The 'In The Moment' Pilot. Evaluating methods of in-situ data collection during episodes of injecting drug use to improve opioid overdose response: A protocol paper

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Introduction

- People who inject drugs are at increased risk of multiple negative health consequences related to injecting drug use, including blood-borne virus transmission and death by drug overdose

- Australian surveillance data reports 6% of respondents reporting receptive needle and syringe sharing (using a needle/syringe after someone else has used it), and 17% reporting past 12-month non-fatal overdose (1)

- Existing research methodologies are often only capable of providing a broad understanding of the circumstances preceding these negative health outcomes

- Novel and innovative methods have been proposed to address the inherent limitations of retrospective data collection based on recall, such as physiological biomarker monitoring and ecological momentary assessment (EMA)

- Such data will assist in the development of new harm reduction interventions, such as drug overdose monitoring technology (2)

- This poster presents study methodology for the 'In The Moment' Pilot, which will explore novel methods of *in-situ* data collection

Study Objectives

1. Assess feasibility and participant acceptability of daily wearing of biometric devices,
2. Assess feasibility and participant acceptability of completion of short-form EMA quantitative questionnaires following every injecting episode, and
3. Assess feasibility and participant acceptability of retention and return of previously used needles/syringes for drug residue testing

Preliminary Results

- Between July-September 2022, a formative demonstration study was conducted with five participants to explore methods of study implementation

- During a one-month study period, participants completed 188 EMA questionnaires, providing highly detailed data about injecting drug use episodes

- 90% of previously used needles/syringes were returned (though were not tested during this formative study)

- Devices were worn consistently and for extended periods

- This demonstration study provided vital methodological information to inform implementation of the expanded study protocol

Discussion

- Despite decades of research, opioid overdose and blood-borne virus transmission are persistent public health issues among people who inject drugs

- To better tailor public health interventions to address ongoing drug overdose and injecting risk behaviour, a more comprehensive understanding is needed of the *in-situ* circumstances surrounding injecting drug use

- The 'In The Moment' Pilot will combine multiple, highly innovative data collection methodologies to explore injecting drug use

- In this way, we will be able to isolate physiological biomarker data occurring at the same time as an injecting episode described in EMA questionnaires, with the injected drugs confirmed by drug residue testing

- The demonstration study already implemented provides vital insights for the expanded project, planned for implementation in January 2023

- Internationally, multiple groups are working to develop new and sophisticated interventions to respond to drug overdose

- The 'In The Moment' Pilot will help further international efforts to design wearable devices that can identify drug overdose and provide response, potentially by alerting emergency services, or even automatically injecting naloxone (2)

Methodology

- 50 participants will be recruited via the Melbourne Injecting Drug Use Cohort (SuperMIX, (3) study

- During study involvement, participants will complete baseline and endline data collection, recording brief demographic and drug use data. Lung function will also be recorded at both time points

- Over a three-month study period, participants will be requested to complete three study activities:

Ecological Momentary Assessment

- Participants will be provided with a smartphone to self-complete confidential, web-based, brief quantitative questionnaires for each injecting episode. Data will record drugs used, location of injection, injecting partners and injecting risk
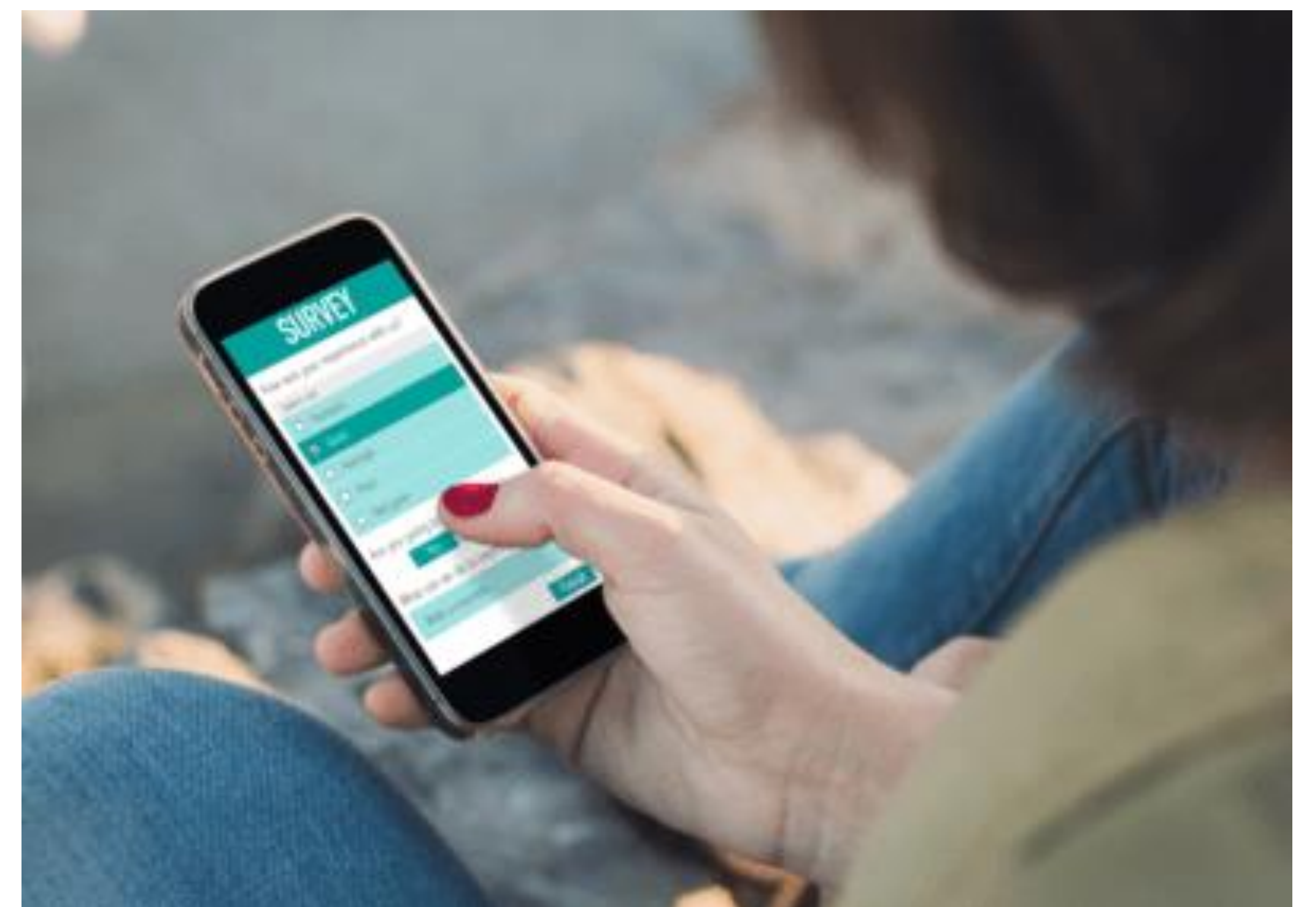
Daily wearing of a biomarker recording device

- Participants will wear a device for three months that will record physiological biomarker (heart rate, respiratory rate, oxygen saturation), both during periods of drug use and non-drug use

Participant not wearing device

Return of used needles/syringes for drug residue testing

- Participants will periodically return needles/syringes previously used to injecting drugs (with date/time of injecting episode recorded) for drug residue testing

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2. Volkow, N., et al., *The Role of Science in Addressing the Opioid Crisis.* 2017, New England Journal of Medicine, 377(4)
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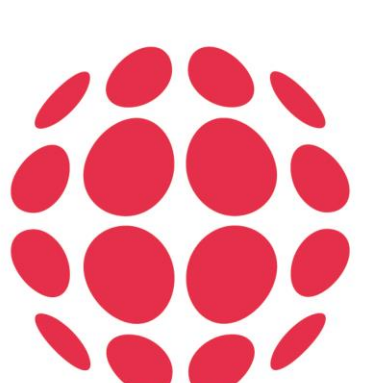
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