

Recommendations for Reducing Illicit Fentanyl Fatalities in the United States: Ideal Program Components on Harm Reduction Strategies as well as Public Education on the Dangers of Synthetic Opioids and Suggested Guidelines for NRT Clinicians

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**Recommendations for Reducing Illicit Fentanyl Fatalities in the United States: Ideal
Program Components on Harm Reduction Strategies as well as Public Education on the
Dangers of Synthetic Opioids and Suggested Guidelines for NRT Clinicians**

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Abstract

This research offers recommendations for reducing illicit fentanyl fatalities in the United States. The study will suggest ideal program components on harm reduction strategies as well as public education on the dangers of synthetic opioids. It will also suggest guidelines for NRT clinicians.

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I. Introduction

The world of opioid abuse in the United States is being pushed to the forefront of news, politics, scientific studies, and agendas for law enforcement officers by one singular element: illicitly manufactured fentanyl (IMF). IMF is causing more than 150 fatal overdoses every day in the United States alone (CDC, 2022). The factors behind its unfortunate success include its ease of manufacture, low cost and those who purchase it in their illegal narcotics receive the high they are looking for. While IMF is most often found in opiates, it is also being found in many different substances not traditionally taken for sedative effects, such as cocaine, methamphetamine, and drugs that appear to be prescription medications. This makes taking any kind of illicit substances from any source dangerous to public health. The main issue behind IMF is its potency and the general ease at which it causes the user to overdose, with a high percentage ending under fatal circumstances. Deaths like these can be prevented with a four-pronged approach of public education, FDA-approved rapid testing strips for the presence of IMF, making naloxone widely and inexpensively available, and safe consumption sites for those who choose to use these substances despite the risks.

The purpose of this research is to encourage the education of the public on the dangers of IMF while simultaneously addressing the problem with those who choose to use illicit drugs by providing harm reduction programs. Working with the public education system to encourage prevention over harm reduction is key, but also providing rapid fentanyl test strips to test street drugs for the presence of IMF, making naloxone available and affordable, and providing safe consumption spaces are other ways to directly address the issue. There is a limited amount of research available on the subject of IMF in relation to harm reduction

studies and their efficacies, but what is available would be most useful if put into one convenient source.

The significance of addressing this issue is that IMF is killing more people per year than the flu and pneumonia combined (CDC, 2020). Second, a very frightening statistic is that according to a study of New Jersey methadone and opiate rehabilitation patients, 38% of participants actively sought out drugs they heard had caused an overdose (Kline, Mattlern, Cooperman, Williams, Dooley-Budsock, Foglia and Borys, 2020). The number of opiate overdose deaths rose 38.1% between 2020 and 2021 (DEA, 2022). Synthetic opiates such as fentanyl (mainly illicitly manufactured), have contributed to a 55.6% rise in overdose deaths during the same period (DEA, 2022). Among the synthetic opiates, fentanyl is the component of most of these overdose deaths (DEA, 2022).

Harm reduction strategies such as rapid testing strips, naloxone, and safe consumption sites can and are working to reduce the number of overdoses, particularly fatal ones (Peiper, Clarke, Vincent, Ciccarone, Kral, and Zibbell, 2019). In one study of opioid drug users participating in a syringe services program in Greensboro, North Carolina, results found that 43% reported changed behavior after the rapid test strips detected fentanyl in the drugs they had purchased. The changed behaviors include using less of the drugs than they had intended, giving themselves a smaller test shot, pushing the syringe at a slower pace, or ingesting the drugs in a different manner (Peiper et al 2019).

The research will be written utilizing secondary data from the CDC, DEA, several quantitative studies, publications from OJP and NCJRS, as well as additional resources and information to obtain secondary data to support my arguments. Similar sources will be used to obtain information about the use of rapid fentanyl test strips, the use of naloxone to

prevent fatal overdoses, and programs currently in place that are doing these things and what effect they are having on the opioid overdose epidemic, including safe consumption sites.

Illicitly manufactured fentanyl is still in its infancy in the grand scheme of narcotics, therefore long-term studies are still ongoing. With the current situation, the specific contributions to the field include recommendations for change including making naloxone available in public places as often as life-saving measures such as AEDs and first aid kits. Naloxone should be available from establishments such as methadone clinics where opioid users frequent, but also over the counter at an affordable cost. Currently, the approximate cost of naloxone ranges from \$20 to \$40, about as much as the drugs themselves. This cost is not feasible for most drug users and will cause many to choose not to use it. Many drug users already do illicit activities to afford the drugs they take, so doubling that amount to make it safer is going to reduce the number of individuals who take advantage of naloxone. Fentanyl test strips should be equally available and equally low or at no cost. Drug education in schools needs to include the dangers of fentanyl and other synthetic opioids and why they are so dangerous, as well as the warning signs of abuse, addiction, overdose, and more. The manufacturers and distributors of fentanyl-laced products need to be held accountable if a person fatally overdoses. The public needs to be educated on what illicitly manufactured fentanyl is, why it is so dangerous, and what they need to know to protect themselves and the people they care about. Utilizing the four-pronged approach of public education, FDA-approved rapid testing strips for the presence of IMF, having naloxone widely and inexpensively available, and safe consumption sites will drastically reduce the number of IMF-related overdoses and fatalities.

II. Literature Review

Illicitly Manufactured Fentanyl Overdose Statistics

The National Center for Drug Abuse Statistics (NCDAS) provides a variety of statistics regarding fentanyl. In the 12 months before May 2020, there were approximately 42,700 overdose deaths attributable to fentanyl (NCDAS, 2022). Urine specimens collected at clinics dealing with primary care, management of pain, and substance abuse have a positive test rate for fentanyl of 5%, or 1:20. One kilogram of fentanyl contains approximately 250,000 lethal doses. In the years from 2013 through 2015, DEA and other agencies were able to intercept 239 kilograms of fentanyl before it was distributed. This equals approximately 60 million lethal doses that were kept out of the hands of unsuspecting people (NCDAS, 2022).

Following seizures of illegal narcotics, the DEA will test the substances to determine what they are made of. A small amount of IMF can be fatal depending on the user's body size, history of use, and tolerance. The DEA has found that 42% of the pills they have seized have contained a minimum of 2 mg of fentanyl, which is considered a potentially lethal dose. Some of the pills seized contained more than 5 mg of fentanyl, more than twice a potentially lethal dose (DEA, 2022).

IMF is not only showing up in pill forms, such as being mixed with benzodiazepines like Valium, Xanax, and Klonopin. This substance is showing up in heroin, cocaine, and even methamphetamine (NIDA, 2021). What this means for a person who uses drugs (PWUD) is that no drug can be considered safe from the possibility of being mixed with IMF therefore nobody is safe from the possibility of experiencing an overdose, statistically speaking possibly a fatal one.

A study done in New York City between March and June of 2017 was conducted to give a glimpse of the risk of exposure to illicit fentanyl. Utilizing participants from eleven syringe exchange programs, 434 labeled syringes were distributed for their next injection of illicit opioids. The syringes were collected and tested for fentanyl or fentanyl analogs using gas chromatography-mass spectrometry and liquid chromatography-quadrupole-time-of-flight mass spectrometry. The results showed that of the 271 syringes returned for analysis, 46 of them contained fentanyl or fentanyl analogs (Blachman-Forshay, Nolan, McAteer, and Paone, 2018).

Harm Reduction Strategies

There are strategies that can be used in the battle against fatal overdoses involving IMF. These strategies, while controversial, can and have saved many lives. They include rapid fentanyl test strips, naloxone—better known as Narcan, and safe consumption sites.

Rapid fentanyl test strips (FTS) are a tool that can be used to determine if there is fentanyl present in a substance one is about to consume. They can be obtained at harm reduction organizations, narcotic replacement therapy clinics, and even Amazon for as low as a dollar each. Only a very small amount of the drug is needed to test, which is diluted in water in which the test strip is dipped and then laid flat for a few minutes to wait for a positive or negative result (Good Rx Health, 2022). A study into the efficacy of the test strips found a false positive rate of 10%, and a false negative rate of 4% (Green, Park, Gilbert, McKenzie, Struth, Lucas, Clarke, and Sherman, 2021).

A second strategy is the use of naloxone or Narcan, in the event of an overdose from fentanyl or another opioid that is ingested. In the past, naloxone was only available from paramedics or hospitals, in more recent years police officers as well began carrying it to provide

assistance to those needing it. Now, this tool is available from many pharmacies across the country, without a prescription (Narcan.com, 2021). Naloxone is an opioid antagonist that reverses the effects of the drugs someone has in their system. If an individual is overdosing on a drug in the opiate class, naloxone can be administered and that person can likely be saved if done properly and in time. There are two forms of naloxone available for consumer use: injectable and inhalable. Both work to block the opiate effects on the person who ingested it. The pharmacists who can provide naloxone do have to follow their state guidelines regarding training, reporting of administration, record keeping, and other factors (Narcan.com, 2021).

The last strategy is the safe consumption site, an establishment an individual can go to with their illicit substance(s) and use them under the direct supervision of staff. The purpose of these sites is to provide a place where help can be provided in the case of an overdose or other issue that requires intervention. Clean, sterilized supplies are provided, and staff members observe and intervene if necessary. Supplies are also disposed of properly, unlike drugs used in public spaces. There is also access to other things such as mental health services, drug treatment, and other forms of social support (Brangham and Nady, 2021).

DEA and Other Agencies Response to the Growing Problem of IMF

Fentanyl hasn't always been an issue for the DEA and other agencies. It was first developed in 1959 by Dr. Paul Janssen for Janssen Pharmaceutica as an intravenous anesthetic mainly used for cancer patients (DEA, 2020). Over time, the number of fatal overdoses has increased significantly, likely due to illicit fentanyl being significantly cheaper and easier to obtain than legally manufactured fentanyl (NIDA, 2021). A majority of illicit fentanyl is manufactured in labs in China and Mexico and brought to the United States to be cut with heroin

and other drugs. Because it is white in color, it is easily disguised into other substances such as powder heroin, and cocaine, and mixed into pills that look like prescriptions (Dismukes, 2018).

In an effort to reduce the infiltration of fentanyl into this country, law enforcement agencies have employed different ideas and tactics to try and limit the amount of fentanyl getting into the United States with varying degrees of success. One such effort is Project Wave Breaker, a multi-jurisdiction effort aimed at reducing the amount of illicit fentanyl in American communities (DEA, 2022). Project Wave Breaker mainly focuses on street-level networks responsible for distribution, but also pursues couriers, bank accounts associated with networks, businesses that may be involved, and identifying assets for the purposes of investigation and seizure. Coinciding with these efforts are strides to work with Mexican counterparts to address similar issues in Mexico, including pinpointing the source of ingredients used to make illicit fentanyl (DEA, 2022).

Other efforts include Operation Engage, a community-level initiative designed to address a community's issues with narcotics particular to their area (DEA, 2022). Using prevention strategies, encouraging conversations, and collaboration with local partners, each field division office can address their region's most challenging area, according to current drug threat data. Resources can then be focused on that particular area in an effort to reduce the amount of fentanyl available (DEA, 2022).

III. Program Evaluation: Current Examples of Harm Reduction Strategies

Program Perception

The success of a harm reduction strategy lies solely in the hands of the person using the illicit substance. If that individual doesn't feel the need to protect themselves, the strategy will

not be a success. A survey was conducted using individuals in a methadone maintenance program to determine what, if any, changes they made to their injection practices after suspected exposure to fentanyl in the illicit substances they purchased for use (Mistler, Chandra, Copenhaver, Wickersham and Shrestha, 2021). One hundred and five individuals completed the survey, 37.1% of which stated they would not use the illicit drugs in question if they found out they were mixed with fentanyl. Forty percent of the participants stated they would take more time to use the drugs if they learned their supply contained fentanyl. 31.4% of those who participated stated they would be willing to carry naloxone if they learned their supply contained fentanyl. Finally, 17.1% of individuals who participated stated they would be willing to use drugs contaminated with fentanyl if they were with someone who had naloxone (Mistler et al, 2021).

The survey also revealed several interesting trends in the demographics of the individuals who participated in the survey. Individuals with incomes lower than \$10,000 per year were more likely to avoid using drugs containing fentanyl. Caucasian participants were more likely to utilize harm reduction practices in the course of using their illicit substances than other ethnicities. The survey also revealed that those participants who had experienced a previous overdose were more likely to currently carry a supply of naloxone with them. Finally, the survey also found that individuals who use more than one substance were more likely to participate in harm reduction strategies (Mistler et al, 2021).

The research is even more limited on how different harm reduction studies are perceived by different age groups. A study in Seattle showed that individuals less than 30 years of age who use injectable opiates were more likely to re-use syringes, compared to those users above 30 years of age (Cedarbaum and Banta-Green, 2016). Different studies among young adults who

inject opiates further suggest the use of risk reduction strategies are not usually present, and awareness of overdose risk factors does not produce any measurable behavior changes (MacFarlane, Zaccaro, Caban, and Favaro, 2017). The lack of any measurable behavior change in these young adults can sometimes be attributed to their developmental stage, characterized by feelings of impulsivity, and increased risk tolerance. Additional data shows that younger age is associated with seeking fentanyl over less potent opioids (Morales, Park, Glick, Rouhani, Green, and Sherman, 2019).

Strategies

The information readily available about the efficacy of harm reduction strategies is meager. Many studies into the success or failure of these programs are still in the data collection or data analysis stage and have not yet been published. According to one study, people who use drugs and witness an overdose are 2.32 times more likely to seek out a drug-checking service (Beaulieu, Hayashi, Nosova^a, Milloy, DeBeck, Wood, Kerr, and Ti, 2020). The same study showed 53.8% of its participants had witnessed a drug overdose in the past six months.

Rapid Fentanyl Test Strips

RAPIDS

The RAPIDS program (Rhode Island Prescription and Illicit Drug Study) is an example of a randomized clinical trial in the data analysis phase. The purpose of the study is to determine the effectiveness of fentanyl overdose education and rapid test strip distribution in reducing the number of overdoses in people who use opioids (Jacka, Goldman, Yedinak, Bernstein, Hadland, Buxton, Sherman, Biello and Marshall, 2020). All participants were randomly assigned to either receive Overdose Education and Naloxone Distribution (OEND) training, which was what was currently being offered to anyone at risk for a fentanyl overdose, or the RAPIDS training which

includes the OEND but also counseling and rapid test strips. All participants were offered a naloxone kit and information on how to get additional doses if necessary. To date, the results of this pilot study are forthcoming, but the preliminary results seem to indicate a correlation between a lower rate of overdoses in the group that received the RAPIDS training and education over the group that received only the OEND education (Jacka et al 2020).

According to the CDC, the highest increase in overdoses is seen in 25–44-year-old males (CDC, 2022). For this reason, it is imperative to try and determine the best way to educate young men in particular about the dangers of fentanyl and the harm reduction strategies they could be using to be safer. In a study conducted in Rhode Island between May and September of 2017, 93 young adults were recruited to take part in a pilot study aimed at understanding their thoughts on the use of rapid fentanyl test strips (Goldman, Waye, Periera, Krieger, Yedinak and Marshall, 2019).

Individuals were given ten strips to test their illicit substances for the presence of fentanyl. After 2-4 weeks, 81% of the individuals returned, reporting using at least one of the test strips given to them. Of the individuals that reported using the strips, the majority found them easy to use and helpful in determining if their drugs contained fentanyl or fentanyl analogs. Those individuals that reported detecting fentanyl in their drugs did lead to some altered behavior in how they consumed their drugs or if they consumed them at all. Of the 62 participants that used at least one strip, 31 received a positive result for fentanyl or fentanyl analogs. Following the positive result, 14 individuals decided to use less of the illicit drugs, 12 used with someone else present, and 13 injected the substance slower than they normally would. Eleven individuals elected to do a small test shot, three threw the drugs away, three sold them

and two gave them away. Some participants admitted sharing the strips with friends they thought were at high risk for fentanyl contamination (Goldman et al, 2019).

Naloxone

The use of naloxone, or Narcan as it is more commonly known, is only effective if the individual needing it has it and uses their illicit drugs with someone who knows how to administer it properly. One of the purposes of naloxone programs is to train individuals on the signs of an overdose and how to properly respond, including administering the naloxone. Data analysis is still in the early stages of review regarding the efficacy of take-home naloxone kits, but preliminary evidence suggests that countries such as Canada have had overwhelming success in reducing opioid overdose deaths attributed to naloxone kits (Moustaqim-Barrette, Dhillon, Ng, Sundvick, Ali, Elton-Marshall, Leece, Rittenbach, Ferguson, & Buxton, 2021). The kits distributed in Canada come in a carrying case and contain non-latex gloves, alcohol swabs, a face shield to provide rescue breaths if necessary, instructions on what to do in the case of an overdose, and either injectable or inhalable naloxone. There is still research to be done regarding accessibility, availability, and affordability (Moustaqim-Barrette et al, 2021).

Safe Consumption Sites

Up until November 2021, there were no publicly sanctioned safe consumption sites in the United States. A Research Letter penned by a group of doctors and clinicians studying the outcomes of the first two months of the first two publicly sanctioned safe consumption sites shows how effective these establishments can be and how many lives they have already saved (Harocopos, Gibson, Saha, McRae, See, Rivera and Chokshi, 2022).

In the first two months after opening their doors, two sites were utilized 5975 times by 613 individuals. The majority of the participants were male, identified as Hispanic or Latino, and

had an average age of 42 years. Of the participants, 36.9% reported currently living on the streets, presumably of New York City where these sites are located. 75.9% of these same participants admitted they would openly use drugs in a public location if safe consumption sites were not available.

Since opening their doors, these two safe consumption sites have intervened 125 times during a suspected overdose. Naloxone was administered in 19 instances, oxygen was given 35 times, and vitals were monitored in 26 cases. For individuals using stimulant drugs, staff intervened 45 times with hydration, cooling techniques, and de-escalation. Overall, emergency services were called five times, with only three people being transported to the hospital for further treatment. No fatal overdoses occurred at the sites or those transported to the hospital.

According to these statistics, the services at safe consumption sites are being taken advantage of, and those services are reducing the risk of a fatal overdose. More than half the participants also received other support services while attending the site, such as counseling, medical care, and hepatitis C screening. While the results are limited to this short study, it shows that the risks of overdose are lowered, public consumption of drugs and improper discarding of paraphernalia is lowered, and other important services are being obtained by those who need them (Harocopos et al, 2022).

IV. Theoretical Framework

From a psychological standpoint, the theoretical framework that may make the most sense when discussing illicit drug use is Social Learning Theory. This theory posits that individuals learn patterns of behavior from those around them—essentially their friends and family members (Cherry, 2022). For some individuals and some substances, this may hold true. Individuals who hang around people who smoke marijuana are more likely to use it themselves.

If a person grows up in a household where the parents deal and/or consume illicit drugs, they are at a higher risk to become a drug user themselves (Cherry, 2022). With opioids, there is another element to be examined: prescribed opiates. Prescribed opiates such as Oxycontin, Vicodin, and fentanyl are addictive if used improperly when it comes to pain management. According to the National Center for Drug Abuse Statistics (NCDAS), 9.7 million people misuse painkillers, with 95.9% of those individuals using opioids specifically (NCDAS, 2022).

Another theory that could explain, at least in part, the illicit drug use of individuals is the Strain Theory. This theory posits that an individual's level of strain is dependent on the amount of distance between their life aspirations and life expectations (Brezina, 2017). Their aspirations are what they want to get out of life, while their expectations are what they know to be reasonably achievable. The greater the distance between the two, the greater the strain. It is this strain that influences the individual's decision to commit a crime (Brezina, 2017).

While Social Learning and Strain Theories can explain the theoretical framework of drug use, there is also the biopsychosocial component of addiction. Merriam-Webster defines addiction as “a compulsive, chronic, physiological or psychological need for a habit-forming substance, behavior, or activity having harmful physical, psychological, or social effects and typically causing well-defined symptoms upon withdrawal or abstinence” (2022). In other words, despite harming oneself, a drug addict will continue to use an illicit substance to quell a chronic compulsion they have. Chronic drug users tend to build up a tolerance to the substances they are using, including opioids. As stated earlier, fentanyl is an extremely powerful opioid, and for those addicts who are at the stage of using opiates to feel normal because they have too much tolerance built up, fentanyl becomes an option for them and the risk of an overdose is extremely high.

V. Recommendations

As part of the four-pronged approach, public education is crucial in the fight against fatal fentanyl overdoses. The effort to educate children about the dangers of fentanyl is in its infancy despite it showing up in junior and senior high schools across the country (Arundel, Lucas, and Ye Han, 2022). Schools are beginning to stock naloxone to administer in the case of a student overdose. Teachers are beginning to educate students about the dangers of illicit substances, particularly fentanyl. In some instances, the parents are also being brought in and taught about what to look for in their children's behavior, physical appearance, and other factors (Arundel, 2022).

Congressmen Lamborn and Neguse, both from Colorado, have proposed a bill that would expand fentanyl education in schools (Toomer, 2022). The bill would allow unused COVID-19 funds to go towards student education on fentanyl and prevention efforts within schools. Called the Protecting Kids from Fentanyl Act, it would allow for unused COVID-19 funds from Elementary and Secondary School Emergency Relief to be used for educating students about fentanyl. The funding would be used to supply schools with naloxone or other opioid antagonists, training for school staff on the administration of the antagonists, and fund classes and materials for students.

Equally as important is the education of parents on the dangers of fentanyl. Parents need to know the warning signs of opioid abuse and addiction, as well as the signs and what actions to take in the case of an overdose. Parents cannot assume their children are too young to learn about the dangers of drugs, and they cannot assume their child would never do drugs. Cases of using substances such as fentanyl and fatal overdoses are being seen in younger and younger individuals (Toomer, 2022).

Lastly, for those individuals already struggling with tolerance or addiction to opioids, education should continue to be provided on resources such as the availability of rapid fentanyl test strips, naloxone take-home kits, and hopefully in the near future more safe consumption sites. The use of these tools can greatly reduce the number of fatal overdoses, saving countless lives. In addition to these tools, information about the different kinds of drug treatment options could be made available to those who want or need it.

Addressing the Stigma of HRS

With harm reduction strategies, there will come judgment from others. People will often judge what they don't understand, and drug use is very stigmatized in that way. Fortunately, some tools are easily obtained with little to no exposure to others. Rapid fentanyl test strips are one such tool. They are available in pharmacies, at narcotic replacement therapy clinics, online, and more. Depending on where they are purchased they can be as cheap as one dollar per strip and are very easy to use.

Naloxone is available in most pharmacies, but you must have a prescription. It is approximately \$40 per dose, depending on where it is acquired. Because you have to have a prescription, your doctor must be aware that you need it, which can cause some issues with stigma in the future should you need pain management from the same doctor. However, if you are having issues with opioids, your doctor should be aware of it to prevent future abuse of additional substances.

When it comes to drug treatment centers, halfway houses, needle exchange programs, and places such as safe consumption sites, there is often pushback from neighboring businesses and residents from having those types of places in their neighborhoods. This is understandable,

as these types of establishments do attract drug users and abusers and their cohorts. However, these establishments provide a very valuable service to the community in which they serve. Forms of HRS such as safe consumption sites are no different. They provide a valuable community service. These sites provide a place for users to ingest their drugs so they aren't doing it openly on the street. They provide clean, sterile supplies for them to use and dispose of used materials properly—something that would likely not happen if they used them on the street. They provide resources and/or referrals to individuals such as drug and alcohol treatment programs or other services they may need. For those that may need to take advantage of a safe consumption site, there may be some stigma by others, but likely not from those that operate the site. They are aware of why they are there and what the site is used for and only want to prevent someone from dying—that being the reason for their mission.

Understanding the Positive Impacts of HRS

As stated in the previous sections above, there is evidence to suggest harm reduction strategies such as rapid fentanyl test strips, naloxone, and safe consumption sites work to reduce the number of fatal overdoses. In the Goldman et al study, for example, using the rapid fentanyl test strips and receiving a positive indication for the presence of fentanyl led to a substantial change up to and including discarding of the drugs (2019). While naloxone is a harm reduction strategy, statistics on its efficacy are less than fruitful. There is a demand for its production, however, and individuals are acquiring it (CDC, 2022). The safe consumption site discussed in the Harocopos et al study stated they intervened 125 times with the belief someone was overdosing in the first two months of their doors being open (2022). With statistics like these, the number of lives saved is adding up quickly.

VI. Conclusion

Limitations

The most challenging limitation to this research was that studies into the different facets of fentanyl, harm reduction strategies, and other subject matter are still being conducted and/or are not published yet. Despite fentanyl having been around for several decades now, the ability or desire to manufacture illicit fentanyl is much more recent, as is the flooding of it into the illicit opioid market. Studies can take years to conduct, analyze, and be published, and we are just now starting to see the first comprehensive studies regarding fentanyl coming out. A second challenging limitation to this research is how few outlets of specific information there are to be found, specifically safe consumption sites and naloxone. There are only a few safe consumption sites in the entire country, so the information available to study is small. Similarly, statistics for naloxone use are not entirely readily available either. It is apparent there is a demand for it, but statistics on its prevalence or efficacy are not readily available.

Recommendations

My recommendations for future research include comprehensive studies on the different facets of safe consumption sites including naloxone use, needle exchanges, drug treatment requests, and others. My recommendations would also include studies into the use and efficacy of naloxone, including how to lower the cost and increase availability. I would also recommend continued examination of the use of rapid fentanyl test strips, including but not limited to their distribution, use, and behavior modification following use.

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