of Joseph Brant Hospital
    - Torstar Halton Community Advisory Committee

# Disclosures

- I receive financial support from Joseph Brant Hospital and the Ministry of Health of Ontario in the form of salary and billing payments for patient services rendered.
- I have received in-kind support from Halton Public Health in the form of hosting the event

## **Potential for conflict(s) of interest:**

- I have received no funding to support this presentation or to discuss any products (treatments or tests) for this presentation.



## Mitigating Potential Bias

- All data presented is based on Health Canada recommendations and current literature resources





Etiology

# Epidemiology

- Increases in MSM
- Milder heterosexual increases
- Congenital syphilis reemerging from 2015



# Risk Factors

- Unprotected sexual activity especially MSM
- Previous syphilis, HIV, or STBBI (STI)
- Born to someone diagnosed with syphilis in pregnancy
- Substance use, precarious housing

# Clinical Manifestations

1

Primary

2

Secondary

3

Latent

- Early
- Late

4

Congenital

- Early
- Late

5

Neurosyphilis

- Early
- Late

6

Tertiary

# Primary





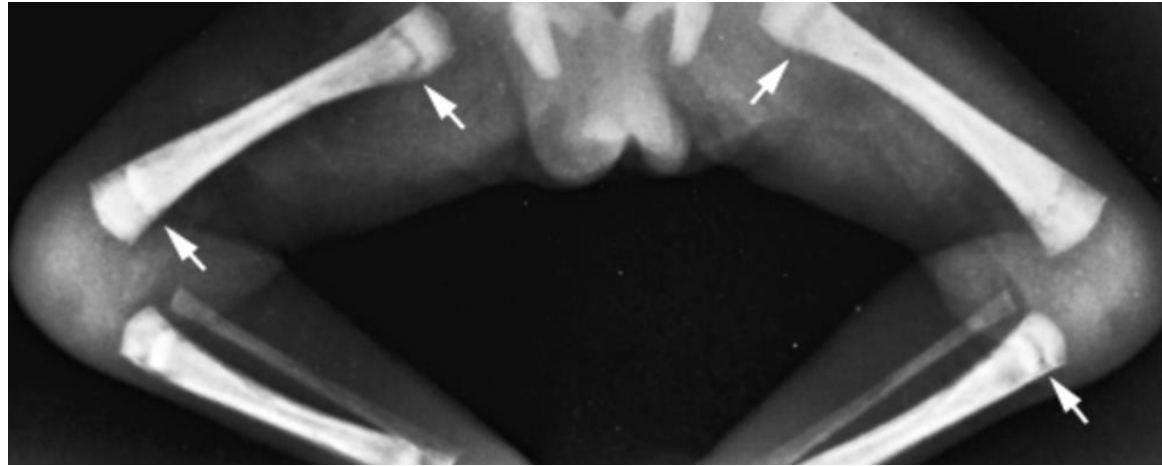
# Secondary





# Tertiary





Congenital

The slide features decorative curved lines in shades of green and blue, positioned in the top-left and bottom-right corners. The text is centered in a dark blue, sans-serif font.

# Screening and Diagnostic Tests

## Traditional algorithm

Initial screen with NTT RPR	First TT TP-PA	Second TT FTA-ABS	Possible interpretation
Non-reactive	Non-reactive	Reactive	<ul style="list-style-type: none"> <li>Primary syphilis with compatible history/clinical findings</li> </ul>
Reactive (dilutions can vary)	Reactive	Reactive	<ul style="list-style-type: none"> <li>Syphilis, any stage <sup>*</sup></li> <li>Previously treated syphilis</li> </ul>
Non-Reactive	Reactive	Reactive	<ul style="list-style-type: none"> <li>Previously treated syphilis</li> <li>Early primary syphilis</li> <li>Late latent/tertiary syphilis</li> </ul>
Reactive	Non-reactive	Non-reactive	<ul style="list-style-type: none"> <li>False positive</li> </ul>

<sup>\*</sup>

Note: RPR titre  $\geq 8$  are more likely to be infectious syphilis.



## Reverse algorithm

Initial screen with TT: EIA	NTT: RPR	Second TT: TP-PA, FTA-ABS or INNO-LA	Possible interpretation
Negative	Not done	Not done	<ul style="list-style-type: none"> <li>Not a case. Repeat serology if at risk for syphilis</li> </ul>
Borderline/ indeterminate	Non-reactive	Non-reactive or indeterminate	<ul style="list-style-type: none"> <li>Repeat serology as seroconversion may not have occurred yet (incubation period)</li> <li>If repeat serology remains unchanged, it is not a case of syphilis</li> </ul>
Borderline/ indeterminate	Non-reactive	Reactive	<ul style="list-style-type: none"> <li>Early primary syphilis</li> <li>Late latent/tertiary syphilis</li> <li>Previously treated syphilis</li> <li>If laboratory does not do the confirmatory test, repeat serology to determine if the person is seroconverting</li> <li>If repeat serology remains unchanged it is not a case of syphilis</li> </ul>
Positive	Reactive or non-reactive	Non-reactive	<ul style="list-style-type: none"> <li>False positive</li> <li>EIA without 2<sup>nd</sup> TT:               <ul style="list-style-type: none"> <li>Early primary syphilis</li> <li>Late latent/tertiary syphilis</li> <li>Previously treated syphilis</li> </ul> </li> </ul>
Positive	Reactive or non-reactive	Indeterminate	<ul style="list-style-type: none"> <li>Repeat serology to determine if it is early primary, late latent/tertiary or previously treated syphilis</li> <li>If repeat serology is unchanged this is likely to be a false positive</li> <li>EIA without 2<sup>nd</sup> TT:               <ul style="list-style-type: none"> <li>Syphilis, any stage, except with non-reactive NTT, then all but secondary stage <input type="checkbox"/>*</li> <li>Previously treated syphilis</li> </ul> </li> </ul>
Positive	Non-reactive	Reactive	<ul style="list-style-type: none"> <li>Early primary syphilis</li> <li>Late latent/tertiary syphilis</li> <li>Previously treated syphilis</li> </ul>
Positive	Reactive	Reactive	<ul style="list-style-type: none"> <li>Syphilis, any stage <input type="checkbox"/>*</li> <li>Previously treated syphilis</li> </ul>



# Alternate guides:

Source	QR
Public Health Agency of Canada	
Public Health Ontario	
Toronto Public Health	
<a href="#"><u>CJDIMM</u></a>	



# Treatment

Stage	Preferred Treatment	Penicillin Allergy Treatment
Primary, Secondary, Early Latent	Benzathine Penicillin G 2.4M units x1	Doxycycline 100mg PO BID x 14d Ceftriaxone 1g IV/IM daily x 10d
Latent, Late Latent, Cardiovascular, and gumma	Benzathine Penicillin G 2.4M units IM weekly x 3 doses	<i>Consider desensitization</i> Doxycycline 100mg PO BID x 28d Ceftriaxone 1g IV/IM daily x 10d
All adult neurosyphilis	Aqueous Pen G 3-4M units IV Q4h x10-14d	<i>Consider desensitization</i> Ceftriaxone 2g IV/IM daily x 14d
Pregnancy	Treat as above according to stage	<i>No alternative to Penicilin. Must desensitize</i>
Congenital	Crystalline Penicillin G 50K units/kg x 10d (BID <1wk old, TID 1-4w old, QID >4w old)	N/A

# Follow-Up

Adult



Congenital



The background features two large, overlapping, curved decorative elements. One is a light green arc in the top-left corner, and the other is a light blue arc in the bottom-right corner. Both have a soft, layered appearance.

# Prevention & Control

# Resources

- [UpToDate](#) (accessed last May 26, 2021)
- [Public Health Agency of Canada](#) (last accessed May 26, 2021)
- [Bennett, Dolin, Blaser, Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases Ninth Ed. Elsevier. 2019.](#)
- [Canadian Pediatric Society](#) (Last accessed May 26 2021)



q u e s t i o n s

# Thank you!

[doctors@halton.ca](mailto:doctors@halton.ca)

[halton.ca/physicians](http://halton.ca/physicians)

