DRUG CHECKING AND OVERDOSE PREVENTION

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If you let her “sleep it off,” she may never wake up.

Drug overdose is the #1 cause of accidental death for adults in Rhode Island. Learn how to spot an overdose and what to do.

Overdose as injury: resembles chronic & infectious disease

pre during post
AGENT HOST ENVIRONMENT
FENTANYL

• 72% of participants who indicated that they had used fentanyl in the last year were aware the drugs contained fentanyl before buying or receiving them.

• Positive qualities about fentanyl discussed
  • Fentanyl is noticeably stronger, less control
  • Many healthcare service sites and shelters do not test for fentanyl, so people don’t lose their benefits

• Negative qualities about fentanyl discussed
  • “it doesn’t have any legs,” too short of a high
  • Tolerance develops quickly; harsh withdrawal
  • More expensive
  • More public use, purchase

Participant Quotes

“I was scared of fentanyl when it first came out. Now it’s like give me more. You know?”

“Yeah, it’s a euphoria feeling. It’s like the feeling of a breach of an orgasm. It’s a real strong euphoric feeling. Everything all feels fuzzy, wavy, hot. It’s just an awesome feeling. You can’t really beat it”

“The detox from it is worse, the withdrawals are different, it messes with your head more, it doesn’t last as long. It’s just not worth it anymore”

“That’s the advantage for the dealer having them stuffed with fentanyl and it’s real strong, but it doesn’t have a lot of legs, so you’ve got people coming back...you don’t want to kill your clients, but you want to keep them coming back, so you want to make sure you try to get the best product you can for the best price”

*This is preliminary project data not intended for broader distribution or presentation.
TRENDS IN OVERDOSE DEATHS, RHODE ISLAND (2009-2017)
FENTANYL OVERDOSE REDUCTION CHECKING ANALYSIS STUDY

Drug overdose deaths / 100,000 population

- >20
- 18-20
- 16-18
- 14-16
- 12-14
- 10-12
- 8-10
- 6-8
- 4-6
- 2-4
- 0-2

BALTIMORE 83.5

PROVIDENCE 35.3

BOSTON 34.6
DRUG CHECKING: WHAT IF PEOPLE KNEW WHAT WAS IN THEIR DRUGS BEFORE USING THEM?

Drug checking has been a public health intervention for decades.
- European health departments
- US music festivals and raves, by PWUD
- Some SSPs in the US and Canada

There is no objective method for knowing if drug samples contain fentanyl (no product safety measures).

Drug checking involves testing a drug sample to check for its purity or for the presence of adulterants.
STUDY AIMS

April through December 2017

Phase I: To compare the limit of detection and accuracy of fentanyl testing strips, a hand-held machine, and a portable desktop machine in detecting fentanyl in 210 street drug samples.

Phase II: Examine the interest in fentanyl checking among people who use drugs in Baltimore, Providence and Boston (N=335)

Phase III: Explore key informant attitudes on drug checking and the programmatic considerations in implementing drug checking (N=32)
PHASE 1: LABORATORY FINDINGS

- BTNX fentanyl test strips
- Raman spectroscopy (TruNarc)
- FTIR (Bruker Alpha)

- Baltimore Police Dept Forensic Crime Lab, RI State Public Health Lab Drug Chemistry Unit
- Instrument manufacturers trained lab staff, strip training based on package insert and harm reduction organization’s input

Limit of Detection
- Fentanyl standard, prepared in solutions of ethanol (TruNarc) or water (BTNX test strips)
- Sequentially tested 3 samples of known fentanyl concentration, decreasing the value of the concentration by serial dilution until not detected

Fentanyl Detection in Street Samples
- 210 powder and pill street drug samples, from Baltimore and Providence Police Dept cases
- Half known fentanyl+, half known fentanyl- based on original GC/MS testing at lab
- Lab staff blinded to results, systematically tested each sample per protocol
## Laboratory Study Results

<table>
<thead>
<tr>
<th>Technology</th>
<th>Detection Limit</th>
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<tbody>
<tr>
<td>BTNX Fentanyl Testing Strips (immunoassay)</td>
<td>0.13 micrograms/ml</td>
</tr>
<tr>
<td>TruNarc (Raman Spectroscopy)</td>
<td>25 micrograms/ml</td>
</tr>
<tr>
<td>Bruker Alpha (FTIR Spectroscopy)</td>
<td>3-4% weight, which is comparable to TruNarc</td>
</tr>
</tbody>
</table>

Four samples containing fentanyl analogues tested: test strips detected 100% as fentanyl present; TruNarc and Bruker Alpha detected 3 of 4 as fentanyl present.
RECRUITMENT AND SAMPLING

Socio-behavioral survey of 335 people who use drugs

**Baltimore (N = 175):** targeted sampling at street-based locations.

**Boston (N = 80) and Providence (N = 80):** Referrals through Harm Reduction Services E.g. Needle Exchange.
THE MAJORITY OF PWUD ARE CONCERNED ABOUT FENTANYL AND INTERESTED IN DRUG CHECKING

84% are concerned about using drugs with fentanyl in it.

89% reported fentanyl checking would make them feel more protected from overdose.

75% did not prefer fentanyl in their drugs
70% reported that knowing their drugs contained fentanyl would lead them to modify their usage, including:

- Avoiding drug purchase in the first place
- Using their drugs more slowly
- Doing a “tester” shot
- Using less than originally intended
- Throwing the drugs away instead of using them
- Telling others who purchase from the same person about fentanyl adulteration

**Desired location drug checking services**

- 20% SSPs
- 17% Health Clinics
- 15% Drug treatment program
- 13% CBO
- 10% Safe consumption space
- 9% Homeless shelters
PWUD (N=335) ARE MORE LIKELY TO BE INTERESTED IN DRUG CHECKING IF...

<table>
<thead>
<tr>
<th>Factor</th>
<th>aOR</th>
<th>95% CI</th>
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<tbody>
<tr>
<td>Older age***</td>
<td>1.04</td>
<td>(1.02 - 1.06)</td>
</tr>
<tr>
<td>Female gender*</td>
<td>1.27</td>
<td>(1.03 - 1.57)</td>
</tr>
<tr>
<td>Race/Ethnicity (vs. Non-Hispanic White)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic Black**</td>
<td>1.80</td>
<td>(1.27 - 2.55)</td>
</tr>
<tr>
<td>Hispanic ethnicity**</td>
<td>2.30</td>
<td>(1.44 - 3.68)</td>
</tr>
<tr>
<td>Other / Multiracial*</td>
<td>1.46</td>
<td>(1.09 - 1.94)</td>
</tr>
<tr>
<td>Witnessed a fatal overdose*</td>
<td>1.74</td>
<td>(1.04 - 2.90)</td>
</tr>
<tr>
<td>Used a drug they thought had fentanyl, last 6 months***</td>
<td>2.11</td>
<td>(1.54 - 2.88)</td>
</tr>
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Controlling for homelessness, type drug use, rushed drug purchase
* p < 0.05, ** p < 0.01, *** p < 0.001

Binomial regression with standard errors clustered by study city
CONSISTENT FINDINGS IN TWO CONTEMPORANEOUS STUDIES USING TEST STRIPS
GREENSBORO, NC (N=129) & PROVIDENCE, RI (N=93)

People who inject drugs, young adults who misuse Rx opioids
High rates of willingness to use (>90%) and actual use (>75%)
After using fentanyl test strip, observed high rates of increased opioid safety (90%) and changes in use behavior (>50%)
- use less, use with others around, use more slowly, do “test shot”
Many people using drugs are disconnected from care.

Fentanyl use often associated with frequent injection, multiple overdoses, repeat visits to ED/hospital, straining relations and resources.

Create meaningful and supportive opportunities to talk about health, safety, MAT, and infectious disease transmission risk reduction.

New HIV outbreak in Lowell, MA: Aug 2017 survey of 50 PWUD:

- 92% had used fentanyl in past year, 72% knew beforehand.
- 73% interested in drug checking.
- 57% willing to bring drugs in for checking.
- Poor naloxone, MAT access.
FENTANYL TEST STRIP DISTRIBUTION PROGRAMS

Engagement with new clients/participants
- Non-injectors
- Post-overdose outreach tools

Family/parent-based harm reduction

Post-release from incarceration kits

Overdose engagement sites

Event- and venue-based distribution
- Prompted by death of a center employee and 3 friends
- Pride Season
- Increase in unintentional overdose of recreational drugs contaminated with fentanyl
- Pride West Hollywood: 6,800 strips distributed
**SUMMARY**

Opioid overdose trends show deaths continue at a too-high rate.

Drug checking can help provide insights into the drug supply and supports goals of public safety, engagement, harm reduction and overdose prevention.

Need to pioneer new approaches to address contamination concerns, public and behavioral health goals, and safer use supplies for preventive intervention and response.

Some communities may be able to work with existing laws, others may benefit from explicit protections.
THANK YOU!

Questions or more information, contact Traci.c.green@gmail.com
INSTRUMENT CONSIDERATIONS

**Fentanyl Testing Strips**
- Fast (3-5 mins), minimal training, easy to use, cost
- Only tests fentanyl, cannot distinguish among fentanyl/analogues/mixtures
- Guard against confusion when reading results, with low fentanyl concentrations

**TruNarc**
- Fast (4 mins), some training, easy to use, durability
- Challenging for street samples of low purity, mixtures. 2-step testing (SERS kit) essential
- Ideally suited for high purity samples, such as in narcotics investigations

**Bruker Alpha**
- Fast (30-60 secs), easy to use, little training to scan, more training to interpret scans, substantial training to curate scans
- Superb for street samples, identifying mixtures and drug components
- Utility is a function of training and scan library
- Potential to construct, curate local libraries