

Early findings from novel methods of surveillance for novel synthetic opioids and other psychoactive substances within Supervised Injecting Facilities

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Background

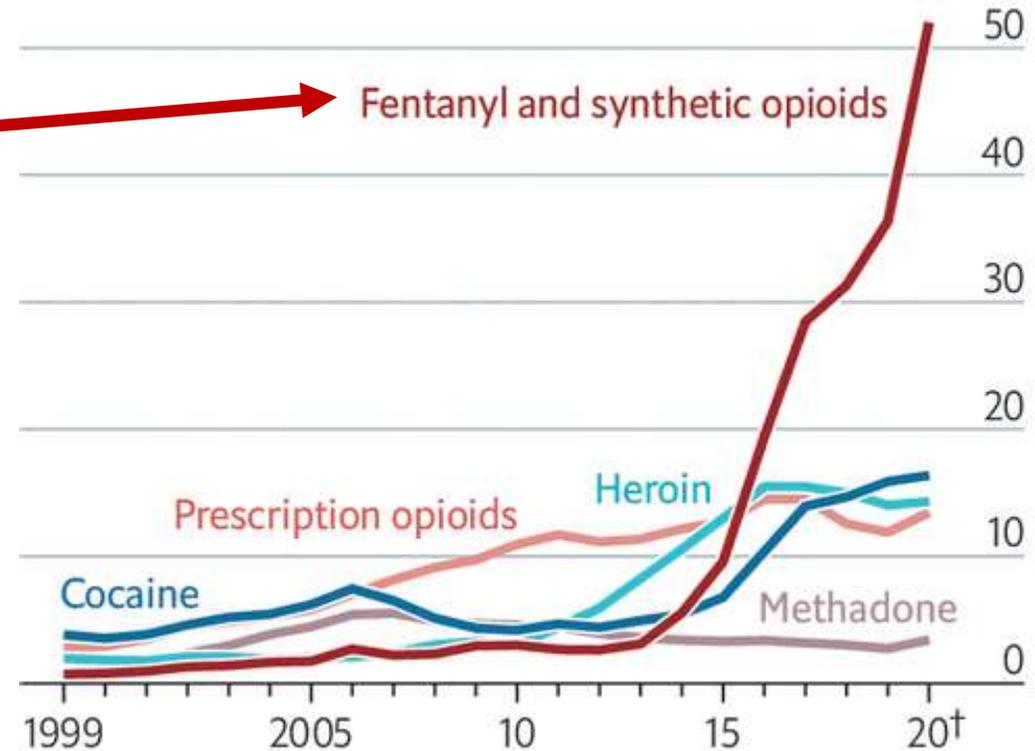
- Concerning international trends with fentanyl

Aim

To expand novel surveillance methods with SIFs for NPS

United States, drug overdose deaths*

By year, '000



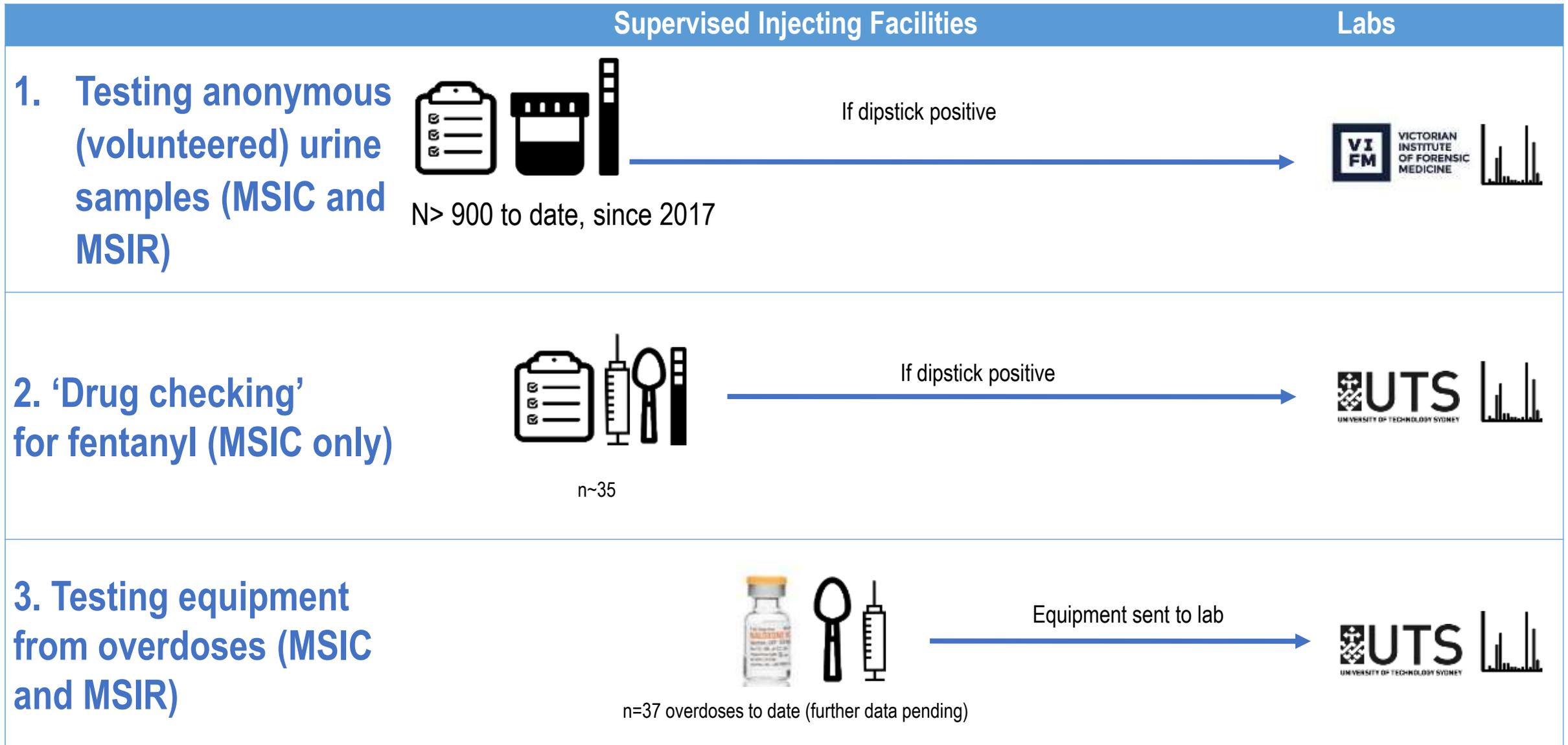
Source: Centres for Disease Control and Prevention

The Economist



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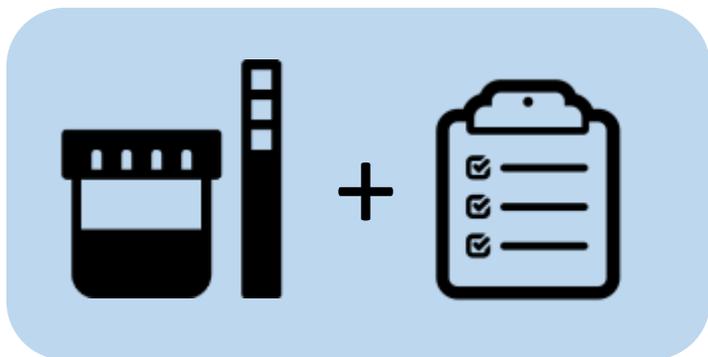
Overview of surveillance methods



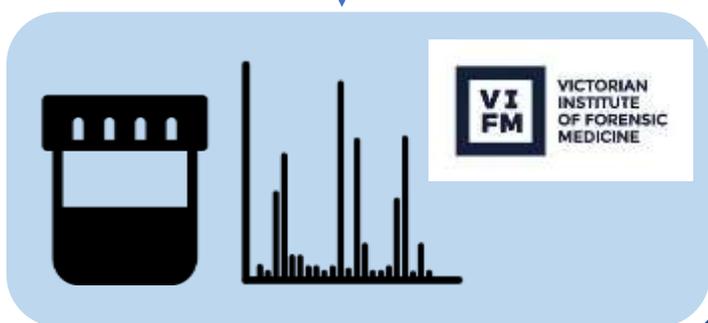
Testing anonymous urine samples



Methods:



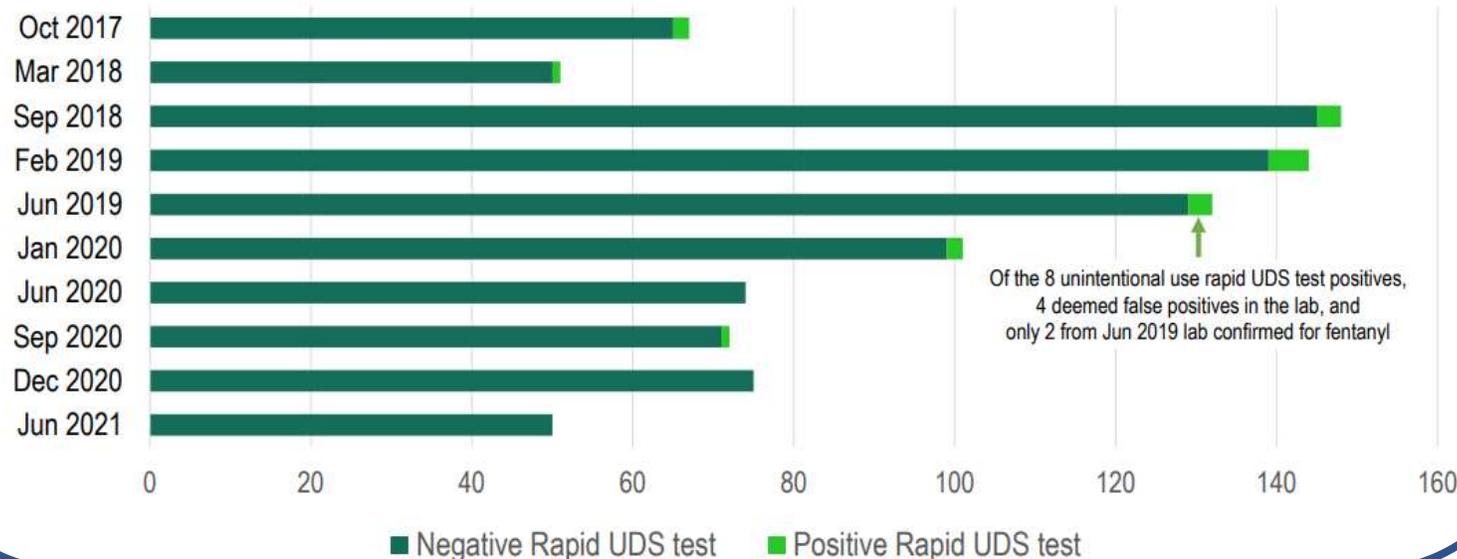
If positive (from 2018)



Results:

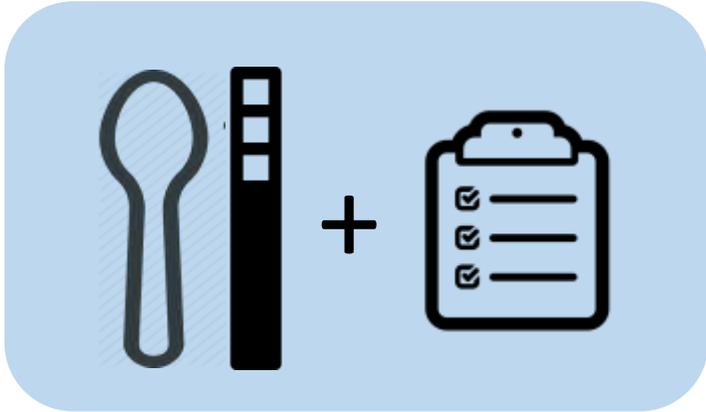
- Ten waves of data collection, 911 tests, 2017-2021
- 17 positive (9 pharmaceutical fentanyl, 8 unexpected)

Limited evidence of unintentional fentanyl use among people who regularly inject heroin in Sydney and Melbourne



Drug checking with fentanyl test strips (FTS)

Methods:



Testing of samples:

- Test wash in spoon after drawing up injection (before/after injecting)
- One page survey on experience of drug checking

Results:

- Initially research approvals → Limited demand
- Changed procedures to reimburse participants (\$10)
 - Completed 35 surveys at MSIC (Sydney only)
 - Support for drug testing if completed **after rather than before drug use** ($p=0.013$).
 - **2 positive samples** sent for lab confirmation → **both false positives** (N.B. False positives common in urine testing also, in addition to results being misread)



The impact of false positives

Bayes theorem (or my bad explanation of its implications):

When you test for something with a very low prevalence, and a relatively high false positive rate, you are likely to be giving a reasonable amount of people bad information

This could be an issue for fentanyl testing strips in Australia

<https://www.theguardian.com/world/2021/apr/18/obscure-maths-bayes-theorem-reliability-covid-lateral-flow-tests-probability>

Bayes's theorem is written, in mathematical notation, as $P(A|B) = (P(B|A)P(A))/P(B)$. It looks complicated. But you don't need to worry about what all those symbols mean: it's fairly easy to understand when you think of an example.



Thomas Bayes, author of the Bayes theorem.



Fentanyl Test Strips for Drug Checking

Different context to festivals

→ Testing AFTER use for surveillance and to inform future purchasing

“When I arrive and I have my drugs it is unlikely I will stop for testing – all I want is to get it in. That is .. the priority” (Consumer)



Testing overdose equipment

Methods:



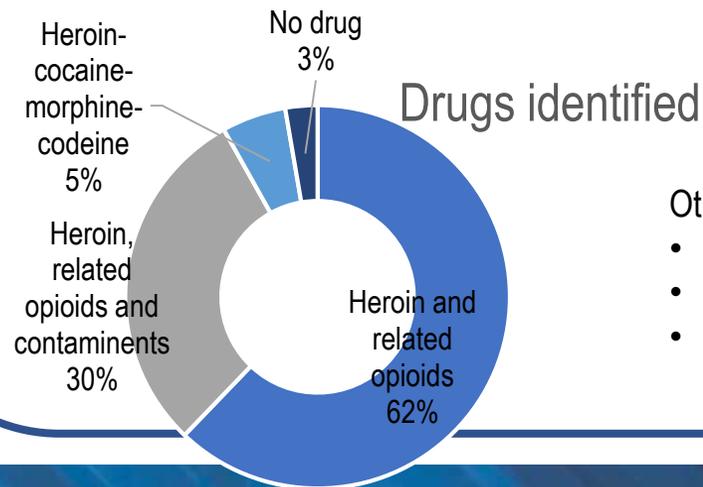
Where an overdose requiring naloxone occurs, equipment is sent to lab at to test what drugs were involved

Preliminary analysis from 37* overdoses

→ COVID delays with lab processing

Results:

- **Fentanyl and other NPS were not identified**
- Heroin (and expected contaminants/impurities from heroin manufacture) found in 36 samples (one appeared to be a blank syringe)
- 2 samples also had cocaine (trace amounts) on spoon (not syringe)



Other suspected substances

- Triazolam was detected on one of the spoon
- Dronabinol (DELTA-9THC)
- Orphenadrine



Conclusions

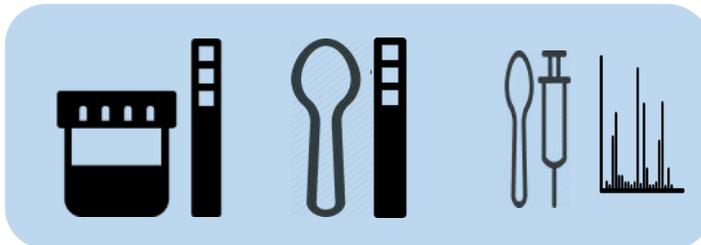
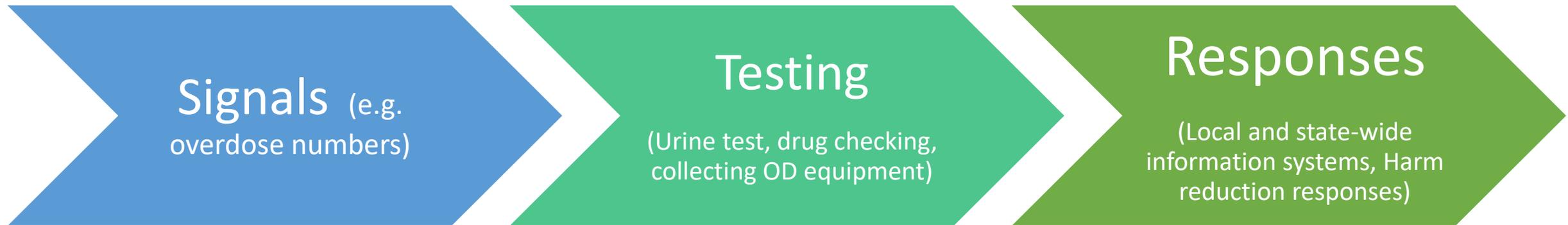
All three methods of monitoring are feasible, implementable and acceptable to consumers if needed (e.g. signals of emerging fentanyl)

- 1) Limited evidence of fentanyl (across all components of the study)
- 2) Testing urine – provides a broader window of surveillance, but greater inconvenience for services
- 3) Drug checking – easy to do, but high false positive rate (lab confirmation critical) may undermine confidence in testing and limited interest to test prior to use
- 4) Testing overdose equipment – important data (e.g. most opioid overdoses do not attend EDs) – but need faster results



How do these methods fit into the bigger picture?

- Ongoing surveillance for fentanyl not be currently warranted (opportunity cost, may mean less time for other harm reduction activities at SIFs)
- These developed testing methods can be easily implemented if needed



Thank you!

Enormous thanks to:

- **Participants who provided samples**
- **Consumer expertise and staff at the Supervised Injecting Facilities, and other key experts** that participated in workshops
- **Lab staff** involved in analysis

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