

Introduction

In **October of 2017**, the **United States Department of Health and Human Services declared a national public health emergency** because of the country's opioid crisis. Opioid abuse has become a daunting public health problem across the nation, and especially in the Philadelphia region. There may be as many as 70,000 heroin users in the Philadelphia area along with 50,000 people that have misused prescription painkillers. **In 2017, the number of deaths caused by drug overdoses in Philadelphia were four times greater than the number of deaths by homicide.** Overall, **the opioid crisis costs the city an estimated \$26 million a year or more.** Combating this problem has proven to be a challenge for health officials, and it is imperative that measures are taken to decrease morbidity and mortality related to opioid drug abuse and decrease healthcare costs. **The Task Force to Combat the Opioid Epidemic, created by Philadelphia mayor James Kenney, produced a list of possible solutions that included implementing a Comprehensive User Engagement Site (CUES) that would provide medical resources and assistance for opioid users. This facility would allow people who inject drugs (PWID) to do so under the supervision of trained healthcare professionals. PWID would have access to clean needles, overdose medications, patient education, and opportunities for recovery.** A similar safe injection facility (SIF) has been operating in Vancouver for many years, and has had success in addressing both the costs and complications associated with opioid abuse in Canada. This study analyzed the clinical, ethical, and economic considerations associated with a potential CUES site in Philadelphia, using the Vancouver SIF as a model for comparison.

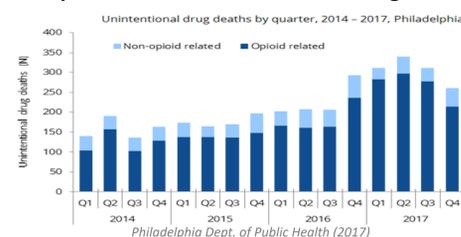
Methods

- A review of the literature was conducted using PubMed, EMBASE, and various public data sources. Search keywords related to the history and efficacy of safe injection facilities (SIFs), their implementation to Philadelphia, and other related terms were used.
- Semi-structured discussion sessions were conducted among members of the Institute of Clinical Bioethics at Saint Joseph's University, resident physicians at Mercy Health System, and medical students at the Philadelphia College of Osteopathic Medicine (PCOM). Topics of discussion included the risks, benefits, and ethics involved in initiating a CUES in Philadelphia, with research regarding past SIFs being used as a comparative model
- Each team conducted independent reviews of different aspects regarding a proposed SIF in Philadelphia and presented their findings back to the group.

Results

The Reality In Philadelphia:

- 2016: 907 deaths** were documented to be caused by drug overdoses
 - Of those, **80% were attributed to Opioids**
- 2017: 1217** unintentional drug overdose **deaths** occurred in Philadelphia
 - Fatal drug overdoses **increased by 34%** compared to 2016
 - **Opioids were found in 88%** of drug deaths in 2017, up from 80% in 2016



- **935** Cases of **secondary conditions** arose from **Needle Sharing**
- Predicted that there are **4X as many deaths** from Overdose compared to homicides

Insite: Canada's First Legally sanctioned Supervised Injection Facility

2003-Present:

- Insite has served as a **scientific pilot** and has resulted in :
 - **Reduction in public disorder** (figure 2)
 - **Reduction in infectious disease transmission**
 - **Reduction in incidence of drug overdose**
 - **Increased participation in external treatment programs**
 - Did **NOT** result in an increase in Crime
 - **Overall Cost effective**
- There have been **48,798** clinical treatment visits
- **6,440 overdose interventions, and 0 deaths.**

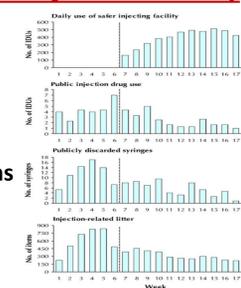


Figure 2: 6 weeks before and 12 weeks after facility opened. Dotted line represents opening of facility. Wood et al. (2004)

The Estimated Impact on Philadelphia:

Medical Analysis - Each year a CUES that saw 2000 patients would lead to an **estimated prevention of:**

- **3 to 48** cases of **HIV infections** annually
- **15 to 213** cases of **Hepatitis C** annually
- **24 to 76** overdose related **deaths**

Economic Analysis- Estimate of the impact of a hypothetical CUES in Philadelphia

- **Reduction in costs** related to hospitalizations for **Skin and Soft tissue infections** were estimated to be **\$1.5 – \$1.9 Million** annually.
- Total value of **overdose deaths averted: \$12.5 to \$74.8 Million** annually
- Estimated Impact on Healthcare costs **annually:**
 - **A reduction in ambulance costs** by **\$123,776** per year
 - Annual **savings of \$280,683** due to a **reduction in in hospital emergency department utilization**
 - Annual **savings of \$271,971** on hospital costs due to **reduced hospitalizations** for those who overdose

Ethical Analysis - revealed that safe injection **is ethically permissible** given the **primary intent is to limit the user's exposure to harm.**

- Reviewing existing evidence on Supervised Injection facilities and local data we estimate the following **harm reduction impact:**
 - Serves as an **access point** for drug and alcohol treatment
 - Reduced incidence of disease transmission as well as drug overdose

Discussion

Due to the effectiveness of Insite in Vancouver, our research seeks to consider Comprehensive User Engagement Sites (CUES) as a viable option in response to the growing Opioid Crisis in Philadelphia. As an extension of the framework provided by Insite, the CUES model would offer additional resources such as:

- **Wound Care:** It has been estimated that the annual savings of a CUES skin and soft tissue service could save between \$1.5-\$1.8 million annually. The integration of a wound care service with medical education provides an opportunity for students to gain practical experience, while witnessing first-hand the effects of opioid usage within marginalized populations.
- **Needle Exchange Program:** between 1999 and 2014 the needle exchange program reduced the number of HIV transmission cases related to needle sharing from 46% in 1992 to 5.4% in 2014.
- **Naloxone (Narcan®) distribution:** 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.

Applying the results from Vancouver's Insite to a Philadelphia Comprehensive User Engagement Site, the facility has the potential to be highly successful. Experts from Insite project that a facility in Philadelphia could lead to between 3 and 48 averted cases of HIV infection annually, 15 to 213 averted cases of Hepatitis C cases annually, and prevent 24 to 76 overdose related deaths annually.

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