

# Monitoring for fentanyl and novel psychoactive substances within Supervised Injecting Facilities

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# Background

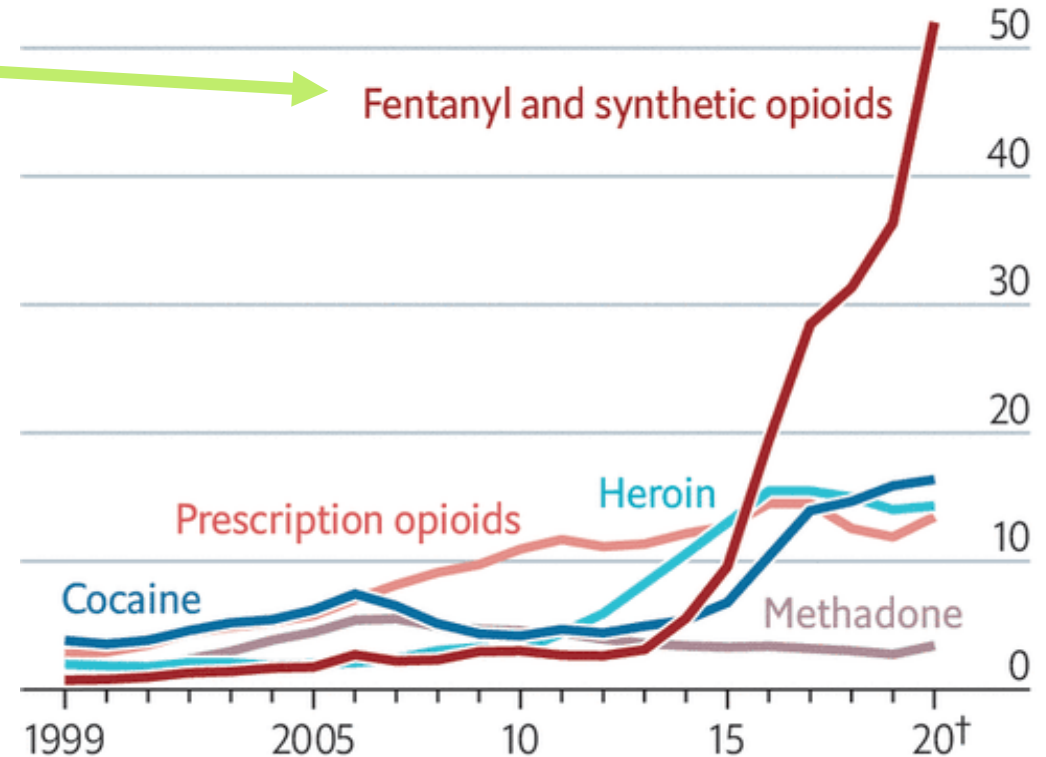
- International trends with fentanyl
- Little evidence in Australia (yet)

## Aim

To expand novel surveillance methods with SIFs for fentanyl and other NPS

United States, drug overdose deaths\*

By year, '000

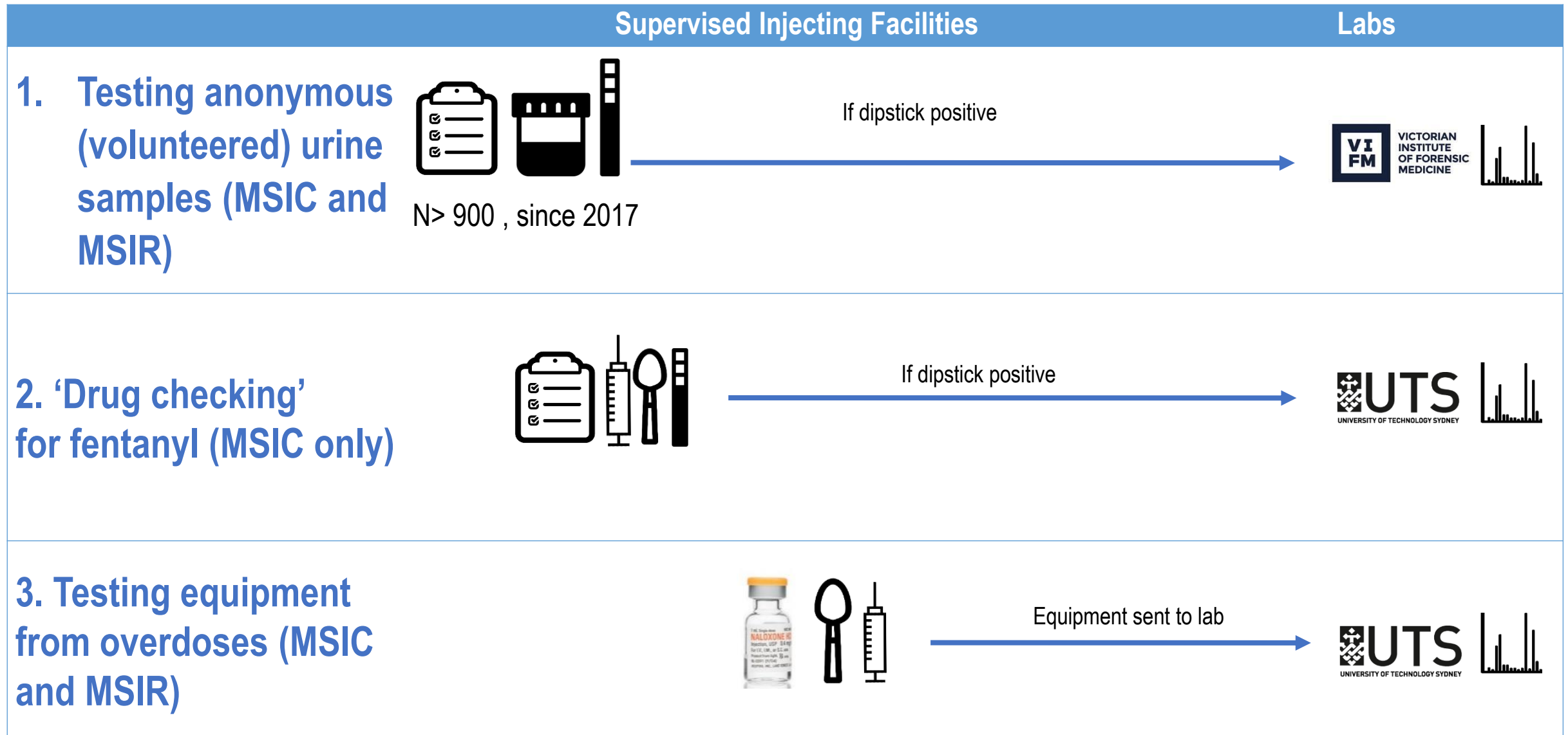


Source: Centres for Disease Control and Prevention



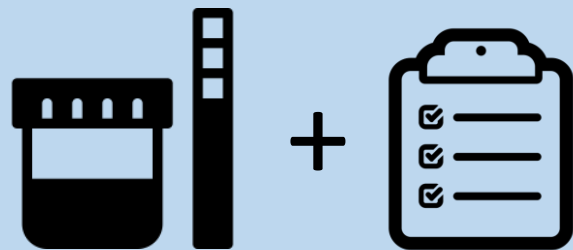
DrSuziNielsen

# Overview of surveillance methods

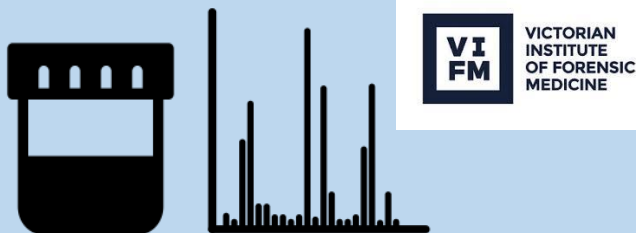


# Testing anonymous urine samples

## Methods:



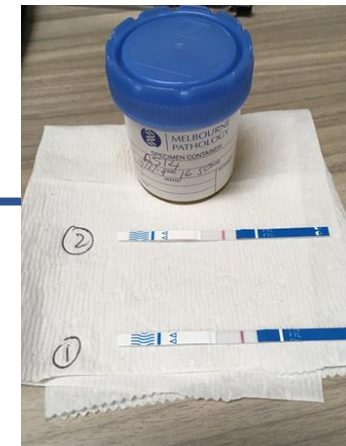
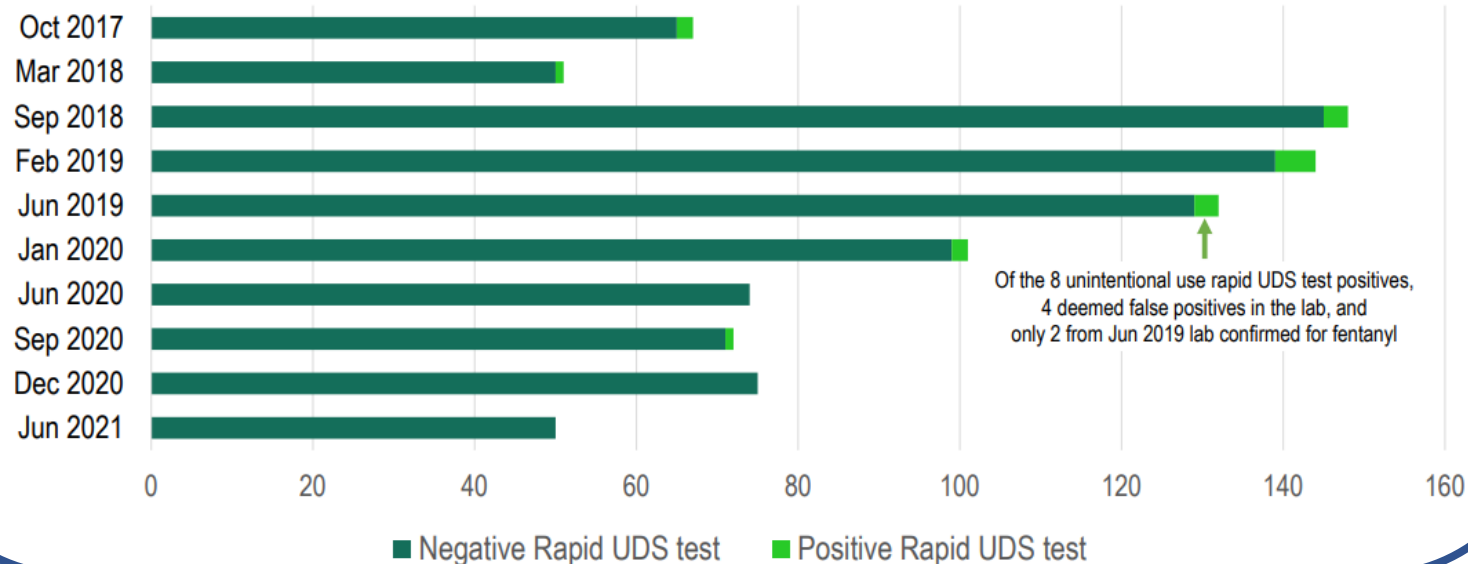
If positive (from 2018)



## Results:

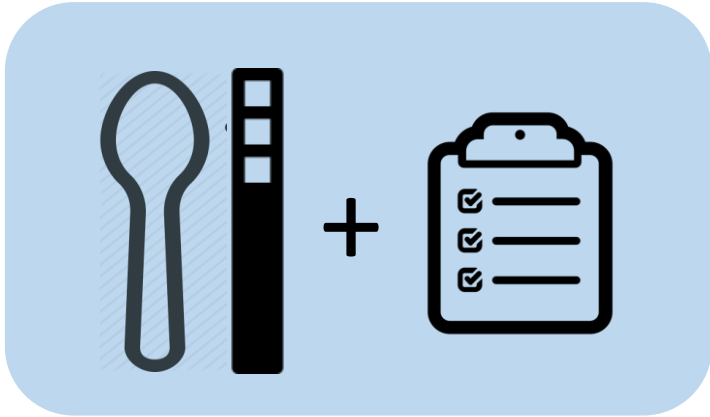
- Ten waves of data collection, 911 tests, 2017-2021
- 17 positive (9 pharmaceutical fentanyl, 8 unexpected)

**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:

- Limited demand initially
- Changed procedures to reimburse participants (\$10)
  - Completed 35 surveys at MSIC (Sydney only)
  - **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)
  - Support for drug testing if completed **after rather than before drug use** ( $p=0.013$ ).



# 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:

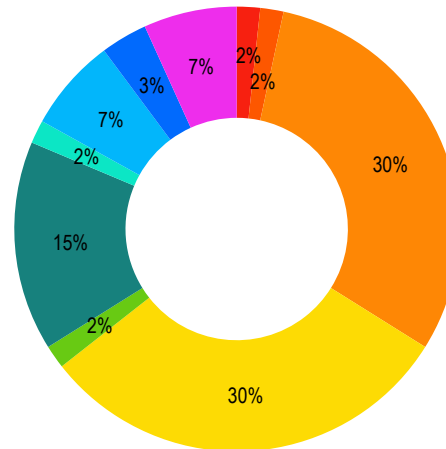


Where an overdose requiring naloxone occurs, equipment is sent to lab at to test what drugs were involved

- 59 overdoses (137 pieces of equipment)

## Results:

- **Fentanyl and other NPS were not identified**
- Heroin (and expected contaminants/impurities from heroin manufacture) found in 59 samples
- 2 samples also had cocaine (trace amounts) on spoon (not syringe)

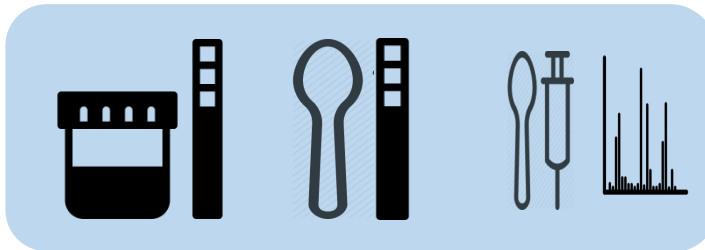
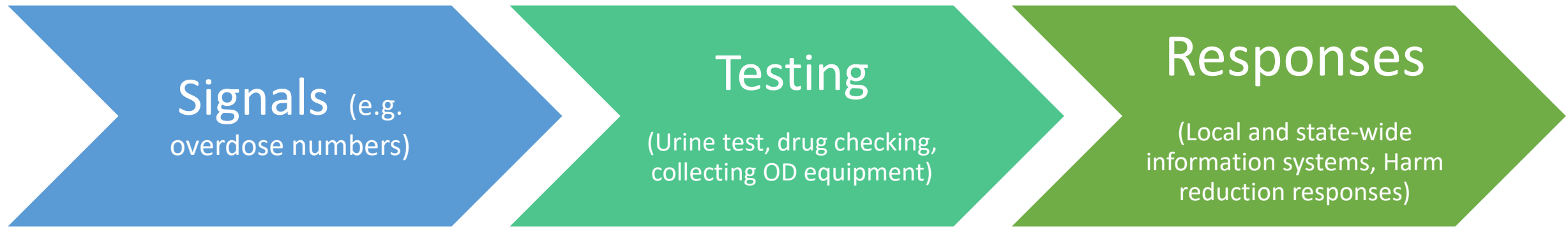


- Cocaine-Heroin-Morphine-Codeine
- Cocaine-Heroin-Morphine-Codeine-Adulterants
- Heroin
- Heroin-Morphine
- Heroin-Codeine
- Heroin-Morphine-Codeine
- Heroin-Morphine-Adulterants
- Heroin-Morphine-Codeine-Adulterants
- Heroin-Adulterants
- No Substance



# Workshops

- Workshops identified low support for routine fentanyl testing currently (opportunity cost → e.g. less time for other harm reduction activities at SIFs)
- Developed testing methods can be easily implemented if needed





# Discussion: 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.



# 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 less convenient
- 3) Drug checking
  - easy to do, but low interest (esp prior to testing)
  - High false positive rate may undermine confidence in testing → lab confirmation critical
- 4) Testing overdose equipment – important data (e.g. most opioid overdoses do not attend EDs) – but need faster results, most OD still due to heroin



## Key take-away messages

- False positives an issue with FTS in low-fentanyl (confirmatory testing is important)
- Low consumer interest in SIFs currently (in Australia – low fentanyl)
- We developed a process that can be rapidly upscaled if fentanyl emerge

## Enormous thanks to:

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

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