

Trends in Reported Sexually Transmitted Infections in Wellington-Dufferin-Guelph: 2022

To: Chair and Members of the Board of Health

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Recommendations

It is recommended that the Board of Health receive this report for information.

Key Points

- Annual rates of confirmed chlamydial infection and syphilis increased in 2022 over 2021 rates, both locally in Wellington-Dufferin-Guelph (WDG) and province-wide in Ontario.
- While the annual rate of confirmed gonorrhoea in WDG in 2022 was approximately the same as the rate in 2021, the provincial rate of this disease increased noticeably in 2022 from the 2021 rate.
- Relatively few cases of human immunodeficiency virus infection/acquired immune deficiency syndrome (HIV/AIDS) were reported in 2022, compared to

other sexually transmitted infections (STI's). Furthermore, the number of cases reported in 2022 was less than the number reported in 2021.

- Females were over-represented among cases of chlamydial infection reported in WDG in 2022, whereas males were over-represented among reported cases of gonorrhea and syphilis.
- In 2022, a fast-spreading outbreak of monkeypox occurred worldwide, centred primarily in men-who-have-sex-with-men (MSM) communities. Fewer than ten cases of the disease were reported in WDG in 2022.
- Wellington-Dufferin-Guelph Public Health (WDGPH) maintained case management of all positive cases of chlamydia, gonorrhea, and syphilis throughout the COVID-19 pandemic.

Background

The Ontario Health Protection and Promotion Act Regulation requires that certain diseases of public health significance (DOPHS) are reported to public health units when diagnosed. Among these DOPHS's are several STI's. Once a report of an STI is received by WDGPH, staff in the Clinical Services program contact the case for the purpose of gathering information on how the infection might have been acquired and counselling the client on minimizing the risk of transmission and reinfection. In this way, the risk of wider spread of the STI within the population might be mitigated. Using data gathered from cases, the health unit also monitors the incidence and trends of reportable STIs within the local population.

As a follow-up to the BOH report on STI's presented in March 2022, this report will summarize numbers and trends of STI's in WDG over the past two years and discuss any observed changes in trends over this time.

Summary of STI Surveillance Information: 2022

The table below shows crude incidence rates and numbers of cases of sexually transmitted DOPHS reported to WDGPH over the past two years (2022, and 2021; Data Source: Integrated Public Health Information System, Public Health Ontario Infectious Disease Query):

STI	Number of Cases: WDG 2022	Number of Cases: WDG 2021
Chlamydial Infection	669	558
Gonorrhea	122	120
Syphilis - Infectious	28	22
Syphilis - Non-Infectious	9	8
Syphilis - Early Congenital	0	2
HIV/AIDS	8	5

Discussion

Chlamydial Infection:

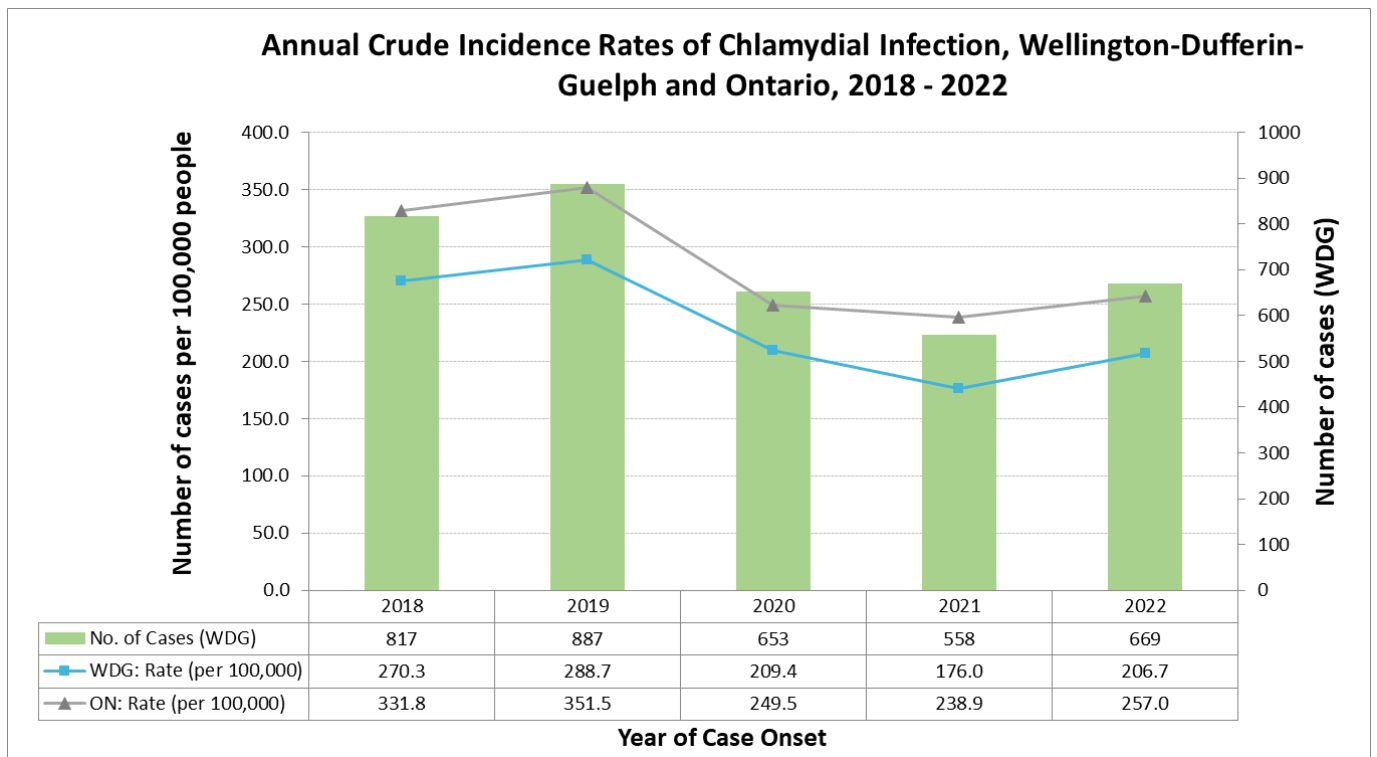
Chlamydia trachomatis is a bacterium that is spread through vaginal, anal or oral sex.¹ Most infections, especially in females, do not produce any symptoms, but in other cases, pain during urination and discharge from the penis or vagina can occur. Complications include pelvic infections, which can cause infertility or chronic pelvic pain.²

Key findings from local data reveal that:

- Annual rates of reported chlamydial infection increased in both WDG and Ontario in 2022, compared to 2021;
- Rates in WDG in 2022 remained lower than provincial rates, as they have over the past several years; and
- Rates remained higher in females than males, and were also highest in 15-29-year-olds, especially 20-24-year-olds, than in other age groups.

In the years before the COVID-19 pandemic, annual rates of reported chlamydial infections in WDG, Ontario and Canada all showed a generally increasing trend.³ However, the pandemic years saw a decrease in the incidence confirmed cases of this disease, for the reasons discussed in the March 2022 WDGPH Board of Health report. (<https://tinyurl.com/67c8kr83>). With the lifting of most pandemic restrictions and the return of most medical and public health services in 2022, the rate of confirmed infections rose in 2022. There were 669 cases of chlamydia diagnosed in 2022, as compared to 558 in 2021.

Figure 1:



In 2022, 61.5% of confirmed cases of chlamydial infection occurred in females, and 38.5% occurred in males. The infection is more likely to be detected in females because women are more likely to be screened for STIs than males, as opposed to only being tested because of symptoms. Therefore, asymptomatic infections in women are more likely to be detected. In addition, females are thought to be more biologically susceptible to being infected by the bacterium than men.⁴ The vast majority of cases (78.7%) occurred in people 15 to 29 years of age, especially 20-24-year-olds (43.0% of all cases), which was consistent with what has been seen in recent years.⁵

There were several risk factors reported by cases of chlamydial infection followed up by WDGPH. In descending order, they included:

- sex with opposite sex,
- no condom used, and
- more than one sexual partner in the past six months.

This implies that heterosexual contact is the way that most cases of chlamydia infection were acquired. Only a few cases indicated that they had had sexual contact with someone of the same sex.

The increase in the rate of confirmed chlamydial infection seen in 2022 was most likely due to increased access to and use of sexual health services and testing in Ontario as pandemic measures were lifted and health services began to return to pre-pandemic levels. It is consistent with the increasing trend seen year to year before the pandemic and may signal a return to that trend in the annual incidence of this STI.⁵

Gonorrhoea:

Gonorrhoea is an infection caused by the bacterium *Neisseria gonorrhoeae*. Like *Chlamydia trachomatis*, this bacterium is spread through vaginal, anal or oral sex. Infected females are often asymptomatic, whereas infected males often experience painful urination or discharge from the penis. Like chlamydia, gonorrhoea can progress to pelvic infection or cause infertility.⁶

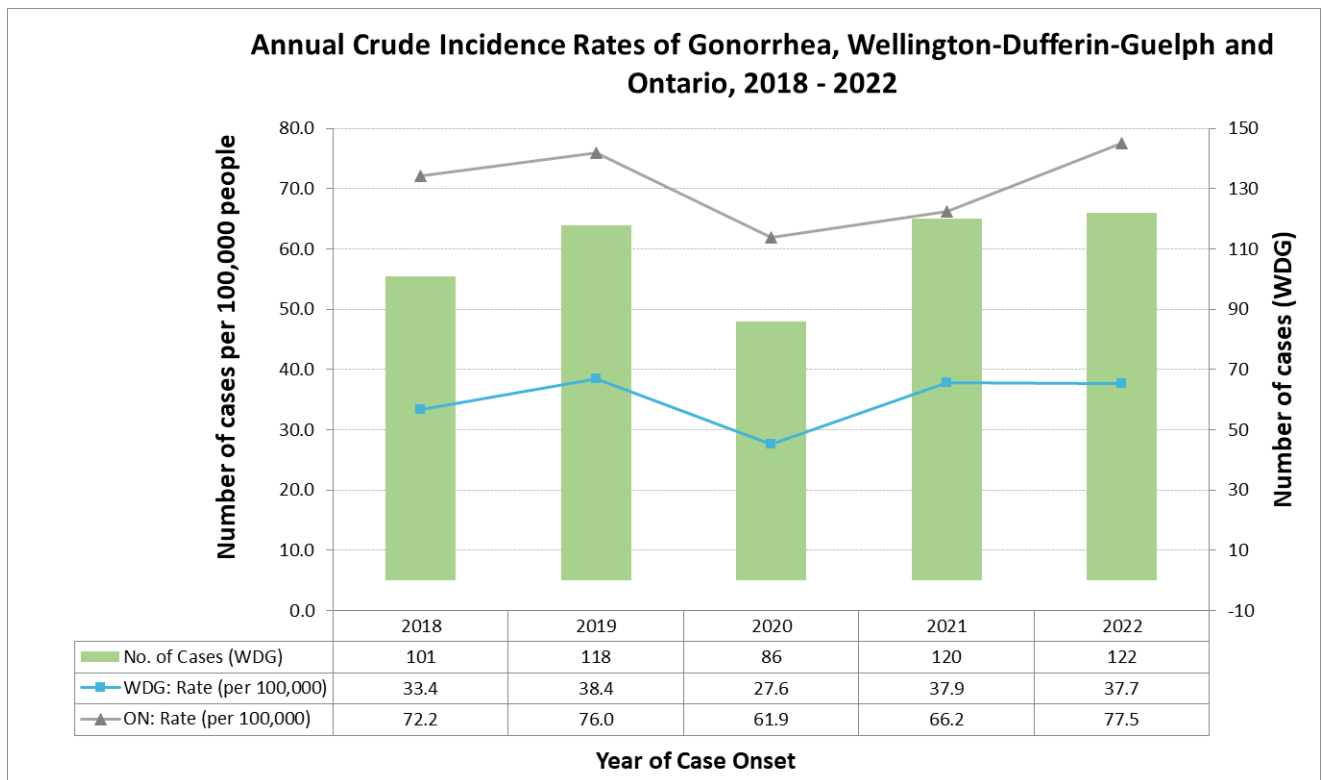
Key findings from local data reveal that:

- In WDG, the rate of laboratory-confirmed gonorrhoea in 2022 was similar to the 2021 rate, and to the rate seen before the pandemic, in 2019. On the other hand, the 2022 provincial rate of gonorrhoea was higher than the 2021 rate.
- The rate in WDG remained well below the provincial rate in 2022.
- Over 60% of cases were reported in people in the 20-34-year age group, with 20-24-year-olds and 25-29-year-olds equally represented (24.0% of all cases, each).
- Consistently with what has been seen in recent years, more cases were reported in males than females, with this over-representation of males probably being explained by increased likelihood of detection in men due to symptoms, and a relatively high prevalence in the MSM community.³

Like chlamydial infection, annual rates of reported gonorrhoea in WDG, Ontario and Canada all showed a generally increasing trend before the COVID-19 pandemic.³ The first year of the pandemic (2020) saw a decrease in the incidence of confirmed cases of this disease, for the reasons discussed in the March 2022 WDGPH Board of Health report. (<https://tinyurl.com/67c8kr83>).

However, the 2021 rate in WDG returned to that seen in 2019 and was similar in 2022. In Ontario, the 2022 rate was higher than the 2021 rate, showing a steadily increasing trend from 2020 to 2022 and returning in 2022 to the incidence seen in 2019. If the assumption can be made that there was some under-reporting of STIs during the pandemic, it may be concluded that increases seen during the last two years under-represent the true magnitude of the burden of disease in the population during this period.

Figure 2:



Conversely to the gender distribution seen for chlamydial infection, most cases of gonorrhoea reported in WDG occurred in males: 58.9% in males vs. 41.1% in females. As discussed in the 2022 BOH report, the tendency for more cases to be males is consistent with trends reported nationally for gonorrhoea.⁵ This may be partly explained by the fact that males are more likely than females to have symptoms associated with the infection, and therefore to seek health care and be tested. Furthermore, in some regions of North America, higher gonorrhoea rates have been reported in MSM communities.³

Equal percentages (24.0%) of cases of gonorrhoea reported to WDG in 2022 occurred in the 20-24- and 25-29-year age groups. The next most affected age group was the 30-34-year group, with 16.3% of cases. This pattern was not dissimilar to that seen in 2021.

The three risk factors most frequently reported by cases of gonorrhoea followed up by WDGPH, in descending order, included:

- sex with same sex,
- sex with opposite sex, and,
- more than one sexual partner in the past six months.

This reflects the transmission of a higher proportion of cases of gonorrhoea in the MSM community, in comparison with chlamydial infection where heterosexual transmission appeared to be predominant.

Syphilis:

Syphilis is an infection caused by the bacterium *Treponema pallidum* and spread through vaginal, anal or oral sex. During the infectious stage, syphilis can also be transmitted “vertically” from an infected mother to her child during pregnancy or birth, causing congenital syphilis in the child. Syphilis infections progress through multiple stages, each with their own symptoms, though early symptoms include genital sores, rash and headache. Later stages of syphilis can affect the brain, heart, or other organs.⁷

Key findings from local data reveal that:

- There was a noticeable increase in the number of reported cases of infectious syphilis in WDG in 2022, in comparison to 2021.
- As seen for chlamydial infections and gonorrhoea, annual rates of infectious syphilis in WDG were lower than provincial rates of the disease in 2022, as has been the case in most years in the recent past.
- In 2022, over 70.0 % of syphilis cases reported to WDGPH occurred in males, a reflection of the circulation of the disease in the MSM community.³
- The age distribution of infectious syphilis cases in WDG was slightly shifted toward older age groups than the distributions seen for chlamydial infection and gonorrhoea, with the 40-44-year age group accounting for the highest percentage of cases (24.0%) than all of the five-year age groups.

As usually occurs, infectious syphilis was the third most commonly reported STI in WDG in 2022. There has been an increasing trend in reported cases, both locally and provincially, since the decrease seen in the first year of the pandemic, with 2022 seeing the highest number of reported cases for the last five years (Figures 3a and 3b).

Smaller numbers of latent syphilis cases were reported in 2022, but the increasing trend was also apparent for this form of the disease. However, the annual rate of confirmed syphilis in WDG was lower than the provincial rate in 2022, as it has been for the past several years.

With the increasing incidence of infectious syphilis being seen in several regions of North America, there has been some concern about increasing spill-over of the disease

into the infant population. In Ontario, the incidence rate of reported early congenital syphilis in 2022 in children 4 years old and under was 3.4 cases per 100,000, more than double the incidence in the province in 2021 (1.4 per 100,000). In WDG, no lab-confirmed cases of congenital syphilis were reported in 2022, and two occurred in 2021.

Figure 3a:

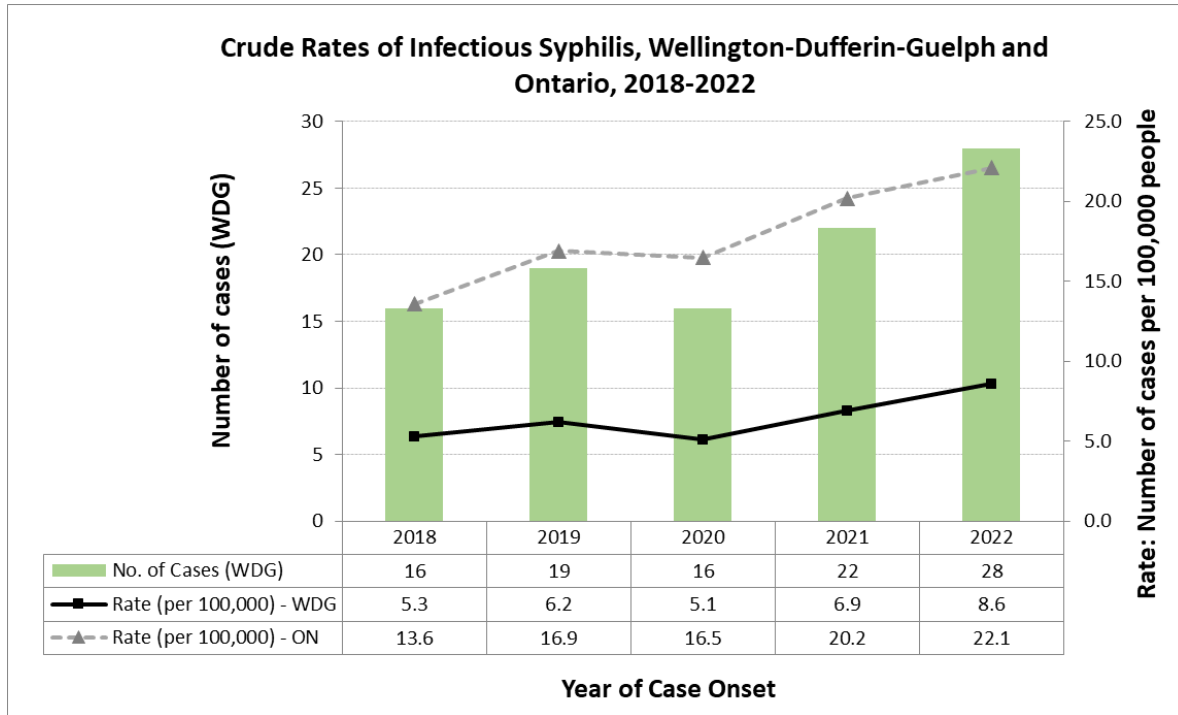
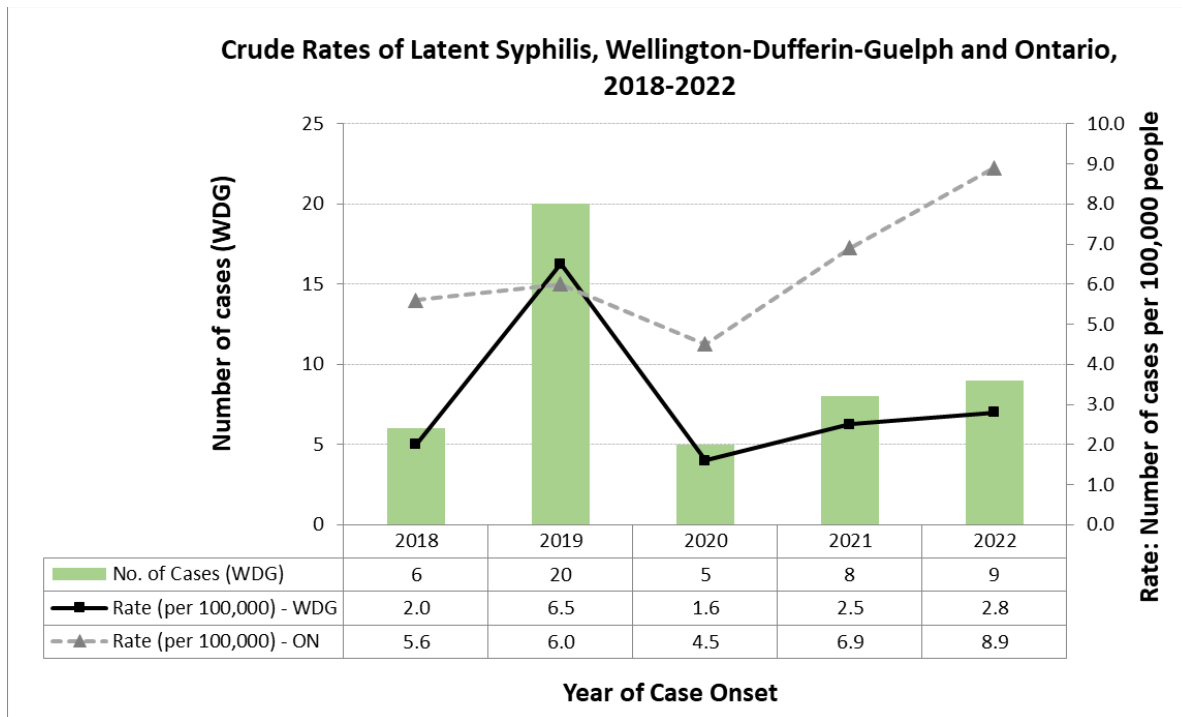


Figure 3b:



In 2022, more than twice as many cases of infectious syphilis were reported in males than in females (70.3% vs. 29.7%). Only a small number of cases of latent syphilis cases was reporting in 2022; however, nearly twice as many were in males as there were in females. This over-representation of males among syphilis cases is similar to what has been seen locally, provincially and nationally in recent years, and may reflect a higher burden of disease within MSM communities.³

In comparison to chlamydial infection and gonorrhoea, the age distribution of cases of infectious syphilis reported in WDG in 2022 was shifted toward older age groups, with the highest percentage of reported cases (24.0%) being in the 40-44-year age group, followed by the 30-34-year age group. The older age distribution was consistent with what has been seen in recent years. For the relatively few cases of latent syphilis reported in WDG in 2022, cases were relatively evenly distributed across age groups.

The three risk factors most frequently reported by cases of syphilis followed up by WDGPH, in descending order and besides 'no condom used', were sex with same sex, sex with opposite sex and more than one sexual partner in the past six months. However, for this disease, information on risk factors was unavailable for a large proportion of cases.³

Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS):

AIDS is a relatively rare viral disease caused by HIV infection. The highest likelihood of transmission of the infection is associated with sexual intercourse, but contamination of mucous membranes or open wounds with the blood or body fluids of an infected person, or transfusion of their blood into a healthy recipient, are also possible routes of infection. The infection is most commonly spread through unprotected sex and sharing HIV-contaminated needles or syringes.⁸

In 2022, fewer than ten cases of HIV/AIDS were reported in WDG, with a slight reduction in incidence from 2021. The vast majority of reported cases occurred in males, and over half of the cases were under 35 years of age.

Monkeypox (Mpox):

In 2022, a large and fast-spreading outbreak of monkeypox (recently renamed Mpox by the World Health Organization) occurred worldwide, with cases occurring primarily in the MSM community of several countries outside of the continent of Africa. WDGPH's Board of Health Report Infectious Disease Spotlight: Mpox (formerly known as monkeypox), Pertussis and Invasive Group A Streptococcal (iGAS) Disease, BH.01.MAR0123.R09 – Infectious Disease Spotlight: Mpox (formerly known as monkeypox), Pertussis and Invasive Group A Streptococcal (iGAS) Disease, outlined the epidemiology and significance of this disease in Canada in 2022.⁹

This viral disease, not currently classified as an STI and therefore not managed by the Clinical Services program at WDGPH, has long been known to be transmitted by direct or indirect contact with the body fluids of infected people or animals, most often by an uninfected person getting fluid from pox lesions of someone with the disease onto the skin. More recently, however, the rapid transmission among the MSM community, which has vastly exceeded the rate of spread previously seen in endemic regions where outbreaks are relatively common, has led to the hypothesis that sexual transmission may be possible, and possibly more efficient, via contact with the mucous membranes. In addition, the virus has been detected in the saliva, stool and semen of some infected patients, some of whom were asymptomatic at the time.^{10,11} Statistical modelling also suggests that the 2022 outbreak could be effectively controlled by similar measures used to reduce the risk of recognized sexually transmitted infections.¹⁰

The first cases of monkeypox ever diagnosed in the local population were reported in WDG during the 2022 outbreak; in that year, six laboratory-confirmed cases of the disease were recorded in the region. A vaccine (Imvamune) that had originally been developed to protect against smallpox, a related virus, was used in high-risk populations in Canada, including in WDG, after the start of the outbreak. This, as well as anecdotal reports of safer sexual practices in MSM communities in response to the outbreak, may have resulted in reduced transmission and mitigated the spread. As of early January, 2023, no laboratory-confirmed cases of the diseases have been reported in WDG since September 2022.

To promote Imvamune immunization in the WDG MSM population, WDGPH partnered with the local HIV/AIDS organization, ARCH. This organization reached out to their MSM population and promoted the WDGPH Imvamune immunization clinics which were hosted at their location. WDGPH provided support staff, nursing staff, supplies and Imvamune immunization for these clinics. Additionally, WDGPH partnered with The Ridge Resort, an LGBTIQA+ campground, and provided a weekend Imvamune clinic for their MSM population. The WDGPH Imvamune immunization program provided 359 first doses.

Imvamune provides the best protection when two doses are administered. Of the initial first dose group, only 97 clients returned for their second dose as of Feb 28, 2023. As a result, WDGPH reached out to all the remaining clients that received a first doses to and encouraged them to complete their Imvamune vaccination series. As of March 13, 2023, 108 people have either received or booked their appointment for the second dose of Imvamune.

WDGPH will continue to promote Imvamune immunization to all high-risk clients on an ongoing basis.

WDGPH Sexual Health Services in 2023

Wellington-Dufferin-Guelph Public Health suspended most programs, including STI testing, in 2020 to respond to the pandemic. During this time, people requesting testing for sexually transmitted infections were referred to their primary care provider, or to walk-in clinics. HIV/AIDS Resources & Community Health (ARCH) also saw people for testing and follow-up treatment.

The start of the pandemic saw a shift from in-person to virtual consultations at most primary care clinics in Ontario, resulting in reduced access to primary care for STI testing.⁵ This exacerbated the already reduced access to testing and care for patients in the community.

During the pandemic all positive cases of HIV, syphilis and gonorrhea in the WDG region were followed up and managed by a reduced team of WDGPH staff as directed by the Infectious and Communicable Diseases Prevention and Control standard in the Ontario Public Health Standards (OPHS). The standard indicates that Public Health shall ensure appropriate follow up of designated infectious diseases and provide education on reducing the spread of the disease in the community. This reduced team also provided referrals for care in the community to those who required it. Now as WDGPH is recovering from the pandemic, case management for all required sexually transmitted infections is occurring by the Clinical Services team.

WDGPH re-instituted testing for clients who requested asymptomatic testing for sexually transmitted infections (STI) in all areas of WDG in July 2022. WDGPH has been providing in-person physician assessments, testing, and counseling for clients who present with symptoms of STI since August 2022. Now all appointments for STI counselling and support are offered in-person in all 3 offices.

WDGPH will be expanding their services in 2023 for STI testing by extended clinic hours and by adding more physicians who are able to treat symptomatic illness.

WDGPH actively participates in sexual health outreach programs throughout the WDG region. WDGPH attended University of Guelph Homecoming, Orangeville Pride, Fierce on the Farm, and Night of Red. While attending these events, WDGPH focused on promoting and educating clients on regular testing for STI and safe sexual practices.

Health Equity Implications

The information provided in this report shows that some sections of the local population are affected by STIs more than others, with higher incidence of the infections in particular age groups, and with cases of infectious syphilis disproportionately affecting the MSM community.

Public Health can attempt to address these inequities by targeting educational activities and provision of resources at the sections of the population at higher-risk for sexual practices associated with transmission of STI's and with higher incidence rates of lab-confirmed STI's as reflected by surveillance data.

Conclusion

The resumption of medical and public health services in 2022 that had been affected by the COVID-19 pandemic over the previous two years resulted in increased access to testing for and treatment of STI's. In addition, the lifting of pandemic restrictions on gatherings may have facilitated the spread of infections by sexual contact. These changes occurring in 2022 and may partially explain why annual rates of confirmed chlamydial infection and syphilis increased in 2022 over 2021 rates, both locally in WDG and province-wide in Ontario. No increase was apparent for confirmed gonorrhea in the region in 2022, but the 2022 provincial rate did show an increase. The only STI for which a decrease in incidence was seen locally in 2022 was HIV/AIDS.

A few cases of Mpox were reported in WDG in 2022, part of the rapidly spreading worldwide outbreak that occurred last year that was primarily centred in the MSM community. Although this disease spread mainly between MSM sexual contacts during this outbreak, Mpox is not classified as an STI.

The resumption of medical and public health services, and the return of pre-pandemic levels of access to the testing and treatment of cases of STI, can be expected to reveal trends in the rates of STIs that are more reflective of the incidence and transmission of these infections in the population over the next few years.

WDGPH Clinical Services team is gradually restoring STI testing, and case management to pre-pandemic levels.

Increased surveillance coupled with health promotion strategies and timely management of positive cases will help to reduce the incidence and burden of these diseases in the community.

Ontario Public Health Standards

Foundational Standards

- Population Health Assessment
- Health Equity
- Effective Public Health Practice
- Emergency Management

Program Standards

- Chronic Disease Prevention and Well-Being
- Food Safety
- Healthy Environments
- Healthy Growth and Development
- Immunization
- Infectious and Communicable Diseases Prevention and Control
- Safe Water
- School Health
- Substance Use and Injury Prevention

2023 WDGPH Strategic Directions

- People & Culture:** WDGPH has an organizational culture of engagement, inclusion and agility.
- Partner Relations:** WDGPH collaborates with partners to address priority health issues in the community.
- Health System Change:** WDGPH is positioned to be an agent of change within the broader health sector.

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