Time-series analysis of presentations to four syringe dispensing machines and a needle and syringe program during COVID-19 lockdowns in Melbourne, Australia

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Background:
Australian harm reduction services are provided via a mix of modalities, including fixed-site needle and syringe programs (NSP) and syringe dispensing machines (SDMs). SDMs are cost-effective and provide 24-hour anonymous access to needles/syringes, often to underserved geographic areas, and can attract clientele who may choose not to use NSPs. The introduction of COVID-19 control measures saw disruptions and adaptations to the provision of harm reduction services. It is possible that SDMs filled the gap in otherwise disrupted harm reduction services in Melbourne.
In this paper, we use data from four SDMs and an NSP to explore changes to harm reduction usage during periods of COVID-19 lockdowns in Melbourne, Australia in 2020.

Methods:
Our data spans September 2017 to December 2020. We analysed daily counts of SDM use and monthly counts of NSP use, according to unique presentations to both. Auto-regressive integrated moving average (ARIMA) time-series models were fitted to the data with the effects of lockdowns estimated via a step function.

Results:
Across the study period, we estimated 85,851 SDM presentations and 29,051 NSP presentations. Usage across both the SDMs and the NSP declined during the COVID-19 lockdowns, but only the decline in SDM usage was significant in ARIMA analysis.

Conclusion:
Along with declines in drug use, the slight, but significant decline in SDM use might suggest possible barriers to access, though this may have been mitigated by SDM users acquiring needles/syringes from other sources. The decline, however, may be a concern if it led to lowered needle/syringe coverage and subsequent increase in injecting risk. Further work is needed to properly explore potential changes in preference for needle/syringe acquisition site and associated barriers. Importantly, this work adds to the body of literature around the impacts of COVID-19 on harm reduction provision and potential areas of improvement.

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All other authors have nothing to declare.