Comprehensive User Engagement Sites (CUES) in Philadelphia: A Constructive Proposal

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Citation

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Abstract

This paper is a study about Philadelphia's comprehensive user engagement sites (CUESs) as the authors address and examine issues related to the upcoming implementation of a CUES while seeking solutions for its disputed questions and plans. Beginning with the federal drug schedules, the authors visit some of the medical and public health issues vis-à-vis safe injection facilities (SIFs). Insite, a successful Canadian SIF, has been thoroughly researched as it represents a paradigm for which a Philadelphia CUES can expand upon. Also, the existing criticisms against SIFs are revisited while critically unpackaged and responded to in favor of the establishment. In the main section, the authors propose the layout and services of the upcoming CUES, much of which would be in congruent to Vancouver's Insite. On the other hand, the CUES would be distinct from Insite, as the authors emphasize, in that it will offer an information center run by individuals in recovery and place additional emphasis on early education for young healthcare professionals by providing them a platform to work at the site. The paper will also briefly investigate the implementation of a CUES site under an ethical scope of the Harm Reduction Theory. Lastly, the authors recommend some strategic plans that the Philadelphia City government may consider employing at this crucial stage.

1. INTRODUCTION

The opioid epidemic in the U.S. is becoming an ever-increasing problem. Over the last decade, there has been a significant and steady rise in the number of opioid related overdoses. There was a 6.2-fold increase in the total number of deaths involving heroin from 2002-2015 [1]. During 2016, it is reported that 42,249 opioid overdose deaths occurred in the U.S. which makes an average of 115 opioid overdose deaths each day. [2] Also, one in every five young deaths is opioid-related in the U.S. [2]. Locally, Philadelphia has been one of the cities that has been most affected by the opioid epidemic. With estimates nearing 1200 lives cut short, Philadelphia takes its place as the hardest hit city in the United States [3]. In 2016, 907 deaths were documented to be caused by drug overdoses in the city. [4] As of May 2017, it is estimated that there are 50,000 people who have overused prescription opioids and 70,000 heroin users, which makes a population who use drugs as high as 26,400 [4]. Also, in 2017, 935 cases of secondary conditions arose due to the sharing of needles [5]. In 2017, it was determined that drug overdose was the leading cause of death in the Philadelphia, killing four times as many people as homicides [4]. Even the AIDS epidemic at its worst fell 200 deaths short of the number of drug-overdose-related deaths in 2017 [4].

The drug addiction for some is attributed to doctors' prescribing behaviors while others become addicted because they found the street drugs as an outlet for their own personal problems. While heroin, due to its cheap price, still ranks as the number one drug circulating through the streets, fentanyl, the Schedule 2 prescription synthetic opioid painkiller has flooded the illicit market as a viable and far more lethal alternative to heroin. Therefore, it has become a social responsibility to work cohesively to combat the epidemic both immediately as well as realistically.

The National Institute of Health reports that approximately 40-60% of recovering individuals will eventually relapse.

Some studies even place this number as high as 80%. With these numbers in mind, it is deemed that the recovery rate is as low as 20% just for the individuals who seek rehabilitation [6]. Successful treatment from opioid dependence involves integration of both behavioral and pharmacological approaches. Behavioral therapies include cognitive behavioral and contingency management therapy, whereas pharmacological therapies include treatment with methadone, buprenorphine or naltrexone. Regarding individuals with substance abuse disorder, it is essential to use a harm reduction approach. Safe injection facilities (SIFs) fall under the umbrella of harm reduction, as they will not only provide opioid users with clean needles and supervision of medical personnel but will also equip the users with important information regarding detoxification and rehabilitation programs.

SIFs have been around for many years in Europe and Canada, and there is a great number of documented studies that show that the programs have reduced significantly the harm on individual patients, as well as a community level. These initiatives have resulted in a tremendous financial saving when calculating cost savings for averting infections such as HIV/AIDS, Hepatitis C, and other preventable diseases and for thwarting overdose-related deaths. Thus, Philadelphia, along with other major U.S. cities like Seattle, San Francisco, and New York, are considering introducing the harm reduction initiative to the city.

Philadelphia, like the other U.S. cities, attempts to follow Canada's SIF paradigm rather than the European one due to similarities in culture and socio-political climate. However, we recognize oppositions to the initiatives. The arguments and claims by the opponents are identical everywhere SIFs are planned due to the same ethical justification for SIFs and its practical application. Among the various disputes, five major criticisms can be found against the implementation of a SIF. That is, SIFs 1) will ultimately fail because the users are those who not wish to quit to begin with; 2) encourages drug use and disincentivizes drug cessation because it sends out the message that drug use is legally tolerable, if not acceptable, and that drug addiction is medically manageable; 3) promotes drug tourism from outside the community; 4) causes crime and disorder in the neighborhood; and 5) abstinence-based programs may work better to fight the opioid crisis than the harm-reduction programs like SIF. This paper seeks to mitigate potential concerns surrounding these claims based on conceptual-psychosocial analysis and empirical evidences such as statistical data.

Ultimately, the focus of this paper is to help the City of Philadelphia systematically concretize plans, beyond piecemeal efforts and discussions, and bring in its first SIF, comprehensive user engagement sites (CUESs). To determine the CUES as a viable option for Philadelphia, this paper is outlined in the following sections. In the section that immediately follows, medical and public health issues related to the current opioid addiction vis-à-vis SIFs/CUESs are addressed. This section explores the medical standards used by the U.S. federal government to "schedule" opioid drugs and regulate their use in conjunction with state government policies. The medical and pharmacological aspects of heroin, and fentanyl and its analogues because those substances are what the CUES staff should be most familiar with. In the next section, we will introduce the backgrounds and workings of Canada's SIFs, Insite, which is thoroughly investigated since a CUES will be modeled after Insite. In addition, five major criticisms against the implementation of SIFs/Insite facilities are reviewed. The third section, the authors propose their visions of CUESs in terms of its layout and services in detail. The CUES is congruent to the modeled Insite in addition to placing further emphasis on the following services: fentanyl screenings, wound care, Hepatitis-C/HIV screenings, a needle exchange program, Narcan distribution and education, counseling for rehabilitation and detoxification done by individuals in recovery, and early education. In the fourth section, the harm reduction ideal is introduced as consisting of the practical, ethical criteria in support of the moral implementation of the CUES. Lastly, the paper concludes by recommending some strategic plans that the Philadelphia City government may consider carrying out the plan to implement the CUES.

2. MEDICAL AND PUBLIC HEALTH ISSUES

2.1. Drug Schedules

Under the Controlled Substances Act, the U.S. federal government classifies drugs or substances in terms of the degree of potential abuse which leads to severe psychological and physiological dependence and of accepted medical use. Classified into five (5) categories, Schedule 1 drugs are considered to have high potentials for abuse and no accepted medical use, thereby making the listed drugs effectively illegal except medical research. "Heroin, lysergic acid diethylamide (LSD), marijuana (cannabis), 3,4-methylenedioxymethamphetamine (ecstasy), methaqualone, and peyote" fall under this list of Schedule I drugs [7].

Drugs in the lower four categories (Schedules 2 to 5) are

considered to have some medical use but differ in ranking in potential for abuse (from high to low). For instance, Schedule 2 drugs, which are “combination products with less than 15 milligrams of hydrocodone per dosage unit (Vicodin), cocaine, methamphetamine, methadone, hydromorphone (Dilaudid), meperidine (Demerol), oxycodone (OxyContin), fentanyl, Dexedrine, Adderall, and Ritalin” may have some medical use but have a high potential for abuse related to severe psychological and/or physical dependence [7]. Meanwhile, Schedule 5 drugs such as “cough preparations with less than 200 milligrams of codeine or per 100 milliliters (Robitussin AC), Lomotil, Motofen, Lyrica, Parepectolin” present the least potential for abuse [7].

However, despite the federal drug scheduling law, each state has different policies to control medical and recreational drug use. From the perspective of drug enforcement, federal agents focus mainly on trafficking while state agencies make most arrests for drug possession [8]. But, on the federal level, the charges brought upon people in possession of drugs are not strictly conformed to the drug schedules. The Drug Enforcement Administration (DEA) uses the drug scheduling as a reference to determine the charges for drug possession. However, marijuana trafficking is treated less severely than cocaine trafficking though the former is Schedule 1 drug while the latter belongs to the Schedule 2 category. The reason that marijuana trafficking is treated less severely is that many studies suggest that marijuana has some medical use. But it is hard to deny that the trend ultimately reflects change of the current cultural-political climate on marijuana use. As of July 2018, 31 states (including D.C., and the U.S. territories of Gaum and Puerto Rico) have legalized medical use of marijuana. Its recreational use is legal in 9 states including California, Washington, and Colorado [9]. Furthermore, additional states are considering the legalization of medical and recreational use of marijuana. However, apart from marijuana, both federal and states governments act in unison in strictly regulating use of Schedule 1 and 2 drugs. Again, Schedule 1 drugs (except medical marijuana) are effectively illegal for use except medical research, and Schedule 2 drugs can be used for medical purposes through physicians’ prescriptions. But so many physicians have legally yet unethically prescribed their patients Schedule 2 drugs, fentanyl, oxycodone, Dexedrine, Adderall, etc.

2.2. Heroin

Diacetylmorphine, or more commonly known as heroin, was first synthesized from morphine in 1800s and sold as a "non-addictive” morphine subsitute [10]. Like morphine, heroin is considered a natural drug since it is scored from poppy plants before it is turned into opium and sold as the notorious drug. As a Schedule 1 drug, heroin is no longer used in the medical field today as it is regarded as having no medical use and fatally dangerous because it causes severe physical and psychological addictions. Its cheap cost coupled with high potency makes heroin the drug of choice for many opioid users, contributing to the worst opioid epidemic in U.S. history. In 2017 alone, heroin-overdose death reached over 1,000 in Philadelphia [11].

2.2.1. Pharmacological Facts and Methods of Intake

What makes heroin truly unique is that it is more lipid soluble than other opioids, meaning that it can rapidly cross the blood brain barrier and reach high levels to give users their euphoric effects within seconds [12]. In fact, it crosses the blood brain barrier 100 times faster than morphine [12]. The effects of heroin can be immediately reversed with Naloxone, which is an opioid antagonist working to displace the drug from its opioid receptors. However, the effect of Naloxone is only temorary. Its use is a stopgap measure while waiting for EMS. Heroin can be administered different ways (orally, injected intravenously, snorting, smoke inhalation, or even as a rectal suppository). When taken orally, it undergoes an extensive first pass metabolism, meaning that it is broken down to morphine by the liver and gut, significantly reducing its euphoric effect. Instead, when used intravenously, it is profused in the blood and thus causing its euphoric effects to be far more palpable. Therefore, the injection is the most popular method for drug users.

2.2.2. Physical and Psychological Effects and Dangers

Like all opioids, heroin mimics the effects of endogenous endorphins. It produces the analgesic effects to relieve pain as well as its desired effect of euphoria. However, its immediate effects also decrease the invididuals’ respiratory drive, putting them at risk for overdosing on the drug and causing death. In addition, the heroin users are also at significant risks from contracting lung infections such as pneumonia and tuberculosis due to their poor general health as well as depression of their respiratory drive. The chronic use of heroin is particularly dangerous because the brain will essentially shut down the natural production of endorphins since the users are receiving them externally via the drug. Without its intake, the users start to feel withdrawal

symptoms including depression, diarrhea, cramping, tearing and excessive sweating. It causes users to feel the need to resort back to heroin or one of its derivitives to get rid of those negative feelings.

Injection, compared to the other methods of intake, poses the greatest risks because it is more potent and fatal. Meanwhile, when heroin is not injected in a sterile fashion (e.g., through needle-sharing), the users place themselves at high risks for infections such as HIV, hepatitis B and C, endocarditis, and other blood-borne illnesses, all which can be fatal. In fact, in 2016, approximately 9% of newly diagnosed HIV infections were from people who inject drugs [13]. Making matters worse, it is nearly impossible to quit heroin, having up to a 90% relapse rate [14]. This is compounded by the fact that alternatives to heroin that are used to serve as a bridge to quiting include drugs such as methadone, which are naturally addictive themselves. In fact, one study in Dublin found that 91% of opiate-dependent users in Ireland reported relapse after going through a 6 week treatment program [15].

2.3. Fentanyl and Its Analogues

Fentanyl and its analogues such as carfentanil and sufentanil are a set of deadly synthetic opioids that are flowing into the United States at record rates. In fact, it was found that 84% of opioid-associated deaths in Philadelphia were associated with fentanyl or one of its derivatives [16]. First synthesized in 1959, fentanyl entered medical use in 1968 to be used as an anesthetic and analgesic [11]. Today, it is considered a Schedule 2 drug and is growing in popularity for both medical and illicit uses. It is lawful for doctors to prescribe fentanyl since it is a Schedule 2 drug. However, due to over-prescription, irresponsible prescribing practices, and aggressive and misleading marketing of pharmaceutical companies, physicians and pharmaceutical companies are to be held accountable for its abuse. Also, combined with their illicit form of use, fentanyl and its analogues have come close to heroin in drug abuse.

2.3.1. Fentanyl: Pharmacological Facts and Methods of Intake

Fentanyl is a synthetic pure -opioid available as an injection in transdermal and transmucosal formulations. Due to its high lipid solubility and low molecular weight, it rapidly diffuses across the blood brain barrier compared to morphine. Like heroin, fentanyl can be smoked, snorted, or injected. Fentanyl is often cut with much weaker heroin, making it much more powerful and deadlier than heroin alone. Its effects can also be countered by Naloxone. However, fentanyl's potency may require multiple doses of Naloxone and possibly even a continuous drip to overcome the effects of fentanyl. However, it should be noted that Naloxone is only a temporary measure.

2.3.2. Fentanyl: Physical and Psychological Effects and Dangers

The effects of the synthetic drug are typical of other opioids in that it acts on opioid receptors, resulting in analgesia, sedation, and euphoria. Because of its high lipopholicity, it approximately 75 to 100 times more potent than natural opioids like heroin and morphine as it can more easily penetrate the central nervous system within a matter of seconds. Though its effects are similar to heroin, fentanyl causes greater sedation and greater respiratory depression [11].

2.3.3. Fentanyl Analogues

There has also been a recent rise of the use of fentanyl analogues. Carfentanil was first synthesized in 1970s and has been used as a tranquilizer for elephants and other large animals. It is approximately 10,000 times that of heroin and morphine and 100 times that of fentanyl [16]. A weaker substitute for carfentanil is sufentanil, approximately 10 to 20 times less potent than carfentanil which, in turn, is 500 to 1000 times more potent than heroin and morphine. These analogues are so powerful that just merely coming into contact with what is equivalent to a few grains of salt can be fatal [16].

3. INSITE: CANADA'S FIRST SUPERVISED INJECTION FACILITY

3.1. Insite in Planning

In the mid-late 1990's, Vancouver's health authority declared a public health emergency in response to over 300 fatal overdoses and close to 20% of the local people who inject drugs (PWID) testing positive for HIV. In response to the epidemic, the "Cain Report" was developed by a task group comprising of members from the Provincial Chief Coroner of British Columbia. After reviewing the success of SIF implementation in Europe, the group recommended exploring a SIF as an option to combat the growing opioid epidemic in Canada.

From the years of 1995 through 2002 a series of developments ultimately led to the opening of Canada's first legally sanctioned SIF. Vancouver's efforts through

unsanctioned SIF's and advocacy for policy change led to increased public dialogue. In support of SIF, both local organizations and the City Council of Vancouver developed the Four Pillar Drug Strategy. The strategy was based on the ethical-clinical justification of the harm reduction approach, developed from Western Europe. Officials from Europe with experience in SIFs met with local PWID, their families, activists, healthcare professionals, and researchers known as the Harm Reduction Action Society the result of which a pilot SIF was introduced [17]. In 2002, the Registered Nursing Association of British Columbia (RNABC) supported the supervision of injections as an ethical obligation, citing potential harms with unsupervised injections [18]. In 2003, the Portland Hotel Society (PHS) was working quietly building a SIF in a vacant public building. Cooperation between PHS and the regional health authority was established and became the impetus behind the final push for approval. Soon after, Canada's first sanctioned SIF, named "Insite," was given federal exemption under Section 56 of the Controlled Drugs and Substances Act granted by the federal Health Minister.

At its inception, the Insite program faced immediate oppositions from the newly elected conservative government then. Disagreements between the PHS and the government would take the issue to the Supreme Court of Canada. The government had appealed after the Supreme Court judge ruled in favor of Insite's continued operation, but the Supreme Court justices ruled 9-0 in favor of Insite [19].

Insite is operated by Vancouver Coastal Health (VCH), a regional health authority which is one of six publicly funded healthcare organizations within British Columbia. VCH provides funding, administrators, and clinicians to maintain Insite while cooperating with the Portland Hotel Society (PHS) and Community Services Society, a non-profit organization which furnishes "housing, service, and advocacy to those poorly served in Vancouver and Victoria, BC" [20].

3.2. Insite at Work

3.2.1. Statistics

Since its opening in 2003, more than 3.6 million users have injected at the facility. According to 2017 data, most users are men with only 28% being women, and 18% of users are of indigenous ethnicity [21]. Heroin is by far the most commonly used drug at Insite (64%) though both methamphetamine (25%) and cocaine (6%) have been reported [21]. Over the years, a total of 6,440 interventions for overdoses have occurred at Insite with a total number of 48,798 users who underwent clinical treatment in some form for their substance abuse disorder. [21] In 2017, there were 2,151 overdose interventions in total; 175,464 visits made by 7,301 different users with an average of 415 visits per day to the injection room and of 537 needle exchange services per day; 3,708 other clinical interventions including wound treatment and pregnancy testing [21]. Concerning the mortality rate, among residents living within 500 meters of Insite facilities (70% of Insite users), "overdose deaths decreased from 253 to 165 per 100 000 person-years (PYs) and the absolute risk difference was 88 deaths per 100 000 PYs; 1 overdose death was prevented annually for every 1137 users." [22] [23]

3.2.2. Location

Insite is located in the Downtown Eastside neighborhood of Vancouver in which a large population of PWID reside. Throughout the early 1960's, heroin and crack cocaine became common substances of abuse in Downtown Eastside. Commercial real estate was relocated while single-housing occupancy hotels remained. The changing landscape of the city prompted an increased concentration of people with addictions [19]. Still, Downtown Eastside is a dangerous, impoverished area where a disproportionate number of residents are Aboriginal people.

3.2.3. Layout and Services

Insite currently serves approximately 800 people each day with hours from 7:00 am to 3:00 am every day. Users must be age 19 or older to use the facilities [21]. PWID bring their own drugs, and Insite staff provide clean needles and medical supervision. The Insite facility in Vancouver houses 12-seat injection rooms with booths where the users can inject their own drugs using clean syringes, cookers, filters, water, and tourniquets supplied by the Insite staff including nurses. The staff monitors all users for signs of any overdose and intervenes if the overdose occurs. The nursing staff also provides other health services including wound care, immunizations, and pregnancy tests. After injecting, the users can move to a post-injection room with refreshments and interact with the staff in a safe environment.

The facility also provides recovery/detoxification services in the upstairs of the building which is a place called "Onsite." Onsite is open 24 hours, 7 days a week for anyone age 19 or older, and staffed by mental health professionals, counseling therapists, nurses, and physicians. Onsite features 12 rooms

with private bathrooms while offering a variety of recovery resources for the Insite users. The patients are referred from Insite itself as well as from some other hospitals. During the 2017-2018 fiscal year, a total of 443 users accessed Onsite services with 11 days being the average length of stay. Onsite staff actively encourage the patients to connect with their families and obtain employment.

On the third floor of the Insite building is transitional recovery housing for a step-down program. The users can join the program after they have been treated at Onsite; during their stay in the housing, the users can access further treatment programs and community supports such as information about further housing arrangements.

The administrators at Insite stress that recovery can only be successful as the staff and users build trust with each other. Thus, they make sure that the Insite staff is trained to create "respectful, tolerant relationships with individuals who are chronically marginalized and dehumanized" so that the staff can help users to move forward with their recovery by seeking detoxification and c services [24]. They boast that the "Insite staff are experts at listening, and, through listening to participants' stories and needs, help connect them to other services including wound treatment, housing needs and referral to treatment services such as withdrawal management and opiate replacement"[24].

3.3.Discussion

3.3.1. Harms Reduced/Benefits Reaped: Documented Data

There has been a great amount of research and surveys evaluating the efficacy of Insite since its opening in 2003. There have been a 35% drop in overdose deaths since 2003 in the area surrounding Insite (compared with a 9% decrease throughout Vancouver), reductions in public drug use and discarded syringes, and shifting the burden from emergency medical services through on-site overdose management [25] [26] [27]. A study by the British Columbia Center for Excellence in HIV/AIDS finds that people who use safe injection sites are 30% more likely to enter detox programs and 70% less likely to share needles [27]. Insite has been found cost-effective due to averted medical expenses through clean needle exchange and cutting down HIV-related medical expenses [28][29][30]. Financially, it is also projected to produce even larger return on investments through the propagation of safe injection practices [28]. These analyses have also been utilized as a tool in evaluating the prospects of opening additional SIFs in Ottawa and Toronto [31] [32].

Nevertheless, there was considerable resistance to the implementation of SIFs like Insite, and the opponents have shown many arguments and claims against the implementation of SIFs. In the following, we introduce five major criticisms to which we will show our critical responses [23].

3.3.2. First, the Insite Program Will Ultimately Fail Because PWID Do Not Want to Quit to Begin with.

There is a view shared among the opponents of SIFs that the Insite program will eventually fail because the addicted people who use the facility do not want to quit the behavior to begin with. In other words, the drug users are happily high all the way to their own demise, so the best thing for the society to do is just not to bother them. To reply, first, the documented data above indicating the efficacy of Insite program already confronts the criticism. The Insite program is no longer considered a pilot study but rather an established program. However, the critics can still argue that in a long-term projection the SIFs will eventually fail due to the aforementioned reason. Thus, we engage in a conceptual-psychological analysis to show errors in the claim.

The view that the addicted people do not wish to stop the drug habit in the first place presupposes the assumption either 1) that the PWID are completely void of any desire to quit the drug habit, or 2) that the PWID evaluate their desire to stay addicted so positively that the desire to quit is an insignificant element in their decision-making process. Confining the discussion to the group where a strong form of drug addiction is already set in like the Insite users, the former possibility is false because it is a plain fact that the addicted people have two conflicting desires: 1) the desire to stay addicted, and 2) the desire for capability of executing the will to do away with the habit and start a normal life, which can be equivalent to the desire to quit using drugs.

That the PWID evaluate their desire to stay addicted so positively that the desire to quit is an insignificant element in their decision-making process is also repudiated because, if the addicted people's understanding and perception about their addiction is so affirmative that they prefer to remain in addiction, it would mean that they enjoy not only the drug-induced euphoria but also the concomitant low quality of life which would be exacerbated day by day with chronic illnesses, financial difficulty, emotional instability, and social isolation. However, it is very difficult to believe that anyone would enjoy such a lifestyle that people ordinarily regard as a great disvalue. In fact, empirical evidences are in

disagreement with the claim that the addicted people enjoy the lifestyle of addiction. There are numerous stories of addicted people out there. For some, the lifestyle of homelessness and poverty caused them to rely on drugs. Some began using drugs to overcome physical trauma or sexual abuse or neglect while others started to seek street drugs after discharged from the hospital where they were on opioid painkillers prescribed by their doctors. Witnessing all these terrifying, emotional stories, it is difficult to think that PWID are enjoying the life of misery.

In fact, the position that the SIF program will eventually fail because PWID do not wish to change is fundamentally linked with the society's stereotype perception about PWID. Because so many PWID possess concomitant diseases such as HIV and HCV, they are often perceived as people who gave up on themselves. But this stigmatization is directly against the purpose of medicine because medicine is a practice committed to nonmaleficence (do-no-harm) and beneficence (strive-to-help) regardless of patient status. But in most cases the social stigmatization is derived from lack of knowledge about the targeted group. In our case, many people do not have the knowledge about who the Insite users are, how they have gotten there, and how specifically SIFs can help them. Thus, education, particularly community education, seems a solution to overcome this negative perception [33].

3.3.3. Second, Insite Encourages Drug Use and Disincentivizes Drug Cessation Because It Sends out the Message that Drug Use is Legally Tolerable, If Not Acceptable, and that Drug Addiction is Medically Manageable.

Another popular criticism by the opponents of SIFs is that Insite promotes drug use and discourages drug cessation because its operation gives the community the message that drug use is legally tolerable, if not acceptable, and that drug addiction is medically manageable. And its extended variation can be that minors will be introduced to drug use believing that the Insite program is a legal endorsement to use drugs and/or is a medical safeguard to manage drug addiction.

This view has some important points to consider. It is true that the Insite facility is a legal safe-haven for the users and that the medical professionals at the facility are there to help PWID to manage the medical symptoms associated with the drug addiction. However, the message that Insite gives to the community is neither that drug use is legally tolerant everywhere because the narcotic law is not enforced de facto due to a great social acceptance, nor that drug use/addiction is a medically manageable practice/symptom due to a recent medical advance. If and only if these are true, it can be said that drug use is promoted and that drug cessation is disincentivized by Insite. Furthermore, if anyone understands the idea behind the Insite program this way, this is a rather strange understanding about the issue because ordinary adult members of society understand that drug addiction is highly difficult to overcome without professional help and thus that the addicted people will inject the drugs illegally anyway. That is why the Insite offers a legal safe-haven where they can use their own drugs so that medical professionals can encourage them to commit themselves to rehabilitation while providing the managed medical care before it is too late (overdose death).

Statistical evidences are in favor of this defense. According to the 2000-2006 data published by McCreary Centre Society, a non-governmental, not-for-profit center whose work is focused on promoting health of the youth in the province of British Columbia, the use of illicit drugs such as heroin, amphetamine, crystal meth, and prescription opioid drugs obtained without prescription declined overall in both Vancouver and Victoria, the two cities of BC, where Insite serves PWID [30], which means that people are not motivated to use drugs because of the Insite program.

Meanwhile, the McCleary Centre Society report includes that the rates of injecting an illegal drug increased by 14% in the province of British Columbia [34] One way of interpreting the data is that the increase is due to the population increase within the province. Vancouver's population increased by 57,831 according to the census data from 2001 to 2011 [35]. This data affirms the validity of our view because it would mean that the illegal drug use decreased in the communities that Insite serve while it increased in the rest of the communities despite the increase of the general population of BC.

Also, according to a comparative study conducted to examine the community drug use pattern within 3 years before and after the opening of Insite, there was no a significant increase in relapses back into injection drug use (17% before, 20% after), nor was there a significant decrease in people ceasing their drug use altogether (17% before, 15% after) [35]. Another study surveyed a group of 1065 PWID that utilized Insite during its first two years of operation to gather information on their first experience with injection drug use. Of this group, only 1 person reported that their first

injection was done at Insite. When extrapolated to the entire population that utilizes Insite (approximately 5000 people at that time), it was estimated that only 5 people may have initiated injection inside the facility [35]. In addition, 14 individuals reported having initiated injection drug use after the opening of Insite, and none of them reported having done so within the facility [35]. These findings indicate that, at least initially, the vast majority of Insite users were long-time injection drug users, with no evidence to support increased rates of first time injection drug use. In addition, several studies show that Insite users are more likely to initiate detoxification and addiction treatment. A 2007 study comparing detoxification service use among 1031 PWID before and after Insite opened found a statistically significant increase of 30% in utilization of detoxification services [37]. Initiation of detoxification services were independently associated with initiation of addiction treatment and overall decreased utilization of the SIFs [37]. And a study using data from 2010 to 2012 among 1316 PWID showed that 147 individuals (11.2%) reported enrolling in detoxification services at least once during the study period [38].

It is admitted that much of the data comes from the studies were conducted in the first few years of Insite's operations. Thus, more updated research is needed to support conclusively the idea that SIFs like Insite do not increase injection drug abuse but help PWID move towards cessation. Nevertheless, we believe that, given all the reasons so far, it is less likely to be expected that brand-new studies will show results otherwise.

Lastly, to respond to the extended version of the criticism that minors would feel motivated to use drugs because of Insite, it is hard to know whether this would be true or false because it is difficult to collect and verify the validity of the data. It is not easy to develop a robust survey to inquire if the minors injecting drugs were introduced primarily because they perceived the Insite program as the legal and medical support for the drug use. Even if such data was obtained, it is hard to accept the teenagers' answers as credible as they are considered minors. However, if some of the drug-addicted minors, in their susceptible minds, began using drugs believing that the Insite program was the legal and medical greenlight for drug use and addiction, the burden of responsibility should be on the public relations (PR) professionals of Insite, not the Insite's operation itself. For example, it is reasonable to think that minors start smoking cigarettes not because of the local convenient stores selling cigarettes but because of tobacco companies' deceptive marketing to teens. Note that minors are not allowed to use Insite (the minimum age for Insite users are 19), as they cannot buy cigarettes from convenient stores. In the end, it is how we advertise the Insite program to the community that determines whether the minors misinterpret the Insite's operation or not. Successful PR, media strategy, and creative advertising plans are needed to send the right message to the members of the community including the minors. However, above all, we stress that community education is the best marketing. This is the reason that the Philadelphia's CUES program, as we propose, must be equipped with the community education project which we will address later in detail.

3.3.4. Third, Insite Promotes Drug Tourism from Outside the Community.

Another popular criticism raised is that Insite promotes drug tourism. To respond immediately, although there have been no recent studies, the data obtained from the first few years do not support the claim, for, as shown above, the vast majority of PWID users are residents in the area. In addition, it is difficult to believe that people travel a long distance to use the Insite facility located in a place like Downtown Eastside. Downtown Eastside is a dangerous, impoverished area where a disproportionate number of residents are Aboriginal people. Thus, it is highly unlikely that outsiders come to Downtown Eastside for drug tourism. Note that the proposed injection site in Philadelphia, Kensington, is similar to Downtown Eastside in this regard.

3.3.5. Fourth, Insite Causes Crime and Disorder in the Neighborhood.

The opponents of SIFs say that Insite causes crime and disorder in the neighborhood where Insite facilities are located. At the opening of Insite, they had predicted that general crime, including drug sales, and motor vehicle collisions (due to impairment) would increase as a direct result of the opening of a SIF. By contrast, however, public order has been shown to improve in the area around Insite, with one study showing decreased public drug use and less discarded syringes in the 12-week period following the opening of the facility [39]. Another study specifically examined the impact of Insite on crime in Vancouver, but neither an increase nor a decrease was reported in drug-trafficking or assaults/robbery in the year prior to the opening of the site versus the year after. Rather, a decrease in vehicle break-ins and theft was observed [39]. Nevertheless, while the information so far offers

counterevidence to the criticism that SIFs promote crime and social disorder, data from more recent years would help to solidify this assertion. However, we argue that a well-organized police patrol and security enforcement in the area will solve this problem.

In the Philadelphia context, PWID will not be wary to use a CUES because of the perspicuous presence of the police and security enforcement. PWID will know that they will not get arrested for using the facility, as the city government has campaigned about the legal immunity for those using the CUES. It is expected that the police and security officers will go around to talk to the PWID while making sure of the safety of the area.

3.3.6. Last, Abstinence-Based Programs May Work Better to Fight the Opioid Crisis Than the Harm-Reduction Programs like Insite.

The last criticism we introduce is that to fight the opioid crisis, abstinence-based programs, assisted variations of "cold-turkey," will be as much effective as the harm reduction programs like Insite [40]. The critics add that the merit for adopting the abstinence-based program will save a lot of public funds. It is true that Opioid Replacement Therapy (ORT), a kind of abstinence-based approach, has been found to be particularly effective in reducing relapse events and decreasing mortality in former drug addicts [41]. [42] Also, the efficacy of a prize-based or motivational incentive, which is another kind of abstinence-based approach, can also be addressed to support the critics' argument [41] [42].

We reply, however, that both programs above show that the abstinence-based programs are efficacious in improving the conditions of opioid drug abusers only in an outpatient setting [43] [44]. However, the abstinence-based programs do not voluntarily attract most drug users as well as fail to recognize the recovery-status of individuals on medication-assisted therapy [45] [46]. Also, we suspect that the outpatient drug abusers are those whose physical and psychological conditions are not as severely impaired as most of the Insite users.

Ultimately, it is unknown whether the abstinence-based program may work better than the harm-reduction program because no studies or pilot programs have been conducted in a community setting. But it is important to understand that, at a deeper level, the advocates for the two different approaches come from respectively different philosophical anthropological views. The supporters for abstinence-based program assume that rational human will is the ultimate decision-maker and thus that all human decisions are the products of our rational deliberations even though they may not appear to be. As a result, the addiction is overcome only when the individual rationally deliberates over his/her own situations and problems and decides to take the steps to control it. Accordingly, the only effective external aid is to assist his/her rational will with some psychological boost such as prize-based or motivational stimuli that the abstinence-based programs may provide.

On the other hand, the anthropological presupposition behind the harm-reduction approach is that, although we are creatures with rational willpowers, a vast number of our decisions are made by unjustifiable desires. In certain circumstances, desires impair our capacity for rational decisions. The drug addiction is such an occasion because it is the mental state where the desire to use drug prevails over or controls one's rational ability to stop the behavior. Thus, the best we can do is to entice the addicted people into the path where their distorted mental state can be restored without punishing them, which is what the harm-reduction strategy is all about.

In sum, the question if the abstinence-based program may work better than the harm-reduction program or vice versa depends on which of the two philosophical anthropologies that we fundamentally subscribe to. In addition, as mentioned above, since there has not been any major investment to institute the abstinence-based programs or research studies in a community-setting, there is no way to tell which program is more effective to fight the opioid crisis. However, in philosophical bioethics literature, there have been strong arguments that addicted people, including PWID and tobacco smokers, should be treated as those who lost rational willpower and thus that strong governmental and organizational interventions are needed to help those suffering the loss [47] [48].

4. COMPREHENSIVE USER ENGAGEMENT SITES (CUES) IN PHILADELPHIA

In Philadelphia, drug overdose deaths rose by more than one third, up to 1,217 last year (2017). There is no doubt that the opioid epidemic is worsening in the city. The City of Philadelphia has been looking into ways of combating this crisis, the solutions for which must be as multifaceted and dynamic as the complexity of its problems. The mayor of the city, Jim Kenney, has gathered a group of people and created

the Task Force to Combat the Opioid Epidemic whose mission is to analyze the situations, collect data, and create a list of possible solutions to help combat the epidemic. Among the recommendations are education programs, treatment availability, screenings, housing for recovery and a few others. Suggestion #13 calls for the opening of the first "Comprehensive User Engagement Sites" (CUES), which entails the opening of a safe injection site where people can come and safely inject drugs under the supervision of trained healthcare professionals. Modeling after the success of Vancouver's Insite, these facilities would offer clean needles, naloxone in the event of an overdose, education on how to safely use along with the dangers behind drug use, and most importantly, avenues into recovery [49] [50].

4.2. CUES in Planning: Analysis

Mayor Jim Kenney and District Attorney, Larry Krasner, are the two most important proponents for CUES in Philadelphia. The mayor and district attorney assert that the opioid pandemic, other than its direct tolls such as death and related public health issues, has increased violence and homelessness in Philadelphia and has placed undue stress on the city's EMS system. Citing the failed "War on Drugs" in response to Philadelphia's crack epidemic, the duo wants to shift from the criminalization of drug use and its enforcement, to treating addiction. Instead of incarceration, more avenues to treatment and recovery will be offered to those struggling with addiction. Drug use and addiction will be treated as a health issue, not a legal one. Therefore, Kenney and Krasner hope that the implementation of CUES will provide a direct link to treatment, distribute naloxone, save lives, and keep PWID alive until they enter recovery [49]. In support of CUES, Philadelphia Health Commissioner, Thomas Farley, also said in January 2018: "We have an obligation to do everything we can to prevent those people from dying" [51]. In addition, Philadelphia Police Commissioner, Richard Ross Jr., a staunch opponent to the CUES initially, told that he was open to the idea of the facilities. In sum, there seems to be an agreement among city officials.

However, due to the novelty of this undertaking, state legislatures are not so sure about the plan. Being the first of its kind in the U.S., political and legal backlash seem inevitable. For example, Pennsylvania Governor, Tom Wolf, believes these sites present significant legal and public health concerns [51]. He claims that he would not stand in the way of Philadelphia, should they decide to open CUES [52]. Further complicating matters, US Attorney General, Jeff Sessions, is an outspoken opponent of the CUES, favoring a "war on drugs" style approach to combating the epidemic [53]. In a letter released December 2017 from the Vermont District of the US Attorney's Office, a proposal for the safe injection sites was condemned, asserting that these sites would only exasperate the opioid problem, undermining work in recent years from local law enforcement to curb this blight. Fears were expressed over the "normalization" of heroin and other narcotic use, which in turn would lead to children to think heroin use is not only permissible, but also that the government will help you do it. The Vermont US Attorney's Office further asserts that the CUES would only fuel the illegal drug market, and that court-mandated rehabilitation would be more effective than implementation of a CUES. However, perhaps the biggest blow would be the assertion that both users and staff at the CUESs would be subject to criminal prosecution [50]. The Controlled Substances Act Section 856 states:

> Except as authorized by this subchapter, it shall be unlawful to— (1) knowingly open, lease, rent, use, or maintain any place, whether permanently or temporarily, for the purpose of manufacturing, distributing, or using any controlled substance; (2) manage or control any place, whether permanently or temporarily, either as an owner, lessee, agent, employee, occupant, or mortgagee, and knowingly and intentionally rent, lease, profit from, or make available for use, with or without compensation, the place for the purpose of unlawfully manufacturing, storing, distributing, or using a controlled substance [55].

Falling under the "Crack House Statute" (21 USC §856), it is illegal to operate a facility in which controlled substances are manufactured, distributed, or used. Violators are subject to a felony charge. The DEA has echoed similar sentiments claiming that anyone operating or using these sites would be subject to criminal prosecution at the federal level [56]. On the other hand, the Surgeon General, Jerome Adams, has advocated for widespread use of naloxone, encouraging individuals who know or may come into contact with someone who uses opioids, to carry the lifesaving drug [57]. However, beyond this statement, little tangible progress has been made at a national or federal level. Additionally, the letter released by the Vermont District of the US Attorney's

Office relies on anecdotal and circumstantial evidence as well as conjecture, to play on fears and concerns raised regarding the implementation of the CUES.

Nevertheless, the Crack House Statute (21 USC §856) seems to play the biggest role in the prohibition of these sites. As previously stated, this statute prevents the operation of a site in which controlled substances like heroin are manufactured, distributed, or used. While the CUES do not manufacture or distribute heroin, the use of the drug does occur under the supervision of trained healthcare professionals, the fact of which makes the users and staff at the sites vulnerable to criminal prosecution. One alternative might be the use of mobile or portable CUES sites. This could be a way of working around the Crack House Statute. Moreover, due to the current legal status of such a site, it would be difficult, if not impossible, to obtain the necessary insurance coverage and zoning permits.

However, a case can be made in favor of a CUES for it can be argued that the establishment and operation of SIFs are legally justified by reference to necessary defense given that they satisfy the following 6 criteria: 1) The criminal action was taken to avoid a grave harm; 2) The harm to be avoided was imminent; 3) There was no available legal alternative; 4) The harm to be avoided was greater than the harm caused by the act; 5) It was reasonable for the actor to believe that his/her criminal act would be successful in averting the threatened harm; 6) There was no apparent legislative intent to preclude the use of the defense in the situation in question.

Taking a CUES into the context of preventing overdose-related deaths, the defense of necessity could be invoked to protect both staff and users from legal repercussions. One of the reasons that CUESs are being implemented is to prevent overdose related deaths. With the rise of fentanyl and its analogues being used to cut down heroin, the chance of overdosing has skyrocketed, putting both users and healthcare professionals in a very precarious situation, as overdoses are now more imminent. While treatment programs may be cited as an alternative to the CUES, it is not a viable option as many individuals would be unable to cover the cost of treatment, especially without insurance coverage. Lastly, allowing PWID to utilize a CUES under the supervision of trained healthcare professionals outweighs allowing that same PWID to overdose on the street or in a setting in which naloxone is not available.

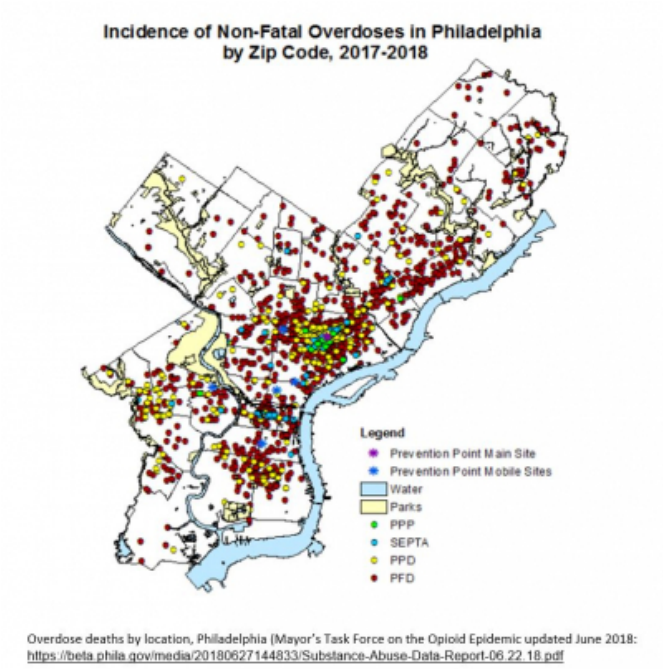
While navigating the complexity of the legal system to allow for the creation of CUES is beyond the scope of this paper, these are some issues that ought to be brought to light. We have reached a point in which Philadelphia's opioid crisis only grows worse. To allow every proposed solution to be caught up in political debate or bureaucratic red tape is essentially to sit back and allow this crisis to grow worse.

4.3. Proposed Description of a CUES

4.3.1. Location

In order to make the safe injection sites as successful as possible, location becomes a pivotal factor. While use of heroin and other drugs is rampant around the city, it is heavily concentrated in the neighborhood of Kensington. What was once a thriving neighborhood for working class immigrants has become a mecca of drug dealing, coined "an open-air drug market" [58]. In the second half of the twentieth century, Kensington was plagued by racially motivated violence, gang violence, and significant amounts of drug trafficking. Sales of drugs like amphetamines, crack-cocaine, and more recently, opioids like heroin have become the livelihood of many individuals residing in the area. Kensington is so notorious for its drug sales that people from New Jersey and Delaware can even be found routinely stopping by to purchase their drug of choice. Furthermore, homelessness has been an increasing issue as the opioid epidemic persists [58]. Alfred Lubrano, reporter of the Philadelphia Inquirer, and long-time resident in Philadelphia, calls Kensington a "Bermuda Triangle" in which the addicted people come to buy drugs, but somehow never seem to leave [58]. Given the state of poverty, homelessness, and rampant drug use in Kensington, it would make the perfect pilot location for a safe injection site in Philadelphia, and by extension, the United States.

Figure 1



Overdose deaths by location, Philadelphia (Mayor's Task Force on the Opioid Epidemic updated June 2018: https://beta.phila.gov/media/20180627144833/Substance-Abuse-Data-Report-06.22.18.pdf

4.3.2.Layout

Logistically speaking, Philadelphia's CUES will be laid out in a similar format to that of Vancouver's Insite. The CUES will have a reception area in which PWID will be given a card with an anonymous identification number. In addition to the individual's anonymous identification number, the card will contain the address and phone number of the facility, and the phone numbers of counseling and rehabilitation programs as well as emergency services in the event of an overdose. The staff and PWID should be reminded that the CUES User ID card does not contain the user's personal information. Rather, the card is to give the users information about the facility and where to contact when emergent situations arise and to collect data to see whether the CUES is efficient in serving the users.

At registration, a PWID will be required to given basic information such as how he or she heard about the site, age, gender, ethnicity, and whether the PWID is interested in rehabilitation, psychiatric services, wound care, and clean needle exchange and additional services later addressed in the paper. This ID card will allow the individual to swipe in an out of the facility so that the facility's traffic can be monitored. If a user does not have a clean needle, one will be provided. At this point, it is pertinent to emphasize that the CUES does not provide the drugs for users to inject. PWID must bring their own drugs for use. Purity testing kits will be made available for those who wish to test if their drugs have been laced with substances like fentanyl.

After reception, the CUES will have a large room with numerous benches at which PWID can safely inject under the supervision of trained healthcare professionals. PWID will be provided with the sterilized supplies or kit needed for substance-use such as syringes, disposable cookers, matches, bottled water, and tourniquet. Spaces at the benches will be partitioned off to create a semi-private space for each individual (See Figure 1). Each bench will have a box in which dirty needles can be safely disposed. Should an overdose occur, trained medical professionals will be available to administer naloxone to reverse the overdose. Medical students will also be available to care for wounds that result from prolonged IV drug use. Oxygen supplies will be provided if needed.

The injection area is followed by a lounge area in which PWID can briefly relax for a designated amount of time (30 minutes). It will be not difficult to gauge if anyone is receptive to the conversation on recovery. Thus, if anyone seems open to the conversation, the time restriction will be set aside as the staff engages in the communication process. It is at this point that educational materials, counseling, and rehabilitation programs will be offered to PWID. The goal here is for those staffing the site to build relationships with the PWID from the community. Hopefully, the lounge can be an area that facilitates conversations about rehabilitation and treatment for PWID.

4.3.3.Services

Due to the effectiveness of Insite in Vancouver, this article seeks to consider CUES as a viable option in response to the severity of the opioid crisis in Philadelphia. In terms of services to be offered, the CUES would be congruent to Vancouver's Insite. But the CUES that this paper suggests incorporates additional services, some of which had not been included in Canada's Insite, namely, more involvement of people in recovery and places a particular emphasis on early education for new and future healthcare professionals. As a result, the following services are to be provided: fentanyl screenings, wound care, Hepatitis-C/HIV screenings, a needle exchange program, Narcan distribution and education, counseling for rehabilitation and detoxification done by individuals in recovery, and early education.

Fentanyl Screenings. Fentanyl has become a potent adversary in the Philadelphia crisis. Sixty-four percent of

fatal overdoses in the Philadelphia County can be attributed to fentanyl [55]. With overdoses averaging 800 per year, the number continues to skyrocket. However, the majority of PWIDs are unaware that substances that they use are laced with fentanyl [55]. Therefore, the CUES facility would offer fentanyl screenings. The use of fentanyl screenings has been found to change behavior amongst people who inject drugs. Johns Hopkins and Brown Universities conducted a pilot study investigating the impact of fentanyl testing with PWIDs. Using a simple $1 testing strip dipped in the drugs mixed with water, the study has shown that people who received positive fentanyl results tend to 1) use less, 2) inject with someone around and/or 3) to use more slowly. [60] Upon learning fentanyl was laced in the drugs acquired, PWIDs became more attuned to severity of their circumstances and became cautious. As individuals with opioid use disorder, PWIDs proceeded to inject at their own risks but were more cognizant of their safety. Therefore, offering fentanyl testing kits in a CUES would be beneficial in allowing PWIDs to become more conscious to their present reality and potentially seek assistance in rehabilitation and detoxification.

Wound Care. Wound care would be another sector within the compartmentalized process of a supervised injection facility as described in Insite. Compounded with the increase blood-borne diseases, other infections arise as a result from injecting intramuscularly and subcutaneously with unsterile needles. Many of these conditions are primarily bacterial infections: staphylococcus infections, abscesses, cellulitis, necrotizing fasciitis, botulism, tetanus, and septic thrombophlebitis [61]. Lacerations and other wounds can be inflicted from the needle itself due to improper technique. Therefore, the CUES would have a wound care service staffed by healthcare personnel such as a physician assistant, nurse practitioner or students in healthcare education to provide immediate care for the wounds at the site, which could minimize the spread and progression of secondary infections. Treating wounds and infections promptly could reduce the future healthcare costs further since the estimated annual savings due to the CUES will range from $1,512,356 to $1,868,205. [8] Additionally, the integration of wound care services with medical education provides an opportunity for students to gain practical medical experience. The wound care service also proactively addresses the systemic issue within the healthcare system by allowing future healthcare personnel witness the first-hand effects of opioid usage within marginalized populations.

Hepatitis-C/HIV Screenings. Hepatitis C virus (HCV) and human immunodeficiency virus (HIV) infections are the most prevalent blood-borne diseases that arise from opioid injections. In 2015, 60% of acute HCV cases in Philadelphia reported of having injected drugs [8]. Acute hepatitis C lasts a short time and occurs within six months of infection yet remains asymptomatic [62]. Nevertheless, 75-85% of infected cases become chronic through which the virus remains “silent” for decades yet still attacks the body. Prolonged exposure to the hepatitis C virus infection can lead to liver cirrhosis, jaundice, fatigue, fever and muscle aches. Liver cirrhosis often leads to liver failure or even cancer. By the time liver cirrhosis is discovered, treatments entail a 12-week antiviral regimen that ranges from $63,000 to $94,500 per person affected [63]. In 2016, a total of 2846 individuals have reportedly been diagnosed with hepatitis C in Philadelphia alone [64]. Additionally, 19,113 individuals had been diagnosed with HIV in 2016, a percentage of which can be attributed to blood borne infections from needles [65]. In 2017, 30 new HIV-diagnosed cases were found among the PWID population [8]. The human immunodeficiency virus (HIV) infects the body’s CD4 cells (T cells) that help the immune system fight off infections. If untreated, the reduction of CD4 cells can lead to further susceptibility to secondary infections or cancers which eventually results in the acquired immune deficiency syndrome (AIDS) [66]. No effective cure currently exists, but there are treatment plans which reduce the HIV viral load. The average cost of one drug regimen is $28,688. According to the CDC, the cost for one treatment over a lifetime for an HIV infection is estimated at $379,668 per individual [67]. More often than not, HIV and HCV are coinfections amongst PWIDs whom are less likely to afford health insurance. As a result, PWIDs have a tendency to seek emergency medical attention once the symptoms have progressed to latent stages, costing healthcare systems. Therefore, this article proposes to offer HIV/Hep-C screenings to the CUES. Each comes with its own OraQuick Rapid test that detects antibodies for the respective viruses via a simple fingerstick with results in just 30 minutes. [68] Offering HIV/Hep-C screenings serves as a proactive means for both PWIDs and healthcare systems by encouraging PWIDs to seek treatment early and possibly guide them further rehabilitative care because it provides a space and opportunity to be able to test for HIV and HCV infections which could lead to the overall reduction in healthcare costs.

A Needle Exchange Program. The Syringe Exchange Program, also referred to as the needle exchange program,

was instituted in Philadelphia in 1992 in attempt to reduce the number of blood-borne diseases such HIV caused by the reuse and sharing unclean needles amongst people who inject drugs. At that time, 46% of HIV diagnoses had a strong correlation amongst PWID [69]. The program was created through which unclean needles could be exchanged for sterile ones with the provision of education of risks and implications regarding the sharing of needles. Prevention Point had thus become the largest and only city-sanctioned needle exchange program in Philadelphia [70]. Maurer and her colleagues examined the effectiveness of the needle exchange program over the span of 15 years between 1999 and 2014 and found that the needle exchange program had reduced the number of HIV transmission instances via needle sharing from 46% in 1992, 22.2% in 2006, 11.1% in 2009, and 5.4% in 2014 [69]. The number of new registrants per year had declined as well from 2168 in 1999 to 1295 in 2014 [69]. Nevertheless, the opioid crisis remains prevalent in Philadelphia today. Maurer and her team note that, even though the number of new registrants per year has decreased, PWID have been utilizing the needle exchanges more than in the past, especially within the younger generation [69]. Therefore, the conjunction of the CUES with a needle exchange program offers sterile needles that may further reduce the transmission of blood-borne diseases while also providing a space that gives education about the risks surrounding opioid usage and offers various opportunities and support that could potentially guide participants into rehabilitation. It is important to emphasize that the needle exchange program would be paired with the CUES as opposed to needle distribution. The needle exchange program with the CUES would also serve as a means to help clean up the area of needles to prevent wounds and infections caused by unsterile needles.

Narcan Distribution and Education. The partnership of the educative Narcan distribution with a CUES could be considered as an attempt to reduce the number of fatal overdoses in Philadelphia. Narcan is the intranasal form of naloxone. Naloxone is an opioid antagonist that acts on the central nervous system to reverse respiratory depression, the main cause of overdose deaths [71]. Naloxone can enact its effects within 5 minutes upon administration. The Surgeon General, Jerome Adams, made a statement in April 2018 urging Americans to carry naloxone:

For patients currently taking high doses of opioids as prescribed for pain, individuals misusing prescription opioids, individuals using illicit opioids such as heroin or fentanyl, health care practitioners, family and friends of people who have an opioid use disorder, and community members who come into contact with people at risk for opioid overdose, knowing how use naloxone and keeping it within reach can save a life [57].

Moreover, Pennsylvania Act 139, known as “David’s Law”, provides first responders, friends and families access to naloxone in hopes to lead an individual toward the substance abuse treatment that they need [71]. The Good Samaritan Provision falls under Act 139 to encourage friends and loved ones to seek emergency medical services upon witnessing an overdose [72]. In February 2018, Independence Blue Cross (IBX) announced to make naloxone available to its subscribers free of charge [73]. IBX will grant subscribers up to six syringes of naloxone every 30 days effective March 1 [73]. Prevention Point currently distributes Narcan kits and provides training [70]. Given the federal, state, and insurance involvement, the distribution of Narcan complemented with education and training to CUES participants serves as both a precautionary means of saving themselves from overdosing and preventing others from fatally overdosing. Narcan distribution further encourages PWIDS to recognize and seek help. The use of Narcan can further reduce the current Philadelphia healthcare cost of $92,408 per hospitalization with an average length of stay of 7-10 days attributed to overdose [8].

Counseling for Rehabilitation and Detoxification Done by Individuals in Recovery. The information center can provide avenues that can connect participants to different resources. While healthcare personnel will be available to offer their expertise regarding health, nutrition, and safety, the information center would primarily be run by people in recovery. Having one-to-one interactions with people in recovery facilitate interpersonal relationships to help guide PWID to other resources available to them. For some, the information center could be their only exposure to the various possibilities and opportunities that can be offered to them such has rehabilitation, detoxification, medication-assisted therapies, grooming services, counseling and more. The CUES may serve as a mediator for someone undergoing the journey through rehabilitation by being the “half-way” point, which could prevent overindulgence after an attempt of abstinence. If a person should revert back to substance abuse, the CUES facilitates a space with medical personnel on hand should emergency care be needed. Furthermore, individuals in recovery are also given a sense of purpose in facilitating conversations and providing encouragement for

PWIDs which is an impetus to remain in recovery.

Early Education: Although the government continues to propose and introduce new initiatives focusing on increased early education for new and future healthcare professionals, the nation as a whole continues to fall short of reaching the educational goal. Looking forward, the integration of healthcare students into the CUES would be paramount in buffering the opioid epidemic. The introduction of healthcare professionals into the CUES would be beneficial for all parties involved.

- **Healthcare institutions:** The CUES would serve as an opportunity for healthcare institutions to show their continued commitment towards the opioid crisis and towards some of the most underserved populations of our country.
- **Students:** Involvement early on in their career equips them with the necessary practical experience and much needed skills in dealing with the opioid epidemic, in addition to making them more adept with dealing with the underserved populations.
- **CUES facilities:** In addition to providing voluntary services to the facility from trained healthcare professionals, it will also help destigmatize the public's perceptions of these sites since the CUES could show the fact that they are also focusing on educating our young health professionals early on in their careers.

4.4. Discussion

Nevertheless, the model safe injection facility compounded with the additional services suggested makes the CUESs a strong viable option for Philadelphia. Fentanyl screening provides a sharp cognizance for safety by showing PWID the risks of injecting elicited drugs. From the perspective of the healthcare personnel and students training in the healthcare system, the CUES provides first-hand exposure to the opioid epidemic and gain first-hand experience in attending to PWID in wound care services and also in counseling. The interactions with PWID helps students form one-on-one relationship and are able to help with PWID feel they are ready. Equipping young healthcare professionals with the necessary skills in dealing with the opioid crisis will be paramount looking forward, as the opioid crisis continues to climb. Furthermore, offering Hep-C/HIV screenings is a preventative means of encouraging PWIDs to seek treatment early before the progression to the viral latent stages. Logistically, the combination of the needle exchange program with the CUES could help clean the area of needles and reduce the number of blood-borne diseases and skin and soft tissue infections. As a result, these measures could effectively reduce the overall healthcare costs. Having healthcare personnel on hand compounded with educative Narcan distribution may reduce number of fatal overdoses and hospitalizations. Providing an informational center run by people in recovery provides a safe space for PWIDs to openly discuss their concerns and seek while also giving those in recover a sense of purpose and impetus to remain in recovery. Thus, the implementation of the CUES offers various dynamics that could curb the ever-increasing opioid crisis in Philadelphia.

However, we witness the exact same criticisms against Insite resurfacing upon the installation of a CUES. However, in the aforementioned Insite section, we had addressed the opponents' concerns listed as five major critiques. Thus, rather than reiterating those responses, we stress that the criticisms are repudiated conceptually, psychologically, and statistically [74].

4.4.1. Harms Reduced/Benefits Reaped: Projected Estimates

CUES models after Insite which has reduced significant harms on both individual patient and community levels. It is projected that in Philadelphia, on a yearly basis, there will be between 3 and 48 averted cases of HIV infection, 15 to 213 averted Hepatitis C cases, and 24 to 76 overdose-related deaths to be prevented. From an economic standpoint, with the installment of a CUES, a great possible saving is expected. Officials in Philadelphia estimate that the CUES could reduce costs related to hospitalization for skin and soft tissue infections between $1,512,356 and $1,868,205 per year. Again, they also estimate that the total value of overdose deaths averted is between $12,462,213 and $74,773,267 annually, which includes a reduction of $123,776 from ambulance costs; $280,683 in savings from a reduction in hospital emergency department utilization and $247,971 in savings from reduced hospitalizations [8]. Also, as mentioned earlier, the value of overdose deaths averted could reach between $12.5 and $74.8 million annually, reduce ambulance costs by $123,776 per year, and save $271,971 in hospital costs annually for PWID [74]. Also, reduction in skin infections could save the healthcare system between $1.5 and $1.9 million annually. Of course, it is difficult to provide an accurate assessment on the costs compared to benefits. But the primary variable is that we are not certain how many individuals would utilize the CUES. After a few months of data collection following the establishment of the site, an accurate cost/benefit analysis can be produced by reference to financial index.

4.4.2. The CUES's Emphasis of Community Education

Philadelphia's CUES program should have an added emphasis on education which is aimed not only at the users that these sites serve but also the members of the surrounding community. The officials from Canada's Insite, healthcare personnel, law enforcement members, international SIF representatives, and members in the community will convene in a series of forums exchanging ideas, addressing concerns, etc. Once opened, PWID would learn how to use their drugs in the safest ways possible, how to properly discard needles, and how to administer naloxone in the event of an overdose. The education will reduce the number of overdoses, mitigate the transmission of infectious diseases such as HIV and Hepatitis C, lower the amount of social disorder in the surrounding neighborhoods, and lower the financial and resource burden on the healthcare system. Also, there will be continual community education with a focus on why safe injection sites would have a positive impact on the area based on principles from the harm reduction theory which is addressed in detail next [74].

5. HARM REDUCTION AS PRACTICAL ETHICAL JUSTIFICATION

The driving ethical force behind the push for CUESs to be made available as a viable option for PWID is its potential to be used under the harm reduction idea. Harm reduction is an approach focused on minimizing the negative results that go hand-in-hand with drug abuse [75] [76]. Harm reduction techniques have both a medical and ethical impact on the individual and society as a whole. Harm reduction techniques accept the individuals as they are, while also tailoring that person's treatment to fit his or her needs [77]. Furthermore, there are certain principles that are quintessential to an understanding of harm reduction, as listed by the Harm Reduction Coalition:

- Accepts, for better and or worse, that licit and illicit drug use is part of our world and chooses to work to minimize its harmful effects rather than simply ignore or condemn them.
- Understands drug use as a complex, multi-faceted phenomenon that encompasses a continuum of behaviors from severe abuse to total abstinence and acknowledges that some ways of using drugs are clearly safer than others.
- Establishes quality of individual and community life and well-being–not necessarily cessation of all drug use–as the criteria for successful interventions and policies.
- Calls for the non-judgmental, non-coercive provision of services and resources to people who use drugs and the communities in which they live in order to assist them in reducing attendant harm.
- 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 drugs users themselves as the primary agents of reducing the harms of their drug use and seeks to empower users to share information and support each other in strategies which meet their actual conditions of use.
- Recognizes that the realities of poverty, class, racism, social isolation, past trauma, sex-based discrimination and other social inequalities affect both people's vulnerability to and capacity for effectively dealing with drug-related harm.
- Does not attempt to minimize or ignore the real and tragic harm and danger associated with licit and illicit drug use [75].

The CUES' ability to allow PWID to have a safe environment to inject drugs gives itself the potential to be used as a harm reduction agent in and of itself. Furthermore, many individuals who die from opiate overdoses like heroin did not receive necessary medical treatment in time to save them; allowing PWIDs' access to the CUES could possibly save many preventable deaths. If we, as a society, value human life as sacred, we must find a way to prevent these deaths. The CUES program, like Insite in Vancouver, supervised by trained medical personnel as a harm reduction agent could present a viable alternative to address the growing heroin addiction epidemic and save thousands of lives. The heroin epidemic is growing, fatal overdoses are increasing, and people are becoming more and more frustrated by legal and political barriers to new forms of treatment being put in place to stop this problem. As shown above, SIFs like Insite have been shown to decrease heroin abuse, disease, and mortality rate in Canada and Europe. In the United States, overdoses have led to 45,000 opioid overdose deaths in a 12-month period that ended in September 2017. This number is unacceptable by any standards [78]. Therefore, the harm reduction initiatives like Insite and a CUES must be introduced.

6. RECOMMENDATIONS

While the CUES is a viable option for the city of Philadelphia, it is understood that logistic, legal, and financial implications may arise as a result. In an effort to mitigate such implications, this article proposes the following strategic recommendations.

In accordance with the City of Philadelphia's report on exploratory site visits for CUESs, this article motions to convene with interested stakeholders, work with elected officials to conduct community education and engagement activities at the citywide and neighborhood levels and identify funding sources [79].

In addressing the academic, medical, and legal affiliations

with CUESs, we propose that the Mayor of Philadelphia calls for a summit between the local universities, medical schools, local medical residency programs, hospitals, law enforcement in addition to representatives from the communities and rehabilitation centers. This would create an environment in which the healthcare, public health, and legal communities may work cohesively to take the next step in implementing these sites, and further address the opioid crisis.

Additionally, we call for the creation of national principles that include universal screenings, access to medications and continuing long term patient care places further emphasis on the opioid epidemic as a healthcare issue. It is believed that, once private users recognize these standards and create financial incentives to meet them, the rest of the health care system will follow [80].

Also, the federal government should create regulations on opioid prescribing. It creates a system which forces healthcare to actively consider methods in the best interests of their patients in terms of pain management. A study from the Journal of the American Medical Association found that NSAIDs are more effective in treating pain than opioid-based medications [81]. In 2016, the Surgeon General's report stated that 10 percent of 21 million Americans with substance-use disorders will receive treatment [80]. Even so, there are no standards of care for treating addiction when it is a complex disorder that requires a multi-pronged approach. The creation of a protocol to treat those with substance use disorder within healthcare systems provides a mentality of treating addiction as a disease and giving people the appropriate care they need. It not only allows physicians to reexamine their methodology of pain management but also educates and trains future physicians about the epidemic and how to properly care for individuals with substance abuse disorder.

Most importantly, widespread education and advocacy is important for creating an informed community which shapes the mindset regarding one's approach to the opioid epidemic as a whole. In the face of this public health emergency, it is easy to first accuse those who are responsible. However, it is the vulnerable populations and ethnicities who are often accused leading to incarcerations and stigmatism. The opioid effects compounded with the incarcerations have broken individuals and their families leaving them subject to criticism and pushed to the wayside. Therefore, acknowledging that the opioid epidemic is a multi-faceted systemic issue and providing education and awareness is a critical component to the public understanding of the harm reduction theory and taking the necessary steps to address this crisis. Nevertheless, the recommendations with the additional services proposed could lay the foundations to make Comprehensive User Engagement Sites an effective paradigm for Philadelphia.

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