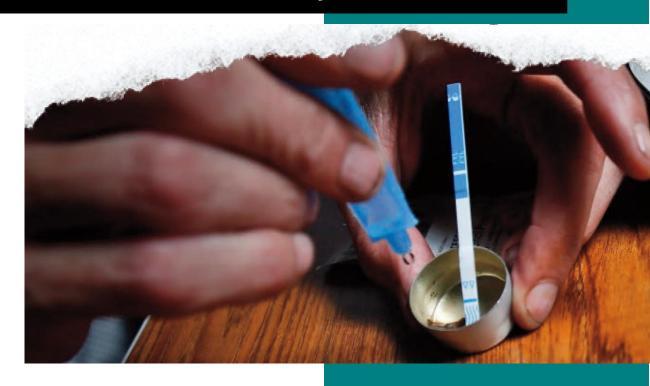
Fentanyl & Xylazine Test Strip Kit Pilot Project Evaluation



Walter Humeniuk Timiskaming Health Unit 11/1/2024

Contents

KEY MESSAGES	1
BACKGROUND	2
PROGRAM DESCRIPTION	2
PURPOSE	3
EVALUATION QUESTIONS	4
METHOD	4
EVALUATION FINDINGS	5
LIMITATIONS	10
DISCUSSION	10
CONCLUSION	12
RECOMMENDATIONS	12
REFERENCES	14
Appendix A	15
Appendix B	16
Appendix C	17
Appendix D	19
Appendix E	21
Appendix F	22
Anna and the O	0.0

Prepared By:

Walter Humeniuk, Research Planning and Policy Analyst

Reviewed By:

Amanda Mongeon, Manager of Community Health Kim Peters, Public Health Promoter

KEY MESSAGES

The results of this evaluation demonstrates the value of the fentanyl and xylazine test strip distribution pilot project to people who use drugs (PWUD) and its role in the prevention of opioid-related harms. This report can assist in assessing the utility and practicality of a test strip distribution program, help inform decision-making, and clarify future roles and processes.

During a six-month period, an estimated 612 test strip kits were distributed throughout the district of Timiskaming with the demand for fentanyl and xylazine test strip kits being almost identical. Of the 105 visits for the purpose of obtaining the test strip kits, about 1 in 5 were by individuals who had never accessed Timiskaming Health Unit (THU) harm reduction services before. Very few test strip kits were accessed through community partners with most distributed through THU offices and a peer support worker who works for Centre de santé communautaire du Témiskaming (CSCT). The most common change in drug use behaviour resulting from a positive test result was to go slow and use a lower dose.

Overall, PWUD and service providers perceived the program as reducing opioid-related harms with some evidence to support this assertion. Following the implementation of the test strip distribution initiative, opioid-related emergency department (ED) visits in the THU area decreased by over half compared to the same period the previous year. However, the low number of incidents in a relatively short period of time did not permit meaningful statistical analysis. A preliminary cost-benefit analysis outlined below examines the potential cost savings as a result of implementing the program when considering ED visits, paramedic services and policing costs associated with opioid-related poisonings/overdoses. Facilitators and barriers to implementing the program are discussed and recommendations provided.



BACKGROUND

In 2022, there were an estimated 2,531 opioid-related deaths in Ontario, with seven of those being in the Timiskaming Health Unit (THU) catchment area (Ontario Agency for Health Protection and Promotion [Public Health Ontario] 2024a). High-potency synthetic opioids such as fentanyl and the adrenergic agonist or animal tranquilizer xylazine continue to make their way into the unregulated drug supply, leading some people who use drugs (PWUD) to unknowingly consume these substances, resulting in increased poisonings and overdoses (Larkin, 2023).

While fentanyl is a powerful opioid used medically for pain management (Centre for Addiction & Mental Health [CMHA], 2017), xylazine is a non-opioid analgesic used in veterinary medicine and not currently approved for human use in Canada (Krotulski et al., 2023; Government of Canada, 2023). Both fentanyl and xylazine are often added to unregulated drugs to increase bulk and enhance or mimic the effects of these substances (Government of Canada, 2023). The central nervous system depressant effects of xylazine and fentanyl are similar, resulting in sedation and/or drowsiness, confusion, slow or irregular breathing, slowed or irregular heartbeat, constricted pupils, and possible coma or death (Government of Canada, 2024; Government of Canada, 2023). When xylazine and opioids such as fentanyl are used in combination, synergistic effects can occur, resulting in intensified or prolonged effects and an increased risk of overdose and death (Government of Canada, 2023; Krotulski et al., 2023). Since 2019, there has been an increase in the number of drug samples submitted by law enforcement agencies across Ontario that have tested positive for xylazine (Government of Canada, 2023).

PROGRAM DESCRIPTION

Drug checking is a harm-reduction strategy used by people who use drugs (PWUD) to decrease their risk of experiencing drug-related poisonings and overdoses. Test strips are a relatively simple, convenient, and low-cost method for checking whether trace amounts of a compound such as fentanyl or xylazine are present in samples of unregulated drugs (Gozdzialski et al., 2023). A positive result for fentanyl or xylazine in drug supplies can prompt PWUD to discard the drugs, do a 'tester' shot, use lower doses, go slower, or use with someone else present (Larkin, 2023). The method of using test strips is the same regardless of whether one is using a fentanyl test strip or a xylazine test strip. PWUD are cautioned that a negative result does not always mean the supply is safe, and they should always take caution including carrying the opioid antagonist naloxone, avoiding using alone, and starting low and going slow.



In October 2023, THU received funding from the AIDS Committee of North Bay and Area (ACNBA) and used a portion of this funding to pilot the distribution of test strip kits across the district. In total, 500 fentanyl and 500 xylazine test strip kits were created for distribution through the THU harm reduction program. Each kit was packaged in a Ziploc bag containing two test strips (to test for either xylazine OR fentanyl), a small cup, four water ampoules, and a measuring spoon. Bilingual print resources were also included consisting of instructions for using the test strips and a National Overdose Response Service (NORS) card with a number to call if using alone. The program was promoted primarily through word of mouth. Posters were placed in lobbies, clinic rooms, and washrooms of participating sites, and information was also shared on social media and by email to community partners.

THU nursing and reception staff were trained in the proper use of the test strips and the required tracking documentation. Training in the appropriate use of the test strip kits was provided to PWUD when presenting for services by THU staff or a peer support worker employed by Centre de santé communautaire du Témiskaming (CSCT). Initially, the distribution of the kits was solely performed by THU, but approximately one month later, it was expanded to include the Canadian Mental Health Association – Kirkland Lake office (CMHA-KL), the Temagami Family Health Team (TFHT), and a pharmacy (Northern Drugs) located in New Liskeard. Staff at these agencies received training on the proper use and distribution of the test strip kits from THU staff.

The goals of the test strip kit initiative were to:

- Decrease the harms associated with a contaminated drug supply
- Empower people to make informed choices about their drug use
- Encourage PWUD to take additional precautions to prevent overdoses/poisonings
- Provide insight into the local unregulated drug supply
- Help normalize conversations about substance use health and safety.

PURPOSE

This evaluation aims to assess the utility and value of the test strip distribution pilot project, identify barriers and facilitators to implementing the project, and assess its processes and outcomes (See Appendix A – Logic Model). The information provided in this document can help inform decision-making and clarify future roles and processes.



EVALUATION QUESTIONS

The following evaluation aims to answer the following questions:

- 1. Which test strip kits were distributed, how many, and where?
- 2. Has the number of new THU harm reduction clients changed since the onset of the test strip kit program?
- 3. Did drug use behaviour change after the test strip kit program was implemented?
- 4. Are the test strip kits reducing harms?
- 5. Did staff receive adequate training, and how comfortable are they distributing the test strip kits?
- 6. Are PWUD finding the test strip kits valuable?

METHOD

A mixed method involving quantitative and qualitative data captured in the Fentanyl & Xylazine Test Strip Tracking Sheet (see Appendix B), a PWUD survey (see Appendix C), and a service provider survey (See Appendix D) were utilized for this evaluation. In addition, data from the National Ambulatory Care Reporting System (NACRS) and the Office of the Chief Coroner for Ontario were used for exploratory purposes to assess any changes in the rates of opioid-related emergency department (ED) visits and deaths.

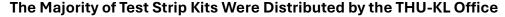
The Fentanyl & Xylazine Test Strip Tracking Sheet captured the date the kits were distributed to the client, the type and number of kits provided, whether the individual had used THU harm reduction services in the past, and for clients who had previously used the strips, whether the test results changed how the client used their substances. The PWUD and service provider surveys attempted to capture perceptions of the test strip kit pilot project and the training they received in the use of the test strips. The surveys were launched in SurveyMonkey on August 22, 2024. A poster was created to promote the PWUD survey (See Appendix E) and displayed in all THU offices and agencies across the district where PWUD may frequent. The service provider survey was emailed to THU staff and participating agencies. Both surveys were initially scheduled to close on August 30, 2024, but they were extended to September 13, 2024, due to low response rates. An email was sent to service providers on September 3, 2024, as a reminder to complete the survey. Despite the extension, survey response rates continued to be low.

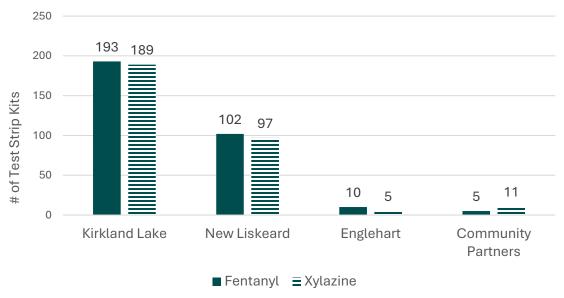
EVALUATION FINDINGS

Evaluation findings detailed below are based on 36 completed Tracking Sheets (13 THU-New Liskeard [NL] Office, 19 THU-Kirkland Lake [KL] Office, two THU-Englehart [ENG] Office, two Community Partners), four completed PWUD surveys, six service provider surveys, and data from NACRS and Office of the Chief Coroner for Ontario. Costs were analyzed utilizing THU financial data.

Number & Type of Test Strip Kits

During a six-month period from October 23, 2023, to April 23, 2024, there were a recorded 612 test strip kits distributed across the district, with almost an equal amount of fentanyl test strip kits (310) as xylazine test strip kits (302) requested. Of the test strip kits distributed, 382 were distributed by the THU-KL office, 199 by the THU-NL office, 15 by the THU-ENG office, and 16 by community partners (11- Northern Drugs, 5- CMHA-KL, 0-TFHT). Part of the discrepancy between the THU-KL and the THU-NL offices might pertain to the work of the CSCT peer support worker in Kirkland Lake who obtained kits through the THU-KL office, distributed a recorded 92 fentanyl and 93 xylazine test strip kits to PWUD. No peer support workers were fulfilling this role in other areas of the district.





Number of Visits

From October 23, 2023, to April 23, 2024, there were a recorded 102 visits to THU offices and three visits to community partners to obtain fentanyl and xylazine test strip kits. Of these visits, 59 visits were to the THU-KL office, 40 to the THU-NL Office, three to the THU-ENG Office, two to Northern Drugs, and one to CMHA-KL. No requests were received by the TFHT for test strip kits. Almost 1 in 5 visits (19/105) were by individuals who had never accessed THU harm reduction services before.

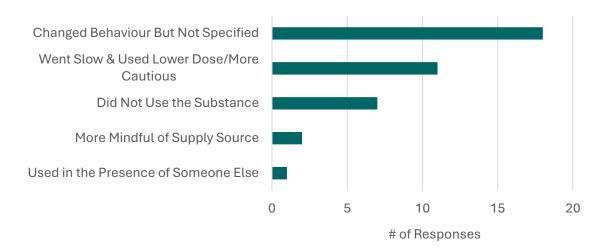
70 59 60 50 40 #of Visits 40 30 20 12 10 3 0 Kirkland Lake New Liskeard Englehart **Community Partners** ■ Total Clients = Repeat Clients ■ New Clients

Repeat Clients Accounted for the Majority of Visits

Changes in Drug Use Behaviour

Whether the test strip results led to a change in substance use behaviour was recorded for less than half of the visits (44/105). Where change was indicated, 77% (34/44) reported that a positive test result impacted how they used their substance. Being more cautious, going slower, and using a lower dose was the most common approach when encountering a positive test result. Not using the substance, returning it, or discarding the supply was also noted. Surprisingly, only one individual indicated that a positive test result prompted them to use it in the presence of someone else, but this may have already been a common practice before the introduction of the test strip kit distribution pilot project.

The Presence of Fentanyl or Xylazine in Drug Supplies Led THU Harm Reduction Clients to Be More Cautious



Similar results were captured by the PWUD survey, with 100% of respondents affirming that the test strip kits had led them, or someone else they know, to take additional steps to prevent overdoses/poisonings. Survey respondents noted the test strip kits helped determine the presence of fentanyl and xylazine, deterred them from using, or helped them find a "clean" supply. In addition to the changes in drug use behaviour, all PWUD survey respondents and 5 out of 6 service providers perceived the value of continuing the test strip kit distribution program in the THU area.

"This resource is a fantastic add to our harm reduction toolkit and if the resource was for some reason to be discontinued, I personally would feel greatly concerned with the increase in xylazine."

PWUD

Harm Reduction

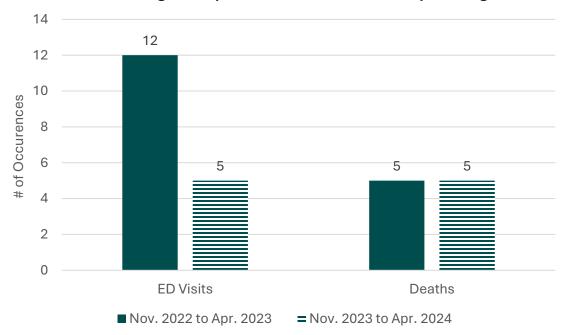
A recent rapid review of the literature demonstrated the use of test strips to be associated with a reduction in reported fatal and non-fatal poisonings/overdoses; however, few, if any, studies quantitatively examined if the use of test strip kits impacted opioid-related ED visits (Ontario Agency for Health Protection and Promotion [Public Health Ontario], 2024b). For exploratory purposes, data from NACRS and the Office of the Chief Coroner for Ontario were utilized to assess any changes in the rates of opioid-related ED visits and deaths in Timiskaming for the same period before and after the implementation of the test strip kit

distribution pilot project. Before its implementation from November 1, 2022, to April 30, 2023, there were 12 opioid-related ED visits in the district of Timiskaming and 12 opioidrelated deaths (NACRS, 2024; Office of the Chief Coroner for Ontario, 2024). Following the implementation of the test strip kit distribution program from November 1, 2023, to April 30, 2024, there were no changes in the number of opioid-related deaths, but a decline of over 58% in ED visits was witnessed. Due to the short time interval under consideration and the small number of incidents, statistical analysis could not be interpreted with any degree of confidence. It is not clear why ED visits would decrease while the number of deaths remained unchanged, and the possibility of this occurring due to other factors or by chance cannot be ruled out. Further investigation is required with a longer time interval to determine if this trend persists. However, the decline in opioid-related ED visits is aligned with the opinions expressed in the rapid review cited above and the PWUD survey, where respondents perceived the test strip kit program as decreasing the harms associated with a toxic drug supply. Based on their opinion and from what they had heard from their clients, 2 out of 3 service providers thought the use of the test strip kits resulted in clients taking additional precautions to prevent overdoses/poisonings.

"We do not have a lot of clients collecting the strips, however, the ones that do, find them useful."

Timiskaming Service Provider

Opioid-Related ED Visits Decreased By Over Half Following the Implementation of the Test Strip Kit Program



Adequacy of Training & Comfort Level

Most of the respondents to the PWUD survey (3 out of 4) reported having received training in the use of the test strip kits from the CSCT peer support worker or a member of the Timiskaming Drug Strategy's People with Lived/Living Experience (TDAS PWLLE) Advisory Committee. It is uncertain whether the CSCT peer support worker and the member of the TDAS PWLLE advisory committee are the same person. Only one respondent received training in a THU office. In contrast, 5 out of 6 service providers received their training directly through THU, and one received training via an instructional video. All PWUD and service provider survey respondents perceived the training they received as adequate. It was suggested by a service provider that some consideration be given to having a short instructional video that can be accessed by clients as needed. In terms of distributing and instructing clients on the proper use of the fentanyl and xylazine test strip kits, 5 out of 6 service providers rated themselves as comfortable or very comfortable, but one rated themselves as being very uncomfortable. A lack of experience in distributing the test strip kits was cited as the cause of discomfort. Only one service provider reported distributing test strip kits daily, with most distributing the kits once per month or less.

Cost-Benefit Analysis

Each test strip kit consisted of two test strips, one measuring spoon, one graduated translucent plastic medicine cup, four ampoules of water, one bilingual test strip instruction card, and one bilingual National Overdose Response Service (NORS) wallet card (See Appendix F). The Ontario Harm Reduction Distribution Program (OHRDP) provided the ampoules of water at no cost to THU. The xylazine test strips were twice the cost of the fentanyl test strips, and as a result, the total cost of a xylazine test strip kit was \$4.97, while the price of a fentanyl test strip kit was \$2.97. There were a recorded 310 fentanyl strip kits and 302 xylazine test strip kits distributed across the district for a total of \$2,421.64 before taxes (See Appendix G).

Depending on the quantity of the drug supply, each test strip kit has the potential to prevent an infinite number of opioid-related poisonings/overdoses at a cost of between \$2.97 and \$4.97 for each test strip kit. In 2022, an urgent ED visit was estimated to cost approximately \$351.00 in Ontario (Alliance for Healthier Communities, 2023). The cost of the test strip kits (\$2,421.64) was less than the cost of approximately seven ED visits (\$2,457.00). In addition to the cost of an ED visit, opioid-related incidents often involve costs associated with paramedic services and/or police. Each opioid-related poisoning/overdose also poses a risk of death. It may be reasonable to assert that the cost of the test strip kit distribution initiative is justified through the savings realized in healthcare, paramedic services, and policing costs; however, further investigation would be required to determine the full extent of these savings.



LIMITATIONS

Some limitations associated with this evaluation are worth noting. First, there seems to be incomplete documentation regarding tracking the distribution of kits. There is no documentation of test strip kits being distributed by the THU-KL office for the entire period from January 13, 2024, to March 1, 2024, or the THU-NL office for the whole month of April 2024. Not having any requests for the test strip kits during these times is unlikely as the THU-KL office had an average of 12 visits, and the THU-NL office had averaged 7.4 visits for other months. As a result, the number of visits and test strips kits distributed is most likely underestimated. The "changes in drug behaviour" section in the tracking document also seems incomplete, with just over half of the sections completed for repeat clients. More complete data may have identified additional precautions being taken by PWUD in terms of both type and quantity.

Another limitation concerns the response rate to the PWUD survey. Only four responses were received despite extending the deadline for completion by two weeks, making it difficult to draw any definitive conclusions from the data. A third test strip kit to detect benzodiazepines became available via OHRDP approximately five months after the commencement of the pilot project but was not included in this evaluation.

Finally, a short evaluation period consisting of six months and a relatively low number of opioid-related incidents posed a challenge in evaluating the potential impacts. A more extended period is required to fully assess any positive effects of the initiative and any unintentional consequences.

DISCUSSION

Project Reach

Overall, the test strip kit program tended to be well-received and valued by PWUD and service providers. At least 612 test strips were distributed across the district, and the majority of test strip kits (382) were distributed from the THU-KL office. Clients requested an almost equal number of fentanyl test strip kits and xylazine strip kits. A slight increase in harm-reduction clients (18%) was witnessed during the six-month pilot project, indicating that the test strip kit distribution initiative attracted new clients to the THU harm-reduction program. Each new client provided an opportunity for THU to foster trusting relationships, normalize conversations about substance use, and facilitate access to additional services and supports.



Project Impact

PWUD perceived the test strip kit program as decreasing the harms associated with a toxic drug supply. As well most service providers also agreed that the test strip kit program was contributing to a reduction in opioid-related harms. Where indicated, most clients presenting to THU offices and PWUD survey respondents reported that positive test strip results led them to change their drug use behaviour. However, while a positive test result often led to PWUD going slow and using a lower dose, there were no reports on whether negative test strip results influenced drug-use behaviour. For example, in a study conducted by Tilhou and colleagues (2023), PWUD were more likely to engage in riskreducing behaviour when encountering a positive test strip result than a negative result. A negative test strip result might be misinterpreted as the drug supply being safe. However, drug supplies may be contaminated by adulterants other than those detected by the test strips, or the targeted adulterant may be present in the drug supply but not in the sample tested. The combination of a false sense of security and the presence of an undetected lethal contaminant may result in unintentional harm. Future investigations should consider exploring whether there are differences in drug use behaviour when test strips reveal a positive versus negative result.

An unexpected finding pertained to reports of dealers/wholesalers using the test strip kits to test for contaminants in their drug supplies. It is unknown whether the results of those tests were being shared with consumers at the point of sale to encourage them to take extra precautions or used in other ways (e.g., promoting the purity of their product).

Facilitators & Barriers

Several facilitators and barriers were identified as a result of this evaluation. First, the funding received from the ACNBA facilitated this initiative and without it, this pilot project may not have been possible. Supplies provided by the OHRDP (i.e., ampoules of water) helped offset some of the costs associated with the test strip kits.

The CSCT peer support worker played a pivotal role in promoting the initiative to clients and training them in the proper use of the test strip kits. The peer support worker is believed to have contributed to a greater number of test strip kits being distributed by the THU-KL office compared to the THU-NL office. This peer support worker is now one of three recently hired harm reduction outreach workers employed across the district.

Most service providers received their training directly through THU and perceived the training as adequate overall. One service provider noted the infrequency with which they distribute the test strip kits as a barrier to feeling comfortable doing so. They suggested that refresher training occur regularly for those seldom working in harm reduction. One service

provider identified time limits due to competing demands as a barrier to adequately instructing harm reduction clients in the use of the test strip kits.

Finally, for unknown reasons, PWUD accessed very few test strip kits through community partners, choosing instead to access the kits either directly at THU offices or indirectly (e.g., via the CSCT peer support worker). Further investigation would be required to discern the exact reasons. However, while test strip kits are a form of harm reduction, participating community partners (i.e., CMHA-KL, Northern Drugs, and TFHT) are better known for being treatment-focused. There may have been a level of discomfort on the part of PWUD in accessing harm reduction services at the same location they receive treatment or there may have been a low awareness of the availability of test strip kits at these locations.

CONCLUSION

The evaluation findings provide support for a fentanyl and xylazine test strip kit distribution program as an essential tool for harm reduction. Overall, the pilot project was well-received by both PWUD and service providers. Preventing substance poisonings/overdoses can save significant healthcare costs associated with emergency responses and long-term health issues related to substance use. In addition to decreasing substance-related harms, the initiative provided increased opportunities for public health to build trusting relationships with PWUD, facilitate access to additional services, and raise awareness about the presence of contaminated drug supplies and safer use practices.

RECOMMENDATIONS

The findings outlined in this evaluation form the basis for the following recommendations:

- 1. The fentanyl and xylazine test strip distribution initiative should be continued with consideration to include test strips that detect other substances (e.g., benzodiazepines and others as they become available).
- 2. It should be reinforced with service providers to caution PWUD at every visit about the need to exercise precautions regardless of the test results, as there may be other contaminants that are undetectable by the test strips, or the sample tested may not be representative of the entire supply.
- 3. Given the small number of test strip kits distributed by community partners, consideration should be given to limiting the distribution of test strips to THU offices and THU harm reduction outreach workers. This would allow for more control over the information provided to PWUD, thoroughness of documentation, and increased opportunities to foster trusting relationships with PWUD. If community partners are to

- participate, PWUD may be more comfortable accessing the kits from service providers that are more aligned with harm reduction rather than treatment services.
- 4. THU harm reduction staff and management should be informed of the intended secondary outcomes of harm reduction services, which include building trusting relationships with PWUD, facilitating access to additional services and supports, and raising awareness about safer drug practices. This requires building rapport and extra time engaging with PWUD when they present for services. Service providers should not rush the interaction.
- 5. To increase comfort levels while distributing test strip kits, service providers should be provided with refresher training regularly (e.g., every 90 days) on the proper use of test strip kits, which, depending on need, may consist of simply viewing a video that is now available via OHRDP.
- 6. The current documentation and tracking of the distribution of test strip kits should continue with consideration given to an additional evaluation. To ensure the quality of the data collected, service providers should receive an in-service on the importance of the accuracy of documentation to evaluations and be provided with opportunities to address barriers to collecting this information, including their levels of comfort in asking the questions required. It is recognized that it is challenging to hold external service providers accountable for documenting data.
- 7. Tracking records should be monitored regularly by the evaluation lead to ensure accuracy, completion, thoroughness, and consideration given to forwarding these records to the evaluation lead or designate monthly to ensure they are not lost or misplaced.
- 8. Given the low response rates to the PWUD survey, consideration should be given to exploring more effective means of engaging with PWUD for data collection and evaluation purposes (e.g., surveys, focus groups, outreach workers, etc.).
- 9. To better gauge the impact of the test strip distribution initiative on outcomes such as opioid-related ED visits or deaths, a longer interval of time (e.g., 12 to 18 months) should be allowed before evaluation.
- 10. The results of this evaluation should be shared with PWLLE and THU harm reduction outreach workers, who may be able to provide more insight into the impacts resulting from the initiative, including the conflicting results involving reduced opioid-related ED visits and the unchanged number of deaths.

REFERENCES

- Alliance for Healthier Communities (2023). Emergency department costs averted attributed to community health centres in Ontario. Kawartha Lakes, ON: Dale McMurchy Consulting Inc. Accessed from https://www.allianceon.org/research/Emergency-Department-Costs-Averted-Attributed-Community-Health-Centres-Ontario
- Centre for Addiction & Mental Health. (2017). Street Fentanyl. Toronto, ON: CMHA Accessed from https://www.camh.ca/-/media/health-info-files/guides-and-publications/straight-talk-fentanyl.pdf
- Gozdzialski, L., Wallace, B., & Hore, D. (2023). Point-of-care community drug checking technologies: an insider look at the scientific principles and practical considerations. *Harm Reduction Journal*, 20, 39. https://doi.org/10.1186/s12954-023-00764-3
- Government of Canada (2023). Health Canada drug analysis service. Spotlight: The emergence of xylazine in Canada. Longueuil QC: Government of Canada. Accessed from https://www.canada.ca/en/health-canada/services/publications/healthy-living/emergence-xylazine-canada.html
- Government of Canada (2024). Fentanyl. Ottawa, ON: Government of Canada. Accessed from https://www.canada.ca/en/health-canada/services/substance-use/controlled-illegal-drugs/fentanyl.html
- Krotulski, A.J., Shinefeld, J., DeBord, J., Teixeira Da Silva, D., Logan, B.K. (2023). *Evaluation of xylazine test strips (BTNX) for drug checking purposes*. Centre for Forensic Science Research and Education, United States. Accessed from https://www.cfsre.org/images/content/reports/drug_checking/CFSRE_Xylazine_Report-Rev-1-18-23.pdf
- Larkin, K. (2023). Harm reduction and overdose prevention fact sheet: Evidence for fentanyl test strips.

 Boston, MA: The Network for Public Health Law. Accessed from https://www.networkforphl.org/wp-content/uploads/2023/04/Effectivenss-of-Fentanyl-Test-Strips.pdf
- National Ambulatory Care Reporting System (2024). Ambulatory Visits 2022-2024, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario, Extracted August 2024. Population Estimates 2022-2024, Ontario Ministry of Health and Long-Term Care, IntelliHealth, Ontario. Extracted July 2024.
- Office of the Chief Coroner, Ontario. (2024). *OCC Opioid-related deaths 2022-2024*. https://odprn.ca/occ-opioid-and-suspect-drug-related-death-data/
- Ontario Agency for Health Protection and Promotion [Public Health Ontario]. (2024a). *Interactive Opioid Tool: Opioid-related morbidity and mortality in Ontario*. Accessed from https://www.publichealthontario.ca/en/Data-and-Analysis/Substance-Use/Interactive-Opioid-Tool
- Ontario Agency for Health Protection and Promotion [Public Health Ontario]. (2024b). *Test strips for drug checking*. Toronto, ON: King's Printer for Ontario. Accessed from https://www.publichealthontario.ca/-/media/Documents/T/24/test-strips-drug-checking.pdf?rev=e6e1c036f7ec4797a781ae47805a6398&sc_lang=en
- Tilhou, A.S., Zaborek, J., Baltes, A., Salisbury-Afshar, E., Malicki, J., & Brown, R. (2023). Differences in drug use behaviors that impact overdose risk among individuals who do and do not use fentanyl test strips for drug checking. *Harm Reduct Journal*, 20, 41. https://doi.org/10.1186/s12954-023-007670



Appendix A

Test Strip Kit Distribution Logic Model

Goal: To reduce the adverse health, social and economic consequences of drug use

Activities	Outputs	Short Term Outcomes	Intermediate Outcomes	Long Term Outcomes
Train harm reduction staff, PWUD, PWLLE and community partners on the proper use of fentanyl and xylazine test strip kits and the interpretation of test results	All harm reduction staff, PWLLE, community partners and PWUD know how to use the test strips and interpret the results	PWUD have access to and using test strip kits to help detect the presence of contaminants in their drug supply and have received instruction on their	Reduced drug-related harms	
Provide or ensure the availability of fentanyl and xylazine test strip kits across the THU area	Test strip kits are available across the THU area	proper use and interpretation	Decreased ED visits, hospital	
Facilitate PWUD's access to substance use treatment, other harm reduction services, health, community and social services	PWUD are being referred to health care, mental health, substance use, harm reduction, and social services.	PWUD are accessing substance use and mental health treatment programs, social services, and health care.	admission/re-admission and length of stay attributed to substance	Improved health wellness for residents of Timiskaming
Track/document the number and type of test kits being distributed, and any feedback provided by PWUD as well as harm reduction outreach workers /community partners	Complete and accurate documentation is available on the type and # of kits distributed, and the feedback received from PWUD, PWLLE and community	PWUD and community members have access to up-to-date information on the possible presence of contaminated supplies.	Decreased rate of deaths attributable to drug use	Reduced premature mortality, morbidity, and disability due to substance use
Monitor opioid-related ED visits and deaths	The # of monthly opioid-related ED visits and deaths are captured with public access to a dashboard	Feedback from PWUD is used to assess the utility of test strip kits, types of contaminants, and Immediate impacts of program	care, mental health and substance use, and social supports	Reduced burden on the health care system
Increase knowledge and application of drug consumption practices that reduce or eliminate the risk of transmission of	THU harm reduction staff are engaging with PWUD in conversation when presenting for services	Trusting and respectful relationships established between THU and PWUD.	Reduced rates of BBI, and soft tissues injuries attributable to drug use	
infectious disease; drug poisonings; and soft tissue injuries.	PWUD are aware of consumption practices that reduce or eliminate the risk of BBI, drug poisonings, & soft tissue injuries.	PWUD are engaging in consumption practices that reduce the risk of BBI, drug poisonings & soft tissue injury	-	



Appendix B

Fentanyl & Xylazine Test Strip Tracking Sheet

Date	# Fentanyl Kits	# Xylazine Kits	Questions	Y/N	Explain answer, comments, or feedback
			Have you used our harm reduction services before?		
			If repeat client, ask the follow-up question: Did using the test strip change how you used your substances?		
			Have you used our harm reduction services before?		
			If repeat client, ask the follow-up question: Did using the test strip change how you used your substances?		
			Have you used our harm reduction services before?		
			If repeat client, ask the follow-up question: Did using the test strip change how you used your substances?		
			Have you used our harm reduction services before?		
			If repeat client, ask the follow-up question: Did using the test strip change how you used your substances?		

Appendix C

Test Strip Kit – PWUD Survey

Invite to participate:

Introduction & Purpose:

This survey will ask you about your use of fentanyl and xylazine test strips. Your answers will help us gain insight into the value of the test strip program and its role in reducing the harms of a toxic drug supply. This survey will remain open until August 30, 2024.

What you will be asked to do:

We are seeking your input into the training you received and your experiences with the test strip kits. The survey will consist of eight (8) questions and should take about 10 minutes. By completing this survey, you agree to the use of the information you provide. Your responses will not be shared with others outside the research team. You are free to skip any questions you prefer not to answer or end the survey at any time.

Questions About the Project:

This survey has received ethics approval from the Timiskaming Health Unit's Ethics Review Committee. When you agree to take part, you keep all your legal rights. If you have any questions regarding the survey or ethical issues related to this project, you may contact the Research Ethics Lead by email at humeniukw@timiskaminghu.com or by phone at 705-647-4305 ext. 2271. Thank you for helping us make the community safer.

Survey

- Do you identify as either a person with lived/living experience or a person who uses drugs?
 - a. Yes
 - b. No
- 2. Who provided the training to you on the proper use of the test strip kits?
 - a. Timiskaming Health Unit
 - b. CMHA
 - c. Pharmacy
 - d. Family Health Team
 - e. Other (Please specify):
- 3. Did you find the training adequate?
 - a. Yes
 - b. No. (If not, how can the training be improved?)

- 4. Have the test strip kits led you, or someone else that you know, to take additional steps to prevent overdoses/poisonings?
 - a. Yes. (If yes, what did you do?)
 - b. No
- 5. In your opinion, has the test strip kit program decreased the harms associated with a toxic drug supply?
 - a. Yes
 - b. No
 - c. Unsure
- 6. Do you see value in continuing the test strip kit program in the district of Timiskaming?
 - a. Yes
 - b. No
- 7. Are there any changes to the program you want to see?
 - a. Yes (If yes, please specify):
 - b. No
- 8. Do you have any additional comments about the program you want to share?

Thank you for participating in this short survey. Your feedback is valued.

Appendix D

Test Strip Kit – Service Provider Survey

Invite to participate:

Introduction & Purpose:

The Timiskaming Health Unit is inviting you to complete a brief survey of your experiences distributing the fentanyl and xylazine test strip kits. By providing this information, you are helping community partners gain insight into the effectiveness of the test strip distribution program and its role in decreasing the harms associated with a toxic drug supply. This survey will remain open until August 30, 2024.

What you will be asked to do:

We are seeking your input into the adequacy of the training you received and your experience in distributing the test strip kits. Participation will consist of a survey comprising 11 questions and should take about 10 minutes. By completing this survey, you consent to the use of the information you provide. Your responses will be anonymized when shared with others outside the research team. You are free to skip any questions you prefer not to answer or end the survey at any time.

Questions About the Project:

This survey has received ethics approval from the Timiskaming Health Unit's Ethics Review Committee. When you agree to take part, you keep all your legal rights. If you have any questions regarding the survey or ethical issues related to this project, you may contact the Research Ethics Lead by email at humeniukw@timiskaminghu.com or by phone at 705-647-4305 ext. 2271. Thank you for supporting your neighbourhood and helping us provide a safer community.

Survey

- 1. What is the name of your agency?
- 2. What is your role?
- 3. Who provided the training to you on the proper use of the test strip kits?
 - a. Timiskaming Health Unit
 - b. Your Employer
 - c. Did Not Receive Training
 - d. Other (Please Specify):
- 4. Did you find the training adequate?
 - a. Yes
 - b. No (If no, how can the training be improved?)



- 5. On average, how frequently do you personally distribute test strip kits?
 - a. Daily
 - b. At least once weekly
 - c. Less than weekly but more frequently than monthly
 - d. Monthly or less frequently
 - e. Have never distributed the test strip kits
- 6. How comfortable are you distributing and instructing clients on the proper use of the fentanyl and xylazine test strip kits?
- 1-Very Uncomfortable 2-Uncomfortable 3-Neutral 4-Comfortable 5-Very Comfortable
 - 7. Are there steps that can be taken to make you more comfortable distributing the test strip kits?
 - a. Yes (If yes, please explain)
 - b. No
 - 8. Has your organization seen an increase in the number of new clients due to the availability of test strip kits?
 - a. Yes
 - b. No
 - c. Unsure
 - 9. In your opinion, as well as what you may have heard from clients, do you think the test strip kits have led to clients taking additional precautions to prevent overdoses/poisonings?
 - a. Yes
 - b. No
 - c. Unsure
 - 10. Do you see value in continuing the test strip kit program in the district of Timiskaming?
 - a. Yes
 - b. No
 - 11. Do you have any additional comments about the program you want to share?

Thank you for participating in this short survey. Your feedback is valued!

Appendix E

PWUD Survey Promotional Poster

HAVE YOUR SAY!

HAVE YOU EVER USED:

FENTANYL & XYLAZINE TEST STRIPS?

If so, please take a moment to let the Timiskaming Health Unit know what you think by taking our short survey.



À VOUS LA PAROLE!

AVEZ-VOUS DÉJÂ UTILISÉ:

BANDELETTES RÉACTIVES AU FENTANYL ET À LA XYLAZINE?

Si oui, veuillez prendre un moment pour informer le bureau des Services de santé du Timiskaming de ce que vous en pensez en participant à notre court sondage.



https://www.surveymonkey.com/r/PM6ZHLF



Appendix F

Test Strip Kits





Appendix G

Cost of Kits

Fentanyl Test Strips @ \$1.00 each x 2 = \$2.00/Kit

Xylazine Test Strips @ \$2.00 each x 2 = \$4.00/Kit

Measuring Spoon @ \$0.42 each x 1 = \$0.42/Kit

Medicine Cup @ \$0.01 each x 1 = \$0.01/Kit

Instruction Card @ \$0.45 each x 1 = \$0.45/Kit

NORS Wallet Card @ \$0.09 each x 1 = \$0.09/Kit

Ampoules of Water No Cost (Provided by OHRDP)

The total costs of the kits before taxes are as follows:

Fentanyl Test Strip Kits = \$2.97 each x 310 distributed = \$920.70

Xylazine Test Strip Kits = \$4.97 each x 302 distributed = \$1,500.94

Total Cost Before Taxes = \$ 2,421.64