CASE 10

Middlesex-London's Public Health Emergency: HIV in People Who Inject Drugs

Daniel E. Murcia Monroy, BA, MPH (MPH Class of 2017)
Tamara Thompson, PhD (formerly Program Evaluator, Middlesex-London Health Unit)
Amanda Terry, PhD (Assistant Professor, Western University)

"Equity is the only acceptable goal."
– Paul Farmer

Biggs'[1] injection-drug use (IDU) began when he was relatively young. At the age of 14, he ran away from his troubled home, seeking to find a better place to live. After failing to obtain accommodations through friends and family or in community shelters, Biggs found himself experiencing homelessness. As he navigated through his youth, Biggs found himself using drugs to help him cope with the suffering associated from living on the streets, dealing with addiction, leaving his troubled home, and failing to complete his high school education.

As he grew older, Biggs made multiple attempts to get his life 'back on track' by accessing services that were available to people who use drugs (PWUD) in his community. When things were going well for him, Biggs enjoyed volunteering at the same places where he was accessing services, helping others who he could relate to. During this time, Biggs' lived experience allowed him to provide valuable feedback to these organizations, often helping them understand that the need of the client is not always what the provider thinks. He also became well-informed about the services that were available in his community and was working towards molding his life to help others. However, there were times when things would get challenging and Biggs would find himself back where he started. Finding himself where he started, of course, had little, if anything, to do with his willingness to improve his lifestyle. In fact, it never had anything to do with his desire to be healthy and serve his community. Discrimination, poverty, stigma, isolation, as well as other social and structural barriers often pushed Biggs back into homelessness and drug use.

"The bloodwork shows that you are HIV-positive. I am sorry," said the HIV specialist from the Infectious Disease Care Program at St. Joseph's Health Care. Jeffrey, known as 'Biggs' by his friends, was a 39-year old Caucasian male. He was a father, brother, son, and friend. He was also someone who injected drugs. Biggs was not surprised that he was HIV-positive. For years, he had seen many of his friends and loved ones diagnosed with HIV. He had become well aware that people who inject drugs (PWID) in general have significantly higher rates of HIV than the general population.

Biggs knew that something had to be done to prevent other PWID in his community from contracting HIV, a complex and serious illness that has many challenges. From his experiences accessing healthcare and social services in Middlesex-London, he recognized that health and

[1] This character is the product of the author's imagination and used in a fictitious manner.

harm reduction programs did not always meet the complex needs of the PWID population. Services available for PWID, such as those that rely on professional outreach workers to recruit, educate, and distribute harm reduction materials (e.g., brochures, posters, pamphlets), often operate under the "provider-client" model, which relies on the relationship between clients and providers to promote health (Small et al., 2012). However, services under this model do not always provide PWID with the treatment, support, and care they need (Broadhead et al., 1998). In fact, Biggs thought that health and harm reduction interventions that rely on the relationships between clients and providers lack comprehensive social, healthcare, and public health services and, thus, fail to address the complex needs of PWID (Lally, Montstream-Quas, Tanaka, Tedeschi, & Morrow, 2008; McLaughlin, McKenna, & Leslie, 2000).

As someone with lived experience, Biggs felt that he had the unique ability to address some of the gaps in Middlesex-London's service delivery. Biggs joined the Middlesex-London Health Unit's (MLHU) Citizen-Led Task Force[2] because he believed that he could provide peer-informed recommendations to MLHU that could help in the development of strategies aimed at reducing the barriers that hinder the ability of PWID to access resources and support services. Using his lived experience, Biggs felt that he could play a critical role in improving health and harm reduction interventions in his community, and by doing so, he could help protect his fellow PWID from contracting HIV and other infectious diseases.

Biggs had to answer many questions in order to help provide MLHU with a set of recommendations to help protect other PWID from becoming infected with HIV and/or other blood-borne diseases:

- What made London's PWID population more vulnerable to HIV infection compared to the PWIDs in other cities?
- Why were the rates of HIV infection disproportionately higher among PWID compared to the general population?
- Do PWID have access to adequate health and social services?
- How did Biggs' life conditions and those of other PWID (e.g., injecting drugs) restrict their capacity to make choices?
- How could MLHU and its community partners protect others like Biggs from the transmission of HIV?
- Did MLHU and its community partners have the capacity and resources required to put a stop to the alarming rates of HIV infection in PWID?

BACKGROUND

In early 2013, MLHU began to see a significant increase in the number of infectious diseases that were being diagnosed. Like Biggs, other PWID seemed to be at a higher risk of being diagnosed with infectious diseases, such as Human Immunodeficiency Virus (HIV), Hepatitis C Virus (HCV), invasive Group A Streptococcus (iGAS), as well as endocarditis. These infectious diseases are disproportionately higher in PWID compared to other populations in Middlesex-London (Coleman, 2017). From his experience, Biggs understood that the complexity of treating those illnesses is further complicated by addictions and/or substance use.

In 2016, as the rates of HIV were declining across Ontario, the number of new cases of HIV continued to increase in Middlesex-London, particularly in the PWID population (see Exhibit 1). Biggs was one of the 61 new HIV cases that had been reported to MLHU that year—a record high number of new HIV diagnoses in Middlesex-London (Coleman, 2017). Perhaps the number

[2] This Task Force is the product of the author's imagination and used in a fictitious manner.

of new HIV cases that were being diagnosed in Middlesex-London could be associated with increased testing, he thought. However, Biggs knew that he would need more information to be able to draw this conclusion.

In the past, Biggs had attended many educational workshops and was aware that the risk of HIV infection in PWID was high. He also recalled reading about the Scott County, Indiana HIV epidemic in 2015. In Indiana, by June 10, 2015, at least 150 PWID had been newly diagnosed with HIV—80% of them co-infected with HCV. Most of the people who were diagnosed with HIV in Indiana lived in rural communities, had no access to needle exchange programs, were young (median age 32 years), and Caucasian (Strathdee & Beyrer, 2015).

Biggs did not want to see his friends and loved ones become HIV-positive or acquire any of the other infectious diseases that PWID are at risk for. He knew that something had to be done to prevent Middlesex-London from becoming vulnerable to such a severe HIV epidemic.

PERSONS WHO INJECT DRUGS IN MIDDLESEX-LONDON

While the exact number of PWID in Middlesex-London was unknown, estimates suggested that the PWID population was approximately 6,000 (Coleman, 2017). In comparison, Thunder Bay (Ontario) had 1,500 in 2017 (Thompson, personal communication, 2017), Calgary (Alberta) had 2,000 in 2017 (O'Gorman, personal communication, 2017), and the province of Saskatchewan had 5,000 in 2008 (Laurence Thompson Strategic Consulting, 2008). Relative to its population size, London had the largest population of PWID. In 2016, the Ontario Integrated Supervised Injection Site Feasibility Study (OISIS), which gathered data from Biggs and 198 other PWID in Middlesex-London, found that in the past six months 88.4%, 83.8%, and 71.4% of those surveyed had injected opioids, crystal methamphetamine, or both, respectively (Kerr et al., 2017).

Biggs, like the majority of the PWID population, had experienced a myriad of inequalities that increased his risk of adverse health outcomes. Coping with day-to-day addictions, limited resources, stigma, and discrimination was extremely challenging for Biggs and resulted in constant stressful living conditions. His opportunities to engage in healthy behaviours, such as healthy eating, being physically active, or seeking adequate social and healthcare services, had significantly diminished as most of his resources had been directed towards IDU to relieve the symptoms of stress and dope-sickness. This suggested that Biggs, like other PWID, occupied a position within social hierarchies where social (e.g., stigma) and structural (e.g., poverty) inequities shaped his vulnerability to adverse health outcomes.

The Public Health Agency of Canada's 2012 I-Track survey monitored the prevalence of HIV and other related infections, as well as the risk behaviours among people who inject drugs. The survey showed that the PWID population in Middlesex-London experienced structural as well as social inequalities. Many PWID reported unstable housing (56.9%), less than high school education (52.9%), less than $1,000.00 monthly income (43.8%), and recent jail sentences (20.1%). Additionally, this survey revealed very high rates of unsafe injection practices (e.g., sharing needles and injecting in public spaces) among PWID (MLHU, 2013).

Thinking about his social position, Biggs wondered,

- How does discrimination, stigma, and lack of comprehensive social and healthcare services impact the health of PWID?

- How does the position that PWID occupy within society shape their vulnerability to adverse health outcomes?
- How does IDU make PWID more vulnerable to inequalities than the general population?

Finding answers to these questions would allow Biggs to develop and share recommendations with MLHU's Citizen-Led Task Force, which was aiming to address the social and structural inequalities that make PWID vulnerable to HIV and other infections.

NEEDLE EXCHANGE PROGRAMS

IDU is a major risk factor for the transmission of blood-borne viruses, such as HIV and HCV. It is estimated that PWID are approximately 59 times more likely to contract HIV or HCV compared to the general population, as a result of the injecting practices and sexual behaviours associated with injection drug use (Challacombe, 2016; Degenhart et al., 2010). Harm reduction practices, such as needle exchange programs, aim to minimize the risks associated with IDU, including overdose and the transmission of HIV and HCV. By providing Biggs and the PWID population with harm reduction materials and information, needle exchange programs can decrease the likelihood that PWID will share drug-use equipment and, thus, reduce the risk of infectious disease transmission (Ksobiech, 2003).

The Counterpoint Needle Exchange Program in Middlesex-London is a partnership between MLHU and Regional HIV/AIDS Connection (RHAC) that provides harm reduction equipment. In addition to MLHU and RHAC, there are now a number of other satellite harm reduction sites in London, including My Sister's Place, Mission Services of London, and a few pharmacies. Each organization hosts a needle exchange program on-site (see Exhibit 2), and RHAC offers a mobile van that offers outreach harm reduction services. MLHU and RHAC offer harm reduction equipment to all PWID in Middlesex-London. Mission Services offers harm reduction equipment to anyone who is accessing their Community Mental Health Program, while My Sister's Place, a women-only program, only offers services to women. With the goal of decreasing the number of new HIV diagnoses in PWID, four pharmacies have agreed to provide needle exchange services in London (see Exhibit 2).

Biggs remembers what it was like accessing the Needle Exchange Program at RHAC. He recalls that clients who are seeking sterile harm reduction material walk into a room where all harm reduction equipment is available for them at no charge. Clients are given a black plastic bag, to maintain their privacy, where they can put their new and clean drug-consumption equipment (see Exhibit 3).

In 2016, the Counterpoint Needle Exchange Program distributed approximately 3,000,000 needles and syringes (Regional HIV/AIDS Connection, 2017b). Nevertheless, the number of new HIV diagnoses in PWID continues to rise in Middlesex-London.

- Are the needle exchange sites located in places that are not easily accessible for PWID?
- Why do PWID continue to be vulnerable to the transmission of HIV and other infectious diseases, even when harm reduction services, such as needle exchange programs, are available free of charge?
- Do PWID feel uncomfortable or judged by staff when they access harm reduction equipment?
- What impact do the hours of operation have on PWID's risk of contracting HIV?

These were critical questions that Biggs had to answer if he wanted to come up with recommendations to help stop the increase of HIV and other infectious diseases in the PWID population in Middlesex-London.

NEEDLE RECOVERY STRATEGY

During the June 2017 London Victoria Park Kids Expo: London's Children Festival, a used needle was found by a father of three beside his two-year-old toddler (Ghonaim, 2017). On another occasion earlier that year, a six-year-old boy was pricked by a used needle while playing in the park (Sutherland, 2017). These incidents suggest that used needles and syringes continue to be discarded in public property across Middlesex-London.

Did the number of needles that were found in Middlesex-London increase as a result of the increase in needles that have been distributed to PWID? (see Exhibit 4).

At the community level, injection in public places and discarded injection-related equipment are a source of community concern (Kerr et al., 2017). Biggs, as many PWID, was well aware of how to safely dispose of his needles and acknowledged the risks of failing to do so. Biggs did not want to cause anyone any harm and was always making an effort to properly dispose of his injection-related equipment whenever he used drugs in public. But the fear of being caught with this equipment, the stares and comments he received from other people, and the location of safe disposal bins created barriers that made it harder for him to dispose of his used injection-related equipment safely.

With the intention of reducing the number of improperly discarded needles across the city, the City of London placed 17 safe disposal bins in London's Downtown Core (see Exhibit 5 & Exhibit 6). These bins are maintained by London CAReS, specifically, their outreach team. The team empties the bins on a weekly basis or twice a week if it is in high use (Z. Eastabrook, personal communication, 2017). The London CAReS outreach team is also responsible for responding to calls related to improperly discarded sharps found in public spaces. London CAReS, however, is mandated as a housing organization that engages with individuals experiencing homelessness and supports their move off the street and into a home—not needle recovery. Additionally, the Counterpoint Needle Exchange Program is also heavily involved in the recovery of used needles and syringes. In 2016, approximately 1,800,000 used needles/syringes were returned through MLHU, RHAC, My Sister's Place, and London CAReS (Regional HIV/AIDS Connection, 2017b).

Biggs wanted to understand what other jurisdictions were doing to decrease the amount of improperly disposed needle waste, so he contacted a number of health units to find out more about their needle recovery strategies (see Exhibit 7). By decreasing the number of discarded sharps found across the city, Biggs hoped he would help address the community`s concern with improperly discarded injection-related equipment.

HEALTHCARE AND SOCIAL SERVICES

Despite successful harm reduction programs and primary care efforts, the rates of HIV infection in PWID in Middlesex-London continue to rapidly increase. Although healthcare, social, and harm reduction services (see Exhibit 8) are in place for PWID, this population faces many barriers to accessing services. As someone who injected drugs, Biggs had firsthand experiences with poverty, homelessness, and unemployment, as well as stigmatization, discrimination, and marginalization. Living in poverty, for example, had often prevented him from meeting his basic living needs. For example, poverty prevented him from seeking healthcare and social services and also caused him to experience health problems, isolation, and further

marginalization (Canadian AIDS Society, 2004). Social and structural barriers further increase the risk that PWID will contract HIV as well as other infectious diseases (Canadian HIV/AIDS Legal Network, 2005; Frankish, Hwang, & Quantz, 2009; Public Health Agency of Canada, 2013).

In an effort to decrease the incidences of HIV and other infectious diseases in the PWID community, MLHU reallocated funds to establish an outreach team to work closely with PWID and key stakeholders in the community (Dhinsa, Hovhannisyan, Coleman, & Thompson, 2017). This team was intended to create a comprehensive, community-based care program to respond to the urgent need to reach PWID and other under-housed populations. The outreach team is developing a long-term care plan to address and improve infectious disease prevention, provide a linkage to treatment, increase adherence to medication, increase access to harm reduction services and support, and increase access to healthcare and social services. The outreach team also aims to help reduce health and social issues among PWID in London, Ontario.

- How would MLHU's outreach team meet the needs of PWID living with and at risk of HIV and other infectious diseases?
- How could they improve services in order to remove the barriers that prevent PWID, regardless of their HIV status, from obtaining much-needed healthcare and social resources?

Biggs knew these questions were not easy to answer, but in order to begin to provide better healthcare and social services to PWID in Middlesex-London, these questions needed to be answered.

BIGGS' DECISION

While MLHU's decision to create an outreach team to help decrease the incidences of HIV and other infectious diseases in PWID had many positive elements, Biggs was not sure that this effort alone would have a significant impact on the overall health of the PWID population and the barriers that restrain them from accessing adequate healthcare and social services. Additionally, Biggs feared that the funds that had been reallocated to establish this team would not be enough and would impact the quality of other services. Biggs knew that something had to be done and that current efforts were not enough to meet the myriad needs of PWID.

Biggs' lived experience allowed him to recognize strategies that would help decrease the rates of HIV and infection in PWID. Specifically, Biggs realized that the combination of medical and social services could increase the availability and effectiveness of interventions aimed to address the needs of PWID in Middlesex-London. The combination of medical and social services, also known as wrap-around care, aims to link, retain, and support PWID in seeking healthcare services, medication adherence, and getting to their appointments on time (Jackson, 2015). These services also help PWID navigate the healthcare system to increase care and treatment adherence to meet their needs. Additionally, wrap-around care can include other supports, such as food assistance, housing support, mental health resources, and transportation.

If MLHU's outreach team was to succeed, Biggs believed that strategies that combined social and medical services needed to be developed to meet the needs of PWID in Middlesex-London.

- Did MLHU and other community organizations have the capacity and resources needed to put a stop to the increasing rates of HIV infection in PWID?

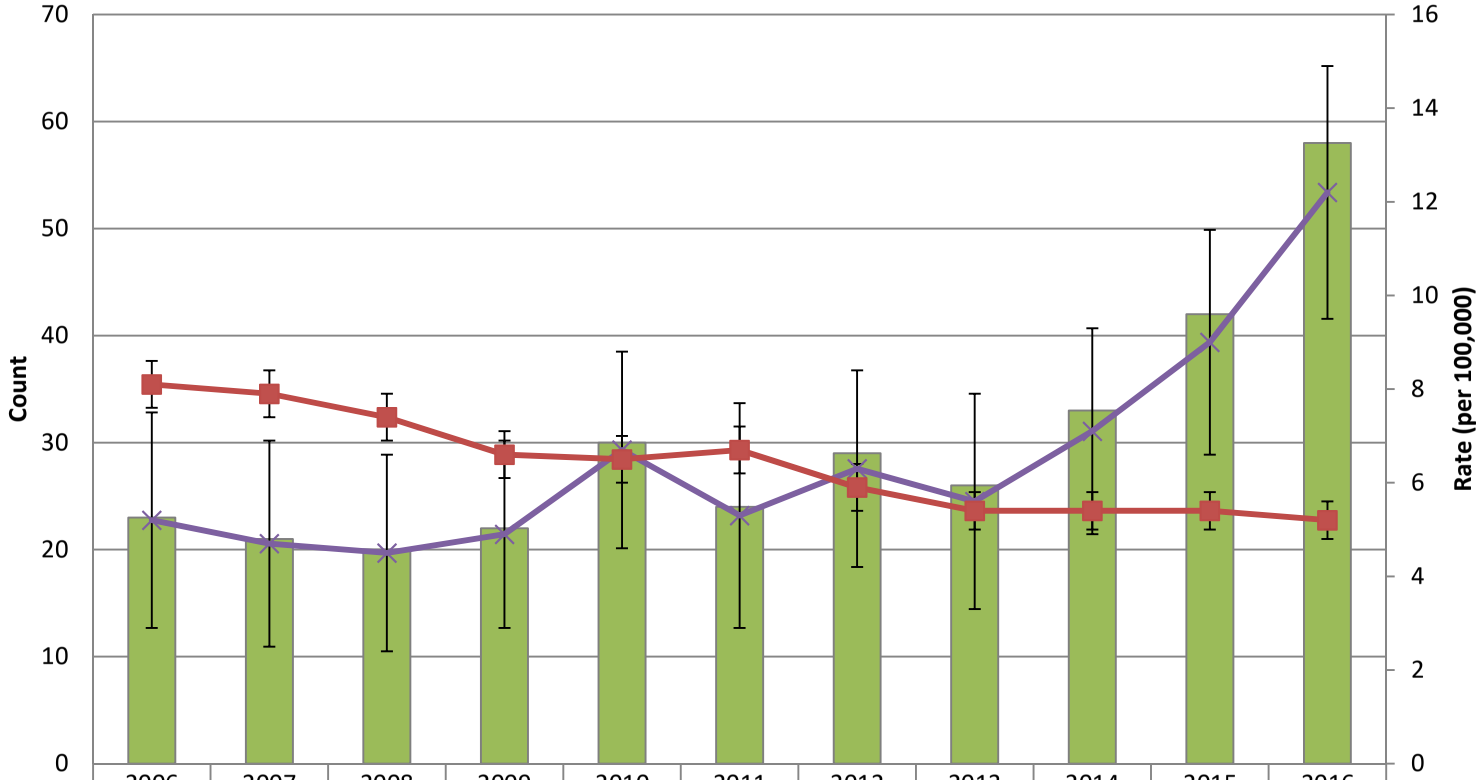
- Which key stakeholders were essential to ensure that PWID received wrap-around care?
- How would these initiatives be funded?

CONCLUSION

Biggs hoped that he would be the last PWID to be diagnosed with HIV in Middlesex-London, as he did not want any more of his friends and loved ones to become HIV-positive. Biggs was proud that MLHU and other community organizations were collaborating to decrease the rates of HIV in PWID, but he recognized that many challenges still lay ahead. What changes or improvements would provide adequate healthcare and social services, as well as remove the barriers that prevent PWID, regardless of their HIV status, from obtaining much-needed healthcare and social resources?

EXHIBIT 1

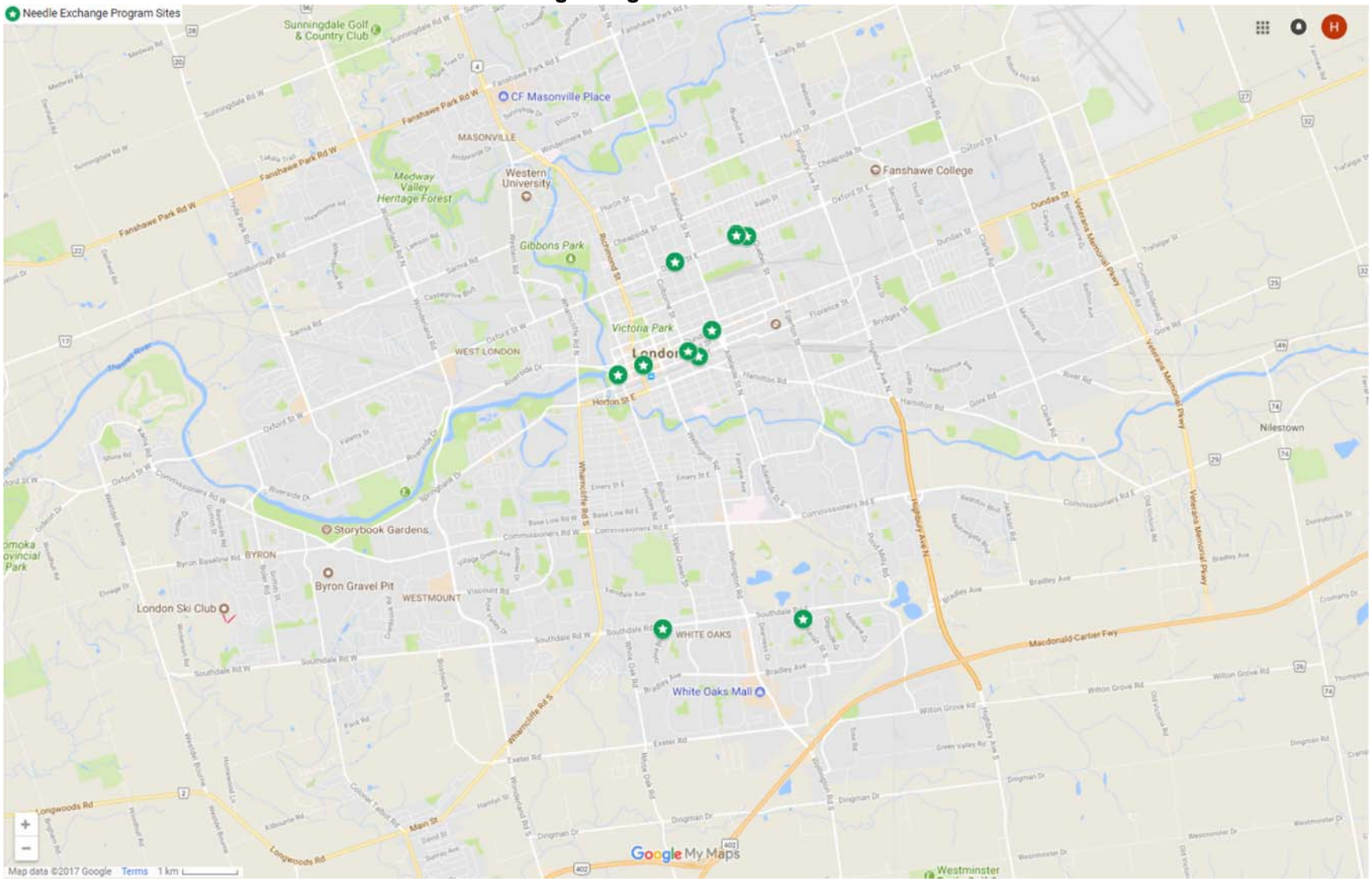
Reported count and crude rate of new cases of HIV in Middlesex-London and Ontario, 2006 -2016



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
MLHU Count	23	21	20	22	30	24	29	26	33	42	58
MLHU Rate	5.2	4.7	4.5	4.9	6.7	5.3	6.3	5.6	7.1	9	12.2
Ontario rate	8.1	7.9	7.4	6.6	6.5	6.7	5.9	5.4	5.4	5.4	5.2

Source: Dhinsa, Hovhannisyan, Coleman, & Thompson, 2017.
Note: Ontario Rates Exclude MLHU. MLHU Count has been updated to 61.

EXHIBIT 2
Needle Exchange Program Sites in Middlesex-London



Source: Google. (2017). [Google maps of Needle Waste, Exchange & Recovery in London, Ontario, Canada]. Created and retrieved November 2017.

EXHIBIT 3
List of Supplies Available at Counterpoint Needle Exchange Programs (Free-of-Charge)

- New needles & syringes
- Biohazard sharps containers
- Cookers
- Ties
- Filters
- Vitamin C
- Alcohol swabs
- Sterile water
- Tourniquets
- Condoms & personal lubricant
- Snorting kits
- Safer inhalation kits
- Educational resources

Source: MLHU, 2016.

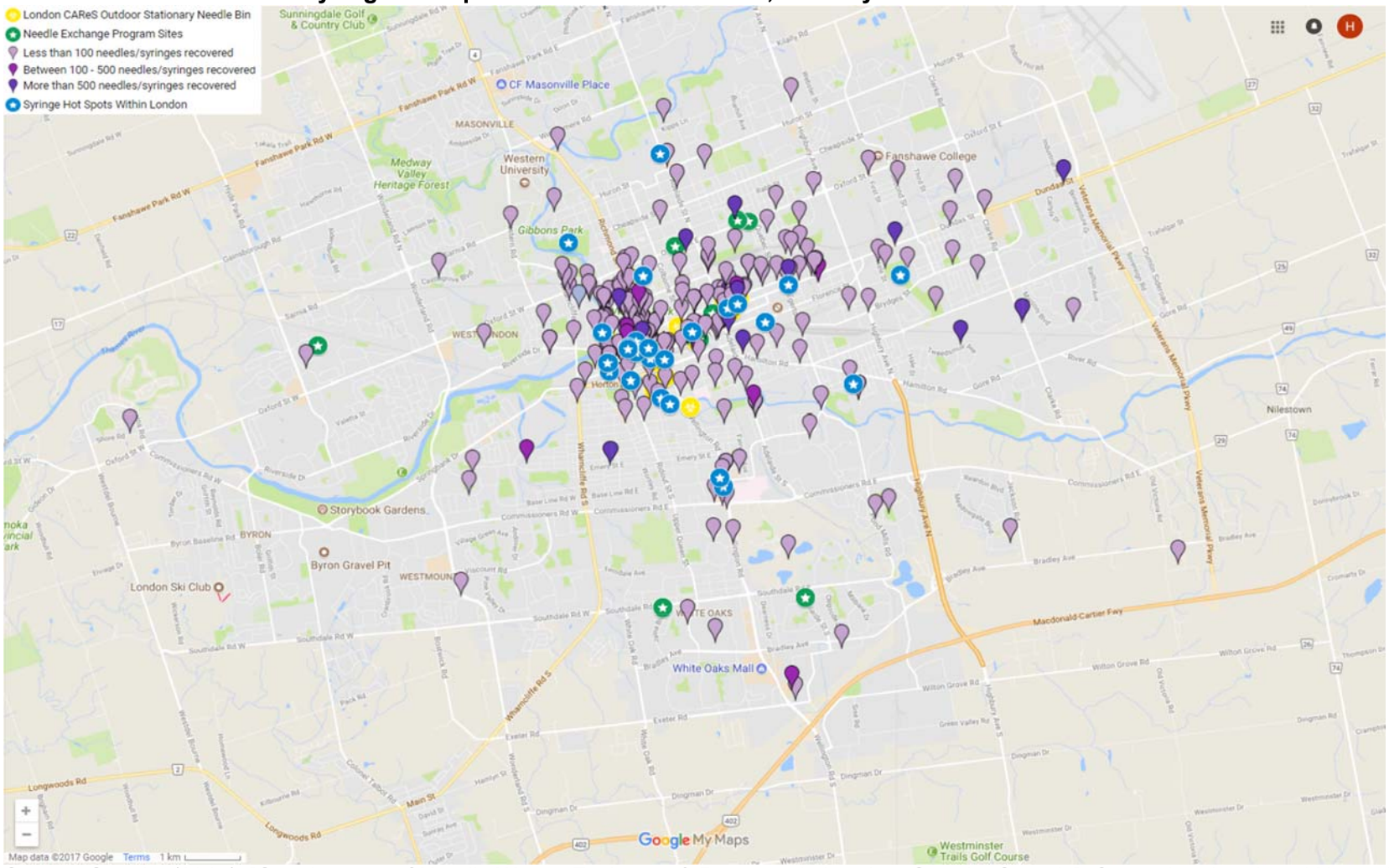
Counterpoint Needle Exchange Program Hours of Operation

Counterpoint Needle Exchange Programs	*Hours of Operation*
Middlesex-London Health Unit	Monday to Thursday: 9:00 a.m. to 7:00 p.m. Friday: 9:00 a.m. to 4:00 p.m. Weekends & Holidays: No Service
Middlesex-London Health Unit – Kenwick Mall	Monday to Wednesday: No Service Thursday: 11:00 a.m. to 1:00 p.m. & 2:00 p.m. to 4:00 p.m. Friday, Weekends & Holidays: No Service
Mission Services of London	Monday to Friday: 7:00 a.m. to 10:00 p.m. (service available to clients in Crash Bed Program) Weekends: Service is available through the Crash Bed Program
Regional HIV/AIDS Connection	Monday to Friday: 9:00 a.m. to 5:00 p.m. Weekends & Holidays: No Service
Regional HIV/AIDS Connection Mobile Van	Pick-up and delivery is available: Monday to Friday: 10:30 a.m. to 6:00 p.m. Weekends & Holidays: No Service
My Sister's Place (Women Only Program)	Monday to Friday: 10:00 a.m. to 3:00 p.m. Weekends & Holidays: 11:00 a.m. to 2:00 p.m.

Source: Regional HIV/AIDS Connection, 2017a; MLHU, 2016.

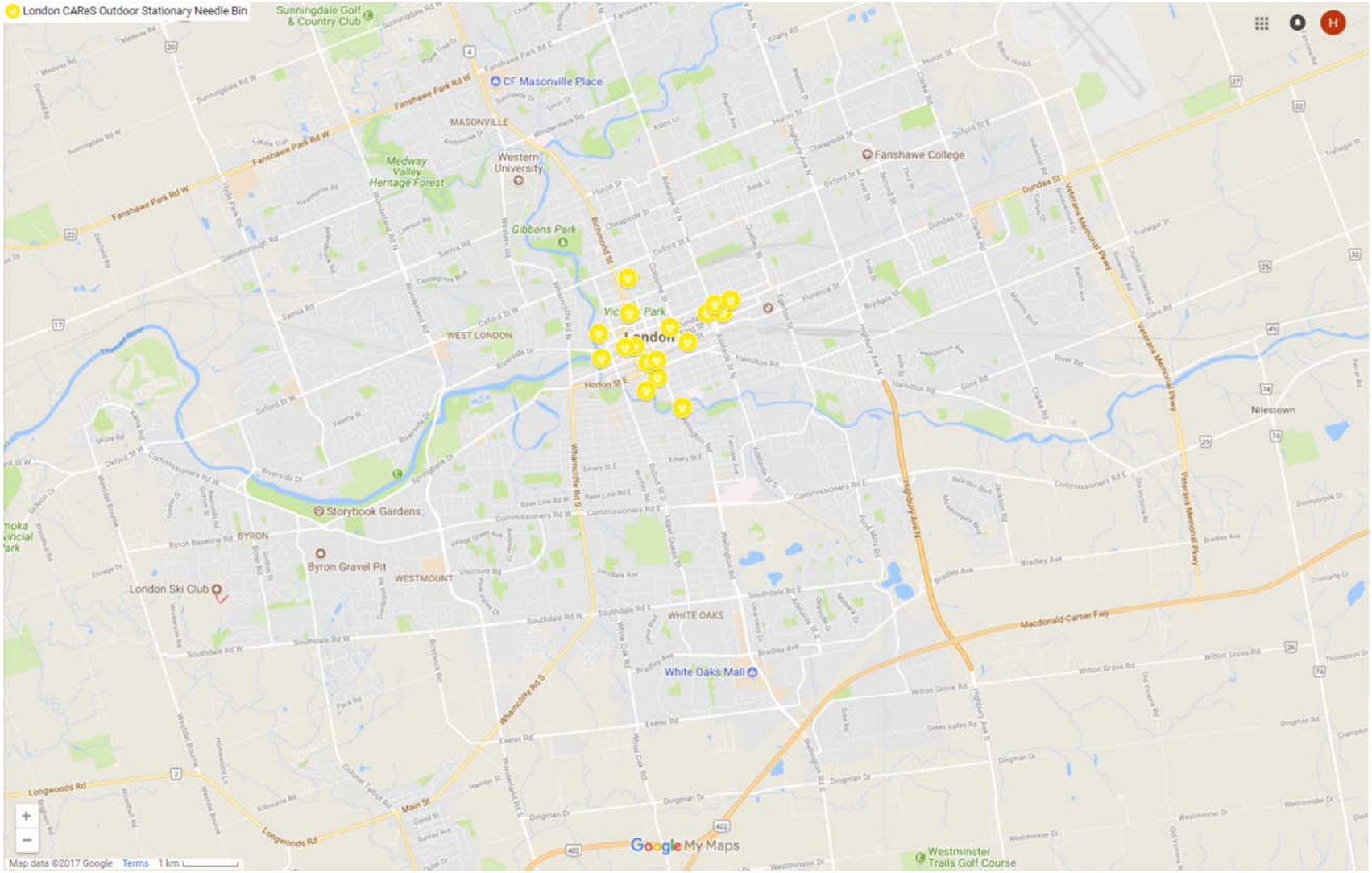
EXHIBIT 4

Needle Exchange Program Sites, London CAReS Outdoor Stationary Needle Bins, Request for Sharps Removal, and Syringe Hot Spots in Middlesex-London, January 2016 to November 2017



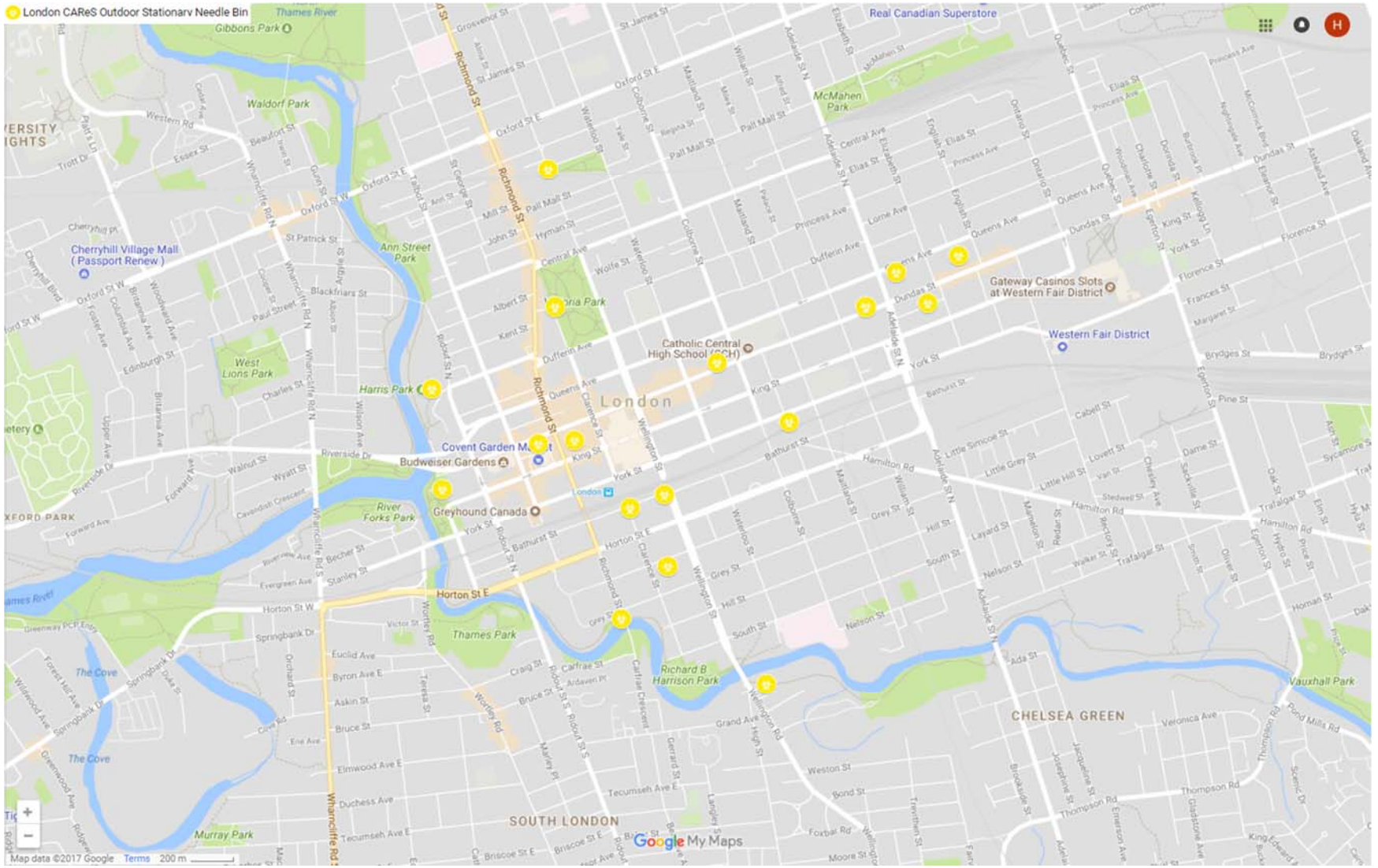
Source: Google. (2017). [Google maps of Needle Waste, Exchange & Recovery in London, Ontario, Canada]. Created and retrieved November 2017.

EXHIBIT 5
London CAReS Outdoor Stationary Needle Bin Locations



Source: Google. (2017). [Google maps of Needle Waste, Exchange & Recovery in London, Ontario, Canada]. Created and retrieved November 2017.

EXHIBIT 6
London CAReS Outdoor Stationary Needle Bin Locations (Zoomed-In)



Source: Google. (2017). [Google maps of Needle Waste, Exchange & Recovery in London, Ontario, Canada]. Created and retrieved November 2017.

EXHIBIT 7
Needle Recovery Strategy Environmental Scan: Summary of Findings

This report examines various strategies or models of needle recovery that have been adopted in Ontario (London, Ottawa, Thunder Bay, Windsor, and Toronto), Quebec (Montreal), Alberta (Edmonton and Calgary), British Columbia (Vancouver), Saskatchewan, Northern Ireland, and Australia. Please note that this information was collected through interviews, as well as a literature search conducted by Daniel Murcia (MPH Student/Program Evaluator). The findings presented here include the most recent data available.

The estimated number of people who inject drugs (PWID) in Canada ranged from 1,500 (Thunder Bay) to 12,000 (Vancouver) (2016 data). In 2015, Northern Ireland had an estimated PWID population of 26,227. In 2016, Australia had an estimated PWID population of 74,000.

The estimated number of needles distributed in Canada ranged from 600,000 (Ottawa) to 4,750,000 (Vancouver) (2016 data). In 2015, Northern Ireland distributed an estimated 342,580 needles. In 2016, Australia distributed an estimated 49,400,000 needles.

The estimated needle recovery rate in Canada ranged from 63% (London) to 96% (Saskatchewan). Some places claimed to have higher recovery rates; however, there is no supporting data available. Other locations did not have an estimated recovery rate available. Places with high needle recovery rates explicitly stated that sharps recovered included needles and syringes used for drug use as well as medical purposes (e.g., diabetic needles for insulin). The estimated needle recovery rate in Northern Ireland ranged between 31% and 70%. In Australia, needle recovery rates are no longer collected; however, older reports suggest it was approximately 70%.

The most common method of estimating the number of sharps recovered is by weighing disposal bins and biohazard containers. Other methods include using the size, volume, or number of biohazard containers returned and/or relying on self-reported data from clients. Improperly discarded sharps are counted individually. Some jurisdictions do not count the number of collected and/or returned sharps and the rationale for this was not reported.

The majority of sharps are recovered through needle exchange programs and pharmacies. Places with high recovery rates follow an 'exchange new for used needles' philosophy but also do not deny new equipment to users who do not have used equipment to exchange. Other successful models of needle recovery include needle drop boxes placed across the city, supervised injection sites, and available needle bins in private businesses, fire departments, and public restrooms.

Improperly discarded sharps are mainly recovered by outreach teams, peer support teams on the street, city wide clean-up campaigns, 24/7 sharps recovery hotline, and mobile vans that provide needle exchange services. Places aim to educate clients, whenever possible, on how to safely dispose of needles and the risks of failing to do so. This type of education has shown to be successful in reducing the number of improperly discarded sharps. Lastly, organizations that employ street outreach peers with lived experience contributed to decreasing the number of improperly discarded needles as well as increasing harm reduction and safe disposal education in the PWID population.

Organizations involved in sharps recovery include public health units, community centres, pharmacies, hospitals, fire and police departments, municipalities, provincial and federal governments, non-governmental organizations, not-for-profit organizations, domestic waste and recycling disposal facilities, and private waste contractors. In most cases, each organization is financially responsible for disposing the sharps they recover; however, places where one organization is financially responsible for sharps disposal reported higher recovery rates. Some locations have multiple organizations involved in the recovery of sharps and also produce high needle recovery rates.

Source: Created by author.

EXHIBIT 8
Healthcare, Social, and Harm Reduction Services Available for PWID

Name of Program	*Services Offered*
Infectious Disease Care Program (IDCP)	Since 1990, the Infectious Disease Care Program of St. Joseph's Health Care has served the needs of people living with HIV/AIDS. This program provides medical and psychiatric, nursing, social work, pharmacy, and nutrition services for HIV-infected and affected populations. Driven by care, compassion, comprehension, and confidentiality, the program's aim is excellence in patient care. IDCP is the only HIV care program in the city (St. Joseph's Health Care London – IDCP, 2017).
MyCare Program	The MyCare Program recognizes that many people living with HIV face barriers to access and treatment. A partnership between St. Josephs' Health Care London and London InterCommunity Health Centre (LIHC) provides specialized HIV case management and primary care services to people living with HIV (St. Joseph's Health Care London, 2017).
London CAReS	London CAReS aims to end homelessness in London, Ontario. It provides 24/7 street outreach services to support individuals experiencing homeless move off the streets and into a home. It also offers a housing stability program that provides intensive case management support to individuals that have experienced persistent homelessness who are now housed. Lastly, London CAReS is responsible for the maintenance of safe disposal boxes in identified areas to collect sharps and assist with needle and syringe recovery (London CAReS, 2017b).
Options Clinic & Anonymous HIV Testing	The London InterCommunity Health Centre's Option Clinic provides a safe and private environment where vulnerable populations can be anonymously tested for HIV free of charge. It also provides education and support from non-judgmental counsellors. The Anonymous HIV Testing Program provides HIV prevention, testing, and counselling services to vulnerable populations on an outreach basis around the city. This program is coordinated by the Options Clinic (London InterCommunity Health Centre, 2015).

Source: St. Joseph's Health Care London, 2017; London CAReS, 2017b; London InterCommunity Health Centre, 2015.

REFERENCES

1. Broadhead, R.S., Heckathorn, D.D., Weakliem, D.L., Anthony, D.L., Madray, H., Mills, R. J., & Hughes, J. (1998). Harnessing peer networks as an instrument for AIDS prevention: Results from a peer-driven intervention. *Public Health Reports, 113*(Suppl. 1), 42-57.
2. Canadian AIDS Society. (2004). HIV and Poverty Information Sheet Series: The Link Between Poverty and HIV. Retrieved from http://pubs.cpha.ca/PDF/P20/21825.pdf).
3. Canadian HIV/AIDS Legal Network. (2005). Part of the Solution: A Plan of Action for Canada to Reduce HIV/AIDS-Related Stigma and Discrimination. Retrieved from http://www.aidslaw.ca/site/wp-content/uploads/2013/04/Plan+of+Action+-+Bklt+-+Discrimination+-+ENG.pdf
4. Challacombe, L. (2016). The epidemiology of HIV in people who inject drugs in Canada. Retrieved from www.catie.ca/en/fact-sheets/epidemiology/epidemiology-hiv-canada
5. Coleman, T. (2017). Development and Implementation of a Strategy to Address HIV, Hepatitis C, invasive Group A Streptococcal Disease and Infective Endocarditis in Person Who Inject Drugs in Middlesex-London, Ontario (Publication No. Appendix A to Report 021-17). London, ON.
6. Dhinsa, S., Hovhannisyan, G., Coleman, T., & Thompson, T. (2017). Public health challenges and opportunities in addressing complex health issues in person who inject drugs (PWID) in Middlesex-London, Ontario. Retrieved from http://www.ohrdp.ca/wp-content/uploads/2017/05/2017-RespondingMLHU.pdf
7. Eastabrook, Z. (2017). Needle Recovery in London – London CAReS [Personal Interview].
8. Frankish, J., Hwang, S. W., & Quantz, D, (2009). The Relationship Between Homelessness and Health: An Overview of Research in Canada (Rep.) Toronto: Cities Centre, University of Toronto.
9. Ghonaim, H. (2017). 'It's scary' says mom after family finds needle in Victoria Park A mother of three was at Victoria Park when we noticed a used syringe next to her two-year-old. *CBC London*. Retrieved from http://www.cbc.ca/news/canada/london/exposed-syringe-sparks-public-concern-1.4168393
10. Google. (2017). [Google maps of Needle Waste, Exchange & Recovery in London, Ontario, Canada]. Created and retrieved November 2017.
11. Jackson, T.D. (2015). Wrap-around care: A necessity, not a luxury. Retrieved from http://www.thebody.com/content/75372/wrap-around-care-a-necessity-not-a-luxury.html
12. Ksobiech, K. (2003). A meta-analysis of needle sharing, lending, and borrowing behaviors of needle exchange program attenders. *AIDS Education and Prevention, 15*(3), 257-268.
13. Lally, M.A., Montstream-Quas, S.A., Tanaka, S., Tedeschi, S.K., & Morrow, K.M. (2008). A qualitative study among injection drug using women in Rhode Island: Attitudes toward testing, treatment, and vaccination for hepatitis and HIV. *AIDS Patient Care and STDs, 22*(1), 53-64.
14. Laurence Thompson Strategic Consulting. (2008). A review of needle exchange programs in Saskatchewan. *Vol. 12, Rep*. Saskatoon, SK: Population Health Branch Saskatchewan Ministry of Health.
15. London CAReS. (2016). [Community Requests – Syringe Recovery (2016)]. Unpublished raw data.
16. London CAReS (2017a). [Requests for Sharps Removal (2017)]. Unpublished raw data.
17. London CAReS. (2017b). London CAReS. Retrieved from http://londoncares.ca/about-us/london-cares

18. London InterCommunity Health Centre. (2015). *Options Clinic Anonymous HIV Testing* [Brochure]. London, ON.
19. McLaughlin, D.F., Mckenna, H., & Leslie, J.C. (2000). The perceptions and aspirations illicit drug users hold toward health care staff and the care they receive. *Journal of Psychiatric and Mental Health Nursing, 7*(5), 435-441.
20. Middlesex-London Health Unit (MLHU). (2013). A profile of people who inject drugs in London, Ontario: Report on the Public Health Agency of Canada I-Track Survey, Phase 3, Middlesex-London, 2012. London, Ontario
21. Middlesex-London Health Unit (MLHU). (2016). Needle Exchange. Retrieved from https://www.healthunit.com/needle-exchange
22. Middlesex-London Health Unit (MLHU). (2017). Safe disposal of sharps. Retrieved from https://www.healthunit.com/sharps-disposal
23. Regional HIV/AIDS Connection. (2017a). Needle & Syringe Program. Retrieved from http://www.aidslondon.com/community/community-programs/needle-syringe-program
24. Regional HIV/AIDS Connection. (2017b). [Needles OUT and IN (2016-2017)]. Unpublished raw data.
25. Small, W., Wood, E., Tobin, D., Rikley, J., Lapushinsky, D., & Kerr, T. (2012). The injection support team: A peer-driven program to address unsafe injecting in a Canadian setting. *Substance Use & Misuse, 47*(5), 491-501.
26. St. Joseph's Health Care London - IDCP. (2017). Infectious Diseases Care Program. Retrieved from https://www.sjhc.london.on.ca/infectiousdiseases
27. St. Joseph's Health Care London. (2017). Partnership brings life-sustaining HIV treatment to London's most vulnerable. Retrieved from https://www.sjhc.london.on.ca/our-stories/partnership-brings-life-sustaining-hiv-treatment-londons-most-vulnerable
28. Strathdee, S.A., & Beyrer, C. (2015). threading the needle — How to stop the HIV outbreak in rural Indiana. *New England Journal of Medicine, 373*(5), 397-399.
29. Sutherland, M. (2017). 6-year-old pricked by used needle while playing in local park. *CTV News*. Retrieved from http://www.ctvnews.ca/canada/6-year-old-pricked-by-used-needle-while-playing-in-local-park-1.3427025

INSTRUCTOR GUIDANCE

Middlesex-London's Public Health Emergency: HIV in People Who Inject Drugs

Daniel E. Murcia Monroy, BA, MPH (MPH Class of 2017)
Tamara Thompson, PhD (formerly Program Evaluator, Middlesex-London Health Unit)
Amanda Terry, PhD (Assistant Professor, Western University)

BACKGROUND

Middlesex-London is experiencing an alarming rise of new HIV cases in people who inject drugs (PWID). Despite a demonstrably successful harm reduction program and primary care effort, the rapid increase in HIV remains. To help reduce the incidence of HIV in PWID, in association with Regional HIV/AIDS Connection (RHAC), My Sister's Place, and the Middlesex-London Health Unit (MLHU), the Counterpoint Needle and Syringe Program in Middlesex-London distributed over three million needles in 2016. Nevertheless, healthcare workers continue to diagnose PWID with HIV and other infections. Of those needles distributed, only 1,895,798 were recovered through these organizations and, thus, improperly discarded needles have been spotted across the city on multiple occasions.

PWID in Middlesex-London face significant barriers when accessing care and support. Barriers, including, but not limited to, psychosocial (i.e., stigma, social support), structural (i.e., housing, treatment access, poverty), and institutional factors (i.e., patient-physician relationship), can hinder PWID from accessing adequate healthcare and support services. With an aim to address some of the barriers faced by PWID, the Middlesex-London Health Unit has established an HIV Leadership Team that works collaboratively with key system partners in the field of HIV treatment and support, substance use, and support for people who experience homelessness.

This case demonstrates the impact of social determinants of health such as poverty, homelessness, and inequalities in PWID's health, well-being, morbidity and mortality patterns, as well as their access to care. This case also highlights the importance of recognizing the influence of social determinants of health in the planning, implementation, and evaluation processes of public health programs to ensure that interventions are effective, cost-effective, and equitable.

OBJECTIVES

1. Explain the potential impacts of social inequalities on the health and well-being of PWID, the principles of harm reduction, the operation of needle exchange programs, and the needle recovery strategies. How does the position of a PWID in society impact their health outcomes?
2. Identify the needs of PWID in Middlesex-London and highlight current gaps in healthcare and social service models.
3. Describe the importance and benefits of wrap-around care.

DISCUSSION QUESTIONS

1. What are the benefits of providing harm reduction services to PWID? How does wrap-around care improve these services?
2. What is the role of structural violence on restricting PWID's capacity to make choices? How does this influence the health and well-being of PWID?
3. How might inequalities of risk and outcome in PWID be addressed?
   a. What are the most urgent needs?
4. How can services be improved to remove the barriers that currently prevent PWID, regardless of their HIV status, from obtaining much-needed healthcare and social support resources?
5. How can the general population be educated about harm reduction?
6. How can MLHU and community partners improve the current needle and syringe recovery strategy to destigmatize injection drug use, PWID, and harm reduction services?

KEYWORDS

Harm reduction; needle recovery; needle exchange programs; wrap-around care; PWID; HIV prevention; injection drug use; structural violence; social determinants of health.