

DNP Project: Safe Injections Sites as a Solution to the Opioid Crisis - A Policy Analysis

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Table of Contents

Executive Summary	4
Introduction	5
Problem Statement	5
Significance to Practice or Population Health	6
Background	8
Policy Model	11
Status of Opioid Crisis in Michigan	12
Review of the Literature	14
Stakeholder Identification	19
SWOT Analysis for Implementing Safe Injection Sites in Michigan.	21
Alternatives to Current Practice	24
Cost Benefit Analysis	25
Issues Impacting Opioid Crisis	26
Methods	28
Data Analysis	31
Recommendations	35
Sustainability Plan	36
Implications for Advanced Nursing Practice	39
Conclusion	40
References	42
Appendix A – Literature Tables	49
Appendix B – Timeline	63

Appendix C – SWOT Chart	65
Appendix D – Stakeholder Questions/Responses	68

Executive Summary

Over the past 20 years, the fatality rate from opioid and drug overdoses has dramatically increased in the United States. Clearly, a solution is needed to address this vast and serious problem. While Michigan Governor Gretchen Whitmer recently enacted legislation investing over \$800 million towards the treatment and prevention of the opioid crisis, the legislation does not endorse the implementation of Safe Injection Sites (SIS), which have been proven to save lives in other countries.

The purpose of this policy analysis was to explore the benefits of SIS in mitigating the opioid crisis, barriers to adoption, and potential solutions to barriers. SIS have been successful in reducing overdose deaths, preventing the spread of infectious diseases, and connecting people who use drugs with healthcare and social services. Barriers to the adoption of SIS include political opposition, legal challenges, and community pushback. Possible solutions to overcome these barriers include education and outreach campaigns to increase public awareness and support, partnering with law enforcement and community leaders, and piloting SIS in smaller, more controlled settings to demonstrate their effectiveness and safety.

The findings of this policy analysis suggest that the time is not right for SIS in Michigan. Stakeholders expressed great concerns about initiating such a program at this time. However, Advanced Practice Registered Nurses (APRNs) living in Wayne County, Michigan can still play a crucial role in addressing the opioid epidemic by providing evidence-based treatment and counseling to individuals with opioid use disorder, advocating for policy changes to increase access to care, and participating in educational initiatives to raise awareness of opioid misuse and addiction.

Safe Injection Sites as a Solution to the Opioid Crisis: A Policy Analysis

Over the past 20 years, the fatality rate from opioid and drug overdoses has dramatically increased in the United States (US). As stated by the Centers for Disease Control and Prevention (CDC), approximately 100,000 drug overdose deaths occurred in 2020 in the US, which is almost 30% more than the previous year (CDC, 2021a). In Michigan, there are approximately 12.3 overdose deaths per 100,000 residents annually, with 19.4% opioid-related (Michigan Department of Health and Human Services [MDHHS], 2020). Clearly, a solution is needed to address this vast and serious problem.

Problem Statement

According to the CDC, overdose deaths have quadrupled since 1991, and more than 70% of drug-related deaths in 2019 involved an opioid substance (CDC, 2021a). Due to the alarmingly high rate of overdose deaths, the United States Department of Health and Human Services (HHS) has already implemented several controversial harm-reduction programs, including needle exchange programs to prevent the spread of bloodborne illnesses and distribution of fentanyl test strips to assist drug users in identifying tainted street drugs (Bazzi et al., 2021). Of note, HHS does not endorse the implementation of Safe Injection Sites (SIS), which has proven to save lives in other countries (Gostin et al., 2019).

In early 2022, Governor Gretchen Whitmer signed and enacted Senate Bills 993, 994, and 995, which aim to invest more than 800 million dollars toward the treatment and prevention of the opioid crisis in Michigan (State of Michigan, 2022). These resources will also be used as settlement funds for lawsuits created due to the opioid epidemic and to create an Opioid

Advisory Commission in Michigan to create legislation aimed to support those with opioid use disorder. Governor Whitmer was quoted as saying, “The legislation... will be instrumental in preventing more deaths and will provide Michigan families impacted by the devastating opioid epidemic with some semblance of relief” (State of Michigan, 2022, para. 2). SIS were not specifically mentioned by the governor. However, although currently illegal in Michigan, SIS may offer a solution to the opioid crisis and should be seriously considered.

Significance to Practice and/or Population Health

All Americans, regardless of age, race, ethnicity, and sexuality, are being impacted by the opioid public health epidemic. According to the CDC, more than 100,000 drug overdose deaths occurred in the US between April 2020 and April 2021 (2021a). This statistic represents an almost 30% increase from the previous year and suggests that innovative approaches to harm reduction are necessary (CDC, 2021a).

In 2015, the Michigan Prescription Drug and Opioid Abuse Task Force reported that 0.3% of the nearly 5,000 overdose deaths in Michigan between 2009 and 2012 were men, and 39.7% were women (2015). The age of overdose victims ranged from under 15 to over 65 years, although the age group with the largest number of deaths (29.3%) was between 45 and 55 years. The majority of those who died from an overdose were white (84%), followed by black people (13.6%), Native Americans (1.4%), and Asian or Pacific Islander (0.1%). Despite making up a relatively small percentage of overall deaths, Native Americans had a death rate of 20.2 per 100,000 people, compared to 12.7 for whites and 10.9 for blacks (Michigan Prescription Drug and Opioid Abuse Task Force, 2015). Of all drug overdose deaths in Michigan in 2012, 59% occurred during the first 30 days after receiving a prescription, while 80% occurred closer to one year after receiving a prescription (Michigan Prescription Drug and Opioid Abuse Task Force,

2015). This data indicates that most overdose-related death victims in Michigan obtained medications through illegal routes rather than therapeutic means.

One study from Vancouver, Canada, revealed a net decrease in overdose mortality of 26% in the close vicinity of SIS (Levengood et al., 2021). Another study done in Barcelona, Spain, experienced a 50% decline in drug overdoses between 1991 and 2008 in those using SIS (Gostin et al., 2019). As of early 2022, numerous U.S. cities and the state of Rhode Island have implemented SIS. New York City opened the first SIS in the U.S. in November 2021 (Peltz, 2022). Overall, SIS decrease public nuisance offenses, decreases infectious diseases, and reduces overdose deaths (Finke et al., 2022). However, the United States Department of Justice has reportedly threatened SIS operators, clinicians, and users of these sites with criminal punishment and continues to fight against SIS existence (Gostin et al., 2019). Many of the concerns regarding SIS are unwarranted as these facilities have been proven effective at reducing overdose deaths. Despite a lack of federal support, individual states and communities are taking the lead in promoting harm-reduction tactics to reduce overdose deaths.

Several professional organizations support plans to decrease the effects of the opioid epidemic, but only one has spoken out in support of SIS. In 2019, the American Academy of Family Physicians (AAFP) released an official statement in support of SIS (AAFP, 2019). In addition, 14 medical specialists participated in the American Society of Anesthesiologists (ASA) Pain Summit to address the fundamentals of acute surgical pain, which aim to form the framework for a multidisciplinary acute pain resource (ASA, 2021). The summit focus was on fundamental ideas, many of which have their roots in methods for cutting down on opioids, such as multimodal analgesia. The ASA and the American Academy of Orthopedic Surgeons (AAOS) worked together to create a Pain Alleviation Toolkit, which includes recommendations for the

safe and effective management of postoperative pain using opioids, but does not specifically endorse an SIS (ASA, 2021). The American College of Obstetricians and Gynecologists (ACOG) concurs with the CDC that opioids should only be used to relieve pain if other options are ineffective or inappropriate. However, ACOG has not presented specific recommendations (2016). Last, the American College of Physicians (ACP)(n.d.) is developing a comprehensive pain curriculum for primary care and internal medicine clinicians. These include addressing issues like prescribing opioids inappropriately, managing chronic pain with non-opioid treatments, including pharmacologic and non-pharmacologic, weighing the risks and benefits of opioid therapy, and monitoring opioid-dependent patients appropriately. However, SIS is not specifically mentioned as a solution (ACP, n.d.).

More work is still needed in support of SIS strategy in the U.S. Family practice providers can promote awareness of needed change by supporting local government discussions in favor of SIS, cooperating with local advocacy groups to advance efforts in the fight against opioid addiction, and working with local and state healthcare associations to create favorable policies (Finke et al., 2022). People Who Inject Drugs (PWID) should have access to harm reduction strategies that are safe, and efficient as well as referrals to addiction care services. To prevent overdose deaths, the U.S. should promote SIS, which is saving lives in other nations (Finke et al., 2022).

Background

Opioid Use Disorder, or OUD, is a serious overconsumption of opioids leading to distress and results in an average of 130 deaths in the U.S. per day (Hodge et al., 2019). Since 2021, man thousands of people have died due to the misuse of prescription and illicit opioids (Hodge et al.,

2019). The American Psychiatric Association (2022) states that OUD is a chronic, lifelong disorder that must be managed effectively and consistently to prevent accidental death.

Opioids are a class of drugs, either synthetically made or naturally found in an opium poppy plant, used to relieve pain (National Institute on Drug Abuse, 2021). The euphoric sensation is a side effect of this class of medication which leads its users to consistently desire and ultimately misuse the drug. Chronic use of opioids leads to increased uncontrollable drug intake, causing cravings and withdrawal, and, eventually, opioid dependence or addiction (Wang, 2018). Various sensitive opioid receptors are found within the brain, spinal cord, skin, and gastrointestinal tract and are associated with reward processing. The reward center is activated when opioids are used, and tolerance and dependence advance rapidly. When tolerance develops, feelings of euphoria may lessen over time, but symptoms of withdrawal, such as agitation, anxiety, sweating, body aches, and abdominal cramps, will persist leading to a vicious cycle of using and withdrawing (Wang, 2018).

In Michigan, opioid deaths have grown tenfold since 2000 (State of Michigan, 2022). In 2018, the 2,599 lives lost to opioid overdose were more than the total car crash fatalities from the same year (State of Michigan, 2022). Harm reduction measures in public and private sectors have included controlling access to prescription opioids, controlling illegal supplies to consume opioids, rapid treatment for overdose of opioids, and introducing palliative substitutes for opioids and pain management (Hodge et al., 2019). Although there have been concerted efforts, the Michigan opioid epidemic grows and is still responsible for claiming lives to this day.

Safe Injection Sites – What are they?

Safe injection sites (SIS) provide the user with a controlled location to consume narcotics and a clinical professional prepared to assist should an overdose occur during injection (Gostin et

al., 2019). These facilities are staffed with clinical professionals who offer instruction on safe injection techniques, emergency care during an overdose, primary medical care, and referrals to social and addiction services. Users must supply the injectable drug, and the facility supplies sterile injection supplies, alcohol wipes, miscellaneous drug paraphernalia, and life-saving equipment such as oxygen and opioid reversal agents (Gostin et al., 2019). Safe injection sites have existed for many decades in Europe, Australia, and Canada (Gostin et al., 2019). With overdose deaths in the U.S. rising annually at an alarming rate, a potential solution to this grave problem may be SIS.

SIS were first introduced in Switzerland in 1986 and has proven effective in preventing opioid overdoses and deaths (Hodge et al., 2019). Studies related to the Switzerland SIS have shown a decrease in opioid-related deaths, a reduction in inappropriate discarding of syringes, a reduction in public injections, and a decrease in HIV infections (Hodge et al., 2019). Hodge et al. (2019) also reported that opioid consumers in Switzerland were often connected with addiction treatment through the SIS.

Multiple U.S. jurisdictions have expressed interest in the implementation of SIS, but varied translations of laws and policies present challenges. Numerous states still fail to support local SIS proposals (Hodge et al., 2019). Many organizations at the local, state, and federal levels are trying to advocate the need for an SIS to open and operate in legal and sanctioned manner in the U.S. (Davidson, Lopez, & Kral, 2018). This advocacy highlights the need to ensure such services remain focused on the user-defined market rather than external political concerns. This is essential in jurisdictions where an SIS needs to acquire legal sanctions at the local level to operate (Davidson, Lopez, & Kral, 2018).

In Michigan, the Public Health Code Act 368 of 1978, prevents the legalization of SIS as it opposes using any type of dwelling for the consumption of controlled substances. Fear of repercussions related to this law prevents a safe environment for PWID and will lead to more deaths among this population. Alternatives to the current opioid epidemic, such as SIS are needed to avoid further harm and unnecessary opioid overdose deaths in Michigan.

The opioid epidemic remains a challenge for people of all races, ethnicities, and from all backgrounds. Local and state governments must take action to reduce deaths using evidence-based data to implement harm-reduction efforts aimed at reducing opioid-related deaths. The benefits and challenges of SIS should be explored by local and state governments, while other harm-reduction strategies related to opioid use disorder should not be excluded.

Policy Model

This project will conduct a policy analysis regarding an SIS as a solution to the opioid epidemic using the sixth edition of *A Practical Guide for Policy Analysis* by Bardach and Patashnik (2020), which is a widely used, practical model to assess public policy. Eight steps are recommended by Bardach and Patashnik (2020) that will be systematically applied to the policy analysis. The first step in the process is to define the problem, which is critical to give direction to the process. Once the problem has been identified, evidence must be assembled. This step will recur in every part of the process as it applies to projecting the outcomes after the problem has been defined. During this step, information is collected and converted into evidence, bearing on the issue. The third and fourth steps are constructing alternatives and selecting criteria, respectively. The third step will lend some insight into other options that can be considered to mitigate the problem, while the fourth step evaluates the plotline.

The fifth step in the policy analysis is to project the project's outcomes. Bardach and Patashnik (2020) refer to this step as "being realistic," as projected outcomes may not be what was initially intended for the project. The sixth step includes confronting the trade-offs, which may involve clarifying the results associated with other policy options for the audience's sake. Step seven, based on the analysis, is to make a decision based on all of the previous analysis steps. Finally, step eight is to tell the story to an audience of stakeholders and other interested parties. The story can take on many tones, ranging from friendly to hostile, based on the audience. Currently, there are many policies and legal concerns against using SIS in the U.S., but alternatives will be analyzed and presented. Final policy recommendations to reduce overdose-related death due to opioid use through SIS will be made based on practical alternatives, usefulness, costs, and benefits.

Status of Opioid Crisis in Michigan

The state of Michigan is experiencing a statewide opioid epidemic. The Michigan Opioids Task Force (MOTF), established in August 2019 by the executive order of Governor Gretchen Whitmer, is dedicated to understanding how OUD impacts Michigan residents and is working to implement effective strategies to manage this epidemic (MDHHS, 2020). Twelve members of Michigan's executive branch make up the MOTF, an advisory board inside the USDHHS, with a main goal to unite state agencies to promote action to stop opioid usage, widen treatment access, and lessen the harm brought on by substance use (MDHHS, 2020).

The MOTF assembled for the first time in October 2019 and outlined several guiding principles for future work, including (1) providing priority to personal experiences, (2) implementing evidence-based strategies, (3) collecting and using data to guide strategy as well as to monitor results, (4) collaborating with state agencies and external stakeholders, and (5)

developing future-oriented goals to address ongoing issues (MDHHS, 2020). Additionally, the MOTF formed a Stakeholder Advisory Group that included members of academia, insurance payors, healthcare workers, substance use treatment centers, non-profit organizations, community organizations, court officials, law enforcement officers, state lawmakers, and public citizens whom OUD has personally impacted. All efforts culminated in a statewide goal to cut opioid overdose deaths in half by 2025. Strategic plans included improving prevention education, expanding access to care, reducing harm, collecting data, and ensuring equity. Target populations include pregnant women, new mothers, and citizens already involved with the criminal justice system (MDHHS, 2020).

Economic Impact in Michigan

The opioid crisis has significantly impacted Michigan's economy. According to a 2017 report from the CDC, the cost of OUD in Michigan was 17.9 billion dollars, and the cost of fatal opioid overdoses was 23.5 billion dollars (Luo, 2021). This correlates to a \$2,357 dollar cost per capita, which can be attributed to a variety of causes. According to the MOTF, people who excessively use opioids generate more hospital visits, are less productive at work, and are more likely to interface with the police and justice systems. Each of these incurs costs to healthcare organizations and taxpayers (MDHHS, 2020).

Michigan Department of Health and Human Services Aim

A top goal of the MDHHS is combating the opioid epidemic (MDHHS, n.d.). The departments approach to prevent prescription drug and opioid misuse, decrease accidental overdoses and fatalities, and improve access to treatment for those who suffer from OUD is based on a strategic plan of objectives aimed at early detection, effective treatment, and adequate prevention. The first objective is preventing patients from acquiring an OUD. Prevention tactics

include reducing the usage of prescribed opioids for medicinal purposes, encouraging the return of unused prescription drugs, and promoting effective methods for safely prescribing analgesics. The second objective is early intervention. Strategies include encouraging screening tools, referring clients for intervention, boosting harm reduction initiatives statewide, identifying people at risk of an opioid use disorder, and using the Medicaid Benefits Monitoring Program. The third objective is effective treatment for people with opioid use disorders. MDHHS funds treatment for substance use disorders through grants from various entities, dramatically expanding Michigan's ability to pay for this epidemic. Treatment strategies include expanding and boosting the use of medication-assisted therapy (MDHHS, n.d.).

Review of the Literature

The purpose of the literature review was to explore current knowledge about SIS and its impact on mortality, patient outcomes, and healthcare economics. Five main terms guided the first search strategy: (a) *safe injection sites*, (b) *opioid epidemic*, (c) *patient outcomes*, (d) *economic impact*, and (e) *healthcare costs*. This policy analysis' literature review utilized the PubMed research database. The following exclusion criteria applied to each search: (a) full text and (b) English language. The time period was limited to five years. The Boolean operator 'or' was used to broaden the search while the Boolean operator 'and' was used to narrow the search. Each search was reduced based on relevance.

A total of five searches were completed. The first search included the terms "opioid epidemic" AND "safe injection sites" AND "patient outcomes" OR "economic impact" OR "healthcare costs." This search yielded 93,558 results. The second search utilized the terms "opioid epidemic" OR "safe injection sites" AND "economic impact," which yielded 3,938 results. A total of 15 abstracts were reviewed, with one study chosen. Terms utilized in the third

search were “safe injection sites” AND “patient outcomes,” which yielded 360 results. A total of 25 abstracts were reviewed, with two studies chosen. The last search utilized the terms “safe injection sites” AND “patient outcomes” AND “healthcare costs.” This final search yielded 9 results, of which all abstracts were reviewed, and two studies were chosen.

Of the articles selected for the literature review, two articles were systematic reviews, two articles were cohort studies, one article was a qualitative study, and one article was a hallmark quantitative study detailing the success of a SIS model in Canada. When searching for a specific title not located in the databases mentioned above, Google Scholar was accessed. Reference lists from crucial articles were manually searched to identify essential literature. In addition to online databases, relevant academic and professional books, as well as organizational publications, were reviewed.

Another literature search was conducted separately in the PubMed database. This literature search consisted of four total searches. The following exclusion criteria applied to each search: (a) full text and (b) English language. The time period was limited to five years. The Boolean operator ‘or’ was used to broaden the search while the Boolean operator ‘and’ was used to narrow the search. The first search term was “safe injection site*,” which yielded 37 results. The second search was done using the search terms “safe injection site*” OR “opioid crisis,” which yielded 1,944 articles. The third search used the terms “safe injection site*” OR “safe consumption sites*,” which yielded 63 results. The fourth search terms were “safe injection site*” OR “safe consumption sites*” AND “harm reduction,” which yielded 30 results. A total of 27 abstracts were analyzed and five articles were chosen for the literature review. For a full evidence synthesis table, please see Table 1 in Appendix A.

After conducting the literature review, it was clear that the opioid epidemic is escalating, and the current tools being used to manage it are not entirely effective. Rising costs are unsustainable and include healthcare-related expenses, loss of employee productivity, and strain on the criminal justice system. Four main themes arose from the literature review: (1) reduction in mortality and improvement in health outcomes, (2) economic impact, (3) stakeholder perception, and (4) health benefits and harm reduction. Specifically, the articles reviewed demonstrate the potential combined impact that healthcare professionals, workplace professionals, and the potential introduction of SIS could have on mitigating the opioid epidemic. Preventing overdose deaths as well as reducing the economic burden on all stakeholders is the probable outcome.

Reduction in Mortality and Improvement in Health Outcomes

SIS allow PWID to use clean needles while under the care of trained clinicians. Additional services that are available at an SIS may include needle exchange services, condom provision, education about drug detoxification, and referral to addiction programs (Ng et al., 2017). While SIS are currently illegal in the U.S. based on federal law, there are 90 sanctioned SIS worldwide. Research studies have observed positive effects from the adoption of SIS, particularly in Vancouver, Canada (Kennedy et al., 2019). A cohort of PWID were studied over 72 months, and researchers found that frequent SIS use reduced all-cause mortality and improved stable housing (Kennedy et al., 2019). A systematic review conducted by Levenson et al. (2021) showed that the use of SIS may reduce morbidity and mortality related to overdose and improve healthcare outcomes, while reducing crime and nuisance to the public. Finally, an analysis of cohort and modeling studies found SIS reduced overdose mortality, HIV infections,

and ambulance calls (Ng et al., 2017). Based on this literature review, research suggests that SIS are likely to reduce morbidity and mortality of PWID.

Economic Impact

The economic impact of the opioid epidemic can be seen at many levels, from the cost to individuals and employers, as well as the public via government spending. In 2017, Florence et al. estimated that OUD and overdose deaths cost \$1.02 trillion at the federal and state levels. The reasons for these high expenditures include healthcare costs, crime-related expenses, a decline in workforce productivity and participation, and loss of quality of life (Florence et al., 2017). Bayoumi and Zaric (2008) found when simulating the population of Vancouver, Canada the use of an SIS predicted significant overall cost savings. For example, when considering only decreased needle sharing at SIS, the facility experienced a net savings of approximately \$14 million dollars. Savings continued to increase the more health benefits were added. For example, with the addition of safe injection techniques and referral to alternative treatment clinics, net savings were estimated at \$18 million, and 1175 life years gained over 10 years (Bayoumi & Zaric, 2008). Based on this literature review, research suggests that SIS are likely to decrease the economic burden to all stakeholders.

Stakeholder Perception

When considering the potential widespread adoption of SIS as a means to mitigate the opioid epidemic, it is important to understand stakeholder perception as it can affect the efficacy and acceptance of SIS and funding. Stakeholders include PWID and SIS staff, as well as the general public (Lange & Bach-Mortensen, 2019). Key issues of concern include benefits of SIS and SIS location, rules, and regulations, as well as ongoing monitoring to ensure proper

restrictions and regulations are updated and enforced (Lange & Bach-Mortensen, 2019). Housing status emerged as an important factor as to whether PWID would use SIS. In a free listing exercise conducted by Harris et al. (2018), it was found that PWID with stable housing would prefer to continue injecting at home, regardless of the possible decreased risk when injecting at SIS. However, those without stable housing would prefer to use SIS so as to not expose their actions to the public.

The opinion of community members in locations where SIS may be adopted are essential; however, Lange and Bach-Mortensen (2019) discovered a significant misunderstanding about the key issues, concerns, and opinions among the public when conducting a systematic review. Lange and Bach-Mortensen (2019) suggest that discussions with community stakeholders is critical.

Health Benefits and Harm Reduction

Health benefits and harm reduction are two areas that SIS can positively impact. Lambdin et al. (2022) conducted a prospective cohort study and found that users of SIS were less likely to visit an emergency room and had a lower incidence of hospitalization than those not using the SIS. Lambdin et al. (2022) concluded that SIS would likely reduce the increasing burden placed on acute care services utilized by PWID.

SIS are more than a place to use recreational drugs and often incorporate other harm reduction strategies concurrently. These strategies include syringe exchange programs, naloxone distribution, and referral to addiction treatment. Saloner et al. (2018) identified that safe injection sites are underutilized in the U.S. but have been shown to reduce harm in European countries. The authors point out that while abstinence-only methods as a response to the opioid epidemic

are the current standard, this strategy will lead to further deaths from overdose and also risk public health (Saloner et al., 2018).

Kennedy et al. (2021) found that harm was reduced by decreasing the number of public injections and a successful syringe exchange program after expanding SIS in Vancouver, Canada. The popularity of SIS use increased quickly after expanding access. Interestingly, the expansion almost immediately had an increase in addiction treatment participation as well (Kennedy, 2021).

Summary

A total of 11 articles were incorporated into the literature review after two separate searches. Of the 11 articles selected, there were three systematic reviews, five cohort studies, one qualitative study, one quantitative descriptive study, and one historical quantitative study detailing the proposed success of SIS model in Canada. Ultimately themes were derived and analyzed from this selection, and similarities were identified.

Stakeholder Identification

The opioid epidemic has many stakeholders. First, adults with disabilities are more likely to have mental health issues as well as substance use issues than adults without disabilities. Adults with disabilities are particularly susceptible during times of public health crisis, such as during the COVID-19 pandemic “shut-downs,”. They may have increased susceptibility to substance abuse and decreased access to mental health care. Behavioral healthcare providers are in a position to mitigate negative effects for adults with disabilities by proactively reaching out to those with physical, cognitive, or sensory disabilities, such as through telehealth (Czeisler et al., 2021).

Next, employers, especially those who provide work opportunities involving heavy physical labor or with limited health care, can serve a critical role in monitoring employee health before it becomes problematic or severe. Employers can decrease ergonomic risk factors, address employee health and safety concerns, encourage early substance use intervention, facilitate access to nonpharmacological pain management, and provide opioid use education (Shaw et al., 2020). Additionally, United States workers are stakeholders who would benefit from disclosure of work-related pain or substance use problems if they knew doing so would not result in retaliation from their employer or co-workers. Government stakeholders, such as legislators, can establish laws that would require employers to provide education and accommodations for at-risk employees. Employee-facing associations related to health, disability, and injury can serve as partners and intermediaries between employers, employees, and the government to help shape policy, make recommendations, and enforce issues related to health, pain, disability, injury, and substance use (Shaw et al., 2020).

Next, urban communities with Black and Hispanic populations have been disproportionately impacted by opioid overdose deaths and tend to have poorer health outcomes. During the COVID-19 pandemic, public and private interventions primarily helped white communities instead of the disadvantaged communities. Telehealth providers can improve access to health services during times of public crisis (Ghose et al., 2022). SIS staff members are community health providers who provide education, drug injection supervision, emergency services, first aid, referral to additional medical and behavioral health services, and needle exchange and condom provision (Ng et al., 2017). Health departments provide core public health services such as disease control, vaccines, and education. The judicial system still considers the use of SIS to be illegal under federal law in the United States. Members of the general public

help shape public policy, thereby indirectly affecting funding and support for PWID. Educating the public about the advantages of SIS can result in their acceptance of the implementation (Levengood, 2021).

Finally, the perceptions of PWID should influence public policy because any sanctioned interventions would directly benefit them. According to research, people without stable housing felt they would benefit most because they inject drugs in hidden, isolated locations to avoid disturbing the public (Harris et al., 2018). Law enforcement often interfaces with these people and are knowledgeable to provide Narcan in the event of an emergency overdose situation.

SWOT Analysis for Implementing Supervised Injection Sites in Michigan

Strengths

According to Marshall et al. (2011), accidental drug overdose is the leading cause of morbidity and mortality in PWID. Risk factors for a fatal overdose can be attributed to individual and environmental factors, such as polydrug and public consumption (Marshall et al., 2011). Some of the strengths of SIS include the ability to decrease morbidity and mortality, as well as lower the economic burden of all stakeholders (Lambdin et al., 2021).

In 2003, the first SIS opened in Vancouver, Canada in 2003. This SIS is known as “Insite” and is located in an urban area where an estimated 5,000 PWID reside (Kerr et al., 2006). During the 18-month analysis of the SIS, there were no fatalities reported among the total 336 illicit drug overdoses (Kerr et al., 2006). The reduced mortality and morbidity rate associated with illegal drug overdoses are attributed to early interventions and safer injection education within the SIS community (Kerr et al., 2006). In an undisclosed and unsanctioned SIS in the U.S, there were fewer frequent visits to the emergency room and less hospitalization among participants in the SIS than in those not using SIS (Lambdin et al., 2021). As the need for

acute care services increases, SIS can offer some relief from the burden on the health care system.

Weaknesses

Since SIS are not sanctioned or permitted in the U.S., most studies have focused on Canada or Europe, where SIS is legalized. Although many positive outcomes are attributed to the programs surrounding SIS, some weaknesses should be explored. For example, the physical location of SIS is a factor that impacts overdose fatalities. In one population-based analysis in Vancouver, Canada, a 35% decrease in mortality occurred within 500 meters of the SIS, compared to a 9% reduction in other areas during the same period (Marshall et al., 2011). Since there are already challenges with opening an SIS in the United States, physical location and access to SIS will be an added obstacle. In the same study, the authors found that an extensive waiting list was an additional barrier, as there were only 12 injection seats and a capacity of 500 supervised injections per day, and the neighborhood had over 5,000 PWID (Marshall et al., 2011). Additionally, the study's authors noted that many overdoses at SIS came from cocaine or other stimulants. Most evidence-based overdose interventions and prevention strategies, including methadone maintenance therapy and naloxone, are ineffective at reducing the risk or preventing overdoses associated with stimulant consumption (Marshall et al., 2011).

Opportunity

When discussing SIS in the United States, there are many strong opinions that both champion and advocate for legal sanction, and there are those that reject and disfavor the implementation. Matheson et al. (2014) conducted a public opinion survey in Scotland, where the drug treatment strategy is no longer focused on harm reduction, but recovery based. A random sample survey focused on the problem of illicit drug use, as negative media attention

often affects perceptions regarding drug treatment (Matheson et al., 2014). The authors noticed there were positive attitudes towards PWID if the respondents had a personal experience of drug misuse (Matheson et al., 2014). The authors also concluded that over half of respondents were unwilling to pay for drug treatment for PWID, which indicated they likely did not value recovery interventions (Matheson et al., 2014). The authors concluded that a gap existed between public attitudes toward PWID and evidence-based drug treatment (Matheson et al., 2014). An opportunity to influence public opinion could be done through public engagement and education, and thus improve drug treatment knowledge for the general public (Matheson et al., 2014). Matheson (2014) concluded that a better understanding of drug misuse was associated with more favorable attitudes, which reduced stigmatization and attitudinal barriers. In another study of public opinion in Massachusetts and Rhode Island, a limited understanding of harm reduction led participants to favor prevention and treatments by "avoiding" or "fixing" the problem of illicit drug use rather than acknowledging a problem exists and keeping PWID safe (Childs et al., 2021).

Threats

Many things threaten the opening of SIS or the operation of running a sanctioned SIS. For example, community policing has been found to reduce access to harm reduction and other services (Collins et al., 2019). While policing is necessary for areas with a high prevalence of PWID, this often leads to rushed injection, increased risk of overdose, and a higher risk of disease transmission (Collins et al., 2019). There is a delicate balance of maintaining trust and safety among PWID while also allowing law enforcement to keep the community safe for all as part of a public health response. Police surveillance can make users of SIS feel unsafe, given the criminalization of drugs, which may impact how PWID utilize them (Collins et al., 2019). PWID

may be hesitant to request assistance when an overdose happens, in fear the police may also attend to the emergency and make an arrest (Collins et al., 2019). Therefore, despite the SIS being a safer environment for PWID to avoid overdose fatality, drug-scene policing created some barriers to harm reduction, which also increased the risk of drug-related harm and overdose (Collins et al., 2019). Threats may also exist at the local government level. Currently in Michigan, there is a law preventing the use of controlled substances in public places. This ensures that any unsanctioned SIS in Michigan is at risk for criminal charges against those that use or run SIS.

Alternatives to Current Practice

Safe Injection Sites

As it stands, there are no clear practice guidelines in Michigan to treat OUD. As the opioid crisis continues to evolve and worsen, it is prudent to look at all aspects and find innovative ways to reduce harm among PWID. The current Michigan law focuses on what is illegal rather than permissible. One alternative to current practice is SIS. As mentioned previously, SIS are a supervised healthcare facility that provides a safe and hygienic environment for PWID (Houborg and Frank, 2014). The first legal SIS in Switzerland focused on improving drug users' health while providing access to services such as addiction treatment (Houborg and Frank, 2014). Although there is no legally sanctioned SIS in Michigan at this time, it is essential to look at the works of other states and countries to provide a framework for the future.

Syringe Services Programs

Syringe Services Programs (SSP) were implemented in the 1980s in some large cities to combat the spread of disease through needle-sharing (Jones, 2019). SSP were created as a harm reduction measure for PWID, as it allows them to obtain clean hypodermic needles at almost no

cost, sometimes in exchange for the safe disposal of used needles (Sharp et al., 2020). Many SSP also offer the opportunity for disease testing, wound care, referral for addiction treatment, and other harm reduction programs and services (Sharp et al., 2020). There has been a considerable amount of research that SSP has led to an increase in seeking treatment, improved access to treatment, and reduced blood-borne communicable diseases (Sharp et al., 2020). Some of the same barriers exist with SSP as with SIS. Many community members fear that SSP in a neighborhood may increase criminal activity and drug use (Sharp et al., 2020).

Naloxone Distribution Programs

There are opportunities to reduce overdose mortality, including naloxone treatment and take-home naloxone. Emergency Departments and EMS providers have typically administered naloxone to reverse opioid overdose, as naloxone was not easily accessible to lay persons (Papp et al., 2019). It has been shown that providing take-home naloxone rescue kits (NRK) to patients at risk for overdose reduces death rates (Papp et al., 2019). NRK can be given to trained and untrained rescuers as minimal education is required to prevent fatality in an opioid overdose (Papp et al., 2019). There is also data linking giving NRK to patients in the emergency room as a potential lifesaving intervention (Papp et al., 2019).

Cost Benefit Analysis

The benefits of establishing SIS can far outweigh the costs, as supported by an analysis of a proposed program in Baltimore, Maryland (Irwin et al, 2017). Using a Canadian SIS program as a guide, Irwin et al. (2017) explored the potential annual costs versus savings by examining six criteria which included: prevention of human immunodeficiency virus (HIV) transmission, Hepatitis C Virus (HCV) exposure, skin and soft-tissue infection (SSTI), nonfatal overdoses, deaths related to overdose, and involvement in medication-assisted treatment (MAT). SIS were

predicted to lower all viral transmissions and infections, reduce hospitalizations and death rates, and bring more PWID into treatment (Irwin et al., 2017). The analysis further found that SIS offered potential savings of \$7.8 million, based on an operating budget of less than \$2 million per year. Annual savings were calculated to be around \$4.35 for every dollar spent (Irwin et al., 2017). In conclusion, SIS could be a cost-effective option and provide significant public health and economic benefits to Wayne County, Michigan.

Issues Impacting Opioid Crisis

Disability – Physical and Mental

Adults with disabilities experience higher rates of substance use and mental health disorders than adults without disabilities. According to a poll conducted in the months of February and March 2021, 64.1% of Americans with disabilities reported experiencing mental health symptoms or drug and alcohol use (Czeisler et al., 2021). Adults with disabilities were 50% more likely to have serious suicidal ideation, methamphetamine use, opioid and nonopioid prescription drug abuse, and polysubstance use (Czeisler et al., 2021). To significantly decrease suicide rates, governments must partner with healthcare providers to increase economic support and offer coping mechanisms through trauma-informed care.

Additionally, people with disabilities were more likely to have a disadvantage accessing care due to the pandemic, when diagnosed with mental health or substance use disorder (Czeisler et al., 2021). Compared to persons without impairments, adults with disabilities more frequently reported pre-pandemic and recent substance usage to manage emotional stress. Enhancing mental health and drug use screening among adults with disabilities and improving access to related healthcare services are crucial during public health emergencies, such as the COVID-19

pandemic. Telehealth is one example of a strategy designed to improve access to care and medication during public health emergencies. Across demographic categories, differences in mental health were seen among adults with disabilities, underscoring the necessity of providing this population with access to support for coping with disaster distress and preventing suicide (Czeisler et al., 2021). Additional research is needed to both identify and address health disparities among adults with disabilities and could further evidence-based strategies (Czeisler et al., 2021).

Covid Pandemic

Due in part to growing health inequities, the effects of the opioid crisis have differed in diverse and socioeconomically impoverished communities. The COVID-19 pandemic brought on increased drug overdose deaths in the U.S. Consequently, uncertainty exists over the extent to which the pandemic affected overdose deaths across various metropolitan demographics. Through spatiotemporal analysis, Ghose et al. (2022) investigated the impact of the COVID-19 pandemic on opioid overdose mortality. The researchers conducted a longitudinal study of overdose deaths in Milwaukee County, Wisconsin and discovered that monthly overdose deaths increased dramatically due to the pandemic. The Black and Hispanic communities were most significantly impacted, but overdose fatalities also increased in white suburban communities with greater wealth. A deeper comprehension of the underlying elements is required to direct actions at the local, regional, and national levels (Ghose et al., 2022).

Employment

Employers in the United States paid an estimated 18 billion dollars in annual costs and one trillion dollars in total costs due to opioid addiction between 2001 and 2017 (Fuhrmann-

Berger, 2018). These estimates took into account medical costs, lost production, and fatalities. Due to the opioid crisis, there has been a sharp fall in labor participation, making it challenging for employers to hire and retain skilled employees (Fuhrmann-Berger, 2018).

The prevalence of OUD and opioid overdose fatalities among United States workers has not been well addressed. Workplace and organizational characteristics may predispose employees to the development of OUD, as evidenced by the higher frequency of overdose fatalities in individuals with physically demanding occupations, dangerous work, and limited health insurance coverage (Shaw et al., 2020). Significant potential exists to enhance outcomes by implementing organizational policies that lower risk factors, addressing employee health and safety issues, making nonpharmacologic pain management available, and promoting early substance use treatment. The establishment of policies at all levels of organizations could enhance how employers handle employees who have OUD and lower occupational risks that could operate as aggravating factors (Shaw et al., 2020).

Methods

Project site and population

Implementing SIS in Michigan is a controversial issue and involves input and consideration from multiple stakeholders. The goal of implementing this project and policy analysis occurs in many areas. The stakeholders identified have vested interests in the implementation of SIS in Michigan. Many stakeholders are involved in state-level policy, federal-level policy, legislation, community members, and law enforcement. Although OUD is a widespread issue affecting people from different backgrounds and demographics, the population's primary focus will be in Wayne County, Michigan. During the Michigan State

Institutional Review Board (IRB) process, arrangements will be made to work with stakeholders identified through the literature review.

Ethical consideration and protection of human subjects

Protecting stakeholders during this process was considered to be of the utmost importance. This project seeks to understand what the public perception of SIS. This project also aims to understand if stakeholders support SIS in Michigan. Subsequently, qualitative data collection will take place. Michigan State University IRB process requires that a formal procedure be followed as stakeholders' identities should be protected. Stakeholder categories will be recorded in interviews, and responses will be grouped according to themes. All qualitative data collected will be de-identified, and names and titles of stakeholders will not be associated with responses.

Setting Facilitators and Barriers

Some barriers have been identified that may challenge this policy review. For example, accessibility of state legislators is often more difficult after an election such as the recent midterm election. This is due to increased requests of elected officials from the media, businesses, other politicians, and constituents. Many elected officials have legislative aids that manage the outreach to triage communication with the public. For this reason, it may be difficult to speak directly to some legislators. Further, some stakeholders are also not offering face-to-face meetings due to the COVID-19 pandemic protocols. This also may mean that more email, phone calls, or zoom sessions would be necessary, and technology can often be unreliable.

Many law enforcement personnel in Wayne County are often overwhelmed with large-scale issues affecting the region. There is a high rate of crime in the city of Detroit and surrounding areas. It may be challenging to reach some law enforcement for comments and

opinions if they are already stretched thin on their daily job tasks and other emergencies that can arise.

Although there are barriers that may affect the policy review, some positive facilitators can favor the success of this policy review. For example, technology can be both a barrier and a facilitator. It offers a convenient way to converse when a face-to-face meeting is impossible due to the pandemic or otherwise. The midterm election has also just concluded. New electors are getting ready to advocate for a constituent and may be excited to help on new projects such as this. They may also offer more options to meet with the constituents in public settings, such as coffee houses or local libraries. Further, the legislative aids can be a facilitator as they often have more time than elected officials and can speak to an official on behalf of a constituent.

Intervention and Data Collection Procedures, Measurement Instrument/Tools

Using qualitative data collection, the stakeholder interviews will consist of responses to a pre-determined list of questions. Michigan State University IRB and Human Research Protection Program (HRPP) protocol will be followed and requires that the questions presented to stakeholders be reviewed and approved. Therefore, all questions submitted to stakeholders will be standardized to ensure congruency. Michigan State University determined its human subjects, HRPP protocol has to be followed. Themes will be analyzed among responses to the questionnaires, and stakeholders will be protected, as information will be de-identified.

Timeline

The comprehensive implementation of this project will occur between December 2022 and April 2023. Succeeding IRB approval in December 2022, stakeholders will be contacted for interviews during the months of December 2022 and January 2023. Analysis of responses will be completed in February 2023. The finalization of the policy analysis will occur in March 2023, in

preparation for presentation in April 2023. The complete timeline of the policy review can be viewed in Appendix B.

Data Analysis

Description of Data Analysis Method

Stakeholders were contacted via telephone, email, and text message. Attempts to contact Wayne County, Michigan stakeholders with political interests, healthcare personnel (registered nurses, medical providers, social workers, healthcare agencies), religious leaders, and law enforcement personnel were made. There were five standard questions that were asked of each person, as well as a consent sheet for stakeholders. The five questions asked of each stakeholder are as follows (see Appendix D):

1. What do you know about the opioid epidemic?
2. What do you know about Safe Injections Sites?
3. How would the citizens of Michigan benefit from Safe Injection Sites?
4. What barriers do you anticipate encountering if a Safe Injection Sites was initiated in your county?
5. What do you believe is a solution to the opioid crisis?

In total, feedback was received from four people in political positions, six people with a healthcare background, and three in law enforcement. Feedback was not received from religious leaders. It was found that they were reluctant to give a stance on SIS because it might conflict with beliefs of their religious institutions.

Political Stakeholders

The three groups of stakeholders included those with political interests, healthcare personnel, and law enforcement. There were common themes identified across and within each group. The stakeholders in each group also had concerns related to their jobs or interests.

Stakeholders with political interests were mostly aware of the opioid crisis, but most were unsure of a solution to the problem. Some stakeholders made it clear that SIS were not even considerations at the state government level at this time. It was also noted among this group of stakeholders that a solution to the opioid crisis may result from equal education, starting in the school systems, and also reducing poverty by increasing wages. There was concern even though OUD affects people from all demographics and backgrounds, those in poverty seem to be at an unfair advantage. Lastly, political stakeholders asked for strict sentencing for drug dealers as a solution, as well as bringing more awareness to the problem.

Law Enforcement Stakeholders

Law enforcement stakeholders were all aware that the opioid crisis exists, but overall were less in favor of implementing any SIS. Multiple concerns existed about keeping the general public safe, policing protests and riots, and other violent encounters that may exist around an SIS. One law enforcement officer stated that the introduction of fentanyl to the U.S. has increased the danger of the opioid crisis, leading to more overdoses and deaths than in the past. Many spoke on their direct exposure to the opioid crisis and administering Naloxone to prevent overdose deaths. Some law enforcement personnel expressed concern over the importation of drugs from other countries and suggested that targeting high level drug dealers could mitigate the opioid epidemic. Some law enforcement stakeholders were concerned that SIS may enable or condone the use of illegal substances, and therefore make the opioid crisis worse in the long run.

Healthcare Stakeholders

Healthcare stakeholders were mostly aware of the opioid crisis, some stating that it was a “public health emergency”. Naloxone administration was mentioned as an immediate solution to prevent overdose death, but longer lasting rehabilitation centers need to be implemented to address OUD long term. Another solution to the opioid epidemic presented by healthcare stakeholders was to find nonpharmacological alternative solutions to treat pain on an outpatient basis. There would also need to be implementation of additional safeguards for prescribing opioids as prescription opiates seem to contribute to the opioid crisis. Safeguards may also include requiring continuing education for healthcare providers in the treatment of pain management and OUD. One healthcare worker commented on a favorable outcome of implementing SIS, which may lead to less family intervention with Child Protective Services as adults could use opioids safely and away from visibility of children at home. Other healthcare personnel suggested SIS would be a solution to the opioid crisis, but also recommended improving the access of naloxone for overdose.

Theme 1: There is Not a Long-Term Solution to the Opioid Crisis

Each of the three stakeholder groups were aware that the opioid crisis was an issue, and gave examples of possible solutions, but the common theme was ultimately, there is not a solution. One law enforcement officer stated that as long as there was demand for the supply, people will always find a way to do illegal things. It was clear that frustrations were present from each point of view of the stakeholders. Stakeholders with political interests were worried about keeping Wayne County safe, and that implementing measures such as SIS, would only make drugs more accessible. Law enforcement officers had concerns over the amount of repeat offenders. Some had stated that they continued to see the same people battling OUD, and as

much as they had tried and wanted to, they were unable to get away from using drugs, some having fatal consequences. Healthcare stakeholders who were familiar with the opioid crisis, some with daily exposure, were left frustrated with the lack of governmental support for the opioid crisis. All groups saw funding for treatments of the opioid crisis as a barrier to solutions and did not foresee an increase in funding to support it.

Theme 2: SIS Will Make Communities Less Safe/Location

While there were some favorable considerations for implementing SIS by a few stakeholders, many were concerned about the location of the SIS and the safety surrounding it. Concerns were raised over property values of houses surrounding an SIS as well. If SIS were to be implemented, resistance from the community may occur as well. It would be unclear how to police the surrounding area, and there wouldn't be boundaries for responsible parties to intervene, such as EMS or police. Political stakeholders were concerned that Wayne County as a whole would be made unsafe if SIS were to be implemented as mentioned previously, as access and availability to drugs may be more prevalent around an SIS.

Theme 3: The Opioid Crisis Should be Treated as a Mental Health Crisis

There were many comments among political stakeholders citing mental illness as the cause of the opioid crisis and interventions should be aimed at addressing this first. Law enforcement was also in agreement, as there are often limited places to take those suffering from OUD and mental illness concurrently. The treatment facilities used in current practice are often costly and short-term, and healthcare stakeholders suggested long-term treatment facilities may be a more favorable alternative to current practice.

Recommendations

Based on stakeholder feedback, it appears that SIS is not an option for Wayne County right now. Most stakeholders felt that drug use and OUD will likely continue to be a problem despite the introduction of SIS. Law enforcement stakeholders felt that targeting high profile drug dealers and monitoring the importation of illegal substances would slow down the overdose deaths and potentially be a long-term solution. Other stakeholders felt that by implementing education strategies for the public and medical providers as well as increasing safeguards around prescribing, less OUDs would arise from prescription medications.

There is significant resistance among political personnel, law enforcement, and healthcare stakeholders to implement SIS. Concern over neighborhood and county-wide safety was a common theme among stakeholders. With implementation of SIS, there would have to be significant change to current monitoring of neighborhoods and policing, which may not be feasible at this time. Concern around funding for the SIS was a major concern. If taxpayers were responsible for initiating and upkeep of an SIS, there would likely be public resistance. Neighborhoods where the SIS would be located may also give pushback as safety would be a large concern. There may be a better time to move forward with SIS in the future, but based on the feedback received, the concern over the political motives and political division among citizens of Wayne County and Michigan, as a whole, would seemingly limit implementation at this time.

Wayne County has many opportunities to gain support and implement an SIS, but there are currently gaps that are preventing this. For example, public education may need to incorporate some form of awareness, even at a young age, to combat the opioid crisis and

normalize interventions for those that are suffering from OUD. Awareness of OUD and the opioid crisis brought to the public may also assist in the future implementation of SIS.

In addition, there are currently very few mental health and addiction treatment centers that are affordable, accessible, and focus on long-term remission from OUD. Funding could be directed to these solutions in order to get the opioid crisis under control. It would be imperative that this be considered prior and during implementation of an SIS.

Some political implications related to SIS include lack of funding and safety plans. Law enforcements are already stretched thin on juggling the opioid crisis and other crime in Wayne County. Adding an SIS to monitor may burden the system more. Funding would have to be dedicated to the SIS, and this would likely be coming from taxpayer dollars. As mentioned previously, there may be resistance in this area.

Based on stakeholder feedback, there are alternatives to SIS that may be more feasible at this time. For example, many stakeholders mentioned harm reduction measures as a solution to the opioid crisis. Measures which are already in place include treatment facilities, syringe exchange programs, and naloxone distribution. More affordable and long-term treatment facilities would help to educate and treat those currently suffering from OUD. Syringe exchange programs would help to limit the spread of communicable disease, thus also providing a harm reduction measure to those living with OUD. Naloxone distribution has been proven to save lives from deadly overdose. The accessibility of naloxone in the public, would continue to reduce deaths related to opiates in the community.

Sustainability Plan

SIS provides many benefits to PWUD, including reducing overdose deaths, harm, and stigma, education as well as offering treatments options and providing access to basic healthcare

services (Lambdin et al., 2021; Levensgood et al., 2021). Given that SIS are not widely supported in the United States, there are several hurdles to overcome with implementation in Wayne County, specifically financial considerations, and stakeholder buy-in. If SIS were to be implemented, a primary goal should be long-term financial viability.

Multiple Sources of Funding

It is important to ensure that there are multiple sources of funding for SIS, both from public and private sources. Funding must be secured from private donors, such as individuals and non-governmental organizations (NGO) as well as public funding at the local, state, and federal levels. By diversifying sources of funding, success of an SIS is more likely. Furthermore, diversification of funding creates a “bandwagon effect” such that each source will view the other as a confirmation that SIS support is beneficial.

Cost-sharing Partnerships

Many communities may already have resources, such as physical, financial, and human capital, to start and sustain an SIS. By partnering with local healthcare facilities, additional funding for SIS may be available. Additionally, through collaboration with established healthcare providers, social capital may help community stakeholders accept the concept and further implementation of an SIS in the community.

Utilize Sliding-scale Fees

While using sliding-scale fees may not be popular, it can help defray the costs of operating SIS as well as increase community support by holding PWUD partially responsible when accessing this service. Sliding-scale fees take into consideration a patient’s ability to pay, therefore ensuring those with lower income can still afford access to care. Caution should be

used when implementing such a structure as finances could be a barrier to some PWUD to obtaining care.

Advocate for Government Funding and Support

Government support for SIS is likely a major cornerstone for sustainability in the United States takes many beneficial forms, including grants, tax breaks, or financial incentives to healthcare providers, medical suppliers, real estate owners, and PWUD. The success of SIS will depend on being able to implement on a large scale with fidelity, which can only be done with government support. SIS advocates can help to justify government investments is that SIS can reduce the risk of overdose and the spread of infectious diseases, help connect PWUD with addiction treatment and recovery resources leading to improved health outcomes, and ultimately, a reduction in all societal costs associated with substance use disorders.

Partnerships with Research Organizations

Public and private organizations that conduct research in healthcare, addiction, and related fields may have access to funds in exchange for research opportunities. Ideas for research would include demonstrating the efficacy of SIS in the US, benefits of SIS, cost-benefit analyses, and the impact of SIS among all community stakeholders. A barrier to SIS adoption is the lack of rigorous scientific studies on the potential effectiveness of SIS programs in the US. Pilot studies and both quantitative and qualitative research can not only help to establish the benefits and cost-effectiveness of SIS, but also generate important data on the impact of these programs on the wider community. By demonstrating the value of SIS programs through research, organizations can promote their implementation as well as develop evidence-based policies for addressing substance use disorders which are needed to justify additional spending.

Leverage of Social Media

The impact of social media and key social influencers can have a dramatic impact on public opinion, support for, and adoption of new ideas. In recent years, individuals with no budget but an important message have been able to utilize social media to amplify their voice and garner public support for essential causes. Two examples are the work of Greta Thunberg on environmental sustainability and Collin Kapernick's work toward social justice. Furthermore, the entertainment industry has many examples of lives lost too soon to OUD. Perhaps leveraging the voices of several key individuals would be enough to gain support for the use of SIS.

By implementing a combination of these strategies, financial feasibility may be established to support SIS in the United States. The sustainability plan outlined provides numerous starting points but would require flexibility due to changing financial and political landscapes. Overall, integrating SIS programs in the United States will require innovative strategies, collaboration between stakeholders, and a willingness to respond to new challenges and opportunities.

Implication for Advanced Nursing Practice

Advanced Practice Registered Nurses can play a critical role in combating the opioid crisis. Multisector partnerships can be formed by APRNs to address OUD. APRNs can also perform assessments and improve opioid prescribing practices by ensuring they are safe and appropriate. Another key responsibility for APRNs is screening for and monitoring opioid use among patients. Working together with patients to reduce opioid use through transitional treatment and supporting overdose rescue efforts are also necessary. Through a combination of efforts, APRNs can make a significant impact in reducing the harm caused by the opioid crisis.

In response to the opioid crisis, stakeholders have proposed various harm reduction measures. These measures include long-term treatment facilities, syringe exchange programs, and naloxone distribution. APRNs are often on the front line of engaging with patients and therefore implementing such measures. For example, they can collaborate with healthcare providers to provide long-term treatment options for individuals with OUD. APRNs can educate patients on harm reduction measures and in the distribution and use of naloxone. By working together, APRNs can provide comprehensive care to individuals who are affected by the opioid crisis.

Additionally, APRNs can advocate for creating standards-based approaches to prescribing practices and monitoring policies and education, which are logical and achievable approaches to help reduce opioid abuse. By working with legislative bodies and professional organizations on policy change, APRNs can make a difference. APRNs can also implement education strategies for public and medical providers to increase awareness of the risks associated with opioid use and promote the use of non-opioid options and multimodal strategies to manage pain. By implementing these strategies, APRNs can reduce the number of OUDs that arise from prescription medications.

Conclusion

According to the CDC (2021a), the number of opioid overdose deaths has increased fourfold since 1991, and opioids were involved in more than 70% of drug-related deaths in 2019. In response to this trend, the HHS has implemented several harm reduction programs, including needle exchange programs and distribution of fentanyl test strips to help drug users identify drugs which have been laced with fentanyl without their knowledge (Bazzi et al., 2021).

However, HHS has not endorsed the implementation of SIS, even though they have been shown to reduce mortality in other countries (Gostin et al., 2019).

In early 2022, Michigan Governor Gretchen Whitmer signed bills investing over \$800 million towards the treatment and prevention of the opioid crisis in Michigan (State of Michigan, 2022). The resources will also be used to establish an Opioid Advisory Commission to develop policies to support those with OUD. However, SIS were not mentioned. Michigan and Wayne County legislators do not support SIS due to concerns they could further encourage drug use, despite evidence showing that SIS can save lives and reduce public health risks (Gostin et al., 2019). Instead, local legislators have focused on alternative strategies, such as expanding access to medication-assisted treatment (MAT) and naloxone, as well as increasing funding for community-based recovery programs (State of Michigan, 2022).

While SIS implementation does not appear to be a viable option in the near term, there are still several ways that APRNs living in Michigan and Wayne counties can help combat the opioid epidemic. APRNs can play a key role by adhering to prescribing guidelines and laws, conducting thorough patient assessments, using transitional treatment, and alternative pain management strategies. APRNs can also provide education to patients and families about the risks of opioid use and the importance of proper disposal of unused medication. Additionally, APRNs can advocate for harm reduction programs such as needle exchange and naloxone distribution. In conclusion, while SIS has been proven a valid strategy in the fight against opioid addiction, more research is likely needed to convince Michigan and particularly Wayne County of the benefits.

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Appendix A

Author/Title	Level of Evidence	Purpose of the project/research	Framework	Results	Relation to Project	Implications for Practice
Bayoumi, A. M., and Zaric, G. S. (2008). The cost-effectiveness of Vancouver's supervised injection facility. <i>Canadian Medical Association</i> , 179(11), 1143-1151	Level IV	The cost-effectiveness of Canada's only supervised injection sites has not been rigorously evaluated. We estimated the impact of the facility on survival, rates of HIV and hepatitis C virus infection, referral to methadone maintenance treatment and associated costs.	None	Focusing on the base assumption of decreased needle sharing as the only effect of the supervised injection facility, we found that the facility was associated with an incremental net savings of almost \$14 million and 920 life-years gained over 10 years. When we also considered the health effect of increased use of safe injection practices, the incremental net savings increased to more than \$20 million and the number of life-years gained to 1070. Further increases were estimated when we considered all 3 health benefits: the incremental net savings was more than \$18 million and the number of life-years gained 1175.	Even at the most conservative estimate of decreased needle sharing, SISs result in \$14 million in net saving as well as 920 life years. This indicates that SISs have considerable potential to reduce costs to individuals, hospitals, and communities as well as save lives or add to total years of life.	Results were sensitive to assumptions related to injection frequency, the risk of HIV transmission through needle sharing, the frequency of safe injection practices among users of the facility, the costs of HIV-related care and of operating the facility, and the proportion of users who inject in the facility.

Collins et al., (2019) Policing space in the overdose crisis: A rapid ethnographic study of the impact of law enforcement practices on the effectiveness of overdose prevention sites.	Level VI (single descriptive study)	To determine how drug-scene policing practices are connected to practices of people who inject drugs (PWUD) which influence the execution of safe injection sites (SIS) which is part of a public health response to the opiate crisis.	None	As policing surveillance in areas around OPS took place, PWUD were discouraged from participating in street-based using of drugs. Even though policing increased in the SIS area discouraged public use of drugs, there was still hesitation of participants to use SIS because of police presence in the area.	Police surveillance is necessary to maintain public safety. It may also be a barrier for those in fear of running afoul of current laws.	Policing areas around a SIS may create a barrier for participants to enter. This may create a less safe environment for using injection sites.

<p>Florence et al., (2021)</p> <p>The economic burden of opioid use disorder and fatal opioid overdose in the United States, 2017</p>	Level I	To determine the cost of opioid use disorder and fatal overdose from all opioids in 2017.	None	<p>Calculated estimates of fatal opioid overdose and opioid use disorder were based on health care costs, crime-related costs, lost productivity costs, and valuation of lost quality of life and life lost. Overall, the total economic burden related to overdose and opioid use disorder in 2017 was \$1,020.7 trillion; \$35 billion related to health care costs; \$23 billion to crime-related costs; \$92 billion to lost productivity and fatal overdose.</p>	<p>Half of the cost of opioid use disorder in 2017 can be attributed to fatal overdose. SIS's can save billions of dollars per year.</p>	<p>SIS's are illegal at present; they also need funding for startup and maintaining of sites. Costs of running SIS's must be analyzed to ensure health care dollars are not wasted.</p>
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<p>Harris, R. E., Richardson, J., Frasso, R., Anderson, E. D., (2018). Perceptions about supervised injection facilities among people who inject drugs in Philadelphia. <i>International Journal of Drug Policy</i>. 52, 56-61.</p>	<p>Level IV</p>	<p>Despite positive experiences in other countries, little research explores how PWID in the U.S. perceive the value of Supervised Injection Sites (SISs).</p>	<p>None</p>	<p>Participants expressed support for a potential SIS as a valuable public health intervention. They suggested that an SIS would improve PWID health while reducing the public disorder associated with injecting drugs in public. The latter was especially important to participants without stable housing, whose decision to inject in secluded places was often motivated by desire not to upset community members, particularly children. These participants acknowledged that such seclusion elevated the risk of fatal overdose. Despite similarly positive perceptions about an SIS, participants with stable housing reported that they would prefer to continue injecting at home.</p> <p>Results both confirm and extend prior research about PWID and SISs. Participants expressed</p>	<p>Overall, participants indicated SISs would be beneficial. However, people who use drugs (PWUD) who have stable housing prefer to inject at home, even if an SIS was available. This means the risk of fatal overdose for these users may remain unchanged as the SIS is not an attractive option for them.</p>	<p>Although not systematically elicited, in unstructured discussion, access to housing emerged as an important factor in participant decision-making and perceptions, with just over half of the participants.</p>
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				support for SISs as in prior survey research in the U.S. and in other countries. Facility location and housing status were identified as important determinants of facility use.		
Kennedy M.C., Hayashi K., Milloy M.J., Wood E., Kerr. T. (2019) Supervised injection facility use and all-cause mortality among people who inject drugs in Vancouver, Canada: A cohort study. PLoS Med 16(11):	Level IV	The study examined the relationship between frequent SIS use and all-cause mortality among PWID in Vancouver, Canada.	None	Researchers observed a high burden of premature mortality among a community-recruited cohort of PWID. Frequent SIS use was associated with a lower risk of death, independent of relevant confounders. These findings support efforts to enhance access to SISs as a strategy to reduce mortality among PWID.	Increasing access to SISs will reduce mortality among people who inject drugs.	Further analyses of individual-level data are needed to determine estimates of, and potential causal pathways underlying, associations between SIS use and specific causes of death.

<p>Kennedy et al., (2021)</p> <p>Health Impacts of a scale-up of supervised injection services in a Canadian setting: an interrupted time series analysis</p>	<p>Level V (Data from 2 linked on-going prospective cohort studies)</p>	<p>To determine the possible significance of expanding Overdose Prevention Sites (OPS) in Vancouver on the pattern of SIS use, public injection, syringe sharing, and the link to addiction treatment by looking at data from two studies on PWID. The authors were hopeful their research would provide more insight to support ongoing operations of SIS services.</p>	<p>None</p>	<p>After expanding OPS, the use of SIS increased immediately and continued to increase several months following initial expansion. The authors concluded that the intervention of expanding the OPS, helped address the gaps in coverage among PWID and existing SIS. Addiction treatment linked to the SIS also increased with expansion.</p>	<p>Health benefits such as access to syringe exchange programs, overdose preventions, decreased public injection, and participation in addiction treatment increases as access to SIS is available.</p>	<p>Multiple drug laws exist preventing SIS in Michigan.</p>
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<p>Lambdin et al., (2022)</p> <p>Reduced emergency department visits and hospitalization with use of an unsanctioned safe consumption site for injection drug use in the United States</p>	<p>Level II (Prospective Cohort Study)</p>	<p>To evaluate health outcomes in an unsanctioned SIS in an undisclosed United States urban area. Health outcomes measured included fatal and non-fatal overdose, soft tissue or skin infections, ED visits, and hospitalization.</p>	<p>None</p>	<p>Those that used the SIS had a 24% lower risk of a fatal or non-fatal overdose. Among participants using the SIS compared to those that did not; participants were 27% less likely to visit the ED, had 54% fewer ED visits, were 32% less likely to be hospitalized, and 50% of participants spent fewer days in the hospital.</p>	<p>Harm reduction is the goal of this project. Even though the site was unsanctioned, the health outcomes were undoubtedly significant.</p>	<p>Depending on the location of the unsanctioned SIS in this study and the laws of the state, legal implications can incur if found and prosecuted.</p>
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<p>Lange, B. C. L., Bach-Mortensen, A. M., (2019).</p> <p>A systematic review of stakeholder perceptions of supervised injection facilities.</p> <p><i>Drug and Alcohol Dependence.</i> 197, 299-314.</p>	Level IV	<p>Qualitative systematic review - aims to answer the question, “how do stakeholders perceive SISs?”</p> <p>Supervised injection sites (SISs) have been developed to address the public health burden associated with substance use. While these facilities have been associated with a number of positive outcomes, stakeholder opinion (the opinions of</p>	None	<p>The findings of this review illustrate how perceptions vary and align across different types of SISs.</p> <p>Key themes included (1) benefits of SISs, such as the increased safety of people who use drugs (PWUD) and the education that was provided at these facilities; (2) concerns regarding SISs, such as the location of these facilities and existing rules and regulations; and (3) suggestions for SISs, such as changing restrictions and regulations. Perceptions often fluctuated between stakeholders with first-hand experience of SISs (e.g. staff and PWUD) and stakeholders not involved in the operation of SISs (e.g. the general public).</p>	<p>People who use drugs or work at SISs and people who do not use drugs or work at SIS seem to have different perceptions about SIS. This means aligning stakeholder needs and expectations is important when proposing policy changes.</p>	<p>Implications of this study include further discussion related to how these facilities are implemented to begin with and the stakeholders who are directly involved.</p>
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		those potentially affected by these facilities) is likely to influence their future development.				
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<p>Levengood, T.W., Yoon, G. H. Yoon, Davoust, M. J., Ogden, S. N., Marshall, B. D. L., Cahill, S. R., Bazzi, A. R. (2021). Supervised Injection Facilities as Harm Reduction: A Systematic Review. <i>American Journal of Preventive Medicine</i>, 61(5), 738-749.</p>	<p>Level IV</p>	<p>The objective of this review is to determine the effectiveness of supervised injection facilities, compared with that of control conditions, for harm reduction and community outcomes.</p>	<p>None</p>	<p>Supervised injection sites in the included studies (n=number of studies per outcome category) were mostly associated with significant reductions in opioid overdose morbidity and mortality (n=5), significant improvements in injection behaviors and harm reduction (n=7), significant improvements in access to addiction treatment programs (n=7), and no increase or reductions in crime and public nuisance (n=7).</p> <p>For people who inject drugs, supervised injection sites may reduce the risk of overdose morbidity and mortality and improve access to care while not increasing crime or public nuisance to the surrounding community.</p>	<p>SIS provided reductions in harm without an increase in crime or public nuisance.</p>	<p>Supervised injection sites are harm reduction interventions that allow people who inject drugs to use previously obtained substances under the supervision of health professionals. Although currently considered illegal under U.S. federal law, several U.S. cities are considering implementing supervised injection sites anyway as a response to the escalating overdose crisis.</p> <p>Research is needed in a</p>
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						broader range of settings, including resource-poor and politically diverse settings, to enhance the generalizability and utility of findings within this literature.
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<p>Ng, J., Sutherland, C., Kolber, M. R. (2017). Does evidence support supervised injection sites? <i>Canadian Family Physician</i> 63(November) 866</p>	Level IV	Do supervised injection sites (SIS) reduce mortality, hospitalizations, ambulance calls, or disease transmission?	None	<p>Of persons living within 500 m of the SIS (70% of SIS users), overdose deaths decreased from 253 to 165 per 100000 PYs and the absolute risk difference was 88 deaths per 100000 PYs; 1 overdose death was pre-vented annually for every 1137 users. There was no change in mortality in the rest of the city.</p> <p>Before the SIS opened, 35% of 598 intravenous drug users were admitted to hospital in a 3-year period, 15% for skin infections.</p> <p>After the SIS opened, of 1083 SIS users over 4 years, 9% were admitted with cutaneous injection-related infections (including osteomyelitis and endocarditis).</p> <p>While SIS nurse “referral” to hospital increased the likelihood of admission, the average length of stay decreased by 8 days (from 12 to 4).</p> <p>Near one SIS, average monthly ambulance calls with</p>	<p>Use of SIS resulted in a nearly 35% decrease in overdose deaths, reduction in hospital referrals for related injury and infection, reduced use of naloxone, and mathematical modeling also predicted a reduction in HIV infection.</p>	<p>Best evidence suggests that SIS are associated with lower overdose mortality (88 fewer overdose deaths per 100000 person-years [PYs]), 67% fewer ambulance calls for treating overdoses, and a decrease in HIV infections.</p> <p>The benefit of the SIS is likely limited by site capacity: the SIS assists only about 4% of all injections in Vancouver’s Downtown Eastside.</p> <p>Educating SIS users likely contributes to</p>
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				<p>naloxone treatment for suspected opioid overdose decreased from 27 to 9 (relative risk reduction of 67%).</p> <p>About 6 to 57 HIV infections per year are prevented by the SIS according to mathematical modeling.</p>		<p>decreased syringe borrowing (37% in 1996 to 2% in 2011).</p>
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Saloner et al., (2018) A public health strategy for the opioid crisis	Level V	To investigate local barriers and alternative strategies to increase the executing harm reduction (primary syringe exchange) programs in rural communities of Rhode Island and Massachusetts.	None	Several challenges existed that threaten the implementation of harm reduction programs in the rural communities including; limited understanding of the meaning of harm reduction programs; community stigma around programs; inaccurate perceptions; and “prosecutorial mindsets”.	These views on harm reduction programs may exist in many communities across Michigan and the United States and may present significant barriers to implementation of SIS’s.	Barriers to harm reduction must be reviewed in detail around communities in Michigan to ensure success of SIS programs if implemented.
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Appendix C

SWOT chart

Strengths	Weaknesses
<ul style="list-style-type: none"> • Early interventions and safer injection education (Kerr et al., 2006) • Reduced mortality and morbidity (Kerr et al., 2006) • Reduced frequency of visits to the emergency room and less hospitalization among SIS participants (Lambdin et al., 2021) • Lowering the burden of acute care services among PWID (Lambdin et al., 2021) 	<ul style="list-style-type: none"> • Currently, SISs are not sanctioned or permitted in the United States • The physical location of the SIS is a factor that impacts overdose fatalities, with the greatest benefit to those residing within 500 meters of the SIS facility in one study (Marshall et al., 2011) • An extensive waiting list for injection seats and supervision capacity can be limited in any single SIS (Marshall et al., 2011) resulting in a mismatch between supply and demand of services • Current evidence-based methods of overdose and prevention methods are ineffective at reducing the

	<p>risk or preventing overdoses associated with stimulant consumption (Marshall et al., 2011)</p>
<p>Opportunity</p> <ul style="list-style-type: none"> • The public may exhibit positive attitudes towards PWID if the respondents had a personal experience of drug misuse (Matheson et al., 2014) • While over half of respondents to a survey about supporting PWID indicated they were unwilling for drug treatment for PWID, this may be primarily due to a gap between public attitudes toward PWID and evidence-based drug treatment (Matheson et al., 2014) • An opportunity to influence public opinion could be to evaluate public engagement and education about PWID and improve drug treatment knowledge (Matheson et al., 2014) 	<p>Threats</p> <ul style="list-style-type: none"> • Street policing has been associated with reduced access to harm reduction and other services due to PWID rushing injection in anticipation of police presence, which leads to increased risk of overdose, and disease transmission (Collins et al., 2019) • PWID may be hesitant to request assistance when an overdose happens, in fear the police may also attend to the emergency and make an arrest (Collins et al., 2019) • Currently, in Michigan, there is a law preventing the use of controlled substances. Therefore, any unsanctioned SIS in Michigan is at risk for criminal charges to staff or PWID at the SIS

- Alternative drug treatment strategies may offer other opportunities to get public buy-in, as some survey respondents indicate willingness to pay for harm reduction as opposed to maintenance medication. (Matheson et al., 2014)
- Identify and encourage local leaders that advocate for harm reduction to proactively educate the community about harm-reduction measures (Childs et al., 2021)
- Improve the visibility of services that reduce mortality, morbidity, strain on hospital service, as well as public nuisance within the community (Childs et al., 2021)
- Get buy-in from local stakeholders including law enforcement and local government. (Childs et al., 2021)
- By educating the public, stigmas can be reduced, and harm-reduction strategies may be easier to implement. (Childs et al., 2021)

Appendix D

STAKEHOLDER QUESTIONS AND RESPONSES

Questions for Stakeholders

Stakeholder Responses: # _____

Stakeholder Category: _____

1. What do you know about the opioid epidemic?
2. What do you know about Safe Injection Sites?
3. How would the citizens of Michigan benefit from Safe Injection Sites?
4. What barriers do you anticipate encountering if a Safe Injection Site was initiated in your county?
5. What do you believe is a solution to the opioid crisis?