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JASON PROBST
ASSISTANT MINORITY LEADER
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Colleagues,

Kansans are dying at an alarming rate from fentanyl poisoning - with our state experiencing the second-highest increased death rate in the United States. This plague affects people of all walks of life, socio-economic strata, and age groups, including children.

HB2540 contained an update to the 41-year-old definition of drug paraphernalia (written in 1981) to exclude fentanyl testing strips (FTS). The definition of paraphernalia was written a generation before fentanyl existed. The bill was returned to conference and this life-saving measure removed. These inexpensive strips can alert someone to the presence of fentanyl. It has saved lives in other states, and it can save lives in Kansas. As such, when the CCR for HB2540 emerges, I intend to revisit the issue of decriminalizing FTS. Kansans are worth the effort.

I've put together an educational packet for your review. If you see nothing else, I hope you'll read the letter from Libby Davis, the mother of a 16-year-old boy who unwittingly died a fatal dose of fentanyl.

In arguments against FTS, concern about the lack of a hearing was raised. This is patently untrue. A hearing on the original bill, HB2277, was scheduled Feb. 1, 2022, in the Senate Judiciary committee, with 13 pieces of proponent testimony on FTS, many ready to testify in-person. There was no opposition. Chair Warren held a partial meeting but adjourned before proponents could testify. I have included that compelling testimony here.

Another concern was that FTS enabled drug use. The data and research do not support this. Nothing about FTS facilitates the use of drugs; they do not make it easier to do drugs and they serve no role in administering drugs. They do provide information that keeps a user alive. Addiction isn't forever – most people recover to live vibrant and meaningful lives. We have a duty to give every Kansan that chance.

Fentanyl is unlike anything our country has seen before. It is a poison – one particularly fatal to teenagers, who have little or no established tolerance for opioids. Most are dying from counterfeit pills that appear to be authentic opioids. Additional Kansans will die in the coming year if we fail to allow a simple, effective, and affordable tool that could save their lives. Addicts, too, are worthy of our compassion. They are our friends, neighbors, brothers, sisters, parents, and children. I humbly ask for your support to decriminalize fentanyl testing strips this session. Waiting a year will result in unnecessary deaths that each of us could've had a hand in saving.

Sincerely,

Rep. Jason Probst, District 102

May 12, 2022

RE: Fentanyl Test Strips

Dear Members of the Kansas Legislature,

I write to you today as the mother of a 16-year-old son who was poisoned by a fake pill containing illicit fentanyl on August 29, 2021. He was just a curious teenager who did not get the opportunity to learn from his mistake. Over these past 8 months I have come to learn a lot about illicit fentanyl. Most importantly, I have come to understand that illicit fentanyl is a poison, and it is taking the lives of more than 150 Americans every day. It has become the leading cause of death for Americans ages 18 to 45, as well as our youth ages 15 to 24. More must be done, and awareness may be our only defense.

Despite much effort, the DEA is unable to stop illicit fentanyl from coming into our country. In fact, in 2021 the DEA seized enough fentanyl to kill every American. Sadly, that is only 20% of what comes across our border. The amount of fentanyl being smuggled into our country by the Mexican drug cartels could kill every American 5 times over. To me, this sounds like a weapon of mass destruction, because it is doing just that. If we cannot stop it from coming in, we must use every harm reduction tool we have available. Fentanyl testing strips is one of those. Kansans currently have access to Narcan, a reactive harm reduction tool to treat overdose, so why would we also not want to make available a proactive harm reduction tool such as fentanyl testing strips. The strips may not be a perfect tool, but they can help save a life. I would also recommend that instructions on how to use the strips correctly be provided at distribution locations. Every American deserves to have the option to test a substance they are about to consume to find out if it could contain a poison that may kill them. If we knew that our milk supply was being tainted with poison coming from Mexico, would we not take every precaution necessary to ensure it did not make it into the mouths of all Americans.

The availability of fentanyl testing strips could also have some downstream positive effects on those plagued with addiction. Use of the test strips provides a time for the drug user to become more mindful of their actions. Availability of the test strips will only increase awareness around the fentanyl crisis our country is facing. Embracing those afflicted with addiction and providing these harm reduction tools may lead to them feeling more accepted. Fewer would feel they have to live in the shadows and may be more willing to ask for and accept the help they need.

In a perfect scenario, Americans would not use drugs. Everyone needs to set aside what they think about drug use, because the reality is that the disease of addiction exists, and people are going to use. Our country does have an addiction problem, and it is not going away anytime soon. In fact, with this influx of illicit fentanyl, more addicts are being created every day due to the higher potency and highly addictive nature of illicit fentanyl. This may be the Mexican cartel's #1 goal. They are trying to create repeat customers and addicts because it is good for their business. Addicts did not wake up one day and say, "I want to get addicted to drugs." It may have been a choice the first time or two, but it quickly turns into a disease. They no longer can make a logical choice each day to use or not to use, the disease

that has taken over their bodies is making those choices. Whether they have cancer, asthma, Alzheimer's, or drug addiction, every American should have access to harm reduction tools to protect themselves against the hidden poison that is coming into our country in unprecedented amounts.

After losing my teenage son, I have recognized other items that need to be addressed as the number of fentanyl related deaths continues to climb.

1. Fentanyl and fake pill education needs to be provided in all schools.
2. All schools should have Narcan on hand.
3. Kansas needs to adopt the Good Samaritan law as it relates drug overdoses.
4. Poisoning should be listed as the cause of death rather than accidental overdose when illicit fentanyl is involved.
5. Anyone distributing drugs containing illicit fentanyl which leads to a death should be charged with murder.
6. Our state needs more PSA's, commercials, billboards, community bulletins etc. to raise awareness around the dangers of illicit fentanyl and fake pills.

I pray that you will take all these things into consideration and into action before illicit fentanyl takes someone you love.

Sincerely,

Libby Davis, RN, MSN

Libby Davis

Kansas Fentanyl Overdose Deaths Increasing Rapidly

Kansas Department of Health and Environment

Kansas Department for Aging and Disability Services

Provisional surveillance results from the State Unintentional Drug Overdose Reporting System (SUDORS) show that at least 338 Kansas residents have died of drug overdose between January 1, 2021 and June 30, 2021. The tally represents a 54% increase from the 220 drug overdose deaths identified by SUDORS surveillance in the same 6-month time frame in 2020.

Of the provisional 338 deaths, 149 involved fentanyl or fentanyl analogs (synthetic opioids), 149 involved methamphetamine and 40 involved other licit and illicit drugs, such as cocaine, benzodiazepines and prescription opioids. More than one drug can be involved in a fatal drug overdose, so these values are not mutually exclusive.

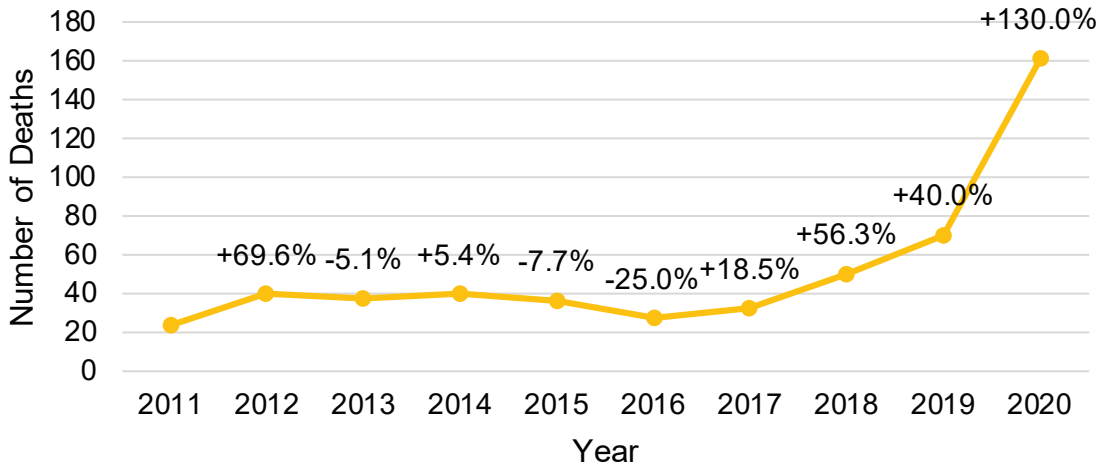
Based on data retrieved from Kansas death certificates, mortality due to synthetic opioids increased by 600% from 2011 to 2020. In the most recent vital statistics data available, synthetic opioid deaths increased from 70 in 2019 to 161 in 2020 (a 130% increase).

Fentanyl continues to drive the uptick in fatal drug overdoses in Kansas. This is largely attributed to increased availability, accessibility and use of illegally manufactured fentanyl statewide.

From August 2020 to June 2021, 6,531 free naloxone kits were distributed through the Kansas Department for Aging and Disability Services (KDADS) and DCCCA to individuals and agencies across Kansas.

According to KDADS/Beacon Health Options, in FY21 1,367 individuals received SUD treatment for Opioid Use Disorder (OUD) through State Opioid Response (SOR II) funding.

Synthetic Opioid Overdose Mortality Among Kansans: 2011-2020



Source: Mortality Database, Kansas Office of Vital Statistics

Synthetic Opioid Overdose Mortality Among Kansans: 2011-2020

Drug	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Synthetic Opioids	23	39	37	39	36	27	32	50	70	161

Technical Notes

SUDORS Data:

Kansas SUDORS collects information on unintentional or undetermined intent fatal overdoses occurring in Kansas. Deaths are identified and drug categories are determined based on both the toxicology results as well as the listed cause of death. The SUDORS data presented here is provisional and has not yet been finalized.

Vital Statistics Mortality Data:

Drug Overdose deaths were analyzed based on information about the underlying cause of death from Kansas death certificates, and are reported based on decedents place of residence. Drug overdose deaths were identified based on ICD-10 codes indicating a drug poisoning (X40-44, X60-64, X85, and Y10-14) as well as a multiple cause of death code indicating a synthetic opioid (T40.4), which includes fentanyl, fentanyl analogs, tramadol, and other synthetic narcotics excluding methadone. The Vital Statistics data presented here is finalized for deaths occurring from 2011-2020. Data for deaths occurring in 2021 has not been finalized but are scheduled to be released later this year.

Further information can be found here: kdhe.ks.gov/1309

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Educational Overview of Fentanyl Test Strips

What are fentanyl test strips?

- **Kansas** had the **second-highest percentage increase** (41%) in **overdose deaths** from December 2020 to December 2021.[1]
- Fentanyl test strips are "small strips of paper that can detect the presence of fentanyl in any drug batch—pills, powder, or injectables," and in doing so, can help prevent overdoses.[2]
- Federal grants, including the Overdose Data 2 Action (OD2A) grant, allow for purchasing fentanyl test strips.
    - However, fentanyl test strips are classified as drug paraphernalia in Kansas; presently, possession of these life-saving tools may include fines and jail time.

What are the economic benefits of fentanyl test strips?

- Fentanyl test strips are **inexpensive**, **accurate**, and **reliable**, costing just **$1 per strip** and having **96-100% accuracy** in the detection of fentanyl.[3,4]
- In contrast, the **average nationwide cost** for an overdose patient who required **intensive care** was **$20,500**.[5]
- **Fatal opioid overdoses** cost the United States **$1 trillion per year**, further underlying the need for **cost-efficient** tools such as fentanyl test strips to reduce **the risk of an overdose**.[6]

What are the public health benefits of fentanyl test strips?

- Fentanyl test strips **significantly reduced daily illicit opioid use** and the **frequency** of **injection drug use**.[7]
- People who had a positive test result were **5 times more likely** to report **changing their drug use behaviors than those who had a negative test result**.[8]

What are the public safety benefits of fentanyl test strips?

- Fentanyl test strips, in conjunction with other evidence-based strategies, allow communities to better engage people with substance use disorders to care. This ensures a more viable **path to treatment and recovery**, **address stigma,** and **reduce recidivism**.[9]

What are some misconceptions about fentanyl test strips?

- *People only want FTS so they can intentionally use substances with fentanyl in them*.
    - Pu and colleagues (2021) reported that "Most drug users were concerned about fentanyl and other questionable substances in their drug supply." [10]
- *People who do not want to risk an overdose should just stop using drugs.*
    - Numerous studies have demonstrated that "Just Say No" messages are largely ineffective, or even counterproductive, at preventing substance use.[11-13]
- *FTS only enables drug use*.
    - Utilizing FTS acknowledges the reality that most overdoses and overdose deaths have been unintentional due to fentanyl contamination and that **people cannot recover from a substance use disorder if they are dead**.
    - Pu and colleagues (2021) found that 90% of drug users were willing to use fentanyl test strips as an overdose prevention method.[10]
    - FTS can link people with substance use disorder to treatment and recovery, which in turn, can help reduce or abstain their substance use.[14]

References can be accessed by scanning the QR code. Inquiries can be directed to Ngoc Vuong at ngoc@partnersforwichita.org. Created by Ngoc Vuong, Lisa Vayda, and Jacob Kresky.

SAFE ST

Uniting Neighbors Against Crime

The Honorable Jason Probst
Kansas House of Representatives
Topeka, Kansas

Dear Members of the Kansas Legislature:

I am writing in regard to your bill to establish legal status for fentanyl detection strips to be used in Kansas without restrictions. Although I work at the University of Kansas Health System, I am speaking from my professional experience and do not represent any opinion of the University of Kansas Health System or the University of Kansas School of Medicine.

The ongoing overdose epidemic is directly linked to fentanyl contamination of illicit drugs manufactured by Mexican drug cartels and widely distributed in the United States. Fentanyl is more than 100 times stronger than morphine or heroin, and a very small amount is sufficient to kill a person. Fentanyl is being added to pills made by Mexican cartels to resemble pharmaceutically produced medications such as oxycodone or Xanax, as well as adding to illicit drugs including cocaine, methamphetamine and marijuana. Fentanyl is cheap to produce, requires very little bulk and easy to smuggle in various forms. It is used to increase the potency of drugs, with the intent to increase sales and profit. Instead, it is causing unprecedented overdose deaths, especially among young people who are experimenting with various pills and unaware that some contain enough fentanyl to kill instantly.

In my work at the University of Kansas Health System, I treat people who abuse various drugs, mostly opioids and methamphetamine. When we check urine drug screens for illicit drugs, we commonly find fentanyl and our patients don't know they have been exposed to it. When they discover the presence of fentanyl, they often refuse to buy from a dealer who is selling fentanyl contaminated drugs. One can hope that in the world of illegal drug sales, demand would decrease if people were able to detect fentanyl and perhaps the market response to demand and supply would shift away from such products. Availability of fentanyl detection strips would allow people to evaluate and avoid this lethal risk.

The great majority of adolescents and young adults who experiment with drug use do not progress to addiction, but lethal exposures are now a significant risk

for even intermittent drug use. When addiction progresses, recovery from drug abuse often requires years and involves multiple episodes of relapse. Our patients are at risk of fentanyl exposure with any relapse episode. Research conducted over the last 15 years has clearly indicated that drug and alcohol recovery are chronic and long term processes, which is also evident in Twelve-Step programs. The lengthy course of recovery increases the importance of safeguards to prevent even brief exposure to risks of fentanyl-induced overdose death.

Drug use, especially opioids and methamphetamine, essentially re-wires aspects of the brain's ability to make rational choices and prioritize behavior. This occurs in a primary area of the brain which controls emotional function and can override cognitive choices. Thus even when people make a cognitive choice to stop using drugs or alcohol, the altered brain function undermines ability to implement the choice. People who are escaping addiction must learn how to avoid provoking the emotions and behaviors linked to drug use, and learn how to adapt to normal emotional states. This process takes years of trial and error practice. During this time, the most important goal is to keep the person alive long enough to recover.

Thank you for allowing me to present my request and for your efforts to help our patients. Having fentanyl detection strips legal and available will help us keep people alive and with hope for the future.

Sincerely yours,

Jan Campbell MD
Director, McKnelly Addiction Treatment Center
University of Kansas Health System
Kansas City, Kansas

Dear Kansas Legislators,

I am Lisa Vayda, a pharmacist, economist, and community advocate from Wichita, KS. I am a proponent of excluding fentanyl testing strips as being considered drug paraphernalia in the state of Kansas.

I have worked for many years battling the growing opiate epidemic and promoting prevention and harm reduction measures. But the grim facts are that deaths from drug overdoses in Kansas increased by 42.9% from December 2020 to December 2021 and this rate increase is the second highest in the United States. The majority of the deaths are due to synthetic opiates such as fentanyl. Fentanyl as counterfeit oxycodone and Xanax or contaminating other illicit drugs, such as cocaine and methamphetamine. There have been recent reports of marijuana being contaminated with fentanyl, as well

Legislative Analysis and Public Policy Association issued a fact sheet reporting several studies showing that people who employ the fentanyl testing strips prior to using can be more informed about the drugs they are buying and using, leading to behavior change and adoption of harm reduction strategies. Furthermore, the federal grant guidelines now allow federal funding to purchase fentanyl test strips in applicable programs. This includes the CDC's Overdose Data to Action (OD2A) cooperative in which Kansas is a participant. However, organizations in Kansas cannot do so because of the current state statutes.

Economically, the cost benefit analysis is supportive of employing fentanyl test strips. The price of a fentanyl testing strip is $1. Consulting area emergency departments in Wichita, the minimum cost for ambulance services, physicians, and hospital services of a level one episode is $1500-2000. This does not include a scenario where resuscitation (code blue) or other medical attention is required. Consider the cost benefit analysis of $1 for a fentanyl test strip vs a human life, which is priceless, or overdose situation requiring attention from an already stressed health care facility for which costly services may not be reimbursed if the patient is uninsured.

Finally, when considering this issue as a mother, I know of two young people, who died of accidental drug overdoses in the past year. I cannot even imagine the grief their parents, friends and family are experiencing. It is heartbreaking that the deaths of these young people could have been prevented.

I come here today representing many Kansas Citizens who have shared their heartbreaking narratives about their child, loved one, colleague, or friend who might be alive today if they were made aware of the dangerous fentanyl lacing their drugs by using testing strips and acting accordingly. There are simple measures that Kansas Legislators could take to improve harm reduction measures in our great state and potentially save lives.

Sincerely,

Lisa K. Vayda, RPh, MS, MA

14400 E. Sport of Kings St.

Wichita, KS 67230

A handful of the recent reporting on fentanyl in Kansas

Fentanyl killed their boys. Now these KC area parents are on a quest to save lives

https://www.kansascity.com/news/business/health-care/article258982433.html

Many counties in Kansas fight the rise of fentanyl in their communities

https://www.ksn.com/news/health/one-pill-can-kill/many-counties-in-kansas-fight-the-rise-of-fentanyl-in-their-communities/

Kansas City family speaks out on dangers of fentanyl after losing loved one to overdoes

https://www.kshb.com/news/local-news/kansas-city-family-speaks-out-on-dangers-of-fentanyl-after-losing-loved-one-to-overdose

More of Kansas City's young people are dying from fentanyl-related overdoses

https://www.kcur.org/podcast/up-to-date/2022-05-12/more-of-kansas-citys-young-people-are-dying-from-fentanyl-related-overdoses

Fentanyl crisis growing in Sedgwick County

https://www.kwch.com/2022/05/03/fentanyl-crisis-growing-sedgwick-county/

Number of fentanyl deaths rising

https://www.kake.com/story/46462558/numbers-of-fentanyl-overdoses-rising

Rise in fentanyl laced street drugs

https://www.kake.com/story/46297594/crime-stoppers

Television coverage of "One Pill Can Kill"

https://www.ksn.com/news/health/one-pill-can-kill/

Fentanyl is everywhere and treatment needs to be just as prevalent, experts say

https://www.kshb.com/news/national/fentanyl-is-everywhere-and-treatment-needs-to-be-just-as-prevalent-experts-say

Hutchinson police lenient on fentanyl test strips

https://www.kwch.com/2022/05/20/hutchinson-police-lenient-fentanyl-test-strips/

“It’s a prevention tool”: Reaction to fentanyl testing strip

https://www.kake.com/story/46540760/its-a-prevention-tool-reaction-to-fentanyl-testing-strip

Podcast with former U.S. Attorney Stephen McCallister

https://thatguyinhutch.substack.com/p/that-podcast-in-hutch-former-us-attorney?s=w

Podcast with death scene investigator Sharon Mandel

https://thatguyinhutch.substack.com/p/that-podcast-in-hutch-death-investigator?s=w

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Research Paper

Fentanyl test strips as an opioid overdose prevention strategy: Findings from a syringe services program in the Southeastern United States

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ABSTRACT

Background: In 2016, the number of overdose deaths involving illicitly-manufactured fentanyl (IMF) surpassed heroin and prescription opioid deaths in the United States for the first time, with IMF-involved overdose deaths increasing more than 500% across 10 states from 2013 to 2016. IMF is an extremely potent synthetic opioid that is regularly mixed with heroin and often sold to unwitting consumers. Community-based organizations have started to distribute fentanyl test strips (FTS) as a strategy to identify IMF in street purchased products. We investigated the association between FTS use and changes in drug use behavior and perceived overdose safety among a community-based sample of people who inject drugs (PWID) in the United States.

Methods: Between September-October 2017, a total of 125 PWID completed an online survey about their most recent FTS use in Greensboro, North Carolina. Our first outcome of interest included whether PWID engaged in any of the following changes in drug use behavior after using FTS: used less than usual, administered tester shot, pushed syringe plunger slower than usual, and snorted instead of injected. Our second outcome of interest was whether PWID felt that FTS use made them feel better able to protect themselves from overdose. We conducted bivariate and multivariate analyses to determine the association between FTS use and these two outcomes.

Results: Overall, 63% of the sample reported a positive FTS test result and 81% reported using FTS prior to consuming their drugs. For the outcomes, 43% reported a change in drug use behavior and 77% indicated increased perceived overdose safety by using FTS. In multivariable models adjusting for demographic and FTS correlates, PWID with a positive FTS test result had five times the odds of reporting changes in drug use behavior compared to those with a negative result. PWID who used the FTS after drug consumption were 70% less likely to report behavioral changes at subsequent drug consumption compared to those who used it before consumption. PWID who were not existing clients of the syringe services program had four times higher odds than existing clients to report increased overdose safety from using FTS.

Conclusions: We found that using FTS and receiving a positive test result was associated with changes in drug use behavior and perceptions of overdose safety. FTS may represent an effective addition to current overdose prevention efforts when included with other evidence-based strategies to prevent opioid overdose and related harm.

Introduction

The opioid overdose crisis in the United States continues to generate unprecedented levels of mortality. Over 63,000 people died from a drug overdose in 2016, with more than 60% of deaths involving an opioid (Hedegaard et al., 2017). In 2016, the number of overdose deaths involving illicitly-manufactured fentanyl (IMF) surpassed the number of heroin-involved deaths and prescription opioid-involved deaths for the first time, with IMF-involved overdose deaths increasing more than 500% across 10 states from 2013 to 2016 (O'Donnell, Halpin, Mattson, Goldberger, & Gladden, 2017). A recent report published by the Centers for Disease Control and Prevention (CDC) detected IMF in 56% of opioid overdose deaths (O'Donnell, Halpin, et al., 2017), with the highest burden in the Northeast and Midwest regions of the country and rising trends identified in the South and West (Peterson et al., 2016; Tomassoni et al., 2017). Postmortem toxicological reports from opioid overdose decedents have identified new polydrug combinations (e.g., alprazolam + gabapentin + IMF) that suggest the emergence of high-

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risk consumption patterns and complex clinical presentations (Dragovic et al., 2016; Marinetti & Ehlers, 2014).

Fentanyl is a synthetic opioid 50 times more potent by weight than heroin, with a rapid onset of action and relatively short duration of effect. The vast majority of fentanyl overdose deaths since 2013 involve IMF, not diverted prescription fentanyl. Manufactured in clandestine labs outside of the U.S., IMF typically enters the country alongside heroin and other illicit drugs through illicit channels before being sold by itself or used to adulterate heroin (Drug Enforcement Administration, 2017a). IMF includes fentanyl analogs (e.g., carfentanil) that may be purchased on the internet and shipped through international postal services before being distributed throughout regional drug markets in the U.S. (Frank & Pollack, 2017). IMF has also been pressed into counterfeit prescription drugs, with fake versions of OxyContin, Percodan, and Xanax linked to overdose outbreaks in several states (Green & Gilbert, 2016). In addition, IMF has been found on illustrated blotter paper commonly associated with paper tablets of lysergic acid diethylamide (LSD; Drug Enforcement Administration, 2015).

National estimates from the Drug Enforcement Administration show law enforcement seizures of IMF have increased substantially, from 4,697 reports in 2014 to 14,400 in 2015 (O'Donnell, Gladden, & Seth, 2017). This rapid growth in supply has led to increased saturation of IMF in existing and emerging heroin markets while exacerbating the opioid overdose risk environment by introducing a new level of difficulty for consumers as they try to parse out different "heroin" types and discern IMF from heroin (Somerville et al., 2017; Marshall et al., 2017). Due to a heightened risk environment and the urgent need to prevent and treat opioid overdose, several public health strategies established by harm reduction organizations have been implemented in high-burden communities throughout the U.S., including overdose education and naloxone distribution (OEND) programs and Good Samaritan Laws (Lambdin et al., 2018; McClellan et al., 2018; Strang et al., 2012; Walley et al., 2013).

Most recently, fentanyl test strip (FTS) technology has emerged as a drug checking strategy to address the fentanyl crisis. FTS was originally developed as a field immunoassay to screen for the presence of fentanyl in urine, but harm reduction organizations discovered that FTS can also detect fentanyl in illicit drug solutions. This realization has led many harm reduction organizations to distribute FTS to people who consume street opioids as an off-label approach to test street drugs for fentanyl (Harm Reduction Coalition, 2018). One type of FTS technology commonly distributed by harm reductions organizations is manufactured by BTNX, Inc., a Canadian biotechnology company that specializes in drug testing research and development.

A recent report compared BTNX's FTS technology with both Raman Spectroscopy (TruNarc machine) and Fourier-transform infrared spectroscopy (Bruker Alpha machine) to determine FTS's effectiveness for detecting fentanyl's presence (sensitivity) and absence (specificity) in street drug products (Johns Hopkins University, 2018). Among the three technologies, BTNX's FTS performed the best with the lowest detection limit (0.13 mcg/ml) and highest sensitivity (96% and 100%) and specificity (90% and 98%) for fentanyl, in addition to detecting 4-out-of-4 fentanyl analogs (two cases involving acetyl fentanyl and two cases involving furanyl fentanyl). These findings suggest that BTNX's FTS technology is effective and can be used off-label to detect the presence of fentanyl and several fentanyl analogs in street drug products.

Numerous international studies have demonstrated the utility of drug checking services for consumers of illicit drugs (Butterfield et al., 2016; Decorte, 2001; Giné et al., 2017; Harper et al., 2017; Hungerbuehler et al., 2011), especially MDMA testing among club and rave culture (Barratt et al., 2018; Mounteney et al., 2016; Saleemi et al., 2017). A recent study in Rhode Island among young (aged 18–35 years) people who use drugs showed high levels (> 90%) of willingness to use FTS (Krieger et al., 2018). Comparably less is known about whether FTS use can help facilitate safer drug use behavior and protect against overdose for this population (Prekupec et al., 2017).

The current study investigated behavioral outcomes associated with the off-label use of FTS among a community-based sample of people who inject drugs (PWID). The study was conducted at a harm reduction organization in the southeastern United States that recently started distributing FTS as part of their overdose prevention efforts. Our primary objective was to determine the influence of FTS results on drug use behavior and perceptions of overdose safety. Based on existing literature and our collective fieldwork experience, we hypothesized that PWID who received a positive FTS result would be more likely to change their drug use behavior than those who received a negative result.

Methods

Study sample

We administered anonymous online surveys to PWID in Greensboro, North Carolina to examine the association among self-reported FTS results and behaviors and attitudes. The study was conducted in September and October 2017 in collaboration with the Urban Survivors Union (USU), a community-based organization that provides syringe services and OEND programs to PWID. Study recruitment began on International Overdose Awareness Day (August 31, 2017) to publicize the study and maximize enrollment. Initial recruitment involved direct intercept with people receiving services at USU. Informational flyers were also posted at USU and made available for people to disseminate amongst their social networks. PWID interested in study participation visited USU's fixed site where they were referred to study staff for instructions on determining eligibility for the study. Eligibility criteria included being aged 18 years or older, having injected illicit opioids within the past 24 hours, and reporting having ever used FTS to test street drugs.

In the Spring of 2017, USU began distributing BTNX Inc.'s Rapid Response Fentanyl Test Strips as part of their overdose prevention strategy. BTNX FTS is a lateral flow chromatographic immunoassay that qualitatively detects the presence or absence of fentanyl and fentanyl analogs in urine but does not assess concentration levels. Positive and negative results are signified by single and double red lines, respectively (Fig. 1). USU offered FTS to program participants in combination with naloxone and overdose education literature, which included directions for how to use the FTS and a directive to use the strips prior to drug consumption (Asher, 2018; Harm Reduction Coalition, 2018).

Data collection occurred on computers made available at USU's SSP in Greensboro using a secured online data collection platform (SurveyGizmo, Boulder, Colorado). To ensure both anonymity and prevent duplicate responses, we implemented a quality control mechanism that used existing program participants' anonymous program identifiers as their study identification (ID). Study participants who were not already enrolled at USU were assigned a randomly-generated, unique identifier as their study ID. After respondents confirmed their eligibility and provided informed consent, they proceeded to a 20-minute online survey that asked about their most recent FTS use. Upon survey completion and verification by study staff, respondents were provided a $20 Visa gift card as remuneration. The study protocol was approved through a full review by the institutional review board at RTI International.

Survey measures

Data were collected using an online survey instrument pertaining to social and demographic characteristics, including age, gender, race/ethnicity, education, marital status, living situation, health insurance status, employment status, and quality of life. In addition, access to transportation was added based upon its identification as one of six key

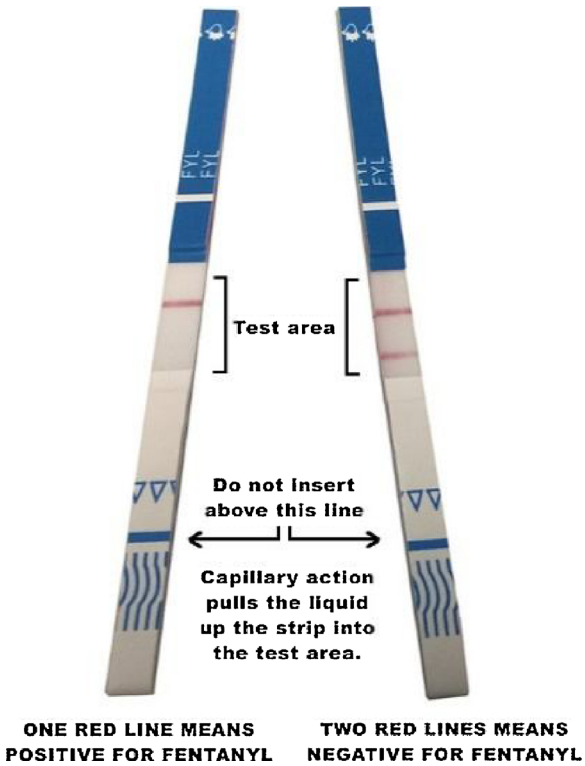

Fig. 1. Rapid Response™ Fentanyl Test Strip (BTNX, Inc.).

variables for rural program access in a recent vulnerability assessment published by the CDC (Van Handel et al., 2016). FTS correlates included ever experiencing an opioid overdose, previous experience with naloxone (e.g., ever administered naloxone during overdose, received naloxone training), SSP utilization, purposively seeking fentanyl, FTS usage before or after drug consumption, and the FTS result from last test.

Participants were instructed to report on their behavior and perception as it related to the most recent FTS use. Several a priori measures of safer drug use behavior were identified by extensive community-based field work with PWID and further confirmed by discussions with key harm reduction stakeholders. Four safer drug use behaviors were combined to make a generalized drug use behavior variable (any behavior vs none): used less drug than usual; pushed syringe plunger slower than usual; administered tester shot; and snorted instead of injected. Of note, two other safer drug use behaviors— threw away the drugs (n = 0, 0%) and staggered drug use with injection partner (n = 1, 1.6%)—were included on the survey, but due to sparseness, were not included in the generalized drug use behavior variable. Perceived overdose safety was assessed by asking participants, "Does using FTS make you feel better able to protect yourself from overdose?" (yes/no).

Statistical analysis

Descriptive statistics were calculated for demographics, FTS correlates, and the study outcomes. We employed a stepwise process to arrive at a parsimonious set of covariates for the final multivariable models (Hosmer & Lemeshow, 2000). First, we conducted bivariate analyses to determine significant associations between demographics and FTS correlates with changes in drug use behavior and perceived overdose safety using the χ^2 statistic, or Fisher's exact test in instances of small cell sizes. Variables that were significant at the $P < 0.20$ level in the bivariate analyses were then included in multivariable logistic regression models. We used a backward selection process to retain covariates that were significantly associated with drug use behavior and perceived overdose safety at the $P < 0.05$ level. Firth's penalized likelihood method was used to estimate the final models to address issues of separation and bias of the parameter estimates due to small sample sizes (Greenland & Mansournia, 2015). This computed adjusted odds ratios (aOR) and 95% confidence intervals (CI) for the demographics and FTS correlates associated with the outcomes. To test the robustness of our findings, we conducted a sensitivity analysis that

Table 1
Characteristics of Survey Respondents: Greensboro, NC, United States, September-October 2017.

Characteristics		Overall (N = 125)	
		n (%)	
Gender			
	Female	55	(44.0)
	Male	70	(56.0)
Age			
	20–29	28	(22.4)
	30–39	59	(47.2)
	40+	38	(30.4)
Race			
	NH White	97	(77.6)
	NH Black	15	(12.0)
	Other[a]	13	(10.4)
Marital Status			
	Single	41	(32.8)
	Married/Partnership	45	(36.0)
	Separated/Divorced	39	(31.2)
Education			
	< College	55	(44.0)
	Some College	40	(32.0)
	Tech/College Graduate	30	(24.0)
Living Situation			
	Home/Apartment	87	(69.6)
	Shelter/Halfway House	13	(10.4)
	Park/Public Place	10	(8.0)
	Friends/Family	15	(12.0)
Employment Status			
	FT/PT	52	(41.6)
	Unemployed	61	(48.8)
	Retired/Disabled	12	(9.6)
Health Insurance Status			
	No	71	(56.8)
	Yes	54	(43.2)
Car Available to Drive			
	No	52	(41.6)
	Yes	73	(58.4)
Quality of Life			
	Poor/Fair	39	(31.2)
	Good/Excellent	86	(68.8)
Lifetime Overdose			
	No	65	(52.0)
	Yes	60	(48.0)
Naloxone Experience[b]			
	No	22	(30.2)
	Yes	103	(82.4)
SSP Client			
	No	68	(54.4)
	Yes	57	(45.6)
Wanted Fentanyl			
	No	86	(68.8)
	Yes	39	(31.2)
FTS Usage			
	Before	101	(80.8)
	After	24	(19.2)
FTS Result			
	Negative	46	(36.8)
	Positive	79	(63.2)

Abbreviations: NH, non-Hispanic; HS/GED, high school/general equivalency degree; Tech, technical school; FT/PT, full-time/part-time; SSP, syringe services program.

[a] Other races include Hispanic, Asian American, Pacific Islander, Native American, Alaska Native, and Multiracial.

[b] Naloxone experience includes "ever having administered naloxone to another person" or "ever having received training to administer naloxone".

modeled associations between demographics and FTS correlates with changes in drug use behavior and perceived overdose safety only among those PWID who reported using FTS prior to drug consumption (n = 101). Stata version 15.1 was used to execute all analyses.

Results

A total of 129 PWID completed the online survey. Respondents who reported an uncertain FTS result (n = 4) were excluded from analyses. Of the remaining 125 respondents, 56% were male, 70% were 20–39 years old, 78% were white, 24% were college or technical school graduates, 70% lived in a home/house, and 49% were unemployed (Table 1). Nearly half of the sample (48%) reported having experienced an overdose in their lifetime, while 82% reported previous experience with naloxone. More than three quarters of the sample (81%) reported using FTS before drug consumption and nearly one-third (31%) reported seeking fentanyl when performing the FTS test. Approximately two-thirds (63%) of the FTS results at last use were positive.

For the study outcomes overall, 43% of the sample reported changes in drug use behavior and 77% indicated that FTS increased their perceived overdose safety. Using less drug than usual was the most commonly reported change in drug use behavior (32%) followed by performing a tester shot (17%), snorting instead of injecting (10%), and pushing the plunger more slowly (9%). Based on the bivariate analyses, marital status, education, employment status, health insurance, naloxone experience, FTS usage, and FTS result were retained for further analysis with changes in drug use behavior, while age, race, employment status, and SSP client status were retained for perceived overdose safety.

In the final multivariable models (Table 2), unemployed PWID had lower odds of reporting changes in drug use behavior compared to employed PWID (aOR = 0.29, 95% CI = 0.13–0.66) and PWID who used FTS after drug consumption also had lower odds of changing drug use behavior compared to PWID who used FTS before consumption (aOR = 0.33, 95% CI = 0.11–0.95). PWID reporting a positive FTS result had higher odds than those with a negative result to report changes in drug use behavior (aOR = 5.08, 95% CI = 2.12–12.17). PWID aged 40 years and older had higher odds than people aged 20–29 years to report perceived overdose safety (aOR = 3.98, 95% CI = 1.18–13.40). Non-SSP clients had higher odds than existing clients to report increased perceived overdose safety (aOR = 4.06, 95% CI = 1.63–10.13).

The sensitivity analysis of PWID who used FTS before drug consumption (N = 101) yielded highly comparable results to the analysis of the full sample (N = 125). Among the subsample of 101 PWID, respondents who reported a positive FTS result had increased odds of changing their drug use behavior compared to respondents with negative FTS results (aOR = 4.88, 95% CI = 1.91–12.46); unemployed PWID had lower odds of reporting changes in drug use behavior compared to employed PWID (aOR = 0.21, 95% CI = 0.09–0.55); PWID aged > 40 years had higher odds than those aged 20–29 years reporting increased overdose safety (aOR = 4.03, 95% CI = 1.08–15.02); and non-SSP clients had higher odds than existing clients to report increased overdose safety (aOR = 4.51, 95% CI = 1.58–12.88).

Discussion

This study examined the off-label use of FTS technology by PWID and its effect on changes in drug use behavior and perceptions of overdose risk. Of 125 PWID, nearly two-thirds (63%) reported a positive FTS result from their most recent use. PWID who reported positive FTS results had five times higher odds of changing their drug use behavior compared to those with negative results. Although we found no statistically significant association between FTS results and perceptions of overdose risk, a high percentage of respondents (77%) indicated that FTS made them feel more able to protect themselves from overdose.

In contrast to reports claiming that "opioid addicts" lack impulse control and are unable to make healthy decisions (Grant et al., 2000; Jones et al., 2012; Volkow & Fowler, 2000), PWID's capacity to make safer drug use decisions when confronted with test results has been well documented (Bandura, 1990; Celentano et al., 2002; Weinstein, 1989). One example consistent with our findings comes from the hepatitis C (HCV) literature and involves injection equipment serosorting: a disease prevention strategy whereby PWID choose injection partners based on disease status (e.g., HCV+) to reduce infectious disease transmission (Smith et al., 2013; van den Boom et al., 2014). In a national study of 9,690 PWID, Smith et al. (2013) found that PWID who received HCV antibody test results and knew their anti-HCV status were more likely than those with an unknown HCV status to engage in safer injection behaviors (e.g., sharing injection equipment only with partners of concordant disease status).

Our study employs the logic of serosorting to situate "drug checking" with FTS as a test that can influence PWID's decision to practice safer drug use behaviors based on the result. In the current analysis, PWID who reported a positive test result at last use were significantly more likely to change drug use behavior compared to those with a negative test result (aOR = 5.1, 95% CI = 2.1–12.2). Like serosorting, this finding provides additional evidence that PWID, when receiving test results indicating potential harm, can change how they inject drugs to prevent adverse health outcomes.

Another notable finding is that over three-quarters of our sample (81%) reported using FTS to test their drugs prior to consuming them. This contrasts with a recent Canadian study that found only 38% of PWID used FTS before consumption (Lysyshyn et al., 2017). As our study found that respondents who used FTS after consumption had lower odds of reporting changes in drug use behavior, it is possible that discrepancies between studies emerged due to the Canadian study recruiting PWID from a supervised consumption site (SCS). SCSs are staffed by health professionals and PWID may be less motivated to use FTS before consuming street-purchased opioids because they are using them in a safe environment (Kennedy et al., 2018; Kerr et al., 2017; Kral & Davidson, 2017). In the absence of SCSs, the high percentage of FTS use before consumption in the current study suggests that PWID are willing to use FTS as an added strategy to protect against fentanyl overdose and preempt the need for emergency interventions (e.g., naloxone, EMS, acute hospitalization).

The impact of FTS distribution on service utilization is also noteworthy. Slightly over half of our sample (54%) were non-SSP participants, and this group had four times higher odds than existing SSP clients to report FTS increased overdose safety. Studies in the U.S. show that SSPs provide direct harm reduction services to only a small proportion of PWID in a given community or locality (Lorvick et al., 2006; Riley et al., 2010). Results from this study provide evidence that FTS distribution may represent a cost-effective strategy to increase program participation among PWID not currently utilizing harm reduction services in their community.

Nearly one-third (31%) of our study sample reported wanting fentanyl when testing their most recently purchased street drugs. This finding is consistent with another study that found 26% of respondents (N = 256) reported their preference for fentanyl (Johns Hopkins University, 2018). Ethnographic research suggests that recent shifts in illicit opioid preferences may be a function of the specific psychoactive effects associated with fentanyl (Ciccarone et al., 2017), such as a stronger "rush" compared to heroin (Armenian et al., 2018). Increased preference for fentanyl may also reflect IMF's growing saturation in illicit drug markets and associated increases in (witting and unwitting) fentanyl exposure that can result in exacerbated physical dependence and greater tolerance among PWID (Cicero, Ellis, & Kasper, 2017; Helander, Backberg, Signell, & Beck, 2017; Marshall et al., 2017; Somerville et al., 2017). Together, these findings may represent a growing proportion of PWID who prefer IMF and IMF-adulterated heroin over heroin alone.

Further complicating fatal overdose risk are recent reviews

Table 2
Multivariable Logistic Regression Models of Associations with Changed Drug Use Behavior and Perceived Overdose Safety.

Correlates	Changed Drug Use Behavior				Perceived Overdose Safety			
	Prevalence		Adjusted[a]		Prevalence		Adjusted[a]	
	n (%)		aOR (95% CI)		n (%)		aOR (95% CI)	
Gender								
Female	27	(49.1)	—		42	(76.4)	—	
Male	27	(38.6)	—		54	(77.1)	—	
Age								
20–29	12	(42.9)	—		18	(64.3)	1.00	
30–39	23	(39.0)	—		46	(78.0)	2.42	(0.86–6.83)
40+	19	(50.0)	—		32	(84.2)	3.98	(1.18–13.40)
Race[b]								
NH White	41	(42.3)	—		75	(77.3)	—	
NH Black	8	(53.3)	—		14	(93.3)	—	
Other	5	(38.5)	—		7	(53.8)	—	
Marital Status								
Single	12	(29.3)	—		30	(73.2)	—	
Married/Partnership	22	(48.9)	—		38	(84.4)	—	
Separated/Divorced	20	(51.3)	—		28	(71.8)	—	
Education								
< College	22	(40.0)	—		43	(78.2)	—	
Some College	14	(35.0)	—		31	(77.5)	—	
Tech/College Graduate	18	(60.0)	—		22	(73.3)	—	
Living Situation								
Home/Apartment	40	(46.0)	—		64	(73.6)	—	
Shelter/Halfway House	5	(38.5)	—		11	(84.6)	—	
Park/Public Place	2	(20.0)	—		9	(90.0)	—	
Friends/Family	7	(46.7)	—		12	(80.0)	—	
Employment Status								
FT/PT	31	(59.6)	1.00		36	(69.2)	—	
Unemployed	18	(29.5)	0.29	(0.13–0.66)	48	(78.7)	—	
Retired/Disabled	5	(41.7)	0.63	(0.15–2.58)	12	(100.0)	—	
Health Insurance Status								
No	27	(38.0)	—		57	(80.3)	—	
Yes	27	(50.0)	—		39	(72.2)	—	
Car Available to Drive								
No	21	(40.4)	—		39	(75.0)	—	
Yes	33	(45.2)	—		57	(78.1)	—	
Quality of Life								
Poor/Fair	17	(43.6)	—		28	(71.8)	—	
Good/Excellent	37	(43.0)	—		68	(79.1)	—	
Lifetime Overdose								
No	31	(47.7)	—		47	(72.3)	—	
Yes	23	(38.3)	—		49	(81.7)	—	
Naloxone Experience[c]								
No	5	(22.7)	—		18	(81.8)	—	
Yes	49	(47.6)	—		78	(75.7)	—	
SSP Client								
No	27	(39.7)	—		59	(86.8)	4.06	(1.63–10.13)
Yes	27	(47.4)	—		37	(64.9)	1.00	
Wanted Fentanyl								
No	35	(40.7)	—		67	(77.9)	—	
Yes	19	(48.7)	—		29	(74.4)	—	
FTS Usage								
Before Drug Consumption	48	(47.5)	1.00		76	(75.2)	—	
After Drug Consumption	6	(25.0)	0.33	(0.11–0.95)	20	(83.3)	—	
FTS Result								
Negative	10	(21.7)	1.00		36	(78.3)	—	
Positive	44	(55.7)	5.08	(2.12–12.17)	60	(76.0)	—	

Abbreviations: NH, non-Hispanic; HS/GED, high school/general equivalency degree; Tech; technical school; FT/PT, full-time/part-time; SSP, syringe services program.

[a] The adjusted models retained covariates that achieved significance at the $P < 0.05$ level using a backward stepwise procedure.

[b] Other races included Hispanic, Asian American, Pacific Islander, Native American, Alaska Native, and Multiracial.

[c] Naloxone experience includes "ever having administered naloxone to another person" or "ever having received training on how to administer naloxone.".

identifying strong links between economic instability and "deaths of despair" (i.e., deaths from drug overdose, alcohol-related disease, and suicide) in states hard hit by the opioid epidemic (Case & Deaton, 2017; Diez Roux, 2017; Rudd et al., 2016; Zibbell et al., 2017). Our study found that unemployed PWID had lower odds of reporting changes in drug use behavior compared with employed PWID. This finding highlights the impact economic instability exerts on drug use behavior and overdose risk, especially among PWID who experience homelessness, unemployment, incarceration, eviction, and residential transience (Galea & Vlahov, 2002). These "root" causes of the ongoing opioid crisis need further exploration (Dasgupta et al., 2018). Targeted outreach efforts, tailored interventions, and referral to specialty services are necessary to provide supplemental support for economically disadvantaged PWID.

The use of FTS as a primary overdose prevention strategy is gaining traction and rapidly becoming a component of harm reduction programs in the U.S. At present, however, there is a paucity of evidence on their safety and efficacy, and numerous questions remain as to whether their use can indeed reduce overdose risk. Qualitative research (Marshall et al., 2017; Somerville et al., 2017), including rapid assessment ethnography (Ciccarone, 2017), can serve as key supports of implementation science when examining drug checking technologies (Barratt et al., 2018). Further studies that investigate attitudes and risk-reduction behaviors associated with FTS use, including barriers to behavioral change, would also benefit from direct observation in real world settings. For example, field research can aid in studying the correlation between consumer perceptions and discernment of fentanyl with FTS detection alongside gold standard gas/liquid chromatography coupled with mass spectrometry. With reports of fentanyl increasingly being detected in non-opioid drugs like cocaine and methamphetamine (Marinetti & Ehlers, 2014; Seth et al., 2018), clinical and toxicological studies are needed to address the issue of fentanyl testing in different drug classes or different source-forms of heroin (e.g., black tar).

Limitations

These results should be considered in light of several potential limitations. The generalizability of this study is limited, given that data were from just one community in the southeastern U.S. According to the Drug Enforcement Administration, IMF is more prevalent in Greensboro, NC and other states east of the Mississippi River, regions where heroin powder is dominant and can be more easily mixed with IMF (also a powder), compared to western states like California, New Mexico and Texas where black tar heroin is dominant and more difficult to adulterate with IMF (Drug Enforcement Administration, 2017b). The small sample size limited our ability to derive more precise estimates in the multivariable analyses, although stepwise and sample size penalization procedures improved model parsimony. Limited sample size also precluded a more thorough examination of FTS use with the four changes in drug use behaviors. Because the survey was taken anonymously, it is possible that some respondents could have participated twice and double counted in the sample, particularly persons not already enrolled at USU and unfamilar to SSP staff. We suspect subject duplication was minimal, however, given the short time frame of the study (two months) and its rigorous, in-person enrollment procedures. In addition, a small proportion of the total sample (3%) reported an uncertain FTS result, a finding comparable to other recent FTS studies (Harm Reduction Coalition, 2018; Health Canada, 2017; Johns Hopkins University, 2018). Our study suggests, however, that the effects of FTS use on drug use behavior outweigh the very small likelihood of an uncertain result. As the general population is still encouraged to use other common types of health protections (e.g., condoms, over-the-counter pregnancy tests) despite being subject to diagnostic error or improper use, the public health message that PWID not use FTS and assume that all street drugs are tainted with IMF may be counterproductive regarding informed decision-making and maintaining an internal locus of control (Celentano et al., 2002; Mitchell et al., 2017). Larger prospective studies are now needed to further evaluate patterns of FTS use and the types of changes in drug use behavior that can lead to reductions in opioid overdose, including the need to develop strategies in situations of product uncertainty.

The current study suggests that FTS use has the potential to facilitate changes in drug use behavior among PWID, but the question as to whether FTS can lead to reductions in overdose was beyond the study's scope and requires further investigation. Nevertheless, the need for more evidence should not prevent community-based organizations and public health agencies from distributing FTS as part of a comprehensive overdose prevention strategy. When seen in this light, FTS can follow the path of syringe exchange and lay naloxone distribution, interventions initially developed by harm reduction activists and organizations before adequate evidence was available and prior to being endorsed by state and federal public health agencies. A recent commentary recommends a similar approach for FTS, echoing the importance of additional research and the need to provide FTS within a package of evidence-based harm reduction services (McGowan, Harris, Platt, Hope, & Rhodes, 2018). In addition to FTS, there remains a need to evaluate other types of drug checking technologies, including portable chromatography and spectroscopy devices that can be utilized onsite at SSPs and SCSs, or through community-based drop-off laboratories and mail order tests that provide more comprehensive drug panels. Given an increasingly lethal fentanyl risk environment, FTS technology represents a low-cost and timely strategy that can inform evidence-based overdose prevention and provide the foundation for developing safer drug use practices for PWID.

Contributors

Jon. E. Zibbell, Nicholas C. Peiper, Dan Ciccarone, and Louise B. Vincent originated the idea and design for this article. Nicholas C. Peiper, Sarah Duhart Clarke, and Alex H. Kral analyzed the data. Nicholas C. Peiper and Sarah Duhart Clarke created the figures and tables. Nicholas C. Peiper, Jon E. Zibbell, Sarah Duhart Clarke, and Dan Ciccarone conducted literature searches and wrote the article. This manuscript has been approved by all authors and is not being reviewed or considered for publication at another journal.

Conflict of interest

The authors declare no conflicts of interest.

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Perspectives on rapid fentanyl test strips as a harm reduction practice among young adults who use drugs: a qualitative study.

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Abstract:
Background

In 2016, drug overdose deaths exceeded 64,000 in the United States, driven by a sixfold increase in deaths attributable to illicitly manufactured fentanyl. Rapid fentanyl test strips (FTS), used to detect fentanyl in illicit drugs, may help inform people who use drugs about their risk of fentanyl exposure prior to consumption. This qualitative study assessed perceptions of FTS among young adults.

Methods

From May to September 2017, we recruited a convenience sample of 93 young adults in Rhode Island (age 18-35 years) with self-reported drug use in the past 30 days to participate in a pilot study aimed at better understanding perspectives of using take-home FTS for personal use. Participants completed a baseline quantitative survey, then completed a training to learn how to use the FTS. Participants then received ten FTS for personal use and were asked to return 2-4 weeks later to complete a brief quantitative and structured qualitative interview. Interviews were transcribed, coded, and double coded in NVivo (Version 11).

Results

Of the 81 (87%) participants who returned for follow-up, the majority (n = 62, 77%) used at least one FTS, and of those, a majority found them to be useful and straightforward to use. Positive FTS results led some participants to alter their drug use behaviors, including discarding their drug supply, using with someone else, and keeping naloxone nearby. Participants also reported giving FTS to friends who they felt were at high risk for fentanyl exposure.

Conclusion

These findings provide important perspectives on the use of FTS among young adults who use drugs. Given the high level of acceptability and behavioral changes reported by study participants, FTS may be a useful harm reduction intervention to reduce fentanyl overdose risk among this population.

Trial registration

The study protocol is registered with the US National Library of Medicine, Identifier NCT03373825, 12/24/2017, registered retrospectively. https://clinicaltrials-gov.ezproxy.fhsu.edu/ct2/show/NCT03373825?id=NCT03373825&rank=1

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Full Text:
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Introduction

Opioid overdose is an ongoing public health crisis in the United States (US), exacerbated by fatal overdoses involving illicitly

manufactured fentanyl (herein referred to as "fentanyl"), a powerful synthetic opioid contaminating the North American drug supply [1, 2]. As early as 2013, several states in the US, particularly those in the Northeast, began to report a rise in the total number of overdose deaths attributable to fentanyl and related analogs [3, 4]. By March 2015, due to the rapid increase in fentanyl-involved overdose fatalities, the US issued a nationwide alert to law enforcement identifying the dangers and increased prevalence of fentanyl in the illicit drugs supply [3-5]. Between 2015 and 2016, there was a 21% increase in the age-adjusted rate of overdose deaths in the US, driven by a rise in deaths involving synthetic opioids, primarily that of fentanyl [6, 7]. These overdose fatality trends highlight the urgent need to address fentanyl contamination in the US drug supply and its associated harms.

The rate of fentanyl-attributable fatal overdose has been particularly high among residents of New England, the northeastern region of the US [8, 9]. In 2016, fentanyl was found in 58% of all overdose deaths in Rhode Island, a state in New England with an overdose death rate about 1.5 times greater than the national average [10, 11]. Additionally, fatal opioid overdoses are affecting younger populations than previous years. In Rhode Island, young adults have the fastest growing rate of fatal overdoses; more than one in four fatal fentanyl-related overdoses in 2016 were among people between the ages of 18 and 29 years [12, 13].

When implemented effectively, harm reduction interventions can reduce the rate of fatal opioid overdoses among people who use drugs [14, 15]. For example, the distribution of naloxone (an opioid antagonist that reverses the effects of an opioid overdose and can be easily used by laypeople) through community- and pharmacy-based overdose education and naloxone distribution (OEND) programs has been shown to reduce opioid overdose mortality [16-18]. Communities with OEND programs have shown greater reductions in overdose mortality compared to those without such programs [16, 17]. Moreover, the distribution of naloxone to laypersons has been found to be cost-effective [16, 17, 19]. However, due to the increased and varying potency of fentanyl and related analogs, naloxone doses previously adequate to reverse an opioid overdose may not be consistently sufficient [20]. In addition, consumption of fentanyl causes more profound respiratory depression than other opioids and produces clinically distinct symptoms (e.g., bradycardia, chest wall rigidity) that precipitate rapid onset of overdose death, narrowing the window of opportunity to administer naloxone [21, 22]. Due to the drug's potency, only a miniscule amount--the equivalent of several grains of salt--can cause an overdose death [23] and can be nearly impossible to identify in illicit drugs with the naked eye.

Rapid fentanyl test strips (FTS) represent an emerging harm reduction intervention that may help to prevent unintentional fentanyl exposure and accidental opioid overdose. These tests have the ability to detect the presence of fentanyl and some analogs in urine or in drug samples dissolved in water that are believed to be contaminated [24, 25]. Drug checking has become a staple harm reduction intervention in parts of Europe and Canada, through the establishment of drug testing programs and supervised injection facilities (SIFs) [24, 26-28]. People who use drugs (PWUD) living in parts of Europe and Canada can bring their drugs to harm reduction organizations or SIFs to have them tested for adulteration; however, PWUD in the US do not have access to the same types of programs because of legal barriers to implementing SIFs at the federal level [29-31]. In studies of fentanyl testing done outside of the US, persons who use FTS and who receive a positive test result may be more likely to partake in overdose prevention strategies than a person who is not aware that their drug is contaminated with fentanyl [32, 33]. Therefore, the use of FTS may be an important harm reduction practice to inform and increase engagement in overdose prevention behaviors, employed before an overdose occurs.

In the US, where SIFs have not been legalized, FTS offer PWUD the option to test their own drugs in a private setting. Because evidence for distributing FTS for home use by PWUD is nascent, there are many uncertainties regarding the efficacy and the safety of FTS self-testing as a means of overdose prevention [34]. Preliminary research has found mixed results regarding the efficacy and acceptability of fentanyl self-testing as harm reduction strategy. A study performed in North Carolina among people who injected drugs found FTS were widely used among the sample and that a positive FTS resulted in changes in drug use behavior [35]. Other studies conducted in Canada have found that people who were using supervised injection facilities did not use FTS frequently because of commonly held perceptions that most drugs were fentanyl-contaminated, and therefore, participants did not need to confirm its presence [34, 36]. This conflicting evidence points to the fact that further research is needed to understand the ways in which FTS are viewed and used by PWUD. The need for additional research is particularly urgent as FTS are being distributed by multiple US harm reduction organizations and state departments of health for at-home use [37-42]. In Rhode Island, organizations have recently started distributing FTS as part of local overdose awareness events [43].

Despite growing interest in fentanyl drug checking technology, perceptions of and attitudes towards FTS as a tool to reduce overdose risk among young PWUD have not been investigated in the US. Therefore, the aims of this study were to (1) understand perspectives on take-home FTS among young adults (age 18-35) who use drugs in Rhode Island and (2) determine whether positive results from the FTS led to behavioral changes in the way that people use drugs. Understanding the perceptions of PWUD regarding FTS can formatively assist in the development and implementation of rapid fentanyl testing programs in the US and in other settings experiencing a high burden of fentanyl-involved overdose.

Methods

Participant recruitment

From May to September 2017, young PWUD were invited to participate in a pilot study designed to understand perceptions of take-home FTS among young adults who use drugs. For this study, eligibility criteria were informed by a recent investigation of fentanyl-involved overdose deaths in Rhode Island [13]. Specific eligibility criteria included (1) being 18-35 years of age; (2) currently living in Rhode Island; (3) being able to speak English; (4) reporting the use of heroin, cocaine, purchasing prescription pills on the street, or injecting any drug in the last 30 days prior to study enrollment report; and (5) being able to provide informed consent. Many of the participants were recruited from online classifieds (i.e., Craigslist) which discussed the eligibility criteria for our study, and by word of mouth from peers who participated in the study. Additionally, fliers were placed in public areas where PWUD are known to congregate, such as bus stations, transit centers, and local universities. This study was approved by the Brown University Institutional Review Board (#1612001662). The study's protocol is also documented on ClinicalTrials.gov (Identifier NCT03373825).

Intervention protocol

At the initial baseline visit, all consenting participants completed an hour-long survey, performed by trained research assistants, which collected information on participant demographics (such as race, gender, age, educational attainment, housing and employment status), drug use patterns, and overdose history. The protocol for the initial baseline visit has been described in detail elsewhere [44]. Once the survey was completed, participants were shown two brief instructional videos demonstrating how to use and interpret BTNX Inc. Rapid Response[TM] Fentanyl Test Strips [45]. These FTS are disposable, single-use immunoassay tests with a detection level of 20 mg/ml; the tests provide a binary result of either positive or negative for the presence of fentanyl. The tests have high sensitivity and specificity for detecting fentanyl and some analogs [46]. Further, all participants were given a handout that was written in plain language and discussed how to test urine or powdered drugs and pills with the FTS. Additionally, we placed a key on each of the FTS packages to assist with interpretation of the test results (Fig. 1. Fentanyl rapid test strip results label).

Fig. 1:

Fentanyl rapid test strip results label. This is the key that was placed on each of the FTS packages to assist with interpretation of the test results. This key shows that a strip with one red line indicates a positive test and a strip with two red lines indicates that the test is negative, but that the participant should still use caution

From May 2017 to mid-July 2017, the first 40 participants were instructed to use the FTS to test their urine (after drug use). We instructed participants in this first group to use the FTS in their urine in concordance with how the product is intended to be used [25, 45]. During the recruitment period, a separate study found that the FTS retained high specificity and sensitivity when used to test drug residue from bags, spoons, or pills crushed in water [46]; therefore, the study protocol was amended to instruct the second group of participants to test a drug sample or drug residue dissolved in water (prior to consumption) [46]. Participants recruited between mid-July 2017 and September 2017 were thus trained to test a drug sample or their drug residue (before consumption). In both groups, participants were instructed that a negative FTS did not necessarily indicate an absence of fentanyl contaminants or zero overdose risk and were instructed to always use their drugs with caution. Participants were provided with overdose education and naloxone following the FTS training. This education also included training on how to use drugs more safely (such as using with someone else, having naloxone, and using a smaller initial dose). Once the training was complete, participants were subsequently asked if they felt comfortable using and interpreting FTS independently or had any concerns regarding the previously described training materials and were then given ten BTNX Rapid Response[TM] Fentanyl Testing Strips for personal use.

Data collection

At each participant's follow-up visit, occurring approximately 2 to 4 weeks after baseline enrollment, consenting participants completed a brief, researcher-administered quantitative survey, as well as a structured qualitative interview designed to capture attitudes regarding FTS use. Interviews were conducted by trained research assistants and were recorded for subsequent transcription. Research assistants had a guide of 12 open-ended questions that explored participants' test use and experience. The questions explored FTS use and general opinions of the tests by asking, "Did you use any of the tests?" and "How was that experience for you?". Additionally, questions, such as "What was not useful about the fentanyl tests?", "What got in the way of using the tests?", and "Is there anything that would make it easier to use the test?", brought forth discussions about barriers to FTS use. The prompt, "Based on the test strip results, did you do anything differently when it came to how you used your drugs?", elicited discussions regarding behavior change as a result of FTS use. Qualitative interviews lasted between 10 and 20 min. Participants were paid $25 after their initial visit and $50 after completing the follow-up visit.

Data analysis

Interviews were transcribed by four members of the research team. The data analysis was performed by using a thematic analytic approach, an iterative process of repeatedly analyzing data in order to recognize categories that subsequently become the themes of a research study [47]. For this study, a deductive approach was utilized in order to develop an initial coding scheme, which was constructed from the interview template [48]. A code book was then developed and refined as new ideas and themes were discovered in the transcripts. Subsequently, an inductive approach was utilized, which brought forth new concepts and themes from the reading of the interview transcript [49]. A final coding template was created and agreed upon. Six interviews were cross-coded by two research team members to ensure a concordance with a kappa of at least 80%. Cross-coding occurred to prevent bias and to ensure uniform use of the coding template by the two coders. Descriptive statistics of the population were drawn from responses to the baseline researcher-administered survey. NVivo (version 11) was utilized for qualitative data retrieval and management.

Results

Of 93 recruited participants, 81 (87%) returned for follow-up and were included in this analysis. A summary of the participant characteristics is shown in Table 1. The mean age was 26 (SD = 4.7), 45 (55.5%) were male, and the majority (n = 45, 55%) identified as white. Over half of the participants (n = 55, 68%) expressed concern about their drugs being contaminated with fentanyl at baseline.

Study population characteristics (n = 81)

Of those who used at least one FTS, 37% reported regular heroin use, 24% reported regular cocaine use, 13% reported regular non-medical prescription pills use, 47% reported lifetime injection drug use, and 50% received at least one positive FTS result (Table 2). A greater percentage of those who were in the urine testing group reported cocaine use compared to those in the residue testing group (49% vs. 24%); otherwise, few baseline characteristics differed between these two groups. Additionally, about half of the participants from each group who received a positive test result reported altering the way they use drugs. Compared to the residue testing group, a greater proportion of those in the urine testing group reported changing their behavior following a positive FTS (62% vs. 38%);

however, there were no significant differences in the specific behaviors that people reported changing between groups. A further quantitative analysis measuring the use of FTS among this sample has been detailed elsewhere [50].

Fentanyl rapid test strip use among young adults who use drugs in Rhode Island (*n* = 81)

Overall, the majority of participants who used FTS expressed positive opinions regarding the utility and simplicity of the tests. Five key themes emerge from the interviews: (1) FTS were a tool to confirm suspicions of fentanyl adulteration, (2) differences in ease of FTS testing depended on testing method, (3) participants re-distributed tests to people with high perceived overdose risk, (4) participants preferred testing their drugs in private, and (5) presence of fentanyl led to self-reported behavior change.

FTS were a tool to confirm suspicions of fentanyl adulteration

In general, participants expressed positive opinions regarding FTS, stating that they were easy to use and that they provided valuable information regarding the presence or absence of fentanyl in a drug sample. Respondents stated that the FTS were useful especially when a drug supply source was not trusted by the participants.

Everything was useful. Those tests opened my eyes, and it has saved my life, and I can gladly say I haven't taken any more because I was going to take two bags. If I had took those two bags, I think I wasn't even going to be here right now (Respondent 39, male of non-disclosed race, age 28, residue testing group).

One respondent proceeded to not use his drugs because of fear of overdose. Like other respondents, knowledge of fentanyl adulteration led to fentanyl avoidance.

But it's (fentanyl) going to show up in the test, so it is kind of worth it. That's what I'm saying is, you could save your life by using this. Or you could not use it and do what you're going to do and be dead...I thought it came out positive, so I got rid of the fentanyl (Respondent 17, white male, age 20, urine testing group).

Another respondent provides an example of how he used FTS to avoid consuming of fentanyl adulterated drugs.

I contacted a local dealer of mine that I had gone to in the past, that I had mentioned before, I was like questionable of his product, so I told him that I had these strips and that I was going to test, to test his stuff for fentanyl to see if it was good or not and showed him the positive result... with those tests, I was able to do that with a couple other dealers between now and then to root out my chances of getting a tainted product (Respondent 54, White male, age 23, residue testing group).

This participant, along with others, discussed how some dealers were unaware or non-forthcoming regarding fentanyl adulteration. The participant also suggested that he sought out dealers whose drugs were not contaminated with fentanyl.

Differences in ease of FTS testing depended on testing method

When prompted about barriers to using FTS, participants from both testing groups expressed that using the FTS were "straightforward" and "easy to do." A majority of participants expressed positive opinions of the accessibility of FTS use.

They're very useful, very straightforward, very simple. I think it's a great tool, I think they should be given out on a street corner (Respondent 11, white male, age 29, urine testing group).

I mean the packaging was easy, I mean it's pretty discreet...they weren't inconvenient, they weren't hard to use, they weren't, you know, embarrassing to be seen with or anything (Respondent 36, white female, age 34, residue testing group).

Another participant reported FTS to be easy to use and discussed showing others how to use FTS.

It was easy, you know, very easy to do in front of them. Very easy to explain. When I say in front of them, I mean the dealers or whoever I was sourcing the product from... It was easy to do it in front of them, show them how it works, show them that it's effective even with just the residue in the baggie (Respondent 54, white male, age 23, residue testing group).

Participants in the urine group expressed wanting to be able to test their drugs ahead of time in order to prevent an overdose.

If there was a like test strip you know that you could mix a bit of your heroin, or what you think is heroin in water and dip the strip in it, and something like that, you know, like to be able to test it before you use it. Because, you know, afterwards it could be too late, you know (Respondent 13, male of non-disclosed race, age 22).

In addition to wanting to use FTS before drug use, several participants alluded to the fact that using a urine-based test was not convenient.

I didn't have to pee all the time so like, sometimes when I wanted to take it I would just have to drink a bunch of water but, it worked out (Respondent 27, female of an unspecified race, age 25, urine testing group).

Participants distributed tests to people with high perceived overdose risk

Some participants from both groups described engaging in "secondary distribution" of FTS, that is, the distribution of FTS to people in the participant's networks, such as friends, family members, and casual acquaintances who they perceived as having a higher risk for using a drug contaminated with fentanyl:

I gave them to close friends of mine who I suspect still use and casual friends of mine...and you know I just wanted them to know, 'hey listen, you can test if it's fentanyl with this, I don't know if it's a good thing or a bad thing, but you can test' (Respondent 10, black male, age 30, urine testing group).

Well one of my one of my aunts has, I don't see her very much, but I know that she's had like a history with addiction, so I figured I give her one and just let her know about what it does pretty much (Respondent 59, white female, age 22, residue testing group).

Another participant described handing out 5-6 of her test strips to people she knew from the methadone clinic, who had previously mentioned wanting to know if fentanyl was in their drug supply.

They were not just close friends, but a couple of people I met at the clinic and stuff, and they actually were people who really want to know if the fentanyl is actually in the drugs they are using, and they actually use a little bit more than I do. On a daily basis they still use, so I felt like it was very important to have (Respondent 55, white female, age 28, residue testing group).

Participants preferred testing their drugs in private

When participants were asked how it felt to test their drugs at home, followed by questions that assessed their willingness to go to a local health organization to get their drugs tested, a majority of participants expressed that they preferred to use FTS at home. Participants reported two primary reasons for wanting to test at home. Some reported they would rather use drug tests at home in order to avoid feeling judged by others.

I think that people like to test their own stuff in private. I have friends that would get the drug test kits from the stores and just test in private because like a lot of stigma attached to things. So when you go to a place where you have to do drug testing even the people there can kinda look at you kinda weird um no matter what their reason is (Respondent 2, multiracial female, age 29, urine testing group).

In addition to reports of feeling judged or stigmatized, other participants suggested fear of legal ramifications or other risks if they were to test their drugs someplace other than their home.

I would rather be at home. I wouldn't want to be taking my drugs into somewhere, and it's just like, a lot of people would feel that way too, because like I know damn well that I'm nothing. I'm just a statistic. But a lot of people think that they would go to jail I'm sure if they went to a place and they said, hey test my drugs (Respondent 11, white male, age 29, urine testing group).

Just because it's more private, it's in my house, I wouldn't have to risk getting caught by the police bringing it somewhere. I would just, I don't know, I would never bring it somewhere to get it tested honestly, never (Respondent 81, white female, age 25, residue testing group)

I feel like going to a local health organization it would just be, I hate to say this, an opportunity for the cops to try to stop you as you're walking in to have it tested. Definitely at home, I would definitely do it at home where it's more secure and I don't have to worry about anything else (Respondent 37, white female, age 28, residue testing group).

Presence of fentanyl led to behavior change

During the qualitative interview, participants described behaviors such as using a "tester" (i.e., an initial small dose of the drug to determine potency), having naloxone nearby, using a drug with other people around, and disposing of the drug, particularly as a result of receiving a positive test. Here, participants describe how they would use an initial smaller dose of the drug they tested, a "test shot," in reaction to a positive FTS result. Though this participant was not using drugs during the study period, she advised a friend who was using drugs to go slower because of the positive FTS.

A friend of mine was shooting up and before they did that I said let me test it, so I grabbed the cap after they used it and I tested it, and it was positive for fentanyl. And they, asked me what exactly fentanyl does and I said it's way stronger than your heroin and it has the potential to kill you with a drop. And they were like "what am I supposed to do" I said, honestly, you shouldn't take that, but I know you're going to, so take it in portions...instead of putting the whole .4 to the face, they would do .1 at a time, and, you know, with a little bit of time in between, in between, each one (Respondent 68, multiracial male, age 21, residue testing group).

I always did them [FTS] with someone else. It was me and two of my friends a few times. And the stuff they were getting, they kept assuming it had fentanyl in it, but they weren't 100% sure. Usually when heroin comes out white or clear it's fentanyl. So, when we tested it and it was positive for it, it made them, you know, they did a tester shot before they did the rest and that was smart on their end because it was really strong, and they would have worn out otherwise (Respondent 61, white female, age 35, residue testing group).

Another participant described how a positive FTS result contributed to a change in her "mindset" about her drug use and keeping naloxone nearby.

I had Narcan and I had it in the room, like I literally had it on the couch next to me, cause it, it honestly, just like thinking fentanyl in it was one thing, but like knowing it was in it kind of like changed my, like my mindset going into it (Respondent 59, white female, age 22, residue testing group).

Similar to other participants, another respondent described her response to a positive FTS result. She describes her conversation with her cousin, a dealer, about disposing of a significant amount of fentanyl-contaminated heroin.

I used one for myself, and then, the other nine I gave to my cousin who is a drug dealer, um, and I told him to give me nine samples of his dope, and I followed the video that I watched ... And out of the nine that came back, seven were positive for fentanyl. So, I told him, you either have seven murder charges on your record, and you have the rest of your life in prison, you don't get to see your kids get married, graduate. Kinda give him a little guilt trip on it, but I convinced him to flush it. He had almost $2000 worth of fentanyl laced heroin and he got rid of it (Respondent 68, biracial female, age 26, residue testing group).

Finally, participants who used the FTS after drug use described various overdose prevention strategies for the *next time* they used drugs following a positive FTS, including warning others about fentanyl contamination following a positive FTS.

But being able to relay, relay that information to people, that it actually would impact in ways that hopefully would change some of their actions and how they conducted, either, using or, giving it to other people (Respondent 23, biracial male, age 25, urine testing group).

I would say we were definitely a lot more cautious about what we were doing, like definitely a lot more ready for something to, you know, go wrong...I definitely, like, would pace myself a lot slower with the drugs. And you know, it was like I said, it's kind of sad to say but we were almost expecting an overdose or such. And so, if that did happen, you know like at least somebody could be like, oh and jump on it and act fast (Respondent 22, white male, age 22 , urine testing group).

Discussion

The results of this study demonstrate that many young PWUD at risk of a fentanyl overdose perceive FTS as a feasible and acceptable harm reduction tool. In this study, we assessed two different applications of FTS (urine testing and residue testing) and found that residue testing is more convenient and allowed for participants to know about fentanyl adulteration before drugs are consumed. The majority of participants suggested that FTS were straightforward to use and did not cite significant barriers to use. After receiving a positive test result, many participants described precautions that they believed would prevent an overdose, such as using a drug with others around, keeping naloxone nearby, or using a tester. These findings suggest FTS may represent an important harm reduction intervention for opioid overdose prevention among young adult PWUD.

While there are other methods confirming the presence of fentanyl in one's drug supply, such as the use of Raman spectroscopy and FTIR spectroscopy, prior research has found that the BTNX Inc. Rapid Response[TM] Fentanyl Testing Strips have higher specificity and sensitivity and are significantly less expensive than other methods [46]. Nonetheless, testing illicit drugs, through either FTS or chemical analyses, has proven to be an effective approach in identifying adulterants that pose added overdose risk to PWUD, as indicated by ongoing drug checking efforts in Canada and in European countries [24, 27].

In places where drug testing is legal, such as Canada and Europe, people who want to have their drugs tested most often need to bring their substances to specific locations. For instance, SIFs in Canada distribute FTS to their clients; however, clients must test their drugs in that same setting [51-53]. In Europe, drug testing largely takes place at music venues and mobile test sites with trained professionals [27, 54]. In contrast, syringe service programs (SSPs) in the US are just beginning to disseminate FTS to their clients for at-home use outside of a clinical or supervised context [40, 41]. State governments and departments of health, such as those in California, Vermont, and Maine, are also providing funding for the purchase and dispersal of take-home FTS through existing SSPs [37-39, 42]. However, there are debates as to whether there is sufficient evidence to support the effectiveness of home testing programs [32]. Given that FTS have the potential to return false negative results, PWUD using FTS may proceed to use their drugs without added precautions to prevent fentanyl overdose risk even if their drugs are contaminated with fentanyl. Outside of monitored environments such as at SIF, a false negative test in a private setting could lead to a higher risk of overdose [34]. To mitigate this concern, all participants were instructed during the FTS training that false negatives are possible and that a negative result does not necessarily mean an absence of overdose risk. Private use of FTS (i.e., outside of monitored environments) may represent a novel harm reduction strategy to reduce the risk of fentanyl-related overdose, even though concerns persist regarding the risk for unintentional overdose resulting from a false negative [34].

Harm reduction technologies used in private settings have appeal to PWUD in the US who fear the legal ramifications and stigma associated with use of harm reduction services, such as SSPs [55, 56]. In agreement with US studies that have found that harm reduction service can be uncomfortable and unapproachable for some PWUD, particularly for young adults, our participants recounted their reluctance to engage in FTS use at professional agencies or harm reduction organizations [57-59]. Our study suggests that young PWUD are comfortable using FTS on their own and would prefer to use them either in their own home or in another private setting due to concerns for privacy and fear of arrest and facing stigma from the public, found to be a significant barrier to harm reduction uptake in earlier studies [58]. Furthermore, secondary distribution of FTS, mirroring documented occurrences of secondary distribution of sterile syringes, has the potential to benefit PWUD who are either uncomfortable accessing or are not closely engaged to healthcare services [60, 61]. Collectively, these findings indicate that interventions which permit drug checking in private environments may potentially increase accessibility and acceptability of drug testing among young PWUD. Additionally, our participants may have used take-home FTS as this intervention allows for self-efficacy and peer-to-peer interaction, which have been found to lead to successful implementation harm reduction programs in previous research [57].

Upon receiving a positive FTS result, many participants were motivated to engage in various harm reduction techniques, including using a smaller dose, having naloxone nearby, using the drug with someone else around, or disposing of their drugs entirely. Consistent with another study of FTS conducted in the US [35], participants stated they employed these precautions because they were made aware of fentanyl contamination. Prior studies of self-testing technologies suggest similar results--that is, rapid self-testing may contribute to an increase in harm reduction behaviors. Multiple studies on rapid self-testing for HIV, a technology that was legalized for at-home use in the US in 2012, have reported noticeable increases in both perceptions of risk and target risk reduction behaviors [62-65]. Additionally, studies have shown HIV self-testing is a successful intervention for increasing routine HIV testing among hard to reach and hard to engage populations, such as young adults engaging in high-risk behaviors [66, 67]. Such findings

offer promise for rapid testing technology as a key component of harm reduction interventions for fentanyl overdose. Furthermore, in Canadian studies of FTS, and in initial studies of FTS in New York City, participants who received a positive FTS result changed their behavior in similar ways to the current study; they slowed down their use, used a smaller dose, or disposed of the drug that was found to contain fentanyl [25, 26, 42]. Given these results, FTS should be explored as an additional means of preventing opioid overdose used in tandem with other harm reduction measures, such as naloxone distribution and overdose education. In contrast, it has been hypothesized that in areas where fentanyl contamination is pervasive, PWUD who have taken drugs that contain fentanyl and have not experienced an overdose may become complacent in their use of overdose prevention strategies [34]. This could prove to be true in Rhode Island where participants noted that fentanyl contamination is likely. Ultimately, future research is needed to evaluate FTS interventions to understand how FTS may contribute to behavior change among young adults.

This study had a number of limitations. First, as the average follow-up time frame was less than a month, some participants did not have an opportunity to try the FTS, given that some reported a lack of opportunity to either buy or use the drugs in the study's timeframe. Many of the participants who had not used FTS during the study had expressed that given a longer time frame for use, they would have tried the FTS. Future research regarding fentanyl FTS should include a longer period between the provision of the FTS and follow-up. Second, though interviews varied in length, they generally did not last more than 15 min. Beyond this pilot project, future studies could conduct longer interviews with participants, which may allow for a more nuanced understanding of the influence and effect of FTS utilization on behavior change among young PWUD. Third, discussions of how drug use changed following a positive FTS result could be affected by social desirability bias. Additionally, selection bias may have occurred due to healthy screenee bias [68], in which PWUD who want to avoid fentanyl may be more likely to enroll in a study of FTS. Nonetheless, our results suggest that participants altered their drug behavior as a result of having a definitive knowledge that their drug contained fentanyl. Fourth, while we ascertained that many of the participants had a history of homelessness, we did not ask if participants faced challenges of using FTS due to current housing instability or homelessness. Therefore, we cannot make claims about FTS usability among those currently experiencing homelessness. Finally, this study took place in Rhode Island, a state with a high burden of fentanyl-related overdoses and fentanyl contamination. As such, results may not be generalizable to other settings, particularly those in which the presence of fentanyl contamination in illicit drugs is less common.

Conclusion

In sum, FTS may prove to be an important harm reduction tool, particularly in the context of the US opioid overdose crisis, as fentanyl and fentanyl analogs are increasingly responsible for the rising rate of overdose fatalities in the US [6]. This study is among the first to explore the perceptions and use of FTS among young adults who use drugs. Participants expressed that FTS were an efficient and straightforward tool, and many reported distributing them to other persons in their social networks. Participants also discussed the value of FTS as a harm reduction tool for identifying fentanyl contamination and informing overdose prevention behaviors. Take home rapid tests that have the ability to detect the presence of fentanyl and other analogs may offer PWUD additional options for overdose prevention in the face of increasing contamination in the US drug supply.

Abbreviations: FTS: Rapid fentanyl test strips; HIV: Human immunodeficiency virus; OEND: Overdose education and naloxone distribution; PWUD: People who use drugs; SIF: Supervised injection facility; SSP: Syringe service program; US: United States

Competing interests: The authors declare that they have no competing interests.

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Availability of data and materials

The data that support the findings of this study are available on request from the corresponding author, BDLM. The data are not publicly available due to them containing information that could compromise research participant privacy/consent.

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Marysville Police warn of fentanyl laced marijuana

https://www.wibw.com/2022/04/28/marysville-police-warn-fentanyl-laced-marijuana/

By Sarah Motter
Published: Apr. 28, 2022 at 12:52 PM CDT

MARYSVILLE, Kan. (WIBW) - Marysville Police have warned residents they recently seized marijuana which had been found to be laced with fentanyl.

The Marysville Police Department took to Facebook on Thursday afternoon, April 28, to warn residents of the dangers of fentanyl.
https://www.facebook.com/marysvillekspolice/posts/303196511999299

MPD said recently, officers seized marijuana which tested positive for fentanyl. While officers said they often hear “it’s just weed,” they said that may not always be true.

MPD noted that fentanyl does not have a smell or taste and can be added to any other substance.

Officers said they have seen an increase of illegal substances that test positive for fentanyl.

Simply put, MPD said fentanyl can be deadly and the danger is real.

Officers said they want to educate the public, especially those who may use illegal substances. They said they want residents to know that help is always available.

Additionally, MPD said Kansans who would like a Naloxone kit can request one for free HERE.

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Date: January 30, 2022

From: Amy Curry, MD
Ref: Support for excluding fentanyl test strips from the definition of “drug paraphernalia" in HB 2277

Senate Judiciary Committee

Chairwoman Warren and Members of the Committee,

My name is Amy Curry and I am a Family Medicine physician practicing in Wichita Ks. I am writing to strongly encourage you to update the paraphernalia law with the amendment in HB 2277 excluding Fentanyl test strips from paraphernalia categorization

Unintentional overdoses from products laced with Fentanyl is a growing problem in Kansas. I am on faculty at the KU Family Medicine Residency Program at Ascension Via Christi. We provide care to hospitalized patients who are "unassigned" meaning they have no primary care physician. We are seeing more unintentional overdoses due to Fentanyl in this population. We have seen these in patients chronically abusing illegal substances as well as adolescents just experimenting with drugs for the first time.

Think back to the first time you or your teenager may have experimented with illegal substances, smoked a joint in a college dorm room or took a pill at a friend's party. What if that had been laced with Fentanyl? It would not have taken your opioid naive body long to quickly succumb to its potent effects. And then, what if your friends, realizing their mistake, just left you, instead of calling 911, afraid of the consequences of being found associated with a death involving drugs? This scenario is being played out repeatedly around our nation and state.

As a physician I would love for people not to be using illegal substances. I would also love for my patients to not be smoking cigarettes, eating unhealthy diets or drinking too much alcohol. Sometimes we just have to meet people where they are at and do all we can to help them make healthy choices.

Decriminalizing fentanyl test stripes is not unlike printing warnings on the harms of using tobacco on cigarette products. They both allow consumers to make an informed choice about the substance they are about to use. The difference is that one could kill them in minutes, not take years.

Thank you for your consideration of this important amendment. Regardless of your decision, I would also like to say thank you for all the hard work you are doing in service to our state and its people. I know it must often feel unappreciated but I am grateful for it.

Sincerely,
Amy Curry, MD
Associate Clinical Professor
KU School of Medicine-Wichita

Senate Committee on Judiciary,

My name is Ana Woodburn, and I am the president of Kansas Recovery Network, a person in long-term recovery and a Kansan. I thank the committee for the time to speak today. Excluding fentanyl testing strips from the definition of "drug paraphernalia" will assist a good deal of Kansans. During this tumultuous time there are many pressing issues which affect us all and require addressing, this is one of them.

Fentanyl test strips were manufactured to test urine for the presence of the deadly drug post consumption. They can also be used to test a substance for the presence of fentanyl prior to consumption. Utilizing Fentanyl test strips has been proven to reduce the risk of overdose. A study completed by Johns Hopkins found that 85% of participants do want to know if there is fentanyl in a substance and 70% of respondents reported that knowing a substance contained fentanyl would lead them to modify their behavior and utilize less-risky strategies.

When a person, of any demographic and any situation, uses, experiments with, or tries a substance, even one time they are at risk for a fatal overdose. When a person intends to use one substance and they overdose due to the presence of an unknown substance then it is not a drug overdose, but a poisoning.

Increasing access to fentanyl test strips is happening or has happened in many states. Adjusting this statute to exclude fentanyl testing strips from the definition of "drug paraphernalia" fosters many positive outcomes including saving lives. This capability also reduces costs to first responders, law enforcement and hospitals as well as bringing grant dollars to Kansas to implement strategies such as this. Kansas has learned to adapt in large and smalls ways to support Kansans and this change is as simple as changing verbiage.

Thank you.

Date: January 29, 2022

From: Andrew Regoli, RN
Ref: Support for excluding fentanyl test strips from the definition of "drug Paraphernalia in HB2277"

Senate Judiciary Committee

Chairwoman Warren and Members of the Committee:

Good afternoon, Chairwoman Warren and Members of the Committee. My name is Andrew Regoli. I am a Registered Nurse (RN) practicing in Wichita, Kansas. I am also a fourth year MD candidate at the University of Kansas.

I am writing regarding HB 2277, and the opportunity to update the amendment law therein to exclude Fentanyl test strips from the list of banned items. I am hopeful that my learned colleagues in addiction medicine have been consulted and discussed the technical aspects and population implications of Fentanyl testing, and so I would like to take this opportunity to speak on a more human level.

Drug use is a pandemic in its own right, and the insidious infestation of Fentanyl has accelerated how lethal this problem is by an order of magnitude. Good, hard-working Americans are falling victim to poisoning from Fentanyl. It is being pressed into pills that resemble other substances. When a person takes a pill, there is a confidence that it has been manufactured correctly; that the contents are as advertised. In so many cases now, this assumption is proving fatal.

A typical story a patient will tell me is that they suffered an accident at work (often in Aircraft manufacturing), were treated with opioid medication but then abruptly cut off by their healthcare provider. Then, in that painful, sweating, miserable desperation, sometimes they accept medication from families or friends to stave off the horrific withdrawal. Because of undetected Fentanyl contamination, the pills they are given could prove fatal in a matter of minutes.

Allowing people to test for Fentanyl is a net win for Kansas, because it could save the lives of Kansas residents. Right now Kansas hospitals are bursting at the seams with patients. Kansans are often struggling to get the help they need because of how overrun Emergency Rooms are. Taking a simple measure like enabling Kansans to test for Fentanyl could help cut down on overdose admissions, and make a small step toward helping this overload, helping not just those who struggle with addictions or chronic pain, but the population as a whole.

Thank you for your time,
-Andrew Regoli, RN, MS4 KUMC-W

MIRROR, INC

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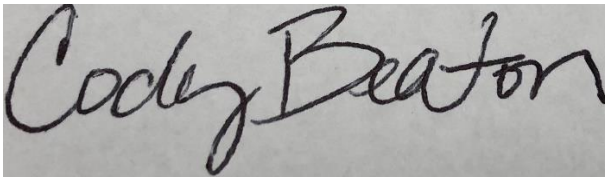
To Whom It May Concern:

As a mental health and substance use treatment professional, I strongly advocate that Kansas House Bill 2277 be enacted into law. Lethal doses of fentanyl have been identified in a wide array of illicit and counterfeit drugs, and as a result, many lives have been taken long before their respective potentials were reached. People matter and they are the most effective change agent that we have – and people cannot change this world for the better if they are dead. Fentanyl test strips (FTS) could prevent opioid overdoses by better informing individuals who use drugs whether it contains fentanyl. As it stands, FTS are considered drug paraphernalia under state law. As a treatment professional, I have worked with thousands of people who needed several chances for recovery to take hold of their lives. That is the nature of the disease. It is a shame that many people die before they have that chance to experience the wonder of recovery. FTS are a harm reduction method that have the ability to keep a person alive long enough to reach their full potential in recovery. I have met some of the most intelligent, creative, caring, and impactful people in my life as a result of the recovery community – they are absolutely, 100%, without a doubt WORTH IT.

Thankfully, Kansas House Bill 2277 was recently introduced, which excludes FTS from drug paraphernalia classification. Additionally, Federal guidelines have changed, and organizations are allowed to use federal funding to purchase and distribute FTS. However, we CANNOT do this until statues change in Kansas. Therefore, along with my colleagues and friends in recovery, I am requesting that the Kansas Senate Judiciary Committee enact Kansas House Bill 2277 into law.

Thank you,



Cody Beaton, LSCSW, LCAC

514 N. Dodge Ave., Wichita, KS 67203 Phone: (316) 330-3297

Date: January 28, 2022

From: Daniel Warren, MD
Ref: Support for excluding fentanyl test strips from the definition of "drug paraphernalia in HB 2277

House Judiciary Committee

Chair Warren and Members of the Committee:

Good afternoon, Chair Warren and Members of the Committee. My name is Daniel Warren. I am a physician in Wichita, Kansas, where I practice in the field of addiction medicine. I am writing to you in regarding HB 2277.

I am the medical director of an opioid treatment program ("methadone clinic") as well as a treatment provider at a federally-qualified health center (FQHC). I spend the entirety of my medical practice providing treatment for people with disordered opioid use. Over the last two years, I have seen a transformation in the patterns of opioid use in my patient population—a change that has been reflected in our state's vital statistics information. The change started with a trickle, and it is now a tidal wave. Fentanyl and similar synthetic opioids have replaced all other opioids—they are more available, less expensive, and much less safe. And they are killing Kansans in record numbers.

This transformation is still unknown to many who are using these synthetic opioids. I see patients who believe they are using heroin or pharmaceutical opioid pills. They are shocked to learn that their drug tests are negative for those substances and positive for fentanyl. This pattern is not restricted to people who use opioids—as we have seen in Wichita, people using cocaine are at risk, and if patterns in Missouri predict what will happen in Kansas, we will soon see a huge increase in methamphetamine poisoned with fentanyl.

And poisoning is the right word for this. We can and should have intense discussion about the relative safety of any illicit substance use—the drugs are illegal, after all, with private and public safety being the primary reasons for their criminalization. But we should not get caught flat-footed in the belief that drug use is either "safe" or "unsafe". There are degrees of safety, and as my patients have proved over and over, when provided with salient information about the risks of their behavior, they are willing to make different choices in order to limit those risks. The fentanyl poisoning epidemic has taken away the ability to make an informed choice, because Percocet is no longer Percocet; heroin is no longer heroin; cocaine is no longer cocaine. The technology to produce synthetic opioids, combined with the drive to profit at all costs, has created a drug use milieu that drastically increases the vulnerability of all people who use drugs.

Without access to basic knowledge about the substances they are using, Kansans who use drugs, whether recreationally or as part of an addiction, are much less safe than they were even two years ago. We have tools to deliver more safety, one of which is consumer fentanyl testing. Test strips are simple, inexpensive, and rapidly able to detect the presence of fentanyl in a drug sample. Armed with knowledge about the fentanyl status of a drug sample, the person may make different safety choices: choosing to use the drugs with someone else nearby; making sure naloxone (Narcan) is available; using a smaller amount or in a safer method; or not using at all.

Fentanyl test strips, according to state law, are drug paraphernalia. As used for consumer testing, these test strips were not conceived of when the paraphernalia code was written initially. I strongly encourage you to update it with HB 2277. By excluding test strips from the paraphernalia code, we will allow consumers and community organizations to possess and distribute this tool without incurring criminal charges in the effort of saving a life.

Sincerely,

Daniel Warren, MD

Senate Judiciary Committee

Chairwoman Warren and Members of the Committee:

Good afternoon, Chairwoman Warren and Members of the Committee. My name is Hassan Zbeeb. I am a medical student in Wichita, Kansas, undergoing training at the University of Kansas School of Medicine Wichita campus. I am writing to you regarding HB 2277. As you are aware, increased concentrations of poverty, fallouts of the coronavirus pandemic, and the rise of fentanyl and other synthetic opioids have provided us a rather grim forecast of the future. *Preventable* overdoses are taking the lives of Kansans in record numbers.

Addiction medicine specialists in Wichita are reporting that drug consumers have no idea that fentanyl is a contaminant in whatever drug they are using. The manufacturing, distribution, and abuse of illicit substances jeopardizes public and private safety. But there is nothing more dangerous than being under-equipped with the knowledge to minimize unintentional and unwanted consequences. Fentanyl test strips are simple, inexpensive, and rapidly able to detect the presence of fentanyl in a drug sample. This technology informs a drug consumer so that they can potentially make a life-saving choice about their behavior. Whether it is using less, using a safer method, stopping use of that drug entirely, or seeking resources and treatment. In all these scenarios, death is less likely.

As future physicians in Kansas who will continue to clash with this opioid crisis head on, my classmates and I have vowed to always prioritize safety and safeguard a person's right to make an informed choice about their health. The reason we prioritize the latter goal so much in our education is because we know that lack of knowledge/awareness is a primary risk factor for morbidity and mortality in virtually everything. Clarity is essential. What is the state's interest in continuing to criminalize fentanyl test strips? I strongly encourage you to update the paraphernalia law with the amendment in HB 2277. By excluding test strips from paraphernalia categorization, we will allow consumers and community organizations to possess and distribute this tool without risking arrest in the effort of saving a life.

Sincerely,

Hassan Zbeeb, MS

SENATE JUDICIARY COMMITTEE

CONFEREE TRANSMITTAL FORM

Bill # HB2277 Date of testimony 1/30/22

TESTIMONY MUST BE SUBMITTED AT LEAST 24 HOURS IN ADVANCE OF THE HEARING

Print Name of person testifying: Kelsey Ellis

Title/Organization, if applicable: _____

Phone # 913-602-6934 email: kellis@kpcnc.org

Name of contact person if different from above: _____

Phone # _____ email: _____

Please check both testimony type and delivery method applicable:

Proponent X In-person _____

Opponent _____ Via WebEx _____

Neutral _____ Written only X

Please submit 15 written copies and a PDF electronic copy of testimony no later than 24 hours in advance of the hearing to:

Kim Sage, Committee Assistant
Senate Judiciary Committee
State Capitol
300 SW 10th Ave., Room 418H-E
Topeka, KS 66612
kim.sage@senate.ks.gov
785-296-6817

Date: January 1/30/2022
From: Kelsey Ellis, RN,BSN
Ref: Support for excluding fentanyl test strips from the definition of "drug paraphernalia" in HB 2277
Senate Judiciary Committee
Chairwoman Warren and Members of the Committee:

I am Kelsey Ellis, RN, BSN. I am a nurse case manager and behavioral health care coordinator at a community health center in Junction City, KS and Manhattan, KS. I have started and now coordinate a medication assisted program for opioid use disorder and other addictions. I have dedicated my career and my future to addiction medicine. I am originally from Kansas City and now live in rural Junction City. I have seen addiction effect the lives from different areas in Kansas. As a young child I was exposed to the disease of addiction as it was all around me. I know it is very simple to think- if you don't want to overdose or suspect fentanyl in drugs- simply don't use them. If only the disease of addiction were that simple. It is a complex and multidimensional disease. I have never suffered from addiction, but I can tell you I have been deeply exposed in my personal life and have spent the last 2 years of my career researching and understanding the disease of addiction. I have listened to dozens of stories on how the addiction started and I challenge you to listen also to understand the mere reason behind someone's addiction. I think most people would change their perception on addiction after hearing just a few. Please look at the pharmacology of opioids on the body and see the large threshold it can have on one's brain. Addiction stems from unhealthy coping mechanisms, which we all have. Some just unhealthier than others. Had a hard day and say "I could really use a drink?"

We include surgeon general labels on cigarettes. You can look at a food item and see the calorie and fat count and decide to eat it or not. We provide the opportunity to let mother's test their breast milk for alcohol. All of this is in effort to make healthier decisions, why would we not provide the opportunity for other substances? Through history we can see that prohibiting something will not make it go away. Restricting unhealthy food will not make diabetes go away. But providing Kansans, human beings, the resources and opportunities to make healthier decisions.
Now I have had several dozens of people seek out my clinic for assistance with opioid addiction. I can tell you in my professional opinion- I hear 2 things. 1.) being that I did not know that there was fentanyl in what I was using or 2.) I took this pill and it was like any other hold on me I ever had and was instantly hooked on it. Later finding out there was fentanyl in it. I can tell you that the withdrawals are more intense and come on within hours of not using. Making it harder and harder to get away from them.
We see the trends; we know that more and more people are dying from overdoses. We know more and more drugs are being mixed with fentanyl. Please let us try and prevent overdoses and save lives. I am strongly encouraging you to update the paraphernalia categorization with the amendment in HB 2277. By allowing people to test their substances, we can provide people to make better decisions when it comes to their use. Times are different from when the law was written and we know in healthcare we have to keep up with the time to create better outcomes. There is so much we can do as a state to make a difference and legalizing fentanyl test strips is just the beginning.

Thank you,
Kelsey Ellis RN, BSN

TESTIMONY: HB2277.LisaVayda.2-1-22.PRO

Chairman and Sen. Warren and members of the Kansas Senate Judiciary Committee,

My name is Lisa Vayda, and I am a pharmacist in Wichita, KS. I am a proponent of House Bill 2277: Clarifying the definition of possession in the Kansas criminal code. Specifically, I am a proponent of excluding fentanyl testing strips as being considered "drug paraphernalia" page 6, line 27.

As a Kansas citizen, health care provider, and community advocate, I have worked for several years battling this awful opioid epidemic. The grim facts are that drug overdose deaths are increasing, especially involving synthetic opioids, such as fentanyl. Per the National Center for Health Statistics: Predicted deaths from drug overdoses in Kansas increased by 47% from June 2020 to June 2021 (396 deaths to 582 deaths). This rate increase is the second highest in the U.S. (https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm)

Fentanyl is showing up as counterfeit oxycodone and Xanax or contaminating other illicit drugs, such as cocaine and methamphetamine. By employing fentanyl test strips, studies have shown that people who use drugs can be more informed about the drugs they are buying and using, leading to behavior change and adoption of harm reduction strategies. (https://harmreduction.org/issues/fentanyl/fentanyl-test-strip-pilot/)

Furthermore, earlier this year, the federal grant guidelines changed, and federal funding may be used to purchase fentanyl test strips in applicable programs. (https://www.cdc.gov/media/releases/2021/p0407-Fentanyl-Test-Strips.html). This includes the CDC's Overdose Data to Action (OD2A) cooperative in which Kansas is a participant. However, organizations in Kansas cannot do so because of the current state statutes.

I come here today representing many Kansas Citizens who have shared their heartbreaking narratives about their child, loved one, colleague, or friend who might be alive today if they were made aware of the dangerous fentanyl lacing their drugs by using testing strips and acting accordingly. Passage of Kansas HB2277 would be a simple step that Kansas Legislators could take to improve harm reduction measures in our great state and potentially save lives.

Respectfully submitted,

Lisa K. Vayda, RPh, MS

14400 E. Sport of Kings

Wichita, KS 67230

Tel: 316-371-6188

Email: lvayda@cox.net

MIRROR, INC

www.mirrorinc.org

To Whom It May Concern:

As a mental health and substance use treatment professional in Kansas, I am strongly advocating for the Kansas House Bill 2277 be enacted into law. Lethal doses of fentanyl have been identified in a wide array of illicit and counterfeit drugs, and as a result, many lives have been taken long before their respective potentials were reached. Many of these lives, as well as the lives of those tasked with supporting these individuals, could have been saved with more readily available access to testing supplies to safeguard against this deadly drug. Fentanyl test strips (FTS) could prevent opioid overdoses by better informing individuals who use drugs whether it contains fentanyl. As it stands, FTS are considered drug paraphernalia under state law. As a treatment professional, I see the immediate good this would do to support our clients' efforts to build a path towards recovery. FTS are a harm reduction method that can keep a person alive long enough to reach their full potential in recovery. In addition, many substance use and healthcare providers lives are put at risk when combating this deadly chemical, and more widespread use of these tools would aid in improving the efficacy of the work we do in aiding our clients to recover and become contributing members of society.

Thankfully, Kansas House Bill 2277 was recently introduced, which excludes FTS from drug paraphernalia classification. Additionally, Federal guidelines have changed, and organizations are allowed to use federal funding to purchase and distribute FTS. However, we CANNOT do this until statues change in Kansas. Therefore, along with my colleagues and friends in recovery, I am requesting that the Kansas Senate Judiciary Committee enact Kansas House Bill 2277 into law.

Thank you,

Mac Crawford, LSCSW

514 N. Dodge Ave., Wichita, KS 67203

Phone: (316) 330-3297

Date: January 29th, 2022

From: Megan Seidl, D.O.

Re: Support for excluding fentanyl test strips from the definition of "drug paraphernalia" in HB 2277

Dear Chairwoman Warren and members of the Senate Judiciary Committee:

My name is Megan Seidl. I am a family doctor, and medical director of a community health center with locations in Junction City and Manhattan, Kansas. I am writing to you about the upcoming hearing to discuss House Bill 2277.

Our clinics offer medication assisted treatment and case management for patients with opioid use disorder and other substance use disorders. Since our program started two years ago, we continue to see more and more patients reaching out for help because they want to stop using opioids. It is a common story that these patients decide to stop using because they realize there is fentanyl in their substances, and they realize how dangerous that is. Unfortunately, that realization often comes when they or someone they know experiences an overdose event. They are being intentionally misled – often fentanyl pills are stamped with prescription-like labels and they believe it came from a regulated pharmacy.

Fentanyl test strips help prevent overdose, which will decrease traffic in our overwhelmed emergency departments, and allow patients to access care in the more efficient outpatient setting.

Fentanyl test strips allow Kansans to make safer decisions. For many of our patients, that decision is to stop using drugs altogether.

It should not take a fatal or near-death experience for our community members to learn they are taking fentanyl.

Kansans are being poisoned. Fentanyl test strips are a cost-effective way to help us protect our citizens.

Please exclude fentanyl test strips from the definition of "drug paraphernalia" when you discuss House Bill 2277.

Thank you for your time.

Sincerely,

Megan Seidl, D.O.

Written Testimony in Support of Kansas House Bill 2277

Submitted by Ngoc Vuong, 3210 West Graber Circle, Wichita KS

Dear Sen. Warren, Sen. Wilborn, Sen. Haley, Sen. Baumgardner, Sen. Bowers, Sen. Corson, Sen. Gossage, Sen. Pyle, and Sen. Thompson,

I am writing to you as a behavioral health policy researcher and a person who has loved ones with mental health and substance use issues.

In 2021, there were more than 100,000 drug overdoses nationwide. Provisional data from the National Center for Health Statistics indicates that reported drug overdose deaths in Kansas increased from 396 in June 2020 to 573 in June 2021. This is a 44.7% increase and the **third highest** in the country. Most drug overdose deaths both statewide and nationwide have been attributed to opioids such as fentanyl.

The Kansas Senate Judiciary Committee has the opportunity to facilitate implementing one of the simplest strategies that would allow for fentanyl contamination testing. **Kansas House Bill 2277** could be enacted into law. Lethal doses of fentanyl have been identified in a wide array of illicit and counterfeit drugs. Fentanyl test strips (FTS) could prevent opioid overdoses and save lives by better informing individuals who use drugs whether it contains fentanyl. Although fentanyl test strips are affordable, simple to use, and have empirical support, as it stands, FTS are considered drug paraphernalia under state law.

I can be reached via nxvuong1@outlook.com or (316) 516-3078 if you would like additional information on the strong empirical support for fentanyl test strips and other strategies that can prevent overdoses and save lives, increase access to care for people with substance use disorders, and reduce the stigma of mental health and substance use issues.

Ngoc Vuong

Date: January 29, 2022

From: Sarah Veesart-Wright

Ref: Support for excluding fentanyl test strips from the definition of "drug paraphernalia" in HB 2277

Senate Judiciary Committee

Chairwoman Warren and Members of the Committee:

Hello, Chairwoman Warren and Members of the Committee. My name is Sarah Veesart-Wright. I am a second-year medical student at the University of Kansas of Wichita. I am writing you regarding HB 2277.

Even in the short time I have been school I have seen the effects that fentanyl has had on the community. Many people are unaware that they are using fentanyl. They believe that they are using heroin or pharmaceutical opioid pills and are surprised to learn that their drug test is negative for those substances but positive for fentanyl. This is just the beginning. Fentanyl is more available, less expensive, and much less safe. If this pattern continue it won't be long until more substances are laced with fentanyl.

By withholding knowledge about the substances people are using, Kansans are dying. We have the tools to help safe lives and one of them is fentanyl testing. Fentanyl test are simple to use, inexpensive, and give rapid results about the presence of fentanyl in a sample. By giving people the knowledge about the fentanyl status of a sample, people are able to make a safer decision. These could include: having naloxone (Narcan) available, using a smaller amount or in a safer way, or perhaps not using at all.

According to the state law fentanyl test strips are drug paraphernalia. The fentanyl test strips did not exist when the paraphernalia was written. As the staffing and resource shortage increase the access to treatment access decreases. Who is benefitting when preventable overdose deaths continue happen due to lack of knowledge? Why criminalize the potentially life saving fentanyl test strip? I would strongly encourage you to update the paraphernalia law with the amendment in HB 2277. Excluding test strips from the paraphernalia categorization, will allow community organizations and consumers to distribute and use this tool in an effort to save lives without the risk of being arrested.

Sincerely,

Sarah Veesart-Wright

Senate Judiciary Committee,

I want to first thank you for the opportunity to speak and for taking the time to consider this vital proposal.

My name is Seth Dewey and I work for the Reno County Health Dept. and am a co-founder of the Kansas Recovery Network. I work in Health Education serving as the project coordinator for grants dealing with substance use and finding innovative approaches to substance use issues. We have worked tirelessly with multiple partners from all backgrounds from school districts to law enforcement. From medical professionals and EMS to the business and industry sector. We have realized that while our community coalition work has had success, we know that there is more to be done. Locally and statewide.

Provisional surveillance results from the State Unintentional Drug Overdose Reporting System (SUDORS) show that at least 338 Kansas residents have died of drug overdose between January 1, 2021, and June 30, 2021. The tally represents a 54% increase from the 220 drug overdose deaths identified by SUDORS surveillance in the same 6-month time frame in 2020. Of the provisional 338 deaths, 149 involved fentanyl or fentanyl analogs. Fentanyl is driving the uptick in fatal drug overdoses due to it many times being mixed in with other substances or in counterfeit pills therefore being ingested unknowingly.

Fentanyl test strips can warn an individual if their substance contains Fentanyl and then give them the power to choose how to proceed. Of a group studied in Rhode Island, about half those that received a positive test result after using Fentanyl Test strips altered the way they used the substance by taking measures like not using alone, using a lesser amount, and in some cases even discarding the substance. Now… think if we could have had half of the 338 Kansans that died in the first 6 months of 2021 change their using pattern because of a simple piece of testing paper?

With the numbers we have seen nationally and now locally the residents of Kansas are hard at work with their cities and counties to reduce this current crisis. Much good is being done on many fronts in this great state. But we all know more can be done. HB 2277 needs to get pushed through to save lives and empower people from multiple sectors and backgrounds to be a part of a solution to this growing crisis.

Respectfully,

Seth Dewey