# Sentinel surveillance for emerging illicitly manufactured fentanyl (IMF) use in an inner-city opioid agonist treatment service

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# Introduction

## Issue

- Pharmaceutical fentanyl, a synthetic opioid, is distinct from illicitly manufactured fentanyl (IMF)
- IMF comprises of substances with similar chemical structure but variable toxicity, and more potent
- Increased deaths due to synthetic opioids, including IMF have been recorded in a number of countries.

## Primary aim

- To determine the feasibility of a sentinel surveillance system to monitor for the emergence of IMF within an opioid using population of inner-city Sydney.

- The project will also determine the level of concordance of patients' self-reported use and UDS results.

# Background

- Fentanyl injection reported by 8% total sample from Needle Syringe Program (NSP) survey[1]

- Fentanyl-related mortality in Australia

  - 136 fentanyl-related deaths recorded during 2000-2011
  - 54% had history of injecting drug use (95% injected at time of death)
  - 36% recorded fentanyl as being prescribed
  - Deaths primarily among Australians < 47 yrs age[2]

- The Sydney Medically Supervised Injecting Centre (MSIC) conducted urine testing with the Rapid Response Single Drug Test Strip (Fentanyl) (BTNX) of 118 samples in late 2017/early 2018 and did not find any cases of unwitting fentanyl use[3]

1. Geddes et al. Drug and Alcohol Review. 2018, 37, S314-S322

2. Roxburgh et al. Drug and Alcohol Review. 2013, 32, 269-275

3. Barratt et al. Drug and Alcohol Review. 2018. DOI: 10.1111/dar.12864

# Design and methods

- A total of 100 participants will be recruited from an inner city opioid agonist treatment service where urine testing is performed upon admission and four times annually while receiving treatment.

- Urine samples would be tested each week for fentanyl and fentanyl analogues via chromatography and mass spectrometry conducted by a validated forensic analytical laboratory.

  - Including: 3-methylfentanyl, acetylfentanyl, butyrlfentanyl, carfentanil, furanly fentanyl, octfentanil, p-fluorofentanyl, remifentanil, sufentanil and valeryl fentanyl.

- An additional aspect from original design will be to also conduct urine testing with the Rapid Response Single Drug Test Strip (Fentanyl) (BTNX)

- Demographic data and past month drug use will be recorded via the Australian Treatment Outcome Profile (ATOP).

# Significance of the research

- This research will assist in determining the prevalence of IMF and its derivatives on the Australian market and subsequently whether it is of significant public health concern.

- It will also test the efficacy of expanding urine drug screening to monitor emerging drug trends, which may lead to change in clinical and harm reduction practice.

- The findings of this project will yield three much needed outcomes:

  - Inform feasibility of developing a national sentinel surveillance system, with expansion of this screening approach to other treatment agencies which incorporate UDS.

  - Provide much needed additional public health data required to elucidate the penetrance of fentanyl in the Australian drug market.

  - Identify target population for future interventions to reduce risk of overdose

# Results

- Pending

- Unfortunately there has been a 10 month delay due to difficulties in finalising the contract between UNSW and SVH

- Ethics application is currently underway but 12 month project timeline has been significantly impacted

# Lessons learned

- Difficulties of inter-institutional research and increasing legal complexities and considerations in terms of time-lines for research

- Time constraints for clinical researchers

- Simplicity of design does not always translate to simplicity in the research process

Good things will come to those who wait!