

## BRIEF REPORT

## COVID-19 vaccine acceptability among people in Australia who inject drugs: Implications for vaccine rollout

PAUL M. DIETZE<sup>1,2</sup> , CRISTAL HALL<sup>1</sup>, OLIVIA PRICE<sup>3</sup>, ASHLEIGH C. STEWART<sup>1</sup> , SIONE CRAWFORD<sup>4</sup>, AMY PEACOCK<sup>3</sup>  & LISA MAHER<sup>1,5</sup>

<sup>1</sup>Behaviours and Health Risks Program, Burnet Institute, Melbourne, Australia, <sup>2</sup>National Drug Research Institute, Curtin University, Melbourne, Australia, <sup>3</sup>National Drug and Alcohol Research Centre, UNSW Sydney, Sydney, Australia, <sup>4</sup>Harm Reduction Victoria, Melbourne, Australia, and <sup>5</sup>Kirby Institute, UNSW Sydney, Sydney, Australia

### Abstract

**Introduction.** Vaccine acceptability is a key determinant of vaccination uptake. Despite being at risk of adverse outcomes from coronavirus-19 disease (COVID-19), COVID-19 vaccine acceptability among people who inject drugs is unknown. We surveyed people who inject drugs in Melbourne, Australia to assess potential uptake of COVID-19 vaccines prior to distribution. **Methods.** Cross-sectional study, comprising interviewer-administered structured telephone interviews completed from 30 November to 22 December 2020 in Melbourne, Australia. Participants were people aged 18 years or older who injected drugs at least monthly in the past 6 months and had resided in Melbourne in the past 12 months recruited via needle-syringe programs and word-of-mouth. **Measurements.** COVID-19 hypothetical vaccine acceptability, participants' demographic, drug use and drug treatment characteristics. **Results.** Fifty-eight percent (57/99) of the sample reported that they would definitely or probably be vaccinated for COVID-19, with the remainder indicating that they would not (22%) or were undecided (20%). Among those who indicated that they would definitely or probably not be vaccinated or were undecided ( $n = 42$ ), safety concerns were most often cited as a reason for not wanting to be vaccinated. **Discussion and Conclusions.** Although a majority of sampled people who inject drugs indicated that they would definitely or probably be vaccinated, efforts to reduce hesitancy and allay COVID-19 vaccine safety concerns will be necessary to optimise vaccine uptake among this population. [Dietze PM, Hall C, Price O, Stewart AC, Crawford S, Peacock A, Maher L. COVID-19 vaccine acceptability among people in Australia who inject drugs: Implications for vaccine rollout. *Drug Alcohol Rev* 2022;41:484–487]

**Key words:** COVID-19, people who inject drugs, hypothetical vaccine acceptability, vaccine hesitancy.

### Introduction

Immunisation against coronavirus-19 disease (COVID-19) will be key to recovery from the COVID-19 pandemic. Unprecedented efforts have resulted in the development of safe and efficacious vaccines and many countries have now commenced vaccine rollout with high-risk groups, such as frontline health-care workers and the elderly typically prioritised [1].

People experiencing substance use disorders, including people who inject drugs, may experience a range

of connected morbidities and precarious living circumstances that place them at risk of adverse health outcomes if infected with SARS-CoV2, the virus that causes COVID-19 [2,3]. In this context, it has been suggested that people who inject drugs should be a priority population for vaccination [1,4].

Surveys of the general population have shown that vaccine readiness or acceptability varies greatly across countries and by population characteristics, including cultural and political differences, within countries [5,6].

Paul M. Dietze PhD, Professor, Director of Behaviours and Health Risks Program, Cristal Hall BSW, Research Assistant, Olivia Price MPH, Research Officer, Ashleigh C. Stewart MPH, PhD Candidate and Research Assistant, Sione Crawford, Chief Executive Officer, Amy Peacock PhD, Senior Research Fellow, Lisa Maher PhD, NHMRC Senior Research Fellow and Honorary Senior Principal Research Fellow, Burnet Institute, Head of the Viral Hepatitis Epidemiology and Prevention Program, Kirby Institute, Professor in the Faculty of Medicine, UNSW Sydney. Amy Peacock and Lisa Maher are joint last authors. Correspondence to: Professor Paul M. Dietze, Burnet Institute, 85 Commercial Road, Melbourne, Vic. 3004, Australia. Tel: +61 (3) 932822111; E-mail: paul.dietze@burnet.edu.au

Received 1 June 2021; accepted for publication 16 October 2021.

In Australia, hypothetical acceptability of a COVID-19 vaccine has regularly been assessed among adults, with 79% of Victorians indicating that they ‘would be willing to be vaccinated if a new coronavirus (COVID-19) vaccine became publicly available’ in November 2020 [7]. However, studies of vaccine acceptability rarely include key populations, such as people who use drugs. One study found 53% of a sample of people with substance use disorders in the USA (majority in recovery) surveyed in September 2020 (prior to the release of the first vaccine efficacy studies) indicated hypothetical willingness to accept a COVID-19 vaccine [8]. However, vaccine acceptability among people who inject drugs is currently unknown.

To address this gap, we examined hypothetical COVID-19 vaccine acceptability among a sample of people who inject drugs from Melbourne, Australia, who were recruited in late November to December 2020 prior to vaccine distribution. We aimed to determine:

1. COVID-19 vaccine preparedness among the sample; and
2. Barriers to COVID-19 vaccination among those who indicated that they would be hesitant or unwilling to be vaccinated.

## Methods

The Illicit Drug Reporting System (IDRS) is a drug surveillance system [9] that includes annual interviews with a cross-sectional sample of people who inject drugs recruited from all Australian capital cities (target  $n = 100\text{--}150$  per city) via needle and syringe programs and word-of-mouth between May and July [9]. While annual data collection proceeded nationally from June to September 2020, an additional cross-sectional sample of 100 participants was recruited from 30 November to 22 December 2020 in Melbourne, the capital city of Victoria. This sample was recruited to ascertain effects of the strict 4-month COVID-19 lockdown in Melbourne. At the time, a second wave of COVID-19 cases was subsiding in Victoria (peak daily new cases of 111 on 28 March and 725 on 5 August 2020, respectively), stringent social mobility restrictions were being eased, and initial results from Phase III trials of a number of candidate vaccines were released [10]. This second sample was asked questions regarding COVID-19 vaccine acceptability, which form the focus of the current study (see Appendix A for further information).

Participants were recruited via flyers placed at needle and syringe programs and directed to phone the

study coordinator to assess eligibility. Participants were eligible if they were  $\geq 18$  years of age and reported  $\geq$ monthly injection of illicit/non-prescribed drugs in the 6 months preceding the interview. Informed verbal consent was obtained and interviews were conducted via phone or videoconference (e.g. Zoom), typically lasting 45 min to 1 h. Participants were reimbursed AUD40 for their time.

Ethical approval was granted by the Alfred Hospital Human Research Ethics Committee.

## *Vaccine acceptability measures*

We examined vaccine acceptability through the following question ‘If a COVID-19 vaccine was to become available to everyone in Australia, do you think you would have it yourself?’. Response options comprised: ‘definitely not’, ‘probably not’, ‘I’m not sure yet’, ‘probably yes’, ‘definitely yes’. Those who endorsed the former three response options were asked a follow-up question about the reason(s) for being unsure or not wanting to be vaccinated, which were coded by the interviewer into a list of pre-specified response options developed previously and checked and modified during piloting.

## *Statistical analysis*

Sample characteristics are reported descriptively and presented as a valid per cent (categorical outcomes) or mean (continuous outcomes). Descriptive statistics of vaccine acceptability responses and reasons for being unsure or not wishing to be vaccinated were generated.

## Results

Of the 100 participants, the mean age was 41.7 years, the majority (61%) identified as male, most (90%) reported that they were not currently employed, 35% reported that they did not have year 10 or higher education, one-quarter reported being arrested in the previous year and 25% (16/91 valid responses) indicated that there were unstably housed. Although these sample characteristics are similar to those of samples recruited through the IDRS over time, a higher percentage of our sample reported current drug treatment (65%) than the IDRS sample recruited nationally earlier in 2020 (48%) [11]. Most (62%) participants reported that they were in good health and only 17%

indicated that they were currently concerned about contracting COVID-19.

### *COVID-19 vaccine acceptability*

Ninety-nine of the 100 participants responded to the vaccine acceptability question. Forty-eight percent indicated they would definitely have the vaccine with another 10% indicating they would probably have the vaccine. Fifteen per cent indicated they would definitely not have the vaccine, 7% indicated they would probably not have the vaccine and the remaining 20% who answered the question indicated that they were undecided. Among those who were undecided or unwilling to be vaccinated ( $n = 42$ ), the most frequently nominated concerns related to vaccine safety (57%), with a minority indicating they did not think the vaccine was necessary because COVID-19 was not that serious in most people (14%). Few (<5) indicated they were against vaccines in general and so would not 'accept any vaccines for myself so would not accept COVID-19 vaccine' and there were small numbers of responses related to other concerns.

### **Discussion**

We found the majority of people who inject drugs surveyed indicated they would definitely (48%) or probably (10%) be vaccinated against COVID-19. Nevertheless, this figure was 21% lower than that observed in a contemporary survey of the Victorian population (79%) [7], and slightly higher than that observed in a survey of people with substance use disorders in the USA (53%) [8].

Participants who indicated they were undecided or unwilling to be vaccinated most frequently cited safety concerns, the reason also most often cited in surveys of the broader Australian population [7]. Encouragingly, few indicated their reluctance stemmed from negative attitudes towards vaccination in general. Coupled with the findings of a substantial minority of participants indicating they were undecided about whether they would have a vaccine, these findings suggest targeted education around COVID-19 vaccine safety and utility may be needed to ensure widespread uptake among people who inject drugs. Such targeted education should make use of established communication channels, including peer networks and organisations that represent people who use drugs.

The study sample size was small. Further, recruitment was restricted to metropolitan Melbourne and,

as such, is unlikely to be representative of the broader Australian population of people who inject drugs. We also relied upon self-report data which may be subject to social desirability bias, although research has shown self-reported drug use and related behaviours to be sufficiently reliable and valid [12]. In addition, hypothetical vaccine acceptability may not ultimately reflect actual vaccine uptake, meaning a range of interventions may be required [13].

### **Conclusion**

A majority of a sample of people who inject drugs surveyed in Melbourne, Australia indicated that they would definitely or probably accept a COVID-19 vaccine. However, a significant minority indicated that they were undecided or unwilling to be vaccinated. Findings also suggest that it will be important to address safety concerns in this group with tailored efforts that utilise trusted sources of information, such as peers to assure people who inject drugs that COVID-19 vaccines are safe and effective in preventing serious disease.

### **Acknowledgements**

We would like to thank the participants of the study and Emma Woods, Michael Curtis, Filip Djordjevic and Ellie Walker who conducted interviews. We also thank the Chief Investigators and the broader Drug Trends team, past and present, for their contribution to the IDRS. AP, LM and PD are supported by NHMRC Research Fellowships (#1174630, #1154839 and #1136908). The Illicit Drug Reporting System and the National Drug and Alcohol Research Centre are supported by funding from the Australian Government Department of Health under the Drug and Alcohol Program. The Burnet Institute gratefully acknowledges the funding provided under the Victorian Research Operating Infrastructure Fund.

### **Conflict of Interest**

AP has received an untied educational grant from Seqirus for a post-marketing study of tapentadol and an untied educational grant from Mundipharma for a post-marketing study of oxycodone. PMD has received an untied educational grant from Indivior for a study of buprenorphine depot. PMD has received investigator-driven funding from Gilead sciences for

work related to hepatitis C. All other authors have no conflicts of interest to declare.

## References

- [1] Iversen J, Peacock A, Price O, Byrne J, Dunlop A, Maher L. COVID-19 vaccination among people who inject drugs: leaving no one behind. *Drug Alcohol Rev* 2021;40:517–20.
- [2] Wang QQ, Kaelber DC, Xu R, Volkow ND. COVID-19 risk and outcomes in patients with substance use disorders: analyses from electronic health records in the United States. *Mol Psychiatry* 2021;26:30–9.
- [3] Volkow ND. Collision of the COVID-19 and addiction epidemics. *Ann Intern Med* 2020;173:61–2.
- [4] Iversen J, Sabin K, Chang J *et al.* COVID-19, HIV and key populations: cross-cutting issues and the need for population-specific responses. *J Int AIDS Soc* 2020;23:e25632.
- [5] Lazarus JV, Ratzan SC, Palayew A *et al.* A global survey of potential acceptance of a COVID-19 vaccine. *Nat Med* 2021;27:225–8.
- [6] Sallam M. COVID-19 vaccine hesitancy worldwide: a systematic review of vaccine acceptance rates. *medRxiv* 2021.
- [7] Roy Morgan Research. Available at: <https://www.roymorgan.com/findings/8604-gallup-international-survey-covid-19-opinion-questions-november-2020-202012211153>.
- [8] Mellis AM, Kelly BC, Potenza MN, Hulsey JN. Trust in a COVID-19 vaccine among people with substance use disorders. *Drug Alcohol Depend* 2021;220:108519.
- [9] Peacock A, Karlsson A, Uporova J *et al.* Illicit Drug Reporting System (IDRS) interviews 2020: background and methods. Sydney: National Drug and Alcohol Research Centre, UNSW Sydney, 2021.
- [10] Polack FP, Thomas SJ, Kitchin N *et al.* Safety and efficacy of the BNT162b2 mRNA Covid-19 vaccine. *N Engl J Med* 2020;383:2603–15.
- [11] Peacock A, Uporova J, Karlsson A *et al.* Australian drug trends 2020: key findings from the National Illicit Drug Reporting System (IDRS) interview. Sydney: National Drug and Alcohol Research Centre, UNSW Sydney, 2021.
- [12] Darke S. Self-report among injecting drug users: a review. *Drug Alcohol Depend* 1998;51:253–63; discussion 67–8.
- [13] WHO Technical Advisory Group on Behavioural Insights and Sciences for Health. Behavioural considerations for acceptance and uptake of COVID-19 vaccines: meeting report. Geneva: World Health Organization, 2020.

## Appendix

### COVID-19 cases and restrictions in Victoria

Victoria's first confirmed COVID-19 case was reported on 25 January 2020. Cases grew swiftly, with a total of 71 cases in Victoria on 16 March, when a state of emergency was declared in Victoria. This declaration gave the Chief Health Officer a wide range of powers to confer onto health officials, including the ability to detain people, impose restrictions on areas of the state and enforce self-quarantine on return from overseas travel. Non-essential gatherings were prohibited, forcing pubs and clubs to close.

As cases increased, Melbourne was placed in Stage 3 restrictions on 30 March, when 56 new cases were recorded, bringing Victoria's total to 821. Stage 3 restrictions limited gatherings to a maximum of two, and directed people to only leave the house for four essential reasons: food and supplies, exercise, medical care, work and education.

As the infection rate slowed, Stage 3 restrictions were progressively relaxed from 12 May, allowing people to gather outdoors in groups of 10 and indoors in groups of 5. Pubs, clubs and other hospitality venues remained open for takeaway only, limiting people's ability to socialise.

Restrictions were reintroduced on 1 July. The Victoria–New South Wales border closed on 6 July. The second peak of 725 new cases occurred on 5 August, shortly after the introduction of stage four restrictions (2 August). Restrictions began to ease again on 27 September, with zero new cases reported on 24 November 2020.