OPS Written Testimony, Communities United. .pdf
Uploaded by: Ahart, Jessi
Position: FAV

Baltimore's premiere organizing and advocacy non-profit of low to moderate-income persons most impacted by systems of injustice proudly submits this written testimony of our strong support of SB0279 to authorize overdose prevention sites (OPS) in the State of Maryland.

We were founded in 2010 with the purpose of organizing members in stigmatized communities including neighborhoods of socially ill-repute. This mission led us to hire a spitfire, legendary organizer William Miller, Sr. Mr. Miller Sr. organized and created power among those who with a history or who actively use drugs. He believed that no person in recovery was 'clean' because that implies they were at one point dirty. He believed that with the realization of power, we could organize harm reduction efforts at the grassroots level to improve conditions for all drug users across our State. In October 2020, harm reductionists lost a powerful advocate with the death of William Miller, Sr. to a sudden overdose. Miller's passing sent a sharp jolt through both our organization and the harm reduction community in our city. OPS could have saved his life. They could also save any of the 205 persons who died from overdoses in Baltimore in the first quarter of 2020 or the 427 people who overdosed in the second quarter.

Our organizing in Baltimore's Gilmor homes and McCulloh Homes (Baltimore's 40th Legislative District) provide essential education to drug users and the families and communities that know, love and depend upon them. This education has lead our people to say of OPS, "Yes, In my neighborhood!" They cannot refuse the opportunity to save lives, which far outweighs the stigma that causes people to act or vote counter to harm reduction efforts.

We humbly, yet stridently ask that this committee takes a stand against death. Take a stand against further harm and against unsubstantiated stigma. Take a stand to make Maryland a leader in preventing overdoses. If the number of homicide deaths is a public health crisis - which we argue they are - then surely overdose deaths which are double to triple those deaths should be addressed with the same sense of urgency. We have a solution, and that is OPS.

In the hundreds of safe use sites across the world, there have been no deaths due to overdoses. Overdose prevention sites save lives. As Mr. Will Miller Sr said to you last year: "The question is simple, if you dare to answer it: Do you want to save lives, or don't you?!"

You do. Show it with your support of SB0279.

Thank you.

Communities United

MATOD - SB 279 FAV - Overdose Prevention Services.
Uploaded by: Ashkin, Howard
Position: FAV

c/o IBR/REACH Health Services
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Senate Finance Committee
January 26, 2021

Senate Bill 279
Public Health - Overdose and Infectious Disease Prevention Services Program

Support

The Maryland Association for the Treatment of Opioid Dependence (MATOD) supports Senate Bill 279, which will allow jurisdictions to develop Overdose and Infectious Disease Prevention programs to reduce fatal and non-fatal overdoses, and provide a pathway for people toward needed health care.

Fatal Opioid-related overdoses climbed over 14% from January to September 2020 compared to the same 2019 time-frame. The current increase in fatal overdoses translates to the loss of over 2,400 Marylanders during 2020 from Opioid misuse. Despite Maryland's continued efforts of Prevention, Enforcement and Treatment & Recovery, Opioid addiction and misuse in 2020 will unfortunately claim the largest number of Maryland lives in any single year on record.

Maryland's "all hands on deck" "all tools available" approach has effectively saved lives with harm reduction efforts of increased naloxone distribution and syringe exchange services; increased access and availability to evidenced-based Medication Assisted Treatment (MAT) with Methadone and Buprenorphine; greater implementation of Peer Recovery Specialists in medical and community settings and creative jurisdictional Opioid Intervention Teams (OIT) across the state. More is urgently needed, however, in order to save lives and change the trajectory of the continued Opioid crisis.

Substance Use, Behavioral Health and medical care and treatment is only be effective when and if it's received. The U.S. Surgeon General's 2016 "Facing Addiction" report noted that "only 1 in 10 people with a substance use disorder receive any type of substance use treatment". SB 279 can provide life-saving services for those 90% of Marylanders with the manageable disease of addiction who are not yet engaged in treatment.

The proposed Overdose and Infectious Disease Prevention Services Program is based on similar programs operating in more than sixty (60) cities in ten (10) countries. The results and evidence from these successful harm-reduction facilities is unequivocal – they reduce overdose deaths, provide an entry into treatment, reduce public use and publicly discarded syringes, are cost-effective and they do not encourage or increase additional drug use or crime.

Maryland needs to join the six (6) states considering legislative approval of such sites, and provide another tool in the great work being done to reduce overdose deaths and improve access to needed health care.

MATOD urges a favorable report on SB 279.

MATOD members include community and hospital based Opioid Treatment Programs, local Health Departments, local Addiction and Behavioral Health Authorities and Maryland organizations that support evidence-based Medication Assisted Treatment. MATOD members include thousands of highly trained and dedicated addiction counselors, clinical social workers, physicians, nurse practitioners, physician assistants, nurses, peer recovery specialists and dedicated staff who work every day to save and transform lives.

OPS Senate Bill - YES Testimony (SB0279).pdf
Uploaded by: Benavides, Gerardo
Position: FAV

<u>FAVORABLE</u> – SB 0279: Public Health – Overdose and Infectious Disease Prevention Services Program

Senate Finance Committee, January 26, 2021

Testimony from Staff at the Youth Empowered Society (YES Drop-In Center)

Founded by formerly homeless youth and their allies, the YES Drop-In Center is Baltimore City's only drop-in center for youth experiencing homelessness, working to end homelessness through direct-service provision, youth leadership, and engaging in other systems-level reform. We work with youth, ages 14 to 25, by providing them services to sustainably grow in a dignified, supportive, and safe space. Our team provides, in a broad sense, drop-in services and case management, employment services and job readiness training, housing connections, and leadership opportunities. YES is also an overdose response program (ORP); we became an ORP through the Maryland State Department of Health, which allows us to distribute naloxone to our youth and their networks, a critical tool and intervention in treating substance use as a public health issue. Overdose Prevention Sites (OPS) are an extension of this harm reduction movement, one rooted in social justice and dignity. We write to express our support for SB 279, which will authorize the establishment of Overdose and Infectious Disease Prevention Services Programs by community-based organizations. We believe that OPS are another critical tool needed to allow for the safe consumption of substances, and can help connect people to much-needed, life-saving resources.

At YES, we fundamentally believe in harm reduction and trauma-informed practices, as core principles, rooted in the SELF Sanctuary Model. We strive to carry this into our work, to make YES as safe, accessible, and dignified for the youth we work with—an emphasis on *with*. Overdose Prevention Sites are physical and figurative testaments to how harm reduction and trauma-informed care can work; they allow for people to safely consume substances, in a safe and supportive environment where they can get connected to services if they need to. OPS can be integrated into some existing services, expanding the possibilities for how to best serve individuals. They are a proven, effective, safe, and cost-effective service, one rooted in treating the racist war on drugs as a systems-level, public health issue, rather than shifting the blame of substance use on the individual. They are a socially-just intervention. Notably, OPS are established safe spaces that are not centered on stripping the dignity away from people who use; on the contrary; OPS allow for people who use to lead dignified and healthy lives, and to get connected to much needed services.

YES has had several youth from our community pass away from overdose. The loss of life to overdose was, and still is, traumatizing. Those loved ones lost to overdose are not forgotten. How different would our drop-in center be, how different would our city be, if there were established sites where people who use had access to life-saving tools? To dignified treatment? To respectful practitioners who could support them, before, during, and after their use? This isn't a conceptual dream, or theoretical afterthought; there are very real, dangerous, and traumatizing consequences around what happens when people use without supports. Without the presence of overdose prevention tools like naloxone. Without the presence of people committed to acknowledging all human life as valuable. As an ORP, we have seen the direct benefits of distributing naloxone to youth in our community. OPS can vastly expand those benefits, and directly save human lives; that should be enough to turn this idea into a tangible, and influential, reality.

There are literal lives at stake. Please support SB 279 to authorize the establishment of Overdose and Infections Disease Prevention Services Programs in our communities.

SB0279_PJC_Support.pdf
Uploaded by: Black, Ashley
Position: FAV

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SB 279
Public Health – Overdose and Infectious Disease Prevention Services Program
Hearing of the Senate Finance Committee
January 26, 2021
1:00pm

SUPPORT

The Public Justice Center (PJC) is a not-for-profit civil rights and anti-poverty legal services organization which seeks to advance social justice, economic and racial equity, and fundamental human rights in Maryland. Our Health Rights Project supports policies and practices that promote the overall health of Marylanders struggling to make ends meet, with the explicit goal of promoting strategies that work to eliminate racial and ethnic disparities in health outcomes. PJC strongly supports SB 279 which would establish an Overdose and Infectious Disease Prevention Services Program administered by community-based organizations to provide overdose prevention sites. It would also require that the Maryland Department of Health develop these sites in urban, suburban and rural areas.

Maryland is still facing an opioid epidemic, and the number of deaths has continued to rise over the last several years. According to the Maryland Behavioral Health Administration, the number of opioid-related deaths increased by 7% between 2017 and 2018.[1] Fentanyl-related deaths have increased dramatically since 2013 among most age groups.[2] Maryland also has high Hepatitis C infection rates, a disease that kills more Americans than any other infectious disease and disproportionately impacts African Americans.[3] Further, injection drug use is currently the most common means of Hepatitis C transmission.[4] Research supports that stigma against people living with substance use disorders can limit the willingness of individuals to seek treatment.[5] It is critical that individuals with substance use disorders not

[1] Maryland Department of Health, *Drug and Alcohol-Related Intoxication Death in Maryland* (2018), https://bha.health.maryland.gov/Documents/Annual_2018_Drug_Intox_Report.pdf.
[2] *Id.*
[3] Francis Collins, Hepatitis C Disparities among African Americans (2017), https://www.hhs.gov/hepatitis/blog/2017/02/27/hepatitis-c-disparities-among-african-americans.html.
[4] Kathleen N. Ly, et. al., *Rising Mortality Associated with Hepatitis C Virus in the United States, 2003-2013* (2016), https://academic.oup.com/cid/article/62/10/1287/2462772.
[5] Lawrence Yang, et. al., *Stigma and Substance Use Disorders: An Internal Phenomenon* (September 1, 2018), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5854406/.

The Public Justice Center is a 501(c)(3) charitable organization and as such does not endorse or oppose any political party or candidate for elected office.

only be provided immediate access to Naloxone/Narcan (overdose reversal drug), but also access to drug treatment, education and peer support to recover from addiction.

SB 279, if passed, would create access to Overdose Prevention Sites (OPS) which are revolutionary, holistic tools aimed at reducing overdose deaths, HIV and Hepatitis C infections and stigma against individuals with substance use disorders. By providing access to sterile needles to individuals who use injectable drugs, Maryland could significantly reduce the rate of HIV and Hepatitis C infections. OPS would also offer testing for HIV, Hepatitis C and sexually transmitted infections and referrals for treatment, allowing individuals who have contracted these infections to be promptly connected to care. It is time for Maryland to invest in OPS as a strategy to help end the opioid epidemic and connect individuals with substance use disorders to quality and compassionate care.

For these reasons, the Public Justice Center urges the committee to issue a **FAVORABLE** report for **SB 279.** If you have any questions, please contact Ashley Black at 410-625-9409 x 224 or blacka@publicjustice.org.

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Chakravarthy Testimony SB279.pdf
Uploaded by: Chakravarthy, Rohini
Position: FAV

MedChi

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Maryland Chapter
AMERICAN COLLEGE OF
EMERGENCY PHYSICIANS

TO: The Honorable Delores G. Kelley, Chair
Members, Senate Finance Committee
The Honorable Shelly Hettleman
The Honorable Brian J. Feldman

FROM: Pamela Metz Kasemeyer
J. Steven Wise
Danna L. Kauffman
Rohini Chakravarthy

DATE: January 22, 2021

RE: **SUPPORT** – Senate Bill 279 – *Public Health – Overdose and Infectious Disease Prevention Services Program*

On behalf of the Maryland State Medical Society (MedChi) and the Maryland Chapter, we submit this letter in **support** of Senate Bill 279. As an organization of physicians, we treat many patients for drug use. I am here to share a few of those stories.

In her intoxicated state, she managed to call her mom to ask her "do you have any money?" Completely unaware that she had been admitted hospital. The nameplate on the door said "Seventy-Two." The patient had been brought in by EMS, nearly dead from an overdose that she was no more than a number to our system. As this female in her 40s passed out mid-conversation, I picked up the phone to explain to her mother that her daughter was in the hospital and that the orthopedics team would soon be contacting her to obtain consent for an emergent hand operation. A site where the patient had been injecting fentanyl had become severely infected and without this procedure the patient could lose her hand. For 48 hours, the patient experienced severe alcohol and opiate withdrawal symptoms, diarrhea, nausea, and agitation. She required sedatives to prevent her from having seizures. She required a security officer to prevent her from leaving the hospital in her intoxicated state. For 48 hours, the nursing staff was exhausted and verbally assaulted. In the end the patient's orthopedics procedure was cancelled twice, first from not being able to get appropriate consent and again because of the lack of hospital resources. By that time, the patient had sobered up and left against medical advice.

Down the hall, patient Seventy-Three was an army veteran. After having suffered so many war injuries, the only thing he found to cure his physical and emotional trauma was heroin. His addiction made it difficult to care for his other medical problems and he would go days without taking his seizure medications. This was his sixth presentation to the hospital in less than a month for seizures.

Safe injection sites would help patients Seventy-Two and Seventy-Three and countless other patients, and free up personnel and financial resources for other patients. Seventy-Two's hand site infection would have been prevented. And an injection site could serve as the gateway for Seventy-Three to get continuous access to medical care for seizure prevention.

A summary of research published by the Johns Hopkins School of Public Health describes how safe injection facilities save lives, reduce infection, and serve as a gateway to treatment.[1] Baltimore would save $6 million dollars by opening one site.[2] Studies of previous injection sites have shown decreases in public drug user (by 56%) and high approval ratings (70%) amongst community members.[3]

MedChi recognizes the research and the potential that these facilities can reduce the costs associated with this public health crisis. For these reasons, MedChi asks for a favorable report on Senate Bill 279.

For more information call:
Pamela Metz Kasemeyer
J. Steven Wise
Danna L. Kauffman
Rohini Chakravarthy
(410) 244-7000

[1] https://www.jhsph.edu/research/centers-and-institutes/institute-for-health-and-social-policy/award-programs/lipitz-award/past-awardees/_documents/Safe-Injection-Policies.pdf
[2] https://www.jhsph.edu/news/news-releases/2017/safe-space-for-illegal-drug-consumption-in-baltimore-would-save-6-million-dollars-a-year.html
[3] https://abell.org/sites/default/files/files/Safe%20Drug%20Consumption%20Spaces%20final.pdf

Health Care for the Homeless - SB 279 FAV - Overdo
Uploaded by: Diamond, Joanna
Position: FAV

HEALTH CARE FOR THE HOMELESS TESTIMONY
IN SUPPORT OF
SB 279 – PUBLIC HEALTH – OVERDOSE AND INFECTIOUS DISEASE PREVENTION SERVICES PROGRAM

Senate Finance Committee
January 26, 2021

Health Care for the Homeless supports SB 279, which would allow jurisdictions to establish overdose prevention programs to reduce overdose deaths, which continue to rise at an alarming pace in Maryland.

Health Care for the Homeless is a non-profit Federally Qualified Health Center that works to prevent and end homelessness for vulnerable individuals and families by providing quality, integrated health care and promoting access to affordable housing and sustainable incomes through direct service, advocacy and community engagement.

The General Assembly is well aware of the tremendous burden that heroin and other opioids are taking on Maryland residents. The numbers of fatalities related to drugs and alcohol continues to be staggering in Maryland. According to the latest report released by the Opioid Operational Command Center, there were over 2,000 unintentional intoxication deaths involving drugs and alcohol in Maryland between January and September.[1] Maryland legislators have taken important steps to address this crisis, but overdoses and deaths continue to climb as we look for strategies to address this problem. Overdose prevention sites are an evidence-based harm reduction strategy proven to reduce overdose deaths and crime in neighboring areas. These sites provide a setting where people can use substances with sterile equipment and medical monitoring in place to prevent overdose and death. There has not been a single overdose fatality at any overdose prevention facility.[2]

Just as importantly, these facilities will provide a vulnerable population with connections to substance use disorder, mental health and medical services. Overdose prevention sites are designed to engage people who are hardest to reach, including patients with untreated medical conditions who may not access hospital or primary care services due to fear of stigma. Many of these individuals live in poverty, with limited access to housing and other basic needs.

At Health Care for the Homeless, harm reduction strategies are a cornerstone of our work. We train our clients and the community to use naloxone to reverse an overdose and prevent death. Clients have told us with pride how they saved others by using the naloxone we gave them. In addition, we utilize medication-assisted

[1] Maryland Opioid Operational Command Center (OOCC), *2020 Third Calendar Quarter Report* (released Jan. 13, 2021), available at https://beforeitstoolate.maryland.gov/wp-content/uploads/sites/34/2021/01/Third-Quarter-OOCC-Report-2020-FINAL.pdf.

[2] Wrigh Potier, C. V. Laprevote, F. Dubois-Arber, O. Cottencin, and B. Rolland, *Supervised Injection Services: What Has Been Demonstrated? A Systematic Literature Review*, Drug Alcohol Depend (Dec, 2014), *available at* https://www.ncbi.nlm.nih.gov/pubmed/25456324; *See also* Highleyman, Liz, *Supervised Injection Sites Reduce Drug-Related Harm Facilities prevent overdose deaths and connect drug users with addiction treatment*, MedPage Today (Oct. 2018), available at https://www.medpagetoday.com/hivaids/hivaids/75871.

treatment (MAT) with buprenorphine to treat opioid addiction and help to stabilize lives so that our clients can look for jobs and housing. We are dedicated to community partnerships with organizations that provide needle exchange services, which reduce the spread of HIV, Hepatitis C and other infectious diseases.

All of these harm reduction strategies - naloxone, medication assisted treatment (MAT), and needle exchange – caused concern when they first started. Yet, we have seen time and time again that as communities adopt these programs, overdose fatalities decrease, transmission of infectious diseases slows, and clients build more trusting relationships with medical providers to engage in long-term medical care. Overdose prevention facilities are a continuation of this work. Clients who are current and former drug users have told our providers about the dangerous situations in which they are using heroin and other drugs – in abandoned row houses, in the boiler room of apartment buildings, and in restaurant bathrooms. It is our duty to meet them where they are and help keep them as safe as possible.

Overdose prevention facilities would provide a valuable tool to prevent overdose and death in a vulnerable population while connecting them to needed substance abuse, mental health and medical services. We urge the legislature to be a leader on this critical public health issue and ask for a favorable report on SB 279.

Health Care for the Homeless is Maryland's leading provider of integrated health services and supportive housing for individuals and families experiencing homelessness. We work to prevent and end homelessness for vulnerable individuals and families by providing quality, integrated health care and promoting access to affordable housing and sustainable incomes through direct service, advocacy, and community engagement. We deliver integrated medical care, mental health services, state-certified addiction treatment, dental care, social services, and housing support services for over 10,000 Marylanders annually at sites in Baltimore City, and in Harford, and Baltimore Counties. For more information, visit www.hchmd.org.

For more information please contact Joanna Diamond, Director of Advocacy at jdiamond@hchmd.org or at 443-703-1290.

Testimony OPS 2021 (1).pdf
Uploaded by: Dunleavy, Jessie
Position: FAV

Overdose and Infectious Disease Prevention Services Program

Written Testimony for 2021, submitted by Jessie Dunleavy

My investment in this legislation, and my insight into the suffering and neglected needs of those with a substance use disorder, is the result of the path I walked with my son, who died of a mixed drug overdose in 2017. I loved and admired my son, and I know his death was preventable. I want to spare others his fate, and mine.

Overdose prevention services are based on a deep commitment to public health and human rights. The priority is to keep people safe, eliminate needless suffering, and promote social justice. Champions of overdose prevention services understand that people with a substance use disorder did not forfeit their right to health care or to be treated with dignity.

Data from around the world tells us that overdose prevention sites reduce overdose deaths and the spread of infectious disease, while minimizing the compounded misery of arrests and incarceration. Furthermore, they have proven to be a bridge to treatment and have no history of encouraging drug use. In fact, part of the genius of these services is that, in giving people what they need, they come to you for it, which then provides the opportunity to offer additional services, to work in tandem with community based organizations.

The US has the highest number of overdose deaths per capita in the world, without a close second. While 2020 will be the most deadly year on record for overdose fatalities, 2019 saw significantly more deaths than 2018, which was before the pandemic. Yet misguided and outdated policies continue, highlighting the gap between research and legislation. It's surprising to me—given the severity of this crisis—that so many who could affect change are reluctant to do so.

You may ask yourself WHY you would support this bill. But, I have to ask WHY you would not.

I do understand initial skepticism, but I have come to know that what seems on the surface to be counterintuitive actually makes sense. In my years of speaking with a wide range of individuals and groups, I have yet to encounter anyone who doesn't understand the benefits of these services once given the facts.

Our job then is to educate, to combat the stigma that thwarts needed progress. Because we live in a society that treats the afflicted as criminals, this is an uphill battle. On one hand, we say we know medical intervention is crucial, but on the other, we force the most vulnerable into back alleys, exacerbating their mental and physical health risks.

The long term practice of disempowering those most at risk, of removing resources from them, and isolating them has failed. We are all social people; we all need a network of support and respect.

Research also tells us that the vast majority of people recover from a substance use disorder, many on their own—which has always been the case. But today, given the unregulated drug supply and its increased potency, people are dying before they get the chance to recover.

As far as community resistance is concerned, the answer, again, lies in education. If we are comfortable with jails and prisons (where dehumanization is all too frequent), but uncomfortable with evidence-based health care that has proven, beyond question, to reduce deaths while bolstering the likelihood of recovery, we have to examine why.

I will go back to my son for just a moment. He had disabilities, he struggled in school and was socially awkward. I am sure he found drugs eased his pain. But he was always sweet, and his being dehumanized and degraded only exacerbated his self-doubt. Even so, over time, he was getting better. He loved his job, and had a long stretch of drug-free living. When he relapsed in 2017, he was frightened. But his, and my, earnest attempts to get help failed. Street drugs, on the other hand, were easy to get. And without the benefit of a safe haven or any medical oversight, he died, and he died alone. An overdose prevention site would have saved his life, allowing his continued trajectory toward wellness, allowing him a life. I know too that its premise would have been reassuring, giving him much needed hope.

At this juncture, for me, I am buoyed by simply understanding the humanistic principles of overdose prevention services and I am grateful for its tireless advocates. The choice for all of us is between compassion and indifference, and between turning the corner on the still-rising number of overdose deaths or not. It's really that simple.

2021 MNA SB 279 Senate Side.pdf
Uploaded by: Elliott, Robyn
Position: FAV

Committee: **Senate Finance Committee**

Bill Number: **Senate Bill 279**

Title: **Public Health – Overdose and Infectious Disease Prevention Services Program**

Hearing Date: **January 26, 2021**

Position: **Support**

The Maryland Nurses Association (MNA) supports *Senate Bill 279 – Public Health – Overdose and Infectious Disease Prevention Services Program.* This bill would establish an "Overdose and Infection Disease Program" to offer program services in areas with a high incidence of drug use.

As the number of opioid overdoses increase each year, MNA continues to be very supportive of efforts to address this crisis. This includes having a broad strategy as envisioned by this legislation. MNA supports this endeavor because safe consumption sites provide an array of services in addition to preventing overdoses and deaths due to opioids. This includes the provision of primary health care services including wound care; providing sterile syringes and testing for HIV and Hepatitis C in order to reduce the transmission of infectious diseases; and connecting individuals to substance use treatment.

Thank you for your consideration of our testimony, and we urge a favorable vote. If we can provide any further information, please contact Robyn Elliott at relliott@policypartners.net or (443) 926-3443.

SB279 MAS Letter of Testimony.pdf
Uploaded by: Evans, Hayley
Position: FAV

Senator Delores G. Kelley, Chair
Senate Finance Committee
3 East, Miller Senate Office Building
Annapolis, MD 21401

The Maryland Acupuncture Society, Inc.

January 21, 2021

Re: SB 279 – FAVORABLE – PUBLIC HEALTH – OVERDOSE AND INFECTIOUS DISEASE PREVENTION SERVICES PROGRAM

Dear Chairman Kelley and Members of the Senate Finance Committee:

Please accept this letter on behalf of the Maryland Acupuncture Society ("MAS") as our support of Senate Bill 279 – Overdose and Infectious Disease Prevention Services Program. MAS represents over 1000 licensed practitioners throughout the State of Maryland and we are in strong support of this bill.

Senate Bill 279 would help with the ongoing problem of drug addiction and overdoses in the State of Maryland. As a profession, acupuncturists are dedicated to the fight against drug addiction. Acupuncturists are trained detoxification specialists through the National Acupuncture Detoxification Association. Acupuncture is also an integral part of the National Capitol Region Pain Initiative, which is currently being implemented at Walter Reed.

This bill would provide acupuncturists from across the state the opportunity to expand their client base to communities that need them most. These treatment centers would also direct patients to our beneficial services which they might not have found without these community centers. Our practices of tai chi, NADA protocol , and non-opioid pain management techniques would have a direct and positive impact on patients in these facilities. For the reasons stated above we **SUPPORT** SB 279 – Overdose and Infectious Disease Prevention Services Program. Thank you for your consideration of this important piece of legislation and please do not hesitate to contact us should you have any questions.

Sincerely,

Denise Tyson
President
Maryland Acupuncture Society

OPS testimony 1-22-21.pdf
Uploaded by: Evans, Katharine
Position: FAV

My name is Katharine Evans, and I am a licensed social worker, coordinating services for people who use drugs, in Baltimore. I am writing this testimony to plead with you to consider allowing us the opportunity to add authorized Overdose Prevention Sites to our city. I do not have the words to tell you how difficult it was to move from last year into this new year, knowing so many would only be coming with us as memories, because their lives were taken during fatal overdoses.

I work for SPARC, which is a drop-in center and harm reduction outreach program for women, in Southwest Baltimore. In this setting, I have seen how pressing the need is for people to have a low barrier space to relax or sleep- likely for the first time in days. SPARC is also a place to get a shower, do laundry, attend a "Twerk-shop", connect with medical care, and build community with other folks. Prior to COVID, I met one of our newer guests at a methadone clinic, where she was expressing that she has lost so many friends to overdoses that she has no one left to talk to. She now uses services at SPARC and was so excited to learn that she could also have a place to hang out and use a computer or phone. These social connections and amenities are things that we take for granted, and the isolation of drug use is profound.

At SPARC, we also provide people with tools to use drugs more safely, and in these interactions we are able to have conversations with people about their drug use that few else are having. These conversations prevent soft tissue infections, blood infections and frequently also reduce the rate of injection by alternating routes of administration. Our present void of safe spaces contributes to the fact that Maryland's opioid using population is not engaged in treatment. SAMHSA estimated that of Maryland residents with illicit drug dependence, less than 12% receive treatment. Overdose Prevention Sites are an evidence- based, effective way to dramatically improve drug user health and save lives. OPS are proven to engage with people who are at heightened risk for infectious disease and overdose, and proven to reduce HIV and Hepatitis C risk behavior.

If we were able to add a community-run Overdose Prevention Site, we could prevent a significant number of overdose deaths. No one has ever died at an overdose prevention site, but we have lost so many, just in the last year. After a Canadian facility opened, they found that overdose mortality dropped 35% in the area surrounding the facility. We could provide that longevity for residents of Pigtown, Curtis Bay and Brooklyn, and across the city. Preservation of stigma is the only cause left standing in the way of implementing Overdose Prevention Site care. Please take a moment to imagine how many futures would be preserved, if you make the choice for safety over stigma.

2021 NASW SB 279 Senate Side.pdf
Uploaded by: Faulkner, Rachael
Position: FAV

NASW MARYLAND CHAPTER
National Association of Social Workers

Senate Finance Committee

Testimony in SUPPORT of Senate Bill 279
Public Health – Overdose and Infectious Disease Prevention Services Program
January 26, 2021

Maryland's Chapter of the National Association of Social Workers (NASW – MD), which represents professional social workers across the state, supports Senate Bill 279 – Public Health – Overdose and Infectious Disease Prevention Services Program. The State of Maryland just released new data showing a 12% increase in overdose deaths in Maryland[1]. This crisis which has been with us for years has been overshadowed by the COVID-19 pandemic. In the isolation, unemployment, and depression that have boomed with the pandemic, addiction has thrived to a deadly degree. Maryland must embrace harm reduction strategies in response. The creation of Overdose Prevention Sites is a proven effective way to reduce deaths.

Social workers play a significant role in the substance use disorder treatment community. They see clients begin and maintain recovery through finding treatment, sometimes with the use of medication, sometimes including peer support with the aid of 12-step programs. They also see people who cannot, or choose not, to stop using substances all at once. In those cases, without intervention, clients and their families suffer, fall through the cracks, and die prematurely. Just because a person is using substances does not mean their life is not of value. Social workers help meet the needs of – and empower – all people, with particular attention to those who are vulnerable, oppressed, and in poverty[2]. Unfortunately, with income inequality greater than any time since before the great depression, many people are dying from what are referred to as "diseases of despair," including from substances[3]. Those people are worthy of help.

Overdose Prevention Sites (OPSs) are efficacious, with numerous studies having found they reduce the number of overdose deaths and transmission rates of infectious diseases without increasing drug trafficking or crime in the relevant areas[4]. In addition, these sites are in demand. A Johns Hopkins 2019 study found that 77% of those surveyed, including those in Baltimore, said they would use such sites if they were available. OPSs have been shown to save lives and tax dollars[5].

(over)

[1] https://beforeitstoolate.maryland.gov/wp-content/uploads/sites/34/2021/01/Third-Quarter-OOCC-Report-2020-FINAL.pdf
[2] https://www.socialworkers.org/about/ethics/code-of-ethics/code-of-ethics-english
[3] https://blog.petrieflom.law.harvard.edu/2018/07/22/diseases-of-despair-the-role-of-policy-and-law/
[4] https://www.ama-assn.org/press-center/press-releases/ama-wants-new-approaches-combat-synthetic-and-injectable-drugs
[5] http://www.baltimoresun.com/health/bs-hs-safe-consumption-spaces-20190605-story.html

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Additionally, for people who use substances who want to seek help, our traditional health care system does not always present an effective and welcoming place. OPSs accept people where they are, provide a safe place where people use substances that they would use somewhere else at higher risk of death, get some immediate health assistance for things such as wound care, and get referrals to various support services and treatment.

It is with all this in mind that NASW-MD supports SB 279 and urges a favorable report.

Respectfully,

Daphne McClellan, Ph.D., MSW
Executive Director, NASW-MD

NFranklin SB279 FAV.pdf
Uploaded by: Franklin, Neill
Position: FAV

LAW ENFORCEMENT ACTION PARTNERSHIP
ADVANCING JUSTICE AND PUBLIC SAFETY SOLUTIONS

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To: Delores G. Kelley, Chair
Brian J. Feldman, Vice Chair, and
Senate Finance Committee Members

From: Major Neill Franklin, Ret., on behalf of the
Law Enforcement Action Partnership (LEAP)

Favorable - Senate Bill 279

Public Health – Overdose and Infectious Disease Prevention Services Program

Hearing: Tuesday, February 26, 2021, 1:00 p.m.

Distinguished members of the Committee, thank you very much for the opportunity to present the views of the Law Enforcement Action Partnership (LEAP) in support of Senate Bill 279.

The Law Enforcement Action Partnership's mission is to unite and mobilize the voice of law enforcement in support of drug policy and criminal justice reforms that will make communities safer by focusing law enforcement resources on the greatest threats to public safety, promoting alternatives to arrest and incarceration, addressing the root causes of crime, and working toward healing police-community relations.

"One of the most frustrating things about being in law enforcement is seeing the same people cycle in and out of the system day after day. Many are struggling with drug addiction, yet the police officers called to handle them do not have tools to deal with their root issues. They need support with mental and physical health problems, homelessness, and unemployment to break their addiction, but the criminal justice system's only tools are arrest and incarceration, which often make these problems worse. Though most people relapse repeatedly on their way to quitting for good, failing one drug test can cost them the help they need to quit. As a result, many people cannot stabilize their lives because they lose support right when they need it the most. The Law Enforcement Action Partnership supports harm reduction programs, which help drug users survive their addictions and stabilize their lives rather than demanding that they quit before receiving any support."

"In more than 100 locations across Europe, Canada, and Australia, injection-drug users bring their own drugs into Overdose Prevention Sites (OPS) and inject in the presence of medical staff. In more than two decades of OPS operation, no OPS user has ever died of overdose or contracted HIV or Hepatitis C due to needle-sharing in these facilities. "

These are two quotes directly from our website and as you can see, they speak specifically about how policing and incarceration are not the solutions to drug addiction; therefore, extremely problematic for police officers who recognize the medical needs for those addicted. The second quote makes reference to the successes of more than 100 locations across Europe, Canada and Australia. These facilities are one of the many reasons for such low overdose death rates throughout European countries when compared to the United States.

I have served in three Maryland police agencies as a commander; the Maryland State Police as the northeast regional commander for the Bureau of Drug and Criminal Enforcement, the Baltimore Police Department as the Chief of human resources and head of training, and the Maryland Transit Administration as the head of Investigation Services, which included drug enforcement. Over my thirty-four-year career, I was responsible for the arrest and jailing of hundreds, if not thousands, of Maryland citizens for low-level drug possession charges. Undoubtedly, most of these arrests were of people suffering from addiction.

For five decades we have been attempting to solve a public health condition with criminal justice tactics and it should be no surprise that we have failed dramatically. While other countries have turned the corner toward health-centered policies, we continue persecuting drug users, driving them deeper and deeper into the shadows of despair and solitude. It is well beyond time for us to begin removing the stigma of criminalization from those addicted to drugs.

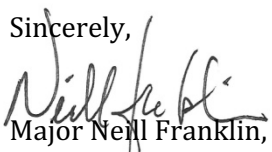
About seven years ago I had the pleasure of visiting Vancouver's Overdose Prevention Site, "Insite." During my day-long visit I toured the facility and the surrounding community, and I was extremely surprised at what I saw and who I met. I saw clean alleys with "Sharps" containers on poles. I saw literature next those containers advising people of dangerous heroin laced with problematic "cut." And I saw police officers interacting with obvious drug users in a cordial helpful manner.

While touring Insite I met Ms. Pearl. Ms. Pearl was a gentle soul who had been addicted to heroin for many years. Prior to her having access to Insite, she was in and out of the hospital for many health concerns other than addiction overdose, a victim of violent crime many times over, and extremely depressed due to isolation. I spent a good portion of the day with Ms. Pearl, even watching her administer to herself a heroin injection. Ms. Pearl had hope, hope of one day being admitted to the bed treatment facility overtop of Insite, Onsite. She knew it would be a very difficult task, but she believed that with the support of Insite, she would succeed. It is the love and support from Insite that gives Ms. Pearl and others connection, and connection is what's needed most in beating addiction, not incarceration and the isolation of stigma.

As a retired career police officer, I am also deeply concerned about the five decades of distracted policing. With a well-financed drug enforcement agenda, at the courtesy of our federal government, local law enforcement has been pulled away from fighting violent crime and tending to the business of keeping people safe. We have migrated away from community policing principles and relationships, to a place of fostering enormous rifts between police and community. The recent Department of Justice investigation concluded that the Baltimore Police Department engaged in hundreds of thousands of unconstitutional stops within the measured timeframe of the investigation. These unconstitutional stops were undoubtedly about our misguided thirst for arresting people possessing drugs, no matter how small the amount. The time has come for change.

It is for these reasons that we, members of the Law Enforcement Action Partnership, support SB279 and ask that you, the members of this committee, give SB279 a favorable report.

Sincerely,



Major Neill Franklin, Ret.
Treasurer
*Formerly with the Maryland State Police and Baltimore Police Departments

SB279 - MoCo - (GA2021) Support.pdf
Uploaded by: Frey, Leslie
Position: FAV

OFFICE OF THE COUNTY EXECUTIVE

Marc Elrich
County Executive

January 26, 2021

TO: The Honorable Delores G. Kelley
Chair, Finance Committee

FROM: Marc Elrich
County Executive

RE: SB 279, Public Health - Overdose and Infectious Disease Prevention Services Program, Support

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Senate Bill 279 would allow the Maryland Department of Health, in consultation with local health departments, to approve up to six single-site programs throughout the State in areas with high incidence of drug use, where drug users can access a location that is supervised by health care professionals in order to consume pre-obtained drugs; obtain sterile injection supplies and dispose hypodermic needle and syringes; be monitored for potential overdose and receive rescue medication, including naloxone; and receive access or referrals to services such as substance abuse disorder counseling and treatment services. Program sites would be established by hospitals, clinics, substance abuse treatment centers, medical offices, federally qualified health centers, mental health facilities, local health departments, or faith-based organizations. To the extent possible, the program sites would include two sites in urban areas, two sites in suburban areas, and two sites in rural areas of the State. The bill would take effect July 1, 2021 and sunset four years later, on June 30, 2025.

Safe consumption sites such as those provided for by Senate Bill 279 are well-studied and shown to positively impact public health by reducing the transmission of HIV and hepatitis C,[1] reducing fatal overdose,[2] facilitating entry into addiction treatment,[3] and through addiction

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[1] Sherman, S., Hunter, K., and S. Rouhani. 2017. Safer drug consumption spaces: a strategy for Baltimore City. The Abell Report, 29(7).
[2] *Id.*
[3] DeBeck, K., Kerr, T., Bird, L., Zhang, R., Marsh, D., Tyndall, M., Montaner, J., and E. Wood. 2011. Injection drug use cessation and use of North America's first medically supervised safer injection facility. Drug and Alcohol Dependence (113) 172-176.

treatment support injection cessation.[4] Because these positive public health outcomes benefit Marylanders struggling with addiction as well as our communities as a whole, Montgomery County supports Senate Bill 279 and respectfully urges the Committee to issue a favorable report.

cc: Members of the Finance Committee

[4] *Id.*

MCF_FAV_SB 279.pdf
Uploaded by: Geddes, Ann
Position: FAV

SB 279 – Public Health – Overdose and Infectious Disease Prevention Services Program

Senate Finance Committee
Date: January 26, 2021
POSITION: Support

The Maryland Coalition of Families: Maryland Coalition of Families (MCF) helps families who care for someone with behavioral health needs. Using personal experience as parents, caregivers and other loved ones, our staff provide one-to-one support to parents and caregivers of young people with mental health issues and to any loved one who cares for someone with a substance use or gambling issue.

SB 279 would allow the establishment of up to six programs that provide a place for individuals to consume pre-obtained drugs. Programs would provide sterile needles, administer first aid as needed, and connect individuals to services. MCF supports this bill.

The COVID-19 Pandemic has severely negatively impacted Maryland's opioid crisis. Data shows that fatal overdoses by opioids increased during the second and third quarters of 2020 by 21% over the same period in 2019. People who have a substance use disorder have been especially hard hit by the pandemic – isolation, the disruption of support systems, and the restrictions in access to treatment have all contributed to increases in substance use and relapse.

MCF has twelve family peer support staff who provide peer support and navigation services to families who have a child or other loved one with a substance use disorder. All of these staff have lived experience caring for someone with a substance use disorder. Some staff members have lost a child to an opioid overdose, others have a child in recovery from opioid use disorder, and others have a child who is still out there using opioids. While our staff provide support to families of any loved one suffering from any substance use disorder, about one-half of the families that we work with have a child addicted to opioids.

MCF is in favor SB 279. We know the desperation of parents and caregivers who have a child actively using opioids. The fear of getting a call that their child has overdosed is ever present among these families.

Supervised Consumption Facilities exist across the world and have for decades. They have been the subject of many rigorous studies, which have shown that there is very little downside to such programs – on the contrary, there is great benefit, including:

- a reduction in blood-borne diseases
- a reduction in bacterial infections
- a reduction in fatalities owing to an overdose
- an increase in treatment engagement

In addition, Supervised Consumption Facilities produce significant cost savings – a 2017 study estimated that there would be $4.35 saved for every dollar spent.

We are aware that there are logistical barriers to implementing such a program. They must be overcome in order to save lives.

We urge a favorable report on SB 279.

Contact: Ann Geddes
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SB 279 FAV Cost Benefit Study of OPS in Baltimore

Uploaded by: Gudlavalleti, Rajani

Position: FAV

Irwin et al. Harm Reduction Journal (2017) 14:29
DOI 10.1186/s12954-017-0153-2

Harm Reduction Journal

RESEARCH Open Access

Mitigating the heroin crisis in Baltimore, MD, USA: a cost-benefit analysis of a hypothetical supervised injection facility

Amos Irwin[1,2*], Ehsan Jozaghi[3,4], Brian W. Weir[5], Sean T. Allen[5], Andrew Lindsay[5] and Susan G. Sherman[6]

Abstract

Background: In Baltimore, MD, as in many cities throughout the USA, overdose rates are on the rise due to both the increase of prescription opioid abuse and that of fentanyl and other synthetic opioids in the drug market. Supervised injection facilities (SIFs) are a widely implemented public health intervention throughout the world, with 97 existing in 11 countries worldwide. Research has documented the public health, social, and economic benefits of SIFs, yet none exist in the USA. The purpose of this study is to model the health and financial costs and benefits of a hypothetical SIF in Baltimore.

Methods: We estimate the benefits by utilizing local health data and data on the impact of existing SIFs in models for six outcomes: prevented human immunodeficiency virus transmission, Hepatitis C virus transmission, skin and soft-tissue infection, overdose mortality, and overdose-related medical care and increased medication-assisted treatment for opioid dependence.

Results: We predict that for an annual cost of $1.8 million, a single SIF would generate $7.8 million in savings, preventing 3.7 HIV infections, 21 Hepatitis C infections, 374 days in the hospital for skin and soft-tissue infection, 5.9 overdose deaths, 108 overdose-related ambulance calls, 78 emergency room visits, and 27 hospitalizations, while bringing 121 additional people into treatment.

Conclusions: We conclude that a SIF would be both extremely cost-effective and a significant public health and economic benefit to Baltimore City.

Keywords: Supervised injection facility, Supervised consumption rooms, Cost-benefit, Cost-effectiveness, People who inject drugs, Harm reduction, Opiate overdose, Heroin, Baltimore, Maryland

Background

Baltimore City has one of the highest overdose death rates in the country, and overdoses have been increasing in recent years. From 2014 to 2015, heroin-related overdose deaths in Baltimore increased from 192 to 260 [1]. These increases are in part attributed to the prevalence of fentanyl in the heroin supply, with fentanyl causing 31 and 51% of 2015 and 2016 overdose deaths, respectively. Fentanyl is 50–100 times more potent than heroin or morphine. Illicit fentanyl and derivatives are appealing to illicit drug networks as these chemicals are cheaper than prescription opioids, heroin, and cocaine, and are extremely potent [2–5].

There are numerous additional medical costs associated with injection drug use, largely related to infectious diseases and soft-tissue infections. Roughly 18% of the people who inject drugs (PWID) in Baltimore are HIV positive, twice the 9% national average for PWID and 50 times the prevalence in the general population [6–8]. One in five Baltimore PWID suffers chronic skin and soft-tissue infection, the leading cause of PWID hospitalization [9–11].

Supervised injection facilities (SIFs) have been established worldwide to reduce the harms associated with injection drug use. In SIFs, PWID inject previously obtained drugs in the presence of medical staff. A

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number of public health, social, and economic benefits of SIFs have been evaluated by studies of the Insite SIF in Vancouver, Canada and the Medically Supervised Injecting Centre (MSIC) in Sydney, Australia, both of which were established in 2003 [12–15].

Among these benefits, studies have demonstrated four in particular that can be quantified. First, SIFs reduce blood-borne disease transmission by providing clean needles and safer injecting education [12, 16, 17]. Second, SIF staff reduce bacterial infection by providing clean injection equipment, cleaning wounds, and identifying serious infections early [18–20]. Third, SIF staff intervene in case of overdose, meaning that while PWID may overdose at a SIF, none die and few suffer complications [13]. Fourth, the SIF and its staff become a trusted, stabilizing force in many hard-to-reach PWID's lives, persuading many to enter addiction treatment [12, 14, 21].

As in other US cities, a multisector discussion about the merits and utility of SIFs has begun in Baltimore due to rising overdose deaths as well as the inadequacy of the current criminal justice-focused response [22].

The purpose of this article is to analyze the potential cost-effectiveness of establishing a SIF in Baltimore. We estimate the annual cost of the facility and the savings resulting from six separate health outcomes: prevention of HIV infection, HCV infection, skin and soft-tissue infection (SSTI), overdose death, and nonfatal overdose and increased medication-assisted treatment (MAT) uptake. Each estimate includes the health outcome, financial value, and a sensitivity analysis. First, we present the existing literature on SIF cost-benefit analyses, then our study's method, its results, its implications, and its limitations.

SIF cost-benefit analysis literature review

Prior cost-benefit analyses of Insite in Vancouver and MSIC in Sydney have assessed a more limited range of outcomes than the present study. The Insite studies were limited to the outcomes of HIV prevention, HCV prevention, and overdose death prevention. They have agreed that Insite generates net savings when all three outcomes are considered [23, 24]. The cost-benefit analysis of Sydney's MSIC only included savings from overdose deaths, ambulance calls, and police services averted by the SIF.

A number of other studies have estimated HIV and HCV prevention benefits for hypothetical SIFs in Canadian cities from Montreal to Saskatoon [25–30]. Irwin et al. [31] are the only other cost-benefit analysis of a hypothetical SIF in the USA—in San Francisco, California—and the only other study to consider more than three outcomes. We discuss the differences in methodologies between this paper and past analyses for each individual outcome in the "Methods" section.

Methods

This study calculates the financial and health costs and benefits of a hypothetical Baltimore SIF modeled on Insite. Insite occupies roughly 1,000 ft^2, provides 13 booths for clients, and operates 18 h per day. Insite serves about 2100 unique individuals per month, who perform roughly 180,000 injections per year [32, 33].

This study measures the cost of the facility against savings from six outcomes: prevention of HIV, HCV, SSTI, and overdose deaths, reduced overdose-related medical costs, and referrals to MAT. We assess each model's dependence on important variables with a sensitivity analysis. For the sensitivity analysis, we increase and decrease the chosen variable by 50% and report the impact on the outcome.

Cost of the facility

Cost calculations are based on a facility equal in size and scope to Insite. We estimate that the annual cost of establishing a new SIF combines both upfront and operating costs. Since we assume the same staffing levels, equipment needs, and other operating cost inputs as Insite, we calculate the operating costs by multiplying the Insite SIF's $1.5 million operating costs by a 4% cost of living adjustment between Vancouver and Baltimore [34, 35]. Since the upfront costs would depend on the exact location and extent of renovations required, we make a conservative estimate of $1.5 million based on actual budgets for similar facilities and standard per-square-foot renovation costs [12, 36]. We convert this upfront cost into a levelized annual payment by assuming that it was financed with a loan lasting the lifetime of the facility. We determine the levelized annual payment according to the standard financial equation:

$$C = \frac{i(P)}{1-(1+i)^{-N}}$$

where C is the levelized annual upfront cost, i is a standard 10% interest rate, P is the $1.5 million total upfront cost, and N is the estimated 25-year lifetime of the facility.

HIV and HCV prevention benefits

The HIV infection prevention benefits of Insite, Vancouver's SIF, have been modeled in several cost-benefit analyses [23, 24, 37, 38]. Pinkerton [24] and Andresen and Jozaghi [23] estimate 5–6 and 22 infections averted per year, respectively. These estimates differ primarily because Pinkerton [24] assumes that the SIF only impacts injections occurring within the SIF,

while Andresen and Jozaghi [23] incorporate the fact that the SIF reduces needle sharing outside the SIF as well, since Insite staff educate clients on safer injecting practices [38].

To estimate the impact of reduced needle sharing on HIV and HCV infection rates, we use an epidemiological "circulation theory" model developed to calculate how needle exchange programs impact HIV infection among PWID and subsequently used to study SIF HIV and HCV infection [23, 39]. We use the model to estimate new HIV infection cases (I_{HIV}):

$$I_{HIV} = iNsd\,[1-(1-qt)^{M}]$$

where i is the percentage of HIV-negative PWIDs, N is the total number of needles in circulation, s is the percentage of injections with a shared needle, d is the percentage of injections with an unbleached needle, q is the percentage of HIV-positive PWIDs, t is the chance of transmitting HIV through a single injection with a shared needle, and M is the average number of people injecting with a single previously used needle. Table 1 shows the values and sources for each variable.

We estimate SIF-averted HIV infections by finding the difference between I_{HIV} at the current rate of needle sharing (s_{pre}) and I_{HIV} at the post-SIF rate (s_{post}). We calculate s_{post} with the formula:

$$S_{post} = S_{pre}\,\frac{(T-N)+(1-n)N}{T}$$

where T is the total number of PWID in Baltimore City, N is the number of SIF users, and n is the 70% reduction in needle sharing by SIF users [40].

We perform the same calculations for HCV, and the values and sources for the HCV variables are contained in Table 2.

We check the model's validity by comparing its baseline prediction of HIV and HCV incidence in Baltimore (I_{HIV} and I_{HCV} at s_{pre}) with the city's actual incidence data. The model predicts 53 new PWID-related HIV cases in Baltimore each year in the absence of a SIF, only slightly lower than the 55 diagnoses reported by the Maryland Department of Health and Mental Hygiene [41]. Since many new HIV cases go undiagnosed, especially in the hard-to-reach PWID population, this baseline figure suggests that we are underestimating potential HIV infections averted [42].

For HCV, the model predicts 302 cases in the absence of a SIF. The Maryland Department of Health and Mental Hygiene (DHMH) does not report annual injection-related HCV infections for Baltimore City. However, based on Mehta et al.'s [43] finding that 7.8% of a sample of Baltimore's HCV-negative PWID contract HCV every year, we estimate PWID HCV incidence at 398 new cases per year. Since our model predicts a significantly lower incidence, we are most likely underestimating the potential number of HCV infections averted.

Skin and soft-tissue infection benefits

Since PWID frequently contract skin and soft-tissue infection from unsanitary injection practices and often avoid seeking medical treatment until these infections become life threatening, SSTI is the number one reason for PWID hospital admission. Insite studies have demonstrated that SIFs significantly reduce SSTI medical costs by providing clean injection materials and referring PWID for medical treatment when necessary [18, 20]. Irwin et al. [31], the only cost-benefit analysis to

Table 1 Values, notes, and sources for variables used to predict HIV infection reduction savings

Variable	Value	Note	Source
Proportion of PWID HIV– (*I*)	82.30%		Mehta [6]
Number of needles in circulation (*N*)	1,600,000	Increased by 33% due to additional syringe sources	Hunt and Parker [81]; German et al. [82]
Rate of needle sharing (*s*)	2.8%	Percent of injections with a needle already used by another person	Park et al. [83]
Percentage of needles not bleached (*d*)	100%		Bluthenthal et al. [84]
Proportion of PWID HIV+ (*q*)	17.70%		Mehta [6]
Probability of HIV infections from a single injection (*t*)	0.67%		Kaplan and O'Keefe [85]; Kwon et al. [86]
Number of sharing partners (*m*)	1.2	Per injection: ratio of receptive to distributive sharing	Park et al. [83]
SIF client reduction in needle sharing (*n*)	70%	From Insite	Kerr et al. [40]
Number of SIF clients (*N*)	2100	Approximate monthly unique Insite injection room clients	Maynard [33]
PWID Population (*T*)	20,950	Adjusted by authors from Baltimore MSA to City using race census data	Tempalski et al. [87]
Lifetime HIV treatment cost	$402,000	National data	CDC [88]

Table 2 Values, notes, and sources for variables used to predict HCV infection reduction savings

Variable	Value	Note	Source
Proportion of PWID HCV− (*l*)	25%	Average of values reported (10–40%)	Falade-Nwulia et al. [89]
Number of needles in circulation (*N*)	1,600,000	Increased by 33% due to additional syringe sources	Hunt and Parker [81]; German et al. [4]
Rate of needle sharing (*s*)	2.8%	Percent of injections with a shared needle	Park et al. [83]
Percentage of needles not bleached (*d*)	100%		Bluthenthal et al. [84]
Proportion of PWID HCV+ (*q*)	75%	Average of values reported (60–90%)	Falade-Nwulia et al. [89]
Probability of HCV infections from a single injection (*t*)	3%		Kwon et al. [86]; Kaplan and O'Keefe [85]
Number of sharing partners (*m*)	1.2	Per injection: ratio of receptive to distributive sharing	Park et al. [83]
SIF client reduction in needle-sharing (*n*)	70%	From Insite	Kerr et al. [40]
Number of SIF clients (*N*)	2100	Approximate monthly unique Insite injection room clients	Maynard [33]
Total PWID population (*T*)	20,950	Adjusted by authors from Baltimore MSA to City using race census data	Tempalski et al. [87]
Lifetime HCV treatment cost	$68,219	Adjusted for inflation	Razavi et al. [90]

incorporate this outcome, have shown this outcome to be significant, concluding that a SIF in San Francisco could reduce SSTI-related hospitalizations by 415 days per year, saving $1.7 million.

We estimate annual savings due to SIF SSTI reduction (S_{SSTI}) according to

$$S_{\mathrm{SSTI}} = NhLrC$$

where N is the total number of SIF clients, h is the percent of PWID hospitalized for SSTI in an average year, L is the average length of SSTI hospitalization, r is the 67% reduction in SSTI hospital stay length that Lloyd-Smith et al. [18] documented for Insite clients, and C is the average daily cost of a hospital stay. See Table 3 for values and sources.

Overdose mortality benefits

While Andresen and Boyd [44] estimate that Insite prevents one overdose death per year, out of roughly 20 total overdose deaths in the neighborhood, they are simply extrapolating that if Insite hosts 5% of the city's injections, it should prevent 5% of the city's overdose deaths. However, Milloy et al. [45] demonstrate that Insite prevents more than 5% of the city's overdose deaths. Milloy et al. attribute this effect to drug use education, which 32% of all Insite clients report receiving. For example, PWID learn to pre-inject a small dose of their drug to "test" the potency, which can prevent accidental overdose in case of an unusually pure or contaminated dose. In Sydney's SIF, known as MSIC, 80% of clients report changing their injection behavior to reduce the risk of overdose as a result of in-SIF education [15].

This finding is supported by Marshall et al. [46], who compare the change in overdose deaths within 500 m of Insite to the change in other Vancouver neighborhoods both before and after the facility's opening. They find that before Insite opened, roughly 20 overdoses occurred within 500 m of the facility. After Insite opened, overdose mortality within 500 m of the facility fell by 35%, compared to a 9.3% reduction further away, suggesting that Insite reduced neighborhood overdose deaths by at least 26% [46].

Table 3 Values, notes, and sources for variables used to predict skin and soft-tissue infection reduction savings

Variable	Value	Note	Source
Number of SIF clients (*N*)	2100	Approximate monthly unique Insite injection room clients	Maynard [33]
Hospitalization rate for skin and soft-tissue infection (*h*)	4.43%	Includes abscesses, cellulitis, sepsis, endocarditis, septic arthritis, osteomyelitis	Hsieh [91]; Lloyd-Smith et al. [18]; Kerr et al. [92]
Reduction in soft-tissue and skin infection for PWID that visit SIF (*r*)	67.00%	From Insite	Lloyd-Smith et al. [18]
Average length of skin infection-related hospital stay for PWID (*L*)	6 days	From Baltimore (Hsieh, 2015)	Hsieh [91]; Lloyd-Smith et al. [18]; Stein [93]; Palepu et al. [94]
Average hospital cost per day (*C*)	$2500	Average cost per inpatient day, not specifically for PWID	Rosenthal [95]; Harris [96]

Therefore, to predict the impact of a SIF on fatal overdose, we estimate the number of overdose deaths within a 500-m radius of an optimally placed SIF in Baltimore. Based on the fact that there were 260 heroin-related fatal overdoses in 2015 and 342 in the first three quarters of 2016, we estimate that there were 463 heroin-related fatal overdoses in all of 2016 [1, 47]. Since data on the geospatial distribution of fatal overdoses in Baltimore City are not available, we approximate this distribution by mapping data from the Baltimore City Fire Department Emergency Medical Services on the locations where medics administered naloxone in response to suspected opioid overdoses [48]. We identify the location with the highest concentration of naloxone administrations within 500 m by plotting the locations of all naloxone administrations in the first three quarters of 2016 in ArcGIS. The chosen location accounts for 6.2% of all naloxone administrations, suggesting that 28 heroin-related overdose deaths occurred within that 500-m radius circle in 2016. As the percent of overdose deaths within this area varies over time, we assume that in an average year, it would encompass a more conservative 23 heroin-related overdose deaths. This is 5% of the citywide total and slightly higher than the 20 deaths per year within 500 m of Insite.

We calculate the total value of overdose deaths averted by the SIF (S_{OD}) according to the equation:

$$S_{OD} = rnDV$$

where r is the rate of overdose death reduction expected within 500 m, n is the 5% share of naloxone administrations concentrated within a single circle of radius 500 m in Baltimore, D is the total number of overdose deaths in Baltimore, and V is the value of a single life saved.

In order to assign value to the loss of life due to overdose, we follow Andresen and Boyd [44] in considering only the tangible value to society rather than including the suffering and lost quality of life for loved ones. We estimate the tangible value by calculating the present value of the remaining lifetime wages of an average person from the community. Since the average age of PWID in Baltimore is 35, we convert 30 years of future wages to present value using a standard discount rate [44, 49]. So the value of a single prevented overdose death (V) is calculated as

$$V = \sum_{i=1}^{N} \frac{W}{(1+r)^i}$$

where n represents the remaining years of income, W represents the median wage for Baltimore City, and r represents the discount rate. We thus use a value per life saved of $503,869 in the overdose death savings calculation above. The values and sources for each variable in this section are given in Table 4.

Most likely, this method underestimates the facility's impact, since this method only estimates averted overdose deaths within 500 m of the SIF, though the facility would also reduce overdose outside a 500-m radius.

Overdose morbidity benefits

Overdoses require emergency medical assistance, even when they are not life threatening. Evaluations of Sydney's MSIC show that by managing overdose events on-site, the SIF reduces ambulance calls, emergency room visits, and hospital stays for overdose-related morbidity [12]. No previous SIF cost-benefit evaluations have included overdose morbidity in their analyses, but MSIC provides sufficient data to estimate the magnitude of a SIF's impact.

In Baltimore, ambulances are called to the scene of roughly half of all nonfatal overdoses [50]. By contrast, almost all overdoses in MSIC, Sydney's SIF, were handled by on-site medical staff and did not result in ambulance calls [14]. We estimate cost savings of averted ambulance calls for a SIF in Baltimore according to the following model:

Table 4 Values, notes and sources for variables used to predict savings from averted overdose deaths

Variable	Value	Note	Source
Percent overdose death reduction within 500 m attributed to Insite (r)	25.7%	36% reduction within 500 m of Insite vs. 9.3% further away	Marshall et al. [46]
Largest share of naloxone administrations within 500-m radius in Baltimore (n)	5%	Lowered from 6.2% to account for reversion to mean based on limited years of data	BCFD [97]
Annual Baltimore overdose deaths (D)	463	Heroin-related overdose deaths in first three quarters of 2016 extrapolated to full year	DHMH [1, 47]
Estimated value per overdose death averted (V)	$503,869	Calculated by authors using the variables below.	
Average years until retirement (N)	30	Assuming retirement age of 65	Genberg et al. [49]
Median wage for Baltimore City (W)	$25,707		Census Bureau [98]
Discount rate (r)	3%		Andresen and Boyd [44]

$$S_{\mathrm{a}} = Io(c_o - c_i)A$$

where S_{a} is the annual savings due to the SIF reducing ambulance calls for overdose, I is the annual number of injections in the SIF, o is the per-injection rate of overdose, c_o and c_i are the rates of overdose ambulance calls outside and inside the SIF, respectively, and A is the average cost of an overdose ambulance call. The values and sources for these variables are given in Table 5.

Emergency response personnel often transport overdose victims to the emergency room for treatment. One Baltimore study found that 33% of PWID reported being taken to the ER for their latest overdose [50]. By contrast, overdoses in SIFs lead to emergency room treatment in less than 1% of cases [14]. With a single Baltimore ER visit averaging over $1,300, SIFs reduce medical costs significantly by keeping PWID out of emergency rooms for overdose. We calculate the savings according to the following:

$$S_{\mathrm{er}} = Io(t_o - t_i)F$$

where S_{er} is the annual savings due to the SIF reducing emergency room visits for overdose, I is the annual number of injections in the SIF, o is the rate of nonfatal overdose, t_o and t_i are the rates of ER visit for overdose when the overdose occurs outside and inside the SIF, respectively, and F is the average cost of an overdose emergency room visit. The values and sources for these variables are given in Table 6.

Overdose victims are occasionally hospitalized for treatment. In Baltimore, 12% of PWID who overdosed reported being hospitalized, while less than 1% of SIF overdoses lead to hospitalization [14, 50]. With one day in a Baltimore hospital averaging $2,500, SIFs reduce medical costs significantly by keeping PWID out of the hospital for overdose. We calculate the savings according to the following:

$$S_{\mathrm{h}} = Io(a_{\mathrm{o}} - a_{\mathrm{i}})E$$

where S_{h} is the annual savings due to the SIF reducing hospitalization for overdose, I is the annual number of injections in the SIF, o is the rate of nonfatal overdose, a_{o} and a_{i} are the rates of hospitalization for overdose when the overdose occurs outside and inside the SIF, respectively, and E is the average expense of an overdose hospital stay. The values and sources for these variables are given in Table 7.

Medication-assisted treatment benefits

Many PWID who are unable to quit using illicit opioids through traditional abstinence-based treatment programs are successful using methadone or buprenorphine maintenance as part of medication-assisted treatment (MAT) [51]. MAT not only reduces the crime and health care costs of PWID by helping a significant portion quit injecting drugs but also decreases drug use, crime, and health costs among the patients who do relapse [52, 53]. Wood et al. [15, 22] and MSIC [12] show that both Insite and Sydney's MSIC refer many SIF clients to treatment, increasing treatment uptake. Irwin et al. [31] find a single SIF's impact on treatment uptake to be significant, estimating that a SIF in San Francisco would bring 110 patients into MAT every year.

We estimate that by referring clients to MAT, a SIF would produce annual health care and crime savings equal to S_{MAT}:

$$S_{\mathrm{MAT}} = Nrf(b-1)T$$

where N is the number of PWID who use the SIF, r is the percent of SIF clients who have been shown to access treatment as a result of SIF referrals, f is a conservative 50% estimate for retention in MAT, b is the average cost-benefit ratio studies have found for MAT, and T is the annual cost of treatment. Table 8 shows the values and sources for each variable.

The SIF's success in referring PWID to MAT depends on the pre-existing local prevalence of MAT uptake,

Table 5 Values, notes, and sources for variables used to predict savings from overdose-related ambulance calls

Variable	Value	Note	Source
Total annual injections in the SIF (I)	180,000	Based on Insite capacity and use	Milloy et al. [45]
Percent of injections resulting in overdose (o)	0.133%	Insite's rate used as conservative estimate, since Baltimore has a higher overdose rate than Vancouver	Kerr et al. [99], Kerr et al. [16], Milloy et al. [45], Astemborski and Mehta [100]
Rate of overdose resulting in ambulance call (c_o)	46%		Pollini et al. [50]
Rate of SIF overdose ambulance call (c_i)	0.79%	For MSIC	KPMG [14]
Cost of overdose ambulance call (A)	$750	For Baltimore County	Baltimore County [101]

Table 6 Values, notes, and sources for variables used to predict savings from overdose-related emergency room visits

Variable	Value	Note	Source
Total annual injections in the SIF (*I*)	180,000	Based on Insite capacity and use	Milloy et al. [45]
Percent of injections resulting in overdose (*o*)	0.133%	Insite's rate used as conservative estimate, since Baltimore has a higher overdose rate than Vancouver	Kerr et al. [99], Kerr et al. [16], Milloy et al. [45], Astemborski and Mehta [100]
Rate of overdose resulting in emergency room visit (t_o)	33%		Pollini et al. [50]
Rate of SIF overdose emergency room visit (t_i)	0.79%	Ambulance call rate for MSIC, an upper bound for emergency room visits	KPMG [14]
Cost of overdose emergency room visit (*F*)	$1,364	Average Baltimore City emergency room visit cost	Rienzi [102]

location and availability of MAT slots, and other neighborhood-level factors. As a result, we acknowledge that the 5.8% increase found for Sydney's MSIC may differ significantly from the actual referral rate for a SIF in Baltimore.

Results

Overall cost-benefit ratio

Our analysis finds a total benefit of $7.77 million and a total cost of $1.79 million, yielding a cost-benefit ratio of $4.35 saved for every dollar spent. Net savings are $5.98 million. We present the sensitivity analysis results for each outcome in Table 9, showing both financial and health results for the base, low, and high cases. Table 10 shows the impact of the sensitivity analysis for each key variable on the overall cost-benefit ratio and net savings.

Cost of the facility

Our estimate of the total annual cost is $1.79 million, which includes $1.62 million in operating costs and $170,000 in annualized upfront costs. In our sensitivity analysis, raising the operating cost by 50% increased the total cost to $2.6 million, lowering the cost-benefit ratio from 4.35 to 2.99 and net annual savings from $5.98 million to $5.17 million. Lowering the operating cost by 50% resulted in a total cost of $980,000, raising the cost-benefit ratio to 7.96 and net savings to $6.79 million.

HIV and HCV benefits

We estimate that a SIF would prevent an average of 3.7 HIV and 21 HCV cases per year, translating to annual savings of $1.50 million and $1.44 million, respectively.

We conducted a sensitivity analysis on the syringe sharing rate. Increasing the rate by 50%, from 2.8 to 4.2%, raises averted infections to 5.5 for HIV and 32 for HCV and savings to $2.25 million for HIV and $2.17 million for HCV. As a result, the overall cost-benefit ratio for the SIF increases from 4.35 to 5.17 and net savings increase from $5.98 million to $6.45 million. Decreasing the sharing rate by 50%, from 2.8 to 1.4%, lowers averted infections to 1.8 for HIV and 11 for HCV, reducing HIV savings to $750,000 and HCV savings to $720,000. In this scenario, the overall cost-benefit ratio declines to 3.52 and net savings fall to $4.51 million.

Skin and soft-tissue infection benefits

We estimate that SIF SSTI care will reduce total PWID hospital stays for SSTI by 374 days per year, which translates to annual savings of roughly $930,000.

Table 7 Values, notes, and sources for variables used to predict savings from overdose-related hospitalizations

Variable	Value	Note	Source
Total annual injections in the SIF (*I*)	180,000	Based on Insite capacity and use	Milloy et al. [45]
Percent of injections resulting in overdose (*o*)	0.133%	Insite's rate used as conservative estimate, since Baltimore has a higher overdose rate than Vancouver	Kerr et al. [99], Kerr et al. [16], Milloy et al. [45], Astemborski and Mehta [100]
Rate of overdose resulting in hospitalization (a_o)	12%		Pollini et al. [50]
Rate of SIF overdose hospitalization (a_i)	0.79%	Ambulance call rate for MSIC, an upper bound for hospitalizations	KPMG [14]
Cost of overdose hospitalization (*E*)	$2500	Average hospital day cost for Maryland	Pfuntner [103]

Table 8 Sources for variables used to predict savings from medication-assisted treatment referrals

Variable	Value	Note	Source
Number of SIF clients (*N*)	2100	Approximate monthly unique Insite injection room clients	Maynard [33]
Percent of SIF users who access MAT as a result of SIF referrals (*r*)	5.78%	From MSIC	MSIC [12]
Treatment retention factor (*f*)	50%	General retention rate estimated at 60–90%	CSAM [104]
Cost-benefit ratio for MAT (*b*)	4.5	Conservative: average of low estimates	Cartwright [51], Gerstein [105], Health Canada [32], Harris et al. [52], CHPDM [53]
Average cost of 1 year of MAT (*T*)	$4000		Schwartz et al. [106]

We conducted a sensitivity analysis on the SSTI hospitalization rate. Increasing the rate by 50% raises averted hospital days to 561 and savings to $1.40 million. As a result, the overall cost-benefit ratio for the SIF increases from 4.35 to 4.61 and net annual savings rise from $5.98 million to $6.45 million. Decreasing the rate by 50% lowers averted hospital days to 187 and reduces savings to $470,000. In this scenario, the overall cost-benefit ratio declines to 4.09 and net savings fall to $5.52 million.

Overdose mortality benefits

We estimate that SIF overdose prevention will save an average of 5.9 lives per year, which translates to $3.00 million in savings for society.

We conducted a sensitivity analysis of drug overdose deaths in the neighborhood around the facility, since deaths fluctuate from year to year. Increasing the total by 50% raises estimated lives saved to 8.9 and financial savings to $4.50 million. This raises the overall cost-benefit ratio for the SIF from 4.35 to 5.19 and net savings from $5.98 million to $7.48 million. Lowering the neighborhood deaths by 50% would reduce estimated lives saved to 3.0 and financial savings to $1.50 million, for an overall cost-benefit ratio of 3.51 and net savings of $4.48 million.

Overdose morbidity benefits

We estimate that the SIF will also prevent 108 ambulance calls, 78 emergency room visits, and 27 hospitalizations for nonfatal overdose, which translates to $81,000, $110,000, and $67,000 in medical savings, respectively.

We conducted a sensitivity analysis on the nonfatal overdose rate, since it is not well documented for Baltimore. Increasing the rate 50% raises the benefits to 162 ambulance calls, 117 ER visits, and 40 hospitalizations, for savings of $120,000, $160,000, and $100,000, respectively. This higher rate would raise the overall cost-benefit ratio for the SIF from 4.35 to 4.42 and net savings from $5.98 to $6.11 million. Lowering the rate by 50% would reduce the benefits to 54 ambulance calls, 39 ER visits, and 13 hospitalizations, lowering the savings to $40,000, $50,000, and $30,000, respectively. This lower rate would reduce the SIF's overall cost-benefit ratio to 4.28 and net savings to $5.86 million.

Medication-assisted treatment benefits

We estimate that 121 PWID will enter MAT as a result of the SIF, translating into $640,000 in benefits for society.

We conducted a sensitivity analysis of the referral rate for MAT. Raising the rate by 50%, from 5.78 to 8.67%,

Table 9 Summary of sensitivity analysis impact for individual components

Outcome	Dollar value ($ million)			Health indicator value			
	Base case	Low case	High case	Base case	Low case	High case	Unit
Total cost	1.79	2.60	0.98				
HIV	1.50	0.75	2.25	3.7	1.8	5.5	Cases
HCV	1.44	0.72	2.17	21	11	32	Cases
SSTI	0.93	0.47	1.40	374	187	561	Hospital days
Overdose deaths	3.00	1.50	4.50	5.9	3.0	8.9	Deaths
OD ambulance calls	0.08	0.04	0.12	108	54	162	Calls
OD ER visits	0.11	0.05	0.16	78	39	117	ER visits
OD hospitalizations	0.07	0.03	0.10	27	13	40	Hospitalizations
MAT	0.64	0.32	0.96	121	61	182	New patients

Table 10 Summary of sensitivity analysis impact on overall results

Variable tested	Cost-benefit ratio			Net savings ($ million)		
	Base case	Low case	High case	Base case	Low case	High case
Operating cost	4.35	2.99	7.96	5.98	5.17	6.79
Syringe sharing rate	4.35	3.52	5.17	5.98	4.51	7.46
SSTI rate	4.35	4.09	4.61	5.98	5.52	6.45
Overdose death rate	4.35	3.51	5.19	5.98	4.48	7.48
Nonfatal OD rate	4.35	4.28	4.42	5.98	5.86	6.11
MAT referral rate	4.35	4.17	4.53	5.98	5.66	6.30

would increase new people in treatment from 121 to 182 and financial savings to $960,000. This would increase the overall cost-benefit ratio from 4.35 to 4.53 and net annual savings from $5.98 to $6.30 million. Lowering the rate by 50%, to 2.89%, would reduce new people in treatment to 61 and financial savings to $320,000, for an overall cost-benefit ratio of 4.17 and net savings of $5.66 million.

Discussion

Our analysis finds a significantly favorable cost-benefit ratio and net benefits in all scenarios for a SIF in Baltimore, MD. Our base case scenario predicts that every dollar spent would return $4.35 in savings. We estimate that a single, 13-booth facility would generate annual net savings of $5.98 million, which is equivalent to 28% of the city health department's entire budget for harm reduction and disease prevention [54]. The study predicts that a SIF would prevent 5.9 overdose deaths per year.

Compared to Irwin et al.'s [31] cost-benefit analysis of a SIF in San Francisco, our study estimates the cost-benefit ratio for a Baltimore SIF to be 87% higher (4.35 versus 2.33) and net savings to be 71% higher ($6.0 million versus $3.5 million). A Baltimore SIF would have lower costs, lower benefits from SSTI prevention, similar benefits related to HIV, HCV, and MAT, and much higher benefits related to overdose deaths. Our study also incorporates additional outcomes, demonstrating that a SIF could generate sizeable benefits by preventing ambulance calls, emergency room visits, and hospital stays related to nonfatal overdose.

The most significant difference between the San Francisco and Baltimore studies relates to the SIF's impact on overdose deaths. We predict 5.9 lives saved per year in Baltimore, compared to 0.24 lives in San Francisco [31]. This difference stems primarily from the much higher overdose death rate in Baltimore. While both cities have roughly 20,000 PWID, Baltimore has more than 20 times more heroin-related overdose deaths. We also use a more advanced methodology—mapping the concentration of overdose deaths—to estimate this outcome.

The SIF's impact on overdose prevention would complement the Baltimore City Health Department's extensive efforts to prevent overdose through trainings and naloxone distribution in community, treatment, and corrections settings. The city has trained over 17,500 Baltimore residents in overdose prevention, including use of the overdose reversal drug naloxone [55]. A SIF would ensure that when PWID overdose, they do so in the presence of staff trained to administer naloxone. In addition, a SIF would prevent overdose deaths outside the facility because SIF staff provide PWID with safer injecting education, stressing the importance of injecting where naloxone is available.

Our results also suggest that a SIF would become a key component of Baltimore's continued efforts to reduce viral infections among PWID. Preventing four HIV and 21 HCV infections every year would reduce total incidence of both HIV and HCV by roughly 5%. The SIF would allow service providers to locate PWID, test them for viral infection, refer them for HIV and HCV treatment, and retain them in treatment. It thus addresses all four aspects of the 2017 HIV prevention strategy of the National Institute on Drug Abuse: "seeking, testing, treating, and retaining" PWID and other populations in need of HIV care [56].

Our estimate that a SIF would save close to a million dollars per year in SSTI hospital costs shows the benefits of removing a small population of "frequent fliers" from emergency rooms and hospitals. Still, since San Francisco has both a more serious SSTI problem due to the prevalence of black tar heroin and higher hospital costs, this area of benefits is smaller for Baltimore.

Our estimate of 121 PWID entering MAT in Baltimore is similar to Irwin et al.'s [31] estimate of 110 PWID in San Francisco. However, in both cities, the actual number will depend on the existing ease of MAT access, as well as the efforts by SIF staff to refer PWID to treatment. Baltimore can maximize these benefits by increasing funding to MAT programs, making treatment referrals a priority for SIF staff, and establishing the SIF near existing treatment providers for easy referral and follow-up.

Our sensitivity analysis illustrates that the SIF's operating cost has a significant impact on the overall cost-benefit ratio, though less of an impact on net savings. While we used a conservatively high cost estimate, strategic staffing, location, and procedural decisions by both SIF executives and local government officials could reduce costs and further increase the net benefits. Cost-effectiveness in Baltimore would be significantly higher largely because Baltimore has lower real estate values, salaries, cost of living, and cost of doing business [31].

There are a number of lessons from the initial operations of Insite which could inform the overall costs associated with a SIF in Baltimore. For example, Health Canada's protocols required Insite to call an ambulance for every overdose incident, resulting in unnecessary costs given the ability to reverse overdose at Insite [57]. We recommend that the Baltimore City Health Department work with a local SIF, with extensive peer involvement, to consider the health, social, and economic impact of any such protocols.

The continuum of care provided at the SIF has important implications for its impact. An integrated SIF model would co-locate detoxification, treatment, medical care, mental health care, housing, employment, government benefits, and legal services. Such a model would facilitate service uptake for a population that faces a number of barriers in accessing services.

We should note that it is difficult to ascertain who exactly would ultimately receive the savings documented in this study. Savings from the HIV, HCV, SSTI, and nonfatal overdose outcomes all accrue to the health care system, but the real beneficiaries are difficult to pin down. Holtgrave [58] and Mehta [6] estimate that the public sector bears the greatest share of HIV treatment costs, in particular Medicaid. Whether PWID have private insurance, Medicare/Medicaid, or no insurance, the savings ultimately reach federal, state, and local taxpayers, as well as everyone who pays health care premiums and hospital bills. MAT savings are split between medical care and reduced crime committed to get money to buy drugs. Overdose death savings represent value to the overall local economy from that person's future contributions.

Limitations

This cost-benefit analysis faces a number of limitations.

First, this study does not tackle the political, legal, and social barriers confronting the efforts to establish a SIF in Baltimore. In spring 2017, a second attempt to authorize safe consumption spaces in Maryland failed in the Maryland State Assembly. This effort faces opposition concerns similar to SIF campaigns in other cities, including fears of "enabling" drug use, "Not In My Back Yard," and potential legal vulnerability to prosecution under federal drug statutes [59–61]. It also faces more unique challenges—while the opiate epidemic's recent damage to white, middle-class communities has grabbed media attention, Baltimore's heroin crisis is decades old and fails to generate the same political capital for action because it primarily impacts lower-income African-American communities [62].

To address these issues, advocates have formed a coalition of public health practitioners, current and former drug users, community organizers, and academics. Over the past year, the coalition has been meeting with the local health department, social service providers, drug users, politicians, and community leaders. In addition to garnering local and state political support, a Baltimore SIF campaign will only be successful if it involves the affected communities and elevates their voices.

Our study's estimates of health and economic outcomes also face limitations. Without specific plans for a facility, some variables are difficult to estimate. Since there are no actual regulations, guidelines, or actual physical plans for a SIF in Baltimore, we can only make a conservative guess at facility cost. Once regulations are established and plans for construction and operation have been created, an updated cost analysis should be performed. Similarly, the SIF's success at referring PWID to treatment would depend on staffing decisions, the protocol for treatment referrals, and the convenience and availability of effective treatment options.

In addition, our models are difficult to verify because a number of important health indicators are not well documented for Baltimore's PWID population. For example, researchers have noted that resources have not been devoted to accurately measuring the Baltimore PWID population's HCV prevalence, much less the HCV incidence or the impact of needle sharing [63]. Also, available data conflicts on the prevalence of SSTI and rates of SSTI hospitalization among PWID. Other variables, from the average number of needle-sharing partners to the rate of ambulance calls to nonfatal overdose, are based on a single study and should be corroborated.

The study's accuracy would also benefit from specific cost information. The costs of HIV and HCV care, SSTI hospitalization, medication-assisted treatment, and overdose-related ambulance calls, emergency room visits, and hospital stays have all been approximated using figures for the general population. We consider all of these to be underestimates of the actual costs, since PWID tend to require more services and supervision [64].

There are also some potential interaction effects that are beyond the scope of this study. For example, our HIV and HCV models do not account for PWID becoming infected or transmitting the viruses to others through sexual contact. Our models also do not account for interaction effects between HIV and HCV infection

or between viral infection and SSTI. While these effects would likely have a minor impact on our overall findings, if relevant data becomes available, our analysis should be updated accordingly.

Finally, the impact of the SIF will depend on how well the SIF and co-located service providers align with the unique features of Baltimore's population of PWID. Studies have shown that the effectiveness of harm reduction programs depends on their consideration of ethnicity, gender, age, homelessness, inequality, social networks, drug markets, and other demographic and social factors [65–70]. We have used the best local health data available to tailor our analysis to Baltimore's unique risk factors and social environment. However, the ultimate impact of a SIF in Baltimore will depend on how well the facility adapts to this environment by studying, consulting, and collaborating with the local PWID population [71–73].

Conclusions

Despite the present study's limitations, it demonstrates that a SIF in Baltimore would bring significant cost savings and public health benefits to the city. A single 13-booth SIF facility in Baltimore City modeled on Insite in Vancouver would generate medical and economic savings of roughly $7.77 million per year. At a total cost of $1.79 million per year, every dollar spent would generate an estimated $4.35 in savings. To put the $5.98 net annual savings for a single SIF in perspective, they equal 28% of the Baltimore City Health Department's budget for harm reduction and disease prevention.

In terms of health outcomes, we estimate that every year, a SIF would prevent 3.7 HIV infections, 21 HCV infections, 374 days in the hospital for skin and soft-tissue infection, 5.9 overdose deaths, 108 overdose ambulance calls, 78 overdose emergency room visits, and 27 overdose-related hospitalizations, while bringing an additional 121 PWID into treatment.

We recommend that the city avoid excessive regulation of a SIF and maximize the linkages to services for the PWID population. We also recommend that researchers carefully track health indicators and medical costs associated with the PWID population before and after establishing a SIF in order to evaluate the facility's benefits.

SIFs provide other important benefits in addition to those quantified in this study. They decrease public injection, prevent physical and sexual violence against PWID, and reduce syringe littering [38, 74–76]. They facilitate research to better understand the PWID population [77]. Lastly, they allow social service providers to harness the power of PWID peer networks and bring important programs to the hard-to-reach PWID population [78–80].

Establishing a SIF in Baltimore would bring a number of well-established medical, financial, and societal benefits. We do not believe that health initiatives like SIFs should be judged purely on financial terms. However, we hope that this cost-benefit analysis provides a helpful starting point to assess the potential impact on Baltimore of a supervised injection facility.

Abbreviations

DHMH: Department of Health and Mental Hygiene (Maryland); HCV: Hepatitis C virus; HIV: Human immunodeficiency virus; MAT: Medication-assisted treatment; MSIC: Medically Supervised Injecting Centre (SIF in Sydney); OD: Overdose; PWID: People who inject drugs; SIF: Supervised injection facility; SSTI: Skin and soft-tissue infection

Acknowledgements

Not applicable.

Funding

The contribution by AI was supported by the Criminal Justice Policy Foundation and the Law Enforcement Action Partnership. The contribution by EJ was supported by the *Canadian Institutes of Health Research* (CIHR) *Postdoctoral Fellowship* (201511MFE-358449-223266).The contributions by SGS and BWW were supported by the Johns Hopkins University Center for AIDS Research (P30AI094189). The contribution by STA was supported by a grant from the National Institute on Drug Abuse (T32DA007292, PI: Renee M. Johnson). The contribution by AL was supported by the Criminal Justice Policy Foundation and by Amherst College.

Availability of data and materials

All data used in the current study are furnished in the text and tables. All calculations are available from the corresponding author on a reasonable request.

Authors' contributions

AI designed most of the models, performed the calculations, and took the lead in writing the manuscript. EJ found data for use in the models, designed the models for HIV and HCV, and assisted in formatting and editing the manuscript. AL found data for use in the models. STA conducted the overdose mapping analysis. BWW supplied data for use in the models and assisted with the overdose mapping analysis. SGS assisted in writing and editing the manuscript. All authors read and approved the final manuscript.

Competing interests

The authors declare that they have no competing interests.

Consent for publication

Not applicable.

Ethics approval and consent to participate

Not applicable.

Publisher's Note

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Received: 28 February 2017 Accepted: 5 May 2017
Published online: 12 May 2017

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SB 279 FAV Lit Review on Safe Injection Facilities

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Position: FAV

Drug and Alcohol Dependence 145 (2014) 48–68

Contents lists available at ScienceDirect

Drug and Alcohol Dependence

journal homepage: www.elsevier.com/locate/drugalcdep

Review

Supervised injection services: What has been demonstrated? A systematic literature review☆

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ARTICLE INFO

Article history:
Received 18 May 2014
Received in revised form 14 October 2014
Accepted 14 October 2014
Available online 23 October 2014

Keywords:
Supervised injection service
Safer injection facility
Supervised injecting center
Drug consumption room
Drug consumption facility
Injection drug user

ABSTRACT

Background: Supervised injection services (SISs) have been developed to promote safer drug injection practices, enhance health-related behaviors among people who inject drugs (PWID), and connect PWID with external health and social services. Nevertheless, SISs have also been accused of fostering drug use and drug trafficking.
Aims: To systematically collect and synthesize the currently available evidence regarding SIS-induced benefits and harm.
Methods: A systematic review was performed via the PubMed, Web of Science, and ScienceDirect databases using the keyword algorithm [("SUPERVISED" OR "SAFER") AND ("INJECTION" OR "INJECTING" OR "SHOOTING" OR "CONSUMPTION") AND ("FACILITY" OR "FACILITIES" OR "ROOM" OR "GALLERY" OR "CENTRE" OR "SITE")].
Results: Seventy-five relevant articles were found. All studies converged to find that SISs were efficacious in attracting the most marginalized PWID, promoting safer injection conditions, enhancing access to primary health care, and reducing the overdose frequency. SISs were not found to increase drug injecting, drug trafficking or crime in the surrounding environments. SISs were found to be associated with reduced levels of public drug injections and dropped syringes. Of the articles, 85% originated from Vancouver or Sydney.
Conclusion: SISs have largely fulfilled their initial objectives without enhancing drug use or drug trafficking. Almost all of the studies found in this review were performed in Canada or Australia, whereas the majority of SISs are located in Europe. The implementation of new SISs in places with high rates of injection drug use and associated harms appears to be supported by evidence.

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☆ Supplementary material can be found by accessing the online version of this paper at http://dx.doi.org/10.1016/j.drugalcdep.2014.10.012.
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http://dx.doi.org/10.1016/j.drugalcdep.2014.10.012
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1. Introduction

Injection drug use represents a source of numerous harmful effects on both the health conditions of people who inject drugs (PWID) and their social environment. Drug injection is one of the main factors in the dissemination of blood-transmissible viral infections such as human immunodeficiency virus or the hepatitis B and C viruses (EMCDDA, 2008; Joint United Nations Programme on HIV/AIDS, 2002; WHO, 1997). In addition, numerous other physical problems can result from drug injection, including other viral and bacterial infections, cutaneous lesions, locomotive disorders, and hepato-gastroenterological pathologies (INSERM, 2010; Klee and Morris, 1995; Palepu et al., 2001). Psychiatric disorders are also more frequent in PWID (EMCDDA, 2008), who are subject to reduced access to medical services (Kerr et al., 2005b). Moreover, PWID exhibit enhanced marginalization from society, which increases their exposure to social precariousness, unemployment, homelessness, crime, and prostitution (DeBeck et al., 2007; EMCDDA, 2008). Thus, injection drug use induces considerably higher mortality. Partly because of its illegal nature, injection drug use is also responsible for numerous societal consequences, e.g., violence, traffic, crime, and public space degradation (Kerr et al., 2005a; Renn and Lange, 1996; Singer et al., 2001). For these reasons, injection drug use places a heavy burden on society.

During the early 1980s, PWID had to face the HIV epidemic. Preventing viral infection became crucial, and, therefore, care professionals had to consider the damage caused by drug use rather than focusing on drug use itself. Moreover, in face of the failure of public policies that aimed to eradicate drug use and drug trafficking (Drucker, 1999) and in consideration of the number of PWID who were not ready to enter into classical abstinence care, new prevention and care paradigms emerged, constituting the 'harm reduction' approach (MacPherson, 2001; Wodak and Owens, 1996). The first aim of these new care systems was to reduce the social and medical consequences of injection drug use and to stop the marginalization spiral to which PWID were exposed (Berridge, 1999; MacPherson, 2001). In this context, the first syringe exchange programs and the development of opiate maintenance therapies were implemented (WHO, 1998).

Similarly, new facilities emerged at the end of the 1980s, and the first objective was to allow PWID to inject self-provided drugs within a supervised framework in enhanced aseptic conditions with medical monitoring and no risk of police control (EMCDDA, 2008; Jozaghi, 2012; Semaan et al., 2011). These facilities have had different appellations, including 'safer injection facilities,' 'supervised injecting centers/sites/rooms/facilities,' 'drug consumption rooms,' and 'supervised injection services' (SISs) (Hedrich, 2004; Noël et al., 2009). Throughout the present article, we will indistinctly use the term 'SISs' to designate these facilities. The concept of SISs rapidly spread in Western countries, and in 2010, there were more than 90 identified SISs in Canada, Australia, Norway, Germany, Switzerland, Spain, the Netherlands and Luxembourg (Semaan et al., 2011).

SISs were implemented complementarily to other harm reduction measures for the following purposes (EMCDDA, 2009; INSERM, 2010; Noël et al., 2009): (1) to reach the most marginalized populations of PWID, who are least likely to obtain access to medical and social support, and connect them with health and social services; (2) to reduce overdose-induced morbidity and mortality; (3) to educate PWID to enhance their health behaviors; (4) to reduce injection-related risks by promoting the prevention and education of safe self-injecting practices; (5) to improve the global health conditions of PWID by promoting the prevention, screening and medical orientation of viral infections; (6) to foster the initiation of dependence care programs among PWID; and (7) to reduce the nuisances triggered by injection drug use in public spaces, e.g., urban violence and crime, drug trafficking and drug-use waste.

SIS access is usually restricted and regulated (Hedrich, 2004; INSERM, 2010). Most SISs are forbidden to subjects under 18 years of age, pregnant women, irregular or unidentified PWID, and individuals who wish to experience their first drug injection. Internal rules also forbid violence and drug selling. Moreover, many SISs prohibit drug sharing or helping other users with drug injection. However, SISs have endured criticism. Some official organizations have argued that "*any national, state or local authority that permits the establishment and operation of drug injection rooms or any outlet to facilitate the abuse of drugs (by injection or any other route of administration) also facilitates illicit drug trafficking*" (INCB, 1999). The detractors of SISs often argue that SIS implementation is equivalent to the tacit acceptance of injection drug use by public authorities, which will foster drug use, attract drug traffickers and increase drug-related consequences in the surrounding area (Boyd, 2013; Elliott et al., 2002; Gandey, 2003; Parliament of New South Wales, 1998). This perception has often been shared by groups of local residents and politicians in cities where new SISs were implemented (Elliott et al., 2002) and has sometimes led to long court procedures (Health Canada, 2006; Small, 2010; Wodak et al., 2003; Wood et al., 2007).

Twenty-eight years after the first legal opening of an SIS (Zobel and Dubois-Arber, 2004), we have performed a systematic review of the literature to collect the published data currently available on SISs and to synthesize these data to determine whether SISs have achieved their objectives and whether the fears raised against them are justified.

2. Materials and methods

A systematic search for relevant articles was conducted and is presented herein according to the PRISMA statement (Liberati et al., 2009). The research was performed using the PubMed, Web of Science, and ScienceDirect databases. To avoid selection bias, an inventory of the different English appellations for SIS was conducted, which led to our use of the following keyword algorithm: ("SUPERVISED" OR "SAFER") AND ("INJECTION" OR "INJECTING" OR "SHOOTING" OR "CONSUMPTION")

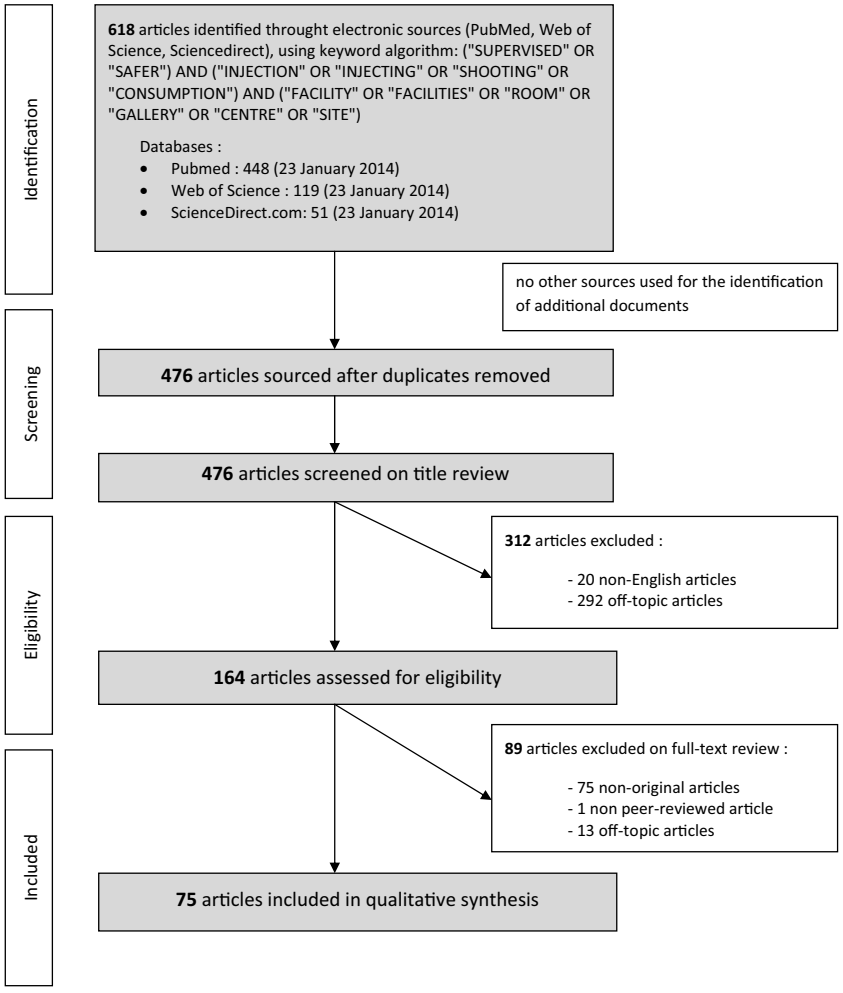

Fig. 1. Systematic selection process of relevant articles used for performing the review.

AND ("FACILITY" OR "FACILITIES" OR "ROOM" OR "GALLERY" OR "CENTRE" OR "SITE"). All results up to January 26, 2014 were examined in the article selection process.

The article selection algorithm is described in Fig. 1. After eliminating duplicates, relevant publications were chosen through the individual and independent selection of titles by three authors (C.P., B.R., V.L.). The articles selected had to be written in English and be related to SISs. In cases of disagreement between the authors during the selection process, the three authors discussed the article until a consensus to include it or exclude it was reached.

A second selection round was performed upon full-text reading. The selection criteria were as follows: (1) peer-reviewed articles that (2) contained original data on SIS assessment. The full texts of all selected articles were independently read by two authors (C.P. and B.R.). If one of the readers believed that the full-text article did not fit the eligibility and inclusion criteria, a final round of selection was performed through a consensual decision that included the same three authors identified above.

The quality of all of the finally selected articles was evaluated using specific tools. Observational studies were evaluated using the "Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement" (Vandenbroucke et al., 2007), and medical economic studies were evaluated using the "Consolidated Health Economic Evaluation Reporting Standards (CHEERS)" (Husereau et al., 2013). Because there is currently no consensual assessment method for either qualitative studies or surveys (Bennett et al., 2011), we did not score these types of articles in our review.

3. Results

3.1. Overall results

We initially found 618 articles using the aforementioned keyword algorithm, among which 75 articles were finally included in the review (cf. Fig. 1).

Table 1 lists the final selection of articles, which were clustered according to the specific subject they addressed: (1) the description of SIS users; (2) the impact of SISs on overdose-induced mortality and morbidity; (3) the impact of SISs on injection behaviors and their consequences; (4) the impact of SISs on the adherence to care of PWID; (5) the impact of SISs on the nuisances induced by drug use in public spaces; (6) the impact of SISs on local drug-related crime, violence, and trafficking; (7) the impact of SISs on the number of local PWID; (8) the medico-economic assessment of SISs; (9) the opinion of PWID on SISs; and (10) the impact of SISs on the opinions of local residents and local police.

Approximately 68% of the articles came from SISs in Vancouver ($n = 51$), 17% from SISs in Sydney ($n = 13$) and 3% from SISs in Europe ($n = 2$). Approximately 12% of the studies do not come from a SIS ($n = 9$).

Different study designs were found.

Of the 75 finally selected articles, 32 articles were about cohort studies, among which 3 were descriptive studies (Kerr et al., 2006b; Marshall et al., 2009; Stoltz et al., 2007a), 13 were analytical studies (Bravo et al., 2009; Hadland et al., 2014; Kerr et al., 2005c; Lloyd-Smith et al., 2010, 2009, 2008; McKnight et al., 2007; Milloy et al., 2010, 2009; Wood et al., 2005d, 2003, 2008, 2005a), 12 were evaluative studies (DeBeck et al., 2008; Kerr et al., 2007c; Kimber et al., 2008a; Milloy et al., 2008a; Petrar et al., 2007; Reddon et al., 2011; Richardson et al., 2008; Stoltz et al., 2007b; Wood et al., 2006d, 2005c, 2007, 2006c), 1 was both a descriptive and an analytical study (DeBeck et al., 2011), and 3 were cross-sectional

Table 1
Comprehensive result synthesis of the systematic literature review. Articles are arranged by clusters, then by date of publication.

Authors and publication date	Population	Total of participants	Study design	Study purposes	Study period	Main findings of the study	Studies quality assessment with STROBE (S) or CHEERS (C) scores
Reach the target population, PWID's profile:							
Hadland et al., 2014	Cohort "ARYS' (At-Risk Youth Study), Vancouver	414	Analytical, longitudinal, prospective study	Factors associated with SIS use among young (16–24 years) street PWID	From 09/2005 to 03/2012	Mean age: 22.8 years (±2.7 years), 33.8% female. Approximately 42.3% of youth used the Vancouver's SIS at least once. Factors associated: having lived or spent time weekly in the Downtown Eastside neighborhood surrounding the SIS (aOR = 3.29, 95%CI = [2.38–4.54]), having injected in public (aOR = 2.08, 95%CI = [1.53–2.84]) and having engaged in daily drug injection (aOR = 2.44, 95%CI = [1.34–4.45] for cocaine – aOR = 2.36, 95%CI = [1.72–3.24] for heroin).	(S): 21/28 (6 NAIs)
Reddon et al., 2011	PWID of ACCESS cohort, Vancouver	395	Descriptive and analytical, prospective study	Description and factors associated with SIS use in PWID HIV+	From 12/2005 to 05/2008	Approximately 26% of attendants used the site for >25% of injections. Factors associated with attending SISs included the following: homelessness (aOR = 1.90, 95%CI = [1.30–2.77]), and daily injection of heroin (aOR = 1.56, 95%CI = [1.08–2.25]) or cocaine (aOR = 1.59, 95%CI = [1.05–2.42]). The major reasons not to attend SISs included injection at home (31%), already having a safe place (21%), and willingness to inject in private (10%).	(S): 19/29 (5NAIs)
Salmon et al., 2009b	MSIC users (exhaustive population)	9778	Descriptive and analytical, prospective study	Measure of self-reported prevalence, of HIV testing and research of associated factors	From 05/01/2001 to 04/30/2007	Self-reported prevalence of HIV: +2%. Screening in the previous year: 94%. Factors associated with HIV+ male sex (aOR = 3.33, 95%CI = [1.96–5.56]), injection of psychostimulants (aOR = 2.02, 95%CI = [1.38–2.96]), use of local health services (aOR = 1.56, 95%CI = [1.07–2.27]), age >30 years (aOR = 2.38, 95%CI = [1.21–4.67]), homosexuality (aOR = 20.43, 95%CI = [13.21–31.59]) and bisexuality (aOR = 5.30, 95%CI = [3.13–8.93]).	(S): 24/29 (5NAIs)
Bravo et al., 2009	Itinere cohort, Barcelone and Madrid (Spain)	249	Analytical study	Factors associated with SIS use among PWID in Barcelona and Madrid		Approximately 39% of subjects used the SIS. Factors associated with SIS use: male sex (OR = 2.3, 95%CI = [1.2–4.3]), a source of illegal income (OR = 1.9, 95%CI = [1.1–3.1]), injection> 1x/week (OR = 4.9, 95%CI = [2.7–8.8]), speedball injection (OR = 2.5, 95%CI = [1.5–4.3]), and HCV + (OR = 3.1, 95%CI = [1.4–7.1]). The borrowing of used syringes is not associated with SIS use (OR = 0.4, 95%CI = [0.2–0.9]).	S: 22/33 (1NAI)
Dubois-Arber et al., 2008	PWID of Drug Consomtion Room (DCR), Geneva	509	Descriptive cross-sectional prospective study	Description of injection profiles and DCR use by PWID	2002	Average age: 33 years, 28% women. Four types described: type 1 (58%): regular users, small/medium number of injections and few days on which they inject, especially cocaine; type 2 (13%): few injections and days of injection, especially heroin; and type 3 (4%): large number of injections and large number of days of injection, especially cocaine.	(S): 23/30 (4NAIs)

Table 1 (*Continued*)

Authors and publication date	Population	Total of participants	Study design	Study purposes	Study period	Main findings of the study	Studies quality assessment with STROBE (S) or CHEERS (C) scores
Kimber et al., 2008a	MSIC users who live in King Cross (=2 km^2 around MSIC)	761	Evaluative observational study	To compare indirect estimation methods to obtain mean PWID prevalence for a confined geographic location and to use these estimates to calculate PWID and injection coverage of a MSIC	From 11/01/2001 to 10/31/2002	Indirect calculated prevalence of PWID in King Cross was estimated between 2.9% and 4.3% of the local population. The coverage of the MSIC on PWID was estimated at 70.7% (range = [59.1–86.7]). The adjusted rate of coverage of the MSIC on injections was estimated at 8.8% (range = [7.3–10.8]). Approximately 11.3% of the total PWID population were estimated to be new entrants to the population per month.	(S): 27/32 (2NAIs)
Richardson et al., 2008	Participants of SEOSI cohort	1090	Evaluative observational study	SIS's impact and factors associated with PWID employment	From 12/01/2003 to 12/31/2005	Approximately 36.3% had +/− regular employment in last 6 months. Regular attendance of SIS has no impact on employment (aOR = 1.06). Only binge consumption was associated with employment status (aOR = 1.27, 95%CI = [1.06–1.52]).	(S): 21/29 (5NAIs)
Stoltz et al., 2007a	Participants of VIDUS cohort	135	Descriptive, prospective study	Epidemiological characteristics of PWID under 29 years attending SIS	From 12/01/2003 to 05/01/2005	Unstable housing (OR = 5.24, 95%CI = [1.99–13.71]), history of incarceration (OR = 2.88, 95%CI = [1.29–6.40]), daily heroin consumption (OR = 2.16, 95%CI = [1.07–4.37]); history of overdose(OR = 2.55, 95%CI = [1.02–6.19]) and needle sharing (OR = 10.52, 95%CI = [1.33–83.46]).	(S): 19/29 (5NAIs)
Tyndall et al., 2006a	SIS of Vancouver users	4764	Descriptive, exhaustive study	PWID epidemiological characteristics and patterns of SIS attendance	From 10/03/2004 to 04/30/2005	Approximately 73% male, median age: 36–40 years. Patterns of attendance: injection (80%), meeting caregivers (10%), and obtaining an injection kit. Injected drugs: heroin (40%) and cocaine (28%).	(S): 23/29 (5NAIs)
Tyndall et al., 2006b	Participants of SEOSI cohort	1035	Descriptive, cross-sectional study	Study of the prevalence of seropositivity for HIV among PWID attending SIS	From 12/01/2003 to 03/31/2005	Approximately 17% were seropositive for HIV. Associated factors: aboriginal PWID (OR = 2.38, 95%CI = [1.65–3.44]), daily cocaine injection (OR = 1.50, 95%CI = [1.07–2.10]), needle sharing (OR = 2.13, 95%CI = [1.49–3.06]), addiction treatment (OR = 1.56, 95%CI = [1.12–2.17]), current use methadone (OR = 1.57, 95%CI = [1.08–2.28), and history of incarceration (OR = 2.04, 95%CI = [1.24–3.35]).	(S): 19/25 (9NAIs)
Wood et al., 2006c	Participants of SEOSI cohort	904	Descriptive and evaluative study	Epidemiological characteristics of PWID attending the SIS and factors associated with SIS daily attendance	From 12/01/2003 to 06/30/2004	Approximately 30% women, 39% involved in prostitution, 18% HIV, and HCV 88% [. . .]. Factors associated with SIS daily attendance: homeless (OR= 2.39, 95%CI = [1.57–3.63]), needing help injecting (OR = 0.61, 95%CI = [0.43–0.86]), daily injecting heroin (OR = 3.44, 95%CI = [2.50–4.73]) or cocaine (OR = 2, 95%CI = [1.44–2.78]), no methadone use (OR = 0.47, 95%CI = [0.32–0.69].	(S): 17/30 (4NAIs)

Wood et al., 2005a	Participants of SEOSI cohort	691	Analytical study	Epidemiological characteristics of PWID infected with HCV, attending the SIS	From 12/01/2003 to 07/30/2004	Approximately 88% of individuals ($N = 605$) in the study were HCV+ Risk factors for HCV infection: prostitution (aOR = 3.7, 95%CI = [2.1–6.1]), syringe borrowing (aOR = 1.8, 95%CI = [1.1–2.9]), and history of incarceration (aOR = 2.6, 95%CI = [1.5–4.4]). Protective factor: daily injection of heroin (aOR = 0.6, 95%CI = [0.3–0.9]).	(S): 17/25 (9NAIs)
Wood et al., 2005c	Participants of VIDUS cohort	400	Evaluative, observational study	Epidemiological characteristics of PWID attending the SIS	From 12/01/2003 to 05/01/2004	Age <30 years (OR = 1.6, 95%CI = [1.0–2.7]), unstable housing (OR = 1.7, 95%CI = [1.2–2.7]), public injection (OR = 2.6, 95%CI = [1.7–3.9]), daily injection of heroin (OR = 2.1, 95%CI = [1.3–3.2]) or cocaine (OR = 1.6, 95%CI = [1.1–2.5]), history of overdose (OR = 2.7, 95%CI = [1.2–6.1]), and HIV infection (30%).	(S): 17/28 (6NAIs)
Kimber et al., 2003	MSIC users (exhaustive population)	2696	Descriptive prospective study	Epidemiological characteristics of PWID attending the SIS	From 06/05/2001 to 04/30/2002	Approximately 70% male, age 31 years, 11% involved in prostitution, 43% inject daily, 40% injection in public areas, 56% live with social allowances, 45% history of overdose, 19 years-old at first injection, 53% injected heroin.	(S): 21/28 (6NAIs)
Reduce morbidity and mortality related to OD:							
Marshall et al., 2011	SEOSI cohort + BCCS register	290 overdoses	Analytical, retrospective cross-sectional repeated study	Impact of SIS opening on overdose mortality	From 01/01/2001 to 09/20/2003 and from 09/21/2003 to 31/12/2005	Significant reductions in the number of overdoses within 500 m of the SIS (35%) were observed compared with the rest of Vancouver (9.3% reduction).	Scores: NA (experimental study)
Salmon et al., 2010	NSW ambulance service patient report data collection, Sydney		Evaluative study "before and after"	MSIC impact on the number of calls of ambulances for overdoses near the MSIC	36 months before to 60 months after MSIC opening (from 05/1998 to 05/2006)	During the open hours of the MSIC, the number of calls decreased by 68% in the vicinity of the SIS (area = 1.5 km^2).	Scores: NA (experimental study)
Milloy et al., 2008b	Users of Vancouver's SIS	766,486 injections	Simulation study	Estimate number of overdoses avoided since the opening of the SIS	From 03/01/2004 to 02/06/2008	SIS avoided 1004 overdoses, including 453 life-threatening overdoses. There were no deaths. Between 1.9 and 11.7 overdose deaths have been avoided.	Scores: NA (experimental study)
Milloy et al., 2008a	Participants of SEOSI cohort	1090	Evaluative observational study	SIS's impact and factors associated with overdoses	From 12/01/2003 to 12/31/2005	Approximately 58.53% reported a history of overdose, and between 8 and 12% reported an overdose in the last six months. Factors found: prostitution (aOR = 1.45, 95%CI = [1.07–1.99]) and public injection (aOR = 1.50, 95%CI = [1.09–2.06]). SIS attendance for more than 75% of injections was not associated with an increase in overdoses (OR = 1.05).	S: 18/25 (9NAIs)
Kerr et al., 2007b	Participants of SEOSI cohort	50	Qualitative study, representative sample	Evaluation of the impact on overdoses according to PWID	From 11/2005 to 02/2006	Speed and quality of care, advice given, and injection in safety conditions.	Scores: NA (Qualitative study)
Kerr et al., 2006b	Participants of SEOSI cohort	1046	Descriptive study	Incidence and care of overdoses at SIS	From 03/01/2004 to 02/06/2008	There were 336 overdoses in 90 different individuals. There were no deaths. Administration of oxygen in 87% of cases, of naloxone in 27% of cases, and transfer to the hospital in 21% of cases.	S: 24/26 (8NAIs)

Table 1 (*Continued*)

Authors and publication date	Population	Total of participants	Study design	Study purposes	Study period	Main findings of the study	Studies quality assessment with STROBE (S) or CHEERS (C) scores
Van Beek et al., 2004	MSIC users	3747	Descriptive prospective study	Incidence, characteristics and care of overdoses at MSIC	From 05/06/2001 to 10/31/2002	Approximately 409 overdoses, no deaths. Heroin injection in 80% of cases and 67% in combination with alcohol or benzodiazepines, a quantity greater than the daily dose, and a recent period of abstinence. Oxygen in 70% of cases, naloxone in 25% of cases. Supported in five minutes in 76% of cases.	S: 17/27 (7NAIs)
Reduce the risks associated with the injection and educate to safe injection:							
Milloy and Wood, 2009	Studies (22) (23) (24)		Evaluative observational meta-analysis	SIS impact on syringe sharing		Global estimation calculated a 69% reduction in needle sharing among PWID attending the SIS.	Scores: NA (meta-analysis)
Salmon et al., 2009a	MSIC users (exhaustive population)	9552	Descriptive and analytical, prospective study	Estimate of the rate problems related to injection and associated factors	From 05/01/2001 to 04/30/2007	Approximately 29% had problems related to the injection. Approximately 10% had an injury or illness related to the injection. Main problems: difficulty finding a vein (18%), scarring or bruising (14%), and swelling of hands/feet (7%). Major diseases: abscess or cutaneous infection (6%), thrombosis (4%), sepsis (2%), and endocarditis (1%). Factors associated with disorders: female injecting the drug (except heroin), antecedent of dependence program, and history of overdose, prostitution, recent public injecting, and sharing needles.	S: 23/29 (5NAIs)
Fast et al., 2008	Participants of SEOSI cohort	50	Qualitative study, representative sample	SIS's impact of education on injection practices	From 11/2005 to 02/2006 to 03/2007	SIS has corrected or fills gaps in the hygienic and safe handling of the injections.	Scores: NA (Qualitative study)
Wood et al., 2008	Participants of SEOSI cohort	1087	Analytical study	Factors related to the request of an education for safe injection	From 03/01/2004 to 03/01/2005	Factors associated: female gender (aOR = 1.55, 95%CI = [1.18–2.4], needing help injecting (aOR = 1.52, 95%CI = [1.26–1.84], binge consumption of drugs (aOR = 1.37, 95%CI = [1.14–1.64]) and the use of an SIS for more than 75% of injections(aOR = 1.47, 95%CI = [1.22–1.77]).	S: 23/29 (5NAIs)
Stoltz et al., 2007b	Participants of SEOSI cohort	760	Evaluative observational study	SIS's impact on injection practices	From 07/10/2004 to 06/30/2005	SIS use is associated with positive changes in injecting practices: decreased the reuse of syringes (aOR = 2.04, 95%CI = [1.38–3.01]), decreased injections in public places (aOR = 2.79, 95%CI = [1.93–3.87]), taking the time needed (aOR = 2.7, 95%CI = [2.03–3.85]), use of clean water (aOR = 3, 95%CI = [2.13–4.18]), cooking/filtering drugs (aOR = 2.76, 95%CI = [1.84–4.15]), tie off prior to injection (aOR = 2.6, 95%CI = [1.58–4.37]), and safe disposal of syringes (aOR = 2.13, 95%CI = [1.47–3.09]).	S: 21/27 (7NAIs)
Kerr et al., 2005c	Participants of VIDUS cohort	431	Analytical, comparative, cross-sectional study	Factors associated with syringe sharing	From 12/01/2003 to 06/01/2004	In logistic regression analyses, use of the SIF was independently associated with reduced syringe sharing (aOR = 0.30, 95%CI = [0.11–0.82], $p = 0.02$) after adjustment. In univariate analyses, significant factors associated was: need help to inject (aOR = 2.94, 95%CI = [1.59–5.42]), binge consumption (aOR = 2.04, 95%CI = [1.05–3.95], and regular injection of heroin(aOR = 1.72, 95%CI = [0.95–3.13]) or cocaine(aOR = 1.70, 95%CI = [0.93–3.06]).	S: 25/29 (5NAIs)

Wood et al., 2005b	Participants of SEOSI cohort	582	Analytical comparative, study	Factors associated with needle sharing according to HIV seropositivity	From 03/22/2004 to 10/22/2004	Factors associated: HIV-: public injecting (OR = 7.07, 95%CI = [2.16–23.13]) and the need help to inject (OR = 2.59, 95%CI = [1.42–4.74]); HIV+ daily injection of cocaine (OR = 3.42, 95%CI = [1.15–10.2]) and shooting gallery use (OR = 6.16, 95%CI = [1.75–21.70]). Among HIV-, exclusive SIS use is associated with a decrease in needle sharing (OR = 0.14, 95%CI = [0.00–0.78]), which is not observed to be statistically significant in HIV+ (OR = 0.94, 95%CI = [0–7.90]).	S: 21/29 (5NAIs)
Wood et al., 2005d	Participants of SEOSI cohort	874	Descriptive and analytical l study	Incidence and factors associated with receiving an education on the safe injection practice at SIS	From 05/31/2003 to 10/22/2004	Approximately 33.5% received an education. Factors associated: need help to inject (aOR = 2.20, 95%IC = [1.62–2.98]), prostitution(aOR = 1.54, 95%CI = [1.09–2.16]) and a few years of experience(aOR = 0.99, 95%CI = [0.97– 1.00]).	S: 18/29 (5NAIs)
Provide primary health care and improve the health of PWID:							
Lloyd-Smith et al., 2010	Participants of SEOSI cohort	1083	Descriptive and analytical study	Incidence and factors associated with hospitalization due to cutaneous infection or other cutaneous complication, owed to injection	From 01/01/2004 to 12/31/2005	Approximately 9% of participants were hospitalised, including 49% for cutaneous disorders caused by injection. Associated factors: HIV seropositivity (aOR = 1.79, 95%CI = [1.16–2.75]), orientation by an SIS nurse (aOR = 5.38, 95%CI = [3.39–8.55]). The hospital stay was significantly shorter among participants sent by an SIS nurse compared with those who were not sent by one (4 days (95%CI = [2–7]) vs. 12 days (95%CI = [5–33])).	S: 27/33 (1NAI)
Lloyd-Smith et al., 2009	Participants of SEOSI cohort	1080	Descriptive and analytical study	Incidence and factors associated to health care provided to a cutaneous infection due to injection	From 12/01/2003 to 01/31/2008	Approximately 27% received care, 65% of whom attended the SIS for this purpose. Factors associated with receiving this care included female gender (aOR = 1.87, 95%CI = [1.32–2.64]), unstable housing(aOR = 1.39, 95%CI = [1.02–1.88]), and daily heroin injection(aOR = 1.52, 95%CI = [1.13–2.4]).	S: 27/30 (4NAIs)
Marshall et al., 2009	Participants of SEOSI cohort	794	Descriptive study	Condom use during sexual relations among PWID	From 12/2003 to 12/2005	The proportion of individuals using a condom during every act of intercourse increased by 8% over the two years of the study. The main predictive factor was HIV seropositivity (aOR = 2.23, 95%CI = [1.51–3.31]).	S: 26/33 (1NAI)
Small et al., 2009	Participants of SEOSI cohort	50	Qualitative study, representative sample	PWID Interests of the site, qualitative study	From 11/2005 to 02/2006	Access to a primary care facility with a competent and experienced staff, devoid of judgment, and a wide variety of care. Social assistance.	Scores: NA (Qualitative study
Lloyd-Smith et al., 2008	Participants of SEOSI cohort	1065	Analytical study	Factors associated with risk of developing a cutaneous injection-related infection	From 01/01/2004 to 12/31/2005 to 12/31/2005 to 02/2006	Approximately 6–10% of participants reported cutaneous injection-related infections. Factors associated: female gender (aOR = 1.68, 95%CI = [1.16–2.43]), unstable housing (aOR = 1.49, 95%CI = [1.10–2.03]), borrowing used syringes (aOR = 1.60, 95%CI = [1.03–2.48]), requiring help to inject (aOR = 1.42, 95%CI = [1.03–1.94]) and daily cocaine injection (aOR = 1.41, 95%CI = [1.02–1.95]).	S: 23/29 (5NAI)

Table 1 (*Continued*)

Authors and publication date	Population	Total of participants	Study design	Study purposes	Study period	Main findings of the study	Studies quality assessment with STROBE (S) or CHEERS (C) scores
Small et al., 2008	Participants of SEOSI cohort	50	Qualitative study, representative sample	SIS's impact on access to care and treatment of infections following injection		SIS seemed to favor access to care. Its advantages: competent staff and non-judgmental, transfer to a hospital if necessary, availability, education/safe injection, and transfer to other medical and social structures.	Scores: NA (qualitative study)
Access to addiction treatment/program:							
DeBeck et al., 2011	SEOSI cohort	1090	Evaluative observational, analytical and study	SIS impact in the establishment of a withdrawal program, including treatment with methadone	From 12/01/2003 to 06/01/2006	The cumulative incidence of injection cessation was 23% (95%CI = [16.2–29.9]). Factors associated with the initiation of addiction treatment: regular attendance at the SIS (aHR = 1.33, 95%CI = [1.04–1.72]), interviews with an addiction counselor (aHR = 1.54, 95%CI = [1.13–2.08]) and the use of methadone treatment, (aHR = 1.57, 95%CI = [1.02–2.40]). The cumulative incidence of entry into addiction treatment was 57.21% (95%CI = [50.9–63.5]).	S: 22/29 (5NAIs)
Milloy et al., 2010	Participants of SEOSI cohort	889	Analytical study			On average, 21% of individuals wanted but were unable to access this dependence treatment. The main obstacle in access was the waiting list. Factors associated with this inability: homelessness (OR = 1.47, 95%CI = [1.09–1.98]), daily heroin consumption(OR = 1.47, 95%CI = [1.13–1.90]), recent incarceration(OR = 1.62, 95%CI = [1.25–2.09]), and sharing needles(OR = 1.67, 95%CI = [1.09–2.56]).	S: 21/30 (4NAIs)
Kimber et al., 2008b	MSIC users (exhaustive population)	3715	Descriptive and analytical study	Study of processes and predictive factors of orientation to medical and social care, in particular to a addiction treatment	From 05/2001 to 10/2002	Approximately 16% (577 PWID) have received counseling, 12% (443) for addiction treatment (77% of PWID oriented). Entering into a detoxification program was confirmed for 20% of PWID oriented. Factors associated with receiving a written orientation for a detoxification program: frequent use of the MSIC(aOR = 1.6, 95%CI = [1.2–2.2]), majority heroin injection (aOR = 1.9, 95%CI = [1.2–2.2]), and obtaining a high school diploma (aOR = 1.6, 95%CI = [1.2–2.2]). Factors associated with treatment entry: prostitution (aOR = 2.6, 95%CI = [1.1–5.8]) and daily injection (aOR = 2.3, 95%CI = [1.1–5.2]). A psychiatric history was negatively associated with entry into treatment (aOR = 0.2, 95%CI = [0.5–0.7]).	S: 23/31 (3NAIs)
Wood et al., 2007	Participants of SEOSI cohort	1031	Evaluative observational study	SIS's impact on the use of an detoxification service by PWID	From 12/01/2003 to 03/01/2005	Attendance service detoxification use (OR = 1.32, 95%CI = [1.11–1.58]), initiation of methadone treatment (RR = 1.56, 95%CI = [1.04–2.34) and addiction treatment (RR = 3.73, 95%CI = [2.57–5.39]) increased one year after the SIS opening. SIS attendance declined in the months following the initiation of addiction treatment.	Scores: NA (experimental study)
Wood et al., 2006d	partIcipants of SEOSI cohort	1031	Evaluative observational study	SIS's impact and factors associated with the use of a detoxification program	From 12/01/2003 to 03/01/2005	Approximately 18% started a detoxification program. Factors associated: weekly SIS attendance (aOR = 1.72, 95%CI = [1.25–2.38]) interview with addiction counselor (aOR = 1.98, 95%CI = [1.26–3.10]), history of contact with a detoxification service (aOR = 2.43, 95%CI = [1.41–4.22]) and unstable housing (aOR = 1.42, 95%CI = [1.06–1.90]).	S: 14/27 (7NAIs)

Reduce public nuisances:							
McKnight et al., 2007	Participants of SEOSI cohort	714	Analytical study	Factors associated with public injection	From 06/02/2004 to 07/2005	Factors found: homelessness (aOR = 3.1, 95%CI = [1.46–6.58], recent incarceration (aOR = 1.77, 95%CI = [1.15–2.73]), needle sharing (aOR = 5.39, 95%CI = [1.96–14.78]), the need for help injecting (aOR = 1.60, 95%CI = [1.01–2.54], daily heroin injection (aOR = 2.71, 95%CI = [1.84–3.98]) and waiting time at the SIS (aOR = 3.26, 95%CI = [2.11–5.6]).	S: 23/33 (1NAI)
Wood et al., 2004	PWID in the 10 city blocks surrounding the Vancouver's SIS		Evaluative comparative prospective study	SIS's impact on nuisances related injections into surrounding public areas	From 6 weeks before to 12 weeks after SIS opening	Statistically significant reductions were found when comparing the before and after opening of SIS in: the daily mean numbers of PWID injecting in public (4.3, IQR = [4.0–4.3] vs. 2.4 IQR = [1.5–3.0]; $p = 0.022$), publicly discarded syringes (11.5, IQR = [7.3–14.3] vs. 5.3, IQR = [3.0–8.0]; $p = 0.010$) and injection related litter (601.7, IQR = [490.0–830.3] vs. 305.3, IQR = [246.3–387.0]; $p = 0.014$). Using the unadjusted regression model, estimations of the predicted mean daily level of each public order measure in the periods before and after the opening of the safer injecting facility were: number of people injecting in public 4.3, (95%CI = [3.5–5.4]) vs. 2.4 (95%CI = [1.9–3.0]), dropped syringes 11.5 (95%CI = [10.0–13.2]) vs. 5.4 (95%CI = [4.7–6.3]) and injection-related waste outside the SIS 601.7 (95%CI = [590–613]) vs. 305.3 (95%CI = [305–317]).	Scores: NA (experimental study)
Impact of SISs on local drug-related crime, violence and drug trafficking:							
Fitzgerald et al., 2010	Computerized reports of NSW police, King Cross		Evaluative observational, longitudinal, retrospective study,	Impact of the SIS opening on local crime (King Cross (KC) area) compared to the rest of the city	From 01/1999 to 03/2010	Overall, there was no significant difference in the drug crimes in the vicinity of the SIS. Discordant trends with the rest of Sydney were as follows: theft with a firearm (stable at KC, vs. downward trend in the rest of Sydney) and retail theft (up at KC vs. steady in the rest of Sydney). Arrests for possession or trafficking of drugs remained stable at KC unlike the rest of Sydney (increase in amphetamine possession and cocaine trafficking; decreased traffic and possession of narcotics).	S: 10/21 (13NAIs)
Milloy et al., 2009	Participants of SEOSI cohort	902	Analytical study	Connection between the SIS use and recent incarceration, and factors associated with incarceration	From 07/01/2004 to 11/30/2005	The recent incarceration rate remained stable between 25 and 33% throughout follow-up, and frequent use of the SIS was not associated with this rate (aOR = 0.99, 95%CI = [0.79–1.23]). Associated factors included the following: precarious housing (aOR = 3.63, 95%CI = [2.70–4.88]), public injection (aOR = 1.60, 95%CI = [1.11–2.31]) and frequent heroin injection (aOR = 1.38, 95%CI = [1.11–1.71]).	S: 20/32 (2NAIs)
Wood et al., 2006a	Vancouver Police Department statistics		Evaluative observational study	Study of crime around the SIS before and after opening	From 10/01/2003 to 09/30/2005	No increase in the rate of drug trafficking (124 [SD = 94] vs. 116 [SD 24]; t-stat = 0.26, df = 11, $p = 0.803$) or the number of assaults or robberies (174 [SD = 25] vs. 180 [SD = 21]; t-stat = -0.59, df = 11, $p = 0.565$). Decrease in the number of thefts and car burglaries (302 [SD = 57] vs. 227 [SD = 48]; t-stat = 4.22, df = 11, $p = 0.001$).	S: 15/32 (2NAIs)

Table 1 (*Continued*)

Authors and publication date	Population	Total of participants	Study design	Study purposes	Study period	Main findings of the study	Studies quality assessment with STROBE (S) or CHEERS (C) scores
Freeman et al., 2005	Records of the King Cross local police, Australia		Evaluative observational study	Impact of the SIS opening on local crime compared to the rest of the city	From 09/1999 to 10/2002	No change in the incidence of theft or the influx of new users or dealers. Increased number of loiterers	Scores: NA (experimental study)
SISs' impact on local number of PWID:							
Kerr et al., 2007c	Participants of SEOSI cohort	1065	Evaluative observational study	SIS's impact on initiation and encouragement of injection drug	From 12/01/2003 to 10/21/2005	An individual was be injected in the SIS for the first time (extrapolation: 5 initiations in SIS, 95%CI = [2–12], 70 initiations outside SIS, 95%CI = [55–80]). Compared with the study of E. ROY (100 initiations in Vancouver street/year, 95%CI = [81–122]), the SIS did not seem to encourage the initiation of injection drug use.	S: 18/31 (3NAIs)
Kerr et al., 2006a	Participants of VIDUS cohort	871	Evaluative comparative, prospective, study	Impact of SIS's opening on addictologic history of PWID	From 03/22/2002 to 03/22/2003 and from 03/22/2003 to 03/22/2004	There was no significant difference in the relapse rate (17% vs. 20%), stopping injections (17% vs. 15%), or the introduction or discontinuation of methadone (11% vs. 7% and 13 vs. 11%, respectively).	S: 19/29 (5NAIs)
Cost-benefits and cost-effectiveness of SISs:							
Jozaghi et al., 2013	PWID Montreal	Between 4300 and 12,500 estimated	Evaluative study by mathematical modeling	Cost-benefits and cost-effectiveness analysis about HIV and HCV infections of a SIS in Montreal	2012	It was estimated that the addition of each SIS in Montreal (up-to a maximum of 3) will, on average, prevent 11 cases of HIV and 65 cases of HCV each year. There was a net cost saving of CDN$0.686 million for HIV and CDN$0.8 million for HCV for each additional SIS each year. Net average benefit-cost ratio of 1.21: 1 for both HIV and HCV.	Scores: NA (mathematical modeling)
Pinkerton, 2011	PWID of Downton Eastside area, Vancouver	5000 estimated	Evaluative study	Cost-benefit analysis of Vancouver's SIS		SISs were estimated to prevent 5–6 new HIV infections per year (95%CI = [4.0–7.6]).	Scores: NA (mathematical modeling)
Andresen and Boyd, 2010	PWID of Downton Eastside area, Vancouver	5000 estimated	Evaluative study by mathematical modeling	Cost-benefit analysis of Vancouver's SIS	Costs of 2007	The SIS would prevent 35 new HIV infections and 3 prevented deaths per year (absolute values).	C: 14/23 (4NAIs)
Pinkerton, 2010	Vancouver PWID	13,500 estimated	Evaluative study by mathematical modeling	SIS cost-benefits estimation about HIV infection	2008	Approximately 47 HIV infections are avoided, contributing to cost-effectiveness (cost HIV infections: $ 7.8 M; cost of Insite: $ 3 M).	Scores: NA (mathematical modeling)
Bayoumi and Zaric, 2008	Vancouver PWID infected with HIV and HCV	Estimated to be between 3000 and 20,000	Evaluative study by mathematical modeling	Evaluating the cost-effectiveness of the SIS in Vancouver for the next 10 years	Simulation about 10 years	Calculated savings: $ 14 million, 920 years of life, and 1191 new HIV and 54 new HCV infections.	C: 21/23 (4NAIs)
PWID's opinions about SISs:							
Jozaghi and Andresen, 2013	PWID Vancouver, Surrey, Victoria (Canada)	31	Qualitative study	PWID opinion about opening another SIS	10/2009 and 2011	SISs reduced overdose deaths, the risk of transmission of HIV and HCV, public injections, and the disposal of syringes in public areas and provided safe injection conditions (no violence, no police) and increase access to primary healthcare.	Scores: NA (qualitative study)

McNeil et al., 2013	Cohort VANDU	23	Qualitative study	PWID opinions and ethnographic observations about assisted injection practices	from 09/2011 to 12/2011	Women and people with disabilities were more likely to need help injecting and, therefore, could not use an SIS. Assisted injection practices at SISs would allow these individuals to reduce health risks (including HIV) and the violence suffered during assisted injections performed in unsafe conditions.	Scores: NA (qualitative study)
DeBeck et al., 2011	Cohort VIDUS	640	Cross-sectional repeated study	Estimating the probability to use the Vancouver's SIS	From 12/2001 to 05/2003 and from 12/2003 to 11/2005	Approximately 72% of PWID who reported being interested in SISs had secondarily attended one. Initial willingness to use a SIF was significantly associated with later use of the facility (OR = 2.20, 95%CI = [1.47–3.30]).	S: 26/32 (2NAIs)
Small et al., 2012	Participants of SEOSI cohort	50	Qualitative study, representative sample	PWID motivations to attend Vancouver's SIS	From 11/2005 to 02/2006	The purposes of PWID in attending SISs were as follows: seeking safety, receiving sterile equipment and adequate care in case of overdose.	Scores: NA (qualitative study)
Small et al., 2011b	Participants of SEOSI cohort	50 PWID interviews + SIS's database	Qualitative and descriptive cross-sectional study	Description of SIS functioning and of local traffic and drug use, and their impact on SIS use by PWID	Interviews: from 11/2005 to 02/2006; datas: from 09/01/2008 to 08/31/2009	Waiting time >15 min or >3 people causes a departure from SISs to inject in a public area. Waiting time is increased by the absence of limitation of time spent in the injection room and by the day of payment of social benefits. Consequence: PWID's suspension. Other obstacles to the use of the SIS: the prohibition of sharing drugs and of physical assistance to inject.	Scores: NA (qualitative study)
Small et al., 2011a	Participants of SEOSI cohort	50	Qualitative study, representative sample	PWID motivations to attend Vancouver	From 02/2005 to 02/2006	The purposes of PWID in attending SIS were as follows: seeking safety and receiving sterile equipment and adequate care in the case of overdose.	Scores: NA (qualitative study)
Kral et al., 2010	San Fransisco PWID	602 (representative sample)	Sample survey	PWID opinion about opening a SIS in San Francisco	2008	Approximately 85% of subjects would be willing to use the SIS, and 50% would go daily. Associated factors: injection in public areas (aOR = 2.6, 95%CI = [1.6–4.1]), speedball injection (aOR = 2.5, 95%CI = [1.4–4.5]). More than two-thirds agree with the settlement, except having to live close to the SIS and having to be monitored by cameras and prove one's identity.	S: 18/29 (5NAIs)
Fairbairn et al., 2008	Women of SEOSI cohort	25	Qualitative study, sample survey	SIS impact on violence suffered by women who inject in the street	from 11/2005 to 03/2007	Refuge against interpersonal and structural violence, theft, and arrest by the police. Provides a source of advice.	Scores: NA (Qualitative study)
Kimber and Dolan, 2007	PWID of shooting gallery (SG)	115 PWID + 8 health workers in connection with PWID	Qualitative and descriptive, prospective cross-sectional study	Willingness, motivation and obstacles to the MSIC's use. MSIC impact on attendance SG	From 01/2001 to 10/2001	Approximately 31 PWID used a SG in the previous 6 months; 68% wanted to use the MSIC. Motivations: free access, hygiene and injection safety, professional help in case of OD. Obstacles: fear of the police, lookout media, distance between the place of purchase and MSIC, smoking prohibition. 69% decrease of syringes collected in SG after 6 months of opening and after 3 months, number of visits to MSIC >number of syringes collected for SG.	S: 12/31 (3NAIs)

Table 1 (*Continued*)

Authors and publication date	Population	Total of participants	Study design	Study purposes	Study period	Main findings of the study	Studies quality assessment with STROBE (S) or CHEERS (C) scores
Petrar et al., 2007	Participants of SEOSI cohort	1082	Evaluative study	Evaluation of PWID satisfaction on SIS	From 12/01/2003 to 09/30/2005	Approximately 75% inject more safely. 71% inject less in public and 56% report less unsafe syringe disposal. Approximately 95% are satisfied with the SIS. Obstacles: waiting time (5%), opening hours (7%), police presence (5%), and the distance to the SIS (12%).	S: 14/31 (3NAIs)
Green et al., 2004	Montreal PWID in public (SurvUDI study)	251	Analytical prospective cross-sectional study	PWID willingness to use a SIS and factors associated with this use	From 04/2001 to 02/2002	Approximately 76% were willing to use an SIS when it was described to them. Factors associated: injection as the main mode of drug use (aOR = 3.08, 95%CI = [1.24–7.63]), PWID think that SISs give a feeling of relief (aOR = 5.06, 95%CI = [2.27–11.28]) or accountability (aOR = 4, 95%CI = [1.79–8.95]), and history of overdoses (aOR = 2.43, 95%CI = [1.07–5.79].	S: 20/33 (1NAI)
Navarro and Leonard, 2004	Ottawa PWID in public	506	Descriptive analytical prospective cross-sectional study	Characteristics of Ottawa PWID in public in order to deduce the implications for SIS opening	From 10/2002 to 01/2003	Approximately 65% are injected in public in the previous 6 months, and 17% do this frequently. Factors associated: male sex (aOR = 2.33, 95%CI = [1.24–4.42]), homelessness (aOR = 6.62, 95%CI = [3.79–11.55]), injecting with more 5 persons (aOR = 3.72, 95%CI = [2.41–5.73]), early injections <20 years (aOR = 2.36, 95%CI = [1.40–3.98]), main injection of opiates (aOR 3.37, 95%CI = [1.01–5.5]), Injecting with use syringe (aOR = 3.12, 95%CI = [1.62–6.00]), prostitution with male clients (aOR = 3.07, 95%CI = [1.18–7.99]), and severe dependence (aOR = 1.09, 95%CI = [1.03–1.16]). Main reasons for public injection: convenience, confidentiality/privacy and immediate need to inject.	S: 22/32 (2NAIs)
Wood et al., 2003	Participants of VIDUS cohort	587	Descriptive analytical prospective study	Estimate the PWID proportion wishing to use a SIS and associated factors to this use	From 06/2001 to 06/2002	Approximately 37% were interested in using an SIS, and 49% were not interested. Factors associated with willingness to use an SIS: difficulties in obtaining sterile syringes (aOR = 2.07, 95%CI = [1.35–3.17]), needing help injecting (aOR = 1.52, 95%CI = [1.01 -2.30]), injection in public areas (aOR = 2, 95%CI = [1.27–3.16]), heroin injection (aOR = 1.81, 95%CI = [1.22–2.68]) and prostitution (aOR = 2.02, 95%CI = [1.31–3.12]).	S: 24/32 (2NAIs)
Fry, 2002	Sample PWID of Melbourne (Australia)	215	Descriptive prospective, cross-sectional study	PWID expectations and willingness to go to SIS	From 12/1999 to 02/2000	Approximately 89% were interested in an SIS if it were located in the zone of their drug purchases, and more 80% agree with the settlement. Obstacles to attendance: the prohibition to help(18%) and share injection drugs (34%).	S: 12/31 (3NAIs)
Van Beek and Gilmour, 2000	Sydney PWID attending needle exchange program	178	Descriptive, cross-sectional study, sample survey	Estimate of willingness to use a SIS and characteristics associated	2 days in 08/1999	Approximately 71% of users wished to use an SIS for their most recent injection; 83% of the 29% who did injected in public compared to 66% of the 71% who did injected in a private area. Obstacles: distance between the SIS and place of drug purchase, police presence, and lack of anonymity.	S: 15/31 (3NAIs)
Opinions of local residents, police and local policies toward SISs:							
Watson et al., 2012	Ottawa and Toronto police officers	18	Qualitative study	Study of police perceptions about Centers Supervised Consumption (CSC)	From 12/2008 to 01/2010	The participants had a strong and unanimous position against SISs; they thought that SISs do not solve the problem of addiction, send confusing messages about the acceptability of the use of illicit drugs, undermine efforts to maintain order, fail to reduce disease transmission rates, and create or exacerbate existing public problems.	Scores: NA (qualitative study)

Philbin et al., 2009	Key stakeholders who had direct or indirect interaction with PWID in Tijuana (Mexico)	40	Qualitative study	Exploring stakeholder perceptions of acceptability and feasibility of needle exchange program (NEP), syringe vending machines and SIS.	From August 2006 to March 2007	Approximately 66% of respondents supported at least one of the three programs. The most accepted program was the NEP (75%), which appeared feasible for 53% of respondents. The SIS was accepted by 58% of respondents and seemed feasible for 25% of them. Syringe vending machines were accepted by 65% of subjects and were 38% achievable. Many suggested raising awareness and education levels within the community, collaborating with religious and political leaders, and changing laws and policies.	Scores: NA (qualitative study)
DeBeck et al., 2008	SEOSI cohort	1090	Evaluative study	Impact of local police on SIS attendance	From 12/01/2003 to 12/31/2005	Approximately 16.7% were sent to the SIS by local police, and 2% learned of the SIS from the local police.	S: 18/33 (1NAI)
Cruz et al., 2007	Representative sample of the Ontario adult population	2411	Prospective study, sample survey	Public opinion regarding SIS's opening	2003	Approximately 60% are in favor. Expectations of the SIS: reduce deaths from overdose or infectious disease, reduce public nuisance associated with injection, and promote contact with the medical and social structures.	S: 27/32 (2NAIs)
O'Shea, 2007	PWID, key personnel and policy makers in the drug field	16 UDI +1 minister +9profession-nals	Qualitative study, without sampling	Evaluation of policy implications and acceptance of SIS opening in Dublin		Ten PWID felt it necessary to create an SIS to reduce the public nuisance of injections (also approved by professionals) and to inject in reassuring conditions. Thirteen PWID reported being willing to use an SIS. Professionals' responses were mixed, with those favorable believing that the SIS is part of the public health policy and those more cautious fearing the strength of public opinion.	Scores: NA (qualitative study)
Salmon et al., 2007	Random sample of local residents and business operators around the MSIC	Local residents: 540–326 business operators: 269–210	Descriptive, prospective, repeated cross-sectional study	Public opinion about SIS's opening	in10/2000, in10/2002 and in 11/2005	After the MSIC opening: less public injection (residents:33% vs 19%, $p < 0.01$; business operators: 38% vs 28%, $p < 0.03$), less syringes dropped (residents: 67% vs 40%, $p < 0.01$; business operators: 72% vs 57%, $p < 0.01$), and less complaints about PWID nuisances but no change in the number of drug deals (residents: 28% vs 26%, $p < 0.80$ et business operators: 33% vs 28%, $p < 0.26$). In 2005, the fears were as follows: encouraging drug use and attracting PWID and traffickers; inconveniences were as follows: negative image of the neighborhood, insecurity and crime, and dropping syringes.	S: 23/31 (3NAIs)
Thein et al., 2005	Sample of King Cross local residents and business operators, Sydney	Local residents: 540; business operators: 207	Prospective repeated cross-sectional study, sample survey	Public opinion about SIS's opening	in 10/2000 and in 10/2002	In 2000, approximately 58% (business operators) to 70% (residents) were in favor of the SIS. Views: SISs do not encourage drug use, do not complicate the drug enforcement, reduce public nuisances associated with injection, improve the health of users but do attract PWID.	S: 15/31 (3NAIs)

NA = Not Applicable; NAI = Not Applicable Item; OR = Odds Ratio; aOR = Ajusted Odds Ratio; 95%CI = 95%Confidence Interval; IQR = InterQuartile Range
ACCESS = AIDS Care Cohort to evaluate Exposure to Survival Services; BCCS = British Columbia Coroners Service; MSIC = Sydney Medically Supervised Injecting Centre; NSW = New South Wales; PWID = People Who Inject Drugs; SEOSI = Scientific Evaluation Of Supervised Injecting; SIS = Supervised Injection Services; UDI = Utilisateurs de Drogues Injectables (=injection drug users); VANDU = Vancouver Area Network of Drug Users; VIDUS = Vancouver Injection Drug Users Study.

studies (DeBeck et al., 2012; Green et al., 2004; Tyndall et al., 2006b). Among the 32 articles about cohort studies, 94% ($n = 30$) were performed in Vancouver, 3% ($n = 1$) in Sydney, and 3% ($n = 1$) in Barcelona.

Other non-cohort investigations consisted of 7 exhaustive population studies [4 descriptive studies (Fry, 2002; Kimber et al., 2003; Tyndall et al., 2006a; Van Beek et al., 2004), 3 descriptive and analytical studies (Kimber et al., 2008b; Salmon et al., 2009a, 2009b)], 13 articles about qualitative studies (Fairbairn et al., 2008; Fast et al., 2008; Jozaghi and Andresen, 2013; Kerr et al., 2007b; McNeil et al., 2013; O'Shea, 2007; Philbin et al., 2009; Small et al., 2009, 2008, 2012, 2011a, 2011b; Watson et al., 2012), 4 cross-sectional studies (Dubois-Arber et al., 2008; Navarro and Leonard, 2004; Salmon et al., 2007; Thein et al., 2005), 3 surveys (Cruz et al., 2007; Kral et al., 2010; Van Beek and Gilmour, 2000), 3 evaluative studies (Freeman et al., 2005; Kerr et al., 2006a; Wood et al., 2006a), 5 evaluative experimental studies (Kimber and Dolan, 2007; Marshall et al., 2011; Salmon et al., 2010; Small et al., 2011b; Wood et al., 2004), 1 meta-analysis (Milloy and Wood, 2009), 1 case-control study (Wood et al., 2005b), 2 mathematical modeling studies (Pinkerton, 2011, 2010), 3 cost-benefit/effectiveness studies (Andresen and Boyd, 2010; Bayoumi and Zaric, 2008; Jozaghi et al., 2013), and 1 simulation study (Milloy et al., 2008b).

Concerning the qualitative assessment of each study using the STROBE and CHEERS scales, the final score is reported in Table 1. This score was calculated from the sum of the applicable items for each study. The number of applicable items for each study can be found in the denominator. The details of each evaluation are available in the supplementary material. Twenty-two studies were not evaluated: 13 were qualitative studies, 6 were experimental studies, 2 were mathematical modeling studies and 1 was a meta-analysis.

3.2. Description of SIS users

We identified 14 articles that aimed to depict the profile of the most frequent SIS users. Eight of these studies were performed in a SIS in Vancouver (Hadland et al., 2014; Reddon et al., 2011; Richardson et al., 2008; Tyndall et al., 2006a, 2006b; Wood et al., 2006c, 2005a, 2005c), while the others were performed in SISs in Sydney (Kimber et al., 2008a, 2003; Salmon et al., 2009b; Stoltz et al., 2007a), Geneva (Dubois-Arber et al., 2008), Madrid and Barcelona (Bravo et al., 2009).

In these studies, it was found that the majority of SIS users were male, ranging from 30 to 35 years of age (Dubois-Arber et al., 2008; Kimber et al., 2003; Tyndall et al., 2006a; Wood et al., 2006c), with frequent housing insecurity and unemployment (Kimber et al., 2003; Richardson et al., 2008) and with a previous history of incarceration. Resorting to prostitution was identified in 10–39% of users (Kimber et al., 2003; Wood et al., 2006c). The most frequent drugs used were, in descending order, heroin, cocaine, opiates, amphetamines, and their derivatives (Kimber et al., 2003; Tyndall et al., 2006a). In Vancouver, compared with other PWID, SIS users exhibited more episodes of overdose (OR = 2.7, 95%CI = [1.2–6.1]) and a higher frequency of daily drug injection (heroin: OR = 2.1, 95%CI = [1.3–3.2]), cocaine: OR = 1.6, 95%CI = [1.1–2.5]) and of public injecting (OR = 2.6, 95%CI = [1.7–3.9]) before the opening of the SIS (Wood et al., 2005c). Eighty-eight percent of SIS users were seropositive for HCV (Wood et al., 2005a), and between 2% (Salmon et al., 2009b) and 30% (Wood et al., 2005c) of them were positive for HIV. For these PWID, syringe sharing was more regular before SIS use (OR = 2.13, 95%CI = [1.49–3.06])(Tyndall et al., 2006b) and was a factor associated with these blood-transmissible viral infections (aOR = 1.8, 95%CI = [1.1–2.9]) (Wood et al., 2005a).

3.3. The impact of SISs on overdose-induced mortality and morbidity

Seven studies evaluated whether SISs successfully reduced harm among SIS users (Kerr et al., 2006b, 2007b; Marshall et al., 2011; Milloy et al., 2008a, 2008b; Salmon et al., 2010; Van Beek et al., 2004). In the different studies, no death by overdose was ever reported within the SISs in which this parameter was evaluated (Kerr et al., 2006b; Milloy et al., 2008b; Van Beek et al., 2004). In Vancouver, SIS implementation led to a 35% decrease in the number of lethal overdoses in the vicinity of the SIS (Marshall et al., 2011); thus, it was evaluated that between 2 and 12 cases of lethal overdose might have been avoided each year (Milloy et al., 2008b). In Sydney, the number of calls for ambulances related to overdose was 68% lower during the operational hours of the SIS (Salmon et al., 2010; Van Beek et al., 2004).

3.4. The impact of SISs on injection behaviors and their consequences

Eight studies addressed the reduction in other harms, especially syringe sharing during injection (Fast et al., 2008; Kerr et al., 2005c; Milloy and Wood, 2009; Salmon et al., 2009a; Stoltz et al., 2007b; Wood et al., 2005b, 2005d, 2008). Studies conducted in Vancouver and Sydney showed that the regular use of SISs was associated with decreased syringe sharing (aOR = 0.30, 95%CI = [0.11–0.82]) (Kerr et al., 2005c), syringe reuse (aOR = 2.04, 95%CI = [1.38–3.01]), and public-space injection (aOR = 2.79, 95%CI = [1.93–3.87]) (Stoltz et al., 2007b). In a meta-analysis, Wood and Milloy estimated that frequent use of SISs was associated with a 69% reduced likelihood of syringe sharing (Milloy and Wood, 2009). The main injection-related issues reported by PWID were difficulty finding a vein, the infectious aftermath of injections, and lack of education on safer injection practices (Fast et al., 2008; Salmon et al., 2009a). Concomitantly, regular SIS use fostered the use of sterile injection materials and the elimination of soiled materials (Fast et al., 2008; Stoltz et al., 2007b) and was associated with more frequent requests for education on safer injection practices (aOR = 1.47, 95%CI = [1.22–1.77]) (Wood et al., 2008).

3.5. The impact of SISs on reducing drug-related harms

We found 6 studies that addressed this issue (Lloyd-Smith et al., 2010, 2009, 2008; Marshall et al., 2009; Small et al., 2009, 2008). All of the studies were sourced from the Vancouver cohort of SIS users. There was no direct finding that SIS use induced a decrease in viral transmission. However, SIS use was associated with increased condom use during intercourse (8% in 2 years) (Marshall et al., 2009). Moreover, approximately 25% of the SIS users received care for injection-related cutaneous lesions (Lloyd-Smith et al., 2009). PWID reported that the SISs assessed, cared for and oriented them quickly, efficaciously, and without any judgment (Small et al., 2009, 2008).

3.6. The impact of SISs on access to addiction treatment programs

This issue was assessed in 5 studies, among which 4 were cohort studies from the Vancouver team and 1 was an exhaustive population study in Sydney. These publications stated that SIS attendance was associated with a global increase in diverse types of dependence care, i.e., referral to an addiction treatment center, initiation of a detoxification program (OR = 1.32, 95%CI = [1.11–1.58]; $p = 0.002$ (Wood et al., 2007)), and initiation of methadone therapy (aHR = 1.57, 95%CI = [1.02–2.40; DeBeck et al., 2011; Kimber et al., 2008b; Milloy et al., 2010; Wood et al., 2007, 2006d). Approximately 20% of PWID were interested in joining a dependence care

program (Milloy et al., 2010; Wood et al., 2006d), and in Sydney's SIS, 25% of the interested subjects started such a program (Kimber et al., 2008b). Among the PWID who used the Vancouver SIS, 18% secondarily engaged in a detoxification program (Wood et al., 2006d), 57% started an addiction treatment, and 23% stopped injecting drugs (DeBeck et al., 2011).

3.7. The impact of SISs on the nuisance induced by drug use in public spaces

Six studies addressed these questions, of which 4 were performed in the Vancouver SIS (McKnight et al., 2007; Petrar et al., 2007; Stoltz et al., 2007b; Wood et al., 2004) and 2 in the Sydney SIS (Salmon et al., 2007; Thein et al., 2005). In Wood et al. (2004), the number of syringes dropped in the hereabouts of the Vancouver SIS was counted and compared before and after the SIS opened. After the SIS was opened, the authors found a reduction in the daily mean number of PWID injecting in public (4.3, IQR = [4.0–4.3] vs. 2.4 IQR = [1.5–3.0]; $p = 0.022$), syringes dropped (11.5, IQR = [7.3–14.3] vs. 5.3, IQR = [3.0–8.0]; $p = 0.010$) and injection-related litter (601.7, IQR = [490.0–830.3] vs. 305.3, IQR = [246.3–387.0]; $p = 0.014$).

The other studies were surveys carried out among PWID in Vancouver (McKnight et al., 2007; Petrar et al., 2007; Stoltz et al., 2007b) or among non-drug users who lived or worked in the vicinity of the SIS in Sydney (Salmon et al., 2007; Thein et al., 2005). Between the periods before and after the opening of the Sydney SIS, this population noted less public injection (residents: 33% vs. 19%, $p < 0.01$; business operators: 38% vs. 28%, $p < 0.03$), less syringes dropped (residents: 67% vs. 40%; business operators: 72% vs. 57%, $p < 0.01$) and less complaints about PWID nuisances, but no change in the number of drug deals (residents: 28% vs. 26%, $p < 0.80$; business operators: 33% vs. 28%, $p < 0.26$) (Salmon et al., 2007). In Vancouver, SIS attendance was associated with a reduction in self-declared public drug injecting (aOR = 2.79, 95%CI = [1.93–3.87]) and syringe dropping (aOR = 2.13, 95%CI = [1.47–3.09]) (Petrar et al., 2007; Stoltz et al., 2007b).

3.8. The impact of SISs on local drug-related crime, violence, and trafficking

Four studies evaluated this issue in Vancouver (Milloy et al., 2009; Wood et al., 2006a) and Sydney (Fitzgerald et al., 2010; Freeman et al., 2005), among which 3 included local police data (Fitzgerald et al., 2010; Freeman et al., 2005; Wood et al., 2006a). In Vancouver, no increase in crime, violence or drug trafficking around the SIS was found after the opening of the SIS (Wood et al., 2006a). In Sydney, compared to the other cities, data collected over a period of 10 years also revealed no increase in offenses related to the trafficking or consumption of drugs in the areas that surrounded the SIS (Fitzgerald et al., 2010; Freeman et al., 2005).

3.9. Impact of SISs on the amount of local PWID

Two studies performed in the Vancouver SIS addressed whether the SIS induced an increase in the number of local PWID (Kerr et al., 2007c, 2006a). These studies reported that 25 months after the SIS opened, there was no increase in the local number of PWID (Kerr et al., 2007c), no decrease in the number of PWID who started methadone therapy (11% vs. 7%), and no increase in relapse rates (17% vs. 20%; Kerr et al., 2006a). Nevertheless, the opening of the SIS did not reduce the number of PWID who injected drugs (17% vs. 15%; Kerr et al., 2006a).

3.10. Medico-economic assessment of SISs

Four studies were performed to assess whether the SIS was a cost-saving system. All of them were carried out on the Vancouver SIS (Andresen and Boyd, 2010; Bayoumi and Zaric, 2008; Pinkerton, 2011, 2010). The authors calculated that the SIS could prevent 5–35 new HIV infections (Andresen and Boyd, 2010; Pinkerton, 2011) and 3 deaths by overdose per year (Andresen and Boyd, 2010). Over 10 years, this prevention would represent a cost savings of $14 million, a gain of 920 years of life, and an avoidance of 1191 new HIV infections and 54 new HCV infections (Bayoumi and Zaric, 2008). Similarly, a study that used mathematical modeling found that opening a SIS in Montreal may be viable in terms of the cost-benefit and cost-effectiveness (Jozaghi et al., 2013).

3.11. The opinion of PWID on SISs

Fifteen surveys aimed to evaluate the opinion of PWID on the pros and cons of SISs in numerous cities: Vancouver (DeBeck et al., 2011; Fairbairn et al., 2008; Jozaghi and Andresen, 2013; McNeil et al., 2013; Petrar et al., 2007; Small et al., 2012, 2011a, 2011b; Wood et al., 2003), Sydney (Kimber and Dolan, 2007; Van Beek and Gilmour, 2000), Ottawa (Navarro and Leonard, 2004), Montreal (Green et al., 2004), Melbourne (Fry, 2002) and San Francisco (Kral et al., 2010). Before the opening of the first SISs in Canada and Australia, between 54% and 89% of the local PWID declared that they were willing to use such services (Fry, 2002; Van Beek and Gilmour, 2000). One survey found that 72% of the same PWID interviewed actually visited the SIS (DeBeck et al., 2012). The main factors associated with visiting the SIS were the desire to inject safely and quietly, the desire to avoid public spaces, previous episodes of overdose, and the need for help to inject (Fry, 2002; Green et al., 2004; Van Beek and Gilmour, 2000). The main reasons reported for not visiting the SIS were the prohibitions against sharing drugs and helping other PWID inject drugs within the SIS (Fry, 2002; Van Beek and Gilmour, 2000).

Seven surveys were published regarding the opinions of PWID on SISs (DeBeck et al., 2012; Fairbairn et al., 2008; McNeil et al., 2013; Petrar et al., 2007; Small et al., 2012, 2011a, 2011b). Approximately 75% of the PWID in Vancouver reported that using the SIS induced positive changes in their behaviors, notably in terms of public nuisance and safe injection practices (Petrar et al., 2007). Qualitative studies in Vancouver revealed that their motivation for using the SIS were similar before and after visiting the SIS, i.e., to inject in safe and quiet conditions without suffering violence or having to share drugs with others and to avoid the police (Fairbairn et al., 2008; McNeil et al., 2013; Small et al., 2012, 2011a). The main concerns of PWID concerning the SIS were the length of the waiting time to access the SIS, the prohibition of sharing drugs and helping others inject, the suspensions of access in cases of non-compliance with the rules, their distance from the SIS, and the presence of police in the surrounding area (Kimber and Dolan, 2007; Petrar et al., 2007; Small et al., 2011a).

3.12. The impact of SISs on the opinions of local residents and police

Seven surveys sought the opinions of local residents, police and professionals in the drug field (Cruz et al., 2007; DeBeck et al., 2008; O'Shea, 2007; Philbin et al., 2009; Salmon et al., 2007; Thein et al., 2005; Watson et al., 2012). Although there was no SIS in Ontario, 60% of the local population favored the existence of an SIS (Cruz et al., 2007), whereas the police forces in Toronto and Ottawa predominantly opposed SISs (Watson et al., 2012). In Sydney, two random sample studies found that more than 70% of the local residents and 58% of the companies located around the SIS were in

favor of the SIS (Thein et al., 2005) and deemed that there was less drug use and syringe waste in public places (Salmon et al., 2007). However, a majority of the companies and residents nonetheless thought that the SIS contributed to a negative image of the district, fostered drug use, attracted drug users and dealers, and increased crime and insecurity (Salmon et al., 2007).

4. Discussion

The aim of this review was to depict the currently available evidence regarding the positive and negative consequences of SISs. Several literature reviews have evaluated the multiple impacts of SISs on PWID or on their local environment (Hyshka et al., 2013; Kelly and Conigrave, 2002; Kerr et al., 2007a; Semaan et al., 2011; Tyndall, 2003; Wood et al., 2006b). However, the present review is the first to systematically embrace the full scope of SIS-related issues using a reproducible keyword algorithm research.

The studies that depict the profile of SIS users were performed internationally, and their results were quite homogeneous among the different countries. PWID using SISs globally exhibited a similar profile of social precariousness and poor life conditions, which suggests that SISs were successful in attracting the most marginalized fringes of PWID. Nonetheless, some experts (Noël et al., 2009) and one study (McNeil et al., 2013) have noted that because there was no assistance for drug injection in SISs, PWID who are unable to self-inject, especially those whose conditions are too deteriorated, would be unable to frequent SISs. Moreover, because most SISs do not accept individuals under 18 or pregnant women, it remains difficult to conclude anything regarding these specific subpopulations, which are particularly vulnerable and require specific care and support. These conditions of accessibility have been discussed among the staff of a Swiss SIS (Solai et al., 2006).

Similarly ubiquitous and homogeneous were the findings that SISs allowed safer injection conditions and promoted enhanced health education among PWID regarding injection techniques and asepsis rules. Given the high rates of HIV and HCV infections in PWID, the reduction of syringe sharing in PWID using SISs indicates that SISs are effective tools against the spread of these epidemics. With the aim of promoting safer injection behaviors, SISs proposed or directed PWID to specific health and social services (Hedrich, 2004). Because these services varied significantly between SISs, it was difficult to globally compare and evaluate this subject. From analyzing different studies, it appeared that most PWID had used such services. However, the benefits of social services remained insufficiently assessed within the different SISs. Most SISs were linked to addiction care services, which were found to facilitate the start of addiction care among PWID. However, a proportion of PWID who attended SISs were already undergoing treatment with methadone, although they continued to self-inject drugs. This finding suggests that SISs and opiate replacement therapies are different, albeit complementary, measures for harm reduction among PWID.

Moreover, it was feared that SISs might foster the initiation of new users into intravenous drug use, but no study found any increase in the total number of local PWID, irrespective of the SIS studied. Equally univocal was the global satisfaction with the use of SISs among PWID in the different surveys (Jozaghi and Andresen, 2013; Kimber and Dolan, 2007; Petrar et al., 2007; Small et al., 2012, 2011a). However, most of the surveys were performed among SIS users, which may not reflect the overall population of PWID. No survey investigated the subjective assessment of SISs among PWID who no longer attended SISs; this population may exhibit different opinions on these facilities. On a medico-economic level, studies have demonstrated that SISs are economically cost-effective (Andresen and Boyd, 2010; Bayoumi and Zaric, 2008; Hadland et al., 2014; Pinkerton, 2011, 2010). Although Des Jarlais discussed the importance of achievable gains, he agreed that the SIS of Vancouver would continue to be cost-effective (Des Jarlais et al., 2008).

Some critics have argued that SISs, by promoting safer and thus more comfortable injection conditions, might foster risk-taking in PWID and thus expose them to increased risks of overdose (Selby et al., 2007). However, the global rate of overdoses in SISs was found to be very low (Kerr et al., 2006b; Van Beek et al., 2004), and the outcomes of overdose cases were improved due to the presence of healthcare workers (Kerr et al., 2006b, 2007b). In addition, different surveys that evaluated the number of overdoses have shown that the rates of overdoses did not increase after the implementation of SISs (Marshall et al., 2011; Milloy et al., 2008a; Salmon et al., 2010). However, no similar observation was found in our results concerning the European SISs. A German departmental report found the same results, but it has not been referenced in any database (Poschadel et al., 2003).

SISs were also implemented to reduce the problems induced by drug injection in public spaces. The Canadian studies (McKnight et al., 2007; Wood et al., 2004) found that SISs contributed to a significant reduction of drug injection in public spaces. This reduction was congruent with the results of surveys of local residents in Sydney (Cruz et al., 2007; Salmon et al., 2007) and with measures of the amount of waste resulting from drug injection in public spaces (Wood et al., 2004). In our results, we found no European studies on this issue; however, European studies have actually been performed and have found similar results (Hedrich, 2004; Kemmesies, 1999). In some European SISs, e.g., in Switzerland and Germany, however, the reduction in the amount of injection-related waste in the areas surrounding the SIS also resulted from active collection by both SIS users and SIS personnel (Benninghoff et al., 2003; Schu et al., 2005). Moreover, it has been noted that external factors without any link to SISs could also reduce drug use in public spaces, e.g., factors related to local homeless housing programs (Noël et al., 2009), local police surveillance, or local policy changes (Government of Canada, 2008). Therefore, the direct impact that SISs may have on reducing drug injection in public spaces was sometimes difficult to assess because the use of drugs in public spaces results from numerous factors that remain difficult to control within scientific studies. Furthermore, local or contextual features related to the function of the SIS may also influence outdoor drug injection practices. For example, the rates of outdoor drug injection increase with the average wait to access the SIS (Benninghoff et al., 2003; Small et al., 2011b). Consequently, if SISs can reduce injection practices in public spaces, this impact might largely depend on their accessibility (EMCDDA, 2009; Hedrich, 2004).

Another fear that emerged with the opening of SISs was the increase of drug trafficking and drug-related crime in the direct vicinity of the SIS. This effect was not highlighted in the studies found in our review, which were performed in Canadian and Australian SISs (Fitzgerald et al., 2010; Freeman et al., 2005; Milloy et al., 2009; Wood et al., 2006a). Furthermore, no European data were found in our review, whereas the European report on drug consumption rooms cited unreferenced studies that found no increase in acquisitive crime in Swiss or Dutch SISs (Hedrich et al., 2010). A few European studies reported small-scale drug trafficking in the immediate vicinity of the SISs (Hedrich, 2004). However, as noted by the European report, "*As many rooms are deliberately located near places where illicit drugs are sold, it is difficult to claim that the existence of such rooms leads per se to drug dealing*" (Hedrich, 2004). Moreover, there are numerous external factors that may influence drug trafficking and criminality. In Vancouver, for instance, the SIS and police services work in close collaboration, which may explain why there was no increase in drug trafficking in the related study (DeBeck et al., 2008; Hedrich, 2004). This

collaboration seems important for the effect on the level of the criminality around the SIS (Hedrich et al., 2010). The surveys among local residents have all noted that numerous prejudices against drug users accompanied the implementation of a SIS within the neighborhood and that these beliefs might last even after the implementation of the SIS. Consequently, it has been recommended that any implementation of a new SIS be preceded by a campaign that aims to inform and educate people living in the vicinity of the SIS (Hedrich, 2004; INSERM, 2010). It should be demonstrated that such preparation for the implementation of a SIS in a specific district is highly effective in facilitating its acceptance by local residents and police services. In addition, the implementation of a SIS is dependent on the political prejudgment of a country or city, which may be a hindrance to the development of SISs. The example of the SIS in Vancouver, where the accumulation of scientific evidence has had little influence on the elected political party (Hyshka et al., 2013; Small, 2010), reflects the controversy of SISs (Keller, 2008; Picard, 2008) and the need for local and national political support.

This systematic literature review on SISs has several limitations. First, encompassing the entire scope of the relevant articles concerning SISs was complex because there are many synonymous terms referring to SISs in the international literature. To date, no consensual appellation has been defined, which explains why we used such a complex keyword algorithm to include the most common appellations in the results. Despite this, a few articles that refer to SISs using more unusual terms might have been missed in this systematic review. Another limitation of the present work is the presence of important differences in the functioning of SISs around the world and gaps in the cultural and political contexts between countries. This fact could introduce important variations in what was synthesized with respect to the different studies selected herein.

Moreover, the types and designs of the studies themselves were highly variable, depending on the question addressed. Notably, there were significant disproportions in the quantity and features of the data published on the different active SISs around the world. Although most SISs are currently located in Europe (Hedrich et al., 2010), the majority of the systematically identified publications were related to the Canadian or Australian SISs, which have received significant means to evaluate their structures. Some subjects were addressed ubiquitously, i.e., the depiction of profiles of PWID, the effect of safety and hygienic conditions for injection, satisfaction surveys among PWID and residents, and the effects of the SIS on overdoses, injection in public areas and crime. Conversely, the imbalance in studies was particularly notable regarding other subjects, i.e., the morbidity secondary to injection-related problems and the economic efficiency of the SISs. However, there are European data on these subjects because they were mentioned in previous comprehensive reviews issued by different official institutions (EMCDDA, 2009; Hedrich, 2004; Hedrich et al., 2010; INSERM, 2010; Joseph Rowntree Foundation, 2006; Noël et al., 2009). The conclusions of these reports were globally similar to those we found in our review regarding each of the different questions. Regardless, if many investigations were performed in European SISs, the results of these investigations were not found in the databases used for the present review, although these databases are among the most commonly used for literature research. For example, 40 European studies that were identified in two main European reports (EMCDDA, 2009; Hedrich, 2004) were not found in the databases used for our review. This lack of inclusion in databases results in a lack of visibility of European data on SISs, although SISs are most numerous in Europe. Consequently, there is a noticeable geographic imbalance between the actual representation of the active SISs in the world and the places where the majority of data were collected. More studies on European SISs should be more easily accessible in the peer-reviewed literature, and more research should be funded in Europe to counterbalance the disproportion of the currently available data among centers and countries; thereby, if SISs continue to develop in Europe, their scientific legacy will be based on local evidence. Lastly, the well-known bias of "socially desirable answers" in surveys of PWID may limit the scope of the survey results on several subjects, e.g., overdose (Milloy et al., 2008a) and syringe sharing (Stoltz et al., 2007b). However, studies with data sources other than self-reports found approximately the same conclusions as the surveys. Consequently, this bias most likely had a weak impact on the overall findings of this review.

In conclusion, despite significant operating differences, SISs ubiquitously and effectively succeeded in attracting the most marginalized PWID, i.e., those who generally have not joined any already existing care system. However, some parts of this population still do not have access to the majority of SISs, especially people under the age of 18, pregnant women, and people who cannot self-inject. Their interest in SISs remains to be demonstrated, and further SIS developments are expected to address these subpopulations.

SISs were found to provide numerous benefits to PWID: safer injection conditions and safe injection equipment, efficacious overdose management, injection technique education, of blood-transmissible infection prevention, and enhanced connections with addiction and social services. Their interventions are deemed efficacious because they induce positive changes in risk behaviors of PWID.

Moreover, SISs generate public benefits such as a decrease in the number of PWID injecting in public and a reduction of dropped syringes in public places. Contrary to what was feared, SISs do not promote drug use and do not increase crime or drug trafficking or the number of PWID. In addition, they seem to be economically cost-effective. Thus, SISs can be considered effective measures complementary to other harm reduction interventions.

Role of the funding source

Nothing declared.

Contributors

B. Rolland and C. Potier designed the study. C. Potier, B. Rolland and V. Laprevote conducted the literature searches and summaries of previous related work. C. Potier and B. Rolland wrote the first draft of the manuscript. F. Dubois-Arber, V. Laprevote and O. Cottencin corrected the first draft of the manuscript. All authors contributed to and have approved the final manuscript.

Conflict of interest

No conflict declared.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.drugalcdep.2014.10.012.

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Safer Consumption Spaces in the United States:

UNITING FOR A NATIONAL MOVEMENT

FROM A THINK TANK HELD
September 27–28, 2016. Baltimore, MD.

PROJECT INFORM

This report provides a summary of the think tank, review of key issues related to SCS, and lists some of the best practices and lessons learned for advocacy and educating people around SCS to teach the value and benefits these sites provide to people who use drugs and the communities where they live.

ACKNOWLEDGEMENTS

Special thanks to Monique Tula, Kassandra Frederique, Patricia Sully, Holly Bradford and Daniel Raymond for their review and editorial comments of this report. Their contributions made this a better report. Any errors are the sole responsibility of the author, Andrew Reynolds.

Thank you to Alan McCord for his design of this report.

Thank you to Zach Ford and Derek Hodel for their note-taking during the meeting.

Thank you to Morey Riordan for meeting facilitation.

Project Inform also expresses its appreciation to the Drug Policy Alliance, Comer Foundation, AIDS United, amfAR, and Gilead Sciences for their generous donations that allowed this meeting to happen.

FRONT COVER PHOTO CREDIT: GPDCR

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EXECUTIVE SUMMARY

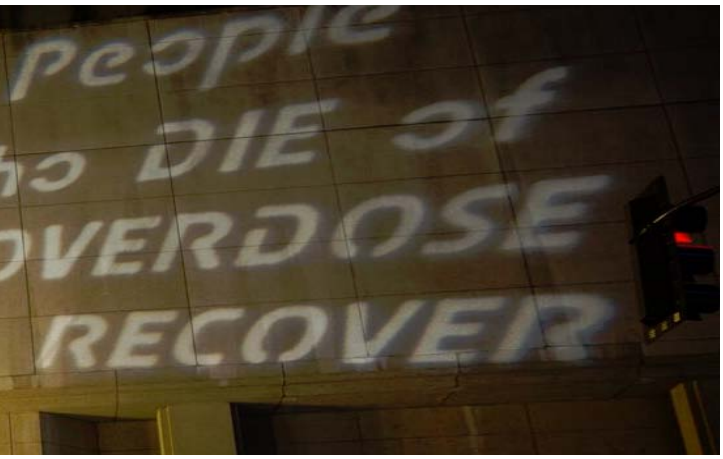
CREDIT: Alex Garland

ON SEPTEMBER 27 AND 28, 2016, Project Inform convened a 2-day think tank in Baltimore, MD entitled, "Safer Consumption Spaces in the United States: Uniting for a National Movement".

The meeting brought together a group of 50 harm reductionists, epidemiologists, lawyers, policy experts and people who use drugs to share experiences and discuss strategies for moving forward to bring safer consumption spaces (SCS) to the U.S.

At the time the think tank was conceived, there was significant movement towards opening SCS/SIFs in several U.S. cities and towns. Ithaca, NY included SCS in their report, "The Ithaca Plan: A Public Health and Safety Approach to Drugs and Drug Policy" as an important component of their response to the opioid crisis. Similarly, the Seattle and King County formed the "Yes to SCS" coalition, a group of people who use drugs, lawyers, medical providers, businesses, and other stakeholders to push the SCS agenda in their city. From there, a task force was formed and they published the "Heroin and Prescription Opiate Addiction Task Force: Final Report and Recommendations" which called for the opening of at least two SCS (called "Community Health Engagement Locations" or "CHELS") in their community. The Harm Reduction Coalition released a report entitled "Alternatives to Public Injecting." New York City embarked on a campaign—SIF NYC—to build a coalition of public health service providers and criminal justice reform advocates to call on the city to implement SCS to address problems related to substance use. In addition to these formal approaches, a number of other cities were at various stages of development in their respective SCS advocacy.

The first day of the meeting consisted of discussions and presentations by people who use drugs (PWUD), advocates, researchers and other stakeholders to ground the think tank in some central themes: Beginning with a panel discussion



from people who use (or used) drugs, a review of a currently operating underground SCS, the importance of including racial justice, and closing with a review of current efforts on the part of 7 cities to bring SCS to their respective communities.

On the second day of the meeting, the group began with a discussion of bringing in new and diverse allies beyond the traditional harm reduction, medical and social service providers. Small groups were divided into breakout groups to discuss the following:

1) Keeping SCS Led by People Who Use Drugs
2) Program Strategies
3) Funding Strategies
4) Tools for Organizing
5) State/Local Advocacy
6) Federal Advocacy Strategies

The meeting closed where we began: Discussing our values in the SCS movement to ensure that we make them happen on our own terms.

MEETING THEMES

- **People who use drugs must be at the head of this movement in all aspects of planning, operating, evaluating and organizing.**
- **SCS must include safer smoking spaces to address the needs of people who do not inject drugs.**
- **SCS are intimately related to criminal justice and drug policy reform as they offer alternatives to the policing of drug use.**
- **SCS advocacy and organizing must include people of color in places of leadership.**
- **Racial justice and equity must be prioritized.**
- **To be successful in our SCS advocacy, we need to expand our outreach to communities beyond the harm reduction, HIV and HCV advocacy movements, including but not limited to LGBTQ organizations, racial justice organizations, sex worker organizations, faith communities, business communities and families impacted by the opioid crisis.**
- **The SCS movement must stay true to harm reduction values and pursue SCS as a moral imperative.**

WHAT ARE
SAFE CONSUMPTION SPACES?

IN AN EFFORT TO ADDRESS PROBLEMS associated with injection drug use, the first legal supervised consumption space (SCS) was established in Berne, Switzerland in 1986. Soon thereafter, SCS were opened in cities throughout Western Europe, with one in Sydney, Australia and another in Vancouver, Canada. Today there are approximately 100 SCS operating worldwide. There are currently no legal SCS operating in the United States.

There are several different terms in use for safer consumption spaces, with corresponding definitions to match. Throughout the literature on the subject, there are a number of names for these spaces, including, but limited to: safe injection facilities, drug consumption rooms, safe injection sites, medically supervised injection centers, supervised drug consumption facilities, etc.

Regardless of the name, there are several unifying themes and services that they all share. The International Drug Policy Consortium, refers to them as drug consumption rooms (DCRs) and defines them as follows: ▶▶

CREDIT: Mehdi Chebil

> **... protected places used for the consumption of pre-obtained drugs in a non-judgmental environment and under the supervision of trained staff. They constitute a highly specialized drugs service within a wider network of services for people who use drugs, embedded in comprehensive local strategies to reach and fulfil a diverse range of individual and community needs that arise from drug use**
>
> **The aim of DCRs is to reach out to, and address the problems of, specific high-risk populations of people who use drugs, especially injectors and those who consume in public. These groups have important health care needs that are often not met by other services and pose problems for local communities that have not been solved through other responses by drug services, social services or law enforcement" (IDPC 2012).**

There have been hundreds of scientific articles and reports about safer consumption spaces from around the world. These evidence-based, peer-reviewed studies have demon-strated the positive impacts for both individual's and the public's health. The benefits are listed to the right:

- They are cost-effective;
- Increased uptake into drug treatment programs and lead to drug use cessation;
- They reduce public drug use and other social order problems, including discarded syringes and other associated injection litter;
- They prevent infectious diseases like HIV and HCV due to reduced sharing of injection equipment;
- They eliminate drug overdose death in these facilities due to immediate access to medical care and naloxone, and also reduce overdose deaths in the communities they are located;
- They do not lead to increased injection drug use;
- They do not lead to increased crime;
- They engage a typically hard to reach population in medical, mental health and other social services.

Drug Policy Alliance;
"Safer Drug Consumption Spaces: A Strategy for Baltimore City," The Abell Foundation;
"Alternatives to Public Injecting," Harm Reduction Coalition

WHAT'S IN A NAME?
A DISCUSSION

Safe injection facility vs. safer consumption space

COMING UP WITH A NAME is more than just an intellectual exercise, as the name indicates the services that can be provided. SIFs/SCS (or drug consumption rooms, medically supervised injection centers or any other name that has been used) are more than just "injection sites." They are also places for healthcare, mental health and counseling services, and referral and linkage to drug treatment services. There's also branding and marketing considerations with a name as we work to promote SIF/SCS in our communities.

There were some key questions to help guide the discussion:

- While we are not looking to come up with a standard definition of what to call these places, a standard working definition will help frame future discussions as we argue for establishing SIFs/SCS, especially if we are looking for a unified message to build critical mass in our advocacy.
- What do people think about the following names:
  - ... Supervised injection facilities
  - ... Safe consumption spaces
  - ... Supervised consumption spaces
  - ... Drug Consumption Rooms
  - ... Medically Supervised Injection Centres (the name of Sydney's SIF)
  - ... Others?
- What about not naming them at all? What are the merits of arguing for supervised injection services as part of an array of services built into homeless shelters, navigation centers, and syringe access sites and so on? Seattle provides a model here: "CHELs" or "community health engagement locations."

The term "safer drug use spaces" was ultimately decided upon. The group agreed that this was an all-encompassing term: "Safer" acknowledges that drug use can be risky, but there are things we can do to keep people healthier and safer, and minimize the risk of drug-related problems. "Drug use" allows for all manner of ways in which people use drugs, including injecting, smoking, sniffing and taking pills. Finally, "spaces" allow for all manner of places to provide safer drug use services from specialized sites to mobile vans to pop-up tents in homeless encampments.

Although we do not claim to make this the standard definition that everyone must use, and we recognize the various needs of respective communities to name them as they see fit, the group did agree that coming to a consensus around what to call these has several benefits:

- A unified term that everyone uses is a means of connecting the movement together across the country.
- Similarly, a single term that is commonly used is easier for the general public to recall and understand. It facilitates a unified message in the media, too.
- As with the media, a commonly used term that stays consistent is better for research, presentations and publications within public health and the social sciences.

For the purposes of this report, Project Inform will use as safer consumption spaces to reflect the more commonly used terminology for these sites. Moving forward, with continued PWUD and community involvement, we will discuss the utility of a common name and decide which, if any, to use.

For more discussion on the importance of a name, see "The Name Matters" section on page 11.

WHAT DO PEOPLE WHO USE DRUGS WANT IN A **SAFER CONSUMPTION SPACE?**

FACILITATOR: Terrell Jones, New York Harm Reduction Educators;
PANEL: Anonymous participants to protect privacy and maintain anonymity.

HARM REDUCTION PROGRAMS are most successful when they include PWUD in all aspects of their programming. Indeed, in its definition of harm reduction, the Harm Reduction Coalition lists the following as core principles of its philosophy:

- Ensures that drug users and those with a history of drug use routinely have a real voice in the creation of programs and policies designed to serve them.
- Affirms drug users themselves as the primary agents of reducing harms of their drug use, and seeks to empower users to share information and support each other in strategies which meet.

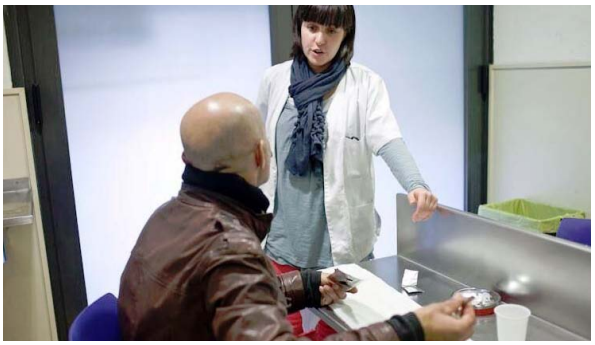
It is with this in mind that we began the think tank with a panel discussion of people who use drugs, facilitated by Terrell Jones of New York Harm Reduction Educators (NYHRE). In this session, the panel addressed a number of questions and issues related to the needs of PWUD/PWID and SCS, and made suggestions and recommendations for ensuring that these programs are most effective and culturally competent.

The themes over the next four pages emerged, and should be considered by all when planning and, when the time comes, operating a SCS.

One of many SAFE SPACE installations

01

KEEP PEOPLE WHO USE DRUGS INVOLVED



CREDIT:
Delphine Vaisset

Inclusion of people who use drugs is the single, most essential element of any successful harm reduction intervention, and it is no different for SCS. PWUD need to be included in all aspects of SCS, from planning and design to operation and staffing to evaluation.

PWUD are often experts in drug use, and many have the experience to work effectively with its participants. We have community examples of peer-to-peer health education and prevention counseling and their effectiveness, and we should extend that to work in SCS. There is a role for professionals like social workers and nurses, but peers must be involved and work the front-lines.

Employing peers has many benefits, not the least of which is that it will create a space that PWUD will trust and feel welcome to attend. Employing PWID has the added benefit of creating jobs for a population that if often viewed as unemployable. In this respect, SCS become sites not only for health and relieving of suffering, but also as places to change perceptions of PWUD and reduce stigma.

"We need everybody's involvement on every level of the program. A peer should always be involved. I've been on boards around the city where people create programs off of drug users' experiences, but when it comes to the implementation of the programs, we don't get invited to participate."

02

INCLUDE SMOKING SPACES

Any safer drug use space should include rooms for people who smoke their drugs. Recognizing that this may be a challenge given space constraints or problems with ventilation, harm reduction programming, including access to health and social services and access to safer smoking kits and new pipes should be available for people who smoke their drugs.

Research has shown that people who smoke crack or crystal methamphetamine have a host of medical problems including higher rates of HIV, HCV, tuberculosis and other medical conditions. Additionally, people who smoke their drugs face many, if not all of the public problems that PWID have: Public drug use and lack of privacy, risk of arrest and harassment, and problems associated with using drugs alone.

The goal of safe consumption spaces must be inclusion of all people who use drugs regardless of mode of administration. In fact, to have spaces for injection while leaving out spaces for smoking creates an unequal public health setting, and may exacerbate health disparities between the two groups. There are also people who use different substances in different ways, so smoking spaces are a means of including people regardless of their preferred method of administration.

There are challenges to creating smoking spaces: There are questions about legality and how to address smoking rooms in the context of smoking bans. These rooms should have proper ventilation and safety measures in place to keep staff and other PWUD safe from secondhand smoke, thus potentially increasing costs and resources.

In the meantime, the need for safer smoking spaces demands creative actions. Outdoor smoking areas, or rooftop spaces are possible solutions. The question of how to do this is challenging, but the conversation must be had.

Isaac Jackson, President and Lead Community Organizer of the Urban Survivors Union (USU) in San Francisco has been a strong advocate for the health and safety of people who smoke drugs. Beginning in the spring of 2014, Jackson and a group of volunteers began an underground crack pipe distribution and outreach program, distributing new pipes and health education to reduce risk of infectious disease and other problems.

> **People who smoke drugs have similar issues and needs to people who inject them. We gotta give smokers a safe place, too.**

What do people who use drugs want in a SCS?

WHEN ASKED ABOUT THE IMPORTANCE OF INCLUDING SMOKING ROOMS IN SCS, JACKSON SAID THE FOLLOWING:

Why is it important to reach out to people who smoke drugs?
"People who smoke drugs often don't have access to the same services as those who inject them. I know that access to clean syringes and injection equipment varies across the country, but even in cities that have great needle exchange programs, there's little offered to smokers. Even if there are safer smoking kits, they are often distributed at needle exchange sites and many non-injectors don't go to those so they miss out. People who smoke still have potential risks from anything to burned lips to HIV or HCV and even bacterial infections. Canada has shown that if you offer harm reduction supplies to crack smokers, you lower the risk of on getting any of these, and increased contact with service providers opens the door to other health and social services. So, in a nutshell: It's important because people who smoke need and are deserving of care. To put simply: It's just the right thing to do."

Why do we need smoking rooms in SCS?
Again, there are disease prevention needs that smoking rooms can address. Giving people their own pipe in a safe space means less sharing. The room will be better ventilated. If something goes wrong while smoking and someone needs immediate medical attention, an SCS would provide that. There's also the social needs. It gets people off the streets and avoids all the problems with using in public. People have a safe space to smoke, so they're not out in public at risk of arrest or as targets of robbery. It reduces public smoking, which is good for the community overall. There will be less drug-related litter because people have a place to use and dispose of things safely.

How is including smoking rooms an act racial justice and inclusion?
Well, in my experience in San Francisco distributing pipes and providing health education, smoking crack cuts across racial and ethnic lines. The stereotype of crack smoking is that its black men and women who use it. They do, but so do many other groups. But the war on drugs, and this stereotype and the fear and stigma that's been raised around crack starting in the 80s, has led to a disproportionate number of African Americans getting arrested and thrown in jail. If you include smoking spaces where black men and women can use safely, you're keeping them out of jail and prison. Plus, if you don't reach out to black people, then we continue to be placed at risk for disease, overdose and other medical problems, while white people reap the benefits of SCS. This will only widen the already too wide gap in health disparities. And again: It's just the right thing to do."

03

THE NAME MATTERS

When planning a space for people to use drugs safely, making sure it's a place of inclusion for all who use drugs is important: If you call it a "safe injection facility," then you leave out people who take drugs by other means. Using a term that is not injection specific such as "supervised consumption spaces" or "drug consumption room" or "safer drug use spaces" is inclusive for both people who may smoke or sniff drugs.

As the opioid crisis rages in the U.S., it is also important to include space for people who use pills. They may not be at risk of HIV or HCV, but there is significant overdose risk, and this population would benefit from many of the services provided at these sites. A safer "consumption" room (or any variation of a name that doesn't limit it to injection) is the most open to all types of people who use drugs. This is not to say we can't have facilities that focus specifically on the needs of PWID—there are specific needs that people who inject have, and tailoring sites and services to them is important. Each city or town that is planning on bringing SCS to their communities should consider the needs of their local community of PWUD, and design a site and implement services that will accommodate all of them.

There is also an option to not to name these sites with any drug-related language at all. This option has the benefits of removing potential stigma associated with words like "injection" or "drug consumption," making it more acceptable to the general public. Seattle provides us with an example in their proposed name for SCS: Community Health Engagement Locations, or "CHELs." This also highlights that these are sites where more than just drug use occurs: They offer an array of medical and social services for people.

Choosing the name can also help shape the debate around SCS. Opponents of SCS/SIF will likely choose to stoke fears and stereotypes by exaggerating the "drug use" and "injecting," but highlighting that these are spaces are where a variety of health and social services are delivered can blunt this negative message.

04

INTEGRATE OTHER SERVICES INTO SCS

In addition to offering a safe and healthy space to use drugs, these are spaces where PWUD can relax, escape the outside world and receive a wide array of services. In fact, SCS are quite successful in creating low threshold opportunities for PWUD to access medical care, mental health care, and referral to drug treatment. These spaces have also been highlighted as being particularly effective in reaching typically "hard to reach" clients, including PWUD who do not trust traditional medical and social services.

All SCS in the U.S. should offer "chill-out rooms," that is, spaces where people can just hang out (whether they've used drugs or not) until they are ready to leave. This model reflects drop-in homeless drop-in centers where people can come, get a reprieve from the streets and have access to care and services. It also gives people time to sit and get medical attention should something go wrong over time.

There are also opportunities to create new services to keep people healthy and minimize risk of overdose. With the current spate of fentanyl laced opioids (and other drugs, for that matter), testing the drugs that people bring in would be a valuable addition to alleviate the crisis, allowing people to know what they are using to take the necessary precautions to stay safe.

Further, rather than establishing a new location for an SCS, it may be prudent and cost effective to consider integrating SCS services within existing programs that serve PWUD. There are existing brick-and-mortar places like drop-in clinics, homeless shelters, and syringe access programs where placing rooms for safer drug use can be a highly effective and relatively easy thing to do.

SERVICES OFFERED IN EUROPEAN SAFE CONSUMPTION SPACES

A survey of European drug consumption rooms lists a wide-range of services provided, which serves as examples of what U.S.-based ones can offer, including:

- Snacks and coffee or tea
- Warm meals
- Needle exchange
- Access to injection equipment
- Personal care opportunities such as laundry and shower facilities
- Storage lockers
- Mailing address/post office box
- Free phone access
- Support for financial and administrative needs
- Health education
- Medical care: Nursing and primary care
- Referral services for drug treatment, mental health and other social services
- Work/reintegration opportunities
- Employment referrals
- Recreational activities

SOURCE:
"Drug Consumption Rooms in Europe: An Organisational Review" (2014)

05

LOCATE SCS IN DRUG SCENES

Following on the integration discussion above, the facility should be convenient for people who use drugs. Often, PWUD have limited options for commuting and transit, so keeping SCS in the neighborhoods and communities where they live is important. It is also essential that these sites remain accessible to people with disabilities and are wheelchair accessible.

Finally, mobile injecting vans can reach people in other neighborhoods where it may not be feasible to place an SCS. Employing "pop-up" SCS in homeless encampments would also be highly effective.

The needs will differ from urban to rural areas, and even city to city. The location and types of sites used will depend upon the local drug scene, too. A community and strategic planning process, led by and with significant input from PWUD and their allies will maximize the chances for successful location, implementation and services provided.

CREDIT: Courtney Large

NOTES FROM AN UNDERGROUND SIF

IN THIS SESSION, GREG SCOTT of DePaul University in Chicago and Sawbuck Productions showed a selection of his documentary video on a currently operating, underground SIF/SCS in "Somewhere, USA." Following the film and a question and answer period, Alex Kral of RTI International and Peter Davidson of UC San Diego presented data on their evaluation of this site.

The SCS in "Somewhere, USA" has been in operation for over 2 years. Prior to opening, the undisclosed organization was operating a safer bathroom. This set-up created a safer place to inject, but it was not ideal: Long lines and waiting—for both people who were there to use drugs and for those who wanted to go to the bathroom—were the norm, and it created a stressful situation for both staff and clients. Most significantly, it was an unpleasant and undignified place to inject.

CREDIT: Santiago Perez

The staff built out a space to create 2 rooms: One to inject and the other to relax and "chill out." The injecting room (there is no smoking allowed in this site as it is not set-up for it) has 5 stainless steel tables, allowing for up to 5 people to inject at a time. The room is stocked with safe injection supplies, and there is always a staff-person on-site to provide health education, safer injecting tips and administer naloxone should someone overdose.

The documentary film provided the meeting participants with a visual of a space that no one other than the participants and staff of the program get to see. As an underground site in an undisclosed location, there is little financial support and certainly no department of public health support, so the SCS has a relatively simple, basic look. The film demonstrates that these places can operate in many different ways, and can be relatively "low-tech:" A clean, well-lit room with safe injection equipment and cleaning supplies can operate very well.

Kral and Davidson provided quantitative and qualitative data to provide more context to the film. In over two years, this site had over 2500 observed injections. For nearly all of these participants, public injecting would be the only option available to them: 92% reported that they would have to use in a public restroom, in a park, on the street, or in

a parking lot. The presence of this SCS gave them space to inject slowly and safely in a controlled manner, and to safely dispose of their syringes and injecting equipment. The site has been very well received by PWID, and there have been no negative consequences—no violence, no sharing of injection equipment and no acute health problems-- for either the individuals who use it or the community where it is located.

A selection of quotes from participants further illustrates the important role an SCS can play in the health of PWUD:

"It affects me in a positive way because I have less of chance of catching something, I have less of chance of not knowing what I'm doing and hurting myself. I have less of a chance of OD'ing and it's like I said, it builds a community and it builds trust and it builds a foundation within all of us to take the tension and the animosity, to be able to be amongst one another and be comfortable and peaceful. I feel when I come in here now, I feel peace, I feel comfortable, I feel peaceful, like the people around me are not all out to get me or they don't just want to be in my face or something."

"So it's the difference between sitting on a curb next to feces and you got people walking by you, and cops driving by constantly, and anytime kids come by, the majority of us we keep an eye out for them. We'll put it away and not expose the kids to that, but then you're rushing your shot in, you don't even really get to enjoy your high that much because there's always people out there bumming off you and stuff. It's really crazy and dirty out there."

The presentation closed with a discussion that Davidson had with a participant:

- Davidson: I guess my final, final question is, if you were trying to explain this thing (providing safer spaces for people to use drugs) to people completely outside the drug world, what would you say about it?
- Participant: Please have faith.
- Davidson: Trust us we're doing something sensible?
- Participant: Please trust us. It might not be tomorrow, it might not be next week, but you'll see a change in a lot of things.

For those outside the harm reduction community, SCS may be so utterly foreign to them that they will immediately oppose them. Trust the research. Trust the evidence. Trust the people who provide the services. And trust the people who use the services.

The research of Kral and Davidson is important as it demonstrates that a SCS can operate safely in the U.S. It is well-received by PWID, but it also has been able to operate anonymously without any social problems or trouble. The general community may or may not know it exists, but the fact that it has been able to operate for over 2 years without any negative consequences serves as a sort of "proof of concept" that SCS can work here. The pioneering work of the staff of this organization, and careful documentation by Kral and Davidson to support their work, serves as inspiration for us all.

RACIAL JUSTICE IS
HARM REDUCTION

SIFs/SCS, Policing and the War on Drugs

> *— Kassandra Frederique, September 27, 2016*
>
> **The idea that we need to frame SCS in racial justice is problematic because the idea that harm reduction is separate from racial justice is problematic. Harm reduction is about radical resistance. It is about people who are considered undeserving being different and demanding what they want. When we think about how to increase racial equity and reduce harm in people of color within this work, they're connected and cannot be separated.**
>
> **The idea here is that racial justice IS harm reduction because it is about reducing the harm that is included with drug policy and mass incarceration and police interactions. If we are talking about harm reduction reducing the harms of drug use then we should also be talking about how racial justice reduces harm.**

ON JUNE 21, 2016, Kristen Maye and Kassandra Frederique, both of the Drug Policy Alliance, wrote a blog for the Huffington Post entitled "Supervised Injection Facilities are Safe Houses, Not Crack Houses" (CITE). This essay marked a seminal moment in the SCS movement: Traditionally SCS have been thought of as public health and drug treatment interventions, but here Maye and Frederique highlight the role these sites can play in racial justice and resistance to the racist war on drugs:

> ***A safer injection facility is a public health intervention. But it doesn't stop there. SIFs not only reduce the potential harms associated with drug use; they also reduce the harms associated with failed drug policies—namely, the over policing and criminalization of Black and Latino people. SIFs aren't just an answer to issues surrounding drug related health issues; they're also a step toward the reduction of criminalization for those communities most targeted by the war on drugs, which may be kinder and gentler for white people, but which continues to rage unabated for Black and Latino people.***

Kassandra Frederique and Monique Tula presented on the racial justice components of SCS and the importance of including race within any SCS--indeed, within any harm reduction and drug policy--discussion that we have. This session is a small start for what needs to be a larger on-going conversation. The following are some key points and recommendations and strategies for meaningful inclusion of people of color in the SCS movement.

- There is a long history of health advocacy with the black and brown community: Both the Black Panthers in Oakland and the Young Lords of Chicago and New York City made access to health care a central tenet of their respective platforms. They were practicing harm reduction before the term was ever coined.
- Imani Woods, a central figure in the founding of the harm reduction movement in the U.S., spoke clearly and directly to ways in which harm reduction served white drug users, but black and brown people, particularly as targets for arrest and incarceration, were often left out of important discussions about how to effectively practice harm reduction in their communities.

- As we are in the early stages of SCS advocacy and organizing, we can correct past mistakes and include people of color in all aspects of the work.
- Sustained, intentional effort to ensure racial justice and equity remain front and center of the harm reduction movement: It is not achieved from a one-time diversity or cultural competency training. Our organizations must have an on-going assessment of policies and practices that marginalize people of color.
- A brief review of the history of using drug use as a means of vilifying and criminalizing a group of people to stifle political organizing. The war on drugs as we know it was started in the late 1960s by the Nixon Administration. John Erlichman, President Nixon's Chief of Domestic Policy, related the goals of this policy: "The Nixon campaign in 1968, and the Nixon White House after that, had two enemies: the antiwar left and black people. You understand what I'm saying? We knew we couldn't make it illegal to be either against the war or black, but by getting the public to associate the hippies with marijuana and blacks with heroin, and then criminalizing both heavily, we could disrupt those communities. We could arrest their leaders, raid their homes, break up their meetings, and vilify them night after night on the evening news. Did we know we were lying about the drugs? Of course we did."
- The Black Panthers and Young Lords were systematically dismantled given the perception that they were a significant threat to governments entrenched in white supremacist tactics. Harm reduction, on the other hand, has survived and has expanded as the opioid crisis moved into suburban and rural areas, and the faces of drug addiction and suffering have become increasingly whiter. This 'kinder, gentler' approach is a welcome shift. However, if this shift does not include people of color, we perpetuate a racist system designed to keep economically disadvantaged black and brown people who use drugs at the lowest rung of society and cycling in and out of the prison industrial complex.
- We must include SCS within efforts of criminal justice reform: SCS can be spaces where people of color—who are the targets of the war on drugs—will have less risk of interacting with police.
- The harm reduction community must reach out to other racial and social justice groups, educate them about the benefits of SCS as one way of mitigating the harms caused by the war on drugs.

This session could be a think tank on its own. As the harm reduction field advances, it is essential that our commitment to racial justice stands side-by-side with our commitment to the health of people who use drugs.

Whose voices are we listening to? Who do we allow at the table?

A SELECTION OF QUESTIONS FOR ORGANIZATIONS TO ASK THEMSELVES

- What aspects of our organization actively work to create inequalities?
- What power dynamics are at play?
- Whose voices are at the table? Whose are not?
- What do we need to support a diverse range of views?
- Who benefits from the way things are done?

INCORPORATING RACIAL JUSTICE INTO SAFE CONSUMPTION SPACE ADVOCACY

The Seattle Heroin and Opiate Addiction Task Force made a concerted effort to include racial equity at the center of their organizing and safe consumption space work from the beginning. There was a recognition that the war on drugs disproportionately impacts people of color and any effort to enact SCS must include them from the beginning and serve their needs. To that end, the task force developed a statement and strategy for including racial equity and social justice in their work. It serves as an excellent example for us all to follow:

"The Task Force will apply an Equity and Social Justice (ESJ) lens to all of its work. We acknowledge that the "War on Drugs" has disproportionately adversely impacted some communities of color, and it is important that supportive interventions now not inadvertently replicate that pattern. Interventions to address the King County heroin and opiate problem will or could affect the health and safety of diverse communities, directly and indirectly (through re-allocation of resources). Measures recommended by the Task Force to enhance the health and well-being of heroin and opiate users or to prevent heroin and opiate addiction must be intentionally planned to ensure that they serve marginalized individuals and communities. At the same time, the response to heroin and opiate use must not exacerbate inequities in the care and response provided among users of various drugs. All recommendations by the Taskforce will be reviewed using a racial impact statement framework. The Task Force will not seek to advance recommendations that can be expected to widen racial or ethnic disparities in health, healthcare, other services and support, income, or justice system involvement. Whenever possible, these concerns should lead to broadening the recommendations of the Task Force, rather than leaving behind interventions that are predicted to enhance the health and well-being of heroin and opiate users."

SCS ORGANIZING AND ADVOCACY

LESSONS FROM SEVEN CITIES

In this session, representatives from 7 cities across the U.S. provided the group with an overview of SCS advocacy.

SEATTLE

Patricia Sully, Kris Nyrop, Michael Ninburg

Don't just preach to the choir.

It's relatively easy to get service providers on your side: Medical providers, social workers and others who work with PWUD will see the benefits of an SCS. It is equally, if not more, important to reach out to public safety and community groups. Go to community meetings and talk with people about the issues related to public drug use and take the opportunity provide some basic information about SCS and harm reduction as an approach to addressing the problems.

Organize across sectors.

There are many groups that are impacted by substance use and its related health and social problems, and including them in your education and outreach events is essential. Build wide-ranging coalitions from impacted groups, including, but not limited to someone who uses drugs, someone in recovery, a business owner, a parent who lost a child to overdose, a defense attorney, a housing advocate, a policeman/woman, a doctor, a park and rec worker and so on. You can and should also organize specialized coalitions (for example "Doctors for Safe Consumption Spaces"), too. Work with them on this issue and bring them to community meetings and other public events as the diversity of experiences, community roles and expertise will speak to a wider range of people.

Don't be afraid of engaging the public.

The best and most effective awareness events that Seattle has done are the ones that have placed them in the middle of the public. For example, bringing the SCS discussion to the general public in parks has been remarkably successful. It's an easy and relatively low-threshold activity. Using Safe Shape (see appendix) in parks was a very effective way to engage hundreds of people who otherwise would not have an idea or opinion on SCS, and certainly would not come to a panel discussion or film showing. Additionally, doing fun, non-adversarial public events are a direct way to reach people in a friendly manner before they've hardened their opinions based on misinformation, and introduce the topic on your own terms. Finally, holding it in neutral, public setting makes it easier to talk to people when they weren't in a fear-based mode of 'is one of these going to be in my neighborhood tomorrow?' It creates a space for a compassionate response to drug use in your community.

LESSONS FROM SEVEN CITIES: **PORTLAND**

Haven Wheelock, Sam Junge

Keep the impacted community front and center.

The local street newspaper, "Street Roots," has been keeping this issue alive in Portland. This paper has stories driven and written by and for homeless persons, advocates, and those most directly impacted drug use and the resultant health and social problems. They are leading a policy push and conversations about SCS are happening in arenas other than syringe exchange programs and other harm reduction services. This brings in new allies from different organizations and other like-minded individuals who might not otherwise now about the subject.

In Portland's last mayoral debate, it was Street Roots that specifically asked each of the candidates if they would support an SCS. Some said yes and some said maybe, but no one said no. In recent months, a report was issued recommending that Portland look at the feasibility of an SCS. We can't say for sure that the two are related, but it was Street Routes and their constituencies that brought this to the attention of Portland policy-makers.

Incorporate SCS into as many community discussions as you can.

It's important to attend community meetings and any time drug use, crime and public order, homelessness, etc. is discussed you should stand up and state of SCS can address these social problems. Portland has brought the SCS discussion into community meetings about obvious issues like HIV and HCV prevention or overdose prevention, but also for other homeless services like creating a drop-in space where homeless people can access clean showers. Normalizing the SCS discussion across different public sectors and highlighting their utility to people who want to address homelessness had been very valuable.

Build (or deepen) your harm reduction culture.

Admittedly, it would be hard to open up a SCS in a community where harm reduction services like syringe access or naloxone distribution are not already established. It's such a new and radical idea that people need to be primed to accept it. So, if you have existing harm reduction programs in your community, bring SCS into the discussion as the next logical step in providing services. Even in the absence of harm reduction programs in your community, raising SCS as potential interactions to deal with the problems of HIV, HCV and/or drug overdose in conjunction with other services will bring it to the table. It may take longer to convince someone to open a SCS as opposed to a needle exchange site, but the conversation has to begin somewhere.

> In my opinion, the best way to get the public to warm up to the idea of a SIF is to proactively initiate other practices that assert the ethical legitimacy of harm reduction.
>
> ***— Sam Junge, People's Harm Reduction Alliance***

LESSONS FROM SEVEN CITIES: **ITHACA**

Lilian Fan, John Barry

Don't rule out a SCS.

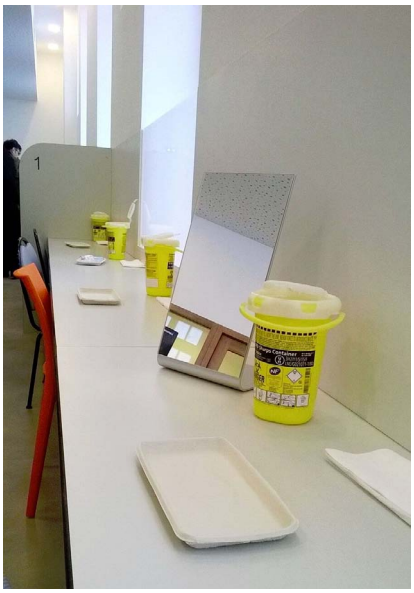
Injection drug is not just an urban problem: Rural and suburban areas have problems related to it, too. The opioid crisis has exacerbated this. The issues of rural New York State mirror those of West Virginia and Kentucky: Overdose deaths, HCV and HIV transmissions, and other medical and social problems. PWID in these areas need better access to syringe access programs and opioid substitution therapy, but SCS is an important intervention, too. They may be difficult to pull off politically and economically, but it is still worth exploring and including SCS in any conversation about how to deal with drug use in rural areas.

Don't wait for an SCS.

Certainly establishing an SCS and all of its related services is the ultimate goal, but in the meantime, don't wait to provide harm reduction and safe injection services. The Southern Tier AIDS Project initiated a safer bathroom program as a pragmatic response to the fact that PWID were already using it as a place to inject. Rather than deny that the problem exists, or worse, enact measures to prevent injection drug use from happening in their bathroom, STAP choose to create a safer space for people to use. Safer bathrooms where people have access to clean injection supplies and can be monitored and revived in the case of an overdose are by no means the gold standard for safer injection facilities, but they are better than leaving people on their own in public settings where there at risk for any number of things, including arrest or overdose death.

Work with your allies in local government.

It's certainly true that many areas of the country may not have an ally in local (or state) government, but if you do, work with them on SCS (and other harm reduction measures). The mayor of Ithaca, Svante Myrick wanted to put together a municipal drug strategy that would best meet the needs of PWID (and other PWUD), so he reached out across sectors for input. Local harm reduction advocates, and the Drug Policy Alliance played a key role in educating local policy-makers and the community at-large, but having a high-ranking government official certainly helped push the agenda forward.



CREDIT: GPDCR

LESSONS FROM SEVEN CITIES: **NEW YORK CITY**

Matt Curtis, Taeko Frost, Shantae Owens

Include people who use drugs and would benefit from SCS early and often.

Provide real participation, compensation for time, and support for speaking/advocating/etc. Create space for authentic leadership AND put in the time to make sure that people are informed, supported, and skilled up as needed. The ideal way to approach this is through structured community organizing. While that can take an unlimited amount of time and energy (especially in bigger communities), you can scale down to meet your capacity. But there's no substitute for doing something along these lines, and all time and effort you put into this will be well worth it: Your movement will be the better for it.

Build relationships with your immediate local community.

If you're a service provider that has plans to bring on SCS sooner or later, build relationships with everyone who may have anything to say about SCS implementation down the road - start those conversations early, informally, be patient, and create space for opposition or indifference. It doesn't click for everyone right away.

Educate politicians, journalists before you start a campaign, never stop.

Get at least a couple key thought leaders on your side before you create opportunities for them to misunderstand or feel threatened by the issue. You can turn people around later, but if you can avoid putting people on the spot (e.g. a key politician you've never met with getting a negatively framed question from a journalist and feeling backed into a corner) it's always better. While the approach to educating politicians and journalists is a little different, they are two classes of people that work in symbiosis around political issues, and you can often use one to steer the other (as well as other constituencies that pay attention to them).

Lead with values.

Campaigns of all stripes are won because decision makers understand the whole context of the problem you raise and solution you're proposing, and they internalize the solution as a good and viable. The issue and solution must ultimately be widely and deeply felt. And while having a clear public health / epidemiological case is essential for winning SCS campaigns, it's far from the whole picture. Asking decision makers to support SCS is asking them to overturn decades of American drug war ideology in which they and their constituents are deeply schooled. They need to understand SCS (and harm reduction) as a moral imperative as well as a pragmatic or science-based solution.

LESSONS FROM SEVEN CITIES: **DENVER**

Preston Murray, Vernon Lewis

Work with your local media to raise awareness.

The first step of addressing the social and medical problems that come with illicit drug use is often to educate the general public about it. Community events and town halls are certainly a part of this, but working with local press—print, television and radio—has the capacity to reach even more people. And if you bring the story to media, you have a greater control of the narrative and shape the story towards harm reduction and compassion, rather than towards a punitive criminal justice-only one.

Get creative with technology and social media.

HRAC has created videos to address awareness and fight stigma, as well as employed a social media strategy called "Our Stories" to fight stigma and highlight the problem of overdose in a humanizing way. These stories build compassion and open the mind for alternative ways of addressing problems. They don't mention SCS specifically, but they serve as a foundation for later SCS advocacy and awareness campaigns.

Engage with local businesses.

Local business located in and around drug scenes have in interest in reducing the social problems related to public drug use. Even if they may not share the same harm reduction ethic as we might, they are likely to have similar goals: Less injecting in public, loitering and other social problems that may keep customers away. Additionally, using drugs in the bathrooms of restaurants and other businesses is both problematic for the businesses and is not safe for the person injecting. To that end, the Harm Reduction Action Center (HRAC) has formed an "SCS Business Coalition," to educate restaurant and retail store owners on the value of SCS and gather support for them and recommend that Denver open an SCS as a public health intervention that is also good for business.

CREDIT: Kirkens Korshær

LESSONS FROM SEVEN CITIES: **BALTIMORE**

Susan Sherman, Natanya Robinovitch, William Miller, Sr., William Miller, Jr.

Work with existing social justice coalitions.

SCS are sites for harm reduction and health. They are also sites for racial and social justice. Making connections with other racial/social justice coalitions is an excellent way of broadening your base. Collaborating with anti-racism organizations, coalitions that mobilize against gentrification and displacement, and other social justice organizations that may not have SCS central to their mission but likely to agree with the need for SCS for the communities they work in will expand your influence.

Incorporate SCS as a response to the failed war on drugs.

A recognition that the criminalization of drug use and incarceration of people who use drugs has been a failure to stem the tide of drug use, and has exacerbated the harms and damage done to communities, especially African American and Latino ones is essential to positioning SCS as an acceptable alternative . Baltimore advocates have been spending a lot of time working in and building community support in areas of the city that are highly impacted by policing, mass incarceration and other social and medical harms, and offering the idea of SCS as a different means of dealing with drug use. These are the populations most heavily impacted by the failed policies of the drug war, and have the greatest to gain from a more compassionate approach.

Engage in real listening.

Including people who use drugs at all levels of SCS planning is essential, and included in this is a deep and serious listening to affected communities, both those who use drugs and those who don't. Engage with residents of poor, divested neighborhoods, and meet them where they're at in terms of solutions to the war on drugs. Work with these diverse communities and stay committed to them for the long run. These relationships are not only the moral thing to do, they will improve the chances for successfully establishing SCS in these communities.

CREDIT: GPDCR

LESSONS FROM SEVEN CITIES: **SAN FRANCISCO**

Laura Thomas, Michael Siever

Prepare and build community and political support.

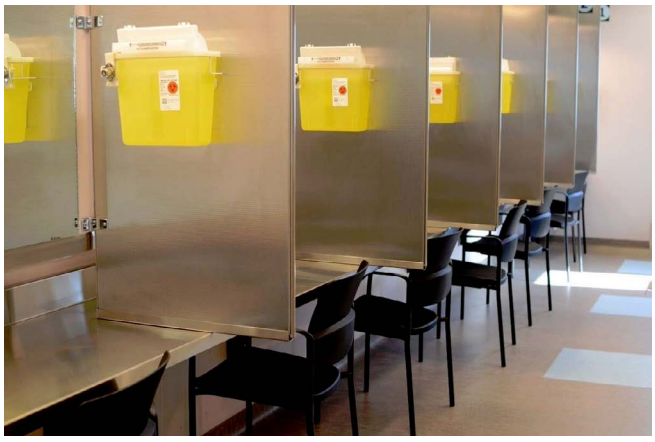
In 2007, a group of advocates called the "Alliance for Saving Lives" organized a day-long summit on safe injection facilities. The event as very well-received locally: The SF Department of Public Health co-sponsored it, there was positive coverage in the local press—including from a columnist who wasn't always on-board with harm reduction, and community members were emboldened and inspired to move forward on SCS. For all of the success locally, news of the event made it into the national press, including the right wing press and talk radio news cycles. The backlash was strong, and made its way to the Senate, where a conservative Senator threatened to block all federal dollars from coming to SF should they open an SCS. This threat was effective, as the lack of prior groundwork to build political cover from local representatives did not allow for room to resist, and it left local policy makers and advocates uncomfortable. The work to make SCS a reality in SF continued, but the pace slowed down and the proper groundwork has been laid.

Work with other task forces and civic groups.

Introduce SCS into as many policy discussions as possible. San Francisco has had a series of task forces and planning groups whose work crossed into drug user health, and enlisting them as allies and incorporating SCS into their recommendations and plans has been an effective tool in broadening support, raising awareness and maintaining a high profile. The inclusion of SCS can be found in reports from 'The Mayor's Hepatitis C Task Force" (2011), the Human Rights Commission's community report on the war on drugs (2014) and the HIV Prevention Planning Council and HIV Services Planning Council (2015).

Work with local merchants and other potential allies.

You must continually reach out to people and get them on-board with the idea of SCS. Work with your local department of public health and educate them on the issue. Attend neighborhood meetings and offer SCS as solutions to problems that concern them, such as public injecting and discarded syringes. Work with merchants and business owners to discuss the role that SCS can play in reducing the use of their bathrooms for injecting. Give opponents an opportunity to state their concerns and engage in respectful dialogue with them. Stay true to your values, support and promote the needs of people who use drugs, and shape the way people talk about drug use.



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BEYOND THE ECHO CHAMBER: ENGAGING NEW ALLIES

SAFER CONSUMPTION SPACES are clearly sites for people who use drugs, so engaging PWUD and their harm reduction allies, as well as other service providers is a relatively easy thing to do: The evidence and effectiveness of harm reduction interventions overall, and SCS in particular, is strong enough that we're already convinced these are effective interventions for dealing with the personal and public health problems of drug use. Additionally, there are natural intersections with a number of groups that may not directly work in issues related to injection drug use, but are more likely to come on-board with SCS after some discussion and education.

Data and evidence alone, however, have not been enough to bring the general public on-board to harm reduction interventions into the mainstream in the U.S. As Johan Hari writes, abstinence-only drug treatment and criminalization of drug use as the only response to drugs is "etched into our subconscious." How do we overcome this and bring new allies under the SCS tent?

A number of groups were highlighted as potential allies, found in the chart below:

- HIV/AIDS advocates and organizations
- HCV advocates and organizations
- LGBTQ advocates and organizations
- Racial justice advocates and organizations
- Homeless advocates and organizations
- Legal organizations
- Criminal justice reform groups
- Harm reduction organizations
- Faith-based groups
- Business groups
- Drug treatment programs
- Merchants associations
- Sex worker rights advocates and organizations
- Medical associations (Nurses, Physicians, medical students
- Family service organizations
- Mental health organizations
- Youth organizations
- Neighborhood groups
- Local political parties/clubs
- Anti-violence advocates and organizations

Several additional points were made to help shape the conversations about SCS and engage new allies:

- Don't limit ourselves to thinking about natural allies, but also reach out to businesses and other community groups. There may be different motives to support SCS, but there are lots of people who want to work and help alleviate suffering.
- Highlight the effectiveness of SCS in engaging PWUD who do not always use other services: People come to use safely, and they stay for the variety of other services offered.
- While it is true that there are many benefits to SCS, we shouldn't oversell these additional benefits over the direct, drug-related harms of overdose, HIV and HCV transmission. This remains the primary mission of SCS and the most effective means of achieving it.
- We have facts on our side: SCS are cost effective, reduce public injecting and related social problems, and reduce medical harms related to drug use. All of this is true, but in our conversations with people, discussing values and compassion are often more effective than data.
- There are many interested stakeholders that the movement should employ to promote SCS: People who formerly used drugs can speak to the needs of people currently using, and would likely be more readily listened to by individuals who have pre-existing biases against drug use. Similarly, the parents of children lost to overdose have been effective change-makers in the naloxone and opioid substitution therapy access advocacy movements. They, too, can be employed in SCS community education and advocacy.
- While there is a diverse array of stakeholders to employ in SCS advocacy, active PWUD are still the primary group to lead this movement. In maintaining our values, we cannot fall into the trap of erasing their voices from the public discourse because people who don't use would be more acceptable to the general public. PWUD as leaders and spokespeople is essential and in and of itself a de-stigmatizing action.
- A central tenat of harm reduction service provision is "meet them where they're at." This applies to the general public, too: It will likely take time and effort to convince people that SCS are safe and effective for the community as well as the individual PWUD.

MEETING PEOPLE
WHERE THEY ARE

engaging the public to raise awareness

Greg Scott is a visual sociologist, filmmaker, and artist at DePaul University in Chicago, IL. His work focuses on harm reduction policy and practice, drug user activism, and the social practices among injection drug users. Greg is also the founder and president of Sawbuck Productions, Inc., a non-profit media production company that works to inspire social change through images and sound. For more information, please visit *sawbuckproductions.org*.

Greg is also the creative designer behind Safe Shape, a mobile pop-up traveling exhibit that demonstrates how safer consumption spaces operate (for more information on Safe Shape, see the resource section). He has taken Safe Shape to cities all across the United States, engaging the public and educating them on how SCS work and the benefits they offer to everyone in the community, regardless of their level and type of drug use. In this capacity, he has spoken to thousands of people and in this experience has developed a list of effective short messages. Here is a selection of them:

- "We already have drug consumption spaces—they just happen to be in public and other unsafe areas of the community. Wouldn't we rather have them be indoors, monitored, and safe?"
- "We already have drug consumption rooms: They're called bars. Bars are effective ways to frame spaces for people to use alcohol, control doses with consumption rules, have clear operating hours, etc. They help keep people who drink alcohol stay safer and they help protect the community from the disorder of public drinking."
- "You have to be alive to quit drugs. Having a pulse is a prerequisite for drug treatment and recovery."
- "If your child was using drugs, where would you rather have them use: In an alley alone or in a space with medical or peer supervision to keep them safe?"
- "These are the next responsible thing to do: For decades we've been supplying people with clean syringes and injecting equipment to keep them healthy but then sending them out into dangerous situations to inject. Providing a consumption space closes the circle of safety and hygiene."
- •"Safer consumption spaces protect everyone in the community, regardless of their level and type of drug use."
- "Safer consumption spaces do not condone or encourage drug use. They exist simply to protect everyone in the community against the harms associated with drug use."
- "Safer consumption spaces have nothing to do with 'enabling' drug users. That's not the issue. What they do is help drug users stay alive and as healthy as possible, help communities reduce death and disease, and empower everyone in the community to chart a humane path forward."
- "Safer consumption spaces save the taxpayers money. It's far less expensive to run these spaces than to cover the costs associated with the overdose deaths, diseases, and social disorder that arise from public drug use."
- "Safer consumption spaces are a concrete way to elevate the standard of care we expect of each other in our communities. Not only are they scientifically proven to improve community health, and not only are they cost effective; they're the humane thing to do."

ADDRESSING CENTRAL ISSUES IN
SCS ADVOCACY

CREDIT: GPDCR

A series of breakout groups met to discuss a range of issues that are important to the SCS advocacy movement.

ENSURING SCS ARE LED BY PEOPLE WHO USE DRUGS

This small group was charged with discussing the importance of keeping PWUD at the forefront of SCS advocacy and education. This discussion focused on the importance of employing PWUD to staff SCS. There is significant concern that as PWUD often have criminal records, they are excluded from many employment opportunities. Organizations that open an SCS must make a concerted effort to hire PWUD to staff them, and then support and develop said staff accordingly. Placing PWUD in positions of management and leadership is important, too.

Other considerations/recommendations include:

- Protecting PWUD with criminal records from further charges and arrest (particularly for any underground SCS).
- Pay a living wage. Too often, PWUD are used as peer volunteers where their labor is used but they are not compensated. Similarly, even when paid positions are available, they are often low-level positions where salaries are low.
- Place PWUD on the board of directors of organizations operating SCS. Forming community advisory boards (CABs) of PWUD to inform the operation of SCS, and to serve as a voice for the people who use SCS.

PROGRAM STRATEGIES

This group was charged with discussing how we can start SCS. There was an agreement that there is a sense of urgency in moving forward with these spaces: SCS are well-established in other parts of the world, are proven evidence-based interventions, and yet, they are still not operating in the U.S. despite being talked about for years.

As we move to start SCS in our community, several considerations were discussed:

- No matter what we end up with, the core principles of involving PWUD and peers in the work and creating an open, welcoming space must be prioritized;
- Don't let perfection be the enemy of good: We can't get stuck in an ideal program type as there is room for a variety of models and service delivery;
- Even if you start small, it's still a start. Once a program is established, there will be opportunities to expand to an array of other services to provide;
- Plan and prepare for media coverage: Engage with the media early and often and do everything you can to frame the message around SCS.

This group developed 3 recommendations:

- The movement wants progress in establishing SCS, ideally legal ones, but underground programs if necessary;
- Programs must be low-threshold, peer-driven;
- Flexibility in program design allowing for local communities to establish SCS that meet their needs.

FUNDING STRATEGIES

The group identified 3 potential areas for funding opportunities/needs: (1) Advocacy, (2) Research and Evaluation, and (3) Programmatic (running a SCS). Each of these areas have different funding opportunities, and some are easier to fund than others: Funding for SCS advocacy, for example, is more readily available than is funding for an underground SCS. Prioritizing funding for advocacy is important as that could both free up funding opportunities from other funders, but it is also a necessary first step to make these programs legal, which will open up funding from others, including departments of public health.

Potential strategies include:

- A funder leveraging drive: A major funder can reach out to communities interested in opening and operating an SCS, and bring other funders to the table to combine grants/funding for funding SCS.
- A funder convening: We can hold a meeting of foundations and other grant-makers—both those that have traditionally funded harm reduction but also new ones—to educate them on SCS and the need to fund advocacy and operations.

The need for funding advocacy and programs is high: Most of the non-profits that would be willing to open and operate an SCS are already on limited budgets, stretched thin with both staff and volunteers and may not have the ability to take on an entirely new program.

TOOLS FOR ORGANIZING

This breakout group identified 7 tools that would assist advocates in both local, state and national advocacy and awareness activities. Some of these tools are already available, some in process and others to be developed.

- **A WEBSITE:** This website would serve as a national resource hub for people to access information and tools for organizing and campaigns. The components of this website will serve as a repository for existing and new material, including, but not limited to the following: Videos with facilitator guides; factsheets; research studies and bibliographies; documentation of history and current activities; interviews with stakeholders with a variety of perspectives speaking on the importance of SCS; advocacy and stories from the front-lines; lessons on how to engage in local activism; statements of core principles; a media repository; a legal section with briefs and analyses; templates for program operations; technical assistance options. This website is under construction by Taeko Frost and Matt Curtis, and will be launched in 2017.
- **A PUBLIC WEBSITE.** In addition to the above website, designed for people working in the SCS space, there is a need for a public-facing website that is simple and clear, providing information around the issues surrounding the need for SCS and harm reduction. This is not in place yet, but something that an agency like Project Inform or Harm Reduction Coalition can curate.
- **A NATIONAL SCS LISTSERV.** A national listserv is already in place to facilitate communication and sharing of best practices among SCS advocates. This listserv is used to announce local news, ask questions and get advice from peers and disseminate information and best practices. This listserv is sisan@googlegroups.com.
- **A FACEBOOK PAGE.** A Facebook page is a simple tool to create a forum for ongoing campaigns, news, and events.
- **RESEARCH.** There is a rich history of using evidence-based research to support harm reduction interventions, and we have a wealth of research on SCS/SIF in Canada and Australia, with less in the English-language press from Western Europe. This research is important for U.S.-based advocacy, but we also need feasibility, cost-effectiveness and other related research here. Alex Kral and Peter Davidson demonstrated the value of their research at this meeting (and both are engaged in on-going research), and several other scholars have work in progress or in press as well. Community groups should reach out to medical, public health, and social science researchers to conduct research related to SCS in their respective community.

In addition to conducting the research, the work needs to be disseminated in traditional manner of scientific conferences and journals, but also in community forums and other settings where the research will reach the impacted communities and those who would most benefit from the information.

Finally, reflecting comments from earlier in the meeting, it's important to bring people who use drugs into the research process with a community-based participatory research agenda.

The website, Facebook page and listserv listed above will also serve as tools for dissemination of research.

STATE ADVOCACY STRATEGIES

Working on a state-by-state advocacy agenda is a viable option for legalizing and opening SCS. At the time of publication, several states—California, Maryland, Vermont, Massachusetts and New York—have bills either in the planning stages or actually in front of their respective state legislatures. Indeed, at the time of this publication, California saw AB 186—a bill that allows local jurisdictions to permit SCS and legally protect both the programs operating them and the participants who use them—pass the state assembly. It still must pass the state Senate and then get signed into law by the governor, but this marks the first time a bill relating to SCS has been passed by a legislative body in the U.S.

CREDIT: Delphine Vaisset

The group discussed several strategies for pursuing an SCS agenda at a state level:

- Avoid siloing within various government agencies. There are different people working across different programs, and it is as important to connect allies within government as it is in the community.
- Link SCS to other related policies such as state HIV/AIDS or HCV elimination strategies, or overdose response plans.
- Keep lines of communication between local advocates and those working at a state level: State legislatures want to know that there is a local health department that wants to authorize an SCS, while local health departments want to know that the state would support the opening of one. Putting the two together and formulating a unified plan will help move things forward.

There are 4 recommendations for state advocates to undertake:

- Frontload information and education to policymakers early;
- Spend a lot of time building coalitions of community groups, professional societies, advocates and so on to support SCS;
- Set benchmarks to serve as a roadmap to victory: What do you need to do to make SCS a reality in your state, and how do you know you're getting there?
- Find a state legislator who will serve as a champion for SCS, work with her/him to draft legislation and educate their colleagues to pass it.

FEDERAL ADVOCACY STRATEGIES

Any clear, organized federal strategy is in its infancy. In fact, for now there is no need to ask Congress to anything in terms of legislation or the like, but rather, focus on preventative advocacy so as to avoid a scenario where an opponent to SCS might threaten to withhold federal dollars from jurisdictions looking to start one. A more productive goal would be to educate Congress now, and seek action later.

There are 3 potential goals for advocates working at the federal level:

- Building support for SCS;
- Mitigating potential harms from federal policymaking;
- Provide support for local and state organizing.

There are a number of potential activities for federal advocates to undertake:

- Educate Congress on the issue through a policy brief or congressional briefing;
- Set-up Congressional staffer visits to InSite in Vancouver, or other Canadian SCS once they open;
- Strategize around effective ways to integrate SCS into other federal efforts related to overdose deaths and syringe access funding, including the Comprehensive Addiction and Recovery Act (CARA);
- Explores ways in which we can work with the Department of Justice (DOJ) on clarifying the legality of SCS within federal law.
- Develop relationships with relevant administrative offices: Department of Health and Human Services (HHS), Housing and Urban Development (HUD), Veterans Administration (VA), Office of National Drug Control Policy (ONDCP), Office of National AIDS Policy and DOJ.

Author's Note: Much of what could be done on a federal level was dependent upon the outcomes of the election. At the time of the meeting, President Barack Obama was in office and there was evidence to suggest that his administration would be receptive to harm reduction and alternative approaches to drug policy. With the election of President Donald Trump, we do not yet have a sense of where the current administration will stand on SCS. Admittedly, the rhetoric of ramping up the war on drugs, and the appointment of an Attorney General with a racist past who has a poor record of ignoring evidence-based interventions for drug treatment or harm reduction while supporting incarcerating people who use drugs, does not leave one room for much optimism. There may be opportunities for partnership, or at minimum opportunities to educate our federal partners on alternative strategies to address the opioid crisis and other drug use

MAKING SCS OUR OWN:

KEEPING VALUES WITHIN THE MOVEMENT

AS WE MOVE FORWARD with our SIF/SCS advocacy there will likely be competing voices calling for compromises or enacting certain conditions in order to allow them happen, particularly from people who may not be deeply invested in harm reduction values. As we fight for SIF/SCS, it's important for us to identify our values as we engage new allies and try to convince potential allies to join us. The meeting closed with a large group discussion reviewing many of the themes we talked about throughout the two days, and further articulating what we want to see in SCS, and how we can keep our values while advocating for and operating them.

A summary of recommendations that the group collectively endorsed for how to proceed in the SCS movement and what services we want to see delivered once these SCS are implemented can be found to the right.

This list is not end of this discussion. Some of these ideas are controversial and may face resistance from the general public. SCS advocates will need to take the time to educate people about SCS and provide rationale for goals and services. This list will likely expand as this movement goes forward. As long as we keep the needs of the people who use drugs at the forefront of this movement and it remains true to the above values, we know we will be doing it right.

SCS PRINCIPLES AND VALUES

- **Keep it a drug user led movement;**
- **Keep these spaces to all PWUD, regardless of how they use their drugs;**
- **Must be centered in racial and social justice;**
- **Build positive relationships across local/state campaigns;**
- **Any program model must be based on respect and inclusion;**
- **They should be spaces for radicalization: SCS are political projects, fighting against a war on drugs and seeking a society that is demilitarized and without stigma.**

SCS OPERATING GOALS AND SERVICES

- **Open 24 hours, 7 days a week, 365 days per year;**
- **Keep it low threshold;**
- **No mandated discussion of drug treatment or other services: "Meet them where they're at;"**
- **Allow for assisted injecting ("doctoring");**
- **No age limits: If you use drugs, you're welcome to attend and receive services;**
- **No pregnancy limits: We want to engage all people and be open and inclusive;**
- **Childcare should be available;**
- **They should be pet friendly;**
- **SCS should be staffed by PWUD who are paid a living wage.**

CONCLUSIONS
AND NEXT STEPS

WITH INCREASED AWARENESS of injection related HIV and HCV outbreaks across the U.S., attention to the opioid crisis and the suffering that results from overdose deaths, as well as a renewed commitment to social justice and racial equity among advocates and the communities most impacted by the failed, racist war on drugs, there is now much public discussion about the ways to reduce the harm associated with injection drug use and alternatives to criminalization. Along those lines, there has been increased discussion—indeed, in the cases of Ithaca, Seattle and California, there has been action—about safer consumption spaces and the role they can play in alleviating these harms.

It will not be easy to overcome the barriers and meet the challenges related to establishing safer consumption spaces in the United States. There are significant barriers to establishing most, if not all, harm reduction interventions in the U.S., and SCS will be no exception. Socially and politically, insistence on abstinence and criminalization of drug use have been the primary means of dealing with this issue. A significant challenge to establishing SCS is overcoming public perception among both policy-makers and community members that these programs will create a host of negative consequences to the areas in which they exist, and that the programs condone and will increase drug use.

The participants of this think tank made an important contribution to the critical and ongoing process of achieving social justice, equity and improved health of PWUD. This think tank is built on the foundations laid by drug user unions and their advocates. There is much work to be done, and this meeting is but a step towards a more humane and just society. How will we know we are doing it right? When we are led by people who use drugs. When we have a commitment to racial justice and social equity. We'll know when we have opened SCS throughout the U.S.

CREDIT: GPDCR

Project Inform will continue this work. In addition to municipal, state and federal advocacy, Project Inform will produce a "Safer Consumption Spaces Toolkit" to help people organize and advocate for SCS in their communities. We are forming a national SCS community advisory board comprised and led by PWUD. Finally we will produce a monthly webinar series devoted to SCS and related topics.

There are many others across the U.S. working to establish SCS in their communities. We are excited to be a part of this movement to push this lifesaving agenda forward.

If you have any questions or comments, please contact Andrew Reynolds at *areynolds@projectinform.org*.

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FUNDED BY

AIDS United
amfAR
Comer Foundation
Drug Policy Alliance
Gilead Sciences

For a PDF of this report,
go to www.projectinform.org/SIFs.

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SB 279 FAV Study Models of OPS_continuum of care.p
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Integrating supervised consumption into a continuum of care for people who use drugs

Ayden Scheim PhD, Dan Werb PhD

Cite as: *CMAJ* 2018 August 7;190:E921-2. doi: 10.1503/cmaj.180824

The opioid overdose crisis in North America demonstrates a need to scale up supervised-consumption services, as well as to experiment with a mix of potential service models. A range of new-to-Canada models have been implemented over the past two years. In some cities, including Toronto and Ottawa, health authorities initially focused on embedding the services within community health agencies to provide a continuum of health care and treatment for substance use disorders, but there are no data on the effectiveness of this model. With an increasing diversity of models of supervised-consumption services in operation, there exists a window of opportunity for a second generation of research in this area that moves from asking whether such services are effective in reducing drug-related harms — which we know them to be[1] — to asking whether, how and under what conditions their benefits can be maximized.

Models of supervised-consumption services operating in Canada include peer-run "overdose-prevention sites," stand-alone storefronts, mobile vans, co-location with harm-reduction programs or social housing, in-hospital services, women-only sites and the aforementioned integrated model. Some of these operate within community health centres that also offer services for populations that do not use drugs. The plurality of models raises questions as to their relative effectiveness. These questions are not answered by the existing scientific literature, which is dominated by reports from two stand-alone sites in Vancouver and Sydney, Australia, employing comparable models.[1] The evidence base on alternative models is insufficient to guide policy in this area, and it would be premature to consider service models interchangeable. Nevertheless, officials in Seattle recently announced they will operate a mobile supervised-consumption service because no fixed location could be secured.

Insite, Canada's first formal supervised-consumption service, opened in Vancouver in 2003 and remained the only sanctioned site in Canada for 12 years.[2] Insite is a stand-alone, storefront model that offers basic nursing care (including initial prescriptions for opioid agonist therapy) and a small co-located medically supervised detoxification facility. Extensive evaluation has established Insite's public health benefits.[1] However, it is also evident that stand-alone models have limited reach.[3] They serve a small geographic area (the distance clients will walk), and even among regular service users, only a proportion of injections are covered (43% of Insite users accessed the site for fewer than one-quarter of injections[4]). Moreover, stand-alone models attract a highly socially vulnerable population,[5] and clients continue to face disparities in health status, homelessness and access to opioid agonist therapy.[6] This suggests a need for greater scale-up of existing models as well as for new models that offer a larger suite of on-site health services.

KEY POINTS

- Supervised-consumption services are known to be effective in reducing drug-related harms, and several dedicated services now exist in Canada.
- It is now time to move from asking whether such services are effective to asking whether, how and under what conditions their benefits can be maximized.
- Integrated and co-located health service models — effectively "one-stop shops" — could improve health outcomes for people who inject drugs by combining the prevention of immediate drug-related harms with access to primary care, mental health care and social service programs.

Integrated and co-located health service models have been developed to address HIV and hepatitis C epidemics among people who inject drugs,[7] and have been successful in improving the quality of client care.[8] Integrated services offer clients "one-stop shopping" in settings where they have established trusting relationships, in contrast to the stigma and mistrust that often characterize other health care encounters.[7,8] Although stand-alone supervised-consumption services have demonstrated some success in making referrals to external health services,[1] referrals to co-located services are likely to be more successful given the difficulties their client populations typically face in accessing medical care.[9] As perhaps the lowest-barrier health services available to people who use drugs, supervised-consumption services represent an ideal fulcrum for service integration.

Such integration is occurring within community health centres in Toronto and Ottawa, where supervised-consumption services aim to prevent immediate drug-related harms while connecting clients to existing on-site primary care, mental health care and social service programs. These integrated models also

offer opportunities for innovative service delivery to fill gaps in the current system of care. In Toronto, Ottawa and Vancouver, drug-checking programs using spectrometry are being put in place within supervised-consumption services so that detailed information on the composition of street drugs can be disseminated in an effort to reduce overdose risk. One Toronto site, The Works, already includes an on-site methadone and suboxone treatment clinic. Further, there is increasing interest across Canada in managed opioid programs to divert patients from adulterated street drugs and to offer managed care for opioid use disorder. Integrated supervised-consumption services are being considered as natural hubs for such programs.

Despite the theoretical advantages of integrated models of supervised-consumption services, there are also potential challenges requiring community-engaged investigation. For example, there is tension between integration with clinical care and provision of low-barrier supervised-consumption services. For some individuals who use drugs, the regulations imposed by government-sanctioned models (e.g., time limits and inability to share drugs) are unacceptable,[3,10] and others may prefer to access supervised-consumption services separately from other health services to maintain their anonymity. Such individuals can choose to access lower-threshold overdose prevention sites in some cities, but these are ultimately intended to be temporary solutions. The impacts of integrated models may also be constrained by operational restrictions of health care facilities, such as limited hours of operation. Therefore, we propose that a consideration of the relative benefits of stand-alone, integrated and low-threshold models should be prioritized in second-generation research on supervised-consumption services, particularly with respect to their appropriateness for urban, suburban, rural and remote communities, and for specific subpopulations, such as women and Indigenous people.

Numerous challenges limit implementation of supervised-consumption services, even during this period of heightened mortality from opioid overdose. Municipalities need not choose from a single model, and all options should be on the table, from peer-run through clinically embedded supervised-consumption services. Indeed, the operation of diverse service models across multiple sites within a given city is likely optimal. The social contexts, needs and preferences of people who use drugs across settings are diverse, and so too must be the public health response. At the same time, precisely because supervised-consumption services can be challenging to establish, efforts should be made to understand when, why and for whom various models are most beneficial, rather than treating them as interchangeable. Specifically, implementing and evaluating programs that integrate supervised consumption within a broader spectrum of care may reduce substantial barriers to progression along the continuum of treatment for substance use disorder for marginalized individuals who use drugs, filling an ongoing gap in care that contributes to the worsening of Canada's opioid overdose crisis.

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Competing interests: Dan Werb received funding from Health Canada to implement drug-checking services within supervised-consumption sites in Toronto. None declared by Ayden Scheim.

This article has been peer reviewed.

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Contributors: Both authors drafted the manuscript, gave final approval of the version to be published and agreed to be accountable for all aspects of the work.

Funding: Ayden Scheim is supported by the Pierre Elliott Trudeau Foundation and a Canadian Institutes of Health Research (CIHR) Fellowship. Dan Werb is supported by a CIHR New Investigator Salary Award.

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SB 279 FAV Study on Safe Injection Facilities Nov

Uploaded by: Gudlavalleti, Rajani

Position: FAV

Supervised Injection Facilities and Other Supervised Consumption Sites: Effectiveness and Value

Evidence Report

Posted November 13, 2020

Prepared for

NEW ENGLAND CEPAC
COMPARATIVE EFFECTIVENESS PUBLIC ADVISORY COUNCIL
AN ICER PROGRAM

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DATE OF PUBLICATION: November 13, 2020

How to cite this document: Armbrecht E, Guzauskas G, Hansen R, Pandey R, Fazioli K, Chapman R, Pearson SD, Rind DM. Supervised Injection Facilities and Other Supervised Consumption Sites: Effectiveness and Value; Evidence Report. Institute for Clinical and Economic Review, November 13, 2020. https://icer-review.org/material/supervised-injection-facilities-evidence-report/

Eric Armbrecht served as the lead author for the report and wrote the background, client perspectives, other benefits, and contextual considerations sections of the report. Rajshree Pandey and Katherine Fazioli were responsible for the oversight of the systematic review and authorship of the comparative clinical effectiveness section with the support of Serina Herron-Smith and Eric Borrelli. Rick Chapman was responsible for the oversight of the cost-effectiveness analyses. Azanta Thakur authored the section on operational guidelines. Greg Guzauskas and Ryan Hansen developed the cost-effectiveness model and authored the corresponding sections of the report. David Rind and Steven Pearson provided methodologic guidance on the clinical and economic evaluations. We would also like to thank Catherine Koola for her contributions to this report.

About ICER

The Institute for Clinical and Economic Review (ICER) is an independent non-profit research organization that evaluates medical evidence and convenes public deliberative bodies to help stakeholders interpret and apply evidence to improve patient outcomes and control costs. Through all its work, ICER seeks to help create a future in which collaborative efforts to move evidence into action provide the foundation for a more effective, efficient, and just health care system. More information about ICER is available at http://www.icer-review.org.

The funding for this report comes from government grants and non-profit foundations, with the largest single funder being Arnold Ventures. No funding for this work comes from health insurers, pharmacy benefit managers, or life science companies. ICER receives approximately 19% of its overall revenue from these health industry organizations to run a separate Policy Summit program, with funding approximately equally split between insurers/PBMs and life science companies. No life science companies who participate in this program are relevant to this review. For a complete list of funders and for more information on ICER's support, please visit http://www.icer-review.org/about/support/.

For drug topics, in addition to receiving recommendations from the public, ICER scans publicly available information and also benefits from a collaboration with IPD Analytics, an independent organization that performs analyses of the emerging drug pipeline for a diverse group of industry stakeholders, including payers, pharmaceutical manufacturers, providers, and wholesalers. IPD provides a tailored report on the drug pipeline on a courtesy basis to ICER but does not prioritize topics for specific ICER assessments.

About the New England CEPAC

The New England Comparative Effectiveness Public Advisory Council (New England CEPAC) – a core program of ICER – provides a public venue in which the evidence on the effectiveness and value of health care services can be discussed with the input of all stakeholders. The New England CEPAC seeks to help patients, clinicians, insurers, and policymakers interpret and use evidence to improve the quality and value of health care. The New England CEPAC Council is an independent committee of medical evidence experts from across New England, with a mix of practicing clinicians, methodologists, and leaders in patient engagement and advocacy. All Council members meet strict conflict of interest guidelines and are convened to discuss the evidence summarized in ICER reports and vote on the comparative clinical effectiveness and value of medical interventions. More information about the New England CEPAC is available at https://icer-review.org/programs/new-england-cepac/.

The findings contained within this report are current as of the date of publication. Readers should be aware that new evidence may emerge following the publication of this report that could potentially influence the results. ICER may revisit its analyses in a formal update to this report in the future.

The economic models used in ICER reports are intended to compare the clinical outcomes, expected costs, and cost-effectiveness of different care pathways for broad groups of patients. Model results therefore represent average findings across patients and should not be presumed to represent the clinical or cost outcomes for any specific patient. In addition, data inputs to ICER models often come from clinical trials; patients in these trials and provider prescribing patterns may differ in real-world practice settings.

In the development of this report, ICER's researchers consulted with several clinical experts, patients, manufacturers, and other stakeholders. The following clinical experts provided input that helped guide the ICER team as we shaped our scope and report. None of these individuals is responsible for the final contents of this report or should be assumed to support any part of this report, which is solely the work of the ICER team and its affiliated researchers.

For a complete list of stakeholders from whom we requested input, please visit: https://icer-review.org/material/supervised-injection-facilities-stakeholder-list/

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List of Acronyms Used in this Report

ACCESS	**AIDS Care Cohort to Evaluate Access to Survival Services**
aHR	**Adjusted Hazard Ratio**
AIDS	**Acquired Immunodeficiency Syndrome**
aOR	**Adjusted Odds Ratio**
ASTHO	**Associate of State and Territorial Health Organizations**
BC	**British Columbia**
CDC	**Centers for Disease Control**
CIRI	**Cutaneous Injection-Relation Infection**
DCR	**Drug Consumption Rooms**
ED	**Emergency Department**
EMS	**Emergency Medical Services**
EMT	**Emergency Medical Technician**
evLYG	**Equal Value Life Years Gained**
HCV	**Hepatitis C Virus**
HIV	**Human Immunodeficiency Virus**
IDU	**Injection Drug User**
IRB	**Injection Risk Behavior**
MAT	**Medically Assisted Treatment**
MeSH	**Medical Subject Headings**
MSIC	**Medically Supervised Injecting Center**
MSIR	**Medically Supervised Injection Room**
NHBLI	**National Heart, Blood, and Lung Institute**
NSW	**New South Wales**
QALY	**Quality-Adjusted Life Years**
OPS	**Overdose Prevention Sites**
OST	**Opioid Substitution Treatment**
OUD	**Opioid Use Disorder**
PHS	**Portland Hotel Society**
PRISMA	**Preferred Reporting Items for Systematic Reviews and Meta-Analyses**
PWID	**People Who Inject Drugs**
PWUD	**People Who Use Drugs**
RCT	**Randomized Controlled Trial**
RR	**Risk Ratio**
SCS	**Supervised Consumption Sites**
SEOSI	**Scientific Evaluation of Supervised Injecting**
SIF	**Supervised Injection Facility**
SSP	**Syringe Service Program**
SUD	**Substance Use Disorder**
US	**United States**
VIDUS	**Vancouver Injection Drug Users Study**

Executive Summary

Background

The opioid overdose epidemic is devastating families and communities across the United States (US). Epidemiological studies from the US Centers for Disease Control and Prevention (CDC) have found that overall life expectancy of Americans has declined, and this decline was largely attributed to drug-related overdose deaths.[1-3] Today in the US, overdoses are classified as the leading cause of injury-related death.

The public health approach to addressing the overdose epidemic is multi-faceted, involving a combination of policy, education, and community interventions. A framework developed by the Association of State and Territorial Health Organizations (ASTHO) describes a cross-sectoral response with four key strategy areas: (1) training and education; (2) monitoring and surveillance; (3) primary and overdose prevention; and (4) treatment, and harm reduction.

Harm reduction strategies seek to mitigate the harms of behaviors.[4] Harm reduction strategies include improved access to the antidote naloxone, syringe service programs (SSPs) that allow people who inject drugs (PWID) to obtain or exchange equipment for injections, and drug checking services that screen for risky drugs such as fentanyl. These implement an alternative to the criminalization and disease treatment models of drug use and addiction. Supervised injection facilities (SIFs) are an additional method of harm reduction. While proponents of harm reduction theory recognize abstinence may be the ideal goal for some people, they accept alternatives which reduce the risk for death and disability even if they do not promote abstinence.[5] Opponents of such strategies often focus on their potential to enable activities that are criminal or perceived as immoral.[6]

Supervised Injection Facilities (or Supervised Consumption Sites)

A SIF is a permanent or mobile place where people can inject drugs they have obtained elsewhere.[7] If it permits use of drugs by routes other than injection (such as smoking or snorting), "supervised consumption site" (SCS) is a more appropriate term. SIFs typically provide equipment to allow users to perform safe and sterile injections while being monitored by trained medical staff who can treat overdoses with oxygen, naloxone, and/or other first-responder care.[7] While SIF model implementation seems to vary based on community needs, resources, and funding, interviews with stakeholders suggest that there are three core features: sterile equipment, trained personnel for supervision, and naloxone administration (along with other first-responder medical care). Additional services may be added to the core features, such as health screening, treatment for substance use disorders (SUDs), referral coordination for social support (e.g., housing), health care and mental health services.[7-10]

In 2003, Insite, the first legally-sanctioned SIF in North America, opened in Vancouver, British Columbia's Downtown Eastside, a neighborhood with high rates of drug use, homelessness, and poverty.[11] Vancouver has become an exemplar setting for researchers and policy advocates to understand the impact of the SIF model on a variety of outcomes, including the ones addressed in this ICER report.

The clients of SIFs are impacted by many social determinants of health. They are homeless, live alone, or have significant housing insecurity. Mental illness and unemployment are common. We spoke with a SIF client who described the people served by SIFs as "poor, homeless, marginalized…a beat-down people".

Although SIFs are considered a type of public health intervention, their population-level reach is measured in city blocks – not miles.[12,13] The location is an important attribute that determines whom a SIF serves as well as its potential public health impact.

There are no legally sanctioned SIFs operating in the United States. Per a report in the New England Journal of Medicine, one unsanctioned site has been operating in the US for six years.[14] There are news reports of elected officials or groups in New York City, Ithaca, Seattle, Denver, Washington DC, Chicago, Baltimore, Burlington, Oakland and San Francisco exploring feasibility, organizing coalitions, or preparing legislation for SIFs.[15-23]

Objectives

The purpose of this assessment is to evaluate the health and economic outcomes of a SIF. This review seeks to answer the question: *What is the net health benefit of implementing a SIF (which includes an SSP) versus an SSP alone?* The CDC recommends SSPs as an evidence-based program noting they are "safe, effective, and cost saving, do not increase illegal drug use or crime, and play an important role in reducing the transmission of viral hepatitis, HIV, and other infections."[24] The ICER value framework includes both quantitative and qualitative comparisons to ensure that the full range of benefits and harms are considered in the judgments about the clinical and economic value. The assessment of effectiveness and value is made in comparison to an SSP as we believe it unlikely that communities without SSPs would be willing to consider a SIF. A SIF implemented in a community without good SSP coverage may experience more than the incremental benefit.

Perspective of the Client and Impact on Persons Who Use Drugs

Section 2 of this report has an extensive description of what we heard from 48 stakeholders including those who are clients of SIFs/SSPs, staff members of SIFs/SSPs, researchers, clinical experts, legislative experts, and a law enforcement officer, and includes direct quotes from many stakeholders.

In brief, some of the major themes we heard include the following:

- **Social Isolation and Community**: SIFs serve the most vulnerable and marginalized people in a community, with many PWUD live in social isolation due to housing insecurity, mental illness, and poverty. SIFs can provide a place where PWUD will be welcomed and can build relationships with other clients and with staff. In contrast to client interactions with SSPs that were described as "transactional and hurried", SIFs have the potential to be more effective at introducing counseling interventions through a community built on camaraderie.
- **Integrated Services**: Providing on-site access to social workers, frontline workers, or counselors was widely considered essential. Their experience suggested that most clients could not be easily referred to external counseling as they often would not accept another counselling center for reasons such as distance, fears, and stigma.
- **Learning from Lived Experience**: Most people commented on how the best SIFs respect the expertise of PWUD and include them in setting policies and operating the facility.
- **Inhalation of Drugs and Safely Testing Drugs**: We heard from multiple stakeholders that changes in the drug supply and client preferences mean that SIFs must adapt and provide for the use of inhaled substances (not limited to opioids), becoming more comprehensive SCSs. Several PWUD described how they use the SIF to check the potency of a new batch under the protection of supervision and resuscitation, if needed.
- **Health Care System Bias**: PWUD noted "shaming and blaming" and "accusations of drug-seeking" from health care system (e.g., hospitals, doctors, and EMTs). SIFs offered a more compassionate way to access education, resources, and medical care.
- **Honeypot Effect**: Most PWUD and many stakeholders dismissed the possibility of a honeypot effect in which a SIF attracted PWUD or crime to a neighborhood, noting the long-established poor conditions of neighborhoods where SIFs are generally located. However, PWUD and stakeholders acknowledged that opposition to SIFs, SSPs, and other forms of harm reduction can exist in a community. We heard from PWUD and stakeholders that drug use still happens just outside of SIFs and SSPs, and at least some community members do complain about syringe/needle debris.
- **Public Drug Use**: There is a community-level trauma caused by public use as well as overdose. SIFs provide the possibility of reducing this trauma to the public.

Clinical Effectiveness

Overview of Studies

Our literature search identified a total of 1188 potentially relevant references for SIFs (see Appendix D2), and we included 48 studies that evaluated individual or community level outcomes for SIFs. The majority of studies evaluated SIFs from Canada (n=33), and the remaining studies evaluated

SIFs in Australia (n=8) and European countries (n=7, including, two from Germany, three from Denmark, and two from Spain). Eighteen studies used a cohort study design, while others employed a pre-post ecological or time series (n=11), and cross-sectional study design (n=10). Nine studies used a qualitative, exploratory, or descriptive study design. We also included government sanctioned evaluation reports from MSIC in Sydney, Australia, the MSIR in North Richmond Australia, and the SCSs in Alberta, Canada. To summarize the effectiveness of SSPs, we included one review of reviews[25] that summarized results from 13 prior systematic reviews as well as three additional systematic reviews.[26-28] These selections were drawn from a search of systematic reviews of SSPs which identified a total of 72 potentially relevant references.

We are assuming that PWID had access to SSPs during the study period, and the outcomes associated with SIFs are informing the added benefits of SIFs over baseline SSP access. Much of the evidence regarding SIFs arises from ongoing prospective cohort studies in Vancouver, Canada, including studies of Insite.

Mortality

Published evidence and unpublished reports from stakeholders suggest that no client of a SIF has ever experienced death from overdose within a facility.[14,29,30] However, PWUD are at high risk of death from overdose, and reduction of mortality inside SIFs does not necessarily demonstrate reduction in mortality in SIF clients.

A Canadian prospective cohort study found that frequent use of SIFs was associated with a lower risk of all-cause mortality (adjusted HR[aHR]: 0.46; 95% CI: 0.26-0.80).[31] However, it is hard to assess causality from such studies as PWUD who are frequent clients of SIFs are likely different from those who are not.

Higher quality evidence on the effect of SIF on mortality probably comes from a population-based study in Vancouver, Canada that evaluated the effects of Insite on overdose mortality by measuring overdose mortality pre-and post-SIF within and beyond the 500 m area around the facility.[12] The SIF opening was associated with a significant reduction of 35% in overdose mortality within 500 m of the facility, compared to a 9.3% decline in the rest of the city. Refer to Table ES1.[12]

Table ES1. Overdose Rates in the Vicinity of a SIF and Beyond (table adapted from Marshall et al. 2011)[12]

	Overdoses within 500 m of SIF		Overdoses farther than 500 m of SIF	
	Pre-SIF	Post-SIF	Pre-SIF	Post-SIF
Number of overdoses	56	33	113	88
Overdose rate (95% CI)*	254 (187 to 320)	165 (108 to 221)	7.6 (6.2 to 9.0)	6.9 (5.5 to 8.4)
Rate difference (95% CI)*; p value	-	88.7 (1.6-176); p=0.048	-	0.7 (-1.3-2.7); p=0.490
Percentage reduction (95% CI)	-	35.0% (0.0 to 57.7)	-	9.3% (-19.8 to 31.4)

SIF: supervised injection facility, CI: confidence interval; Pre-SIF period= January 1, 2001 to September 20, 2003. Post-SIF period= September 21, 2003 to December 31, 2005

*Expressed in units of per 100,000 person-years

Non-Fatal Overdose and Health Care Utilization for Overdose

We identified three studies that evaluated the effect of SIF use on non-fatal overdose and overdose requiring EMS, ambulance, or hospital care.[32,33] A study from Insite from March 2004 to August 2005 found 285 unique users who experienced 336 non-fatal overdose events. Of these overdose events, 28% resulted in a transfer to hospital.[32] A recent time-series analysis of SIF users at Insite reported that the overdose rate per 1000 visits increased from 2010 to 2017 (1.5 vs 9.5, p<0.001) with an increase in overdose events requiring naloxone administration (48.4% to 57.1%, p<0.001) but no overdose deaths were reported within the facility.[33]

In a 2007 study by the New South Wales (NSW) Health Department in Sydney, Australia, opioid overdose-related ambulance calls were analyzed in Sydney over 36 months pre-SIF and 60 months post-SIF. The SIF opening was associated with a greater reduction in ambulance calls for opioid-related overdose events in the vicinity of the SIF compared to the rest of NSW (68% vs 61% decline, p=0.002).[34] This effect was even higher during operating hours of the SIF (80% vs 60% decline, p<0.001).

Injection Risk Behaviors

Reducing injection risk behaviors (IRBs) is important in reducing the risk of infectious disease transmission.[35 1101] We identified seven studies that evaluated the effect of SIFs on reducing IRBs, including four studies from Vancouver and three studies from European countries (Denmark, Germany, and Spain). Most studies reported SIF use was associated with a reduction in IRBs. For example, a cross-sectional analysis of 431 PWID in Vancouver found that SIF use was associated with reduced syringe sharing (adjusted OR [aOR]: 0.30; 95% CI: 0.11 to 0.82; p=0.02).[36] Another cross-sectional study of 1082 PWID explored reasons for changes in changes in IRBs, noting 80% reported reductions in rushed injections, 71% reported less outdoor injections, 56% reported less

unsafe syringe disposal, and 37% reported using used syringes less often.[13] A meta-analysis combined results from three European studies (Wood 2005, Kerr 2005, and Bravo 2009) and found SIF use was associated with a 69% reduction in the likelihood of syringe sharing (pooled effect: 0.31; 95% CI: 0.17 to 0.55).[37]

Infection Prevalence/Incidence and Health Care Utilization

We identified studies that provided evidence on the effect of SIFs on infection incidence and prevalence, most of which were not designed to detect differences, specifically in rates of HIV or HCV.

A cross-sectional study of 510 PWID who attended a SIF in Catalonia, Spain found that there were no significant differences in the prevalence of HIV or HCV among those who had frequent SIF attendance (i.e., daily), medium SIF attendance (i.e., > half of days), and low SIF attendance (i.e., ≤ half of the days).[38]

More extensive evidence exists for the effects of SSPs on viral infections and the results are mixed. A meta-analysis pooled results from 10 studies and found a trend towards a reduced risk of HIV transmission with SSPs (effect size: 0.66; 95% CI: 0.43 to 1.01).[39] When the analysis looked only at six higher-quality studies, a significant reduction was observed (effect size: 0.42; 95% CI 0.22 to 0.81). One meta-analysis pooled results from seven studies and found an increased risk of acquiring HCV with SSPs (RR: 1.62; 95% CI: 1.04 to 2.52)[40], but the authors noted that studies included in their analysis may have been affected by volunteer bias as SSPs may attract higher-risk PWID. Other meta-analyses suggested SSPs may reduce the risk of acquiring HCV.[28,41]

A prospective cohort of 1065 PWID attending Insite (SEOSI cohort) found the use of SIF for all injections versus some injections was associated with a statistically non-significant decreased likelihood of developing a cutaneous injection-related infection in multivariate analysis (aOR 0.58; 95% CI: 0.29 to 1.19).[42] A prospective cohort study of 129 PWID attending a DCF in Essen, Germany found no statistically significant reduction in injection-related abscesses.[43]

Health-Related Quality of Life

No quantitative evidence directly measuring improvements in the health-related quality of life was identified. One qualitative study on people living with HIV who use drugs at Dr. Peter Center in Vancouver, Canada described the positive impacts on quality of life, noting the contributions of increased access to social, health, and broader environmental support services that led to improvement in their overall health.[44]

Other Outcomes

Use and/or more frequent use of SIFs is generally associated with a higher uptake or more rapid entry into treatment and recovery services.[45,38,46-49]

Frequent SIF use is also associated with facilitating access to health and other social services. A multi-country study in Europe reported an association between frequent supervised drug consumption facility use and a greater likelihood of accessing counseling services, medical services, syringe exchange services, and education on safer use.[50] A cross-sectional analysis in Denmark aligned with these results.[51]

One study that assessed changes in drug consumption associated with the use of SIFs reported no substantial differences in relapse rates for injection drug use or stopping drug use pre- and post-SIF opening.[52]

Community and Environmental Outcomes

Among the five studies that assessed the role of SIFs in addressing public drug use and syringe and paraphernalia disposal was an ecological study post-SIF opening in Vancouver Canada where statistically significant reductions in public injection drug use were observed. At the same facility, publicly discarded syringes and injection-related litter also reduced after SIF opening.[53] A retrospective cohort study among 714 PWID attending a SIF reported that increased waiting time at the SIF resulted in an increased likelihood of public injecting.[54] In Sydney, Australia, a time-series study reported that after a SIF opened there was a perceived decline in the proportion of residents and business owners witnessing public injections (19% vs 33%, $p<0.001$) and discarded syringes (40% vs 67%, $p<0.001$).[55] A study of a SIF opening in Copenhagen (Denmark) reported a 56% reduction in public injections as well as a significant improvement in safe syringe disposal.[56] In contrast, over a three-month period a prospective cohort study from Essen (Germany) reported no significant effect of a SIF on public drug use.[43] In a study of DCRs in Denmark, 71% of users also noted that they chose the SIF for drug-use as they were conscious of public drug use bothering people in the neighborhood.[51]

We also identified six studies that assessed the association of the SIF opening on drug-related crime and/or neighborhood safety. Three studies conducted in Sydney, Australia concluded that the opening of the SIF did not result in a significant increase or decrease in crime (i.e., theft, drug-related loitering, or robbery)[57-59], but a slight increase in loitering around the SIF was observed.[57] Similar observations were reported from Vancouver, Canada in an ecological (pre-post) study with no significant changes in robbery or drug trafficking[60] and a decline in vehicle break-ins post-SIF opening. Two studies reported that among SIF users, frequent use of SIFs was not associated with crime or recent incarceration.[61,62]

Uncertainty and Controversies

The available evidence about SIFs comes from studies with cohort and cross-sectional design. It is difficult to establish temporality in some cases and make inferences about the causal association without a reference population or control group.

Many community factors vary considerably across cities in the world (e.g., background risk of bloodborne infection, community support, policing practices, access to primary medical care, treatment capacity and effectiveness), and the variance could impact the generalizability of findings. Some of the risks to generalizability are may be lessened by a real-world experience in Canada and Australia where SIFs have expanded to other cities. For example, a new SIF in North Richmond (Melbourne, Australia) replicated overdose mortality protection observed in Sydney. The recently published review report by the Victorian Government also notes reductions in public injecting and ambulance calls due to overdoses, but no improvement in perceived safety and drug-related nuisances.

Our assessment of SIF effectiveness relies on many studies that are at least 10 years old. It is known that important community factors have changed since then, including global drug supply chains and user preferences. In some parts of the world, drugs typically injected are now being smoked; methamphetamines, for example, are replacing opioids. The increase in fentanyl additives to heroin and/or cocaine has changed the mortality risk of an overdose during the past decade. The estimated mortality reduction of the SIF model studied a decade ago is based on the types and forms of drugs consumed at that time. Naloxone is more widespread today, with police officers, paramedics, community members, and PWID and their allies all having it on hand in a variety of settings. It is unknown how much of a community's overdose mortality can be reduced by a SIF versus expanded naloxone distribution to high-risk people and their social networks.

Experts described the importance of local community support, including law enforcement, to open and maintain a SIF, noting that support for a SIF can erode when proposals and implementation plans with specific locations are presented to community stakeholders.

Summary and Comment

The review and synthesis of included evidence have been organized to demonstrate the contribution of a SIF to individual and population-level outcomes. We did not identify any RCTs and as such, have based comparisons of SIF vs SSP on evidence from the cohort, time-series, pre-post, and other observational studies. Given the available study designs from only a few communities, we recognize that differences between communities could impact generalizability. Moreover, our rating of the effectiveness of a SIF considers its operations in the context of other harm reduction strategies, such as SSPs, which were available to clients in the included studies. We believe that our

focus on the incremental value of a SIF is appropriate since many communities today are exploring if a SIF fits within a broader portfolio of harm reduction and overdose prevention framework.

We recognize that comparisons of SIF use versus no SIF, for which we have relevant data, have shown incremental benefits. Evidence from both Vancouver and Sydney found a significant reduction in occurrences of nonfatal overdose and mortality from overdose in the SIF neighborhood and beyond. Furthermore, our research team has not uncovered any report of an overdose death at a SIF, bolstering our confidence in this outcome. SIFs have demonstrated an ability to assist clients with accessing medical, mental health, and social support services, including the use of addiction treatment services.

The contribution of a SIF to bloodborne infection control is less certain in terms of direct measurement of disease incidence, both due to variation in the baseline infection rates and the lack of incremental data compared with SSPs. We believe that unsafe injecting behaviors are an important and reasonable proxy for infection control since syringe sharing is implicated as primary infection source of new cases of HCV in the US.

In at least some locations, SIFs appear to reduce public injection and, sometimes, syringe and injection litter. Finally, SIFs do not appear to be associated with changes in crime.

Unlike a medication that can be manufactured reliably and administered consistently to deliver benefits to similar patients across the world, how a SIF is implemented can impact individual and community outcomes. The intervention development, including stakeholder engagement, contributes to results. Our overall assessment of the evidence does not consider the ease or difficulty another organization may have in setting up and running a SIF. We assume that planning, stakeholder engagement, and daily management can be executed similarly to that of organizations in Vancouver and Sydney to produce the reported results.

On balance, we believe we have high certainty that, compared with SSPs, SIFs prevent overdose deaths. The degree to which overdose prevention translates to substantially lengthening the life of the individual is uncertain. The evidence on community overdose mortality from Marshall et al. 2011[12], provides moderate-quality evidence given the drop-off in effect over distance from the SIF, which is akin to a dose-response effect. This, too, provides moderate certainty of a substantial benefit. We do not believe that possible harms which have been reported – some communities report increases in needle litter near a SIF – could reduce the net benefit below incremental. There is good reason to believe the net benefit is substantial.

Thus, we have concluded that there is high certainty that SIFs, compared with SSPs provide a small, or substantial net health benefit , and moderate certainty that SIFs provide a substantial net health benefit, leading to a rating of “incremental or better” (**B+**).

Cost Effectiveness

Overview

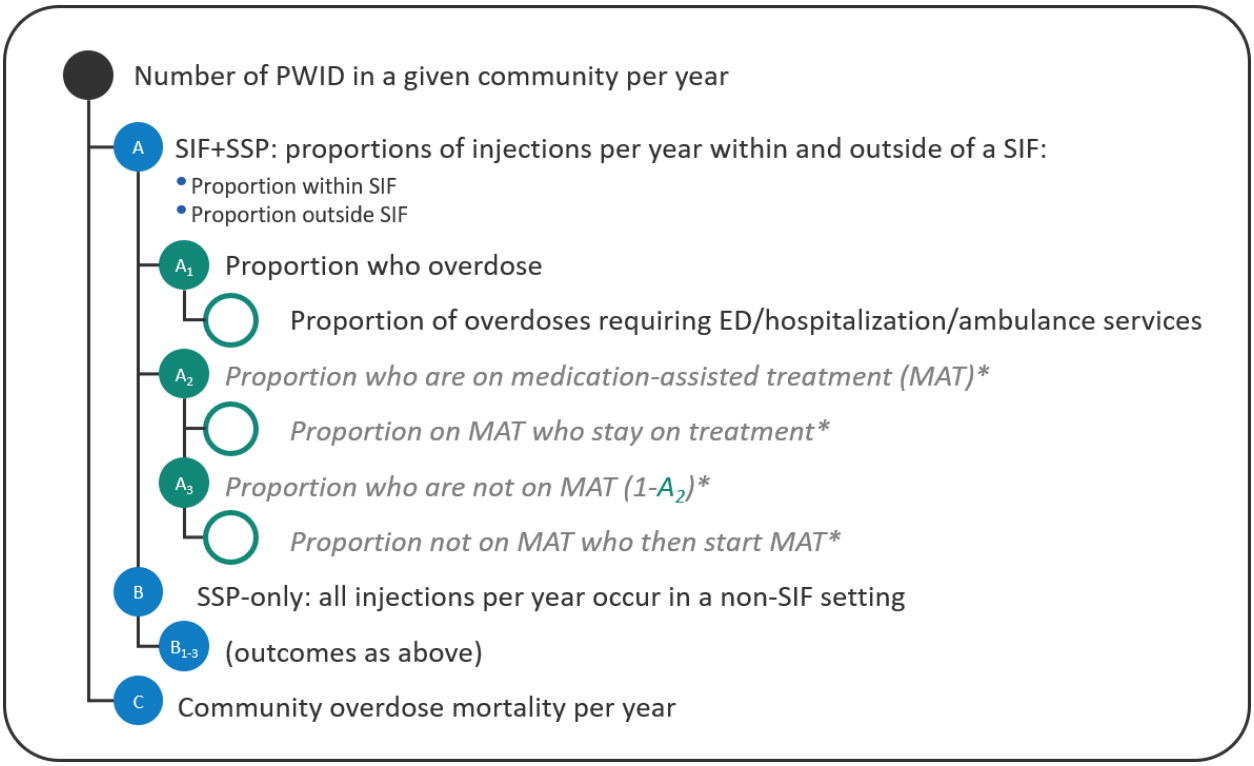
The primary aim of this analysis was to estimate the cost effectiveness of SIFs for IDU among PWID using a cost-effectiveness analysis. The model compared SIFs to SSPs, i.e., SIF+SSP, vs. SSP-only. Because SIFs are not funded by the health care system or payers of health care, the base-case analysis was a modified societal perspective and a one-year time horizon.

Methods and Model Structure

We developed a decision analytic model for this evaluation, with outcome calculations adapted from prior relevant economic models of harm reduction for PWID[63-69] and informed by interviews among key staff and researchers of SIFs.

The model focused on communities of PWID, specified by parameters for individual US cities, who could potentially utilize SIFs in locations where SSPs already exist. We modeled costs and outcomes for Boston, Philadelphia, San Francisco, Atlanta, Baltimore, and Seattle, based on the prior existence of an SSP,[70] US geographic location, and the availability of broad city-level estimates.

Figure ES1. Model Framework



ED: emergency department, MAT: medication-assisted treatment, PWID: people who inject drugs, SIF: supervised injection facilities, SSP: syringe service program

Key Model Characteristics, Assumptions, and Inputs

Table ES2. Key Model Assumptions

Assumption	Rationale
Hypothetical legally-sanctioned SIFs in US cities are comparable to Insite (Vancouver, BC, Canada) in terms of effectiveness, services offered, and cost of living-adjusted operating costs.	Insite is the first and most well-documented SIF in North America.
The US cities modeled have a 0.25-mile radius area within the city that could have 2100 PWID clients for a SIF.	The Insite client-service rate is the basis for the healthcare resource use effectiveness estimates for SIFs in all modeled cities.
Rates of HIV/hepatitis C/other infections are equivalent between SIF+SSP and SSP-only.	We recognize there is some evidence that SIFs may reduce needle sharing, leading to a reduction in infections. However, due to the short time horizon of our model (1 year) and the complexity of estimating the timing of infections and attributing costs to these conditions, we chose to take a conservative approach and not include these additional cost off-sets. We explored a difference in infection rates driven by a reduction in needle sharing conferred by the SIF setting in a scenario analysis.
We assumed that the rates of initiation and continuation of MAT are equivalent between clients using SIFs and SSPs.	There is a lack of comparative data between these two services; however, stakeholders have indicated that increased face-to-face time spent with PWID may lead to increased uptake of MAT. Therefore, we explored the impacts of marginal increases in MAT initiation due to SIFs in a scenario analysis.

BC: British Columbia, HIV: human immunodeficiency virus, MAT: medication-assisted treatment, PWID: people who inject drugs, SIF: supervised injection facility, SSP: syringe service program

Table ES3. Overdose Mortality Inputs

Parameter	Estimate (sensitivity analysis range)
Fatal OD reduction within 0.25 mi of SIF[12]	35.0% (±20%)
Fatal OD reduction beyond 0.25 mi of SIF[12]	9.3% (±20%)
Proportion of total overdose deaths occurring within 0.25 mi^2 of SIF[67]	5% (±20%)

OD: overdose, SIF: supervised injection facility

Utilizing estimates from Insite, we assumed that 0.95% of overall injections result in an overdose (Table ES3).[33] Emergency services included both ambulance services as well as hospital ED access, and were conditional on the occurrence of an overdose.

Table ES4. Overdose and Emergency Services Inputs

Parameter	Estimate (sensitivity analysis range)
Overdose (OD) Inputs	
Total annual injections [71]	180,000 (±20%)
Number of unique clients/month[71]	2,100 (±20%)
Percent of injections resulting in OD[33]	0.95% (±20%)
Emergency Services Inputs	
Proportion of ODs at SIF+SSP resulting in ambulance ride[67,72]	0.79% (±20%)
Proportion of ODs at SIF+SSP resulting in ED visit[67,72]	0.79% (±20%)
Proportion of SSP-only ODs resulting in ambulance ride[67,73]	46% (±20%)
Proportion of SSP-only ODs resulting in ED visit[67,73]	33% (±20%)
Proportion of ED visits resulting in hospitalization[74]	48% (±20%)

ED: emergency department, OD: overdose, SIF: supervised injection facility, SSP: syringe service program

We assumed that SIFs provide equivalent benefit to SSPs in terms of initiation of MAT. Therefore, we used the same estimate of 5.78% of PWID accessing MAT due to a referral from the SIF and/or SSP (Table ES5).[75] We assumed 50% of PWID who begin MAT stay on treatment each year.

Table ES5. Medication-Assisted Treatment Inputs

Parameter	Estimate (sensitivity analysis range)
Proportion of PWID who access MAT[75]	5.78% (±20%)
MAT continuation rate[67]	50% (±20%)

MAT: medication-assisted treatment, PWID: people who inject drugs

SIF facility and operation costs were estimated based on the Irwin et al. approach, adapting each community's estimate according to their individual characteristics.[66,67] Start-up and operating costs are shown in Table ES6. Downstream costs of ambulance rides, ED visit and hospitalization are presented in Table ES7.

Table ES6. Operating and Facility Cost Inputs

Parameter	Estimate (sensitivity analysis range)
Insite Annual Operating Cost[76,77]	**$1,687,286 (±20%)**
Term of Commercial Loan*	**15 years**
SIF Square Footage[67]	**1000**
Adjusted SSP Annual Operating Cost[77,78]	**$1,533,279 (±20%)**

*Assumption

SIF: supervised injection facility, SSP: syringe service program

Table ES7. Emergency Services Cost Inputs

Parameter	Estimate (sensitivity analysis range)
Ambulance Ride Costs[79]	
Boston	$523.06 (±20%)
Philadelphia	$487.41 (±20%)
San Francisco	$566.34 (±20%)
Atlanta	$461.63 (±20%)
Baltimore	$492.50 (±20%)
Seattle	$516.37 (±20%)
Overdose-related ED Visit Cost (All Cities)[74]	$3,451 (±20%)
Overdose-related Hospitalization Cost[80]	
Boston	$8,379 (±20%)
Philadelphia	$7,502 (±20%)
San Francisco	$8,683 (±20%)
Atlanta	$5,890 (±20%)
Baltimore	$7,502 (±20%)
Seattle	$8,683 (±20%)

ED: emergency department

Model Outcomes

Model outcomes included total overdose deaths prevented and total costs for each intervention. The model outcomes also include total emergency services avoided, and total increase in MAT initiation. Due to the one-year time horizon, all results are reported as undiscounted values.

Results

Base-Case Results

The annual cost of operating a SIF+SSP ranged from $1.6 million to $2.5 million, while the cost of operating an SSP-only ranged from $1.4 million to $1.7 million, depending on the location. A hypothetical SIF+SSP was found to result in the prevention of three (Boston) to 15 (Philadelphia) overdose deaths per year, as well as 773 fewer overdose-related ambulance rides, 551 fewer overdose-related ED visits, and 264 fewer hospitalizations (all based on 180,000 injections/year/comparator). This resulting in cost-savings by city are shown in Table ES8, ES9 and ES10.

Table ES8. Base-Case Results for Boston and Philadelphia

Outcome	Boston			Philadelphia		
	SIF+SSP	SSP-Only	Incremental	SIF+SSP	SSP-Only	Incremental
Total Cost	$2,261,000	$6,270,000	-$4,009,000	$1,896,000	$5,796,000	-$3,899,000
Annual Cost of Facility	$2,153,000	$1,641,000	$511,300	$1,794,000	$1,433,000	$361,500
Ambulance Costs	$7,100	$411,400	-$404,400	$6,600	$383,400	-$376,800
ED Visit Costs	$46,600	$1,947,000	-$1,901,000	$46,600	$1,947,000	-$1,901,000
Hospitalization Costs	$54,300	$2,270,000	-$2,215,000	$48,600	$2,032,000	-$1,983,000
Overdose Deaths	9	13	-3	43	58	-15
Ambulance Rides	14	787	-773	14	787	-773
ED Visits	14	564	-551	14	564	-551
Hospitalizations	6	271	-264	6	271	-264

ED: emergency department, SIF: supervised injection facility, SSP: syringe service program

Table ES9. Base-Case Results for San Francisco and Atlanta

Outcome	San Francisco			Atlanta		
	SIF+SSP	SSP-Only	Incremental	SIF+SSP	SSP-Only	Incremental
Total Cost	$2,624,000	$6,457,000	-$3,833,000	$1,687,000	$5,310,000	-$3,623,000
Annual Cost of Facility	$2,513,000	$1,712,000	$800,900	$1,596,000	$1,404,000	$191,500
Ambulance Costs	$7,700	$445,500	-$437,800	$6,200	$363,100	-$356,900
ED Visit Costs	$46,600	$1,947,000	-$1,901,000	$46,600	$1,947,000	-$1,901,000
Hospitalization Costs	$56,300	$2,352,000	-$2,296,000	$38,200	$1,595,000	-$1,557,000
Overdose Deaths	12	17	-4	18	24	-6
Ambulance Rides	14	787	-773	14	787	-773
ED Visits	14	564	-551	14	564	-551
Hospitalizations	6	271	-264	6	271	-264

ED: emergency department, OD: overdose, SIF: supervised injection facility, SSP: syringe service program

Table ES10. Base-Case Results for Baltimore and Seattle

Outcome	Baltimore			Seattle		
	SIF+SSP	SSP-Only	Incremental	SIF+SSP	SSP-Only	Incremental
Total Cost	$1,727,000	$5,750,000	-$4,023,000	$2,146,000	$6,346,000	-$4,199,000
Annual Cost of Facility	$1,625,000	$1,383,000	$241,900	$2,036,000	$1,640,000	$396,100
Ambulance Costs	$6,700	$387,400	-$380,700	$7,000	$406,200	-$399,200
ED Visit Costs	$46,600	$1,947,000	-$1,901,000	$46,600	$1,947,000	-$1,901,000
Hospitalization Costs	$48,600	$2,032,000	-$1,983,000	$56,300	$2,352,000	-$2,296,000
Overdose Deaths	26	35	-9	8	11	-3
Ambulance Rides	14	787	-773	14	787	-773
ED Visits	14	564	-551	14	564	-551
Hospitalizations	6	271	-264	6	271	-264

ED: emergency department, OD: overdose, SIF: supervised injection facility, SSP: syringe service program

Sensitivity & Scenario Analysis Results

To demonstrate effects of uncertainty on both costs and health outcomes, we varied input parameters using reasonable ranges to evaluate changes in costs and health services utilization. We also performed four scenario analyses to evaluate the base case assumptions around infection reduction, overdose rates, MAT uptake, and the perspective of the analysis. The results of these analyses are featured on pages 52-56 of the full report.

Summary and Comment

The costs of operating a SIF were estimated to be higher than operating an SSP across all six cities. However, those costs were offset by cost savings attributed to SIFs through the avoidance of ED visits and subsequent hospitalizations. Furthermore, in all six cities, SIFs were estimated to reduce mortality by avoiding overdose deaths.

The model results were sensitive to several input parameters, which varied slightly across the six cities. The underlying community-level risk parameters of overdose and overdose mortality, along with the mortality risk reduction attributed to SIFs, were the most influential model parameters. Additionally, parameters that determined the number of injections occurring in SIFs within each city also influenced the model estimates.

Potential Other Benefits and Contextual Considerations

For some communities, the opening of a SIF reflects a philosophical shift in addressing substance use disorders as a health issue, rather than a criminal issue. SIFs serve marginalized, vulnerable

populations that are disadvantaged or underserved. There are some potential other benefits offered by a SIF to the individual PWID, caregivers, the delivery system, other PWUD, or the public beyond what is described by the evidence on comparative clinical effectiveness. A summary of these potential other benefits is shown in the table below.

Table ES11. Potential Other Benefits or Contextual Considerations

Potential Other Benefit or Contextual Consideration	Relevant Information
Assumptions made in the base-case cost-effectiveness estimates rendering results overly optimistic or pessimistic.	Most quantitative data that informed the economic model are derived from SIFs operating in only two communities. Uncertainty exists about local factors (unmeasured or unmeasurable attributes unique to the people and place) that contributed to favorable outcomes at the time of the study.
Whether the intervention differentially benefits a historically disadvantaged or underserved community.	Persons served by SIFs are among the most vulnerable and marginalized in a community. Given the disparities in SUD by socio-economic class, SIFs differentially benefit groups with lower life expectancy and higher disability.
Whether the intervention will significantly reduce the negative impact of the condition on family and caregivers vs. the comparator.	In comparison to SSPs which have been described in interviews as "transactional", SIFs are more likely to engage clients in longer and more frequent interactions with staff and other clients. A trust-based relationship can be instrumental in helping clients improve injection behavior and link to medical, mental/behavioral health and social services.
Whether the intervention will have a significant impact on improving return to work and/or overall productivity vs. the comparator.	If SIFs increase the likelihood that clients will initiate and continue MAT, it is possible they could increase return to work and/or productivity.

Health-Benefit Price Benchmarks

As the assessment for this non-drug topic does not include estimates of incremental quality-adjusted life years (QALYs) or equal value life years gained (evLYG), ICER did not produce health-benefit price benchmarks as part of this report.

Potential Budget Impact

As the assessment for this non-drug topic does not include price per treatment or estimates of cost-effectiveness threshold prices, ICER did not produce potential budget impact analyses as part of this report.

1. Introduction

1.1 Background

National and Regional Epidemic

The opioid overdose epidemic is devastating families and communities across the United States (US). Epidemiological studies from the US Centers for Disease Control and Prevention (CDC) have found that overall life expectancy of Americans has declined, and this decline was largely attributed to drug-related overdose deaths.[1-3] Today in the US, overdoses are classified as the leading cause of injury-related death. Overall, drug overdose fatalities decreased 4.1% to 67,367 deaths between 2017 and 2018, and 69.5% involved an opioid [81] and the rest from cocaine or psychostimulants with abuse potential.[2] However, opioid-involved death rates during this period increased in a number of groups (those ages 65 and older, Hispanics, non-Hispanic Blacks) and regions (West, Northeast). In the Northeast region, synthetic opioids other than methadone drove the annual increase, at 17.9%.[81]

The CDC viewed the epidemic of opioid fatalities as having happened in three distinct episodes.[82] The first, which began in the 1990s, involved prescription opioids. Beginning in 2010, the second was marked by heroin-involved deaths. The current drivers of the epidemic are synthetic opioids such as fentanyl and fentanyl analogues, which are pushing mortality even higher. Opioid deaths attributable to synthetic opioids increased by 45.2% from 2016 to 2017.[83] Other sources of drug overdose deaths may be emerging: from 2012 to 2018, the age-adjusted death rate involving cocaine more than tripled, and overdose deaths involving psychostimulants (e.g., methamphetamine, amphetamine, and methylphenidate) increased nearly 5-fold over the same period.[2]

A Public Health Approach

The public health approach to addressing the overdose epidemic is multi-faceted, involving a combination of policy, education, and community interventions. A framework developed by the Association of State and Territorial Health Organizations (ASTHO) describes a cross-sectoral response with four key strategy areas: (1) training and education; (2) monitoring and surveillance; (3) primary and overdose prevention; and (4) treatment, and harm reduction. For example, training and education of physicians and pharmacists can improve adherence to clinical practice guidelines for pain management and reduce the number of patients at risk for addiction and dependence.[84] Expanding distribution channels of naloxone, an antidote for opioid overdose, can reduce rates of fatal overdose.[81,85,86] For people who seek treatment or want to reduce frequency of opioid use, a variety of medication-assisted treatments (MATs) are effective, a topic addressed by ICER assessments in 2014 and 2018. The ASTHO framework recommends funding and implementing

supervised injection facilities — also known as safer injection facilities, supervised consumption sites, or overdose prevention centers—as a harm reduction strategy, noting the program is evidence-based for reducing fatal opioid overdose and enhancing access to primary health care.[84]

Harm Reduction Theory

Harm reduction strategies seek to mitigate the harms of behaviors.[4] Injury prevention policies (e.g., mandating seat belts, bicycle helmets, and child safety seats) are forms of harm reduction that are typically widely accepted.[87] When harm reduction has been applied to substance use disorders, controversy has sometimes arisen because such strategies do not focus on preventing the use of drugs but rather on reducing the risk of such use.[88] Harm reduction strategies (including improved access to naloxone, syringe service programs, drug checking services and supervised injection facilities) implement an alternative to the criminalization and disease treatment models of drug use and addiction. While proponents of harm reduction theory recognize abstinence may be the ideal goal for some people, they accept alternatives which reduce the risk for death and disability even if they do not promote abstinence.[5] Opponents of such strategies often focus on their potential to enable activities that are criminal or perceived as immoral.[6]

Naloxone Access

Naloxone is an essential tool in responding to the overdose crisis as it reverses an opioid overdose when given intranasally or intramuscularly. Naloxone is an opioid antagonist that is used as an antidote to opioids when an overdose occurs. To be effective, it must be available at the time of overdose.[89] When naloxone is distributed widely in a community, it safely reduces overdose deaths in a cost-effective manner. We have not discovered objection to its administration in response to an overdose, although there have been concerns about costs[90] and encouragement of riskier behaviors.[91,92]

Syringe Service Programs

Syringe service programs (SSPs) reduce harm by providing access to safer materials for drug injection (sterile syringes and needles; clean water and other equipment), and also safer disposal of contaminated equipment, and referrals to addiction treatment services; some also offer screening for bloodborne pathogens such as HIV and hepatitis C, distribution of naloxone, safer sex products, and access to medical, mental health, and social support services.[24] As with expanded naloxone distribution, an SSP acknowledges injected drug use is occurring in a community and seeks to reduce harms associated with injecting behaviors. Using sterile equipment for every injection reduces risk for acquiring and transmitting bloodborne viral infections such as HIV, hepatitis B, and hepatitis C.[24] Because SSPs provide for disposal of contaminated equipment, they have the potential to enhance the safety of the public and also first responders. Historically, SSPs have raised concerns among those who feel that harm reduction strategies expend resources that encourage

immoral or illegal behaviors.[93] Thirty-eight states plus the District of Columbia have laws that enable and/or regulate SSPs, as of August 2019.[94] According to National Association of Syringe Exchange Network's provider database, there are 444 SSPs operating in the United States today employing a variety of models, such as mobile, mail-order, and needle exchange.[95] There are also unsanctioned SSPs that have been informally started by people who use drugs (PWUD) outside the restrictions imposed by some governments.[93]

The CDC recommends SSPs as an evidence-based program, summarizing the effectiveness in this way:

> "Nearly 30 years of research has shown that comprehensive SSPs are safe, effective, and cost saving, do not increase illegal drug use or crime, and play an important role in reducing the transmission of viral hepatitis, HIV, and other infections. Research shows that new users of SSPs are five times more likely to enter drug treatment and about three times more likely to stop using drugs than those who don't use the programs. SSPs that provide naloxone also help decrease opioid overdose deaths. SSPs protect the public and first responders by facilitating the safe disposal of used needles and syringes."[24]

Drug Checking Services

Drug checking services are another tool used to combat the overdose crisis. As the rate of illicit drugs containing highly potent opioids such as fentanyl and fentanyl analogues has increased, informing people about chemical composition can modify use behaviors, such as dose consumed, and reduce overdose risk.[96] A variety of technologies exists for analyzing chemical composition, but little is known about optimal process and setting to impact outcomes.[97] The public health impact of a drug checking service depends on the willingness of PWIDs to use it, and a wide range of willingness has been reported.[98,99]

Supervised Injection Facilities

Supervised injection facilities (SIFs) are permanent or mobile facilities where people can inject drugs they have obtained elsewhere.[7] If they permit use of drugs by routes other than injection (such as smoking or snorting), the more comprehensive term is "supervised consumption sites" (SCS). These facilities typically provide equipment to allow users to perform safe and sterile injections while being monitored by trained medical staff who can treat overdoses with oxygen, naloxone, and/or other first-responder care.[7] The sites may also have resources and information available for individuals seeking addiction treatment, primary health care, or social services. While SIF model implementation seems to vary based on community needs, resources, and funding, interviews with stakeholders suggest that there are three core features: sterile equipment, trained personnel for supervision, and naloxone administration (along with other first-responder medical care).

The following services may augment the core features: (1) self-management education for safer injecting practices, (2) screening for soft tissue infections, (3) hepatitis C screening/treatment, (4) drug toxicity screening (e.g., fentanyl), (5) on-site detoxification, (6) access to MAT, (7) referral coordination for social support (e.g., housing), health care and mental health services, (8) psychological/behavioral health counseling, (9) space for client relaxation and socialization, (10) personal hygiene supports (e.g., shower, laundry), (11) syringe service program (SSP) (e.g., needle exchange), (12) naloxone distribution, (13) space for consuming drugs by smoking, and (14) mobile unit to reach neighborhoods with high need.[7-10]

In the 1970s, The Netherlands established the first SIF model in Europe as part of a response to psychosocial needs of youth and their use of illegal drugs.[100] The model adapted to the needs of people using drugs problematically by combining a drop-in meeting space for drug consumption with basic health (e.g., counseling, medical care) hygiene, (e.g., shower, laundry) and food resources. In the 1980s, SIFs were promoted across Europe with a goal of reducing both the harms of injecting drugs and the community effects of public injecting. Around the same time, the model was adopted in Switzerland for similar reasons and SIFs were implemented in Germany in the 1990s and in Sydney, Australia in 2001.[101]

In 2003, Insite, the first legally-sanctioned SIF in North America, opened in Vancouver, British Columbia's Downtown Eastside, a neighborhood with high rates of drug use, homelessness, and poverty.[11] After 17 years of continuous operation, Vancouver has become an exemplar setting for researchers and policy advocates to understand the impact of the SIF model on a variety of outcomes, including the ones addressed in this ICER report. Currently, SIFs are available in 19 cities across Canada.[102]

Currently in the US, there are no legally sanctioned SIFs. Plans to open a SIF or initiate a multi-stakeholder planning process for a SIF have been announced by some cities. For example, the non-profit agency Safehouse has been engaged with the development of a SIF since January 2018 in Philadelphia, navigating through legal, policy and community support issues.[103] In 2019, the mayor of Somerville, a city in the Boston metropolitan area, stated plans to open a SIF in response to overdose deaths.[104] There are news reports of elected officials or groups in New York City, Ithaca, Seattle, Denver, Washington DC, Chicago, Baltimore, Burlington, Oakland and San Francisco exploring feasibility, organizing coalitions, or preparing legislation for SIFs.[15-23] A recent letter published in the New England Journal of Medicine described the experiences of an unsanctioned SIF that has been operating in the US for six years.[14]

The clients of SIFs are usually homeless, live alone, or have significant housing insecurity. Unemployment is common. SIF clients are impacted by many social determinants of health. We spoke with a SIF client who described the people served by SIFs as "poor, homeless, marginalized…a beat-down people" noting that he "had given up on himself" when he found harm reduction services. The prevalence of mental and behavioral health conditions is high among people who

inject drugs (PWID). Although SIFs are considered a type of public health intervention, their population-level reach is measured in city blocks – not miles.[12,13] It seems that a standalone SIF is generally able to address the needs of one neighborhood, as experts explained that PWIDs are unable or unwilling to travel far for SIF services. Thus, location is an important attribute that determines whom a SIF serves as well as its potential public health impact.

Even more than SSPs, the potential implementation of SIFs has raised objections from those who do not feel that facilitation (or direct observation) of drug consumption is appropriate for a health care or public health worker. Even among those who support harm reduction strategies, concerns may be raised about the effects on a neighborhood if PWIDs are attracted and congregate. In 2000, a survey of 515 residents and 209 businesses near a planned SIF location in Sydney showed that 26% and 37% of respondents, respectively, disagreed with the establishment of the SIF. Disagreement waned two years after the SIF opened.[105]

Objectives

The purpose of this assessment is to evaluate the health and economic outcomes of a SIF. This review seeks to answer the question: *What is the net health benefit of implementing a SIF (which includes an SSP) versus an SSP alone?* The ICER value framework includes both quantitative and qualitative comparisons across treatments to ensure that the full range of benefits and harms are considered in the judgments about the clinical and economic value. The assessment of effectiveness and value is made in comparison to an SSP as we believe it unlikely that communities that have not been willing to implement SSPs would be willing to consider a SIF. A SIF implemented in a community without good SSP coverage may experience more than the incremental benefit.

1.2 Scope of the Assessment

Populations

The population of focus for the review included all PWID living in an area with access to an SSP and where a SIF could potentially be placed within a few blocks of where they reside.

We also sought evidence on subpopulations suggested by the stakeholders, looking for evidence on the following subgroup effects:

- Housing status, comparing effects in people living with homelessness or unstable housing and those with stable housing
- Injected drug class, comparing effects in people who inject opioids with effects in people who inject stimulants such as cocaine or methamphetamine

Interventions

The intervention of interest is the implementation of SIFs including sites that permit other forms of drug consumption. We assume that SIFs will include, at a minimum, three core features: sterile equipment, trained personnel for supervision, and naloxone administration (along with other first-responder medical care). We recognize that published data come from SIFs that offer additional resources and services to clients which may impact some of the individual and community outcomes of interest.

Comparators

We compared SIFs to SSPs.

Outcomes

The outcomes of interest are described in the list below.

- Individual outcomes
    - Overdose
        - Requiring EMS/ambulance or hospital care
        - Mortality (occurring in or out of the facility)
    - All-cause mortality
    - Infection
        - Chronic viral infection (hepatitis C and HIV)
        - Bacterial infection requiring hospitalization (e.g., antibiotics, surgery, endocarditis)
        - Skin and soft tissue infection not requiring hospitalization
    - Health-related quality of life
    - Intermediate outcomes
        - Use of treatment and recovery support services
        - Receipt of social (e.g., housing), primary medical care, dental and mental health services
        - Injection behaviors (e.g., needle and syringe sharing)
    - Drug consumption (e.g., frequency, amount)
- Community and environmental outcomes
    - Syringe and paraphernalia disposal
    - Public drug use
    - Drug-related crime
    - Drug use prevalence
- Health system utilization
    - Hospitalizations

- Emergency department visits
- EMT/paramedic calls/responses

Timing

Evidence on intervention effectiveness and safety has been collected from studies of any duration.

Settings

The setting of interest is community SIFs, whether they are affiliated with health centers and hospitals, and mobile SIFs, or not. Inpatient SIFs (i.e., located within hospital settings) are not part of the scope of this review.

1.3 Definitions

Supervised Injection Facility (SIF) – The Drug Policy Alliance defines SIFs as "Legally sanctioned facilities that allow people to consume pre-obtained drugs under the supervision of trained staff and are designed to reduce the health and public order issues often associated with public drug consumption. They are also called overdose prevention sites (OPS), safe or supervised consumption services (SCS), and drug consumption rooms (DCR)."[8]

Syringe Service Programs (SSPs) – The CDC defines SSPs as "Community-based prevention programs that provide access to or disposal of sterile syringes and injection equipment, access to substance use or addiction treatments/services, health care and social services, vaccination, and testing services."[24]

Medication Assisted Treatments (MAT) – The Substance Abuse and Mental Health Services Administration defines MAT as "Use of medications, in combination with counseling and behavioral therapies, to provide a "whole-patient" approach to the treatment of substance use disorder."[106]

1.4 Potential Cost-Saving Measures in Opioid Use Disorder

ICER now includes in its reports information on wasteful or lower-value services in the same clinical area that could be reduced or eliminated to create headroom in health care budgets for higher-value innovative services (for more information, see https://icer-review.org/final-vaf-2017-2019/). These services are ones that would not be directly affected by therapies for opioid use disorder (OUD) (e.g., reduction in disability), as these services will be captured in the economic model. Rather, we are seeking services used in the current management of OUD beyond the potential offsets that arise from a new intervention. During stakeholder engagement and public comment periods, ICER encouraged all stakeholders to suggest services (including treatments and mechanisms of care) currently used for patients with OUD that could be reduced, eliminated, or

made more efficient. We received a suggestion that advertising (e.g., billboards) which promotes OUD treatment and other services for PWID may be a low value use of resources.

2. Perspective of People Who Use Drugs

2.1 Methods

During ICER's scoping and open input periods, we received public comment submissions from 4 stakeholders (1 SIF, 2 advocacy groups, and 1 clinical researcher) and participated in conversations with 37 key informants and/or organizations (4 advocacy organizations, 6 SIF/SSP staff members, 23 researchers, 5 clinical experts, 1 law enforcement officer, 8 legislative/policy experts). These comments and conversations helped us to discuss the impact on PWUD as described below.

The ICER team also interviewed 11 clients/staff members of SIFs or SSPs that operate in Canada as government-approved safe consumption sites (SCS) or overdose prevention sites (OPS); they were also affiliated with the Canadian Association of People Who Use Drugs (CAPUD), the non-profit organization that assisted ICER with interviews. The quotations that are integrated into the text below came directly from these interviews.

2.2 Impact on People Who Use Drugs

Social Isolation

"Lots of people are dead because they overdosed in public alone with no help around them…I can think of 13 people who are still alive today because I was there to call 911 or seek help." – SCS Client

The PWUD we interviewed affirmed that SIFs serve the most vulnerable and marginalized people in a community, noting that many PWUD live in social isolation due to housing insecurity, mental illness, and poverty. Through supervisory services, SIFs mitigate overdose risks associated with injecting alone, a common behavior among PWUD who do not have access to a SIF. One stakeholder described the main task of a SIF as "provid[ing] a place where people will be attracted to come and feel welcomed" so they are not alone. In addition to time-critical first-responder care, SIFs serve as an access point for people who are socially isolated to learn about community resources and be linked to health and social services.

"To me, a lot of drug use is very rational…very rationale response to a society where mental health care is difficult to access." – OPS Staff Member and Client

Camaraderie and Community

"PWUD don't have a lot of places they can go without being stigmatized, so it's so important to have a place you can go and be welcomed and use safely." – OPS Staff Member and Client

Many PWUD and stakeholders described how the SIF had enabled building of relationships with staff and other regular clients. The SIF provides a comfortable, safe space for people to be their true selves and forge trust with others. The SIF was one of the only judgement-free zones available to PWUD whose lives are filled with discrimination, criminalization, and trauma. They felt that SIFs contribute to positive changes in the community that stem from relationship-building among clients, harm reduction workers (e.g., nurses, technicians), police, and even drug dealers. SIFs provide an "opportunity to meet people in a positive way...and that is an immeasurable kind of benefit, in my opinion," noted one former SIF client. One SIF administrator described the purpose of a SIF as "being community space first, that happens to have clinical supports." Another one described the "living room effect" of a SIF – providing a comfortable environment that can help reduce stress and reduce the need to self-soothe with drugs. One stakeholder pointed out that experience and research has demonstrated that PWIDs use SIFs when they are available.

"Needle exchange programs, yeah, it's great, but it's a momentary interaction; they're not going to be there to save your life." – SCS Client

Health Care System Bias

We heard from some stakeholders that SIFs provide a way for PWUD to reduce interactions with hospitals, doctors, and EMTs, during which they often felt there was frequent "shaming and blaming" and "accusations of drug-seeking". Many PWUD relayed stories of stigmatization that compromised their physical and mental health, such as refusal of primary medical care for hepatitis treatment follow-up. Multiple people noted a lack of respect by the health care system for those who work in harm reduction (and their clients). A participant – who was a SIF client and worked for an SSP – found the health care system to be "scary" and distrusted doctors because of poor treatment in a hospital setting. Nurses and doctors at SCSs, however, were stated to be much more compassionate to the problems faced by clients.

"Most interactions with pharmacists, doctors, lawyers…are all so stigmatizing. They make you feel kind of like a moral failure." – OPS Staff Member and Client

Another client noted that electronic health records assured PWUD are labeled "junkie" across the health care system, even before meeting a health care provider. He and others felt that SIFs can offer a counterbalance to the bias of the health care system while providing health-related services valued by PWUD.

Inhalation

> *"We heard loud and clear from PWUD; they did not want the SIF to be just for injection."* – Public health agency professional

We heard from multiple stakeholders that changes in the drug supply and client preferences mean that SIFs must adapt and provide for the use of inhaled substances (not limited to opioids), becoming more comprehensive SCSs. One person noted that smoking is on the rise now since people have learned how to get the same high with less need for the complexities of injecting. We heard that provision of supplies for smoking by one harm reduction program had quadrupled over the prior 18 months. One interviewee believed that technology (e.g., rapid negative pressure decontamination) could protect the staff if government leaders allowed the spending. Nearly every person we interviewed recommended that a space for smoking be included in a SIF because the strategy should focus on the person, not the drug. One stakeholder highlighted the racial disparities in incarceration related to crack cocaine, which is primarily smoked, and recommended the provision of smoking facilities not only as a harm reduction practice, but also as a component of addressing structural racism in the United States.

Testing New Batches or New Suppliers

SIFs are used by some PWUD to test out new batches or drugs obtained from new suppliers. Several PWUD described how they use the SIF to check the potency of a new batch under the protection of supervision and resuscitation, if needed. Depending on the degree of this practice in a community, there may be unmeasured value of a SIF related to particularly volatile periods of changes in the toxicity and potency of the drug supply chain.

Pain Management

> *"Lot of this community with lived experience have been through some hard stuff that have gone unaddressed."* – OPS/SCS Staff Member

We heard that PWUD are frequently dismissed as "drug seeking addicts". Classism, racism, sexism, and homophobia can add to oppression and discrimination that PWUD already experience. However, one person noted that most people who inject or smoke drugs are managing significant physical and emotional pain caused by injury, occupation, sexual assault, or trauma. As opioid prescribing patterns of physicians have changed in recent years, many people have turned to heroin or crack for pain management. One woman noted that "[her] doctor was more concerned about getting [her] off opiates than worrying about [her] pain." We even heard suggestions that SIFs are a safer option for people with "legitimate pain, legitimate anxiety" to self-manage, especially for the poor and marginalized "who cannot even ask a hospital for the medications they actually need."

Access to Treatment

> *"First of all, reach people…and look at what their individual goals are. You cannot treat everyone the same."* – SIF Manager

Multiple stakeholders described differences in the time and frequency of interactions with SIFs versus SSPs. In contrast to client interactions with SSPs that were described as "transactional and hurried", SIFs have the potential to be more effective at introducing counseling interventions through a community built on camaraderie. Frequency of engagement was noted as a good predictor for the degree to which people can transition into an engagement process for referral to treatment. A setting like a SIF where people may expect to use it more frequently will allow for more points of contact to accelerate trust-building with the program. We also heard, though, that there are many users of SSPs who have no interest in making use of SIF services. Relationships and counseling enable access to a variety of services, including MAT, when clients are ready. One SIF manager noted the staff are not curing people nor pretending to; rather, they work to motivate people to find their way into wellness, which may or may not be abstinence-based treatment. A recovery specialist noted that SIFs are merely another interconnected pathway to recovery (among many in a community), and far "better than a shooting gallery in an abandoned building where there is no opportunity for recovery." Several stakeholders noted that SIFs do not address the health care system capacity constraints for treatment (e.g., new patients for MAT), adding that referrals must be picked up in timely manner by compassionate, culturally-competent professionals who respect the client's goals. One person called out a paradox in the evidence, observing that harm reduction programs must demonstrate an ability to get people into treatment, but treatment programs do not have to demonstrate ability to accept referrals from harm reduction programs.

2.3 Other Considerations

Learning from Lived Experience

Most people commented on how the best SIFs respect the expertise of PWUD and include them in setting policies and operating the facility. One example involved how client input has adjusted the use of naloxone. Rapid, full-dose administration of naloxone eliminates the pain relief benefit and sends a client who is opioid-tolerant into withdrawal. While one SIF was "too trigger happy with naloxone a few years back", it now favors oxygen and micro-dosing of naloxone because it respected the expertise of PWUD.

> *"I can attest that bedside care is really lacking from health care professionals, especially in emergency situations. People with lived experience are the experts."* – OPS Staff Member, Former Paramedic

Honeypot Effect

PWUD dismissed the possibility of a honeypot effect in which a SIF attracted PWUD or crime to a neighborhood, noting the long-established poor conditions of neighborhoods where SIFs are generally located, and that SIFs serve people who live nearby. Many stakeholders agreed. One person from Vancouver who had feared Insite would become a drug destination for people from other Canadian cities noted this has not happened and that "people won't travel more than a few blocks" to visit the SIF. However, PWUD and stakeholders acknowledged that opposition to SIFs, SSPs, and other forms of harm reduction can exist in a community due to fear, classism, moral objection to drug use, and societal failures to view addiction as a health care issue. We heard from PWUD and stakeholders that drug use still happens just outside of SIFs and SSPs, and at least some community members do complain about syringe/needle debris.

Medical versus Community Model

For a long time, the "nurse-centric Insite model" was the only SIF model in practice, but a variety of models are now available across Canada. A few participants described how a simple first-aid model can be effective in preventing overdose mortality and suggest that the more expensive nurse-centric model may not always be needed. However, there was appreciation for the Insite model; one participant recommended that a city opening a SIF start with the Insite model and "then work your way from there", moving toward a less medical model over time.

Integrated Services

Providing on-site access to social workers, frontline workers, or counselors was widely considered essential. Their experience suggested that most clients could not be easily referred to external

counseling as they often would not accept another counselling center for reasons such as distance, fears, and stigma. "A simple consumption room is better than nothing but having a little bit of social support on-site is fantastic," explained a manager. The medical director of a new SIF that opened in 2019 explained how it was co-designed with PWUD as a mixed service model and included a consulting area space (three private rooms) to offer low threshold, non-appointment-based support for health and social services. Experience there suggests integration boosts service uptake in a PWUD population where referrals to external services are less effective.

Housing Security

SIF clients are impacted by many social determinants of health, including housing security. A few stakeholders noted the clear limitations of a SIF to impact outcomes when the basic need for housing remained unaddressed. One stakeholder who worked in San Francisco described how the housing crisis there was linked to substance use. Any harm reduction strategy, including a SIF, is affected by the housing policy and resources in the surrounding community. As one stakeholder said, "mortality is important, but mortality is connected to lack of housing and other issues — and SIFs cannot solve for that…until housing is solved, a SIF can keep people alive and connect them to treatment, which has a dramatic impact on mortality." Another stakeholder stated that stable housing is required for a PWID to ever improve quality of life.

Traumatized by Public Drug Use

There is a community-level trauma caused by public use as well as overdose. In many communities, PWUD inject in public spaces (e.g., parks, alleys) but in a location that is discreet and hidden. They prefer to choose bathrooms of businesses because they have privacy (i.e., doors that close), soap, running water, and low chance of being caught by the police. Both locations can lead to trauma among people who witness the drug use or discover an overdose. SIFs offer a means to prevent this form of community-level trauma if the SIF can operate at scale. An advocate for people with substance use disorder noted that harm reduction strategies are making drug use invisible in communities where there are enough services available by normalizing substance use and allowing people to access health and social services. Quality of life increased for the community due to decreased public drug use.

3. Operational Guidelines

3.1 About Insite

Insite: Supervised Consumption Site – Vancouver Coastal Health[107]

Insite was opened in 2003 in Vancouver, Canada as the first legal SIF in North America. The facility was founded in response to a large number of drug-related deaths occurring in Vancouver's Downtown Eastside neighborhood. Insite is co-managed by Vancouver Coastal Health, a regional health authority providing health services, and the Portland Hotel Society (PHS) Community Services Society, a social services non-profit. Operating on a harm-reduction model, Insite works to mitigate the health and socioeconomic consequences of drug use; abstinence from drugs is not required to be connected to care. The model also provides care for those who use substances and have medical or psychological needs including Hepatitis C, HIV/AIDs, and psychiatric disorders.

As a SIF, the site is accessible to anyone 16 years or older who injects drugs and wants a sterile and safe facility to do so; it is open 7 days a week, 9AM to 3AM. Insite has a 12-booth injection room where PWUD can inject drugs they bring with them and where they can be supervised by nurses and other health care staff. They have access to injection equipment including sterile syringes and clean cookers, filters, and water. In the event of an overdose, teams are available to intervene immediately providing medical support including naloxone when indicated. After injecting, clients move to a post-injection room where they are provided with drinks such as juice or coffee and space to spend time with staff in a comfortable environment. Wound care and immunizations are available from the medical staff which also coordinates referrals for medical, mental health, and social support services.

Insite also has onsite services for withdrawal management (i.e., detoxification) on the second floor of the building, known as Onsite. Onsite has twelve detoxification rooms with private bathrooms and has health care teams, doctors, nurses, counselors, and mental health workers. After clients are stabilized, they can move to transitional recovery housing located on the third floor of the same building. There they can be connected to additional resources for housing, treatment programs, and community support.

According to Insite's website, the facility sees an average of 415 visits a day and over 175,464 visits annually – as of 2017. By March 2010, 7 years after their opening, there had been over 1.5 million visits. Many clients visit Insite multiple times; clients average 11 visits per month. There have been no fatal overdoses at Insite and, compared with non-Insite-users, Insite users are more likely to engage in addiction treatment.[107]

3.2 About Uniting Medically Supervised Injecting Centre

Uniting Medically Supervised Injecting Centre[108-112]

Uniting Medically Supervised Injecting Centre (MSIC) opened in Kings Cross, Sydney, Australia in May of 2001 and was the only SIF in Australia for 17 years before a second SIF opened in North Richmond, Melbourne in June 2018. The facility was founded following suit of the opening of the Switzerland SIF in 1986 and was placed in Kings Cross due to the area having the highest concentration of people dying from drug overdose in Australia. Uniting MSIC remains the only SIF in the Southern hemisphere. Like the Insite SIF, Uniting MSIC work to minimize the harm associated with injecting drugs through their team of nurses, counselors, and health education professions. In their mission, they emphasize that they act to prevent injury and death by being present while someone injects rather than supporting and/or promoting drug use to provide immediate medical assistance if and when needed.

Uniting MSIC is open Mondays and Wednesdays-Fridays from 9:30 AM-9:30 PM and Tuesdays from 9:30 AM-3:45 PM and 6:00 PM-9:30 PM. On weekends and public holidays, they are open from 9:30 AM to 5:30 PM. When visiting the SIF, clients first have access to the waiting room and assessment area. Once staff have a clear idea of their current situations and medical histories, they are invited into the injecting room that houses eight open booths fitting two people each. Those who visit must be 18 years or older, not intoxicated in the moment, and they cannot be pregnant or accompanied by a child. A registered nurse is always on duty and present.

Uniting MSIC also functions as an SSP, provides advice on safer injecting practices, and also provides first aid and other health services. The facility does have a resuscitation room in the event of a drug overdose or another health care emergency. After injecting, clients move into an after-care area until they are ready to leave. In this space, they can connect and talk with the health care team in an informal environment. Coffee and tea are available as well as health promoting activities and the ability to connect with medical, psychosocial, housing, rehabilitation, and legal services.

Since opening in 2001, Uniting MSIC has supported over 16,500 clients, managed over 8,500 overdoses, and referred over 14,500 to further care and support – with 0 fatalities. Studies have shown that 70% of local businesses and 78% of local residents support the center. Uniting MSIC does not have an integrated detoxification program but rather refers clients who desire treatment for addiction, medical and mental health care, or social services support. Around 80% of Uniting MSIC's frequent clients ultimately accept referrals for these forms of treatment.

4. Comparative Clinical Effectiveness

4.1 Overview

In this review of the comparative clinical effectiveness of SIFs and other SCS, we systematically reviewed and synthesized existing evidence from available studies. Full PICOTS criteria are described in Chapter 1.2.

Our review focused on the effectiveness of the implementation of SIFs and other SCS in comparison to SSPs. We reviewed the benefits of SIFs important to PWID and sought evidence on all outcomes listed in Chapter 1. The methods and findings of our review of the evidence are described in the sections that follow.

4.2 Methods

Data Sources and Searches

Procedures for the systematic literature review assessing the evidence on SIFs for PWID followed established best research methods.[113,114] The review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.[115] These guidelines include a checklist of 27 items, which are described further in Appendix Table A1.

We searched MEDLINE, PsycINFO, Web of Science, and EMBASE for relevant studies of SIFs through July 2020. Each search was limited to English-language studies of human subjects and excluded articles indexed as guidelines, letters, editorials, narrative reviews, case reports, or news items. We also searched for systematic reviews of SSPs in MEDLINE and PsycINFO through July 2020. All search strategies were generated utilizing the Population, Intervention, Comparator, and Study Design elements described previously. The proposed search strategies included a combination of indexing terms (MeSH terms in MEDLINE and EMTREE terms in EMBASE) as well as free-text terms.

To supplement the database searches, we performed manual checks of the reference lists of included studies and systematic reviews and invited key stakeholders to share references germane to the scope of this project. We also supplemented our review with information submitted by stakeholders, SIF/SCS evaluations or reports, and other grey literature when the evidence met ICER standards (for more information, see https://icer-review.org/methodology/icers-methods/icer-value-assessment-framework-2/grey-literature-policy/).

Study Selection

After the removal of duplicate citations, references went through two levels of screening at both the abstract and full-text levels. Four reviewers independently screened the titles and abstracts of all publications identified using DistillerSR (Evidence Partners, Ottawa, Canada) and disagreements were resolved through consensus. Studies that did not meet PICOTS criteria were excluded.

No evidence from randomized controlled trials (RCTs) was identified. Relevant published high-quality cohort and other observational studies of any sample size or duration were included (see below for details on quality assessment). Only studies that evaluated SIF use in association with the relevant outcomes of interest were included in this review. Further, we recognize that a variety of SIF intervention models exist. We looked for studies of different forms of consumption (e.g., smoking) that expand on the SIF model. However, we did not identify any studies that compared different SIF models and forms of consumption (e.g., injecting vs smoking) in terms of outcomes of interest. A detailed protocol of the methods was registered on Prospero (CRD42020199977).

Data Extraction and Quality Assessment

Four reviewers extracted data into evidence tables. Extracted data were verified by another researcher. Elements included study name, study year, study design, location of the SIF, study inclusion and exclusion criteria, description of study populations, sample size, duration of follow-up, exposure, outcome assessments, findings, and quality assessment for each study. The report utilized the 12-item and 14-item study quality assessment criteria published by NHBLI for cohort, cross-sectional, and before-and-after (pre-post) studies, using the categories "good," "fair," or "poor."[116] For more information on data extraction and quality assessment, refer to Appendix D.

Assessment of Level of Certainty in Evidence

We used the ICER Evidence Rating Matrix to evaluate the level of certainty in the available evidence of a net health benefit among each of the interventions of focus (see Appendix D1).[117,118]

Assessment of Bias

It is customary at ICER to assess for publication bias as part of a review. We have no systematic way to conduct such an assessment on this topic. Many published reports about SIFs are linked to those who provide the services. As such, apart from the greater perceived difficulty in publishing reports showing negative results, there may be an additional preference to report favorable results.

Data Synthesis and Statistical Analyses

Data for the available evidence on outcomes of interest are summarized in evidence tables (see Appendix D2) and are synthesized in the text on the following pages. Relevant data include those listed in the data extraction section. Studies that were deemed sufficiently similar in terms of population, intervention type, and outcome definitions were included in the synthesis.

Due to the unavailability of RCTs among PWID to assess the implementation of SIFs, we have summarized the best available evidence from a comparative cohort, experimental or pre-post, and other observational studies. Due to differences between the studies in terms of the study design, population characteristics, and outcomes (including definitions and methods of assessments), we were unable to conduct a quantitative assessment. Hence, our review provides a narrative description of the outcomes of interest.

4.3 Results

Study Selection

Our literature search identified a total of 1188 potentially relevant references for SIFs (see Appendix D2), and we included 48 studies that evaluated individual or community level outcomes for SIFs. The majority of studies evaluated SIFs from Canada (n=33), and the remaining studies evaluated SIFs in Australia (n=8) and European countries (n=7, including, two from Germany, three from Denmark, and two from Spain). Eighteen studies used a cohort study design, while others employed a pre-post ecological or time series (n=11), and cross-sectional study design (n=10). Nine studies used a qualitative, exploratory, or descriptive study design. We also included government sanctioned evaluation reports from MSIC in Sydney, Australia, the MSIR in North Richmond Australia, and the SCSs in Alberta, Canada.

The primary reasons for study exclusion included outcomes that were outside the scope of this review, different study populations of interest, feasibility or mathematical simulation studies, or conference abstracts that reported duplicative data to the full publications. In the results that follow, we focus on the effectiveness and implementation of SIFs on individual-level outcomes, community and environmental outcomes, and health system utilization outcomes.

We also searched for systematic reviews of SSPs and identified a total of 72 potentially relevant references. We included one review of reviews[25] that summarized results from 13 prior systematic reviews as well as three recent systematic reviews not included in the review of reviews.[26-28]

Overview of Studies

As mentioned previously, evidence for SIFs arises primarily from ongoing prospective cohort studies in Vancouver, Canada. The Vancouver Injection Drug Users Study (VIDUS), AIDS Care Cohort to Evaluate Access to Survival Services (ACCESS), and Scientific Evaluation of Supervised Injecting (SEOSI) are among the longest-running community recruited prospective cohorts of PWUD (recruitment since May 1996). In addition, data from cohorts enrolled from MSIC in Sydney and MSIR in North Richmond in Australia (SUPERMix cohort) have also been included in this assessment.

Overall, the included studies for SIFs were comparable with respect to age (median: 30 years, range: 25-60) and gender (males >50%). However, there was some variation in the exposure assessment based of the frequency of SIF use ranging from PWID who use a SIF versus do not use a SIF, frequent versus rare/occasional use, PWID administering ≥75% versus <75% of their injections in the SIF, or used the SIF at least once versus never during the study period. PWID experiencing unstable housing or homelessness also varied from country to country. Further, unstable housing or homelessness was not reported consistently and ranged between 17%-82% across the studies. Additional details of included references, their key characteristics, and main findings are summarized in Appendix D2.

To determine the incremental benefit of implementing a SIF versus an SSP alone, we included systematic reviews of SSPs as noted above to understand the effects of SSPs. The included systematic reviews evaluated the effect of SSPs on injection risk behaviors (IRBs), HIV, or HCV. We did not find evidence from systematic reviews on the effects of SSPs for other outcomes included in our scope (e.g., access to MAT, overdose mortality); therefore, we have limited our review of the evidence of SSPs to infection prevention. We acknowledge, however, SSPs have benefits beyond infection prevention, as noted in the CDC summary in the background section, such as increasing the likelihood of entering treatment.[119]

However, the primary basis of our assessment of the incremental benefit of SIFs over pre-existing SSPs is derived from the studies evaluating the effects of SIFs as described above. We are assuming that PWID had access to SSPs during the study period, and the outcomes associated with SIFs are informing the added benefits of SIFs over baseline SSP access. We acknowledge, however, that the proportion who utilized services from SSPs is unclear, although the literature has suggested a considerable proportion of PWID access SSPs.[120]

Quality of Individual Studies

We used the National Heart, Blood and Lung Institute (NHBLI) criteria to rate the quality of the included evidence (see Appendix D).[116] For the cohort, and cross-sectional study designs, we used a 14-item NHBLI quality assessment inventory. For the pre-post and time series studies, we used the 12-item NHBLI quality assessment inventory. The studies were rated “good”, “fair”, or “poor.”

These tools included items for evaluating potential flaws in study methods or implementation, including sources of bias (e.g., population selection, performance, attrition, and detection), confounding, study power, the strength of causality in the association between interventions and outcomes, and other factors.

We only rated the studies that were published in peer-reviewed journals. We did not assign a quality rating to qualitative, exploratory, or descriptive studies. In addition, we did not assign quality ratings to references obtained from the grey literature (e.g., evaluation reports). Overall, the cohort and pre-post studies included in this review were rated good to fair; these studies had the least or some risk of bias but deemed not sufficient to invalidate its results. These studies considered some, but not all-important outcomes and used acceptable measures that were generally applied equally. On the other hand, all the cross-sectional studies were rated to be of fair to poor quality.

Health-Related Quality of Life

SIFs contribute towards a reduction in overdose-related events, infections, and other individual-level outcomes as discussed before. While we did not identify any quantitative evidence directly assessing these improvements in the health-related quality of life of PWID, these potentials for a SIF have been regarded to improve the quality of life of PWID. We identified one qualitative study on people living with HIV who use drugs at Dr. Peter Center in Vancouver, Canada. The study participants described the positive impacts of this harm reduction policy on their quality of life. The participants also mentioned increased access to social, health, and broader environmental support services that led to an improvement in their overall health.[44]

Clinical Benefits

All-Cause Mortality

There is an increased risk of premature mortality leading to a decrease in the life expectancy of PWID in the US.[1,121] Beyond age 15, life expectancy in the US (1999-2016) due to drug use was estimated to cost men 1.4 years and women 0.7 years, on average.[122] In Canada, premature mortality was 13 and 54 times higher among young men and women who inject drugs as compared to the general population.[123] However, there is very limited evidence on the effect of SIFs on all-cause mortality. One study conducted using data from two Canadian prospective cohorts reported that frequent use of SIFs was significantly associated with a lower risk of all-cause mortality (adjusted HR[aHR]: 0.46; 95% CI: 0.26-0.80, p=0.006). The crude mortality rate of the 811 SIF clients in the study was 22.7 deaths per 1000 person-years, which translates to 34 years (median, IQR 27–42) of potential life-years lost for the 13.8% who died during the study period.[31]

Overdose Mortality within SIFs

The published evidence on overdose mortality within the SIFs suggests that no client has ever experienced overdose death within the facility.[29,30]

In a qualitative study from Vancouver, clients reported that staff was available to rapidly respond to an overdose event, and injecting at a SIF in the presence of a nurse saved many lives that would have otherwise been lost.[124]

We also heard from multiple people who work at SIFs that they know of no episodes of a client dying at a SIF from an overdose. One stakeholder cited data from an unsanctioned SIF that operates at an undisclosed location in the United States.[14] Many interviewees pointed to the increased risk of mortality associated with clients who live in isolation and therefore inject alone. Without a partner or observer, overdoses that occur when injecting alone can have fatal consequences. Experts highlighted how SIFs address a specific and large group of PWUD whose risk for overdose mortality is elevated due to social isolation.

Overdose Mortality within Communities

A population-based study in Vancouver, Canada evaluated the effects of Insite on overdose mortality.[12] Researchers assessed overdose mortality stratified by pre-and post-SIF within and beyond the 500 m area around the facility. The data were obtained from the British Columbia Coroners Service's registry for deaths caused by overdose, before the opening of the SIF (January 2001 to September 2003) and after the opening of the SIF (September 21, 2003, to December 2005). The SIF opening was associated with a significant reduction of 35% in overdose mortality within 500 m of the facility (absolute reduction in overdose mortality rates from 254 to 165 per 100,000-PYs, rate difference (RD): 89 per 100,000-PYs; 95% CI: 1.6 to 175.8, p=0.048), compared to a 9.3% decline in the rest of the city (Table 4.1; RD: 0.7, 95% CI: -1.3 to 2.7, p=0.49). The authors noted that most SIF users (70%) lived within four blocks of the facility.[12]

Table 4.1 Overdose Rates in the Vicinity of a SIF and Beyond (table adapted from Marshall et al. 2011)[12]

	Overdoses within 500 m of SIF		Overdoses farther than 500 m of SIF	
	Pre-SIF	Post-SIF	Pre-SIF	Post-SIF
Number of overdoses	56	33	113	88
Overdose rate (95% CI)*	254 (187 to 320)	165 (108 to 221)	7.6 (6.2 to 9.0)	6.9 (5.5 to 8.4)
Rate difference (95% CI)*; p value	-	88.7 (1.6-176); p=0.048	-	0.7 (-1.3-2.7); p=0.490
Percentage reduction (95% CI)	-	35.0% (0.0 to 57.7)	-	9.3% (-19.8 to 31.4)

SIF: supervised injection facility, CI: confidence interval; Pre-SIF period= January 1, 2001 to September 20, 2003. Post-SIF period= September 21, 2003 to December 31, 2005

*Expressed in units of per 100,000 person-years

Non-Fatal Overdose and Health Care Utilization for Overdose

Non-fatal overdose events within a SIF have been captured by looking at events where SIF staff intervened by administering naloxone and/or oxygen or by calling EMS.[32,33] We identified three studies that evaluated the effect of SIF use on non-fatal overdose and overdose requiring EMS, ambulance, or hospital care.

A study from Insite from March 2004 to August 2005 found 285 unique users who experienced 336 non-fatal overdose events. Of these overdose events, 28% resulted in a transfer to hospital, and 27% resulted in the administration of naloxone.[32] A recent time-series analysis of SIF users at Insite reported that the overdose rate per 1000 visits increased from 2010 to 2017 (1.5 vs 9.5, $p<0.001$) with an increase in overdose events requiring naloxone administration (48.4% to 57.1%, $p<0.001$) but no overdose deaths were reported within the facility.[33]

In a 2007 study by the New South Wales (NSW) Health Department in Sydney, Australia, opioid overdose-related ambulance calls were analyzed in Sydney over 36 months pre-SIF and 60 months post-SIF. The SIF opening was associated with a greater reduction in ambulance calls for opioid-related overdose events in the vicinity of the SIF compared to the rest of NSW (68% vs 61% decline, $p=0.002$).[34] This effect was even higher during operating hours of the SIF (80% vs 60% decline, $p<0.001$).

Changes in the Drug Supply and Injected Drug Class

Changes in drug class and composition over time, especially a recent increase in the presence of fentanyl or its analogs, have caused a huge public health burden by adding to the toll of overdose mortality.[125] The latest reports from Insite suggest that atypical overdose presentations (muscle rigidity, dyskinesia, or confusion) increased from 23% of overdoses in 2015 to 41% in 2017; 15% of atypical overdoses required transportation to a hospital via ambulance.[126] The authors felt that this increase might be caused by fentanyl contamination in the illicit drug supply. As noted previously, a recent time series analysis from Insite reported that overdose rates increased significantly for all drug categories. Also, the overdose rate associated with heroin increased from 2.7 per 1000 visits to 13 per 1000 visits over the study period. Compared to the baseline period, SIF users in the most recent period had 10.4 times the risk of overdose following cocaine consumption, 4.8 times the risk of overdose following heroin consumption, and 2.5 times the risk of overdose following consumption of other opioids.[33]

Likewise, in Sydney, Australia, a retrospective clinical audit of MSIC (2012-2015) reported that about 44 of 1000 injections contained fentanyl and with 4.4% of injections containing fentanyl resulted in an overdose. Further, fentanyl users were 2.2 to 8.0 times more likely to experience an

overdose than heroin and other prescription opioid users (p<0.001).[127] In Denmark during 2007-2014 a prospective analysis reported that there were 12.7 heroin overdoses per 1000 injections compared to 4.1 oxycodone overdoses per 1000 injections.[128]

A stakeholder pointed to a 5-year study of an unsanctioned SIF in the United States that documented a shift in types of drugs injected -- from about 85% of injections being opioid only in 2014 to just 30% in 2019 when using a combination of opioid and stimulants (e.g., cocaine, methamphetamine) became common.[14] Other experts described substantial variation and changes in the drug supply chain by region (e.g., black tar, white powder, fentanyl), polydrug use, and smoked products as major issues when studying harm reduction strategies. In pursuit of identifying changes in drug supply that increase risk for overdose, SIFs have responded to changes in the drug supply chain by analyzing drug composition (e.g., fentanyl), using fentanyl testing strips and other devices such as mass spectrometers.

Injection Risk Behaviors

As noted earlier, injection drug use increases the risk of transmission of viral and bacterial infections. Reducing injection risk behaviors (IRBs) is important in reducing the risk of infectious disease transmission.[35 1101] The evidence on the effect of SIFs on the incidence of infections over time is limited given the methodological challenges described previously.[129,130] However, the effect of SIFs on reducing IRBs as well as increasing uptake of safer injection education is well-established and serves as the primary basis of our evaluation of the effect of SIFs on infections.

We identified seven studies that evaluated the effect of SIFs on reducing IRBs, including four studies from Vancouver and three studies from European countries (Denmark, Germany, and Spain). Most studies reported SIF use was associated with a reduction in IRBs.

A cross-sectional analysis of 431 PWID in Vancouver (data derived from VIDUS cohort) found that use of a SIF for all, most, or some injections compared to SIF use for no or few injections was independently associated with reduced syringe sharing (adjusted OR [aOR]: 0.30; 95% CI: 0.11 to 0.82; p=0.02).[36] The authors found that the rates of syringe sharing were similar in the two groups before the SIF opened, and differences only emerged after the SIF opened; this finding suggests that the observed association was not confounded by an inherently lower risk of syringe sharing among those who used the SIF.

Two cross-sectional studies among PWID attending Insite (SEOSI cohort) reported that more frequent SIF use was associated with reductions in IRBs. A study of 760 PWID found consistent SIF use (≥25% of injections) compared to inconsistent SIF use (<25%) was positively associated with reductions in many IRBs, including less reuse of syringes (aOR: 2.04; 95% CI: 1.38 to 3.01), less rushed injection (aOR: 2.79; 95% CI: 2.03 to 3.85), less outdoor injection (aOR: 2.70; 95% CI: 1.98 to 3.87), using clean water (aOR: 2.99; 95% CI: 2.13 to 4.18), cooking/filtering drugs prior to injection

(aOR: 2.76; 95% CI: 1.84 to 4.15), safer syringe disposal (aOR: 2.13; 95% CI: 1.47-3.09), injecting in a clean place (aOR: 2.85; 95% CI: 1.83 to 3.86), and others.[131] Another study of 582 PWID found exclusive SIF use (i.e., use of SIF for 100% of injections) compared to some SIF use was associated with reduced syringe sharing among HIV-negative individuals (OR: 0.14; 95% CI 0.00 to 0.78) but was not significantly associated with reduced syringe lending among HIV-positive individuals (OR: 0.94; 95% CI 0.00 to 7.90).[132] Lastly, another cross-sectional study of 1082 PWID found 75% of participants had perceived reductions in IRBs since the opening of the SIF. Among those who reported perceived changes in IRBs, 80% reported reductions in rushed injections, 71% reported less outdoor injections, 56% reported less unsafe syringe disposal, and 37% reported using syringes less often.[13] Of note, these three cross-sectional studies among PWID in the SEOSI cohort had overlapping study periods (Stolz: March '04 to October '04; Wood: July '04 to June '05; Petrar: December '03 to September '05).

We also identified three studies from European countries including Denmark, Germany, and Spain. A cross-sectional study of 41 PWID in Denmark found 76% of participants reported perceived reductions in IRBs since the opening of the SIF, including less rushed injections (63%), fewer outdoor injections (56%), ceasing to share syringes (54%), and cleaning injection site more often (44%).[56] A prospective cohort study of 129 PWID in Germany found no changes in IRBs after three months of SIF use.[43] A cross-sectional study of 249 young heroin users in Spain found SIF use was significantly associated with not borrowing used syringes (OR: 3.3, 95% CI: 1.4 to 7.7); of note, 96% of participants reported using an SSP during the reference period.[133]

A meta-analysis combined results from three of the studies described above (Wood 2005, Kerr 2005, and Bravo 2009) and found SIF use was associated with a 69% reduction in the likelihood of syringe sharing (pooled effect: 0.31; 95% CI: 0.17 to 0.55).[37]

Stakeholders noted SIFs are effective in reducing IRBs by providing a clean, safe space to inject in a less rushed manner. They described an advantage SIFs have in education and supporting safer IRBs, attributable to the SIF's ability to build trust and relationships with clients over time.

In our review of SSPs, six of the thirteen systematic reviews included in the review of reviews examined IRBs, two of which performed meta-analyses. An earlier meta-analysis pooled results from 10 studies and found SSPs reduced HIV risk behaviors (weighted group mean effect size: 0.28; 95% CI: 0.21 to 0.35).[134] The other meta-analysis examined the effect of high SSP coverage plus opioid substitution treatment (OST) and found a reduced likelihood of syringe sharing (aOR: 0.52, 95% CI: 0.32 to 0.83)[41]; of note, this review only included studies conducted in the UK and reported the effect of full harm reduction (i.e., high SSP coverage and OST) on IRBs as opposed to the effect of just SSPs. The other reviews provided a qualitative synthesis that generally supported SSPs' reduction in IRBs.

Safer Injection Education

We identified three studies that reported the uptake of safer injection education (SIE) at SIFs. All studies were among PWID attending Insite (SEOSI cohort). One prospective study of 1087 PWID found frequent SIF use (≥75% of injections) compared to less frequent use (<75% of injections) was associated with an increased likelihood of receiving SIE in multivariate analyses (aOR: 1.47, 95% CI: 1.22, 1.77),[135] and one cross-sectional study of 874 PWID found daily SIF use was marginally associated with receiving SIE in univariate analyses (p=0.085).[136] Lastly, in one qualitative study, narratives from 50 participants showed the SIF allows participants to identify gaps in safer injection knowledge by providing targeted educational messages and demonstrations of safer techniques as well as by promoting meaningful relationships with health care professionals. In addition, participants said the environment of the SIF incites safer injecting practices over time, including within and outside of the SIF.[137]

Infection Prevalence/Incidence

We identified four studies that provided evidence on the effect of SIFs on infection incidence and prevalence, most of which were not designed to detect differences, specifically in rates of HIV or HCV.

Viral Infections

A cross-sectional study of 510 PWID who attended a SIF in Catalonia, Spain found that there were no significant differences in the prevalence of HIV or HCV among those who had frequent SIF attendance (i.e., daily), medium SIF attendance (i.e., > half of days), and low SIF attendance (i.e., ≤ half of the days).[38] In a qualitative study among 22 PWID and seven staff members at the Harm Reduction Room in the Dr. Peter Centre in Vancouver, staff members perceived that there was a reduction in infections that could be potentially attributed to having a safer place to inject and safer injection education.[138]

Much more extensive evidence exists for the effects of SSPs on viral infections. Nine of the thirteen systematic reviews included in reviews of reviews examined the incidence of HIV, including one meta-analysis. The meta-analysis pooled results from 10 studies and found a trend towards a reduced risk of HIV transmission with SSPs, although the results were not significant (effect size: 0.66; 95% CI: 0.43 to 1.01).[39] However, when pooling results from six higher-quality studies, a significant reduction was observed (effect size: 0.42; 95% CI 0.22 to 0.81). Other reviews provided a qualitative synthesis, and their conclusions generally supported the findings of the meta-analysis. However, a more recent meta-analysis not included in the review of reviews found SSP use was associated with an increased risk of HIV seroconversion when pooling results from two studies (HR: 1.59; 95% CI: 1.2 to 2.1).[27]

Eight of the thirteen systematic reviews included in reviews of reviews examined the incidence of HCV, including two meta-analyses. One meta-analysis pooled results from seven studies and found an increased risk of acquiring HCV with SSPs (RR: 1.62; 95% CI: 1.04 to 2.52).[40] There was substantial heterogeneity (I^2=81%), and the authors did not conduct any sensitivity or subgroup analyses. The authors noted that studies included in their analysis may have been affected by volunteer bias as SSPs may attract higher-risk PWID. The other meta-analysis included three studies conducted in the UK and found high SSP coverage was associated with a reduced risk of HCV transmission (aOR: 0.48, 95% CI: 0.25 to 0.93).[41] The other systematic reviews provided a qualitative synthesis and results were mixed; these reviews also included many earlier studies that were not included in the meta-analyses.

We identified two meta-analyses published after the reviews of reviews that provide additional, recent context. A meta-analysis by Cochrane found a trend towards reduced risk of HCV with high SSP coverage, although the results were not significant (RR: 0.79; 95% CI: 0.39 to 1.61); this analysis combined studies from North America and Europe, and there was high heterogeneity (I^2=77%).[28] When stratified by region, high SSP coverage in Europe was associated with a significant reduction in risk of HCV acquisition (RR: 0.24; 95% CI 0.09 to 0.62). Another meta-analysis analyzed results from studies reporting ORs and HRs separately and found no association when analyzing ORs (OR 0.51, 95% CI 0.05 to 5.15) but an increased risk when analyzing HRs (HR 2.05, 95% CI 1.39 to 3.03).[26] There is continued uncertainty from published research around SSPs' effects on viral infections although results are likely affected by selection biases, and we urge caution when interpreting these results.

Expert stakeholders we interviewed felt that the infection control benefits of SSPs are obvious and HIV and HCV incidence rates would rise quickly if the service were removed from a community given the high-risk profiles of clients of SSPs. Experts pointed out that SIFs serve clients at even higher risk than SSPs. Stakeholders believed that SIFs play an important role in reducing the transmission of infections, but it is difficult to measure the impact due to variable baseline rates of HCV and HIV among PWID in different communities. Additionally, stakeholders noted that SIFs have been effective in referring clients to HCV treatment.

Bacterial Infections

A prospective cohort of 1065 PWID attending Insite (SEOSI cohort) found the use of SIF for all injections versus some injections was associated with a decreased likelihood of developing a cutaneous injection-related infection (CIRI) (OR: 0.47; 95% CI: 0.23 to 0.94) in univariate analyses; in multivariate analyses, the aOR was 0.58 and was no longer statistically significant (95% CI: 0.29 to 1.19).[42] A prospective cohort study of 129 PWID attending a DCF in Essen, Germany found no statistically significant reduction in injection-related abscesses.[43]

Stakeholders noted that SIFs can be effective in preventing bacterial infections such as endocarditis and can provide or encourage wound care. One expert noted that SIFs have an advantage over other harm reduction strategies in detecting and intervening early on common soft tissue disease. This advantage was attributed to the frequency that clients visit SIFs and how staff build relationships with clients that permit discussion and intervention to prevent serious wound infections.

Health Care Utilization for Infections

We identified two studies that provided evidence on the effect of SIFs on health care utilization for infections among PWID attending Insite (SEOSI).

A prospective cohort study of 1083 PWID found that over a median follow-up of 21.4 months, 9% of participants were admitted to the hospital of whom 49% were admitted for CIRI or complications.[139] In multivariate analysis, referral to the hospital by a SIF nurse was significantly associated with an increased likelihood of hospitalization for CIRI (aOR: 5.38; 95% CI: 3.39, 8.55). Participants referred to the hospital by a SIF nurse had shorter hospital stays compared to those who were not referred by a SIF nurse (4 days [IQR: 2-7] vs 12 days [IQR: 5-33], p=0.001 after adjustment). A similar analysis of 1083 PWID found that over a median follow-up of 18.6 months, 27% of participants visited the ED for a CIRI. Referral by a SIF nurse was significantly associated with ED use for CIRI among females (aHR: 4.48; 95% CI: 2.76 to 7.30) and males (aHR: 2.97; 95%CI: 1.93 to 4.57).[140]

Hospitalization for bacterial infections including endocarditis have not been reported directly in studies that assessed the effect of SIF use on health care utilization for infections. However, a comment received during the public review period noted the large scale of infections and the burden placed on the healthcare system. It is estimated that anywhere between 5% and 20% of people who inject drugs (PWID) have had infective endocarditis and related hospitalizations increased between 2000 and 2013, especially for young adults.[141]

Intermediate Outcomes

Uptake of Services

SIFs may facilitate access to various services programs for PWID and in turn enable them to access and utilize services like treatment and recovery, health, and social services.

Treatment and Recovery Support Services

We identified six studies that assessed the impact of SIFs on treatment and recovery support services. Across studies, the use of SIFs was associated with a higher uptake of treatment and recovery services.

A recent two-year prospective assessment of Insite reported that 11.2% of clients were enrolled in the co-located detoxification services at least once and frequent SIF users were more likely to enroll and use this service compared to non-frequent (less than once per week) users (aOR:8.15, 95% CI: 5.38-12.34, p<0.001).[45]

Three prospective studies from the SEOSI cohort reported associations between SIF use and rate of rapid entry into the detoxification treatment or service. In these overlapping analyses, SIF use and contact with an addiction counselor led to a significant increase in detoxification uptake, resulting in rapid entry into methadone maintenance treatment.[46-48] A prospective study found that weekly SIF use was positively associated with enrollment in addiction treatment and increased likelihood of injection cessation.[47]

In Sydney Australia, a prospective study from 2001-2002 reported that frequent use of an SCS was positively associated with receiving a referral to a detoxification program (aOR:1.6, 95% CI: 1.2-2.2).[49] Similar findings were reported from Catalonia (Spain), with PWID who utilized a SIF having a significantly higher likelihood of accessing drug dependence services (aOR: 2.12, 95% CI: 1.18-3.81).[38]

Health and Social Services

We identified seven studies that assessed the impact of SIFs on health and social services. Broadly, across studies, the use of SIF was associated with increased access to health and social services.

As described previously, PWID in Vancouver with cutaneous injection-related infections when referred by SIF nurse to the hospital was associated with an increased likelihood of admission resulting in a decrease in the average length of stay by 8 days.[139] Across studies, higher use of ancillary services has also been reported for PWID who utilized SIF frequently compared to those who used them occasionally or rarely.

A multi-country study in Europe reported an association between frequent supervised drug consumption facility use (compared with occasional or rare use) and a greater likelihood of accessing counseling services (46% vs 35% and 25%; p<0.01), medical services (37% vs 29% and 17%, p<0.01), syringe exchange services (59% vs 54% and 44%, p<0.05), and education on safer use (9% vs 3% and 3%, p<0.05).[50] A cross-sectional analysis in Denmark also reported that clients who used the facility frequently were more than twice as likely to receive treatment for an acute health condition compared to non-users.[51]

These observations are in line with the qualitative and exploratory evidence where SIF users have reported greater access to care and treatment with fewer structural and social barriers as a result of services being provided at one accessible location.[50,51,142] In a study from Dr. Peters Centre, Vancouver, PWID who were HIV positive highlighted that they felt comfortable discussing their drug use and health needs with the staff. They also noted that the harm reduction approach used at DPC

led to an increase in access to health care services including palliative and supportive care.[44] Likewise, qualitative evidence collected from 50 in-depth interviews indicated that SIF use facilitates access to care, although a minority of participants expressed otherwise. The PWID described that having on-site nurses at a SIF helped in providing assessment and care for injection-related infections as well as facilitating access to off-site health care services.[143,144]

Expert stakeholders felt that access to treatment, social services, recovery services, and referrals is important to SIF users. They also felt that allowing people an opportunity to enroll in treatment services reduces mortality. However, agreeing to enroll in MAT or other addiction treatment services can take time and may depend on the client's comfort and trust in the facility. In cases where people visit SIFs frequently, the relationship can be fostered by providing more points of contact and a stress-free and safe environment for clients.

Drug Consumption (e.g., frequency and amount)

We only identified one study that assessed changes in drug consumption associated with the use of SIFs. A pre-post study from Vancouver reported no substantial differences in relapse rates for injection drug use or stopping drug use pre- and post-SIF opening. The authors acknowledged that there was an increase in smoking crack after SIF opening but it is unlikely that the facility which does not allow smoking could have prompted this change.[52]

Community and Environmental Outcomes

Some of the key concerns regarding the implementation of SIFs relate to community and environmental issues including public drug use, syringe and paraphernalia disposal, and drug-related crime.

Public Drug Use and Syringe or Paraphernalia Disposal

Five studies assessed the role of SIFs in addressing public drug use and syringe and paraphernalia disposal associated with injection drug use.

An ecological study post-SIF opening in Vancouver Canada reported statistically significant reductions in public injection drug use (measured by researcher counts), compared to pre-SIF opening (daily mean: 4.3 vs 2.4, $p<0.001$). At the same facility, publicly discarded syringes (daily mean: 11.5 vs 5.4, $p<0.05$) and injection-related litter (daily mean: 601.7 vs 305.3, $p=0.01$) also reduced after SIF opening. These declines were independent of police presence and weather conditions.[53] A retrospective cohort study among 714 PWID attending a SIF reported that increased waiting time at the SIF resulted in an increased likelihood of public injecting (aOR: 3.26, 95% CI: 2.11-5.6, $p<0.001$).[54]

In Sydney, Australia, a time-series study reported that after a SIF opened there was a perceived decline in the proportion of residents and business owners witnessing public injections (19% vs 33%, p<0.001) and discarded syringes (40% vs 67%, p<0.001).[55] A study of a SIF opening in Copenhagen (Denmark) reported a 56% reduction in public injections as well as a significant improvement in safe syringe disposal (59%, p <0.001).[56] In contrast, over a three-month period a prospective cohort study from Essen (Germany) reported no significant effect of a SIF on public drug use.[43]

In a study of DCRs in Denmark, 71% of users also noted that they chose the SIF for drug-use as they were conscious of public drug use bothering people in the neighborhood.[51]

Drug-Related Crime

An important aspect of harm reduction with SIFs is promoting (or at least not worsening) neighborhood safety. We identified six studies that assessed the association of the SIF opening on drug-related crime and/or neighborhood safety.

Three studies conducted in Sydney, Australia reported that opening of the SIF did not result in a significant increase or decrease in crime (i.e., theft, drug-related loitering, or robbery).[57-59] After the opening of the SIF, a slight increase was reported for overall loitering at the front and back of the SIF.[57] Additionally, a prospective study conducted from 1999 to 2010 reported a significant decline in robbery and property offenses both in the vicinity of the SIF and across the city. Of note, the rates of drug-related crimes declined between 1999 to 2003 and then remained constant until the end of the study period. However, the authors found no association of the SIF (Sydney MSIC) with robbery, property crime, or drug offenses.[58] In contrast, a separate pre-post study in 2013 reported a decline in robbery or thefts in the neighborhood after the SIF was opened.[59] This study also found that between 2001-2008, possession of illicit substances remained stable while increases were reported both in the SIF neighborhood and citywide from 2009 onwards.

Similar observations were reported from Vancouver, Canada in an ecological (pre-post) study with no significant changes in robbery or drug trafficking.[60] However, compared to the pre-SIF opening, a decline in vehicle break-ins (302 vs 227, p<0.001) was observed post-SIF opening. Two studies—one prospective cohort and another a time-series analysis—also reported that among SIF users, frequent use of SIFs was not associated with crime or recent incarceration.[61,62]

The presence of and interactions with law enforcement may have affected the estimates but were not accounted for in these studies. However, studies do not appear to show an increase in crime when a SIF is opened. Furthermore, the evidence on drug-related crime is in line with observations shared by the experts during interviews.

Government Sanctioned Evaluation Reports for SIFs

Uniting Medically Supervised Injecting Centre (MSIC) Sydney, Australia

In May 2001, Uniting MSIC was established in Kings Cross, Sydney under a license issued by the government of New South Wales (NSW). A first evaluation report was published in 2003 to cover the first 18 months of operation.[145] In response to the evaluation results, the operation license was then extended. A second set of evaluation reports was then commissioned by the NSW government[146-149] that assessed the impact of Uniting MSIC on a range of individual outcomes (e.g., overdose) and community outcomes (e.g., syringe and needle disposal). A total of 9778 PWID used this SIF from May 2001 to April 2007, a majority of whom were male (70%) with a mean age of 33 years. About 40% of SIF users injected daily, and 24% were living in unstable housing. The most injected drugs on-site were heroin (62%), other opioids (12%), cocaine (14%), and meth/amphetamines (6%).

During these years of operation, the SIF managed 2,106 overdose-related events on-site, without a single death within the facility. Between May 1998 (pre-SIF) and April 2006 (post-SIF), a significant decline in overdose mortality was reported both in proximity to the SIF (mean: 4 vs 1 death per month, $p<0.001$) as well as in the rest of the city (mean: 27 vs 8 deaths per month, $p<0.001$). A decline in mean monthly ambulance attendances was reported near the SIF, compared to the rest of the city (mean: 61% vs 68% monthly ambulance attendances, $p=0.002$); the percentage decline was reported to be higher during operational hours of the SIF. After the SIF opening, a 35% reduction was reported for average monthly opioid poisoning presentation at the ED compared to before the SIF opening (11 vs 7, $p<0.01$).

In addition, there was a downward trend in reporting public injecting among SIF users between 2001-2004 as well as in witnessing public injecting among residents and business operators between 2000-2005. In addition, residents and business operators also reported seeing less discarded syringe in the past month between 2000-2005. The monthly totals of discarded needles and syringes collected locally signaled about a 50% decrease in syringe litter following the establishment of the SIF; this was sustained between May 2001- April 2007.

Medically Supervised Injection Room in North Richmond, Australia

In October 2017, the Victorian government announced a two-year trial (June 2018 to June 2020) of a Medically Supervised Injection Room (MSIR) in North Richmond, Australia, with the possibility of a trial extension. An independent review panel evaluated the impact of the SIF during the first 18 months of the trial, and a report was published in June 2020.[150] During the first 18 months, almost 4,000 people visited the SIF; the average age of the clients was 41 years and 35% were living with homelessness or insecure accommodation. There were 116,802 supervised injections (96.6% involving heroin), 2,657 overdoses, and no deaths within the facility.

Ambulance calls involving naloxone reduced by 25% within 1 kilometer after the SIF opened; the decline was even greater during hours of SIF operation, with a reduction of 36%.[150]

There was a decrease in the proportion of residents and business respondents reporting they had seen public injections since the SIF opened ($p<0.05$ for both groups). There was no change in the proportions of residents reporting they had seen discarded syringes or needles, but there was an increase among business respondents). There was an increase in the number of syringes and needles collected after the SIF opened, but there were also increased collection efforts during the last eight months of the trial.[150]

The number and types of offenses within 1 kilometer of the SIF generally remained stable between 2014 to 2019, except for drug use and drug possession offenses. Victoria police members reported seeing more buying and selling of drugs and people who appeared to be under the influence. Victoria police also reported that crime near the facility was largely attributable to local crime trends that were not connected to the MSIR trial.[150]

Supervised Consumptions Services in Alberta, Canada

In 2019, the Alberta government froze the funding for new SCSs and reviewed the socioeconomic impacts of existing and proposed SCSs. A review committee conducted public consultations and a review of qualitative and quantitative data and a report was published in March 2020.[151]

There were seven established SCSs in Alberta at the time of the review– four in Edmonton, one in Calgary, one in Lethbridge, and one in Grande Prairie. Most sites had been operating for more than 12 months. The impact of the SCSs was generally assessed within 250 to 500 meters of the SCSs in this review.

The report found there was a 64% increase in all drug and alcohol poisoning deaths within 500 meters of the SCSs compared to a 30% increase in the 501 to 2000 meter zone outside the SCSs; the committee noted these deaths were predominantly related to opioids. However, the review committee acknowledged the role of SIFs and other SCSs in saving lives. In addition, there was a 74% increase in total opioid-related EMS responses within 500 meters of the SCSs. In the comparison zone beyond 500 meters, an average 11% decline was reported. Additionally, police calls for service (a proxy for crime in their review) had generally increased in the immediate vicinities around the Calgary, Lethbridge, and Grande Prairie sites but not around the four Edmonton sites.[151]

More than 16,000 Alberta residents completed an online survey about their perceptions of the SCSs in their communities. The primary complaint by residents was around needle debris. Residents noted an increase in seeing needles and other drug-related paraphernalia discarded in the vicinity of the SCSs. In addition, residents noted concerns around public safety, seeing people who

appeared under the influence, and general social disorder.[151] Of note, the report did not specifically include feedback from clients of these SCSs or the personnel who worked there.

At least some experts and researchers have expressed serious concerns with the methods used in this report, including but not limited to the lack of statistical significance testing and adjustment for potential confounders, and have called for it to be retracted.[152]

Heterogeneity and Subgroups

Unstable Housing

The rates of people living with homelessness or unstable housing in the included studies varies by region with ranges from 17% to 82%, that causes an increased public health burden.[53,55] People living with homelessness or in unstable housing experience multiple barriers in accessing health and social services especially a safe place to inject.[153] Although a considerable proportion of SIF users in studies were experiencing homelessness or living in an unstable housing, we identified few studies that reported results for outcomes of interest stratified by this sub-group.

In a prospective study from Insite, SIF users experiencing homelessness had a higher likelihood of entry into detoxification program (aHR: 1.42, 95% CI: 1.06-1.90, p=0.019), compared to those who were not.[48] However, another prospective study from Insite Vancouver, Canada reported that SIF users experiencing homelessness had a higher likelihood of not being able to access addiction treatment (aOR: 1.47, 95% CI: 1.09-1.98, p=0.011).[154] SIF users living in unstable housing were more likely to receive CIRI care (aHR = 1.39, 95% CI = 1.02–1.88, compared to those with stable housing.[155]

A study from Insite suggests that homelessness increases the likelihood of injecting in public even among SIF users (aOR: 3.10, 95% CI: 1.46-6.58, p<0.001).[54]

Uncertainty and Controversies

Research Methods

The available evidence about SIFs comes from studies with cohort and cross-sectional design. It is difficult to establish temporality in some cases and make inferences about the causal association without a reference population or control group.

Generalizability

Many community factors vary considerably across cities in the world (e.g., background risk of bloodborne infection, community support, policing practices, access to primary medical care, treatment capacity and effectiveness), and the variance could impact the generalizability of

findings. Some of the risks to generalizability are may be lessened by a real-world experience in Canada and Australia where SIFs have expanded to other cities. For example, a new SIF in North Richmond (Melbourne, Australia) replicated overdose mortality protection observed in Sydney. The recently published review report by the Victorian Government also notes reductions in public injecting and ambulance calls due to overdoses, but no improvement in perceived safety and drug-related nuisances.

Changes in Drug Supply

Our assessment of SIF effectiveness relies on many studies that are at least 10 years old. It is known that important community factors have changed since then, including global drug supply chains and user preferences. In some parts of the world, drugs typically injected are now being smoked; methamphetamines, for example, are replacing opioids. The increase in fentanyl additives to heroin and/or cocaine has changed the mortality risk of an overdose during the past decade. The estimated mortality reduction of the SIF model studied a decade ago is based on the types and forms of drugs consumed at that time.

Frequency of SIF Use

Although published studies report a range of utilization statistics (e.g., percentage of injections per month occurring at a SIF), uncertainty remains about the relationship between SIF visit frequency and effectiveness. It is reasonable to assume that a dose-response curve exists, especially for overdose mortality reduction. It is unknown what level of SIF utilization is required to achieve results for infection control, all-cause mortality, and overdose mortality.

Widespread Access to Naloxone

Naloxone is more widespread today, with police officers, paramedics, community members, and PWID and their allies all having it on hand in a variety of settings. It is unknown how much of a community's overdose mortality can be reduced by a SIF versus expanded naloxone distribution to high-risk people and their social networks.

Community Support

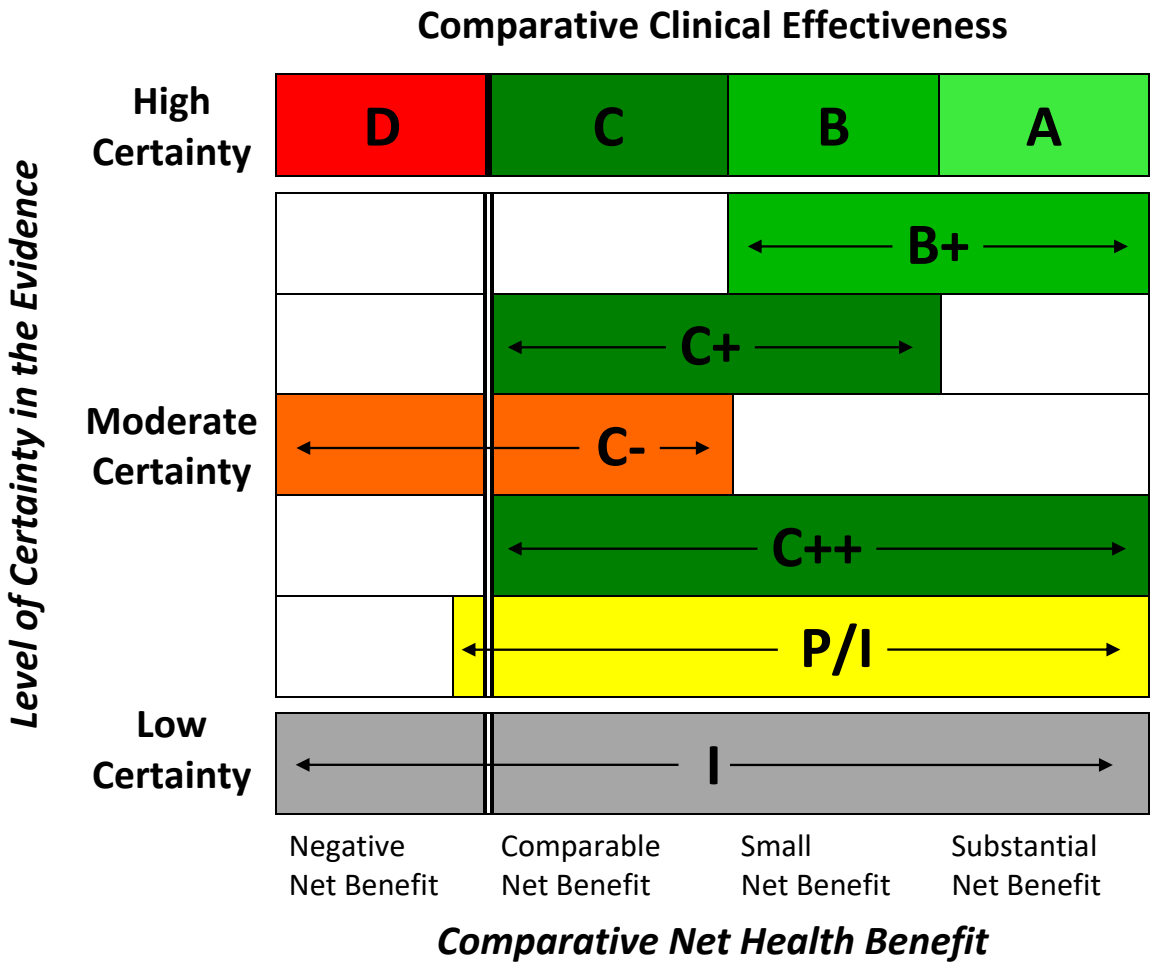
Experts described the importance of local community support, including law enforcement, to open and maintain a SIF, noting that support for a SIF can erode when proposals and implementation plans with specific locations are presented to community stakeholders. While there is no apparent evidence that SIFs attract more PWID or drug-related activity to a neighborhood, uncertainty remains, and concerns over local health and safety might diminish support which could, in turn, decrease the effectiveness of a given SIF.

Law Enforcement

The contribution of law enforcement to a SIF's effectiveness is unknown. Interviews with experts pointed to the importance of collaboration with local law enforcement to assure clients could enter and exit the SIF without being intimidated or arrested by police officers. The data from Vancouver originated from a pilot study that was supported by the police department as well as city government officials.[156] One ethnographic study described the how the increased police presence in the neighborhood of a SIF intimidated clients – forcing some to continuously navigate the risks of arrest or overdosing alone, especially clients who have outstanding warrants.[157] The ability of a SIF to reach PWID, cultivate support from the broader community, and deliver results (individual and community-level outcomes) may depend on its level of collaboration with the police. Notwithstanding state and federal legal issues, the controversy with and for law enforcement involves a concern that SIFs give people the green light to use drugs illegally.

4.4 Summary and Comment

Figure 4.1. ICER Evidence Rating Matrix



A = "Superior" - *High certainty of a substantial (moderate-large) net health benefit*
B = "Incremental" - *High certainty of a small net health benefit*
C = "Comparable"- *High certainty of a comparable net health benefit*
D= "Negative"- *High certainty of an inferior net health benefit*
B+= "Incremental or Better" – *Moderate certainty of a small or substantial net health benefit, with high certainty of at least a small net health benefit*
C+ = "Comparable or Incremental" - *Moderate certainty of a comparable or small net health benefit, with high certainty of at least a comparable net health benefit*
C- = "Comparable or Inferior" *– Moderate certainty that the net health benefit is either comparable or inferior with high certainty of at best a comparable net health benefit*
C++ = "Comparable or Better" - *Moderate certainty of a comparable, small, or substantial net health benefit, with high certainty of at least a comparable net health benefit*
P/I = "Promising but Inconclusive" *- Moderate certainty of a small or substantial net health benefit, small likelihood of a negative net health benefit*
I = "Insufficient" – *Any situation in which the level of certainty in the evidence is low*

The review and synthesis of included evidence have been organized to demonstrate the contribution of a SIF to individual and population-level outcomes. We did not identify any RCTs and as such, have based comparisons of SIF vs SSP on evidence from the cohort, time-series, pre-post, and other observational studies. Our research process also included interviews with 37 experts, including 11 PWID, who provided anecdotes and helped build the framework of outcomes to investigate. Given the available study designs from only a few communities, we recognize that differences between communities could impact generalizability. Moreover, our rating of the effectiveness of a SIF considers its operations in the context of other harm reduction strategies, such as SSPs, which were available to clients in the included studies. We believe that our focus on the incremental value of a SIF is appropriate since many communities today are exploring if a SIF fits within a broader portfolio of harm reduction and overdose prevention framework.

We produced a single evidence rating using the ICER Evidence Rating Matrix (Figure 4.1), considering the effectiveness of a SIF in addressing the public health challenges of injection drug use. We recognize that comparisons of SIF use versus no SIF, for which we have relevant data, have shown incremental benefits. Evidence from both Vancouver and Sydney found a significant reduction in occurrences of nonfatal overdose and mortality from overdose in the SIF neighborhood and beyond. Furthermore, our research team has not uncovered any report of an overdose death at a SIF, bolstering our confidence in this outcome. SIFs have demonstrated an ability to assist clients with accessing medical, mental health, and social support services, including the use of addiction treatment services.

The contribution of a SIF to bloodborne infection control is less certain in terms of direct measurement of disease incidence, both due to variation in the baseline infection rates and the lack of incremental data compared with SSPs. SIFs do reach a population that is known to be at high risk for transmission of serious infectious diseases such as HIV and HCV, and the available evidence demonstrates improvements in injection behaviors; these improvements would be expected to reduce disease transmission. We believe that unsafe injecting behaviors are an important and reasonable proxy for infection control since syringe sharing is implicated as primary infection source of new cases of HCV in the US. In at least some locations, SIFs appear to reduce public injection and, sometimes, syringe and injection litter. Finally, SIFs do not appear to be associated with changes in crime.

Unlike a medication that can be manufactured reliably and administered consistently to deliver benefits to similar patients across the world, how a SIF is implemented can impact individual and community outcomes. The intervention development, including stakeholder engagement, contributes to results. Our overall assessment of the evidence does not consider the ease or difficulty another organization may have in setting up and running a SIF. We assume that planning, stakeholder engagement, and daily management can be executed similarly to that of organizations in Vancouver and Sydney to produce the reported results.

On balance, we believe we have high certainty that, compared with SSPs, SIFs prevent overdose deaths. The degree to which overdose prevention translates to substantially lengthening the life of the individual is uncertain. The evidence on community overdose mortality from Marshall et al. 2011[12], provides moderate-quality evidence given the drop-off in effect over distance from the SIF, which is akin to a dose-response effect. This, too, provides moderate certainty of a substantial benefit. We do not believe that possible harms which have been reported – some communities report increases in needle litter near a SIF – could reduce the net benefit below incremental. There is good reason to believe the net benefit is substantial.

Thus, we have concluded that there is high certainty that SIFs, compared with SSPs provide a small, or substantial net health benefit , and moderate certainty that SIFs provide a substantial net health benefit, leading to a rating of "incremental or better" (**B+**).

5. Cost Effectiveness

5.1 Overview

The primary aim of this analysis was to estimate the cost effectiveness of SIFs for IDU among PWID using a cost-effectiveness analysis. The model compared SIFs to SSPs, which may provide a multi-day or multi-week supply of clean needles and syringes to PWID or provide one-to-one exchanges for contaminated products.[158] Because SIFs are not funded by the health care system or payers of health care, the base-case analysis was a modified societal perspective and a one-year time horizon. We also considered a health care payer perspective as a scenario analysis. The model was developed in Microsoft® Excel® for Office 365 (Version 2005).

5.2 Methods

We developed a decision analytic model for this evaluation, with outcome calculations adapted from prior relevant economic models of harm reduction for PWID[63-69] and informed by interviews among key staff and researchers of SIFs.

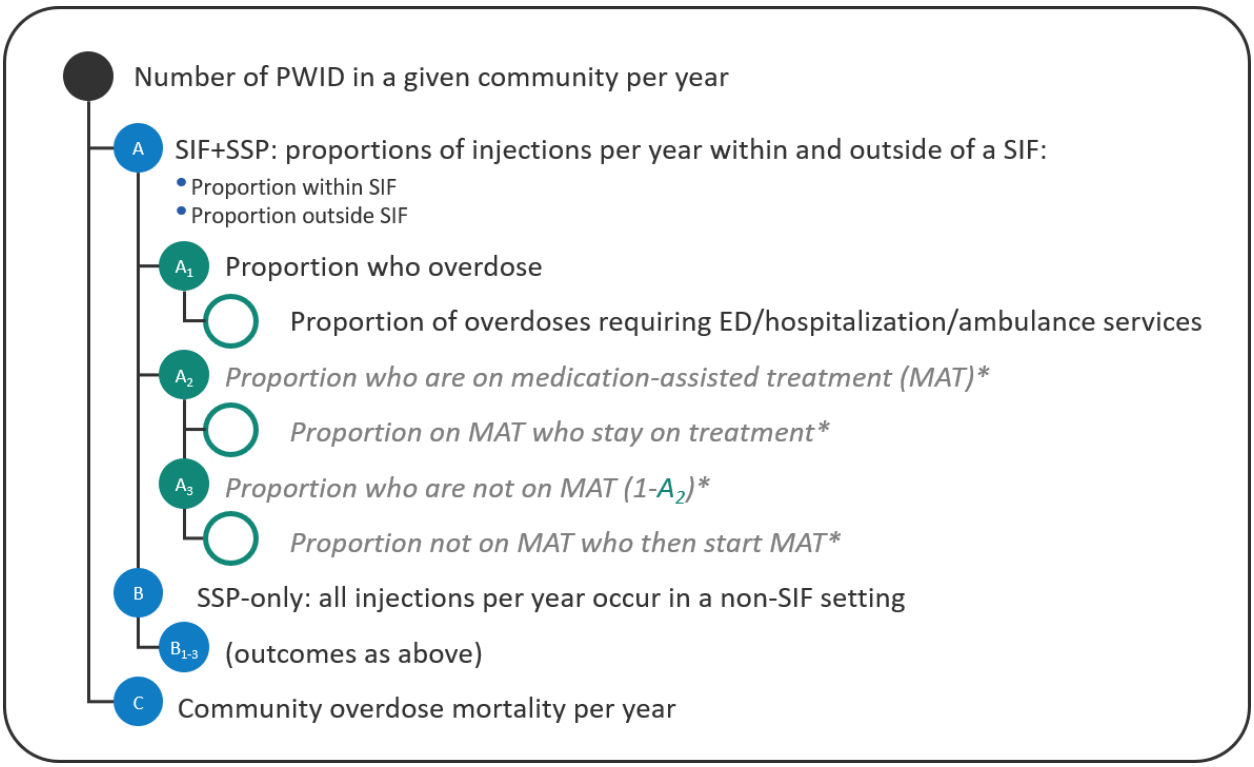
The model focused on communities of PWID, specified by parameters for individual US cities, who could potentially utilize SIFs in locations where SSPs already exist, i.e., SIF+SSP, vs. SSP-only. We calculated each setting's outcomes over one year, based on published data and observations in prior published economic models. The model did not track a single PWID cohort over time; rather, a population of PWID within a given community was estimated based on available data for each location and then outcomes for each community were calculated per year. The costs and outcomes were then summed over the one-year time horizon. We modeled six different US cities, based on local parameters, in order to develop a tool that may be customized to provide cost-effectiveness estimates for any US city given the appropriate data.

Model Structure

PWID within a given community entered the model in either the SIF+SSP (i.e., post-SIF) or SSP-only (i.e., pre-SIF) arm (Figure 5.1). Among the total population of PWID, the number of post-SIF injections/month was calculated (A); all pre-SIF injections were assumed to occur without availability of a SIF (B). For PWID who overdose (A_1), we calculated the proportions that require ambulance utilization and emergency department (ED) visits. We also calculated PWID who are on (A_2) or not on (A_3) medication-assisted treatment (MAT); among PWID who are already on MAT, we calculated the proportion per year who successfully stay on treatment. Among PWID who are not on MAT, we calculated the proportion per year who start it. MAT uptake and success rates were assumed to be equivalent between comparators in the base case, but increased MAT uptake and

success rates due to a SIF were explored in a scenario analysis. These same outcomes were calculated for B_{1-3} and totals for a given community were estimated and compared. Community overdose mortality (C) was estimated based on the proportion of injections in the SIF, applying a risk reduction estimate described below.

Figure 5.1. Model Framework



ED: emergency department, MAT: medication-assisted treatment, PWID: people who inject drugs, SIF: supervised injection facilities, SSP: syringe service program

Locations

The populations of focus for the economic evaluation included PWID at various locations in the US. We modeled costs and outcomes for Boston, Philadelphia, San Francisco, Atlanta, Baltimore, and Seattle, based on the prior existence of an SSP,[70] US geographic location, and the availability of broad city-level estimates (Table 5.1).

Table 5.1. Baseline Community Characteristics

City Characteristics	Boston	Philadelphia	San Francisco	Atlanta	Baltimore	Seattle
Population Density (people/square mile)[159,160]	13,943	11,692	18,581	3,858	7,594	8,391
Commercial Property Value(Cost per square foot)[161-163]	$550	$207	$300	$244	$202	$414
Commercial Mortgage Loan Rates[164,165]	7%	7%	7%	7%	7%	7%
Cost of Living Ratio vs. Vancouver, BC[166]	1.24	1.05	1.47	0.93	0.95	1.18
Number of PWID within city limits[167-172]	29,500*	68,800*	22,500	23,100*	42,200	26,000
Number of Overdose Deaths per Year[173-178]	250	1,150	330	482	692	227

*Estimated based on city population size and average proportion of known PWID in San Francisco, Baltimore, and Seattle

BC: British Columbia, PWID: people who inject drugs

Interventions

The list of interventions was developed with input from community organizations, clinicians, researchers, and government agencies on which interventions to include. The full list of interventions is as follows:

- Intervention of interest: SIF+SSP (i.e., Post-SIF)
- Comparator intervention: SSP-Only (i.e., Pre-SIF)

Key Model Characteristics and Assumptions

Table 5.2. Key Model Assumptions

Assumption	Rationale
Hypothetical legally-sanctioned SIFs in US cities are comparable to Insite (Vancouver, BC, Canada) in terms of effectiveness, services offered, and cost of living-adjusted operating costs.	Insite is the first and most well-documented SIF in North America.
The US cities modeled have a 0.25-mile radius area within the city that could have 2100 PWID clients for a SIF.	The Insite client-service rate is the basis for the healthcare resource use effectiveness estimates for SIFs in all modeled cities.
Rates of HIV/hepatitis C/other infections are equivalent between SIF+SSP and SSP-only.	We recognize there is some evidence that SIFs may reduce needle sharing, leading to a reduction in infections. However, due to the short time horizon of our model (1 year) and the complexity of estimating the timing of infections and attributing costs to these conditions, we chose to take a conservative approach and not include these additional cost off-sets. We explored a difference in infection rates driven by a reduction in needle sharing conferred by the SIF setting in a scenario analysis.
We assumed that the rates of initiation and continuation of MAT are equivalent between clients using SIFs and SSPs.	There is a lack of comparative data between these two services; however, stakeholders have indicated that increased face-to-face time spent with PWID may lead to increased uptake of MAT. Therefore, we explored the impacts of marginal increases in MAT initiation due to SIFs in a scenario analysis.

BC: British Columbia, HIV: human immunodeficiency virus, MAT: medication-assisted treatment, PWID: people who inject drugs, SIF: supervised injection facility, SSP: syringe service program

Model Inputs

Overdose Mortality

We utilized estimates from Marshall et al.[12] to calculate the overdose mortality risk reduction associated with SIFs (Table 5.3). We calculated the mortality reduction attributable to the SIF as the absolute difference between: (a) fatal overdose reduction within a 0.25 mile radius around the SIF and (b) fatal overdose reduction beyond a 0.25 mile radius around the SIF; this was then applied to pre-SIF overdose fatalities per city to derive expected fatalities within and outside the effective range of the SIF. Of note, the Marshall et al. estimate for overdose reduction near the SIF is a weighted average of two Vancouver, BC census tracts within a 500-meter radius of the SIF. As these two census tract distances were within 0.25 mile, we employed this distance instead of 500 meters in this US-based analysis. As in Irwin et al.,[66,67] we assumed that 5% of overall overdose deaths in each city occurred within the 0.25 mi radius of the SIF. Thus, the equation for calculating post-SIF OD deaths was:

*Pre-SIF_OD_deaths_(City)–(OD_reduction_<0.25_mi – OD_reduction_>0.25_mi)*ppn_OD_death_<0.25_mi*OD_deaths_(City)*

Table 5.3. Overdose Mortality Inputs

Parameter	Estimate (sensitivity analysis range)
Fatal OD reduction within 0.25 mi of SIF[12]	35.0% (±20%)
Fatal OD reduction beyond 0.25 mi of SIF[12]	9.3% (±20%)
Proportion of total overdose deaths occurring within 0.25 mi^2 of SIF[67]	5% (±20%)

OD: overdose, SIF: supervised injection facility

Overdoses and Emergency Services

Utilizing estimates from Insite, we assumed that 0.95% of overall injections result in an overdose (Table 5.4).[33] Emergency services included both ambulance services as well as hospital ED access, and were conditional on the occurrence of an overdose. We utilized estimates from Irwin et al. to parameterize these services, with 0.79% of overdoses at a SIF versus 46% of overdoses outside a SIF resulting in an ambulance call, and 0.79% of overdoses at a SIF versus 33% of overdoses outside a SIF resulting in an ED visit.[67] We note that the estimates for emergency services utilization for overdoses at a SIF are lower than some published estimates,[32-33] but are in line with current protocols based on stakeholder feedback. Based on an analysis of the Agency for Healthcare Research and Quality's Healthcare Cost and Utilization Project (HCUP) National Emergency Department Sample, we assumed that 48% of ED visits for overdoses resulted in an inpatient admission.[74]

Table 5.4. Overdose and Emergency Services Inputs

Parameter	Estimate (sensitivity analysis range)
Overdose (OD) Inputs	
Total annual injections [71]	180,000 (±20%)
Number of unique clients/month[71]	2,100 (±20%)
Percent of injections resulting in OD[33]	0.95% (±20%)
Emergency Services Inputs	
Proportion of ODs at SIF+SSP resulting in ambulance ride[67,72]	0.79% (±20%)
Proportion of ODs at SIF+SSP resulting in ED visit[67,72]	0.79% (±20%)
Proportion of SSP-only ODs resulting in ambulance ride[67,73]	46% (±20%)
Proportion of SSP-only ODs resulting in ED visit[67,73]	33% (±20%)
Proportion of ED visits resulting in hospitalization[74]	48% (±20%)

ED: emergency department, OD: overdose, SIF: supervised injection facility, SSP: syringe service program

Medication-Assisted Treatment

We assumed that SIFs provide equivalent benefit to SSPs in terms of initiation of MAT. Therefore, we used the same estimate of 5.78% of PWID accessing MAT due to a referral from the SIF and/or SSP (Table 5.5).[75] We explored differences in uptake in MAT in a scenario analysis. We assumed 50% of PWID who begin MAT stay on treatment each year.

Table 5.5. Medication-Assisted Treatment Inputs

Parameter	Estimate (sensitivity analysis range)
Proportion of PWID who access MAT[75]	5.78% (±20%)
MAT continuation rate[67]	50% (±20%)

MAT: medication-assisted treatment, PWID: people who inject drugs

SIF and SSP Operations and Facilities Costs

SIF facility and operation costs were estimated based on the Irwin et al. approach, adapting each community's estimate according to their individual characteristics.[66,67] We applied start-up costs as well as marginal operating costs, adjusting prior 2013 estimates to 2020 US dollars using the Consumer Price Index (Table 5.6, below).[77] Start-up costs were calculated by multiplying the size of

the Insite SIF (1000 ft^2) by the commercial real estate cost per ft^2 per city (Table 5.1, above); this cost was then amortized over the length of the loan period to calculate an annual loan payment. The Insite annual operating cost was multiplied by the cost-of-living ratio per city compared to Vancouver, BC (Table 5.1, above). Each city's annual SIF cost thus equaled the annual loan payment plus the annual operating cost. We assumed that the SIF's service offerings match those of Insite, as that site is also the source for the effectiveness parameters.

SSP facility and operation costs were estimated from Teshale et al., who reported on the costs of operating these facilities in a variety of settings in the US.[78] We adopted the large (serving 2500 clients), urban SSP setting from Teshale, and then adjusted the budget items based on the SSP offerings that were available at the time of the launch of Insite, in order to align the differences in costs with the services that were added with Insite and the measured mortality impact. This included removing naloxone distribution and medical/testing services, and their associated personnel costs (including benefits). We then adjusted the costs to 2020 US dollars using the Consumer Price Index from 2016 to 2020 dollars.[77] In order to estimate SSP operation and facility costs in each modeled city, we applied US cost-of-living city-level weights, with Teshale's estimate assumed to be the overall mean.

Table 5.6. Operating and Facility Cost Inputs

Parameter	Estimate (sensitivity analysis range)
Insite Annual Operating Cost[76,77]	$1,687,286 (±20%)
Term of Commercial Loan*	15 years
SIF Square Footage[67]	1000
Adjusted SSP Annual Operating Cost[77,78]	$1,533,279 (±20%)

*Assumption

SIF: supervised injection facility, SSP: syringe service program

Emergency Services Costs

We used Centers for Medicare and Medicaid Services (CMS) fee schedules with location-specific adjustments to calculate the costs of ambulance rides (Table 5.7).[79] Overdose-related ED visit costs were estimated from the Nationwide Emergency Department Sample, assuming a 30% cost-to-charge ratio.[74] Overdose-related hospitalization costs were adapted from an analysis of Vizient hospital data that were summarized at the regional level, using the average amount that the hospital was paid for opioid-related admissions.[80]

Table 5.7. Emergency Services Cost Inputs

Parameter	Estimate (sensitivity analysis range)
Ambulance Ride Costs[79]	
Boston	$523.06 (±20%)
Philadelphia	$487.41 (±20%)
San Francisco	$566.34 (±20%)
Atlanta	$461.63 (±20%)
Baltimore	$492.50 (±20%)
Seattle	$516.37 (±20%)
Overdose-related ED Visit Cost (All Cities)[74]	$3,451 (±20%)
Overdose-related Hospitalization Cost[80]	
Boston	$8,379 (±20%)
Philadelphia	$7,502 (±20%)
San Francisco	$8,683 (±20%)
Atlanta	$5,890 (±20%)
Baltimore	$7,502 (±20%)
Seattle	$8,683 (±20%)

ED: emergency department

Model Outcomes

Model outcomes included total overdose deaths prevented and total costs for each intervention. The model outcomes will also include total emergency services avoided, and total increase in MAT initiation. Due to the one-year time horizon, all results are reported as undiscounted values.

Base-Case Analysis

Costs and cost effectiveness were estimated using the incremental cost-effectiveness ratios, with incremental analyses comparing SIF+SSP to SSP-only. Because the health care system does not hold financial responsibility for funding SIFs, the base-case analysis used a modified societal perspective.

Sensitivity Analyses

We performed one-way sensitivity analyses to identify the key drivers of model outcomes, using available measures of parameter uncertainty (i.e., confidence intervals) or reasonable ranges for each input described in the model inputs section above.

Scenario Analyses

In addition, we also performed the following scenario analyses to test the impacts of our model assumptions:

- SIF-associated reduction in HIV and HCV infections. We employed the approach used by Irwin et al. to estimate the reduction in infections among PWID. This approach was driven by a 70% reduction in needle sharing among SIF clients compared to the non-SIF PWID (Table 5.8). Given the 1-year time horizon and the decision to exclude health benefits in terms of utility weights, we did not include costs associated with HIV/HCV treatment in this scenario.

Table 5.8. SIF-Associated HIV and HCV Reduction Inputs for Scenario Analysis[66,67]

Parameter	Estimate (sensitivity analysis range)
Odds Ratio: SIF reduction in needle sharing	0.30 (95% CI: 0.11 to 0.82)
Probability of HIV infection from single injection	0.0067 (±20%)
Probability of HCV infection from single injection	0.030 (±20%)
Needle sharing rate among PWID	0.011 (±20%)
Proportion of unbleached needles	100% (±20%)
Number of needle sharing partners among PWID	1.69 (±20%)
Proportion of PWID who are HIV Positive (all cities)	0.17 (±20%)
Proportion of PWID who are HCV Positive (all cities)	0.25 (±20%)

HCV: hepatitis C virus, HIV: human immunodeficiency virus, PWID: people who inject drugs, SIF: supervised injection facilities

- Threshold analysis of overdose rate needed for cost parity. We lowered the overdose rate per city until the overall costs of a SIF+SSP and an SSP-only were equivalent.

- SIF-associated increase in MAT uptake and MAT retention. Assuming that MAT uptake at an SSP-only would be lower than the proportion of SIF+SSP clients who access MAT (5.78%), we estimated the incremental number of MAT clients at a SIF+SSP by decreasing (over a range of 0%-100%) the relative proportion of SSP-only clients who access it. In addition, we did a two-way sensitivity analysis of the differences in (a) MAT uptake and (b) MAT retention rates between SIF+SSP and SSP-only. Given the 1-year time horizon and the decision to exclude health benefits in terms of utility weights, we did not include costs associated with MAT in this scenario.

- Health care payer perspective analysis. In this scenario we focused on direct health care costs by excluding SIF and SSP costs and utilizing health care reimbursements instead of

total cost for hospitalizations. Reimbursements represent what the health care payer paid to the hospital for the provision of care rather than the net cost of care to the hospital.

Table 5.9. Hospitalization Costs for Health Care Payer Scenario Analysis

City	Health Care Payer Reimbursement[80]
Boston	$5,290
Philadelphia	$6,318
San Francisco	$7,224
Atlanta	$4,309
Baltimore	$6,318
Seattle	$7,224

Model Validation

We used several approaches to validate the model. First, we provided preliminary methods and results to multiple SIF stakeholders, including researchers and SIF staff from various locations. Based on feedback from these groups, we refined data inputs used in the model. Second, we varied model input parameters to evaluate face validity of changes in results. We performed model verification for model calculations using internal reviewers. Finally, we compared results to other cost-effectiveness models in this therapy area.

5.3 Results

Base-Case Results

The annual cost of operating a SIF+SSP ranged from $1.6 million to $2.5 million, while the cost of operating an SSP-only ranged from $1.4 million to $1.7 million, depending on the location. A hypothetical SIF+SSP was found to result in the prevention of three (Boston) to 15 (Philadelphia) overdose deaths per year, as well as 773 fewer overdose-related ambulance rides, 551 fewer overdose-related ED visits, and 264 fewer hospitalizations (all based on 180,000 injections/year/comparator). This resulted in cost-savings for: (a) ambulance rides avoided, from -$437,800 (San Francisco) to -$356,900 (Atlanta); (b) ED visits avoided (-$1.9 million); and (c) hospitalizations avoided, from -$2.3 million (San Francisco and Seattle) to -$1.6 million (Atlanta). For each of the six cities, a SIF+SSP saved money compared to an SSP-only, driven primarily by reductions in ED visit and hospitalization costs (of note, OD deaths avoided is not included in the costs per comparator). The overall cost-savings for a SIF+SSP versus SSP-only ranged from -$4.2 million (Seattle) to -$3.6 million (Atlanta).

Table 5.10. Base-Case Results for Boston and Philadelphia

Outcome	Boston			Philadelphia		
	SIF+SSP	SSP-Only	Incremental	SIF+SSP	SSP-Only	Incremental
Total Cost	$2,261,000	$6,270,000	-$4,009,000	$1,896,000	$5,796,000	-$3,899,000
Annual Cost of Facility	$2,153,000	$1,641,000	$511,300	$1,794,000	$1,433,000	$361,500
Ambulance Costs	$7,100	$411,400	-$404,400	$6,600	$383,400	-$376,800
ED Visit Costs	$46,600	$1,947,000	-$1,901,000	$46,600	$1,947,000	-$1,901,000
Hospitalization Costs	$54,300	$2,270,000	-$2,215,000	$48,600	$2,032,000	-$1,983,000
Overdose Deaths	9	13	-3	43	58	-15
Ambulance Rides	14	787	-773	14	787	-773
ED Visits	14	564	-551	14	564	-551
Hospitalizations	6	271	-264	6	271	-264

ED: emergency department, SIF: supervised injection facility, SSP: syringe service program

Table 5.11. Base-Case Results for San Francisco and Atlanta

Outcome	San Francisco			Atlanta		
	SIF+SSP	SSP-Only	Incremental	SIF+SSP	SSP-Only	Incremental
Total Cost	$2,624,000	$6,457,000	-$3,833,000	$1,687,000	$5,310,000	-$3,623,000
Annual Cost of Facility	$2,513,000	$1,712,000	$800,900	$1,596,000	$1,404,000	$191,500
Ambulance Costs	$7,700	$445,500	-$437,800	$6,200	$363,100	-$356,900
ED Visit Costs	$46,600	$1,947,000	-$1,901,000	$46,600	$1,947,000	-$1,901,000
Hospitalization Costs	$56,300	$2,352,000	-$2,296,000	$38,200	$1,595,000	-$1,557,000
Overdose Deaths	12	17	-4	18	24	-6
Ambulance Rides	14	787	-773	14	787	-773
ED Visits	14	564	-551	14	564	-551
Hospitalizations	6	271	-264	6	271	-264

ED: emergency department, SIF: supervised injection facility, SSP: syringe service program

Table 5.12. Base-Case Results for Baltimore and Seattle

Outcome	Baltimore			Seattle		
	SIF+SSP	SSP-Only	Incremental	SIF+SSP	SSP-Only	Incremental
Total Cost	$1,727,000	$5,750,000	-$4,023,000	$2,146,000	$6,346,000	-$4,199,000
Annual Cost of Facility	$1,625,000	$1,383,000	$241,900	$2,036,000	$1,640,000	$396,100
Ambulance Costs	$6,700	$387,400	-$380,700	$7,000	$406,200	-$399,200
ED Visit Costs	$46,600	$1,947,000	-$1,901,000	$46,600	$1,947,000	-$1,901,000
Hospitalization Costs	$48,600	$2,032,000	-$1,983,000	$56,300	$2,352,000	-$2,296,000
Overdose Deaths	26	35	-9	8	11	-3
Ambulance Rides	14	787	-773	14	787	-773
ED Visits	14	564	-551	14	564	-551
Hospitalizations	6	271	-264	6	271	-264

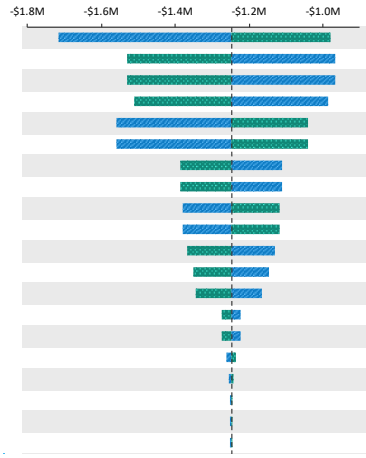
ED: emergency department, SIF: supervised injection facility, SSP: syringe service program

Sensitivity Analysis Results

To demonstrate effects of uncertainty on both costs and health outcomes, we varied input parameters using reasonable ranges to evaluate changes in costs saved per overdose death avoided (Figure 5.2), cost per ambulance ride avoided (Appendix Figure E1), cost per ED visit avoided (Appendix Figure E2), and cost per hospitalization avoided (Appendix Figure E3). The parameter with the largest impact on the cost per OD death avoided was the overdose mortality reduction within 0.25 mi^2 of the SIF.[12] Other parameters with notable impact included the number of injections/year/clientele, the proportion of injections that result in overdoses, the proportion of overall overdose deaths/year/city that occur within 0.25 mi^2 of a SIF, and overdose deaths per city.

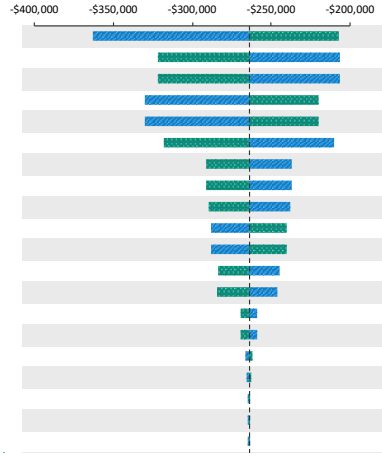
Figure 5.2. One-Way Sensitivity Analysis Results

Costs Saved per OD Death Avoided, Boston



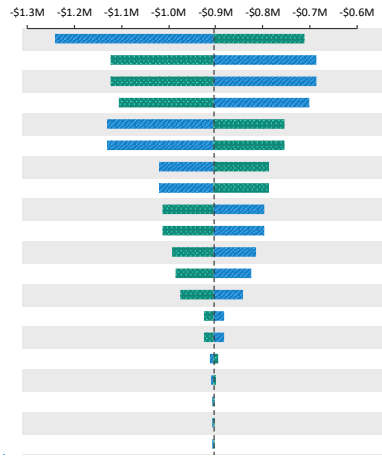
Parameter	Low Value	High Value	Low Result	High Result	Spread
Overdose Mortality: Reduction Within 0.25 mi of SIF	0.280	0.420	-$1,715,144	-$980,831	$734,312
Total annual injections in the SIF	144,000	216,000	-$966,552	-$1,529,415	$562,863
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$966,552	-$1,529,415	$562,863
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$985,442	-$1,510,526	$525,083
Overdose Mortality: Ppn. of City OD Deaths Within 0.25 mi of SIF	0.040	0.060	-$1,559,980	-$1,039,987	$519,993
Overdose Deaths/Year: Boston	200	300	-$1,559,980	-$1,039,987	$519,993
Hospitalization Cost: Boston	$6,704	$10,055	-$1,110,064	-$1,385,904	$275,840
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$1,110,064	-$1,385,904	$275,840
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$1,378,240	-$1,117,728	$260,512
Cost of Living Ratio vs. Vancouver: Boston	0.99	1.49	-$1,378,240	-$1,117,728	$260,512
Cost of ED VIsit: Boston	$2,761	$4,141	-$1,129,647	-$1,366,320	$236,673
First Year SSP Cost	$1,226,623	$1,839,934	-$1,145,803	-$1,350,165	$204,361
Overdose Mortality: Reduction Outside 0.25 mi of SIF	0.074	0.112	-$1,163,759	-$1,345,352	$181,593
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$1,222,369	-$1,273,599	$51,230
Cost of Ambulance Ride: Boston	$418	$628	-$1,222,809	-$1,273,159	$50,350
Number of Unique SIF Clients/Month	1,680	2,520	-$1,259,937	-$1,236,031	$23,907
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$1,254,269	-$1,241,699	$12,570
Cost/sqft Commercial Property: Boston	$440	$660	-$1,251,743	-$1,244,224	$7,519
Commercial Mortgage Loan Interest: Boston	5%	9%	-$1,250,287	-$1,245,542	$4,745
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$1,248,424	-$1,247,544	$880

Costs Saved per OD Death Avoided, Philadelphia



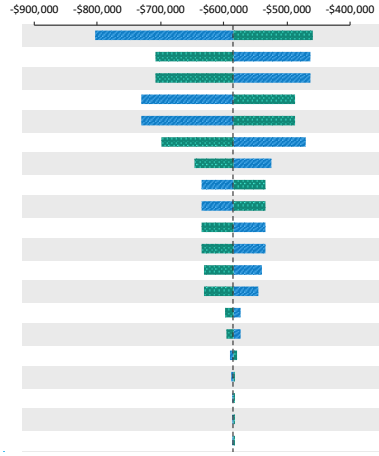
Parameter	Low Value	High Value	Low Result	High Result	Spread
Overdose Mortality: Reduction Within 0.25 mi of SIF	0.280	0.420	-$362,657	-$207,391	$155,266
Total annual injections in the SIF	144,000	216,000	-$206,211	-$321,547	$115,336
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$206,211	-$321,547	$115,336
Overdose Mortality: Ppn. of City OD Deaths Within 0.25 mi of SIF	0.040	0.060	-$329,849	-$219,899	$109,950
Overdose Deaths/Year: Philadelphia	920	1380	-$329,849	-$219,899	$109,950
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$210,022	-$317,736	$107,715
Hospitalization Cost: Philadelphia	$6,001	$9,002	-$237,036	-$290,722	$53,685
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$237,036	-$290,722	$53,685
Cost of ED VIsit: Philadelphia	$2,761	$4,141	-$238,154	-$289,604	$51,451
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$287,857	-$239,901	$47,955
Cost of Living Ratio vs. Vancouver: Philadelphia	0.84	1.26	-$287,857	-$239,901	$47,955
First Year SSP Cost	$1,226,623	$1,839,934	-$244,486	-$283,272	$38,786
Overdose Mortality: Reduction Outside 0.25 mi of SIF	0.074	0.112	-$246,070	-$284,467	$38,397
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$258,690	-$269,068	$10,378
Cost of Ambulance Ride: Philadelphia	$390	$585	-$258,779	-$268,979	$10,200
Number of Unique SIF Clients/Month	1,680	2,520	-$266,148	-$261,610	$4,537
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$265,168	-$262,590	$2,579
Cost/sqft Commercial Property: Philadelphia	$166	$248	-$264,186	-$263,571	$615
Commercial Mortgage Loan Interest: Philadelphia	5%	9%	-$264,067	-$263,679	$388
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$263,968	-$263,790	$178

Costs Saved per OD Death Avoided, San Francisco



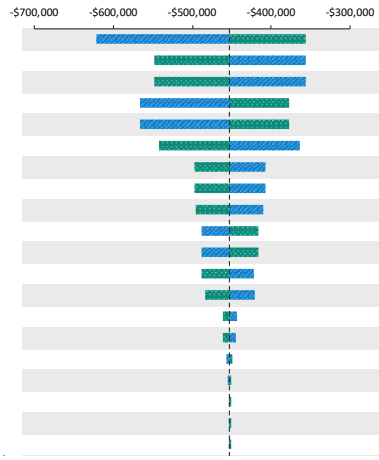
Parameter	Low Value	High Value	Low Result	High Result	Spread
Overdose Mortality: Reduction Within 0.25 mi of SIF	0.280	0.420	-$1,242,355	-$710,460	$531,895
Total annual injections in the SIF	144,000	216,000	-$685,403	-$1,122,538	$437,136
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$685,403	-$1,122,538	$437,136
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$701,199	-$1,106,743	$405,544
Overdose Mortality: Ppn. of City OD Deaths Within 0.25 mi of SIF	0.040	0.060	-$1,129,963	-$753,309	$376,654
Overdose Deaths/Year: San Francisco`	264	396	-$1,129,963	-$753,309	$376,654
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$1,020,953	-$786,989	$233,964
Cost of Living Ratio vs. Vancouver: San Francisco	1.18	1.76	-$1,020,953	-$786,989	$233,964
Hospitalization Cost: San Francisco	$6,946	$10,419	-$795,702	-$1,012,239	$216,538
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$795,702	-$1,012,239	$216,538
Cost of ED VIsit: San Francisco	$2,761	$4,141	-$814,322	-$993,619	$179,298
First Year SSP Cost	$1,226,623	$1,839,934	-$823,209	-$984,732	$161,524
Overdose Mortality: Reduction Outside 0.25 mi of SIF	0.074	0.112	-$842,962	-$974,498	$131,536
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$882,960	-$924,981	$42,022
Cost of Ambulance Ride: San Francisco	$453	$680	-$883,321	-$924,621	$41,300
Number of Unique SIF Clients/Month	1,680	2,520	-$913,418	-$894,523	$18,895
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$908,825	-$899,116	$9,708
Cost/sqft Commercial Property: San Francisco	$240	$360	-$905,524	-$902,417	$3,107
Commercial Mortgage Loan Interest: San Francisco	5%	9%	-$904,922	-$902,961	$1,961
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$904,331	-$903,610	$722

Costs Saved per OD Death Avoided, Atlanta



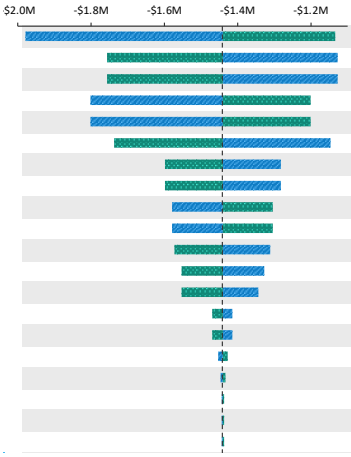
Parameter	Low Value	High Value	Low Result	High Result	Spread
Overdose Mortality: Reduction Within 0.25 mi of SIF	0.280	0.420	-$803,995	-$459,777	$344,218
Total annual injections in the SIF	144,000	216,000	-$461,822	-$708,194	$246,372
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$461,822	-$708,194	$246,372
Overdose Deaths/Year: Atlanta	386	578	-$731,260	-$487,507	$243,753
Overdose Mortality: Ppn. of City OD Deaths Within 0.25 mi of SIF	0.040	0.060	-$731,260	-$487,507	$243,753
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$470,608	-$699,409	$228,801
Cost of ED VIsit: Atlanta	$2,761	$4,141	-$523,630	-$646,386	$122,756
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$635,678	-$534,338	$101,340
Cost of Living Ratio vs. Vancouver: Atlanta	0.74	1.12	-$635,678	-$534,338	$101,340
Hospitalization Cost: Atlanta	$4,712	$7,068	-$534,724	-$635,292	$100,568
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$534,724	-$635,292	$100,568
First Year SSP Cost	$1,226,623	$1,839,934	-$539,656	-$630,360	$90,704
Overdose Mortality: Reduction Outside 0.25 mi of SIF	0.074	0.112	-$545,526	-$630,650	$85,124
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$573,283	-$596,733	$23,451
Cost of Ambulance Ride: Atlanta	$369	$554	-$573,484	-$596,532	$23,048
Number of Unique SIF Clients/Month	1,680	2,520	-$590,313	-$579,703	$10,611
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$587,747	-$582,269	$5,477
Cost/sqft Commercial Property: Atlanta	$195	$293	-$585,874	-$584,142	$1,732
Commercial Mortgage Loan Interest: Atlanta	5%	9%	-$585,539	-$584,445	$1,093
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$585,209	-$584,807	$403

Costs Saved per OD Death Avoided, Baltimore



Parameter	Low Value	High Value	Low Result	High Result	Spread
Overdose Mortality: Reduction Within 0.25 mi of SIF	0.280	0.420	-$621,763	-$355,565	$266,198
Total annual injections in the SIF	144,000	216,000	-$356,487	-$548,335	$191,848
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$356,487	-$548,335	$191,848
Overdose Deaths/Year: Baltimore	554	830	-$565,514	-$377,009	$188,505
Overdose Mortality: Ppn. of City OD Deaths Within 0.25 mi of SIF	0.040	0.060	-$565,514	-$377,009	$188,505
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$362,908	-$541,914	$179,006
Hospitalization Cost: Baltimore	$6,001	$9,002	-$407,803	-$497,020	$89,217
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$407,803	-$497,020	$89,217
Cost of ED VIsit: Baltimore	$2,761	$4,141	-$409,660	-$495,163	$85,503
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$488,463	-$416,359	$72,105
Cost of Living Ratio vs. Vancouver: Baltimore	0.76	1.14	-$488,463	-$416,359	$72,105
Overdose Mortality: Reduction Outside 0.25 mi of SIF	0.074	0.112	-$421,878	-$487,708	$65,830
First Year SSP Cost	$1,226,623	$1,839,934	-$421,302	-$483,521	$62,219
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$443,698	-$461,124	$17,427
Cost of Ambulance Ride: Baltimore	$394	$591	-$443,848	-$460,975	$17,127
Number of Unique SIF Clients/Month	1,680	2,520	-$456,050	-$448,772	$7,278
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$454,554	-$450,269	$4,285
Cost/sqft Commercial Property: Baltimore	$162	$242	-$452,910	-$451,912	$998
Commercial Mortgage Loan Interest: Baltimore	5%	9%	-$452,717	-$452,087	$630
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$452,561	-$452,262	$299

Costs Saved per OD Death Avoided, Seattle



Parameter	Low Value	High Value	Low Result	High Result	Spread
Overdose Mortality: Reduction Within 0.25 mi of SIF	0.280	0.420	-$1,980,327	-$1,132,481	$847,846
Total annual injections in the SIF	144,000	216,000	-$1,125,567	-$1,756,309	$630,742
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$1,125,567	-$1,756,309	$630,742
Overdose Mortality: Ppn. of City OD Deaths Within 0.25 mi of SIF	0.040	0.060	-$1,801,173	-$1,200,782	$600,391
Overdose Deaths/Year: Seattle	181	272	-$1,801,173	-$1,200,782	$600,391
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$1,145,900	-$1,735,977	$590,077
Hospitalization Cost: Seattle	$6,946	$10,419	-$1,283,404	-$1,598,472	$315,068
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$1,283,404	-$1,598,472	$315,068
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$1,577,571	-$1,304,306	$273,265
Cost of Living Ratio vs. Vancouver: Seattle	0.94	1.42	-$1,577,571	-$1,304,306	$273,265
Cost of ED VIsit: Seattle	$2,761	$4,141	-$1,310,497	-$1,571,380	$260,883
First Year SSP Cost	$1,226,623	$1,839,934	-$1,328,369	-$1,553,507	$225,138
Overdose Mortality: Reduction Outside 0.25 mi of SIF	0.074	0.112	-$1,343,691	-$1,553,360	$209,670
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$1,413,064	-$1,468,812	$55,748
Cost of Ambulance Ride: Seattle	$413	$620	-$1,413,543	-$1,468,334	$54,791
Number of Unique SIF Clients/Month	1,680	2,520	-$1,454,107	-$1,427,770	$26,337
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$1,448,001	-$1,433,875	$14,126
Cost/sqft Commercial Property: Seattle	$331	$497	-$1,444,058	-$1,437,819	$6,239
Commercial Mortgage Loan Interest: Seattle	5%	9%	-$1,442,849	-$1,438,912	$3,937
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$1,441,417	-$1,440,460	$957

Scenario Analyses Results

SIF-Associated Reduction in HIV and HCV Infections

In a model assuming that SIFs reduce needle sharing, and that this reduction in needle sharing reduces transmission of viral infection, a single SIF was found to decrease the number of new cases of HIV by between 1 (Baltimore) and 4 (San Francisco) cases per year, and to decrease the number of HCV infections per year by between 6 (Baltimore) and 23 (San Francisco) cases per year (Appendix Table E1).

Threshold Analysis of Overdose Rate Needed for Cost Parity Between SIF+SSP and SSP-Only

We performed a threshold analysis that estimated how low the OD rate would need to be in each city to reach parity between the costs of a SIF+SSP and SSP-only. These ranged between 0.05% (Atlanta and Baltimore) and 0.16% (San Francisco), all representing significantly lower OD rates than the base case (Table 5.13).

Table 5.13. Threshold Analysis of Overdose Rate

	Base Case OD Rate	Incremental Cost	Threshold OD Rate	Incremental Cost
Boston	0.95%	-$4,009,000	0.11%	$0
Philadelphia	0.95%	-$3,899,000	0.08%	$0
San Francisco	0.95%	-$3,833,000	0.16%	$0
Atlanta	0.95%	-$3,623,000	0.05%	$0
Baltimore	0.95%	-$4,023,000	0.05%	$0
Seattle	0.95%	-$4,199,000	0.08%	$0

OD: overdose

SIF-Associated Increase in MAT Uptake and MAT Retention

In the base-case analysis, the proportion of clients who accessed MAT was 5.78% in both comparator arms. This estimate was based on data collected from a SIF in Australia. If MAT uptake at an SSP-only is instead assumed to be 0% of the SIF+SSP, the SIF+SSP would result in 121 additional clients who access treatment. We modeled this increase in MAT uptake in increments of 10% in order to demonstrate the impact of these assumptions (Table 5.14). The two-way sensitivity analysis of MAT uptake and MAT retention is available in Appendix Table E2.

Table 5.14. Scenario Analysis of Differential MAT Uptake at SIF+SSP vs. SSP-only

Relative Difference in SSP-Only Clients who Access MAT Compared to SIF+SSP	0% (SIF+SSP=5.78%, SSP-Only=0%)	10%	20%	30%	40%	50% (SIF+SSP=5.78%, SSP-Only=2.89%)	60%	70%	80%	90%	100%* (SIF+SSP=5.78%, SSP-Only=5.78%)
Incremental MAT Uptake at SIF+SSP	121	109	97	85	73	61	49	36	24	12	0

*Base case

MAT: medication-assisted treatment, SIF: Supervised Injection Facilities, SSP: Syringe Service Program

Health Care Payer Perspective Analysis Focused on Direct Health Care Costs and the Potential Differences in Those Costs between the Interventions

When we focused on health care payer costs only by excluding SIF and SSP operating and facility costs, and by utilizing payer reimbursement costs instead of total (societal) cost, SIF+SSP was still cost-saving versus SSP-only due to savings from avoidance of ambulance rides, ED visits, and hospitalizations.

Table 5.15. Scenario Analysis of Health Care Payer Perspective

	Boston			Philadelphia		
	SIF+SSP	SSP-Only	Incremental	SIF+SSP	SSP-Only	Incremental
Total Cost	$88,000	$3,792,000	-$3,704,000	$94,200	$4,042,000	-$3,948,000
Annual Cost of Facility	$0	$0	$0	$0	$0	$0
Ambulance Costs	$7,100	$411,400	-$404,400	$6,600	$383,400	-$376,800
ED Visit Costs	$46,600	$1,947,000	-$1,901,000	$46,600	$1,947,000	-$1,901,000
Hospitalization Costs	$34,300	$1,433,000	-$1,398,000	$41,000	$1,711,000	-$1,670,000
	San Francisco			Atlanta		
	SIF+SSP	SSP-Only	Incremental	SIF+SSP	SSP-Only	Incremental
Total Cost	$101,100	$4,350,000	-$4,248,000	$80,800	$3,478,000	-$3,397,000
Annual Cost of Facility	$0	$0	$0	$0	$0	$0
Ambulance Costs	$7,700	$445,500	-$437,800	$6,200	$363,100	-$356,900
ED Visit Costs	$46,600	$1,947,000	-$1,901,000	$46,600	$1,947,000	-$1,901,000
Hospitalization Costs	$46,800	$1,957,000	-$1,910,000	$27,900	$1,167,000	-$1,139,000
	Baltimore			Seattle		
	SIF+SSP	SSP-Only	Incremental	SIF+SSP	SSP-Only	Incremental
Total Cost	$94,200	$4,046,000	-$3,952,000	$100,400	$4,310,000	-$4,210,000
Annual Cost of Facility	$0	$0	$0	$0	$0	$0
Ambulance Costs	$6,700	$387,400	-$380,700	$7,000	$406,200	-$399,200
ED Visit Costs	$46,600	$1,947,000	-$1,901,000	$46,600	$1,947,000	-$1,901,000
Hospitalization Costs	$41,000	$1,711,000	-$1,670,000	$46,800	$1,957,000	-$1,910,000

ED: emergency department, SIF: supervised injection facility, SSP: syringe service program

Model Validation

Model validation followed standard practices in the field. We tested all mathematical functions in the model to ensure they were consistent with the report (and supplemental Appendix materials). We also conducted sensitivity analyses with null input values to ensure the model was producing findings consistent with expectations. Further, independent modelers tested the mathematical functions in the model as well as the specific inputs and corresponding outputs.

Model validation was also conducted in terms of comparisons to other model findings. We searched the literature to identify models that were similar to our analysis, with comparable populations, settings, perspective, and treatments.

Prior Economic Models

We identified four prior published economic evaluations of SIFs in the US, along with published analyses of the Insite facility in Vancouver, BC. Our model was informed in large part by these models, though with some different assumptions. Unlike prior models, our approach focused on explicitly comparing SIF+SSP to an SSP operating alone in a city. Because of this decision, many of the outcomes highlighted by prior models, such as infection rates and MAT initiation, were assumed to be equivalent in our base case.

Our model also utilized the distance-based OD death risk reduction from Marshall et al. in a slightly different way than most previous models, by attributing the 25.7% incremental mortality risk reduction associated with the SIF to one quarter mile radius around the SIF.[12] Behrends et al. attributed this risk reduction more broadly to a half-mile radius, while other prior models have used a variety of other methods to attribute lives saved to SIFs.[63] Therefore, it is difficult to exactly reconcile the estimated mortality impact from our model with others, though they are all consistent in estimating that SIFs reduce mortality.

In terms of SIF operating costs, our model estimates aligned fairly closely with those taking the same costing approach but diverged slightly from those that used city- or county-specific wage estimates or different financing approaches. For example, our estimated cost of running the SIF in Seattle for one year was $2,036,000, compared to the Hood et al. estimate of $1,222,332 using wage rates for actual staff employed by the county to run their hypothetical SIF.[64] In that regard, our results for Seattle may be conservative, assuming their SIF operating model was to be executed.

Limitations

There are a number of important limitations to consider when evaluating our model estimates. First, the costs of operating a SIF in cities around the US are extrapolations from a single North American SIF in Vancouver, BC. The actual costs of operating a SIF in any of the cities we modeled will depend on many local factors and the actual funding mechanisms used. Furthermore, the operations of both SIFs and SSPs may vary widely from city to city. Second, the mortality risk reduction estimates we used also come from the estimated impact of that same single North American SIF at a single point in time. The long-term OD mortality risk reduction associated with SIFs is unknown. Lastly, we cannot account for rapidly evolving pandemic-associated factors.

5.4 Summary and Comment

We developed a decision analytic model to estimate the costs and outcomes associated with operating a SIF compared to an SSP only in six cities in the US over a one-year time horizon. The costs of operating a SIF were estimated to be higher than operating an SSP across all six cities. However, those costs were offset by cost savings attributed to SIFs through the avoidance of ED

visits and subsequent hospitalizations. Furthermore, in all six cities, SIFs were estimated to reduce mortality by avoiding overdose deaths.

The model results were sensitive to several input parameters, which varied slightly across the six cities. The underlying community-level risk parameters of overdose and overdose mortality, along with the mortality risk reduction attributed to SIFs, were the most influential model parameters. Additionally, parameters that determined the number of injections occurring in SIFs within each city also influenced the model estimates.

Conclusions

Operating a SIF was estimated to save lives and additionally to reduce medical care associated with overdoses in all six US cities modeled. We estimated that operating a SIF results in fewer lives lost to overdoses and lower costs overall after accounting for the incremental costs associated with operating a SIF compared to an SSP alone.

6. Potential Other Benefits and Contextual Considerations

Our reviews seek to provide information on potential other benefits offered by the intervention to the individual PWID, caregivers, the delivery system, other PWUD, or the public that would not have been considered as part of the evidence on comparative clinical effectiveness. We also recognize that there may be broader contextual issues related to the severity of the condition, whether other treatments are available, and ethical, legal, or other societal priorities that influence the relative value of illnesses and interventions. These general elements are listed in the table below, and the subsequent text provides detail about the elements that are applicable. We sought input from stakeholders, including individual clients, advocacy organizations, policy makers, clinicians, law enforcement agencies, researchers, and SIF managers, to inform the contents of this section.

Each ICER review culminates in a public meeting of an independent voting Council of clinicians, patients, and health services researchers. As part of their deliberations, Council members will judge whether a treatment may substantially impact the considerations listed in Table 6.1. The presence of substantial other benefits or contextual considerations may shift a council member's vote on an intervention's long-term value for money to a different category than would be indicated by the clinical evidence and economic modeling alone. A Council member may also determine that there are no other benefits or contextual considerations substantial enough to shift their vote. All factors that are considered in the voting process are outlined in ICER's value assessment framework. The content of these deliberations is described in the last chapter of ICER's Final Evidence Report, which is released after the public meeting.

This section, as well as the Council's deliberation, provides stakeholders with information to inform analysis on a range of issues related to SIFs, including public policy development.

Table 6.1. Potential Other Benefits or Contextual Considerations

Likert Scale of Potential Other Benefits and Contextual Considerations		
1 (Suggests Lower Value)	**2 (Intermediate)**	**3 (Suggests Higher Value)**
Uncertainty or overly favorable model assumptions creates significant risk that base-case cost-effectiveness estimates are too optimistic.		Uncertainty or overly unfavorable model assumptions creates significant risk that base-case cost-effectiveness estimates are too pessimistic.
This intervention will not differentially benefit a historically disadvantaged or underserved community.		This intervention will differentially benefit a historically disadvantaged or underserved community.
Will not significantly reduce the negative impact of the condition on family and caregivers vs. the comparator.		Will significantly reduce the negative impact of the condition on family and caregivers vs. the comparator.
Will not have a significant impact on improving return to work and/or overall productivity vs. the comparator.		Will have a significant impact on improving return to work and/or overall productivity vs. the comparator.
Other		Other

6.1 Potential Other Benefits and Contextual Considerations

Impact on PWID Care

The opening of a SIF represents a community's commitment to treat substance use disorders as a health issue, rather than a criminal issue. Its availability allows law enforcement and medical professionals to guide PWID to a SIF for immediate and long-term support of a substance use disorder, including screening and prevention of related health issues (e.g., HIV, hepatitis, soft tissue infections). It provides another access point for health and social support services, and referral coordination, especially for people with housing insecurity and mental illness. It is possible that a SIF makes a significant impact on the entire infrastructure of care for substance use disorders in the neighborhoods where it operates and/or for the clients it serves.

Serving the Marginalized

Persons served by SIFs are among the most vulnerable and marginalized in a community. Well-established social norms and public opinions regarding substance use disorders place PWID at a disadvantage for health and social support resources in many communities.

Addressing Health Disparities

Given the disparities in SUD by socio-economic class, SIFs differentially benefit groups with lower life expectancy and higher disability. For example, the average annual rate of heroin use was 5.5% for people in the lowest household income group (<$20,000), which was 3.4 times higher than the >$50,000 household income group.[179] The relationship between race-ethnicity and SUD is confounded by income with larger percentages of minority populations living in poverty. A SIF that

is able to engage clients and successfully refer them to treatment can contribute to improving health equity for recovery as well as overdose-related deaths.

Relationship-Building with Clients

Due to the personal histories of mental illness and substance abuse, some SIF clients have difficulty building and maintaining trust with others, especially health care professionals. In comparison to SSPs which have been described in interviews as "transactional", SIFs are more likely to engage clients in longer and more frequent interactions with staff and other clients. A trust-based relationship can be instrumental in helping clients improve injection behavior and link to medical, mental/behavioral health and social services.

Screening of Street Drug Toxicity

It was reported that some SIF clients use the facility when obtaining drugs from a new or different source. The SIF can provide direct protection for PWID in this case. Toxicity screening of drugs before injection and/or analysis of remnants allows for a SIF to be part of a community's surveillance system of the drug supply and contribute to timely public warnings about lethal substances in circulation.

Attribution of Benefits to the SIF versus Other Factors

Most quantitative data that informed the economic model are derived from SIFs operating in only two communities. Uncertainty exists about local factors (unmeasured or unmeasurable attributes unique to the people and place) that contributed to favorable outcomes at the time of the study. It is not possible to separate features of the intervention from local community factors, such as infection rates, resources for persons with housing insecurity, access to primary medical care, etc. that vary across communities that may be considering implementing a SIF. In communities where SIFs are introduced, they represent a new form of harm reduction that augments other strategies already in place, notably medication-assisted treatment, naloxone distribution, and syringe service programs.

7. Health-Benefit Price Benchmarks

As the assessment for this non-drug topic does not include estimates of incremental quality-adjusted life years (QALYs) or equal value life years gained (evLYG), ICER did not produce health-benefit price benchmarks as part of this report.

8. Potential Budget Impact

As the assessment for this non-drug topic does not include price per treatment or estimates of cost-effectiveness threshold prices, ICER did not produce potential budget impact analyses as part of this report.

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This is the first ICER review of supervised injection facilities.

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Appendix A. Search Strategic Results

Table A1. PRISMA 2009 Checklist

		Checklist Items
TITLE		
Title	1	Identify the report as a systematic review, meta-analysis, or both.
ABSTRACT		
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.
INTRODUCTION		
Rationale	3	Describe the rationale for the review in the context of what is already known.
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).
METHODS		
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.

		Checklist Items
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I2) for each meta-analysis.
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.
RESULTS		
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).
DISCUSSION		
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.
FUNDING		
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data), role of funders for the systematic review.

From: Moher D, Liberati A, Tetzlaff J, Altman DG. The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(6): e1000097. doi:10.1371/journal.pmed1000097

Table A2. Search Strategies for Supervised Injection Facilities: Ovid MEDLINE(R) Epub Ahead of Print, In-Process & Other NonIndexed Citations, Ovid MEDLINE(R) Daily, Ovid MEDLINE and Versions(R) 1946 to Present + PsycInfo

#	Search Term
1	((Supervised or safe* or drug) adj2 (inject* or shooting or consumption or smok* or inhal*) adj3 (facilit* or room* or galler* or cent* or site* or service*)).ti,ab.
2	(overdose adj3 prevention adj3 (site* or service*)).ti,ab
3	1 or 2
4	(addresses OR autobiography OR bibliography OR biography OR clinical trial, phase I OR comment OR congresses OR consensus development conference OR dictionary OR directory OR duplicate publication OR editorial OR encyclopedia OR guideline OR interactive tutorial OR newspaper OR commentaries).pt
5	3 not 4
6	(animals not (humans and animals)).sh.
7	5 not 6
8	limit 7 to English language
9	remove duplicates from 8

Table A3. Search Strategies for Supervised Injection Facilities: EMBASE

#	Search Term
1	((supervised OR safe* OR drug) NEAR/3 (inject* OR shooting OR consumption OR smok* OR inhal*) NEAR/3 (facilit* OR room* OR galler* OR cent* OR site* OR service*)):ti,ab
2	(overdose NEAR/3 prevention NEAR/3 (site* OR service*)):ti,ab
3	#1 OR #2
4	#3 NOT (('animal'/exp OR 'nonhuman'/exp OR 'animal experiment'/exp) NOT 'human'/exp)
5	#4 NOT [medline]/lim
6	#5 AND [english]/lim

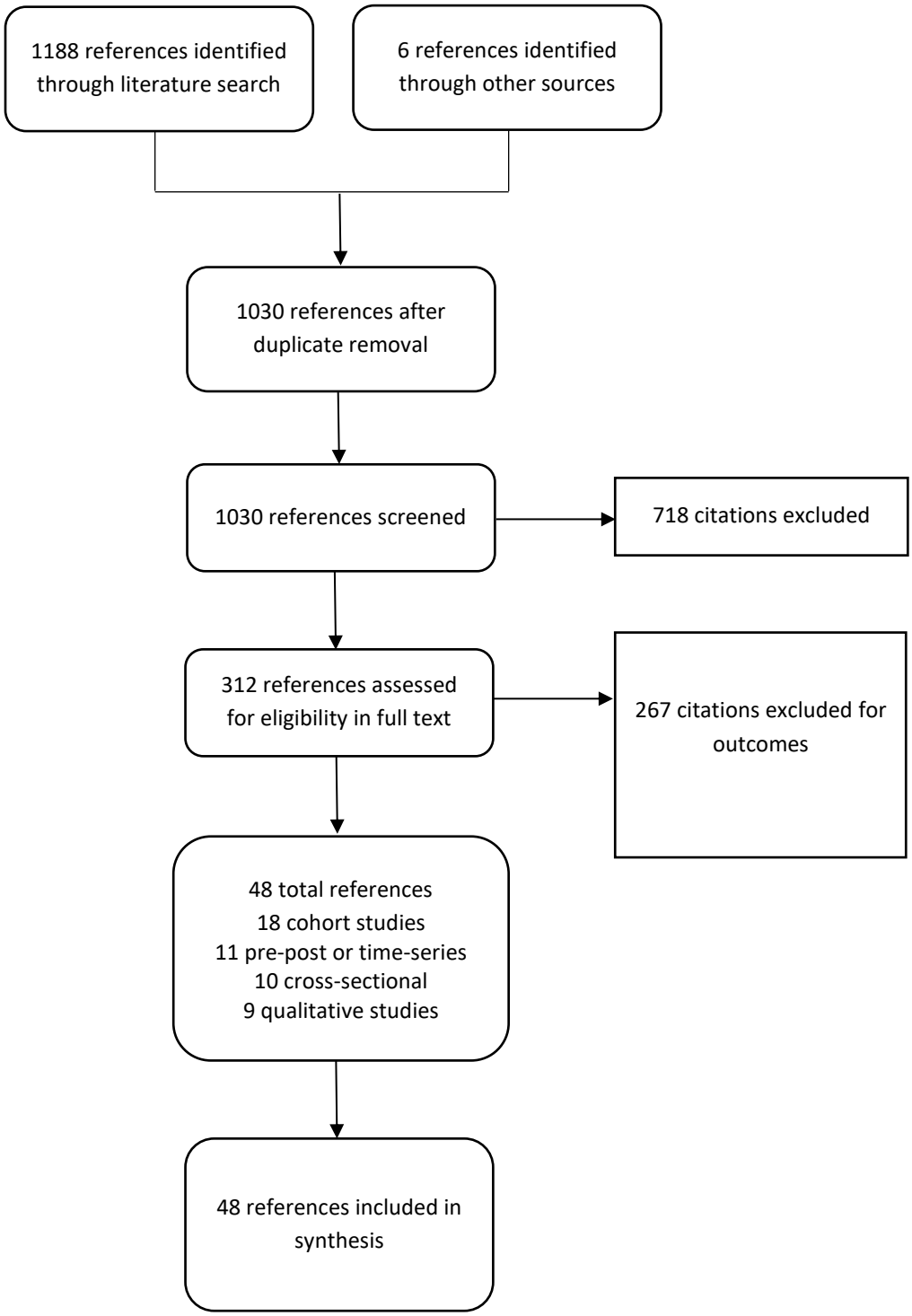
Table A4. Search Strategy for Supervised Injection Facilities: Web of Science (Limited to English language; Year: 1900-2020); Database: Excluding Medline and refined by WOS

#	Search Term
1	TS= (("SUPERVISED" OR "SAFE*" OR "DRUG") NEAR/2 ("SMOK*" OR "INHAL*" OR "INJECT*" OR "CONSUMPTION" OR "SHOOT*") NEAR/2 ("FACILIT*" OR "SERVICE*" OR "ROOM*" OR "GALLER*" OR "CENT*" OR "SITE*"))
2	TS= “OVERDOSE PREVENTION SITES” OR TS="OVERDOSE PREVENTION SERVICE*"
3	#1 OR #2
4	#3 Refined by: [excluding] Databases: (MEDLINE) AND Databases: (WOS)

Table A5. Search Strategy for Syringe Service Programs: Ovid MEDLINE(R) Epub Ahead of Print, In-Process & Other NonIndexed Citations, Ovid MEDLINE(R) Daily, Ovid MEDLINE and Versions(R) 1946 to Present + PsycInfo

#	Search Term
1	Needle-Exchange Programs/
2	((needle* or syringe* or inject*) adj3 (program* or service* or exchange* or distribut* or dispens*)).ti,ab.
3	1 or 2
4	(systematic review or meta-analysis).pt.
5	((systematic* adj2 review*) or meta-analys* or ((evidence or quantitative) adj2 synthes*)).ti,ab.
6	4 or 5
7	3 and 6
8	(animals not (humans and animals)).sh.
9	7 not 8
10	limit 9 to english language
11	remove duplicates from 10

Figure A1. PRISMA flow Chart Showing Results of Literature Search for Supervised Injection Facilities



Appendix B. Previous Systematic Reviews and Technology Assessments

Potier, C., Laprévote, V. et al. (2014) "Supervised Injection Services: What Has Been Demonstrated? A Systematic Literature Review".[30]

A systematic review was identified on the data available on supervised injection services (SISs) to determine whether they have achieved their desired objectives. The review included 75 articles in the final analysis including descriptive, cross-sectional, and analytical assessments. Of these, 68% (n= 51) were related to a SIS in Vancouver, 17% (n= 13) from Sydney, and 3% (N=2) from Europe.

Fourteen studies described the characteristics of the most frequent SIS users. Most SIS users were described as male, aged 30-35 years, experiencing housing and employment insecurity and with a previous history of incarceration. The most frequently used drugs were heroin, cocaine, opiates, and amphetamines. Seven studies concluded that no death by overdose had been reported at a SIS; in Vancouver, the SIS led to a 35% decrease in fatal overdoses. In Vancouver and Sydney, regular SIS use was associated with reduced syringe sharing (aOR = 0.30, 95%CI = [0.11–0.82]), syringe reuse (aOR = 2.04, 95%CI = [1.38–3.01]), and public-space injection (aOR = 2.79, 95%CI = [1.93–3.87]); a meta-analysis determined that the SIS was associated with a 69% reduction in syringe sharing. According to six studies, SIS users received care for injection-related problems and five studies reported that SIS use resulted in an increase referral to addiction treatment (OR= 1.32, 95%CI = [1.11-1.58]: P=0.002). Seven surveys evaluated perceptions of local residents, police, and professionals. In Sydney, 70% of residents and 58% of business owners favored the SIS and saw a decrease in drug use and syringe waste. However, most business owners and residents still related SIS use to a negative image of the district and the "honey-pot" effect.

McNeil, R., Small, W. (2014) "Safer Environment Interventions: A Qualitative Synthesis of the Experiences and Perceptions of People Who inject Drugs".[180]

McNeil and Small conducted a systematic review to evaluate the influence of social, structural, and environmental factors on access and engagement with Safe Environment Interventions (SEIs) among people who inject drugs (PWID). The review included 29 references referring to 21 studies in the final evaluation. The included articles were published in Canada (n=16), the USA (n=6), Russia (n=4), and other settings (n=4). The four themes described in the analysis were- SEIs as a refuge, increased use of social services, SEIs impact on survival, and the social-structural impact on the SEIs.

Multiple studies emphasized on the importance of the SEIs as a refuge from violence on the streets. SEIs promoted safer injecting by redefining the social and environmental contexts of injection drug use. In addition to being a refuge from violence, SEIs also enabled safer drug use practices by

enabling harm reduction. The use of these facilities allowed clients to access safer injection equipment which in turn allowed them to practice safer habits and access to a safer space to contributing to reductions in risky injection behavior. Rushed injections and syringe sharing was reduced and enabled more autonomy for the clients. These facilities mediated access to social and healthcare services. Trust was identified as a critical component; trust between clients and staff was associated with increased acceptance of drug treatment referrals and other services.

Kennedy, M C., Karamouzian, M., Kerr, Thomas. (2017) "Public Health and Public Order Outcomes Associated with Supervised Drug Consumption Facilities: A Systematic Literature Review"[181]

Kennedy et al, conducted a systematic review to assess health and community outcomes related to use of supervised drug consumption facility (SCF) use. A total of 47 studies were included in the final analysis including cohort, pre-post, cross-sectional, or time-series analyses. 28 studies were conducted in Vancouver, Canada, 10 in Sydney and the remaining in Europe (n=9).

Overall, the review found that the use of SCFs was associated with a decrease in overdose deaths, an increase in PWID receiving addiction and medical treatment, and a decrease in substance use in public. Eight studies examined overdose-related outcomes, of which six studies found an association between the establishment of a SIF and reduction in overdose-related deaths. For example, the establishment of Insite, Vancouver was correlated with a 35% decline in overdose related deaths near the vicinity of the SIF, compared to a 9% decline outside of this vicinity. In Sydney, Australia opening of SIF was associated with a reduction in ambulance calls as well as opioid related poisoning presentations near the SIF. Four studies reported that frequent SIF use was associated with a decrease in injection risk behaviors including syringe sharing. A cross-sectional study based in Vancouver reported that SIF users are 70% less likely to borrow or lend a used syringe and two additional studies from Denmark and Vancouver found an association between SIF use and a reduction in other unsafe injection behaviors including injecting outdoors, rushed injections, and reusing syringes. SIF use was also reported to be positively associated with an increase in safer injection practices. Further, four studies reported that frequent SIF use was associated with an increased likelihood of entry into and uptake of addiction treatment. At Insite, Vancouver, use of detox services increased by more than 30% in the year after the SIF was opened, compared to the year before; rapid entry into detox services was also associated with contact with an addiction counselor at a SIF. Three other studies report similar data. Five studies reported that implementation a SIF in Vancouver and Sydney was associated with a reduction in the number of people injecting publicly, publicly discarded syringes, and injection-related litter. Besides, four studies conducted in Sydney found no changes in drug-related crime, and similar results were reported in two studies from Vancouver.

Lange, B. Bach-Mortensen, A M. (2019) "A Systematic Review of Stakeholder Perceptions of Supervised Injection Facilities".[182]

Stakeholder perceptions of supervised injection facilities (SIFs) were evaluated in this systematic review. Of the 47 included articles, the majority were conducted in Canada (n=26) and Australia (n= 8). The mean sample size of the included studies was 55.8 (SD: 64). Patients who use drugs (PWUD), including women, reported that the largest benefit to SIFs (sanctioned or unsanctioned) was their ability to provide a safe space from violence, theft, and police harassment. The increased safety of PWUD at a SIF was attributed to several factors such as education on drug use, a hygienic environment, availability of necessary supplies, and supervision especially in the case of an overdose. Business sector, community workers, and health professionals also reported a reduction in publicly discarded syringes. On the other hand, the most highlighted concerns with sanctioned SIFs were associated with current restrictions, age, and pregnancy. Across four studies, PWUD expressed concerns that SIFs did not allow assisted injections, whereas staff described disruptive client behavior and personnel safety as their main concern. For sanctioned SIFs, stakeholders suggested revising restrictions and regulations, to allow drug sharing and injecting drugs other than heroin. These stakeholders also suggested to increase the operating hours of a SIF.

Rand Report. (2018) "Assessing the Evidence on Supervised Drug Consumption Sites". [183]

Researchers conducted a systematic review to assess the existing evidence on supervised consumption sites (SCSs) using PubMed, Embase, Scopus, Web of Science, and WorldCat. Seventeen reviews were identified as quasi-experiments and simulation studies, while five systematic reviews were identified, and one piece of grey literature.

Overall, the authors concluded that the scientific evidence on the effectiveness of SCSs is limited. The authors note that not many scientific studies exist and of those that do, they were limited to only a few locations such as Vancouver and Sydney; in addition, there are no randomized controlled trials (RCTs) evaluating individual or population-level outcomes. According to the research evaluated, clients who attend an SCS and overdose in the presence of staff are much more likely to live thanks to the staff being equipped with naloxone. According to a study conducted in Vancouver, there is a significant reduction in fatal drug overdoses in the area surrounding the SCS compared to outside of the area, and studies conducted in Vancouver and Sydney identified a significant decrease in opioid-related emergency service calls. Several cross-sectional studies concluded that frequent SCS uses adopt better safer injection practices than those who use the SCS less frequently.

Appendix C. Ongoing Studies

Table C1. On-going Studies for Supervised Injection Facilities

Title/Trial Sponsor	Study Design	Comparators	Patient Population	Primary Outcomes	Estimated Completion Date
The Vancouver Injection Drug Users Study (VIDUS) **Canadian Institutes of Health Research (CIHR)**	Prospective cohort N= 2,700 PWID	n/a	People who inject drugs	Impact of prescription opioid misuse, risk behaviors for HIV, non-fatal and fatal overdose	Unclear
The AIDS Care Cohort to Evaluate Exposure to Survival Services (ACCESS) **National Institute on Drug Abuse (NIDA)**	Survey/ Questionnaire	n/a	Individuals living with HIV who use illicit drugs	Estimate the effects of social, policy, physical and economic aspects of the HIV risk environments on the individual and community	Unclear
At-Risk Youth Study (ARYS) **Canadian Institutes of Health Research (CIHR)** **National Institute on Drug Abuse (NIDA)** **SickKids Foundation**	Multi-year study, survey N= 900	n/a	Street-involved youth	Demographic data as well as information about drug use patterns, HIV and sexually transmitted infection (STI), risk behavior including sexual practices and risks related to drug use, access to health and social services, and engagement in the criminal justice system	Unclear
SuperMIX: The Melbourne Injecting Drug User Cohort Study **Burnet Institute**	Multi-year cohort study	n/a	People who inject drugs in Melbourne, Australia	Information on how injecting drug use evolves, focused on periods during which cohort members cease injecting drug use and if they subsequently relapse and the drivers of this cessation and relapse.	2021

Source: bccsu.ca, Burnet Institute

Appendix D. Comparative Clinical Effectiveness Supplemental Information

We performed screening at both the abstract and full-text level. Four investigators screened all abstracts identified through electronic searches according to the inclusion and exclusion criteria described earlier. We did not exclude any study at abstract-level screening due to insufficient information. For example, an abstract that did not report an outcome of interest would be accepted for further review in full text. We retrieved the citations that were accepted during abstract-level screening for full text appraisal. One investigator reviewed full papers and provided justification for exclusion of each excluded study.

Further, we will use 12-item National Heart Lung and Blood Institute (NHLBI) Quality Assessment Tool to assess the quality of the pre-post studies with no control group and 14- item NHBLI Quality Assessment Tool for observational cohort and cross-sectional studies, using the categories as "good," "fair," or "poor" quality. [116]

Good: *A study has the least risk of bias, and results are valid*.

Fair: *A study susceptible to some bias deemed not sufficient to invalidate its results. The fair-quality category is likely to be broad, so studies with this rating will vary in their strengths and weaknesses*.

Poor: *A study that has a significant risk of bias. Studies rated poor are excluded from the body of evidence.*

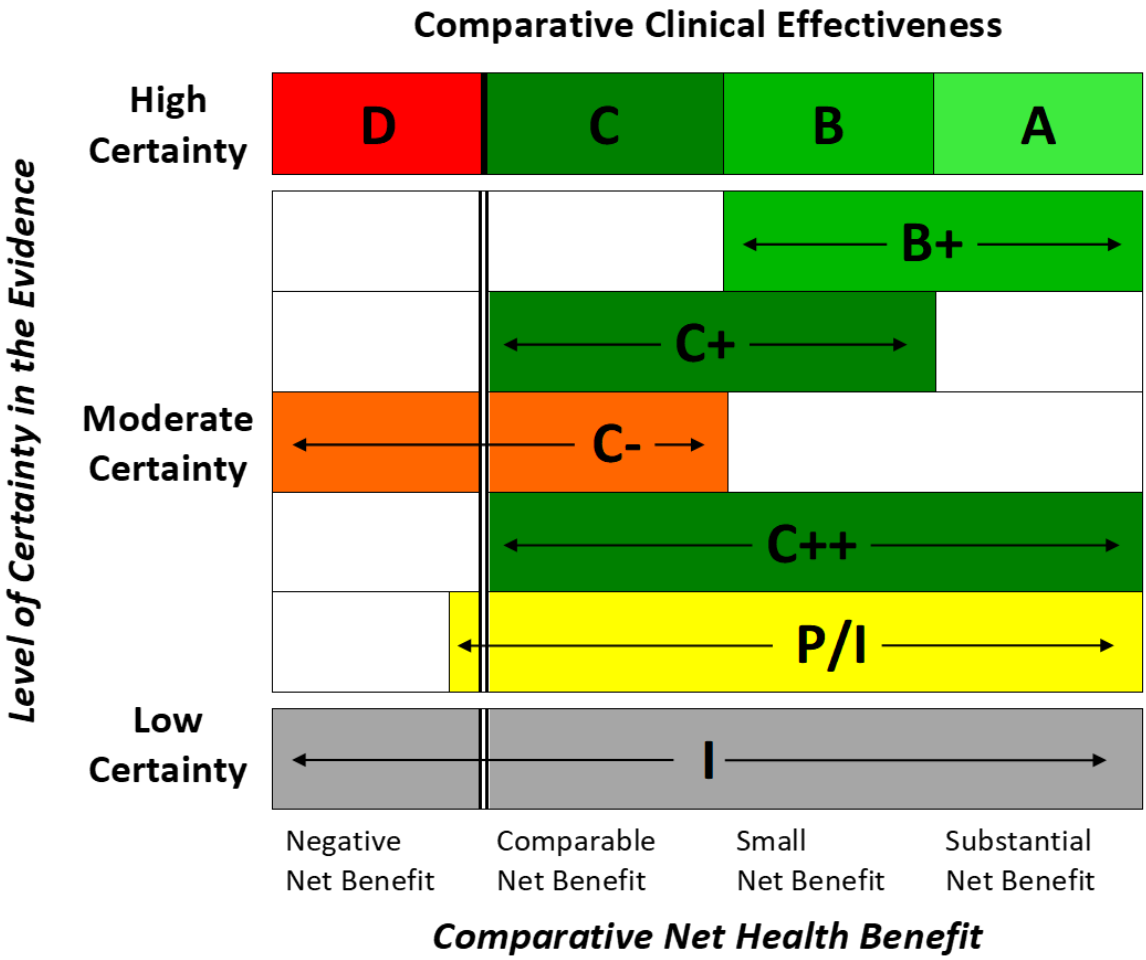
ICER Evidence Rating

We used the ICER Evidence Rating Matrix (see Figure D1) to evaluate the evidence for a variety of outcomes. The evidence rating reflects a joint judgment of two critical components:

1. The magnitude of the difference between a therapeutic agent and its comparator in "net health benefit" – the balance between clinical benefits and risks and/or adverse effects; and

2. The level of certainty in the best point estimate of net health benefit.[117,118]

Figure D1. ICER Evidence Rating Matrix



A = "Superior" *- High certainty of a substantial (moderate-large) net health benefit*
B = "Incremental" *- High certainty of a small net health benefit*
C = "Comparable"- *High certainty of a comparable net health benefit*
D= "Negative"- *High certainty of an inferior net health benefit*
B+= "Incremental or Better" – *Moderate certainty of a small or substantial net health benefit, with high certainty of at least a small net health benefit*
C+ = "Comparable or Incremental" - *Moderate certainty of a comparable or small net health benefit, with high certainty of at least a comparable net health benefit*
C- = "Comparable or Inferior" *– Moderate certainty that the net health benefit is either comparable or inferior with high certainty of at best a comparable net health benefit*
C++ = "Comparable or Better" - *Moderate certainty of a comparable, small, or substantial net health benefit, with high certainty of at least a comparable net health benefit*
P/I = "Promising but Inconclusive" *- Moderate certainty of a small or substantial net health benefit, small (but nonzero) likelihood of a negative net health benefit*
I = "Insufficient" – *Any situation in which the level of certainty in the evidence is low*

Table D2. Evidence Tables

Study / First Author and Year	Study design	Study period (month and year)	Population characteristics	Outcomes reported	Findings
Canada					
Wood et al 2004† [53] **Study quality: Good**	Pre-post study	6 weeks pre-SIF opening to 12 weeks post SIF opening (Sept 22, 2003)	Mean number of visits in first week of SIF opening= 184; after 2 months of SIF opening, visits= 504	Public Injecting, Publicly discarded syringes, Injection related litter	SIF opening was associated with reductions in number of people injecting in public (daily mean: 2.4, 95% CI: 1.9 – 3.0) after vs. 4.3, 95% CI: 3.5 – 5.4) before SIF opening, publicly discarded syringes (daily mean: 5.4, 95% CI: 4.7 – 6.3) after vs. (11.5, 95% CI: 10.0 – 13.2) before SIF opening, and injection-related litter (daily mean: 310, 95% CI: 305 – 317) after vs. (601, 95% CI: 590 – 613) before SIF opening.
Wood et al 2005_a† [132] **Study quality: Fair**	Cross-sectional	March 2004 to October 2004	582 PWID from the SEOSI cohort HIV-positive: 17.3%	Syringe sharing	Exclusive SIF use (i.e., use of SIF for 100% of injections) compared to some SIF use was associated with reductions in syringe sharing among HIV-negative individuals (OR: 0.14; 95% CI 0.00 to 0.78) but was not associated with reductions in syringe lending among HIV-positive individuals (OR: 0.94; 95% CI 0.00 to 7.90).
Wood et al 2005_b† [136] **Study quality: Fair**	Cross-sectional	May 2003 to October 2004	874 PWID from the SEOSI cohort; 293 (33.5%) received safer injecting education	Safer injecting education	Daily SIF use was marginally associated with reporting safer injecting education (p=0.085) in univariate analyses.
Kerr 2005† [36] **Study quality: Fair**	Cross-sectional	December 2003 to June 2004	431 active PWIDs from the VIDUS cohort SIF use (most, all, or some of the injections): 20.9% Syringe sharing: 11.4%	Syringe sharing	Use of SIF was associated with reduced syringe sharing (aOR: 0.30, 95% CI: 0.11-0.82, p=0.02). Between SIF users versus non-users, the rates of syringe sharing were similar prior to the SIF opening (X^2= 0.46, p = 0.50), suggesting that the observed reduction was not due to the SIF

Study / First Author and Year	Study design	Study period (month and year)	Population characteristics	Outcomes reported	Findings
					selecting PWIDs at inherently lower risk of syringe sharing.
Kerr and Stoltz 2006† [52] **Study quality: Good**	Pre-post study	March 2002 to March 2003	Pre-SIF IDUs: 674 Post-SIF IDUs: 700 Use injected drug pre-SIF: 17% Use injected drug post-SIF: 15%	Injection behaviors	No substantial differences in the relapse rate in the community (17% vs. 20%), stopping injections (17% vs. 15%), introduction and discontinuation of methadone (11% vs. 7% and 13 vs. 11%, respectively). The only difference that exceeded 5% cut-off was increase in number who started smoking crack cocaine (21% v 29%).
Kerr and Tyndall 2006 [32] **Study quality: Not assessed**	Descriptive study	March 2004 to August 2005	285 unique participants from the SEOSI cohort accounted for overdoses	Non-fatal overdose	There were 336 overdose events at the SIF corresponding to a rate of 1.33 (95% CI: 0.0-3.6) overdoses per 1000 injections. Of these events, 28% required transport to the hospital and 27% resulted in the administration of naloxone.
Wood et al 2006† [46] **Study quality: Good**	Prospective cohort	December 2003 to March 2005	1031 PWID who used the SIF Males: 71% Regular SIF use: 58%	Attendance at SIF, Use of services	At least weekly SIF use (aHR = 1.72; 95% CI: 1.25 – 2.38, p=0.001) and contact with a SIF addictions counsellor (aHR = 1.98; 95% CI: 1.26 – 3.10, p=0.003) were associated with more rapid time to entry into a detoxification program.
Wood et al 2006 [60] **Study quality: Good**	Time series	Oct 2003-Sept 2004 (pre-SIF) to Oct 2004-Sept 2005 (post-SIF)	NA- Crime Statistics	Drug trafficking, Assaults and Robbery, Vehicle theft	Post SIF opening, no significant increase was observed in drug trafficking: (124 vs 116, MD=7.9, p=0.803), assaults/robbery: (174 vs 180, MD=-6.2, p=0.565). Significant declines were observed in vehicle break-ins/theft: (302 vs 227, MD=75.7, p=0.001), post SIF opening.

Study / First Author and Year	Study design	Study period (month and year)	Population characteristics	Outcomes reported	Findings
Kerr and Small 2007† [124] **Study quality: Not assessed**	Qualitative	November 2005 – February 2006	50 PWID from the SEOSI cohort Age, Range: 25-60 years Males: 56%	Overdose mortality, SIF Use, Overdose requiring hospitalization	Ability to rapidly respond to an overdose and ability to provide naloxone, made the SIF stand out compared to other settings where it takes longer for people to respond or they receive no care at all. Reduced risk when injecting at INSITE versus alone or in an alley and an increased sense of security
Stoltz et al 2007† [131] **Study quality: Fair**	Cross-sectional	July 2004 to June 2005	760 PWID from the SEOSI cohort Age, median: 39.3 years Male: 70%	Consistent vs inconsistent SIF use stratified by characteristics + changes in injection practices associated w/ consistent SIF use	Consistent SIF use (≥25% of injections) was positively associated with decreased public injections (aOR = 2.70, 95%CI: 1.98-3.87, p<0.001); safer syringe or paraphernalia disposal (aOR = 2.13, 95%CI: 1.47-3.09, p<0.001); decreased reuse of syringes less often (aOR: 2.04, 95% CI: 1.38-3.01, p<0.001); less rushed injection (aOR: 2.79 95% CI: 2.03-3.85, p<0.001); using clean water for injecting (aOR = 2.99; 95% CI: 2.13 – 4.18, p<0.001); cooking or filtering drugs prior to injecting (aOR = 2.76; 95% CI: 1.84 – 4.15, p<0.001); tie off prior to injection (aOR = 2.63; 95% CI: 1.58 – 4.37, p<0.001) and it promoted injecting in a clean location (aOR = 2.85, 95%CI: 2.09-3.89, p<0.001).
Wood et al 2007†[48] **Study quality: Good**	Prospective cohort	December 2003- March 1, 2005 (pre-SIF and post-SIF)	1031 PWID from the SEOSI cohort Age, median (IQR): 39(33-46) years Male: 71%	Uptake of detoxification service Injection cessation	There was a significant increase in uptake of detoxification services post-SIF opening, compared to pre-SIF opening (aOR: 1.32, 95% CI: 1.11-1.57, p=0.002). Use of detoxification service was positively associated with a more rapid entry into the

Study / First Author and Year	Study design	Study period (month and year)	Population characteristics	Outcomes reported	Findings
			Regular SIF use (weekly): 58%		MMT (aHR: 3.73, 95% CI: 2.57-5.39). Of those enrolled in the detoxification program, a significant decline in monthly SIF use was observed after discharge from detoxification, compared to 1-month period before enrollment (19 vs 24 visits, p=0.002)
McKnight et al 2007†[54] **Study quality: Fair**	Retrospective cohort	June 6, 2004 – July 31, 2005	714 PWID from the SEOSI Age, median (range): 39 (33-45) years Male: 71% History of incarceration: 30% Unstable housing or homelessness: 7% HIV seropositive: 21% Public injection use: 30%	Community and environmental outcomes	Waiting time at SIF affected SIF use that was associated with increased likelihood of public injecting (aOR: 3.26, 95% CI: 2.11-5.6, p<0.001) Homelessness also increased the likelihood of injecting in public (ORa: 3.10, 95% CI: 1.46-6.58, p<0.001)
Petrar 2007†[13] **Study quality: Fair**	Cross-sectional	December 1, 2003, and September 30, 2005	1082 PWID from the SEOSI cohort Age, median (IQR): 38.4 (32.7–44.3) years Female: 28% HIV positive: 16.5% Daily heroin use: 50.5%	Injection behaviors	Of the 1,082 PWID who utilized Insite that were surveyed, 74.8% (n=809) reported changing their injection behaviors since using a SIF. Among these clients who changed their injection behaviors, 71% indicated that utilizing the SIF has led to less outdoor injections, and 56% reported less unsafe syringe disposal.
Milloy et al 2008† [184] **Study quality: Good**	Prospective cohort	December 1, 2003 to December 31, 2005	1090 PWIDs from SEOSI cohort Age, median (IQR): 38.42 (32.7-44.3) years Female: 29% History of non-fatal overdose: 58.53%	Non-fatal overdose	Frequent SIF use (≥75% of injections) was not associated with recent non-fatal overdose (aOR: 1.01, 95% CI: 0.77-1.32, p=0.96)

Study / First Author and Year	Study design	Study period (month and year)	Population characteristics	Outcomes reported	Findings
Fast et al 2008[137] **Study quality: not assessed**	Qualitative	November 2005 to February 2006	50 PWID from the SEOSI cohort Age, median (range): 38 (25-60) years Male: 56%	Community and environmental outcomes	Participants indicated that there have been substantial gaps in knowledge about safer injecting practices among local PWIDs. These gaps lead to unsafe injecting behaviors and negative health outcomes. Based on users' perspectives, the SCS was found to help clients identify and address these gaps in knowledge through a range of mechanisms that are unique to this facility (e.g., targeted educational messaging).
Small et al 2008† [144] **Study quality: Not assessed**	Qualitative	NR	50 PWID from the SEOSI cohort Age, range: 25-60 years Males: 56%	Barriers to care, Access to care Referrals	SIF facilitated access to on-site nursing attention and care for injection-related infection and facilitated uptake of health services. SIFs have potential to overcome many of the social and structural barriers to care.
Wood et al 2008† [135] **Study quality: Good**	Prospective cohort	March 2004 to March 2005	1,087 PWID from the SEOSI cohort Age, median (IQR): 38.5 (32.8-44.4) years Males: 71%	Patients receiving SIE (safe injection education) stratified by different characteristics	Frequent use of SIF (≥75% of injections) was associated with an increased likelihood of receiving safer injection education (aOR: 1.47, 95% CI: 1.22-1.77, p<0.001).
Lloyd-Smith et al 2008† [42] **Study quality: Good**	Prospective cohort	January 2004 to December 2005	1,065 PWID from the SEOSI cohort Age, median (IQR) of those with CIRI at BL: 36 (31-43) years; those without CIRI at BL: 39 (33-45) years	Cutaneous injection-related infections (CIRI)	SIF use was not significantly associated with development of a CIRI (aOR = 0.58; 95% CI: 0.29-1.19).
Lloyd-Smith 2009† [155] **Study quality: Good**	Prospective cohort	December 2003 to January 2008	1083 PWIDs from SEOSI cohort	Provision of care at the SIF (CIRI)	About 27% received care, 65% of whom attended the SIF for this purpose. Among SIF clients, factors associated with receiving care

Study / First Author and Year	Study design	Study period (month and year)	Population characteristics	Outcomes reported	Findings
					included, unstable housing (aHR = 1.39, 95%CI = 1.02–1.88), and daily heroin injection (aHR = 1.52, 95%CI = 1.13–2.4).
Milloy et al 2009† [61] **Study quality: Good**	Prospective cohort	July 2004 to November 2005	902 PWID from the SEOSI cohort Age, median (IQR): 40.9 (35.6-47.3) years Male: 72%	Incarceration/crime	Frequent SIF use (all/most injections vs few/some/none) was not associated with recent incarceration (aOR = 0.99; 95% CI: 0.79 – 1.23, p=0.92).
Small et al 2009† [143] **Study quality: Not assessed**	Qualitative	November 2005 – February 2006	50 PWID from SEOSI cohort Age, range: 25-60 years Males: 56%	Stigma, Integrated care, Access to social services	SIF provided assessment and care for injection-related infections, as well as enhanced access to off-site medical services. Presence of professional nursing staff aided clients to overcome certain social and structural barriers to care.
Krusi 2009†[138] **Study quality: not assessed**	Qualitative	May 2007 to June 2007	22 PWID attending a harm reduction room in Vancouver Age, mean (range): 43.8 (28-54) years Male: 68% HIV Seropositive: 100%	Use of treatment and recovery support services, Injection behaviors, Receipt of services, Skin and soft tissue infection, HIV, Hepatitis C	The Harm Reduction Room (HRR) influenced access to care by building trusting relationships and encouraging use of other services, such as SEI and care for infections. The most common reasons for using the HRR were hygiene, overdose risk, and physical safety especially among female participants. Participants and staff noted that reduction in infections could be due to SEI and having a safer place to inject.
Milloy et al 2010† [154] **Study quality: Good**	Prospective cohort	July 2004 to June 2006	889 PWID from the SEOSI cohort Age, median: 39 years Male: 70%	Access addiction treatment	20% of SIF users were unable to access any type of drug or alcohol treatment in the previous 6 months. Frequent use of SIF (≥75% of injections) was not associated with trying but being unable to access addiction treatment (aOR = 1.08; 95% CI: 0.84 – 1.40, p=0.54).

Study / First Author and Year	Study design	Study period (month and year)	Population characteristics	Outcomes reported	Findings
Lloyd-Smith et al 2010† [139] **Study quality: Good**	Prospective cohort	January 2004 to January 2008	1083 PWID from the SEOSI cohort Age, median (IQR): 38.4 (32.7-44.3) years Male: 71%;	Hospitalization for cutaneous injection-related infections (CIRI)	Referral to the hospital by a SIF nurse was associated with an increased likelihood of hospitalization for CIRI in multivariate analyses (aHR: 5.38; 95% CI: 3.39, 8.55). Referral by SIF nurse was associated with shorter hospital stays (4 days [IQR: 2-7] vs 12 days [IQR: 5-33], p=0.001 after adjustment
Marshall 2011 [12] **Study quality: Good**	Analytical Study (Pre-post ecological)	Pre-SIF (Jan 2001 to Sep 2003) Post-SIF (Sep 2003 to Dec 2005)	Pre-SIF (<500 m) = 56 Post SIF (<500 m) = 33 Pre-SIF (>500 m) =113 Post-SIF (>500 m) =88	Overdose mortality	In two years, post-SIF opening, fatal overdose decreased by 35% within 500m from SIF (253.8 to 165.1 deaths per 100,000 PYs, p=0.048), compared to two-years pre-SIF opening. During the same period, fatal overdose decreased by 9.3% in the rest of the city (7.6 to 6.9 deaths per 100,000 PYs, p=0.49). The rate difference between these two periods was significant (1·6–175·8 per 100 000 PYs, p=0·048).
DeBeck et al 2011†[47] **Study quality: Good**	Prospective cohort	December 2003 to June 2006	1090 PWID from SEOSI cohort Age, median (IQR): 39 (33-35) years Female: 29% Homelessness: 19% Regular SIF use (in past 6-months): 37% Current MMT: 23%	Drug use; Use of services	Regular use of SIF use at baseline (aHR = 1.33, 95% CI:1.04–1.72) and having contact with the addiction counselor in the SIF (aHR = 1.54, 95% CI: 1.13–2.08) were independently and positively associated with initiation of addiction treatment. Enrolment in MMT (aHR: 1.57, 95% CI: 1.02-2.40) and other addiction treatment program (aHR: 1.85, 95% CI: 1.06-3.24) were positively associated with injection drug use cessation.
Lloyd-Smith et al 2012† [140] **Study quality: Good**	Prospective cohort	January 2004 to January 2008	1,083 PWID from the SEOSI cohort Age, median (IQR): 39.7 (33.7-45.3) years	Infections	During the study period, 289 (27%) participants used the ED for a CIRI. Referral to hospital by SIF nurses was independently and positively

Study / First Author and Year	Study design	Study period (month and year)	Population characteristics	Outcomes reported	Findings
			Male: 70%		associated with ED use for CIRI among (aOR= 4.69, 95% CI: 2.76 – 7.97).
McNeil et al 2014 [44] **Study quality: Not assessed**	Qualitative	November 2010 to August 2011	13 Dr. Peter Center residents (DPC) Age, mean (range): 48 (36-62) years	Drug use healthcare interactions Healthcare access HRQoL	Participants highlighted that DPC aided in providing better access to healthcare services. It provided clients with a comfortable space to have discussions about their drug use and decreased stigmatization. Environmental support by facility decreased drug-related risks and improved health outcomes, including HAART adherence and survival.
Gaddis et al 2017† [45] **Study quality: Fair**	Prospective cohort	November 2010 to December 2012	1316 PWIDs from VIDUS & ACCESS cohort Age, median (IQR): 46.2 (40.2 - 52.1) years Males: 67% Unstable housing: 80% Frequent use of SIF: 60.8%	Factors associated with on-site detoxification services	11.2% of clients reported enrolling in detoxification services co-located with the SIF at least once during the study period. Frequent use of SIF was associated with enrollment into the detoxification program (aOR: 8.15, 95% CI: 5.38-12.34, p<0.001)
Myer and Belisle 2018†[62] **Study quality: Fair**	Time series	January 2002 to December 2004	N/A – Crime statistics	Community and environmental outcomes	Compared to the 89 weeks pre-Insite, Vancouver, the police district that contains Insite observed a significant (per-week) reduction with 6.0 less violent crimes, 34.5 fewer property crimes, and 42.3 less all crimes post-Insite opening; three other police districts observed no significant changes in crime post-Insite opening.
Kinshella et al 2018† [126]	Descriptive study	October 2016 to April 2017	1581 overdose events 497 atypical overdose presentations	Non-fatal overdoses (atypical presentations)	Of 1581 overdose events at Insite, Vancouver, 31.4% were atypical overdose presentations (dyskinesia, confusion, and muscle rigidity). Of 497 atypical overdose presentations, 84.5% were treated with oxygen, 69% with naloxone,

Study / First Author and Year	Study design	Study period (month and year)	Population characteristics	Outcomes reported	Findings
Study quality: Not assessed					and 15.1% were transferred to hospital by ambulance.
Notta et al 2019† [33] **Study quality: Good**	Time series	January 2010 to June 2017	N/R	Overdose	Overdose rate per 100 visits increased from 2010-2017 (1.5 vs 9.5, p<0.001) with an increase in overdose events requiring naloxone administration (48.4% to 57.1%, p<0.001). No overdose deaths reported within the facility. In the recent period clients were more likely to experience an overdose events as compared to baseline if they consumed cocaine (RR: 10.4, 95% CI: 6.7-16.1, p<0.001) or heroin (RR: 4.8, 95% CI: 4.3-5.3, p<0.001)
Kennedy et al 2019† [31] **Study quality: Good**	Retrospective cohort	December 2006 to June 2017	811 PWIDs Age, median (IQR): 39(33-46) years Males: 65.7% Unstable housing: 81.9% HIV seropositive: 30.3% Hep C: 85.3%	All-cause mortality	13.8% participants died during the study period with a CRM of 22.7 per 1000-PY (95% CI: 18.7-27.4). Frequent use of SIF was inversely associated with a risk of all-cause mortality (aHR: 0.46; 95% CI: 0.26-0.80, p=0.006).
Sydney, Australia					
Freeman et al 2005† [57] **Study quality: Good**	Time series	January 1999 to September 2002	N/A- Crime statistics	Police recorded incidents of robbery, Drug-related loitering or dealing	Theft, robbery, or drug-related loitering in front of SIF was not associated with the opening of SIF (p>0.05). Increase in drug-related loitering at the back of the SIF were reported post-SIF opening (p<0.05)
Salmon et al 2007† [55] **Study quality: Good**	Time series	2000, 2002 and 2005	Year 2000: Residents (n=515), Business owners (n=209)	Witness public injections, publicly discarded syringes,	From 2000 to 2005, a significant decline in witnessing public injecting drug use was reported by both, residents (33%, 28%, and 19%, p<0.001) and business owners (38%, 32%,

Study / First Author and Year	Study design	Study period (month and year)	Population characteristics	Outcomes reported	Findings
			Year 2002: Residents (n=540), Business owners (n=207) Year 2005: Residents (n=316), Business owners (n=210)	drugs offered for purchase in the last month	and 28%, p=0.03). Business owners located beyond 500m of SIF were less likely to see this change (p<0.001) Similarly, a significant decline in witnessing publicly discarded syringes was reported by both, residents (67%, 58%, and 40%, p<0.001) and business owners (72%, 64%, and 57%, p=0.01). Business owners located beyond 500m of SIF were less likely to see this change (p<0.001) Variable change was observed in drugs been offered for purchase was reported by both, residents (28%, 29%, and 26%, p=0.80) and business owners (33%, 34%, and 28%, p=0.26) over time.
Kimber, Mattick et al 2008† [49] **Study quality: Good**	Prospective cohort	May 2001 to Oct 2002	3715 PWIDs who used MSIC 1385 referrals to 577 clients Overall referral uptake: 35%	Number of referrals drug characteristics	16% SIF clients with drug treatment referrals had confirmed drug treatment uptake. Frequent SIF use was associated with receiving written referral to drug treatment (aHR: 1.6, 95% CI: 1.2-2.2, p<0.01)
Salmon et al 2010†[34] **Study quality: Good**	Ecological Pre-post	May 1998 to April 2006	N/A – Ambulance calls	Non-fatal overdose, Health system utilization	Significant decrease in average monthly ambulance attendances in MSIC vicinity, compared to rest of the city (61% vs 68%, p=0.002) Significant decline in average monthly ambulance attendances was observed during SIF operating hours, compared to rest of the city (80% vs 60%, p<0.001)

Study / First Author and Year	Study design	Study period (month and year)	Population characteristics	Outcomes reported	Findings
Fitzgerald et al 2010 [58] **Study quality: Good**	Time series	May 2001 to March 2010	N/A – Crime statistics	Police recorded incidents related to robbery, property, illicit drug offenses	Incidence of robbery and property related crimes declined in both the vicinity of SIF (MSIC) and the rest of Sydney between 1999 and 2010 Illicit drug related offense incidents declined vicinity of SIF (MSIC) between 1999 and 2003 and then remained stable until 2009 A similar trend was reported in the rest of Sydney. Illicit drug related arrests declined from 1999 to 2003, with a slightly upward trend from 2003 to 2010
Donnelly 2013† [59] **Study quality: Fair**	Pre-Post study	May 2001 through December 2012	N/A – Crime statistics	Community and environmental outcomes	In 2002, a significant decline in robbery rates was reported near Kings Cross (281 to 112 incidents). Between 2002-2012, a decline in robbery rates per 100,000-persons was reported (1,646 to 563). Significant reduction was reported in thefts in Kings Cross (36,174 to 16,724 incidents per 100,000-persons) and rest of NSW (6,399 vs 3,359 incidents per 100,000 persons). Total illicit drug offences increased in both the Kings Cross LAC and the rest of Sydney. ($p < 0.001$ for all comparisons)
Latimer 2016† [127] **Study quality: Fair**	Retrospective clinical audit	September 2016 to August 2015	189,203 injections undertaken by 4,177 unique individuals Current drug use: Heroin (25%), Other opioids (58%), Crystal meth (13%), Cocaine (4%)	Fentanyl overdose	Overdose events were highest among users of fentanyl (4.4%) with a significantly higher overdose risk (crude RR: 2.21, 95% CI: 1.8-2.6), $p<0.0001$), as compared to heroin users

Study / First Author and Year	Study design	Study period (month and year)	Population characteristics	Outcomes reported	Findings
Roxburgh et al 2017 [128] **Study quality: Good**	Prospective cohort	Jan 2007 to April 2014	909 PWIDs who used the SIF experiencing 2860 overdose Heroin overdose: 62% Oxycodone: 30% Fentanyl: 0.73%	Heroin and oxycodone overdose	During the period 2007–2014, there were 12.7 heroin overdoses per 1000 injections compared to 4.1 oxycodone overdoses per 1000 injections. Heroin overdoses appeared to be more severe than oxycodone overdoses and risk of experiencing overdose with heroin was significantly higher than with oxycodone (OR: 3.1, 95% CI: 3.0-3.2).
Denmark					
Van der Poel et al 2003# [142] **Study quality: Not assessed**	Exploratory	2000	67 PWUD	Use of services	Average SIF visits for four facilities (prior to the interview) was six days (median: 7 days) and two-times (median: 2.5) in last 24hrs. DCR use led to 30% reporting more attention to hygiene, while 59% reported seeing no effect of visiting a DCR on their drug use.
Kinnard 2014# [56] **Study quality: Poor**	Cross-sectional	February 2013 to August 2013	41 PWIDs who use the DCR Age, median (IQR): 37 (30-43) years Males: 90.2% Unstable housing: 26.8% Daily DCR use: 29.3%	Disposal of syringes Behavior change Injection frequency	After SIF opening, 59% reported safer disposal of syringes; 76% reduction in injection risk behaviors [including decline in rushed injection (63%), public injecting (56%) and ceasing syringe sharing (54%)]; p<0.001).
Toth et al 2016# [51] **Study quality: Poor**	Cross-sectional	January 2015 to February 2015	154 PWID who use at least one of 5 SCFs	Injection behaviors, Use of treatment and recovery support services	SIF users receiving SEI were more likely to have access to sterile equipment (68.8% vs 25.9%, p=0.02). SIF users who were advised to seek medical help were more likely to receive treatment for disease, compared to those who

Study / First Author and Year	Study design	Study period (month and year)	Population characteristics	Outcomes reported	Findings
					were not advised to seek medical help (51.3% vs 25.7%, p<0.05).
Spain					
Bravo 2009[# 133] **Study quality: Fair**	Cross-sectional	2002 to 2005	249 PWID Age ≤25 years: 37.3% Males: 44.3% SIF users: 39% Unstable housing: 48.5% NEP use: 96%	Injection practices	Among 249 PWID in two cities with SIFs, clients had significantly higher likelihood of not borrowing used syringes (aOR: 3.30, 95% CI: 1.4-7.7), compared to non-SIF clients. Obtaining sterile syringes for free at the NEP was associated with not borrowing (aOR: 2.6, 95% CI: 1.0-6.8) and not sharing injection equipment (aOR: 3.2, 95% CI: 1.4-7.3), compared to not accessing NEP.
Folch 2018[#38] **Study quality: Fair**	Cross-sectional	2014 to 2015	520 PWID who used a DCR Age, mean (SD): 37(8.1) years Male: 81.8% Homelessness: 26.9% Regular SIF use (frequent): 21.2% In prison (ever): 73.1%	Injection behaviors, Use of treatment support services	SIF use in Catalonia, Spain was associated with significantly lower odds of public injection (aOR: 0.27, 95% CI: 0.12-0.62), and sharing syringes (aOR: 0.39, 95% CI: 0.20-0.78) and significantly higher odds of safe disposal of syringes (aOR: 5.77, 95% CI: 3.41-9.77) and accessing drug dependence services (aOR: 2.12, 95% CI: 1.18-3.81).
Germany					

Study / First Author and Year	Study design	Study period (month and year)	Population characteristics	Outcomes reported	Findings
Zurhold et al 2003[#50] Germany **Study quality: Poor**	Cross-sectional	2000	616 PWID using consumption rooms in Germany Age, mean: 32.6 years Male: 80% Years of drug use, mean: 11 Regular SIF use: 33% Heroin use at baseline: 84%	Use of treatment and recovery support services, Receipt of services	Frequent use of SCS was significantly associated with use of syringe exchange services (59% vs 54% and 44%, p<0.05); counselling services (46% vs 35% and 25%; p<0.01) ; medical services (37% vs 29% and 17%, p<0.01); and education on safer use (9% vs 3% and 3%, p<0.05), compared to occasional or rare visitors
Scherbaum 2010[43] **Study quality: Good**	Prospective cohort	November 2002 to December 2003	129 PWID using DCFs in Germany Age, mean: 31 years Male: 75% History of incarceration: 37% Length of attendance (median): 5 weeks Years of drug use, mean (SD): 11 (6) years	Injection behaviors, Use of treatment support services	Regular and consistent DCF attendance [n (%)]: 9 (7%) of clients. SIF attendance for >3 months: 29 (22%); Left DCR by week 4: 26 (20%); attended the facility for less than a week: 29 (22%). 3months prior to DCF: 83% of clients were in contact at least once with low-threshold ancillary services (e.g., emergency shelter, canteen/cafeteria facility located within the DCF building, and mobile medical unit. After attending DCF: 46% Clients reported regular use of available services and facilities (46%); did not use any service (40%). Reasons for stopping DCF use included transfer to health insurance treatment system facilities (37%), enrollment in methadone maintenance, and imprisonment (17%). Clients stopped attending without providing a reason (21%) and two clients died (one from suicide, one from unknown reasons).

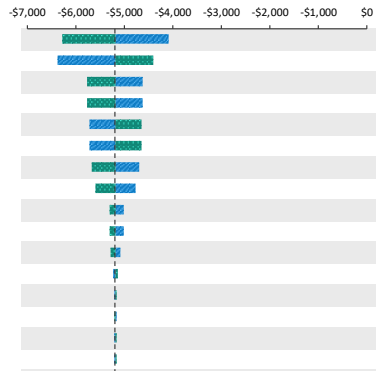
Insite, Vancouver and MSIC, Australia - fixed stand-alone or specialized model (†)
Dr. Peter Centre, Vancouver – Integrated model (‡)

Paris, East Side Frankfurt, and Luxembourg – Embedded model (§)
Some centers in Spain, Germany, and Denmark - Mobile model (#)

Appendix E. Comparative Value Supplemental Information

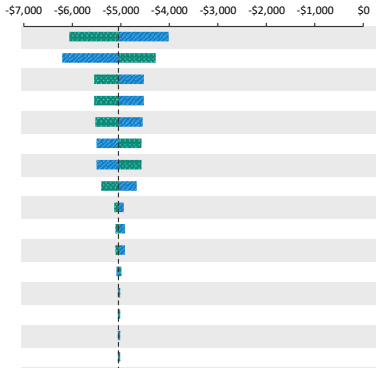
Figure E1a-f. Tornado Diagrams: Cost per Ambulance Ride Avoided, SIF+SSP vs. SSP-Only

a. Boston



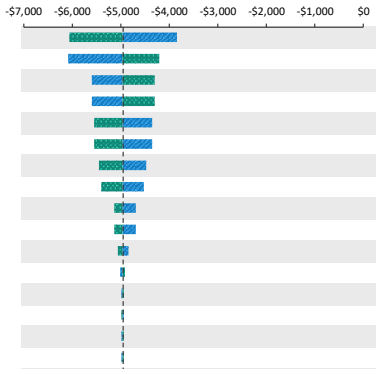
Parameter	Low Value	High Value	Low Result	High Result	Spread
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$4,095	-$6,277	$2,182
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$6,377	-$4,397	$1,980
Hospitalization Cost: Boston	$6,704	$10,055	-$4,613	-$5,759	$1,146
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$4,613	-$5,759	$1,146
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$5,727	-$4,645	$1,083
Cost of Living Ratio vs. Vancouver: Boston	0.99	1.49	-$5,727	-$4,645	$1,083
Cost of ED VIsit: Boston	$2,761	$4,141	-$4,694	-$5,678	$983
First Year SSP Cost	$1,226,623	$1,839,934	-$4,761	-$5,610	$849
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$5,021	-$5,296	$276
Total annual injections in the SIF	144,000	216,000	-$5,021	-$5,296	$276
Cost of Ambulance Ride: Boston	$418	$628	-$5,081	-$5,290	$209
Number of Unique SIF Clients/Month	1,680	2,520	-$5,236	-$5,136	$99
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$5,212	-$5,160	$52
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$5,170	-$5,202	$33
Cost/sqft Commercial Property: Boston	$440	$660	-$5,201	-$5,170	$31
Commercial Mortgage Loan Interest: Boston	5%	9%	-$5,195	-$5,176	$20

b. Philadelphia



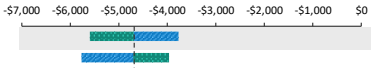
Parameter	Low Value	High Value	Low Result	High Result	Spread
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$4,015	-$6,073	$2,059
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$6,208	-$4,274	$1,935
Hospitalization Cost: Philadelphia	$6,001	$9,002	-$4,531	-$5,557	$1,026
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$4,531	-$5,557	$1,026
Cost of ED VIsit: Philadelphia	$2,761	$4,141	-$4,552	-$5,536	$983
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$5,502	-$4,586	$917
Cost of Living Ratio vs. Vancouver: Philadelphia	0.84	1.26	-$5,502	-$4,586	$917
First Year SSP Cost	$1,226,623	$1,839,934	-$4,673	-$5,415	$741
Cost of Ambulance Ride: Philadelphia	$390	$585	-$4,947	-$5,141	$195
Total annual injections in the SIF	144,000	216,000	-$4,927	-$5,122	$195
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$4,927	-$5,122	$195
Number of Unique SIF Clients/Month	1,680	2,520	-$5,087	-$5,001	$87
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$5,069	-$5,019	$49
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$5,028	-$5,060	$32
Cost/sqft Commercial Property: Philadelphia	$166	$248	-$5,050	-$5,038	$12
Commercial Mortgage Loan Interest: Philadelphia	5%	9%	-$5,048	-$5,040	$7

c. San Francisco



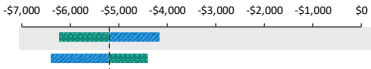
Parameter	Low Value	High Value	Low Result	High Result	Spread
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$3,846	-$6,071	$2,224
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$6,080	-$4,216	$1,865
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$5,600	-$4,317	$1,283
Cost of Living Ratio vs. Vancouver: San Francisco	1.18	1.76	-$5,600	-$4,317	$1,283
Hospitalization Cost: San Francisco	$6,946	$10,419	-$4,365	-$5,552	$1,188
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$4,365	-$5,552	$1,188
Cost of ED VIsit: San Francisco	$2,761	$4,141	-$4,467	-$5,450	$983
First Year SSP Cost	$1,226,623	$1,839,934	-$4,515	-$5,401	$886
Total annual injections in the SIF	144,000	216,000	-$4,699	-$5,131	$432
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$4,699	-$5,131	$432
Cost of Ambulance Ride: San Francisco	$453	$680	-$4,845	-$5,072	$227
Number of Unique SIF Clients/Month	1,680	2,520	-$5,010	-$4,907	$104
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$4,985	-$4,932	$53
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$4,943	-$4,974	$31
Cost/sqft Commercial Property: San Francisco	$240	$360	-$4,967	-$4,950	$17
Commercial Mortgage Loan Interest: San Francisco	5%	9%	-$4,964	-$4,953	$11

d. Atlanta



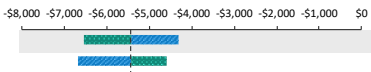
Parameter	Low Value	High Value	Low Result	High Result	Spread
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$3,770	-$5,603	$1,833
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$5,766	-$3,972	$1,794
Cost of ED VIsit: Atlanta	$2,761	$4,141	-$4,195	-$5,179	$983
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$5,093	-$4,281	$812
Cost of Living Ratio vs. Vancouver: Atlanta	0.74	1.12	-$5,093	-$4,281	$812
Hospitalization Cost: Atlanta	$4,712	$7,068	-$4,284	-$5,090	$806
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$4,284	-$5,090	$806
First Year SSP Cost	$1,226,623	$1,839,934	-$4,324	-$5,050	$727
Cost of Ambulance Ride: Atlanta	$369	$554	-$4,595	-$4,779	$185
Total annual injections in the SIF	144,000	216,000	-$4,625	-$4,728	$103
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$4,625	-$4,728	$103
Number of Unique SIF Clients/Month	1,680	2,520	-$4,729	-$4,644	$85
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$4,709	-$4,665	$44
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$4,672	-$4,702	$30
Cost/sqft Commercial Property: Atlanta	$195	$293	-$4,694	-$4,680	$14
Commercial Mortgage Loan Interest: Atlanta	5%	9%	-$4,691	-$4,682	$9

e. Baltimore



Parameter	Low Value	High Value	Low Result	High Result	Spread
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$4,174	-$6,233	$2,059
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$6,407	-$4,407	$2,000
Hospitalization Cost: Baltimore	$6,001	$9,002	-$4,691	-$5,717	$1,026
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$4,691	-$5,717	$1,026
Cost of ED VIsit: Baltimore	$2,761	$4,141	-$4,712	-$5,695	$983
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$5,618	-$4,789	$829
Cost of Living Ratio vs. Vancouver: Baltimore	0.76	1.14	-$5,618	-$4,789	$829
First Year SSP Cost	$1,226,623	$1,839,934	-$4,846	-$5,562	$716
Cost of Ambulance Ride: Baltimore	$394	$591	-$5,105	-$5,302	$197
Total annual injections in the SIF	144,000	216,000	-$5,125	-$5,256	$130
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$5,125	-$5,256	$130
Number of Unique SIF Clients/Month	1,680	2,520	-$5,246	-$5,162	$84
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$5,228	-$5,179	$49
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$5,187	-$5,220	$33
Cost/sqft Commercial Property: Baltimore	$162	$242	-$5,209	-$5,198	$11
Commercial Mortgage Loan Interest: Baltimore	5%	9%	-$5,207	-$5,200	$7

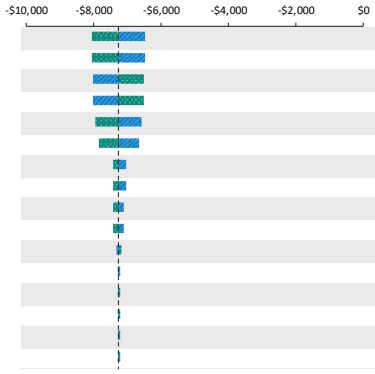
f. Seattle



Parameter	Low Value	High Value	Low Result	High Result	Spread
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$4,320	-$6,544	$2,224
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$6,688	-$4,601	$2,087
Hospitalization Cost: Seattle	$6,946	$10,419	-$4,838	-$6,026	$1,188
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$4,838	-$6,026	$1,188
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$5,947	-$4,917	$1,030
Cost of Living Ratio vs. Vancouver: Seattle	0.94	1.42	-$5,947	-$4,917	$1,030
Cost of ED VIsit: Seattle	$2,761	$4,141	-$4,940	-$5,924	$983
First Year SSP Cost	$1,226,623	$1,839,934	-$5,008	-$5,856	$849
Total annual injections in the SIF	144,000	216,000	-$5,304	-$5,517	$213
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$5,304	-$5,517	$213
Cost of Ambulance Ride: Seattle	$413	$620	-$5,329	-$5,535	$207
Number of Unique SIF Clients/Month	1,680	2,520	-$5,482	-$5,382	$99
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$5,459	-$5,405	$53
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$5,415	-$5,449	$34
Cost/sqft Commercial Property: Seattle	$331	$497	-$5,444	-$5,420	$24
Commercial Mortgage Loan Interest: Seattle	5%	9%	-$5,439	-$5,424	$15

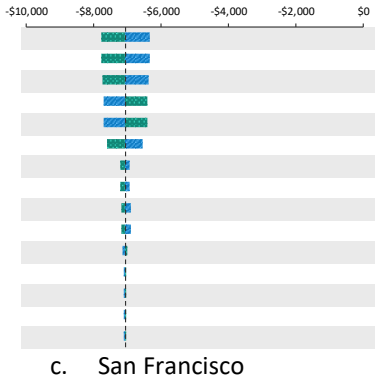
Figure E2a-f. Tornado Diagrams: Cost per Emergency Department Visit Avoided, SIF+SSP vs. SSP-Only

a. Boston



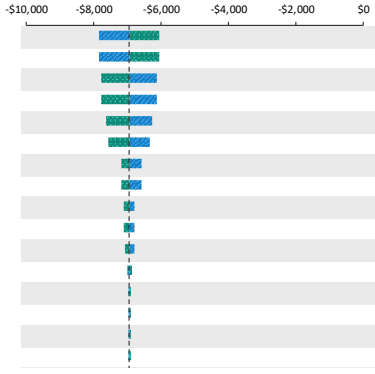
Parameter	Low Value	High Value	Low Result	High Result	Spread
Hospitalization Cost: Boston	$6,704	$10,055	-$6,474	-$8,083	$1,609
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$6,474	-$8,083	$1,609
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$8,039	-$6,519	$1,519
Cost of Living Ratio vs. Vancouver: Boston	0.99	1.49	-$8,039	-$6,519	$1,519
Cost of ED VIsit: Boston	$2,761	$4,141	-$6,589	-$7,969	$1,380
First Year SSP Cost	$1,226,623	$1,839,934	-$6,683	-$7,875	$1,192
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$7,047	-$7,434	$387
Total annual injections in the SIF	144,000	216,000	-$7,047	-$7,434	$387
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$7,129	-$7,428	$299
Cost of Ambulance Ride: Boston	$418	$628	-$7,132	-$7,426	$294
Number of Unique SIF Clients/Month	1,680	2,520	-$7,349	-$7,209	$139
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$7,229	-$7,312	$83
Cost/sqft Commercial Property: Boston	$440	$660	-$7,301	-$7,257	$44
Commercial Mortgage Loan Interest: Boston	5%	9%	-$7,292	-$7,265	$28
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$7,281	-$7,276	$5
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$7,280	-$7,278	$2

b. Philadelphia



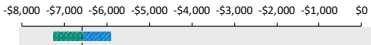
Parameter	Low Value	High Value	Low Result	High Result	Spread
Hospitalization Cost: Philadelphia	$6,001	$9,002	-$6,360	-$7,800	$1,440
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$6,360	-$7,800	$1,440
Cost of ED VIsit: Philadelphia	$2,761	$4,141	-$6,390	-$7,770	$1,380
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$7,723	-$6,436	$1,287
Cost of Living Ratio vs. Vancouver: Philadelphia	0.84	1.26	-$7,723	-$6,436	$1,287
First Year SSP Cost	$1,226,623	$1,839,934	-$6,559	-$7,600	$1,041
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$6,941	-$7,219	$278
Cost of Ambulance Ride: Philadelphia	$390	$585	-$6,943	-$7,217	$274
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$6,916	-$7,189	$273
Total annual injections in the SIF	144,000	216,000	-$6,916	-$7,189	$273
Number of Unique SIF Clients/Month	1,680	2,520	-$7,141	-$7,019	$122
Cost/sqft Commercial Property: Philadelphia	$166	$248	-$7,088	-$7,072	$17
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$7,087	-$7,075	$12
Commercial Mortgage Loan Interest: Philadelphia	5%	9%	-$7,085	-$7,074	$10
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$7,082	-$7,077	$5

c. San Francisco



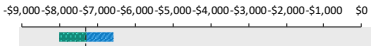
Parameter	Low Value	High Value	Low Result	High Result	Spread
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$7,860	-$6,059	$1,801
Cost of Living Ratio vs. Vancouver: San Francisco	1.18	1.76	-$7,860	-$6,059	$1,801
Hospitalization Cost: San Francisco	$6,946	$10,419	-$6,126	-$7,793	$1,667
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$6,126	-$7,793	$1,667
Cost of ED VIsit: San Francisco	$2,761	$4,141	-$6,269	-$7,650	$1,380
First Year SSP Cost	$1,226,623	$1,839,934	-$6,338	-$7,581	$1,244
Total annual injections in the SIF	144,000	216,000	-$6,596	-$7,202	$606
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$6,596	-$7,202	$606
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$6,798	-$7,121	$324
Cost of Ambulance Ride: San Francisco	$453	$680	-$6,801	-$7,119	$318
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$6,790	-$7,072	$282
Number of Unique SIF Clients/Month	1,680	2,520	-$7,032	-$6,887	$145
Cost/sqft Commercial Property: San Francisco	$240	$360	-$6,972	-$6,948	$24
Commercial Mortgage Loan Interest: San Francisco	5%	9%	-$6,967	-$6,952	$15
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$6,963	-$6,956	$6
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$6,962	-$6,957	$6

d. Atlanta



Parameter	Low Value	High Value	Low Result	High Result	Spread
Cost of ED VIsit: Atlanta	$2,761	$4,141	-$5,888	-$7,269	$1,380
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$7,148	-$6,009	$1,140
Cost of Living Ratio vs. Vancouver: Atlanta	0.74	1.12	-$7,148	-$6,009	$1,140
Hospitalization Cost: Atlanta	$4,712	$7,068	-$6,013	-$7,144	$1,131
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$6,013	-$7,144	$1,131
First Year SSP Cost	$1,226,623	$1,839,934	-$6,068	-$7,088	$1,020
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$6,447	-$6,710	$264
Cost of Ambulance Ride: Atlanta	$369	$554	-$6,449	-$6,708	$259
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$6,492	-$6,636	$145
Total annual injections in the SIF	144,000	216,000	-$6,492	-$6,636	$145
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$6,656	-$6,527	$128
Number of Unique SIF Clients/Month	1,680	2,520	-$6,638	-$6,519	$119
Cost/sqft Commercial Property: Atlanta	$195	$293	-$6,588	-$6,569	$19
Commercial Mortgage Loan Interest: Atlanta	5%	9%	-$6,584	-$6,572	$12
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$6,581	-$6,576	$5
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$6,577	-$6,580	$3

e. Baltimore



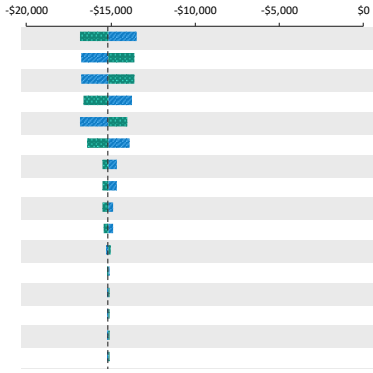
Parameter	Low Value	High Value	Low Result	High Result	Spread
Hospitalization Cost: Baltimore	$6,001	$9,002	-$6,584	-$8,024	$1,440
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$6,584	-$8,024	$1,440
Cost of ED VIsit: Baltimore	$2,761	$4,141	-$6,614	-$7,994	$1,380
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$7,886	-$6,722	$1,164
Cost of Living Ratio vs. Vancouver: Baltimore	0.76	1.14	-$7,886	-$6,722	$1,164
First Year SSP Cost	$1,226,623	$1,839,934	-$6,802	-$7,806	$1,004
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$7,163	-$7,445	$281
Cost of Ambulance Ride: Baltimore	$394	$591	-$7,166	-$7,442	$277
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$7,194	-$7,377	$183
Total annual injections in the SIF	144,000	216,000	-$7,194	-$7,377	$183
Number of Unique SIF Clients/Month	1,680	2,520	-$7,363	-$7,245	$118
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$7,369	-$7,261	$108
Cost/sqft Commercial Property: Baltimore	$162	$242	-$7,312	-$7,296	$16
Commercial Mortgage Loan Interest: Baltimore	5%	9%	-$7,309	-$7,299	$10
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$7,306	-$7,301	$5
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$7,303	-$7,305	$2

f. Seattle

Parameter	Low Value	High Value	Low Result	High Result	Spread
Hospitalization Cost: Seattle	$6,946	$10,419	-$6,791	-$8,458	$1,667
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$6,791	-$8,458	$1,667
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$8,347	-$6,901	$1,446
Cost of Living Ratio vs. Vancouver: Seattle	0.94	1.42	-$8,347	-$6,901	$1,446
Cost of ED VIsit: Seattle	$2,761	$4,141	-$6,934	-$8,315	$1,380
First Year SSP Cost	$1,226,623	$1,839,934	-$7,029	-$8,220	$1,191
Total annual injections in the SIF	144,000	216,000	-$7,445	-$7,744	$300
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$7,445	-$7,744	$300
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$7,477	-$7,772	$295
Cost of Ambulance Ride: Seattle	$413	$620	-$7,479	-$7,769	$290
Number of Unique SIF Clients/Month	1,680	2,520	-$7,694	-$7,555	$139
Cost/sqft Commercial Property: Seattle	$331	$497	-$7,641	-$7,608	$33
Commercial Mortgage Loan Interest: Seattle	5%	9%	-$7,634	-$7,614	$21
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$7,627	-$7,622	$5
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$7,626	-$7,623	$2

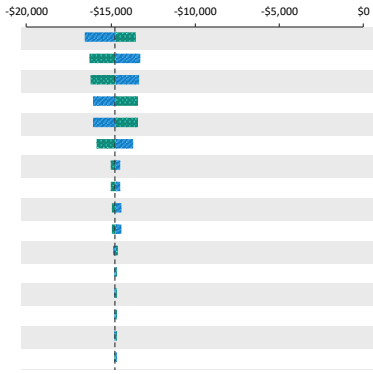
Figure E3a-f. Tornado Diagrams: Cost per Hospitalization Avoided, SIF+SSP vs. SSP-Only

a. Boston



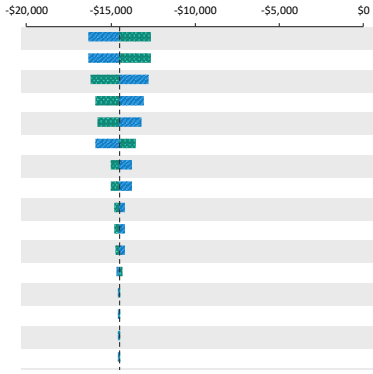
Parameter	Low Value	High Value	Low Result	High Result	Spread
Hospitalization Cost: Boston	$6,704	$10,055	-$13,488	-$16,840	$3,352
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$16,747	-$13,582	$3,165
Cost of Living Ratio vs. Vancouver: Boston	0.99	1.49	-$16,747	-$13,582	$3,165
Cost of ED VIsit: Boston	$2,761	$4,141	-$13,726	-$16,602	$2,876
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$16,861	-$14,034	$2,827
First Year SSP Cost	$1,226,623	$1,839,934	-$13,923	-$16,406	$2,483
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$14,681	-$15,487	$806
Total annual injections in the SIF	144,000	216,000	-$14,681	-$15,487	$806
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$14,853	-$15,476	$622
Cost of Ambulance Ride: Boston	$418	$628	-$14,858	-$15,470	$612
Number of Unique SIF Clients/Month	1,680	2,520	-$15,310	-$15,019	$290
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$15,060	-$15,233	$173
Cost/sqft Commercial Property: Boston	$440	$660	-$15,210	-$15,119	$91
Commercial Mortgage Loan Interest: Boston	5%	9%	-$15,192	-$15,135	$58
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$15,170	-$15,159	$11
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$15,166	-$15,162	$4

b. Philadelphia



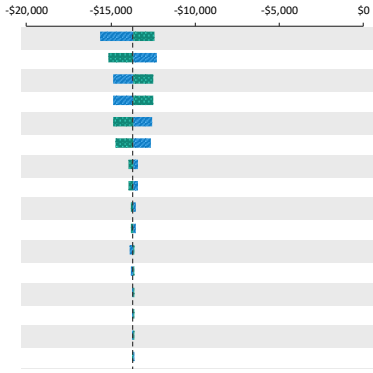
Parameter	Low Value	High Value	Low Result	High Result	Spread
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$16,561	-$13,542	$3,020
Hospitalization Cost: Philadelphia	$6,001	$9,002	-$13,249	-$16,250	$3,001
Cost of ED VIsit: Philadelphia	$2,761	$4,141	-$13,312	-$16,187	$2,876
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$16,090	-$13,409	$2,680
Cost of Living Ratio vs. Vancouver: Philadelphia	0.84	1.26	-$16,090	-$13,409	$2,680
First Year SSP Cost	$1,226,623	$1,839,934	-$13,666	-$15,833	$2,168
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$14,459	-$15,040	$580
Cost of Ambulance Ride: Philadelphia	$390	$585	-$14,464	-$15,035	$570
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$14,408	-$14,977	$570
Total annual injections in the SIF	144,000	216,000	-$14,408	-$14,977	$570
Number of Unique SIF Clients/Month	1,680	2,520	-$14,876	-$14,623	$254
Cost/sqft Commercial Property: Philadelphia	$166	$248	-$14,767	-$14,732	$34
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$14,764	-$14,740	$25
Commercial Mortgage Loan Interest: Philadelphia	5%	9%	-$14,760	-$14,738	$22
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$14,754	-$14,745	$10
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$14,749	-$14,750	$1

c. San Francisco



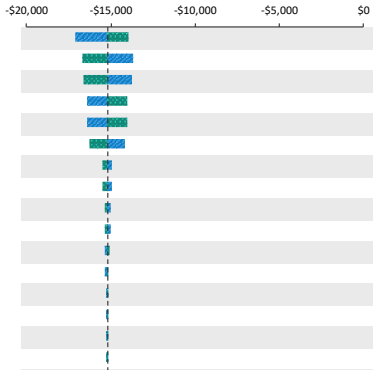
Parameter	Low Value	High Value	Low Result	High Result	Spread
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$16,375	-$12,623	$3,753
Cost of Living Ratio vs. Vancouver: San Francisco	1.18	1.76	-$16,375	-$12,623	$3,753
Hospitalization Cost: San Francisco	$6,946	$10,419	-$12,763	-$16,236	$3,473
Cost of ED VIsit: San Francisco	$2,761	$4,141	-$13,061	-$15,937	$2,876
First Year SSP Cost	$1,226,623	$1,839,934	-$13,204	-$15,795	$2,591
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$15,953	-$13,530	$2,423
Total annual injections in the SIF	144,000	216,000	-$13,742	-$15,004	$1,262
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$13,742	-$15,004	$1,262
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$14,162	-$14,836	$674
Cost of Ambulance Ride: San Francisco	$453	$680	-$14,168	-$14,830	$662
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$14,145	-$14,733	$587
Number of Unique SIF Clients/Month	1,680	2,520	-$14,651	-$14,348	$303
Cost/sqft Commercial Property: San Francisco	$240	$360	-$14,524	-$14,474	$50
Commercial Mortgage Loan Interest: San Francisco	5%	9%	-$14,514	-$14,483	$31
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$14,506	-$14,492	$13
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$14,505	-$14,493	$12

d. Atlanta



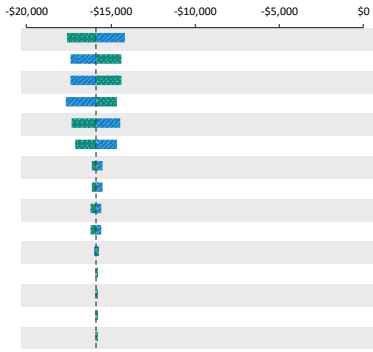
Parameter	Low Value	High Value	Low Result	High Result	Spread
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$15,659	-$12,403	$3,256
Cost of ED VIsit: Atlanta	$2,761	$4,141	-$12,267	-$15,143	$2,876
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$14,892	-$12,518	$2,374
Cost of Living Ratio vs. Vancouver: Atlanta	0.74	1.12	-$14,892	-$12,518	$2,374
Hospitalization Cost: Atlanta	$4,712	$7,068	-$12,527	-$14,883	$2,356
First Year SSP Cost	$1,226,623	$1,839,934	-$12,643	-$14,768	$2,125
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$13,430	-$13,980	$549
Cost of Ambulance Ride: Atlanta	$369	$554	-$13,435	-$13,975	$540
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$13,524	-$13,826	$302
Total annual injections in the SIF	144,000	216,000	-$13,524	-$13,826	$302
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$13,866	-$13,599	$268
Number of Unique SIF Clients/Month	1,680	2,520	-$13,829	-$13,581	$249
Cost/sqft Commercial Property: Atlanta	$195	$293	-$13,725	-$13,685	$41
Commercial Mortgage Loan Interest: Atlanta	5%	9%	-$13,718	-$13,692	$26
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$13,710	-$13,700	$9
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$13,702	-$13,708	$6

e. Baltimore



Parameter	Low Value	High Value	Low Result	High Result	Spread
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$17,145	-$13,931	$3,214
Hospitalization Cost: Baltimore	$6,001	$9,002	-$13,716	-$16,717	$3,001
Cost of ED VIsit: Baltimore	$2,761	$4,141	-$13,779	-$16,654	$2,876
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$16,429	-$14,004	$2,425
Cost of Living Ratio vs. Vancouver: Baltimore	0.76	1.14	-$16,429	-$14,004	$2,425
First Year SSP Cost	$1,226,623	$1,839,934	-$14,170	-$16,263	$2,093
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$14,923	-$15,510	$586
Cost of Ambulance Ride: Baltimore	$394	$591	-$14,928	-$15,505	$576
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$14,988	-$15,369	$381
Total annual injections in the SIF	144,000	216,000	-$14,988	-$15,369	$381
Number of Unique SIF Clients/Month	1,680	2,520	-$15,339	-$15,094	$245
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$15,352	-$15,127	$225
Cost/sqft Commercial Property: Baltimore	$162	$242	-$15,233	-$15,200	$34
Commercial Mortgage Loan Interest: Baltimore	5%	9%	-$15,227	-$15,206	$21
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$15,222	-$15,211	$10
Ppn. of SIF ODs resulting in ED visit	0.0063	0.0095	-$15,214	-$15,219	$5

f. Seattle



Parameter	Low Value	High Value	Low Result	High Result	Spread
Hospitalization Cost: Seattle	$6,946	$10,419	-$14,148	-$17,621	$3,473
Insite Annual Operating Cost	$1,349,829	$2,024,743	-$17,390	-$14,378	$3,012
Cost of Living Ratio vs. Vancouver: Seattle	0.94	1.42	-$17,390	-$14,378	$3,012
Ppn. of ED visits resulting in hospitalization	38.4%	57.6%	-$17,684	-$14,684	$3,001
Cost of ED VIsit: Seattle	$2,761	$4,141	-$14,446	-$17,322	$2,876
First Year SSP Cost	$1,226,623	$1,839,934	-$14,643	-$17,125	$2,482
Total annual injections in the SIF	144,000	216,000	-$15,510	-$16,134	$624
Percent of injections at SIF resulting in OD	0.760%	1.140%	-$15,510	-$16,134	$624
Ppn. of No SIF ODs resulting in ambulance	0.368	0.552	-$15,577	-$16,191	$615
Cost of Ambulance Ride: Seattle	$413	$620	-$15,582	-$16,186	$604
Number of Unique SIF Clients/Month	1,680	2,520	-$16,029	-$15,739	$290
Cost/sqft Commercial Property: Seattle	$331	$497	-$15,919	-$15,850	$69
Commercial Mortgage Loan Interest: Seattle	5%	9%	-$15,905	-$15,862	$43
Ppn. of SIF ODs resulting in ambulance	0.0063	0.0095	-$15,889	-$15,879	$11
Ppn. of No SIF ODs resulting in ED visit	0.264	0.396	-$15,887	-$15,882	$5

Table E1. Scenario Analysis of SIF-Associated Reduction in HIV and HCV Infections

	Boston			Philadelphia			San Francisco		
	SIF+SSP	SSP Only	Difference	SIF+SSP	SSP Only	Difference	SIF+SSP	SSP Only	Difference
HIV Cases	47	49	-2	113	115	-2	56	60	-4
HCV Cases	278	293	-15	668	683	-15	334	357	-23
	Atlanta			Baltimore			Seattle		
	SIF+SSP	SSP Only	Difference	SIF+SSP	SSP Only	Difference	SIF+SSP	SSP Only	Difference
HIV Cases	36	39	-2	27	28	-1	41	43	-2
HCV Cases	215	229	-15	161	167	-6	243	258	-15

Table E2. Two-Way Scenario Analysis of Differential MAT Retention at SIF+SSP vs. SSP-only

Incremental MAT Retention Among SIF+SSP Clients		**Relative Difference in SSP-Only Clients who Access MAT Compared to SIF+SSP**										
		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%*
MAT Retention for SSP-Only Clients Compared to SIF+SSP	0%	61	61	61	61	61	61	61	61	61	61	61
	10%	61	60	59	59	58	58	57	56	56	55	55
	20%	61	59	58	57	56	55	53	52	51	50	49
	30%	61	59	57	55	53	52	50	48	46	44	42
	40%	61	58	56	53	51	49	46	44	41	39	36
	50%	61	58	55	52	49	46	42	39	36	33	30
	60%	61	57	53	50	46	42	39	35	32	28	24
	70%	61	56	52	48	44	39	35	31	27	22	18
	80%	61	56	51	46	41	36	32	27	22	17	12
	90%	61	55	50	44	39	33	28	22	17	12	6
	100%*	61	55	49	42	36	30	24	18	12	6	0*

*Base case

SB 279 FAV Study Role of Overdose Prevention Sites

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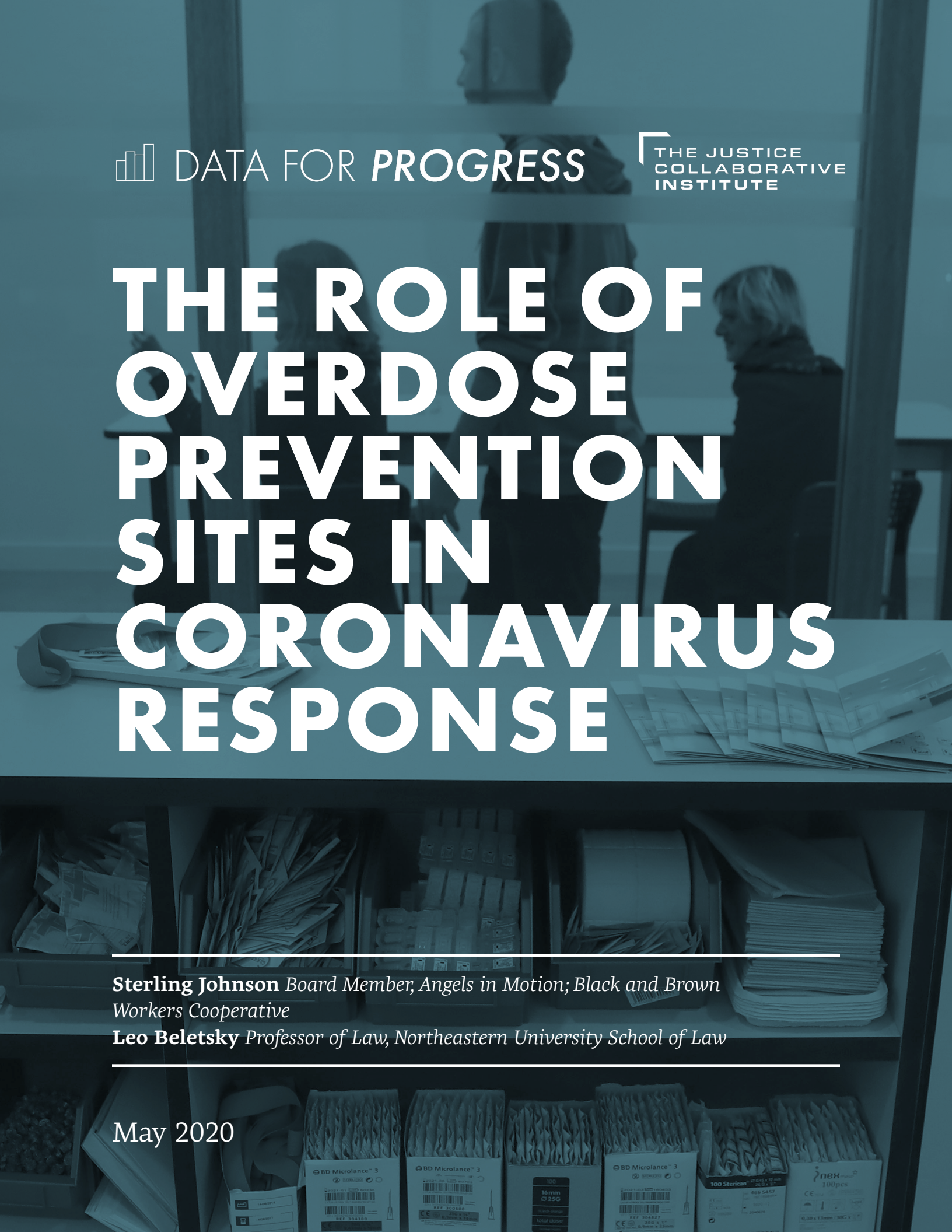
Position: FAV



DATA FOR *PROGRESS*

THE JUSTICE COLLABORATIVE INSTITUTE

THE ROLE OF OVERDOSE PREVENTION SITES IN CORONAVIRUS RESPONSE

Sterling Johnson *Board Member, Angels in Motion; Black and Brown Workers Cooperative*
Leo Beletsky *Professor of Law, Northeastern University School of Law*

May 2020

EXECUTIVE SUMMARY

The coronavirus pandemic has compounded North America's overdose crisis. Just in the United States, drug overdoses have already claimed nearly a half million lives since 1999. Now authorities across the country are reporting a surge in overdose deaths as part of the pandemic fallout, with fatality rates rising by 100% in some counties. By disrupting treatment and harm reduction services, triggering economic shocks and trauma, and severing social support networks, the pandemic is undermining any progress being made in overdose prevention. At the same time, people who use opioids and other drugs are especially vulnerable to coronavirus infections and severe disease because of health and structural stressors.

In responding to these overlapping public health emergencies, we must draw on the full spectrum of science-driven prevention measures. Such measures include rapid scale-up in access to critical overdose prevention medications, including methadone, buprenorphine, and the opioid antidote naloxone. But we must also expand the limited toolkit of overdose prevention efforts in the United States to include overdose prevention sites. Also known as "supervised consumption facilities" or "safe injection sites," these are safe, supervised spaces to use previously-obtained drugs and access essential care and support services. With nearly 300 such facilities operating worldwide, overdose prevention sites have shown overwhelming evidence of their public health benefit and cost-effectiveness. Despite these well-documented successes, advocates have been unsuccessful at opening a legally-sanctioned overdose prevention site in the United States.

In the context of the COVID-19 pandemic, such sites are especially vital because of their potential to prevent both overdose fatalities and the spread of infectious diseases. By handling numerous medical emergencies, they also promise to conserve health care system resources during a time when these resources are acutely scarce.

As coronavirus is fundamentally redefining the status quo, the imperative for overdose prevention sites has never been more urgent. The American public agrees: In new polling, we found substantial bipartisan support for overdose prevention sites and other harm reduction solutions as part of the response to coronavirus. Indeed, voters not only support supervised consumption, they want local officials to take the lead even in the face of state opposition.

OUR POLLING SHOWS THAT:

- **60% of voters, including 53% of Republicans, support overdose prevention sites** as a tool that state and local governments may use to reduce overdoses in their cities and states.
- **58% of voters believe** that mayors and other local officials should open overdose prevention sites if they feel they will address an overdose crisis, even if the state government opposes.
- **54% percent of voters support** supervised consumption via mobile units to immediately target neighborhoods with high overdose death rates.
- **58% of voters overall, and 60% of Republicans, prefer** setting up overdose prevention sites as part of already existing health care systems and hospital networks.

- **Voters also believe** that overdose prevention sites should be accessible: 54% overall and 54% of Republicans prefer setting up overdose prevention sites in commercial areas with heavy traffic over remote locations.

Extraordinary times require extraordinary measures. The COVID-19 pandemic has forced us to rapidly adapt by reforming staid and ineffective systems and policies to safeguard public health. Creating overdose prevention sites should be part of this adaptation. These facilities can act as essential points of access to care for people who use drugs and provide extensive collateral public health benefits to the community as a whole. This is the time to eliminate unnecessary barriers to these lifesaving services. If not now, when?

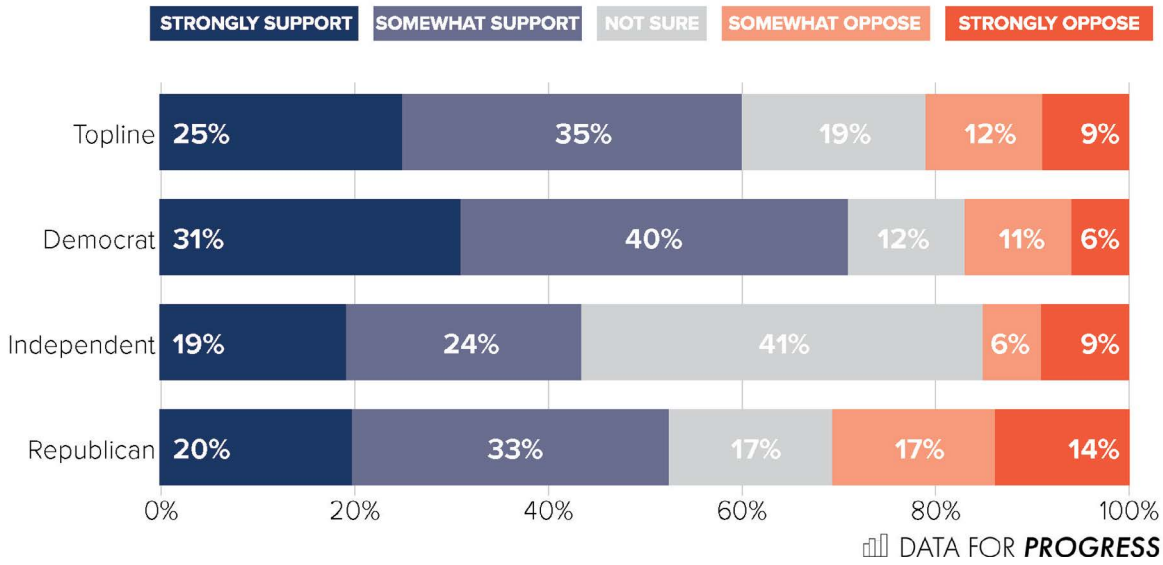
Introduction: Harm Reduction Strategies are Essential to Fighting the Opioid Overdose Crisis

The United States has been in the grips of an overdose crisis since the early 2000s. This crisis has evolved from being driven primarily by prescription drugs to heroin to fentanyl. Instead of focusing on treatment, harm reduction, and root causes, policy responses have primarily targeted drug supply through criminal justice interventions. In many jurisdictions, these punitive approaches continued to fuel the overdose fatalities they were purported to abate.

What makes this slow pace of progress in overdose crisis response especially tragic is that effective interventions are available. Research has long shown that harm reduction strategies, such as community distribution of naloxone, the opioid overdose antidote, have effectively decreased overdose deaths, as have "911 Good Samaritan" laws that promote help-seeking by shielding overdose witnesses and victims from prosecution for minor drug offenses. Providing access to scientifically-based drug treatment with methadone and buprenorphine has been shown to slash overdose risk by 50-80%, including among people reentering society from incarceration. Measures to reduce the collateral harms of problematic substance use include the expansion of syringe service programs, which provide sterile syringes and create a link to broader healthcare services and treatment.

In the context of COVID-19 pandemic, harm reduction strategies are rightly being deemed life-sustaining and essential; there is an emerging consensus among policymakers that we must expand their deployment in responding to this pandemic. But the existing spectrum of harm reduction measures is artificially limited. Even with their successes, many communities continue to face crisis levels of overdose fatalities, along with the collateral consequences of substance use, including infectious disease transmission, heart problems, and suicide. COVID-19 threatens to compound this ongoing crisis, making the imperative for extraordinary measures that much more urgent.

Do you support or oppose overdose prevention sites as a tool that state and local governments may use to reduce overdoses in their cities/states?



Despite Overwhelming Evidence of Effectiveness, Supervised Consumption Has Not Been Used In The United States

Advocates have long urged the United States to adopt overdose prevention sites, a harm reduction measure designed for supervised consumption of pre-obtained drugs in a safe environment. In over 30 years of international experience, overdose prevention sites have saved lives and improved other public health outcomes, without increasing crime or drug use. In the most robust analysis to date, a Vancouver study demonstrated a 35% reduction in fatal overdoses in the area surrounding the site. Supervised consumption can also decrease the use of emergency medical services, reduce public drug use and syringe debris, reduce HIV transmission, and increase linkages to treatment, housing, and other health and social support services. Despite concerns that overdose prevention facilities could increase crime, the research base squarely refutes this theory.

Studies have also found that people who are unstably housed and homeless actively utilize overdose prevention sites to prevent involvement in the criminal legal system. Correctional settings fail to provide meaningful rehabilitation or treatment and, in many cases trigger a cycle of homelessness, unemployment, and risk of fatal overdose.

Yet despite their proven benefits, there are zero legally-sanctioned overdose prevention sites operating in the United States. This is primarily because of local, state, and federal laws that some—including federal prosecutors—have interpreted to prohibit supervised consumption. Even as jurisdictions have taken sensible policy measures to allow overdose prevention sites in response to the overdose crisis, law enforcement and other government actors have made concerted efforts to block them.

In 2018, New York City announced a plan to create four overdose prevention sites, but inaction by the state health department and concerns about federal law enforcement prevented the City from moving forward. In late 2018, the California legislature passed a bill authorizing the City of San Francisco to operate a pilot overdose prevention site, but Governor Jerry Brown vetoed the measure. That same year, Seattle's City Council allocated funding for supervised consumption, but so far organized opposition and threats from federal prosecutors have successfully blocked attempts to create it. Local officials in Denver, Boston and Burlington, Vermont, have also shown varying degrees of public support for supervised consumption without actual execution.

In early 2018, the City of Philadelphia's plan to support supervised consumption sparked federal litigation and led to a landmark court ruling. After the city and the nonprofit organization Safehouse announced an authorized overdose prevention site, the U.S. Attorney in Philadelphia sued to block it, arguing that supervised consumption violates the Controlled Substances Act, in particular the provision that prohibits "opening or maintaining any space for the purpose of manufacturing, distributing or using controlled substances, with a penalty of up to 20 years in prison." In October 2019, a federal district judge rejected the prosecutor's arguments and ruled in favor of Safehouse, explaining that "the ultimate goal of Safehouse's proposed operation is to reduce drug use, not facilitate it." The case is now on appeal, but its rationale may have far-reaching consequences for other jurisdictions and for U.S. drug policy more broadly, as well as for the social stigma surrounding use. Codified in law, stigma continues to be a formidable barrier; safehouse planned to open its site after the ruling, but the site's property owner revoked the lease in response to community backlash.

Why Now: The Role of Overdose Prevention Sites in COVID-19 Response

While supervised consumption has been stalled or outright rejected in the United States, fatal drug overdose rates remain high--and rising in many jurisdictions. The coronavirus pandemic will only compound desperation in an already dire situation. Considering these overlapping public health emergencies, overdose prevention sites should be a core element of the coronavirus response.

Overdose prevention sites have always been designed with the dual purpose of reducing fatal overdose risk, while also preventing the spread of infectious disease. People who use drugs face a grave heath risk if they become infected with the coronavirus. Higher prevalence of HIV, hepatitis C, and other infections are more prevalent among people who inject drugs, as are autoimmune and respiratory challenges. People who use drugs also face elevated stress and trauma caused by a history of incarceration, racism, and homelessness. Many remain subject to policies that require them to interact closely with disciplinary systems, including conditions of probation and parole, as well as punitive treatment systems—as with methadone treatment, which in many settings still requires daily office visits. These requirements make it difficult to practice social distancing and take other COVID-19 prevention measures.

Drug use is often a communal activity and people who use drugs rely on their peers for support on a number of levels. In addition to being psychologically taxing, isolation confers a direct risk of overdose death. To prevent overdoses from turning fatal, harm reduction advocates use the mantra "don't use alone." In the era of social distancing, people who use drugs must

navigate difficult trade-offs between relying on social networks that provide lifesaving help and access to resources on the one hand, maintaining physical distance to prevent infection on the other. Early signs suggest that the coronavirus crisis and its preventive strategies may cause an increase in fatal overdoses.

With the coronavirus crisis, hospital resources are stretched thin to the point where they are making triage decisions on access to life-sustaining equipment. Ambulances may lag in response time to overdoses and people who use drugs may experience even higher rates of and more blatant discrimination in hospital settings.

Overdose prevention sites can directly mitigate these challenges, figuring as an integral part of coronavirus prevention because they can:

1. **Prevent fatal overdoses** at a time when overdose rates are likely to increase because of economic and social conditions
2. **Preserve first responder capacity** by limiting emergency overdose calls
3. **Preserve hospital capacity** by reducing hospitalizations related to overdoses
4. **Prevent the spread of coronavirus through injection equipment**
5. **Prevent the spread of coronavirus through unsafe spaces** where people may be forced to inject in close quarters
6. **Provide early detection of coronavirus through testing** of vulnerable high-risk individuals
7. **Provide vulnerable individuals** with resources, education, and referrals to housing and other services that can help improve prevention and facilitate social distancing

Our polling found that voters of both parties prefer sites that have these capabilities to provide comprehensive care: 58% of voters overall, and 60% of Republicans, prefer setting up overdose prevention sites as part of already existing health care systems and hospital networks.

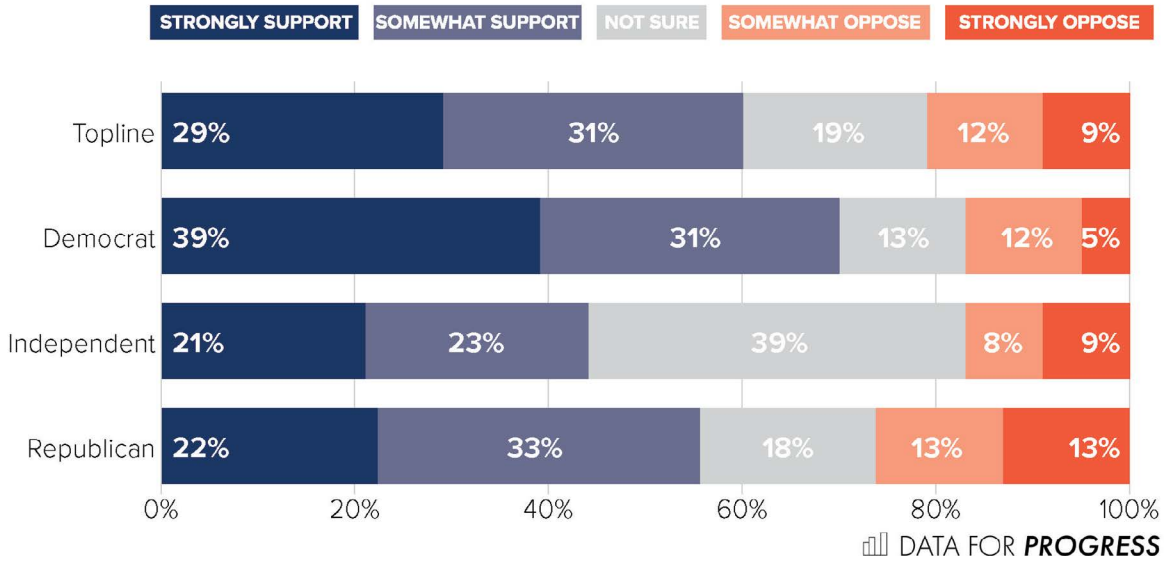
In many ways, supervised consumption, when combined with medical services, overlaps with and furthers many of the policies to slow the spread of coronavirus that public officials across the country have already embraced, including reducing arrests, reducing jail populations, protecting homeless populations to reduce infections, and preserving scarce medical resources. Overdose prevention sites accomplish all this.

Moving Forward

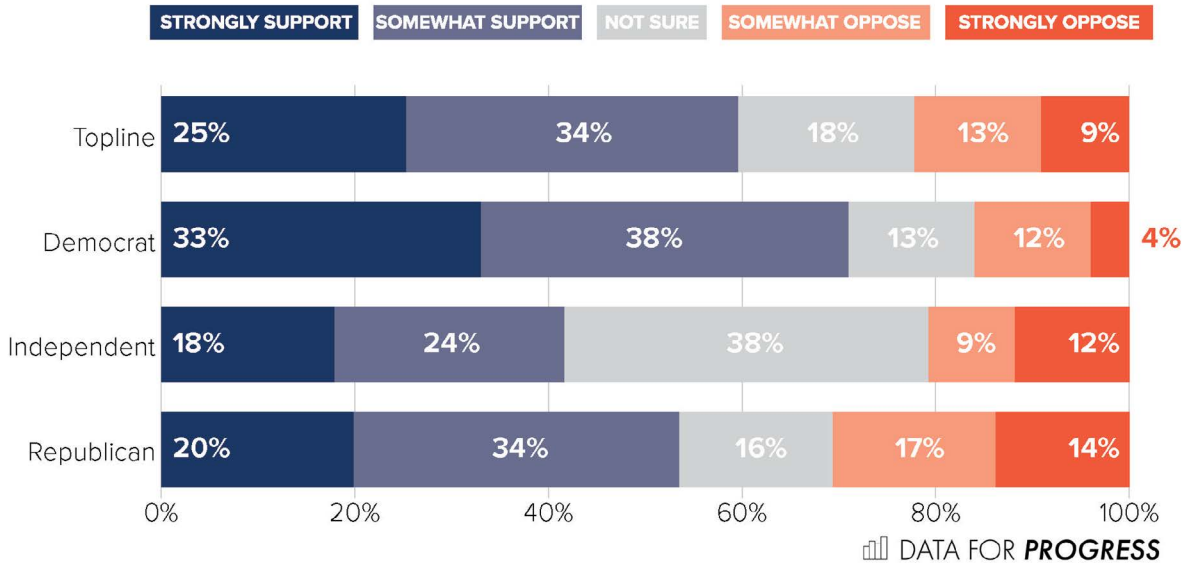
During this pandemic, we have seen unprecedented changes to long-held drug policies, including the regulation of opioid substitution therapies. In the United States, methadone has historically been highly regulated by the federal government. Upon entering a program, methadone patients must receive a dose at a physical site each day and undergo regular drug tests. Only after becoming established may a person receive take-home doses, and each program has the discretion to grant such privileges. In January 2020, in response to the coronavirus crisis, the federal government loosened regulations on methadone programs to allow for 28-day take-home doses. Furthermore, the Drug Enforcement Agency has allowed for prescribing buprenorphine without an initial in-person evaluation.

Our polling shows that voters of both parties strongly support these policy changes:

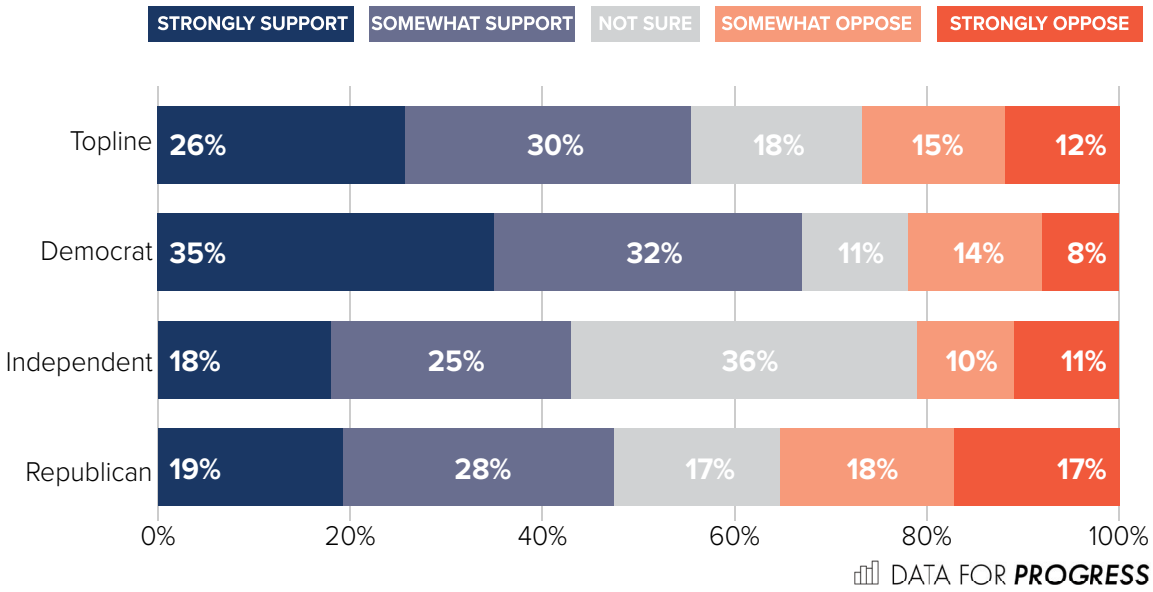
Do you support or oppose naloxone training, a drug that is used in emergency situations to reverse overdoses?



Do you support or oppose allowing states to provide recently released people with a 28-day supply of medication used in an opioid treatment program?



Do you support or oppose expanding state medicaid programs to include methadone treatment, which is used to help many deal with narcotic addiction?



The coronavirus crisis also provides a critical opportunity to deploy proven interventions like overdose prevention sites to address the spread of infectious disease and reduce overdose deaths. Especially during this pandemic, such sites constitute an essential point of access to care for people who use drugs, with extensive collateral public health benefits to the community as a whole. This is the time to eliminate unnecessary barriers to these lifesaving services, both in the U.S. and around the world.

METHODOLOGY

From April 25, 2020 to April 26th 2020, Data for Progress conducted a survey of 1741 likely voters nationally using web panel respondents. The sample was weighted to be representative of likely voters by age, gender, education, urbanicity, race, and voting history. The survey was conducted in English. The margin of error is ± 2.4 percent.

COVER PHOTO
Karolina Grabowska/Pexels

SB0279_FAV_Hettleman.pdf
Uploaded by: Hettleman, Shelly
Position: FAV

SHELLY HETTLEMAN
Legislative District 11
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The Senate of Maryland
ANNAPOLIS, MARYLAND 21401

TESTIMONY OF SHELLY HETTLEMAN

SB 279 – Public Health – Overdose and Infectious Disease Prevention Services Program

I, like many of you, know far too many people who have lost loved ones to an overdose. We use the word "crisis," to describe what is happening in our communities today. While overdose deaths were already increasing nationwide in the months preceding the COVID -19 pandemic, the CDC recently reported the highest number of overdose deaths ever recorded in a 12-month period. In Maryland, drug-and alcohol related deaths have increased 12.1% across the state from January to September compared to the same months last year. [1]At least 1,829 fatalities were linked to opioids, a 14.5% jump from the same time a year earlier, according to data released by the state's Opioid Operations Command Center and the Department of Health. Fentanyl, a synthetic opioid 50 to 100 times more potent than heroin, factored into 93.1% of opioid-related deaths. [2]

Last year, our budget directed more than $700 million to this crisis. This year, those who battle substance abuse are also faced with social isolation, disruptions of support, impeded access to care, and economic distress. Experts fear the continued climb in overdose deaths as this crisis rages on.

What we have done and what we are doing is not enough. We need to use ALL available tools – and ones that are evidence-based and have been known to work -- employing a multi-faceted, multi-pronged approach that will save lives.

This committee and the Maryland General Assembly are doing important work -- we are broadening access to treatment, reining in the provision of prescription opioids, launching educational programs in our schools, expanding naloxone access as well as

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[1] Oxenden, M. (2020, September 22). *Drug and alcohol related deaths across Maryland Jump more than 9% due to the Coronavirus officials say*. The Baltimore Sun. https://www.baltimoresun.com/health/bs-hs-opioid-report-first-half-of-year-20200922-2khvu37zhngf7dsiqivulv6ctu-story.html

2 Miller, H. (2021, January 13). *Overdose deaths jump in Maryland, likely due to coronavirus pandemic, health officials say*. The Baltimore Sun. https://www.baltimoresun.com/health/bs-hs-overdose-rate-maryland-coronavirus-pandemic-20210113-rll3kzzv3jd6he2bf44wah5cbm-story.html

medication assisted treatment. But we could be doing more and that's what this bill would enable us to do.

This bill is not a mandate. It's not a directive. It enables local communities to decide what is best for them. Under this bill, if a community organization – a hospital, a local health department, a federal qualified health care center, or a substance use treatment center, for example – wanted to offer an overdose prevention site (OPS), they would work with their local health department, apply for approval to the Department of Health, and get permission to operate: two urban, two suburban, and two rural sites.

Substance users would be permitted to come to the sites with their own pre-obtained substances and use, under the supervision of health care professionals. A variety of services would be offered at these sites – wound care, substance use disorder education, reproductive care, HIV testing, etc.

There are 12 countries that host over 150 overdose prevention sites around the world. In the 17-year history of one of these sites (Insite in Vancouver), there have been **zero** overdose deaths and crime in a 5-mile radius around the OPS has been **reduced** at a substantially higher rate than in other parts of the city. They have overseen 3.6 million injections without a death and overdoses in the surrounding neighborhoods have also declined. Similar programs worldwide have experienced similar results.

What saves lives should be driving our policy decisions. What is evidence-based and has been proven to be effective in decreasing substance abuse should be driving our policy decisions.

What we *were* doing wasn't enough. What we must consider, in light of the devastating and added impacts of the pandemic is a new, but data driven approach. I ask that you keep your mind open and that you listen carefully to the professionals, the experts in the field of substance use and harm reduction. Overdose prevention sites are not a panacea, but they are another very important tool that will help us address this crisis that continues to take so many lives. Respectfully, I ask for your support of SB279. Thank you.

Irwin OPS MD 2021 SB0279 Testimony final.pdf
Uploaded by: Irwin, Amos
Position: FAV

LAW ENFORCEMENT ACTION PARTNERSHIP
ADVANCING JUSTICE AND PUBLIC SAFETY SOLUTIONS

From: Amos Irwin, Law Enforcement Action Partnership
co-authors: Susan Sherman and Brian Weir, Johns Hopkins University
Ehsan Jozaghi, University of British Columbia

Re: SB 0279 - Public Health – Overdose and Infectious Disease Prevention Services Program

Position: SUPPORT

Date: January 22, 2021

To: Maryland Senate Finance Committee

Distinguished Members of the Committee, thank you for the opportunity to present the results of my research on the impact of an overdose and infectious disease prevention site in Baltimore in support of Senate Bill 0279.

I worked with researchers at Johns Hopkins University who have studied Baltimore's population of people who inject drugs and an expert on Vancouver's Insite facility from the University of British Columbia to estimate the impact of an overdose prevention site (OPS) in Baltimore. We assumed that the facility would be modeled on Vancouver's Insite facility, which has thirteen booths. We used research on the costs and benefits of Insite and data on Baltimore's population of people who inject drugs to model the expected costs and benefits of an OPS in Baltimore.

Our study, which was published in the Harm Reduction Journal in May 2017, found that a single OPS would save roughly $7.8 million per year at an annual cost of $1.8 million. This means $6.0 million in annual net savings, equivalent to about 30% of the city health department's entire budget for harm reduction and disease prevention.

Study Results

Savings related to…			
HIV	$1,501,928	3.7	new infections prevented
Hepatitis C	$1,443,827	21.2	new infections prevented
Skin and Soft Tissue Infections	$934,952	374.0	hospital days prevented
Overdose Deaths	$2,997,791	5.9	deaths prevented
Ambulance Calls	$80,995	108.0	calls prevented
Overdose Related ER Costs	$106,159	77.8	ER visits prevented

Overdose Related Hospitalization Costs	$67,092	26.8	hospitalizations prevented
Medication-Assisted Treatment	$637,245	121.4	additional people entering treatment
Total Savings	**$7,769,988**		
Costs	**$1,932,252**		
Annual Operating Cost	$1,767,000		
Annualized Upfront Cost	$165,252		
Summary			
Cost-Benefit Ratio: $1 spent generates	$4.02	savings	
Net savings	$5,837,736		

Appendix: Study Methodology

Cost of Operating the Facility

Cost calculations are based on a facility equal in size and scope to Insite. We estimate the annual cost of establishing a new OPS combines both upfront and operating costs. Since we assume the same staffing levels, equipment needs, and other operating cost inputs as Insite, we calculate the operating costs by multiplying the Insite OPS's $1.5 million operating costs by a 4 percent cost of living adjustment between Vancouver and Baltimore (Jozaghi et al., 2015; Expatistan, 2016). Since the upfront costs would depend on the exact location and extent of renovations required, we make a conservative estimate of $1.5 million based on actual budgets for similar facilities and standard per-square-foot renovation costs (Primeau, 2013; MSIC, 2013). We convert this upfront cost into a levelized annual payment by assuming that it was financed with a loan lasting the lifetime of the facility. We determine the levelized annual payment according to the standard financial equation:

$$C = \frac{i(P)}{1 - (1+i)^{-N}}$$

where C is the calculated levelized annual cost, i is a standard 10 percent interest rate, P is the $2 million estimated upfront cost, and N is the estimated 25-year lifetime of the facility.

Benefits of Operating the Facility

HIV and Hepatitis C Virus (HCV) savings

Kerr et al. (2005) find that OPS use reduces clients' needle-sharing by 70%. To estimate the impact of reduced needle-sharing on HIV and HCV infection rates, we use an epidemiological "circulation theory" model developed to calculate how needle exchange programs impact HIV infection among PWID. We use the Jacobs et al (1999) model to estimate new HIV infection cases (IHIV):

$$I_{HIV} = iNsd[1 - (1 - qt)^M]$$

where i is the percentage of HIV-negative PWIDs, N is the total number of needles in circulation; s is the percentage of injections with a shared needle; d is the percentage of injections with an unbleached needle; q is the percentage of HIV-positive PWIDs; t is the chance of transmitting HIV through a single injection with a shared needle; and M is the average number of people injecting with a single shared needle.

We use the same model for HCV:

$$I_{HCV} = iNsd[1 - (1 - qt)^M]$$

Skin and soft-tissue infection savings

Skin and soft tissue infections are the number one reason for PWID hospital admissions. While uninsured PWID normally wait until their infection becomes serious enough to be admitted to the ER, OPS medical staff provide wound care and medical referrals to treat these infections before they become serious. Lloyd-Smith et al (2010) found that the hospital stays of Insite users were on average 67% shorter. We predict infection care savings according to

$$S_{SSTI} = NhLrC$$

where S_{SSTI} is the annual savings from OPS infection care, N is the number of people using the OPS, h is the hospitalization rate for SSTI, L is the average length of infection-related hospital stay for PWID, r is the 67% stay reduction for OPS users, and C is the average daily cost of a hospital stay.

Averted Overdose Deaths

Marshall et al. (2011) compare the change in overdose deaths within 500 meters of Insite to the change in other Vancouver neighborhoods both before and after the facility's opening. They find a 35 percent reduction in overdose mortality near Insite, compared to a 9 percent reduction further away, suggesting that Insite reduced neighborhood overdose deaths by roughly 26 percent.

We assume that a Baltimore OPS of the same size, also operating near capacity, would reduce overdose deaths in its immediate vicinity by a similar percentage. Most likely this underestimates the facility's impact, since this method only estimates averted overdose deaths within 500 meters of the OPS, though the facility would also reduce overdose more than 500 meters away.

In order to assign value to the loss of life due to overdose, we follow Andresen & Boyd (2010) in considering only the tangible value to society rather than including the suffering and lost quality of life for loved ones. We estimate the tangible value using 30 years of the median wage for Baltimore City, and since the average age of PWID in Baltimore is 35, we convert 30 years of future wages to present value using a discount rate of 3 percent. So the total value of a single overdose death (V) is calculated as:

$$V = \sum_{n=1}^{30} \frac{W}{(1+r)^n}$$

with n equal to 30 years, W as the $25,707 median wage for Baltimore City, and r as the 3 percent discount rate, we find the value to be $503,869.

Medication-Assisted Treatment Savings

Medication-assisted treatment (MAT) programs, principally methadone and buprenorphine maintenance, have been shown to reduce patients' health care needs and criminal activity, as well their drug and alcohol use (Gerstein 1994, Barnett 1999, Zaric 2000, CDC 2002, Flynn et al 2003). Studies estimate that they save taxpayers $4 to $13 for every $1 spent, mostly by reducing users' criminal activity to get money to buy drugs (Cartwright 2000, Gerstein 1994, Health Canada 2002, Harris et al 2005, Hilltop Institute 2007). Studies of Vancouver's Insite show that OPS users are significantly more likely than non-OPS-users to accept referrals to MAT (Wood et al 2006, Wood et al 2007). In Sydney's MSIC, 5.8% of OPS users accepted MAT referrals per year. We estimate the financial benefits of OPS referrals to MAT programs, considering both health care and crime costs, according to the model

$$S_{MAT} = Nr(b-1)T$$

where S_{MAT} is the annual savings due to the OPS increasing MAT uptake, N is the number of PWID who use the OPS, r is the percent of OPS users who access MAT as a result of OPS referrals, b is the cost-benefit ratio for MAT, and T is the cost of one year of MAT.

Ambulance Savings

Overdoses require emergency medical assistance, even when they are not life-threatening. Ambulances are called to the scene of over half of all nonfatal overdoses, at an average cost of around $500 per call. (MSIC 2003) By contrast, almost all overdoses in MSIC, Sydney's OPS, were handled by on-site medical staff and did not result in ambulance calls (MSIC 2003, MSIC 2010). We estimate cost savings of averted ambulance calls for a OPS in Baltimore according to the following model:

$$S_a = Io(c_o - c_i)A$$

where S_a is the annual savings due to the OPS reducing ambulance calls for overdose, I is the annual number of injections in the OPS, o is the rate of nonfatal overdose, c_o and c_i are the rates of overdose ambulance calls outside and inside the OPS, respectively, and A is the average cost of an overdose ambulance call.

Emergency Room Overdose Savings

Emergency response personnel often transport overdose victims to the emergency room for treatment. In one Baltimore study, 72% of PWID who had an ambulance called for an overdose reported being taken to the ER. By contrast, overdoses in OPSs lead to emergency room treatment in less than 1% of cases. With a single Baltimore ER visit averaging $1,364, OPSs reduce medical costs significantly by keeping PWID out of emergency rooms for overdose. We calculate the savings according to:

$$S_{er} = Io(t_o - t_i)F$$

where S_{er} is the annual savings due to the OPS reducing emergency room visits for overdose, I is the annual number of injections in the OPS, o is the rate of nonfatal overdose, t_o and t_i are the rates of ER transport for overdose outside and inside the OPS, respectively, and F is the average cost of an overdose emergency room visit.

Overdose-related hospitalization savings

Overdose victims are occasionally hospitalized for treatment. In one Baltimore study, 26% of PWID who had an ambulance called for an overdose reported being hospitalized. By contrast, overdoses in OPSs lead to hospitalization in less than 1% of cases. With one day in a Baltimore hospital averaging $2,500, OPSs reduce medical costs significantly by keeping PWID out of the hospital for overdose. We calculate the savings according to:

$$S_h = Io(a_o - a_i)E$$

where S_h is the annual savings due to the OPS reducing hospitalization for overdose, I is the annual number of injections in the OPS, o is the rate of nonfatal overdose, a_o and a_i are the rates of hospitalization for overdose outside and inside the OPS, respectively, and E is the average expense of an overdose hospital stay.

For sources or with questions about the study's methodology, sensitivity analysis, discussion, or limitations, please contact me at Amos@LawEnforcementAction.org.

SB 279-OPS_BHSB_SUPPORT.pdf
Uploaded by: Jefferson , Stacey
Position: FAV

Behavioral Health System Baltimore

January 26, 2021

Senate Finance Committee
TESTIMONY IN SUPPORT
SB 279- Public Health-Overdose and Infectious Disease Prevention Site Program

Behavioral Health System Baltimore (BHSB) a nonprofit organization that serves as the local behavioral health authority (LBHA) for Baltimore City. BHSB works to increase access to a full range of quality behavioral health (mental health and substance use) services and advocates for innovative approaches to prevention, early intervention, treatment and recovery for individuals, families, and communities. **Baltimore City represents nearly 35 percent of the public behavioral health system in Maryland, serving over 77,000 people with mental illness and substance use disorders (collectively referred to as "behavioral health") annually.**

Behavioral Health System Baltimore is in support of SB 279- Public Health-Overdose and Infectious Disease Prevention Site Program. This bill authorizes a community-based organization to establish an Overdose and Infectious Disease Prevention Site Program in no more than six locations throughout the state.

COVID-19 has increased the need for mental health and substance use disorder services in Maryland. According to data released by the Maryland Department of Health, the number of overdose deaths from drugs and alcohol in Maryland increased 12% in the first three quarters of 2020 compared to the same time period in 2019.

BHSB supports SB 279 as we recognize the need for innovative public health interventions to address the opioid crisis in Baltimore City and our state. While the General Assembly has taken laudable steps to address the opioid crisis through measures such, as increasing access to the lifesaving drug naloxone and authorizing syringe services programs more interventions are needed.

The Overdose and Infectious Disease Prevention Program proposed in this legislation mirrors the programs established across the world. Evidence from these sites show that facilities that allow safer drug use reduce overdose deaths and provide an entry into treatment. They target high-risk drug-users who would otherwise inject in unsafe places. This population is at significant risk of death from overdose, which medical supervision can effectively eliminate. There has not been a single overdose fatality at any safer drug use facility. A study of a Canadian facility found that overdose mortality dropped 35% in the area surrounding the facility after it opened. [1i] The facilities proposed in this bill can serve as an access point to substance use disorder treatment and other social services. One study of a Canadian facility found that participants increased detoxification services by more than 30 percent.[2]

[1] Brandon DL Marshall et al., "Reduction in overdose mortality after the opening of North America's first medically supervised safer injecting facility: a retrospective population-based study," *The Lancet* 377, no. 9775 (2011): 1429-37.
[2] E Wood et al., "Rate of detoxification service use and its impact among a cohort of supervised injection facility users," *Addiction* 102(2007): 918.

We must continue to look for innovative ways to engage people who use drugs around safer drug use and connections to treatment. The Overdose and Infectious Disease Prevention Site Programs could advance this goal. As such, **BHSB urges the Senate Finance Committee to support SB 279.**

SB0279_FAV_MedChi, MDACEP, MACHC_Overdose Preventi

Uploaded by: Kasemeyer, Pam

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TO: The Honorable Delores G. Kelley, Chair
Members, Senate Finance Committee
The Honorable Shelly Hettleman

FROM: Pamela Metz Kasemeyer
J. Steven Wise
Danna L. Kauffman

DATE: January 26, 2021

RE: **SUPPORT** – Senate Bill 279 – *Public Health – Overdose and Infectious Disease Prevention Services Program*

On behalf of the Maryland State Medical Society (MedChi), the Maryland Chapter of the American College of Emergency Physicians (MDACEP), and the Mid-Atlantic Association of Community Health Centers (MACHC), we submit this letter in **support** of Senate Bill 279.

This legislation provides that a community-based organization may establish an Overdose and Infectious Disease Prevention Services Program in one or more counties with the approval of the Department of Health, in consultation with the local health department. The legislation limits the program to approval of six programs, two in urban areas, two in suburban areas, and two in rural areas. The program must provide a location supervised by health care professionals or other trained staff where drug users can consume pre-obtained drugs. The program must also provide sterile injection supplies, information regarding safe injection practices, and referrals to obtain naloxone and treatment services.

According to the February 2017 Abell Foundation Report, about 19,000 people inject drugs in Baltimore City. Although hundreds of people suffer overdose deaths each year, thousands more experience nonfatal overdose, skin and soft tissue infections, and are at risk for infectious diseases due to unsafe and unsterilized injection environments.

The first official supervised drug consumption facility opened in Berne, Switzerland in 1986. Today, there are 97 facilities in 66 cities in 11 countries, with an additional seven planned to open in Canada alone. A large body of evidence-based, peer-reviewed studies demonstrate that people who utilize these facilities take better care of themselves; use their drugs more safely; and have better access to medical, social, and drug treatment services.

MedChi, MDACEP, and MACHC recognize the research and the potential that these facilities can reduce the costs associated with this public health crisis. For these reasons, the above-named organizations would ask for a favorable report on Senate Bill 279.

For more information call:
Pamela Metz Kasemeyer
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2021 OPS Testimony_Kattakuzhy.pdf
Uploaded by: Kattakuzhy, Sarah
Position: FAV

January 26, 2020

Chair Delores Kelly
Finance Committee
Miller Senate Office Building, 3 East
Annapolis, MD 21401

RE: SUPPORT of Senate Bill 279
(Public Health - Overdose and Infectious Disease Prevention Services Program) - FAVORABLE

Dear Chair Kelly and Senate Finance Committee Members,

My name is Sarah Kattakuzhy, MD, and I am a physician, scientist, and Assistant Professor at the University of Maryland School of Medicine in Baltimore. I am writing this letter to offer my full support to Senate Bill 279 "Overdose and Infectious Disease Prevention Services Program," which will allow community-based organizations to establish overdose prevention programs to reduce overdose deaths, which continue to occur at unprecedented levels in Maryland.

I have practiced and conducted research in the fields of HIV, viral hepatitis, and opioid use disorder over the last ten years. The data on Overdose Prevention Sites is unequivocal- not only in preventing overdose, but in reducing HIV and HCV transmission risk behaviors, and linking individuals with opioid use disorder into treatment. Furthermore, data supports that individuals with opioid use disorder want Overdose Prevention Sites, and would utilize them as a culturally-competent space centered in safety, compassion, and dignity. The "War on Drugs" philosophy of alienation, segregation, and stigmatization has left 750,000 Americans dead in the last 20 years. As a physician, I urge the Committee to listen to science, reason, and the voices of your constituents most affected by opioid use disorder.

I ask that the Finance Committee give SB279 a favorable report. If you have any further questions, I would be delighted to speak further on this vital and timely bill. I can be contacted at 202-550-2685 and at skattakuzhy@ihv.umaryland.edu.

With deep regards,

Sarah Kattakuzhy, MD

testimony.pdf
Uploaded by: Kerr, Samantha
Position: FAV

January 26, 2020

Chair Delores Kelly

Finance Committee

Miller Senate Office Building, 3 East

Annapolis, MD 21401

RE: SUPPORT of Senate Bill 279

(Public Health - Overdose and Infectious Disease Prevention Services Program) - FAVORABLE

Dear Chair Kelly and Senate Finance Committee Members,

Baltimore Harm Reduction Coalition, BHRC mobilizes community members for the health, dignity, and safety of people targeted by the war on drugs and anti-sex worker policies.

We advocate for harm reduction as part of a broader movement for social justice. supports Senate Bill 279 “Overdose and Infectious Disease Prevention Services Program,” which will allow community based organizations such as our organization to establish overdose prevention programs to reduce overdose deaths, which continue to occur at unprecedented levels in Maryland.

Baltimore Harm Reduction Coalition is an organization that educates and mobilizes people who are using drugs and sellng sex. We provide life saving equipment to the people most affected by the epidemic. Overdose Preventoin Sites will enable us to better serve the people in need.

For over 30 years, it has been proven that Overdose Prevention Sites save lives. We urge the General Assembly to authorize overdose and infectious disease prevention services, a proven intervention used across the globe to decrease overdose deaths. The proposed Overdose and Infectious Disease Prevention Services Program mirrors more than 150 such programs already established across the world. More than 60 cities in 12 countries operate such programs, and numerous studies demonstrate the positive impacts. In all of the 150+ OPS around the world, in which millions of supervised drug injections have occurred, **no one has died of a fatal overdose**.

We ask that the Finance Committee give SB279 a favorable report.

For more information about Baltimore Harm Reduction Coalition or this position, please contact Candy at candy@baltimoreharmreduction.org.

2021 OPS Callanan Testimony.docx.pdf

Uploaded by: Love, Lukah

Position: FAV

January 26, 2020

Chair Delores Kelly
Finance Committee
Miller Senate Office Building, 3 East
Annapolis, MD 21401

RE: SUPPORT of Senate Bill 279
(Public Health - Overdose and Infectious Disease Prevention Services Program) - FAVORABLE

Dear Chair Kelly and Senate Finance Committee Members,

I am writing to express my support for Senate Bill 279 “Overdose and Infectious Disease Prevention Services Program,” which will allow community based organizations such as Baltimore Harm Reduction Coalition and BRIDGES Coalition to establish overdose prevention programs to reduce overdose deaths, which continue to occur at unprecedented levels in Maryland.

When asked what he thinks happens to us when we die, Keanu Reeves once said, “I know that the ones who love us will miss us.” Every life cut short due to overdose is a tragedy, both because each death is a person gone far too early, and because every loss rips a hole in the lives of those left behind. I have personally lost a number of close friends to overdose, and I truly believe that these people would still be in my earthly life today if they had had access to an Overdose Prevention Site such as the one being proposed in this bill. If my loved ones had been able to visit an Overdose Prevention Site, I wouldn’t have visions of them losing consciousness in their car, or on the kitchen floor as their grandparents slept in the next room. I wouldn’t fear that the shivering wracking my bed would suddenly stop, or worry what I might find when I check on my partner who has been in the bathroom for too long. I wouldn’t know the feeling of helplessness as he began turning blue on our floor while I desperately tried to find someone with Naloxone because we didn’t have any in our house.

Instead, I would have the comfort and confidence that each and every one of these friends would be supported, watched over, and cared for as they used their supply. I could sleep easy knowing that they would come home, that I would get another day with them - another day of hugs and laughter, of homemade biscuits and gravy and inside jokes.

I ask you to support Senate Bill 279 because I want people like my friends to stick around. I also ask for your support so that people like me don’t have to go through life missing those people - so that we can have our days of love and laughter instead of an agonizing hole of grief.

For over 30 years, it has been proven that Overdose Prevention Sites save lives. I urge the General Assembly to authorize overdose and infectious disease prevention services, a proven intervention used across the globe to decrease overdose deaths. The proposed Overdose and Infectious Disease Prevention Services Program mirrors more than 150 such programs already established across the world. More than 60 cities in 12 countries operate such programs, and numerous studies demonstrate the positive impacts. In all of the 150+ OPS around the world, in which millions of supervised drug injections have occurred, **no one has died of a fatal overdose**.

In summary, I respectfully ask that the Finance Committee give SB279 a favorable report.

Sincerely,

Amy Callanan
2814 Echodale Ave
Baltimore, MD 21214

Progressive Maryland Testimony SB 279.pdf
Uploaded by: Marguerite, Christianne
Position: FAV

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Testimony on Maryland Senate Bill 279
Public Health – Overdose and Infectious Disease Prevention Services Program

TO: Sen. Kelley, Chair, and members of the Senate Finance Committee
FROM: Katy Edwards, Progressive Maryland Drug Policy Taskforce Leader, Anne Arundel County (D30)
DATE: January 22, 2021
POSITION: Support

Thank you for the opportunity to offer testimony on SB279. Progressive Maryland is a grassroots, nonprofit organization with 9 chapters from Frederick to the Lower Shore and more than 100,000 members and supporters who live in nearly every legislative district in the state. In addition, there are dozens of affiliated community, faith, and labor organizations across the state that stand behind our work. Our mission is to improve the lives of working families in Maryland. Please note our strong support for this bill.

My name is Katy Edwards and I currently work in police diversion here in the city of Annapolis. I have nine years of experience in behavioral health and throughout this time I have seen how the War on Drugs is a direct attack on impoverished communities throughout this country.

Overdose Prevention Sites are currently an essential need throughout the state of Maryland. "Over 81,000 drug overdose deaths occurred in the United States in the 12 months ending in May 2020." In light of these absolutely horrifying numbers, it is essential to reflect on the fact that OPS sites have never had one single death occur. This is an evidence-based method which reliably saves people's lives. This fact clearly signals that this bill has not been passed due to remaining stigma placed on drug users throughout our state. If we look to Portugal where overdose prevention sites operate and illicit substance use has been decriminalized, we see extremely large drops in substance use as a whole and consequently a huge drop in overdose deaths.

Currently in America, we place moral judgements on drug user's lives and continue to dangerously displace many Maryland residents who currently exhibit co-occurring symptoms. For so many people the path to recovery is not a linear process. It is a well-known fact in behavioral health that many drug users face mental health barriers and community stigma only escalates those conditions. In the end, if we are aware that creating safe space for stigmatized people saves lives, we should all aim to work towards that goal. I call upon my elected officials to continue to work for all people of Maryland without stigma. We urge a favorable report.

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Testimony on Maryland Senate Bill 279
Public Health – Overdose and Infectious Disease Prevention Services Program

TO: Sen. Kelley, Chair, and members of the Senate Finance Committee
FROM: Joseph Dacey, Progressive Maryland Drug Policy Taskforce Leader, Baltimore (D44A)
DATE: January 22, 2021
POSITION: Support

Thank you for the opportunity to offer testimony on SB279. Progressive Maryland is a grassroots, nonprofit organization with 9 chapters from Frederick to the Lower Shore and more than 100,000 members and supporters who live in nearly every legislative district in the state. In addition, there are dozens of affiliated community, faith, and labor organizations across the state that stand behind our work. Our mission is to improve the lives of working families in Maryland. Please note our strong support for this bill.

I am writing in strong support of SB279 to establish supervised consumption and overdose prevention sites (OPSs) across the state of Maryland.

For too long, people who are addicted to drugs have been driven away from help – away from resources that can give them hope and an escape - due to the fear of prosecution and imprisonment. Often a law enforcement officer, a correctional officer, or a probation officer may be the only contact the state has with an addicted person. It is not their job – nor should it be their job - to connect the person to social services that can help them through their addiction. This is where an overdose prevention site can be a critical lifeline to an addicted person.

The staff of the OPS is an off-ramp from addiction that can avoid the use of law enforcement and correctional resources. People who are addicted can be directly linked with services at the OPS at the time when they are needed without the constant threat of arrest or harassment. They will be treated as people in need of help instead of criminals who need to be locked up.

Please stand up against policies which morally condemn our community members who are currently experiencing a public health crisis. You can do this by supporting Senate Bill 279. This policy would be one step closer to helping those that are in need of evidence-based assistance without subjective condemnation. We urge a favorable report.

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Testimony on Maryland Senate Bill 279
Public Health – Overdose and Infectious Disease Prevention Services Program

TO: Sen. Kelley, Chair, and members of the Senate Finance Committee
FROM: Wanda Bannerman, Progressive Maryland Drug Policy Taskforce Leader, Prince George's County (D27A)
DATE: January 22, 2021
POSITION: Support

Thank you for the opportunity to offer testimony on SB279. Progressive Maryland is a grassroots, nonprofit organization with 9 chapters from Frederick to the Lower Shore and more than 100,000 members and supporters who live in nearly every legislative district in the state. In addition, there are dozens of affiliated community, faith, and labor organizations across the state that stand behind our work. Our mission is to improve the lives of working families in Maryland. Please note our strong support for this bill.

It is sad to say we humans are so fragile and weak that drug use seems to be the way many people deal with problems. In a perfect world, there would be no need for drug Illicit drug use. We are not living in a perfect world! In our sad difficult life, many people find escape through drugs these drugs sometimes ruin their future and take their lives many times they go to jail and harm their bodies. If we can find a way to at least allow people to live through this tragic experience then perhaps they can get on the road to recovery. Inside of an overdose prevention site, our community members could find a safe environment to use and maybe find a way out, a way back to a safe normal life.

I beg you to agree to try this please for us to work as a community and save people. We should review and understand how these sites have helped other communities. There is no cost-effectiveness for simply locking people up.

Thank you for your time and attention. We urge a favorable report.

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Testimony on Maryland Senate Bill 279
Public Health – Overdose and Infectious Disease Prevention Services Program

TO: Sen. Kelley, Chair, and members of the Senate Finance Committee
FROM: Eryck Stamper, Progressive Maryland Drug Policy Taskforce Leader, Baltimore (D46)
DATE: January 22, 2021
POSITION: Support

Thank you for the opportunity to offer testimony on SB 279. Progressive Maryland is a grassroots, nonprofit organization with 9 chapters from Frederick to the Lower Shore and more than 100,000 members and supporters who live in nearly every legislative district in the state. In addition, there are dozens of affiliated community, faith, and labor organizations across the state that stand behind our work. Our mission is to improve the lives of working families in Maryland. Please note our strong support for this bill.

I'm writing to urge you to support SB 279. The creation of an important program like the Overdose and Infectious Disease Prevention Service Program is important to me and I believe many in my local community and state as a whole will benefit from its offerings and language.

This afternoon I went outside to walk a guest to their vehicle, we had to dodge various needles, plungers and broken drug burned glass in the gutter and area next to their car. A real sad, painful and embarrassing moment as a property owner as I have pride in ownership and care for our community. As a father attempting to raise my daughter in a clean, healthy safe and sound environment, this is not acceptable. She's 12 years old and not even allowed beyond the limited bounds of our small yard and chained fence alone (how did we play at 12?). I can't trust many areas we traverse as we see people literally strung out laying on the street in drug induced states, fighting and screaming over drugs and money. This is traumatic coming from a military Veteran who suffers medical conditions and even more harmful on the forming brain of a young girl. I can't keep my blinders on and ignore it any longer as I travel our great state of Maryland. These are hard realities to face and even harder questions and daily reminders to answer to my daughter in our current state.

We urge a favorable report.

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Testimony on Maryland Senate Bill 279
Public Health – Overdose and Infectious Disease Prevention Services Program

TO: Sen. Kelley, Chair, and members of the Senate Finance Committee
FROM: Henry Farkas, Progressive Maryland Drug Policy Taskforce Leader, Baltimore County (D11)
DATE: January 22, 2021
POSITION: Support

Thank you for the opportunity to offer testimony on SB 279. Progressive Maryland is a grassroots, nonprofit organization with 9 chapters from Frederick to the Lower Shore and more than 100,000 members and supporters who live in nearly every legislative district in the state. In addition, there are dozens of affiliated community, faith, and labor organizations across the state that stand behind our work. Our mission is to improve the lives of working families in Maryland. Please note our strong support for this bill.

As an old, retired emergency physician, I've seen and treated many drug overdose patients. The problem with drug overdoses is that they need to be treated within five minutes of cessation of breathing. If treated in time, the patient lives. If not treated in time, the patient dies. It's that simple. That's why having a place to go in order to shoot up drugs of abuse is so important.

But there are more reasons to fund this initiative. Drugs are more dangerous than ever. That's because fentanyl and the various chemical cousins of fentanyl are both extremely potent and less expensive than heroin. Heroin needs to be imported. Fentanyl can be made in a lab in someone's basement or garage. Fentanyl is so potent that the amount needed to kill is less than a hundredth of an ounce, considerably less. And the powder can be absorbed through the skin.

Also, having a place to use these dangerous drugs where there's an available rescuer with Narcan, the rescue drug, means that the drug abusers will come in contact with someone who can refer them for detox and rehab. The abusers will have chances to get plugged in to treatment and recovery.

We urge a favorable report.

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Testimony on Maryland Senate Bill 279
Public Health – Overdose and Infectious Disease Prevention Services Program

TO: Sen. Kelley, Chair, and members of the Senate Finance Committee
FROM: Alfrieda Hylton, Progressive Maryland Drug Policy Taskforce Leader, Prince George's County (D24)
DATE: January 22, 2021
POSITION: Support

Thank you for the opportunity to offer testimony on SB 279. Progressive Maryland is a grassroots, nonprofit organization with 9 chapters from Frederick to the Lower Shore and more than 100,000 members and supporters who live in nearly every legislative district in the state. In addition, there are dozens of affiliated community, faith, and labor organizations across the state that stand behind our work. Our mission is to improve the lives of working families in Maryland. Please note our strong support for this bill.

I have a granddaughter who's 27 years of age, a heroin addict and I've seen the side effects of the drugs and witness withdrawals, reckless behavior, where she becomes unrecognizable. Thank you for the opportunity to discuss the overdose crisis and to share my views on how it's affecting individuals, families, and communities across our nation. I'm devasted by the misused and increasing prescription and illicit opioid abuse, addiction, and overdose, including paraphernalia, heroin, and methadone. The most alarming is the significant and continued increases in overdose deaths. Too many of our citizens are being robbed of their God-given potential in the prime of their life. Healthcare providers prescribed opioids to treat pain in ways that are high risks associated with opioid abuse, addiction, and overdose when prescribed at high doses and longer durations. There is a lack of health system and healthcare provider capacity to identify and engage individuals that provide them with high-quality, evidence-based opioid addiction treatment.

According to the Center for Disease Control and Prevention in Maryland, nearly 90% of drug overdose deaths involved opioids in 2018; a total of 2,087 deaths (a rate of 33.7) and, in 2018, 67,367 drug overdose deaths occurred in the United States. The age-adjusted rate of overdose deaths decreased by 4.6% from 2017 (21.7 per 100,000) to 2018 (20.7 per 100,000). Opioids—mainly synthetic opioids (other than methadone) are currently the main driver of drug overdose deaths. Opioids were involved in 46,802 overdose deaths in 2018 (69.5% of all drug overdose deaths). Two out of three (67.0%) opioid-involved overdose deaths involved synthetic opioids. Thus, treating only the individual with the active disease of addiction is limited in effectiveness.

Do you know that you can help people who are most at risk for opioid use disorder and overdose in the State of Maryland? As well as helping those struggling with opioid, heroin, and methadone use disorder find the right care and treatment. I strongly believe representatives of District 24 are willing to take a

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major step to combat substance misuse and protect the State of Maryland communities from the scourge of opioid, heroin, and methadone addictions by providing support to those individuals fighting addictions and having access to appropriate interventions treatment facilities, as well as expanding government services to individuals battling with drug addiction.

We urge a favorable report.

BCA_FAV_SB0279.pdf
Uploaded by: Mehu, Natasha
Position: FAV

BRANDON M. SCOTT
MAYOR

Office of Government Relations
88 State Circle
Annapolis, Maryland 21401

SB 279

January 26, 2021

TO: Members of the Senate Finance Committee

FROM: Natasha Mehu, Director of Government Relations

RE: SENATE BILL 279 – Public Health – Overdose and Infectious Disease Prevention Services Program

POSITION: SUPPORT

Chair Kelley, Vice Chair Feldman, and Members of the Committee, please be advised that the Baltimore City Administration (BCA) **supports** Senate Bill (SB) 279.

SB 279 authorizes the establishment of up to six overdose and infectious disease prevention serves programs in Maryland. The programs would be established by community-based organizations with the approval of the Department of Health in consultation with the local health department. The sites must be located in areas with high incidences of drug use and may not be located in residential areas. To ensure geographic diversity, the programs would be limited to two programs in urban areas, two programs in suburban areas, and two programs in rural areas of the state to the extent practicable. The bill also outlines staffing, operations, education, and reporting requirements.

Opioid overdoses are a persistent public health crisis in Baltimore City and across the country. Between 1999 and 2014, opioid related overdose deaths quadrupled in the United States, increasing from an age-adjusted death rate from 1.4 to 5.9 per 100,000.[1] In just the first half of 2020, 427 opioid overdose deaths were reported in Baltimore City.[2]

[1] Kennedy, M., & Kerr, T. (2017, January). Overdose Prevention in the United States: A Call for Supervised Injection Sites. Retrieved November 20, 2020, from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5308167/

[2] Cohn, M. (2020, June 11). Opioid-related deaths make a disappointing uptick in early 2020, possibly related to coronavirus. Retrieved November 20, 2020, from https://www.baltimoresun.com/health/bs-hs-overodose-deaths-first-quarter-20200611-r5pvlyzqrffo3ndvwc2oh3y7cy-story.html

Combined with the effects of COVID-19, opioid overdoses and overdose-related deaths are anticipated to climb.[3]

A potential option to address substance use disorder in Baltimore City is the establishment of an overdose and infectious disease prevention site (OPS). An OPS, also known as a "supervised consumption site," is a "harm reduction intervention that helps to mitigate the harms of drug use, through onsite monitoring and rapid intervention by trained staff in the case of an overdose."[4] A successful OPS will often offer safe consumption and observation rooms staffed by medical professionals, education and access to Medicated Assisted Treatment (MAT), recovery counseling, basic medical services, referrals, and support services such as housing assistance, public benefits, and legal services. This model reduces harm to a client's health while connecting them to care and recovery.[5] Altogether, the program is part of a continuum of care for people with substance use challenges who often have complex medical needs including severe mental illness, HIV/AIDS, and/or Hepatitis C.[6]

At present, no OPS facilities exist in the United States. However, Philadelphia has sought to establish an OPS site, which is pending federal litigation.[7] In North America, an OPS was established in Vancouver, Canada as early as 2003, and several more are now situated throughout the Vancouver area.[8] Throughout the world, there are approximately 120 OPS in 11 countries and 2 in the planning phase.[9]

In Baltimore City, it is difficult to predict how an OPS would function given the above-mentioned legal hurdles faced by Philadelphia and the lack of OPS in cities with demographics akin to Baltimore's. However, a study led by Johns Hopkins Bloomberg School of Public Health (BSPH) researchers published in June of 2019 in the Journal of Urban Health found that 77% of 326 survey participants who use drugs in three East Coast cities expressed willingness to use OPS.[10] Moreover, a Baltimore City-focused 2017 study led by Dr. Susan Sherman, a professor at the BSPH, estimated that a $1.8 million annual investment in an overdose prevention site would save the health care

---

[3] Ibid.

[4] Pauly, B., Wallace, B., Pagan, F., Phillips, J., Wilson, M., Hobbs, H., & Connolly, J. (2020, May 21). Impact of overdose prevention sites during a public health emergency in Victoria, Canada. Retrieved November 20, 2020, from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7242015/

[5] Ibid.

[6] Ibid.

[7] Special to the Capital-Star, P. (2020, November 19). Overdose prevention network advocates for Philly safe injection site: Pennsylvania Capital. Retrieved November 20, 2020, from https://www.penncapital-star.com/blog/overdose-prevention-network-advocates-for-philly-safe-injection-site/

[8] Kennedy, M., & Kerr, T. (2017, January). Overdose Prevention in the United States: A Call for Supervised Injection Sites. Retrieved November 20, 2020, from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5308167/

[9] Countries with OPS: Switzerland, Germany, Netherlands, Sydney Australia, Canada, Spain, Denmark, Norway, France, Australia, Luxemburg, Ireland (1 planned), Scotland (1 planned). Supervised Consumption Services. (n.d.). Retrieved November 20, 2020, from https://drugpolicy.org/issues/supervised-consumption-services

[10] "5 Things to Know About Overdose Prevention Sites | Hopkins ...." 25 Sep. 2019, https://magazine.jhsph.edu/2019/5-things-know-about-overdose-prevention-sites. Accessed 16 Nov. 2020.

system $7.8 million each year through reductions in infections such as HIV and hepatitis C, ambulance calls, emergency department visits, and hospitalizations.[11]

Establishing OPS in Baltimore City would require overcoming several hurdles including legality, funding, and buy-in from community members and law enforcement. SB 279 provides some assistance for overcoming those hurdles by creating a process in state law for establishing OPS; setting parameters for OPS programs that include supervision by health care professional or other trained staff who can administer first aid and monitor and provide rescue medication if needed; sterile supplies and disposal services; access or referrals to treatment, testing, or other health services; education; and security.

BCA is supportive of all safe and legal evidence-based approaches to addressing the opioid crisis and welcomes a discussion to determine whether overdose prevention sites are a viable option for Baltimore City.

Accordingly, the BCA respectfully requests a **favorable** report on Senate Bill 279.

[11] A. Amlani, G., IM. McIntyre, D., ME. Smith, N., IA. Binswanger, T., TA. Takahashi, M., E. Wood, M., . . . RP. Schwartz, P. (1970, January 01). Mitigating the heroin crisis in Baltimore, MD, USA: A cost-benefit analysis of a hypothetical supervised injection facility. Retrieved November 20, 2020, from https://harmreductionjournal.biomedcentral.com/articles/10.1186/s12954-017-0153-2

SB279 FAV BRIDGES Coalition for OPS.pdf
Uploaded by: Morris, Ricky
Position: FAV

BRIDGES COALITION
for Overdose Prevention Sites
Safety. Health. Dignity. Justice.

January 26, 2020

Chair Delores Kelly
Finance Committee
Miller Senate Office Building, 3 East
Annapolis, MD 21401

RE: SUPPORT of Senate Bill 279

(Public Health - Overdose and Infectious Disease Prevention Services Program) - FAVORABLE

Dear Chair Kelly and Senate Finance Committee Members,

BRIDGES Coalition for Overdose Prevention Sites supports SB 279 “Overdose and Infectious Disease Prevention Services Program,” which will allow community based organizations, such our trained membership of over 100 advocates, to establish overdose prevention programs to reduce overdose deaths, which continue to occur at unprecedented levels in Maryland.

Founded in March 2017, BRIDGES Coalition for Overdose Prevention Sites is a statewide Baltimore-based advocacy coalition working to end overdose and criminalization by promoting safe spaces, dignity, health, and justice for people who use drugs. BRIDGES was founded with funding from the Drug Policy Alliance and Open Society Foundations, international resources for drug policy reform and reparative justice for communities harmed by the war on drugs. Our coalition was created to address needs named by Maryland policymakers during committee hearings and delegation meetings in 2016, when then-Delegate Dan Morhaim first presented this bill to authorize OPS.

Since the inception of BRIDGES in March 2017, our statewide coalition’s purpose is to strengthen community buy-in for overdose prevention sites (OPS). Comprised of 30 organizational members dedicated to advocate for Maryland State authorization of OPS, we have led public education and community mobilization efforts via: monthly community organizing meetings, mock demonstrations of OPS, community dialogues, informational hearings with Baltimore City Council, online messaging campaigns, an educational video series, focus groups, surveys with various stakeholders, and seven Maryland General Assembly committee hearings. For four years, we have engaged in well over 3,000 conversations and more than a dozen public events hosted by places of worship, treatment programs, neighborhood associations, and public officials -- all with the same goal of addressing potential community concerns around overdose prevention sites being set up around the state.

Maryland needs Overdose Prevention Sites; indoor spaces where individuals can consume their own drugs in the presence of trained professionals with immediate access to life-saving interventions, medical care, emotional support, and non-judgmental therapeutic relationships.

We recognize that OPS are not the sole solution to the overdose epidemic and could never replace treatment services. OPS are a crisis intervention positioned within the continuum of care to reduce overdose rates. To most effectively save lives from the growing overdose epidemic, Marylanders need and deserve overdose prevention sites that are community and peer-run, grounded in mutual aid efforts, and implemented with a social justice framework.

For over 30 years, it has been proven globally that overdose prevention sites save lives. In all 150+ OPS around the world, in which millions of supervised drug injections have occurred, no one has died of a fatal overdose. We urge the General Assembly to authorize the proposed Overdose and Infectious Disease Prevention Services Program, which mirrors these programs already established across the world.

We ask that the Senate Finance Committee give SB279 a favorable report.

For more information about the BRIDGES Coalition for Overdose Prevention Sites, please contact Rajani Gudlavalleti at rajani@baltimoreharmreduction.org.

GASSOH GOBA 2021 OPS TESTIMONY .pdf
Uploaded by: O'Keefe, Owen
Position: FAV

Good afternoon members of the Senate and fellow Marylanders, my name is Gassoh Goba, a resident of Baltimore City and former Chapter Lead of Sex Workers Outreach Project (SWOP), an all volunteer organization championing the human and civil rights of people in the sex trade.

I'm urging you to pass SB0279, so people who use drugs and harm reductionists can continue the work of dismantling the internal and external damages wrought by the racists and classist War on Drugs - legally and safely.

Many harm reductionists and peers today will uplift the various safety, financial and public health benefits that legalizing Overdose Prevention Sites will garner so, I will highlight the importance of this bill to adults living with childhood and adult trauma wounds.

Adverse Childhood Experiences, a term coined in 1995, is a subset of childhood adversities typified by abuse, neglect and household dysfunction which children and adults who score highly have an increased likelihood of experiencing health issues ranging from substance abuse, suicidal attempts, depression, missed work and poor academic achievement.

Countless studies have been published by the Center of Disease Control, the National Library of Medicine or Harvard University's Center for the Developing Child that highlight the insidious ways prolonged, toxic stress negatively impacts the molecular biology of developing children and adults, further widening the chasm of community and health disparities experienced by communities burdened by such traumas.

Communities disproportionately made up of black and brown, immigrants and indigenous peoples who are working poor, disabled, queer, young, houseless or formerly incarcerated - made to suffer the yolk of systems and policies that have yet to be repatriated.

As an organizer with SWOP Baltimore, I have connected with dozens of people who use drugs and sell sex in the streets of Baltimore City; many of the people I met during those times shared experiences of childhood and adult trauma, citing this pain as reasons why they use - as a balm for the pain.

I will never forget one woman in particular who frustratingly expressed "how do they expect me to heal 50 years of trauma and pain in a 90 day program"?

The reality for many people who use drugs in Maryland is that they are not ready to stop using and, by forcing paternalistic services and programs that do not recognize the extent of trauma, we are again failing residents and the generations of peoples who have passed who also struggled to carry the yolk of multiple oppressions, childhood and adult trauma.

As we move away from the shadow of the Trump presidency and the potential promise of Biden's administration, I urge you, be unafraid of innovation and creative solutions; cultivate compassion and empathy for residents who are falsely seen as "lost or wasted souls".

I am urging you to not only see but invest in the humanity of people who use drugs, in Overdose Prevention Sites that will be a bridge of connectivity, supporting Marylanders to chart their own healing journey with peers, medical professionals and trauma-informed personnel; to support the creation of spaces, like OPS's, where people who drugs can safely begin unpacking layers of pain within a continuum of care that will not disparage them for using drugs or abandon them for healing at their own pace.

Let 2021 finally be the year we move towards building systems of freedom instead of oppression; building tools of connection instead of isolation; fostering hope instead of despair.

Let 2021 be the year Maryland legalizes Overdose Prevention Sites and witness the powerful healing connection can play in our communities - thank you.

MATOD - SB 279 FAV - Overdose Prevention Services

Uploaded by: O'Keefe, Owen

Position: FAV

c/o IBR/REACH Health Services
2104 Maryland Avenue
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Senate Finance Committee
January 26, 2021

Senate Bill 279
Public Health - Overdose and Infectious Disease Prevention Services Program

Support

The Maryland Association for the Treatment of Opioid Dependence (MATOD) supports Senate Bill 279, which will allow jurisdictions to develop Overdose and Infectious Disease Prevention programs to reduce fatal and non-fatal overdoses, and provide a pathway for people toward needed health care.

Fatal Opioid-related overdoses climbed over 14% from January to September 2020 compared to the same 2019 time-frame. The current increase in fatal overdoses translates to the loss of over 2,400 Marylanders during 2020 from Opioid misuse. Despite Maryland's continued efforts of Prevention, Enforcement and Treatment & Recovery, Opioid addiction and misuse in 2020 will unfortunately claim the largest number of Maryland lives in any single year on record.

Maryland's "all hands on deck" "all tools available" approach has effectively saved lives with harm reduction efforts of increased naloxone distribution and syringe exchange services; increased access and availability to evidenced-based Medication Assisted Treatment (MAT) with Methadone and Buprenorphine; greater implementation of Peer Recovery Specialists in medical and community settings and creative jurisdictional Opioid Intervention Teams (OIT) across the state. More is urgently needed, however, in order to save lives and change the trajectory of the continued Opioid crisis.

Substance Use, Behavioral Health and medical care and treatment is only be effective when and if it's received. The U.S. Surgeon General's 2016 "Facing Addiction" report noted that "only 1 in 10 people with a substance use disorder receive any type of substance use treatment". SB 279 can provide life-saving services for those 90% of Marylanders with the manageable disease of addiction who are not yet engaged in treatment.

The proposed Overdose and Infectious Disease Prevention Services Program is based on similar programs operating in more than sixty (60) cities in ten (10) countries. The results and evidence from these successful harm-reduction facilities is unequivocal – they reduce overdose deaths, provide an entry into treatment, reduce public use and publicly discarded syringes, are cost-effective and they do not encourage or increase additional drug use or crime.

Maryland needs to join the six (6) states considering legislative approval of such sites, and provide another tool in the great work being done to reduce overdose deaths and improve access to needed health care.

MATOD urges a favorable report on SB 279.

MATOD members include community and hospital based Opioid Treatment Programs, local Health Departments, local Addiction and Behavioral Health Authorities and Maryland organizations that support evidence-based Medication Assisted Treatment. MATOD members include thousands of highly trained and dedicated addiction counselors, clinical social workers, physicians, nurse practitioners, physician assistants, nurses, peer recovery specialists and dedicated staff who work every day to save and transform lives.

Repair Now.pdf
Uploaded by: O'Keefe, Owen
Position: FAV

January 26, 2020

Chair Delores Kelly
Finance Committee
Miller Senate Office Building, 3 East
Annapolis, MD 21401

RE: SUPPORT of Senate Bill 279
(Public Health - Overdose and Infectious Disease Prevention Services Program) - FAVORABLE

Dear Chair Kelly and Senate Finance Committee Members,

Repair Now, a nonprofit organization founded in 2017, supports Senate Bill 279 “Overdose and Infectious Disease Prevention Services Program,” which will allow community based organizations such as our organization to establish overdose prevention programs to reduce overdose deaths, which continue to occur at unprecedented levels in Maryland.

Repair Now provides information about the rights of people with criminal records and criminal statuses, is focused on providing information pertaining to expungement, records mitigation, and voting eligibility.

Maryland is in the midst of an epidemic of accidental, fatal opiate & opioid overdoses because we are in the midst of a disaster caused by drug prohibition and the drug war. The leading driver of accidental, fatal overdoses is drug prohibition. When we make public policy decisions which lead consumers of any substance to acquire it in the illicit market, we are guaranteeing specific outcomes which will inevitably lead to accidental, fatal overdoses.

In the illicit market, there are no quality controls. There are no safety inspectors or safety regulations. And, each person in the supply chain between the producer and the consumer has a financial incentive to adulterate the substance in question in order to increase their personal financial gain. Every time a substance user consumes a substance obtained in the illicit marketplace, they’re doing so without knowing exactly what they may be ingesting unintentionally.

Prohibition also ensures an unnecessary negative impact in public health outcomes for those who are not using illicit substances. Illicit drug use disproportionately affects those who are homeless or facing housing and employment instability. As a result, many substance users are consuming or ingesting in public spaces, like restrooms or parks. This poses a potential health risk to the public at large and also increases the likelihood of accidental, fatal overdose for substance users who are ingesting in whatever secluded space they can find due to their fear of arrest and stigmatization.

Now, of course I understand that this body does not have the power or purview to end the drug war and drug prohibition on its own. But what it can do, is ensure that overdose prevention sites and decriminalization of simple possession of all drugs are part of any strategy to deal with this issue.

Overdose prevention sites are already operating in other parts of the world, including Europe

and Canada. None of these facilities has ever had a single fatal overdose despite having been in operation for years and, in some cases, decades. These facilities also provide a point of service between public health professionals & social workers with those who are experiencing a substance use disorder.

With respect to decriminalization, we know that the criminal justice system is not the best way to connect those with substance use disorders with treatment services. So, why can't we skip the part where we arrest them and go straight to the treatment? If we did that, we should expect that those with substance use disorders to be more likely to come forward and ask for help since they would no longer fear criminal penalties with respect to their personal substance use patterns.

In short, I implore you to vote yes on SB279 and explore drug decriminalization as a strategy to address this very serious issue.

Respectfully,
Scott B. Cecil
Advocacy Director of Repair Now
Councilmember, City of Mount Rainier, MD

Rhodes.Stephany.pdf
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Position: FAV

January 26, 2020

Chair Delores Kelly
Finance Committee
Miller Senate Office Building, 3 East
Annapolis, MD 21401

RE: SUPPORT of Senate Bill 279
(Public Health - Overdose and Infectious Disease Prevention Services Program) - FAVORABLE

Dear Chair Kelly and Senate Finance Committee Members,

I , Stephany Rhodes, support Senate Bill 279 “Overdose and Infectious Disease Prevention Services Program,” which will allow community based organizations such as our organization to establish overdose prevention programs to reduce overdose deaths, which continue to occur at unprecedented levels in Maryland.

I am a person in recovery and have seen first hand the need for this type of program. Access to this type of preventative care and resources would have greatly benefited me year ago and I hope it will benefit many people in the near future.

For over 30 years, it has been proven that Overdose Prevention Sites save lives. I urge the General Assembly to authorize overdose and infectious disease prevention services, a proven intervention used across the globe to decrease overdose deaths. The proposed Overdose and Infectious Disease Prevention Services Program mirrors more than 150 such programs already established across the world. More than 60 cities in 12 countries operate such programs, and numerous studies demonstrate the positive impacts. In all of the 150+ OPS around the world, in which millions of supervised drug injections have occurred, **no one has died of a fatal overdose**.

I ask that the Finance Committee give SB279 a favorable report.

-Stephany Rhodes
Stepherny@gmail.com
443-913-1176

SB 0279_Sherman.pdf
Uploaded by: O'Keefe, Owen
Position: FAV

TESTIMONEY IN SUPPORT OF SB 0279
Public Health – Overdose and Infectious Disease Prevention Site program

To: Hon. Delores Kelley, Chair, Hon. Senator Brian Feldman, Vice Chair, and members of the Senate Finance Committee

From: Susan G. Sherman, PhD, Baltimore City, Legislative District 40

Dear Chair Kelley, Vice Chair Feldman, and Committee members,

I am a Professor at the Johns Hopkins Bloomberg School of Public Health who has been a researcher on drug use, overdose, and HIV in Baltimore and elsewhere over the past two decades. The views that I state are mine and not those of Johns Hopkins University.

I write to express my extensive support for Senate Bill 0279. Overdose prevention sites are an important component of a comprehensive, evidence-based strategy to reduce drug use and overdose deaths. They are an incredible opportunity to provide integrated services including drug treatment, case management, and a safe space for people to use drugs that reduces their risk of overdose and infectious diseases.

The steep rise in overdose fatalities over the past decade in our state is the result of a perform storm – increases in opioid prescription, a heroin market characterized by more pure heroin as ensuing increases in interdiction, and the rise of cheap, more powerful synthetic adulterants, such as fentanyl, particularly in the eastern half of the U.S. such as Baltimore. It is hard to believe that the enduring overdose epidemic is now occurring in the context of the COVID-19 epidemic, which is the proverbial fuel to an already large fire. As COVID-19 surged in 2020, more than 40 states have reported increases in opioid-related mortality. Fatal overdoses are just the tip of the iceberg, with nonfatal overdoses more frequent but over time, a significant predictor of fatal overdoses.

My own research in Baltimore city and elsewhere provide a cautionary tale of the extent of overdoses that are occurring and traumatizing communities, the risks that people incur without safe, supervised places to use drugs, and the degree to which people who use drugs are interested in overdose prevention sites. In our recent study of 385 women who use drugs in Baltimore City, we found that 35.3% witnessed a fatal overdose, 51.9% witnessed a non-fatal overdose, and 28.3% experienced an overdose <u>in the past 6 months</u>. That is so much trauma over a relatively short period of time.

As we talk about overdose prevention sites – it is important to understand that people are using drugs in places that could be classified as unsafe consumption sites. In another study of 200 people who use drugs, we found that public injection, meaning injecting in such places as alleys or in abandoned houses, was significantly associated with experiencing nonfatal overdose, arrest, and using a previously used syringe in the past six months.[1] Studies have documented that overdose prevention sites reduce public injection, therefore reducing these negative health outcomes.[2]

Further, study time and again show overwhelming support among people who use drugs for the comprehensive range of services that are offered at overdose prevention sites. Often times the actual room where people they consume drugs under supervision is the space that they spend the least amount of time in an integrated overdose prevention site that also offers such necessary services as case management, primary care, a place to shower, a place to hang out, and a place to feel connected. As with most of us, such one stop shopping is appealing and enhances uptake of collocated services.

There is so much research on what overdose prevention sites have and have not caused. One of the most researched overdose prevention sties worldwide is Insite in Vancouver, which opened in 2003 as a part of a broad public health strategy. I visited in 2006 and was amazed at the space. Efficient, clean, clinical, and most importantly, respectful to all who were receiving services. In Insite, there have been no overdose deaths, or any other overdose prevention sites worldwide where hundreds of thousands of people have used their services. In terms of overdose, Insite has had an effect beyond its doors. In the two years after its opening, there was a 35% reduction in overdose events in the 0.25 mile area immediately surrounding Insite compared to 9% in the rest of the city during the same period.[3] Further, using Insite has been associated with reductions in HIV and Hepatitis C and increases of entry into drug treatment.[4-6] You can imagine, these locations would be ideal for both COVID-19 testing and vaccination for high risk individuals.

One of the biggest fears with placing an overdose prevention sites in a neighborhood is the negative response from residents and businesses. We recently conducted a study among 150 businesses located in neighborhoods characterized by high rates of drug use. We found that businesses overwhelmingly supported of overdose prevention sites 82% with 65% supporting a site in their business' neighborhood. This support indicates what could be seen as unexpected support of overdose prevention sites, yet businesses are extremely impacted by public drug use and its attendant outcomes, which likely drives their support.

This is the sixth year that the Maryland State Assembly has had a bill proposed to establish pilot overdose prevention sites. The growth in support in the Senate and the House over this time has been so encouraging. But my great fear is that in Maryland and elsewhere, given the vast, unnecessary COVID-19 fatalities, we will become immune to the insanely high rates of preventable overdose deaths, that we will become apathetic in our response.

A state authorization is the best legal course of action to protect overdose prevention sites in Maryland. An overdose prevention sites should be one part of a comprehensive approach to overdose prevention, which includes drug treatment. This committee has supported many other such evidence-based public health interventions. I hope this is among them.

Sincerely,

Dr. Susan G. Sherman

References

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SB279_Favorable Sign-On Letter.pdf
Uploaded by: O'Keefe, Owen
Position: FAV

BALTIMORE HARM REDUCTION COALITION

January 26, 2021

SB279 (Public Health - Overdose and Infectious Disease Prevention Services Program) - FAVORABLE

Chair Delores Kelly
Finance Committee
Miller Senate Office Building, 3 East
Annapolis, MD 21401

Dear Chair Kelly and Senate Finance Committee Members,

We, the undersigned individuals and organizations, write to express our support for SB279 "Overdose and Infectious Disease Prevention Services Program," which will allow community based organizations to establish overdose prevention programs to reduce overdose deaths, which continue to occur at unprecedented levels in Maryland.

Drug and alcohol related intoxication deaths increased in 2018 for the eighth year in a row, reaching a staggering 2,406 fatalities. And while deaths related to heroin and prescription opioids have trended downward in recent years, fentanyl-related deaths have continued to rise (up 42% from 2016-2017, and up another 18% from 2017-2018).[1] With the constant year to year increase in these numbers, it's critical to remember that in 2012, there were only 29 deaths from fentanyl. 2018 saw 1,888 such deaths, more than 65 times larger than the 2012 number.

Maryland legislators have taken laudable steps to reduce the devastation of the overdose crisis, but they do not go far enough to halt the overdose epidemic. The General Assembly has approved measures to expand access to the life-saving medication naloxone, increase behavioral health treatment, and establish syringe services programs throughout the state. While these essential policies have increased opportunities for health and safety, the situation remains dire.

We urge the General Assembly to authorize overdose and infectious disease prevention services, a proven intervention used across the globe to decrease overdose deaths. The proposed Overdose and Infectious Disease Prevention Services Program mirrors more than 150 such programs already established across the world. More than 60 cities in 12 countries operate such programs, and numerous studies demonstrate the positive impacts. There is an abundance of evidence from Canada and various European countries showing that overdose prevention facilities reduce overdose deaths, provide an entry into healthcare, and reduce public use and publicly discarded syringes. These programs are cost-effective and do NOT encourage or increase

[1] Maryland Dept. of Health, Drug- and Alcohol-Related Intoxication Deaths in Maryland, 2018 (May 2019), available at https://health.maryland.gov/vsa/Documents/Overdose/Annual_2018_Drug_Intox_Report.pdf

additional drug use, youth drug use, or crime. In addition, a carefully studied underground facility in an undisclosed location in the U.S. has been in operation for five years, with impressive results.[2]

Community members, healthcare professionals, law enforcement, homeless advocates, and others in over a dozen U.S. jurisdictions are exploring establishing such services. Since the introduction of the first bill in 2016, stakeholders in Baltimore and across the state have joined the movement for OPS. While other jurisdictions across the United States have struggled to gather community buy-in for OPS, BRIDGES Coalition of Maryland has led organizing efforts for OPS, conducting over 3000 conversations with Maryland constituents. Marylanders are joined by advocates across the United States, from Washington to North Carolina, in pushing for our representatives to take action to save lives. Under President Biden's new administration, there is an opportunity for change in the enforcement of §856 of the Controlled Substances Act within the Department of Justice for the first time in years.

Overdose prevention services reduce health concerns and public order issues by reaching those most at risk of overdose who may otherwise use in public or semi-public locations. The programs are intended for those who are most marginalized including people who are homeless, people with mental health concerns, and street-based sex workers who use drugs. Many of these individuals live in poverty, with limited access to housing and other basic needs.

The supervision provided at overdose prevention sites can dramatically reduce overdose fatality risk in Maryland and save scarce resources. In over 30 years of operation, there has never been a single overdose fatality at any overdose prevention facility in the world.[3] A study of a Canadian facility found that overdose mortality dropped 35% in the area surrounding the facility after it opened.[4] Overdose prevention services also reduce hospital admissions associated with overdose and various infections related to drug use, thus freeing up emergency services. A recent study showed Maryland ranks highest in the nation for rates of opioid-related hospital visits.[5] In 2014 there were 2,665 opioid-related emergency department visits in Maryland, up 41% from just a year earlier (with many of those admitted being repeat visitors).[6] These visits come with significant costs, as nearly 74% of opioid-related emergency department visits occur among individuals covered by Medicaid or without any coverage. Overdose prevention services will reduce these opioid- and overdose-related costs.

We want to meet the needs of our neighbors, patients, friends, and family members. Overdose prevention service locations serve as an access point to substance use treatment and other health and social services. Far from encouraging drug use, overdose prevention sites help people reduce

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[2] Peter J. Davidson, Andrea M. Lopez, Alex H. Kral. "Using drugs in un/safe spaces: Impact of perceived illegality on an underground supervised injecting facility in the United States." International Journal of Drug Policy 53 (March 2018): 37-44. Available at: https://doi.org/10.1016/j.drugpo.2017.12.005

[3] Wrigh Potier, C. V. Laprevote, F. Dubois-Arber, O. Cottencin, and B. Rolland. "Supervised Injection Services: What Has Been Demonstrated? A Systematic Literature Review." Drug Alcohol Depend 145C (2014): 62

[4] Brandon DL Marshall et al., "Reduction in overdose mortality after the opening of North America's first medically supervised safer injecting facility: a retrospective population-based study," The Lancet 377, no. 9775 (2011): 1429-37

[5] Audrey J. Weiss et al., "Opioid-Related Inpatient Stays and Emergency Department Visits by State, 2009-2014." The Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Statistical Brief 219. December 2016. Available at: https://www.hcup-us.ahrq.gov/reports/statbriefs/sb219-Opioid-Hospital-Stays-ED-Visits-by-State.jsp

[6] Maryland Hospital Association, Maryland's Behavioral Health Crisis, (Elkridge, 2016) available at http://www.mhaonline.org/docs/default-source/infographics/2016-behavioral-health-infographic---capital-region.pdf?sfvrsn=4

their use of drugs and enter a number of helpful services. Referrals to behavioral health services are particularly important, because it is often difficult for participants to access this treatment independently. One study of a Canadian facility found that participants increased detoxification services by more than 30%.[7] Currently a significant segment of Marylanders who could use treatment are not accessing it; SAMHSA estimated that of Maryland residents with medically-documented illicit drug dependence, only about 11.8% received treatment.[8] Overdose prevention sites provide opportunities to establish therapeutic relationships and help individuals to access other healthcare services. Facilities can also provide important medical care on site or through connections to existing resources. This care includes testing and counseling for infectious diseases, which is critical as participants often have a high rate of infection of Hepatitis C and HIV/AIDS. In 2017, 18.5% of Marylanders living with HIV were exposed through injection drug use.[9] An analysis of an overdose prevention site in Canada estimated the facility prevents 35 cases of HIV each year, a societal benefit of more than 6 million dollars annually.[10]

These programs benefit the individual as well as the community dealing with the effects of the overdose epidemic. For instance, every study that examined the question found that overdose prevention facilities decrease nuisance and public order concerns in surrounding areas, do not increase loitering, and even reduce crime. These programs are also incredibly cost-effective; facilities save millions of dollars every year by preventing disease transmission and public nuisance. A 2017 cost-benefit analysis of a hypothetical facility in Baltimore found that for an annual cost of $1.8 million, a single overdose prevention site would generate $7.8 million in savings, preventing 3.7 HIV infections, 21 Hepatitis C infections, 374 days in the hospital for skin and soft-tissue infection, 5.9 overdose deaths, 108 overdose-related ambulance calls, 78 emergency room visits, and 27 hospitalizations, while bringing 121 additional people into treatment.[11]

With historically high rates of overdose deaths, it is clear that our state faces a public health crisis of historic proportions. Countering it and ending needless deaths will require an innovative approach. Maryland needs new solutions to address substance use and overdose. Allowing jurisdictions grappling with the crisis to establish overdose and infectious disease prevention services is one such solution. **We ask that the Finance Committee give SB279 a favorable report** to stem the rising tide of overdose deaths in Maryland.

Sincerely,

Abby Becker, Baltimore City
Aline Thompson, Baltimore City
Alison Duncan, Baltimore City

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[7] E Wood et al., "Rate of detoxification service use and its impact among a cohort of supervised injection facility users," Addiction 102(2007): 918
[8] United States Dept. of Health and Human Services, Behavioral Health Barometer Maryland, 2014 (Washington, 2015) available at https://store.samhsa.gov/system/files/bhbarometer-md.pdf
[9] Maryland Department of Health and Mental Hygiene, Exposure Category and HIV in Maryland, 2017 (September 2018) available at https://phpa.health.maryland.gov/OIDEOR/CHSE/SiteAssets/Pages/statistics/Exposure-Category-Data-Sheet-2018.pdf
[10] Brandon DL Marshall et al., "Reduction in overdose mortality after the opening of North America's first medically supervised safer injecting facility: a retrospective population-based study," The Lancet 377, no. 9775 (2011): 1429-37
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Maryland Coalition of Families
Maryland Peer Advisory Council
Maryland Public Health Association
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North Avenue Mission
Nurses for Justice - Baltimore
Nursing Students for Harm Reduction
On Our Own of St. Mary's, Inc.
Onyinye Alheri, Baltimore City
Owen O'Keefe, Baltimore City
People Encouraging People, Inc.
Powell Recovery Center, Inc.
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January 26, 2020

Chair Delores Kelly
Finance Committee
Miller Senate Office Building, 3 East
Annapolis, MD 21401

RE: SUPPORT of Senate Bill 279
(Public Health - Overdose and Infectious Disease Prevention Services Program) - FAVORABLE

Dear Chair Kelly and Senate Finance Committee Members,

My name is Sarah Kattakuzhy, MD, and I am a physician, scientist, and Assistant Professor at the University of Maryland School of Medicine in Baltimore. I am writing this letter to offer my full support to Senate Bill 279 "Overdose and Infectious Disease Prevention Services Program," which will allow community-based organizations to establish overdose prevention programs to reduce overdose deaths, which continue to occur at unprecedented levels in Maryland.

I have practiced and conducted research in the fields of HIV, viral hepatitis, and opioid use disorder over the last ten years. The data on Overdose Prevention Sites is unequivocal- not only in preventing overdose, but in reducing HIV and HCV transmission risk behaviors, and linking individuals with opioid use disorder into treatment. Furthermore, data supports that individuals with opioid use disorder want Overdose Prevention Sites, and would utilize them as a culturally-competent space centered in safety, compassion, and dignity. The "War on Drugs" philosophy of alienation, segregation, and stigmatization has left 750,000 Americans dead in the last 20 years. As a physician, I urge the Committee to listen to science, reason, and the voices of your constituents most affected by opioid use disorder.

I ask that the Finance Committee give SB279 a favorable report. If you have any further questions, I would be delighted to speak further on this vital and timely bill. I can be contacted at 202-550-2685 and at skattakuzhy@ihv.umaryland.edu.

With deep regards,

Sarah Kattakuzhy, MD

Torsch.John.pdf
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Position: FAV

TESTIMONY IN SUPPORT OF SB 279:

January 26, 2021

SB279 (Public Health - Overdose and Infectious Disease Prevention Services Program) -

FAVORABLE Chair Delores Kelly

Finance Committee

Miller Senate Office Building, 3 East

Annapolis, MD 21401

FROM: John Torsch, Baltimore County, Legislative District 8

Dear Chair Kelly and Senate Finance Committee Members,

Ten years ago, my younger brother Danny died in my home of a multiple drug overdose. I have spent the past ten years representing a foundation in Danny's memory. The Daniel Carl Torsch Foundation (DCTF) advocates for harm reduction, addiction treatment, and recovery communities. The DCTF, has been a part of introducing several pieces of legislation that were signed into law, including the 2013 Overdose Response Program, which led to the standing orders for Naloxone that we have today. It is essential to share that I have lost more than **50** friends and family members to drug overdoses, drug-related health complications, and violence related to drugs.

As a peer recovery specialist and person in long term recovery from drug addiction, my life is literally "all addiction all the time." During the last few years, I have researched the Overdose Prevention Sites (OPS) model heavily, including visiting six of these sites in four different countries. There is no question that these sites save lives, increase access to treatment and reduce the rate of infectious disease. These sites serve the most vulnerable and stigmatized population in our society.

In 2019, I toured Australia's first "safe injection room" in Sydney, Australia. The clinic has been in operation for over 15 years. They have never had a fatal overdose during this time and have made over 15,000 referrals to treatment. Miranda St Hill conducted the tour, Service Operations Manager for the Sydney Medically Supervised Injecting Centre (MSIC). I was also able to meet Dr. Graham, who is the acting medical director. Beyond impressed, is the only way for me to describe my visit. The presence of such dedicated medical professionals who show such an incredible amount of compassion and patience for the population struggling with addiction was very inspiring.

Most people who use the site are homeless and either sleep in nearby parks or at a local mission. The majority are unemployed. It is sporadic that someone drives, so DUIs are not a problem. But sometimes, some people have a scooter, and they stay until they are fit to ride. The police are needed 3-4 times a year to handle out of control patients. Far less than an emergency room. A full-time security guard has been there for eight years and knows all the clients by name. He is a compassionate man who has specialized training and a positive relationship with those who utilize it. The center has about 170 people come through on an average day. The police said they have a mutual understanding and do not target people waiting in line to enter the center even when they know these people have a small number of illegal drugs on them.

Even though these sites' goal is to save lives and encourage treatment, finding a bed is not always easy. The wait can be days or even a week or more. By that time, the desire to seek help is often gone. The beauty of operating one of these sites in Maryland, especially in the Baltimore area, is that we have a tremendous amount of treatment options which are available immediately when someone is ready to take that first step.

After leaving the center in Sydney, I stopped by a local mission to see what services they provide to the poor and homeless. While I was there, I noticed a man about my age. He was anxious to speak with me. We sat in the chapel and had one of the realist conversations about addiction and life on the street that I have ever had. He had been addicted for 16 years and has been homeless the whole time. He was able to articulate just how important the safe site was for him. The staff had saved his life over a dozen times. He knew that he would have been in some alley and died alone if he had not chosen to use his drugs at the site. He is part of a street outreach team that encourages others struggling with addiction to utilize the site. When I asked this man what his favorite thing about the site is and why it is so important to him, this is what he said, "The safe site is the only place in Australia where I'm treated like a human being." One of the most touching moments of my life. He had tears in his eyes when he said this, which I shared with him. The connection I felt with this man, the love, and the pain we both shared is something that I will never forget.

Hopefully, this testimony answers some questions for those who are hesitant or strongly oppose these sites coming to the US. 2021 will be the deadliest year in history for people who use drugs. Fentanyl has changed the game. Those of us working in this field realize that we are facing nothing less than chemical warfare. More people are using drugs in public places because they know the chance that they will overdose is high. How often do you see a bill proposed that does not ask for funding and simply asks for permission to save lives? That is all we are asking for with this bill, permission to save lives and treat our society's unwanted with the compassion they deserve and the skills that people like myself are trained for.

Recently, one of the people that I was providing peer support to, died of Fentanyl poisoning. All he wanted was to live what he called "normal" life. The same lifestyle that countless people take for granted every day. He wanted to live in a place where he did not have to walk past a line of people selling the drugs he desperately was fighting to avoid. He tried to wake up in a bed in a warm house, have a cup of coffee and food in his fridge, drive an old pick up to a job he was good at so he could earn an honest wage. Then come home at night, eat dinner, sit in a recliner, and watch TV.

Repeatedly, he would say that this is all he wanted. He was so close, and we were working on a plan. All he needed was an ID to make it happen, but he could not get the ID in time. He never got that everyday life back. Instead, he died alone, in the cold, while carrying the Narcan he used to save several other lives. You won't see his story on the news, read about him in any newspaper, or see RIP posts on social media. His name was Brian. He was not a statistic, he was my friend, and I miss him. If he had access to an Overdose Prevention Site, chances are strong he would utilize the site and still have a chance at that "normal" life.

We recognize that this may be a controversial issue, and it is our intent to stand in support of all legislators who vote favorably on SB279. Mothers and fathers who have lost their children, treatment providers, addiction experts, and people in recovery from drug addiction; ~~we~~ will defend your decision with every breath and on every social media post.

I look to more progressive countries to see what is working because the USA strategy is not working. The only hope we have to get ahead of this crisis is love and compassion, meeting people struggling where they are, reducing harm, and increasing access to treatment while providing peer support. The DCTF is prepared to offer our assistance in the operation of one of these Overdose Prevention Sites in an area of Baltimore County (21222).

Please take off our handcuffs and say YES to letting us, the boots on the ground, do what is necessary to save and improve countless lives. We respectfully ask that the Finance Committee give SB279 a favorable report to stem the rising tide of overdose deaths in Maryland.

Thank you,

John Torsch
Co-founder/Director of Special Programs
The Daniel Carl Torsch Foundation
dctfoundationinc.org
dctfoundationinc@gmail.com
410-847-4247

MRHA SB279 Public Health - Overdose and Infectious

Uploaded by: Orosz, Samantha

Position: FAV

MARYLAND RURAL HEALTH ASSOCIATION

Statement of Maryland Rural Health Association

To the Finance Committee

January 26, 2021

Senate Bill 279 Public Health – Overdose and Infectious Disease Prevention Services Program

POSITION: SUPPORT

Chair Kelley, Vice Chair Feldman, Senator Hettleman, and members of the Finance Committee, the Maryland Rural Health Association (MRHA) is in SUPPORT of Senate Bill 279 Public Health – Overdose and Infectious Disease Prevention Services Program.

MRHA and its members support this legislation that establishes an Overdose and Infectious Disease Prevention Services Program by a community-based organization to provide a place for the consumption of pre-obtained drugs, provide sterile needles, administer first aid, and other services in at least two rural areas. This initiative in harm reduction by community-based organizations is a necessary step in addressing and providing local, community solutions to combat substance abuse disorders. Rural Marylanders are at an increased risk for substance abuse disorder due to unique social determinants of health that create barriers to equitable and quality behavioral health services.

MRHA's mission is to educate and advocate for the optimal health and wellness of rural communities and their residents. Membership is comprised of health departments, hospitals, community health centers, health professionals, and community members in rural Maryland.

Maryland law states that "many rural communities in the State face a host of difficult challenges relating to persistent unemployment, poverty, changing technological and economic conditions, an aging population and an out-migration of youth, inadequate access to quality housing, health care and other services, and deteriorating or inadequate transportation, communications, sanitations, and economic development infrastructure." (West's Annotated Code of Maryland, State Finance and Procurement § 2-207.8b)

And while Maryland is one of the richest states, there is great disparity in how wealth is distributed. The greatest portion of wealth resides around the Baltimore/Washington Region; while further away from the I-95 corridor, differences in the social and economic environment are very apparent.

MHRA believes this legislation is important to support our rural communities and we thank you for your consideration.

Lara Wilson, Executive Director, larawilson@mdruralhealth.org, 410-693-6988

SB0279 MD NARAL SUPPORT.pdf
Uploaded by: Philip, Diana
Position: FAV

SB0279 - Public Health – Overdose and Infectious Disease Prevention Services Program
Presented to the Hon. Delores Kelley and Members of the Senate Finance Committee
January 26, 2021 1:00 p.m.

POSITION: SUPPORT

NARAL Pro-Choice Maryland urges the Senate Finance Committee to issue **a favorable report on SB0279 - Public Health – Overdose and Infectious Disease Prevention Services Program**, sponsored by Senator Shelly Hettleman and Senator Brian Feldman

Our organization is an advocate for reproductive health, rights, and justice: three issues with long, interconnected histories to the public health practice of harm reduction. The current opioid epidemic profoundly impacts the lives of thousands of Marylanders each year, including those who are pregnant and parenting. These Marylanders, and many more, would greatly benefit from the harm reduction practices and security offered by SB0279. According to the Center for Disease Control, Maryland has the third highest rate of overdose deaths in the United States, falling behind only West Virginia and Delaware.[1] Governor Larry Hogan himself declared a state of emergency in regard to the opioid crisis in 2017 and since then, opioid use and overdoses have continued to pose a threat to public health.

Marylanders struggling with addiction continue to be forced into unsafe practices of using unsterile equipment that can transfer diseases. Many are forced to use these illegal substances in unsafe, isolated places in order to avoid legal repercussions. Using in these locations can leave folks struggling with addiction—including pregnant people-- vulnerable to death if they overuse, as well as sexual violence while under the influence in an unsafe, deserted area.

Having access to an Overdose Prevention Site would ensure that more Marylanders have access to sterile equipment for their pre-obtained drugs; would be attended to in the case of an overdose; and, would have access to constant monitoring in a safe and secure medical facility. It eliminates the threat of predators preying on people who are unconscious while under the influence and introduces the possibility for recovery services, testing for specific diseases they may have contracted through needle sharing, and even reproductive health education services.[2] We are hopeful that staff at these sites will be trained to assist pregnant people, so that more will come to seek help at such facilities, rather than risk poor health outcomes for fear of criminalization. Overall, this legislation will enhance the lives of those struggling with addiction and allow them access into a safer and monitored drug usage to reduce opioid related deaths. For these reasons, NARAL Pro-Choice Maryland **urges a favorable committee report on SB0279**. Thank you for your time and consideration.

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[1] "Drug Overdose Deaths," Centers for Disease Control and Prevention (Centers for Disease Control and Prevention, March 19, 2020), https://www.cdc.gov/drugoverdose/data/statedeaths.html

[2] Public Health – Overdose and Infectious Disease Prevention Services Program. Bill (2021).

SB_279_Disability Rights Maryland_SUPPORT.docx.pdf
Uploaded by: Prater, David
Position: FAV

Empowerment. Integration. Equality.

1500 Union Ave., Suite 2000, Baltimore, MD 21211
Phone: 410-727-6352 | Fax: 410-727-6389
www.DisabilityRightsMD.org

Disability Rights Maryland
House Environmental & Transportation Committee
January 26, 2021
SB 279 – Public Health - Overdose and Infectious Disease Prevention Services Program
POSITION: SUPPORT

Disability Rights Maryland (DRM – formerly Maryland Disability Law Center) is the federally designated Protection and Advocacy agency in Maryland, mandated to advance the civil rights of people with disabilities. DRM works to decriminalize disability through the creation and expansion of voluntary behavioral health services centered on civil rights, and thereby decrease inappropriate criminal justice involvement for people with disabilities.

DRM **supports** SB 279 as a common-sense approach to save lives during an opioid crisis, and preserves the civil rights of persons with disabilities by connecting them to voluntary services to support their long-term recovery.

There is strong correlation between mental illness and substance abuse. Studies have found that about half of adults of those who experience a mental illness during their lives will also experience a substance use disorder and vice versa.[1] SB 279 saves lives by providing a safe consumption space with trained professionals to prevent death AND also provides connection to voluntary recovery and prevention services for persons experiencing these types of behavioral health disabilities. Too frequently, the lack of connections to voluntary services results in the criminal justice system filling the gaps in services. Persons with behavioral health disabilities involved in the criminal justice system experience horrendous outcomes including segregated incarceration, short-term expensive emergency room visits, enrollment in coercive programs and services, or long-term institutionalization.

Overdose prevention sites as authorized by SB 279 use voluntary approaches to engage with persons with behavioral health disabilities in recovery. Such approaches are proven to be as effective method to engage people with behavioral health disabilities with recovery as coercive methods[2] and ensure the civil liberties of person with disabilities. SB 279 would stem the tide of mass incarceration of persons with behavioral health disabilities, especially those of color, and provide voluntary services that would contribute to long-term recovery and preserve the dignity and civil rights of persons with disabilities.

For all of these reasons, DRM urges a **favorable** report on SB 279.

---

[1] NIDA. "Part 1: The Connection Between Substance Use Disorders and Mental Illness." *National Institute on Drug Abuse*, 28 May. 2020, https://www.drugabuse.gov/publications/research-reports/common-comorbidities-substance-use-disorders/part-1-connection-between-substance-use-disorders-mental-illness Accessed 22 Jan. 2021.
[2] Kisely, Steve R et al. "Compulsory community and involuntary outpatient treatment for people with severe mental disorders." *The Cochrane database of systematic reviews* vol. 3,3 CD004408. 17 Mar. 2017, doi:10.1002/14651858.CD004408.pub5

Disability Rights Maryland

Empowerment. Integration. Equality.

1500 Union Ave., Suite 2000, Baltimore, MD 21211
Phone: 410-727-6352 | Fax: 410-727-6389
www.DisabilityRightsMD.org

Please do not hesitate to contact me with any questions.

David A. Prater
Managing Attorney
Disability Rights Maryland
1500 Union Ave.
Suite 2000
Baltimore, MD 21211
davidp@disabilityrightsmd.org
443-692-2500

NCADD-MD - SB 279 FAV - Overdose Prevention Servic
Uploaded by: Rosen-Cohen, Nancy
Position: FAV

Senate Finance Committee
January 26, 2021

Senate Bill 279
Public Health - Overdose and Infectious Disease Prevention Services Program
Support

Amid the COVID-19 pandemic, the pre-existing opioid overdose death fatality crisis has worsened. In Maryland, third quarter data from the Maryland Department of Health shows a 14% increase in the number of opioid overdose deaths in 2020, over the same period the year before. The numbers were up even before the impact of the pandemic early last year. Maryland must focus on proven effective harm reduction strategies.

One strategy the State has refused to approve is the creation of an Overdose and Infectious Disease Prevention Services Program. NCADD-Maryland supports its creation through Senate Bill 279. This is a harm reduction strategy whereby people who consume drugs, can do so under clinical supervision. The primary purpose of this is to provide immediate assistance in the case of an overdose.

Along with direct assistance in saving people's lives, these programs, as proposed in SB 279, would also avail people of:

- First aid and care for wounds;
- Sterile syringes and their collection;
- Referral to services for substance use disorders, HIV, hepatitis, sexually transmitted diseases, reproductive health care, and wound care; and
- Education regarding the risk of overdoses and the transmission of various infectious diseases.

There are more than 100 such programs in jurisdictions around the world, and a number of cities in the United States are moving toward establishing them. These kinds of programs have been researched and evaluated for years. Multiple studies show that they reduce the sharing of syringes, and therefore of the transmission of HIV and hepatitis. Research also shows a reduction in overdose deaths, discarded syringes, and an increase in the number of people who enter substance use disorder treatment.

Overdose prevention sites will reduce opioid overdose deaths and begin to address the public health consequences of the crisis. We urge a favorable report on SB 279.

The Maryland Affiliate of the National Council on Alcoholism and Drug Dependence (NCADD-Maryland) is a statewide organization that works to influence public and private policies on addiction, treatment, and recovery, reduce the stigma associated with the disease, and improve the understanding of addictions and the recovery process. We advocate for and with individuals and families who are affected by alcoholism and drug addiction.

National Council on Alcoholism & Drug Dependence – Maryland Chapter
28 E. Ostend Street, Suite 303, Baltimore, MD 21230 · 410-625-6482 · fax 410-625-6484
www.ncaddmaryland.org

In support of SB0279 -- Anne Sawyer.pdf
Uploaded by: Sawyer, Anne
Position: FAV

I am writing in support of SB0279 to authorize overdose prevention sites (OPS). I am a long time resident of Highlandtown/Baltimore Highlands in Baltimore City, a neighborhood where many people who use drugs (PWUD) live and work, where there are open air drug markets and the well known sex worker stroll, Conkling Street. I also have experience in harm reduction, including 8 years of Thursday nights working on the needle exchange van on The Block in Baltimore City.

If there were an OPS that my PWUD neighbors could access, many would be able not only to access equipment for safer injection and be safe from dying of opioid overdose, but also to access other health and social services including drug treatment programs and homeless services.

In the past few years, there have been many house fires near where I live, most in vacant houses to which PWUD gained access. Although establishment of OPS in Maryland will not immediately prevent all the house fires in my neighborhood, it will help reduce them in several ways. First, fires started by people while they are using or soon after will be reduced if those people are using at an OPS. Second, over time, though harm reduction, people will be given opportunities to make changes in their lives that will keep them and their communities safer and healthier.

Anne Sawyer
3432 Leverton Ave
Baltimore, MD 21224
(410) 419-5114

SB0279 Testimony Final.pdf
Uploaded by: Shaklee, Christina
Position: FAV

ANNE ARUNDEL COUNTY
MARYLAND
DEPARTMENT OF HEALTH

J. Howard Beard Health Services Building
3 Harry S. Truman Parkway
Annapolis, Maryland 21401
Phone: 410-222-7095 Fax: 410-222-7294
Maryland Relay (TTY): 711
www.aahealth.org

Nilesh Kalyanaraman, M.D.
Health Officer

2021 SESSION
Written Testimony

BILL NO:	**SB 0279**
COMMITTEE:	**Finance**
POSITION:	**Letter of Support**
TITLE:	**Public Health- Overdose and Infectious Disease Prevention Services Program**

BILL ANALYSIS:

SB 0279 authorizes the establishment of an Overdose and Infectious Disease Services Program by a community-based organization. The Maryland Department of Health may approve up to six programs within the State meeting certain criteria. An established program shall provide a location supervised by health care professionals or other trained staff where drug users can consume pre-obtained drugs through provided sterile injection supplies. The programs must provide access or referrals to certain services (counseling, HIV/hepatitis/STD testing), education, and staff training.

POSITION RATIONALE:

The Anne Arundel County Department of Health supports SB 0279. This legislation would allow community-based organizations, in jurisdictions that are supportive, to establish an Overdose and Infectious Disease Services Program. The benefits of providing overdose prevention services include decreased bloodborne spread of infection, increased access and utilization of detoxification and drug dependence treatment, and reduced public drug use.

Safe Hygienic Drug Use

This bill would require eligible programs to provide sterile injection supplies and secure needle disposal. Nonsterile injections can lead to transmission of HIV, viral hepatitis, bacterial infections, and fungal infections. Providing access to sterile syringes and other injection equipment would reduce the transmission of these diseases. Additionally, access to sterile syringes would decrease other serious, life-threatening, and costly health problems such as infections of the heart valves (endocarditis), serious skin infections, and deep tissue abscesses.

https://www.cdc.gov/ssp/syringe-services-programs-faq.html

The CDC has identified additional emerging infectious disease risks related to injection drug use including increases in methicillin-resistant S*taphylococcus aureus* (MRSA) infection rates, which increased 124% between 2011 and 2016 among people who inject drugs. In addition, people who inject drugs are 16 times as likely as other people to develop invasive MRSA infections.

These programs would also be required to provide access or referrals to HIV, viral hepatitis and STD testing; wound care; and reproductive health education. Programs will also be required to provide education on the risks of contracting HIV and viral hepatitis and well as education on the proper disposal of needles and syringes. Connection to these services is essential in areas with a high incidence of drug use.

Increased Access to Health and Social Services

Eligible programs are required to provide access or referrals to substance abuse disorder counseling and treatment services as well as those services listed above. The use of overdose prevention programs is associated with increased uptake of both detoxification and drug dependence treatment, including opioid substitution (i.e. heroin to methadone or buprenorphine). A Canadian cohort study documents that attendance at a Vancouver facility was associated with increased rates of referral to addiction care centers and increased rates of uptake of detoxification treatment and methadone maintenance. These programs would provide harm reduction services and engagement into treatment for those people who might not otherwise seek treatment.
(http://www.emcdda.europa.eu/system/files/publications/2734/POD_Drug%20consumption%20rooms.pdf)

Reduced Public Drug Use and Safety

Evaluation studies have found an overall positive impact on the communities where overdose prevention programs are located. Their establishment has been associated with a decrease in public injecting and a reduction in the number of syringes discarded in the area. For example, in Barcelona, a fourfold reduction was reported in the number of unsafely disposed syringes being collected in the vicinity from a monthly average of over 13,000 in 2004 to around 3,000 in 2012. A study in Sydney noted that there was also no evidence that the existence of the facility led to either an increase or decrease in thefts or robberies around the facility.
(http://www.emcdda.europa.eu/system/files/publications/2734/POD_Drug%20consumption%20rooms.pdf)

OPS Hearing Testimony.pdf
Uploaded by: Wilson , Alex
Position: FAV

Good Afternoon,

I write to you all today in defense of OPS services. I am proud to join many others who have written in in favor of this bill. As a harm reductionist I'm not in the business of judging people, of denying them care, or of stigmatizing them for what they do.

I am in the business of listening to people, serving people, and saving lives. I am in the business of offering comprehensive care that meets people where they are. I am in the business of helping people reach the goals they've set for themselves with the tools available to us, but enough about me- What I'd like to know is what business you are in.

Are you in the business of purporting to care? The business of enforcing abstinence-based models that have historically never worked? The business of turning folks away while people die in the street? Or are you in the same business I'm in?

In these last several months as the world has navigated uncharted territory there has been an emphasis on public health and communal care like never before, and its been so amazing to see what happens when our government prioritizes health and safety of citizens, and the unfortunate reality of what happens when it doesn't.

The landscape of substance use shows what happens when it doesn't. There has been a pandemic of preventable harm in this country for seemingly endless years and seemingly no desire to mitigate nor stop it. Every year people die preventable deaths because of an over emphasis on abstinence and punitvity than commitment to care and empathy; care and empathy that we've seen are possible from our civil servants. We understand communities self-regulate and know themselves best and that is exactly why We want to keep power in communities while prioritizing harm reduction and safety.

As a harm reduction peer brilliantly pointed out to me recently, the reality is we already have consumption sites: they take the form of alleyways, abandoned homes, port-a-pottys, Burger King bathrooms, bus stops, and other dark corners. These same spaces serves as graves when people aren't empowered to be safer.

We can continue to ignore and invisibilize people or we can serve them. We can continue to punish and preach abstinence, or we can join the other 60 countries in the world who already offer OPS, countries where these centers have never seen a single fatal overdose.

The choice is yours.

Alex Wilson
Sr. Research Assistant and Artistic Program Director
SPARC Baltimore
BRIDGES Coalition

2021 OPS Testimony.pdf
Uploaded by: Zoltick, Meredith
Position: FAV

January 26, 2020

Chair Delores Kelly
Finance Committee
Miller Senate Office Building, 3 East
Annapolis, MD 21401

RE: SUPPORT of Senate Bill 279
(Public Health - Overdose and Infectious Disease Prevention Services Program) - FAVORABLE

Dear Chair Kelly and Senate Finance Committee Members,

My name is Meredith Zoltick and I am a nurse practitioner at the Baltimore City Health Department and Johns Hopkins Hospital. I support the Senate Bill 279 "Overdose and Infectious Disease Prevention Services Program," which will allow community-based organizations such as our organization to establish overdose prevention programs to reduce overdose deaths, which continue to occur at unprecedented levels in Maryland.

As a nurse practitioner that takes care of people who use drugs, I have seen first-hand the need for additional overdose prevention services. I prescribe buprenorphine, a medication to treat opioid use disorder, and spend a lot of time talking about overdose prevention with my patients. Since I have started working as a nurse practitioner, I have had many patients experience fatal and non-fatal overdoses. My patients also experience other health related harms such as skin and soft tissue infections, HIV, Hepatitis C, and other infectious diseases. The current services we have available are not doing enough to keep people alive and healthy. The data supporting overdose prevention sites is incredible. I strongly believe that having overdose prevention sites in the state of Maryland would be very beneficial and would continue the state's legacy of being a harm reduction leader in the country.

For over 30 years, it has been proven that Overdose Prevention Sites save lives. We urge the General Assembly to authorize overdose and infectious disease prevention services, a proven intervention used across the globe to decrease overdose deaths. The proposed Overdose and Infectious Disease Prevention Services Program mirrors more than 150 such programs already established across the world. More than 60 cities in 12 countries operate such programs, and numerous studies demonstrate the positive impacts. In all of the 150+ OPS around the world, in which millions of supervised drug injections have occurred, **no one has died of a fatal overdose**.

We ask that the Finance Committee give SB279 a favorable report.

For more information about my position, please contact Meredith Zoltick at Mzoltic1@jhu.edu

Thank you for your consideration,

Meredith Zoltick,MSN/MPH, CRNP

18 - SB0279 - Public Health - Overdose and Infecti

Uploaded by: Bennardi, Maryland Department of Health /Office of Governmen
Position: UNF

Maryland
DEPARTMENT OF HEALTH

Board of Nursing

Larry Hogan, Governor · Boyd K. Rutherford, Lt. Governor · Dennis R. Schrader, Acting Secretary

January 26, 2021

The Honorable Delores G. Kelley
Chair, Finance Committee
3 East Miller Office Building
Annapolis, MD 21401-1991

RE: SB0279 – Public Health – Overdose and Infectious Disease Prevention Services Program – Letter of Opposition

Dear Chair Kelley and Committee Members:

The Maryland Board of Nursing ("the Board") respectfully submits this letter of opposition for Senate Bill 279 (SB 279) – Public Health – Overdose and Infectious Disease Prevention Services Program. This bill authorizes the establishment of an Overdose and Infectious Disease Prevention Services Program by a community – based organization. The bill requires a program to provide a location supervised by health care professionals or other trained staff where drug users can consume pre-obtained drugs. The program will also provide for distribution of sterile injection supplies and collection of used needles and syringes. Health care providers will need to educate program participants about safe injection practices, monitor participants for potential overdose and administer rescue medication as needed. The bill prohibits Board disciplinary action against a licensee or certificate holder for involvement in the operation or use of the program services.

The Board agrees that the prevention of drug overdose and disease is critical. Substance use disorder is non-discriminatory in that it can affect an individual at any age, of any gender, race or nationality, and of any occupation. However, the Board believes that this bill increases the risk to public safety. Health care professionals may be just one of the types of individuals who utilize the services of this program. With how the bill is currently written, health care professionals who participate in the program, as current substance users, would not be prevented from reporting to their place of practice while still under the influence of controlled dangerous substances. In essence, the Board would be forced to wait until a complaint of working impaired is filed before taking any action to protect patients. This however, overlooks the fact that harm may have already occurred.

This bill not only has the potential to encourage drug use, but it may also increase the instances of diversion of medication from patients by health care providers. Drug diversion occurs when a health care provider takes medication prescribed to patients, usually controlled dangerous substances, for their own use or for sale to others. Program participants would be allowed to bring pre-obtained drugs without being questioned about how the drugs were obtained.

This bill further jeopardizes Maryland nurse's ability to stay enrolled in the Nurse Licensure Compact (NLC). The NLC allows for nurses to have one multistate license with the ability to practice in all states that have adopted the Compact's legislative language. The NLC serves to increase access to health care, particularly for underserved communities. To be eligible for multi-state practice, a nurse may only hold an unencumbered license, or a license that is not revoked, suspended, or made probationary or conditional. A nurse must be authorized to engage in the full and unrestricted practice of nursing. Nurses who may utilize the Overdose and Infectious Disease Prevention Services Program, and who may hold a multistate license, will be in direct violation of the NLC's rules[1]. The nurse will lose their privilege to practice in multiple states. Which could result over time in fewer nurses being able to practice outside of Maryland.

The Board would not be meeting its mission of protecting the public if it has information about drug use by a licensee or certificate holder, and does not act upon this information. Additionally, the Board does not automatically resort to discipline for instances of drug use. The Board offers a safe practice (alternative to discipline) program for licensees and certificate holders with substance use disorders who meet certain criteria. The mission of the safe practice program is to ensure patient safety by monitoring nursing professionals who are struggling with substance use disorders. Enrollment in this program is confidential, and does not pose any infraction on a participant's license or certification. An individual enrolled in this program may also keep an active license and work while following a certain number of stipulations. ~~The Board has provided participation data for the safe practice program from 2016 to 2020 in the table below.~~

~~Committee Activity~~	~~Total~~
~~Active Participants~~	~~471~~
~~Discharges Received~~	~~92~~
~~Agreements Signed~~	~~99~~

The Board would also like to reference the decision rendered by the United States Court of Appeals for the Third Circuit in the case *United States v. Safe House* (January 12, 2021)[2]. The Third Circuit found that owning or operating a "drug-involved facility" (a place for using, sharing, or producing drugs) violated the Controlled Substances Act and its operators would be subject to criminal penalties should there be charges. With the establishment of the Overdose and Infectious Disease Prevention Services Program in Maryland, the Program itself may also be subject to the same challenges under the Controlled Substances Act.

For the reasons discussed above, the Board of Nursing respectfully submits this letter of opposition to SB0279.

[1] The Interstate Commission of Nurse Licensure Compact Administrators. Final Rules Jan 2021. https://www.ncsbn.org/FinalRulesadopted81120clean_ed.pdf
[2] United States v. Safe House. Jan 2021. https://www.safehousephilly.org/sites/default/files/attachments/2021-01/US%20v%20Safehouse%203d%20Circ%20Opinion.pdf

I hope this information is useful. For more information, please contact Iman Farid, Health Policy Analyst, at (410) 585 – 1536 (iman.farid@maryland.gov) or Rhonda Scott, Deputy Director, at (410) 585 – 1953 (rhonda.scott2@maryland.gov).

Sincerely,

Gary N. Hicks
Board President

The opinion of the Board expressed in this document does not necessarily reflect that of the Department of Health or the Administration.

[1] The Interstate Commission of Nurse Licensure Compact Administrators. Final Rules Jan 2021. https://www.ncsbn.org/FinalRulesadopted81120clean_ed.pdf
[2] United States v. Safe House. Jan 2021. https://www.safehousephilly.org/sites/default/files/attachments/2021-01/US%20v%20Safehouse%203d%20Circ%20Opinion.pdf

SB279.UNFAVORABLE.MDRTL.LBogley.pdf
Uploaded by: Bogley, Laura
Position: UNF

Opposition Statement HB396/SB279
Public Health-Overdose and Infectious Disease Prevention Services Program

By Laura Bogley-Knickman, JD
Director of Legislation, Maryland Right to Life

We Strongly Oppose HB396/SB279

On behalf of our members across the state, we respectfully object to HB/SB as written. Without your amendment, this bill could be exploited to expand public funding for abortion and abortion providers. We object to any state mandate that requires taxpayers, employers or insurance carriers to provide funding or coverage for abortion. Such government mandates are a violation of citizens' Constitutional freedoms and natural rights, including the right to life and freedom of speech, assembly and religion.

Pregnancy is not a Disease

Abortion is not healthcare. It is violence and brutality that ends the lives of unborn children through suction, dismemberment or chemical poisoning. The fact that 85% of OB-GYNs in a representative national survey do not perform abortions on their patients is glaring evidence that abortion is not an essential part of women's healthcare. Women have better options for comprehensive health care. There are 14 federally qualifying health care centers for every Planned Parenthood in Maryland. Abortion has a disproportionate impact on Black Americans who have long been targeted by the abortion industry for eugenics purposes. As a result abortion is the leading cause of death of Black Americans, more than gun violence and all other causes combined.

No public funding for abortions

Taxpayers should not be forced to fund elective abortions, which make up the vast majority of abortions performed in Maryland. State funding for abortion on demand with taxpayer funds is in direct conflict with the will of the people. A 2019 Marist poll showed that 54% of Americans, both "pro-life" and "pro-choice" oppose the use of tax dollars to pay for a woman's abortion. Never has more than 40% of the American public supported taxpayer funding of abortion regardless of the context or way in which the question is asked.

Love them both

83% of Americans polled favor laws that protect both the lives of women and unborn children. Public funds instead should be prioritized to fund health and family planning services which have the objective of saving the lives of both mother and children, including programs for improving maternal health and birth and delivery outcomes, well baby care, parenting classes, foster care reform and affordable adoption programs.

Funding restrictions are constitutional

The Supreme Court has held that the alleged constitutional "right" to an abortion "*implies no limitation on the authority of a State to make a value judgment favoring childbirth over abortion, and to implement that judgment by the allocation of public funds*." When a challenge to the constitutionality of the Hyde Amendment reached the Supreme Court in 1980 in the case of *Harris v. McRae*, the Court ruled that the government may distinguish between abortion and other procedures in funding decisions -- noting that "*no other procedure involves the purposeful termination of a potential life*" -- and affirmed that *Roe v. Wade* had created a limitation on government, not a government funding entitlement.