Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

understand barriers to vaccine uptake in a group underrepresented in current research and with lower vaccine uptake. Participants indicated their intentions on a six-point scale.[3] We found that 871 (42·5%) intended to get a COVID-19 vaccine as soon as possible, 467 (22·8%) would get it when they had time, 177 (8·6%) would delay being vaccinated, 223 (10·9%) planned to avoid getting it for as long as possible, 121 (5·9%) said that they would never get a COVID-19 vaccine, and 191 (9·3%) were unsure.

In adjusted analyses, higher perceived threat of COVID-19 (adjusted odds ratio 0·92 [95% CI 0·88–0·97]), increased concern about getting COVID-19 (0·24 [0·16–0·37] for very concerned *vs* not at all concerned), greater confidence in the government (0·54 [0·49–0·60]), and higher trust in institutions (0·58 [0·52–0·63]) were associated with increased intention to vaccinate (appendix pp 1–2). Participants with the lowest level of education had lower intentions to vaccinate (1·33 [1·03–1·72] for high-school or less *vs* university educated).

The top three reasons for lower intention to vaccinate were not knowing enough about how safe a COVID-19 vaccine would be (60·6%; 458 of 756), concern about blood-clotting risk (27·5%; 151 of 1500), and worry about long-term side-effects (26·3%; 185 of 704), supporting previous findings.[4]

At the time of the survey, two vaccines were approved in Australia: Pfizer-BioNTech (Comirnaty) and Oxford-AstraZeneca (Vaxzevria). Among our sample, 63·3% (1297 of 2050) preferred the Pfizer-BioNTech vaccine, whereas 4% (81) preferred the Oxford-AstraZeneca vaccine. Pfizer-BioNTech was consistently perceived as being more effective than Oxford-AstraZeneca (appendix p 2).

Separate to issues affecting vaccination intention, our findings also reflect access barriers. When asked what makes it hard to get a COVID-19 vaccine, 908 (44·3%) of 2050 reported lack of vaccine supply and 668 (32·6%) said that the waiting time is too long. Further barriers included the vaccination site being too far away (8·9%, 182), inconvenient opening times (7·8%, 160), being unable to leave work (6·3%, 129), or caring duties (4·8%, 98). 462 (22·5%) stated that they would feel "not at all" comfortable going to a mass vaccination clinic to receive a vaccine. 420 (20·5%) did not know how to book an appointment and 318 (17%) had been unable to book an appointment.

These findings highlight key areas that need immediate attention to ensure the long-term success of vaccine programmes globally. Public health messaging needs to continue targeting groups with lower education and trust to address motivational barriers to vaccination and explicitly acknowledge and alleviate the vaccine safety concerns of this younger cohort. This survey identified small but critical practical barriers to vaccine uptake which must be urgently managed by authorities for populations to reach vaccination targets.

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Many countries have approved the use of Pfizer-BioNTech's mRNA BNT162b2 vaccine for children aged 12–17 years,[1] and there are safety and efficacy trials underway in children younger than 12 years.[2] Published research examining parents' hesitancy to vaccinate their children against COVID-19 has been based on data from samples selected using non-probability-based selection methods, which are not likely to be representative.[3]

We report data from the August 2021 Australian National University (ANU) COVID-19 impact monitoring survey,[4] a nationally representative, predominantly online survey examining parental vaccine hesitancy. The survey was done 1 month before the Australian Government advised that children aged 15–17 years were allowed to be vaccinated. Of the 3125 adults surveyed, 763 were living in households with at least one child younger than 18 years. For each child, parents were asked: "If a safe and effective vaccine to prevent COVID-19 were available to <NAME>, would you make the decision for them to…?". Responses for 1368 children were provided, with 581 (42·5%) indicating that they would definitely, 497 (36·3%) would probably, 156 (11·4%) would probably not, and 134 (9·8%) would definitely not get their child vaccinated. Parents with

children aged 15–18 years had the highest percentage responding that they would probably or definitely get their child vaccinated (87·1%; 264 of 303), followed by parents of children aged 5–9 years (77·2%; 280 of 363), 10–14 years (76·5%; 316 of 413), and 0–4 years (71·6%; 207 of 289).

We found several demographic characteristics associated with vaccine hesitancy (answers probably or definitely not) among parents in a probit regression model (appendix). Parents of older children, parents who were aged 18–24 years or older than 45 years compared with parents aged 35–44 years, and those with greater household income were more likely to want their child vaccinated. Parents were less likely to want their child vaccinated if they were Aboriginal or Torres Strait Islander, spoke a language other than English at home, had a vocational qualification, or lived outside of Sydney.

A second model added parents' vaccination status or, if not vaccinated, vaccine intentions (appendix). Parents' vaccine resistance (definitely not get vaccinated) or hesitancy (probably not) were the strongest correlates of not wanting their child to be vaccinated. Importantly, parents who indicated that they probably will get vaccinated but have not got vaccinated yet had significantly lower vaccine intentions for their children than parents who were vaccinated. Our findings suggest that over 70% of Australian parents are likely to want to get their child vaccinated and confirm that parents' own vaccine hesitancy is the strongest correlate of their intentions for their children.

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Increased risk of hospitalisation and death with the delta variant in the USA

Increased hospitalisation risk with SARS-CoV-2 delta (B.1.617.2) variant infection compared with alpha (B.1.1.7) variant infection in unvaccinated people was reported by Katherine Twohig and colleagues in the UK (hazard ratio [HR] 2·32 [95% CI 1·29–4·16])[1] and Peter Bager and colleagues in Denmark (3·01 [2·02–4·50]).[2] To corroborate these results in the USA, as well as to examine risk of intensive care unit (ICU) admission or death, we analysed a large cohort of unvaccinated COVID-19 cases within the Veterans Health Administration (VHA) using the previously described COVID-19 Shared Data Resource.[3]

In the absence of available genomic confirmation of SARS-CoV-2 variant, we used two time periods: the first before substantial delta variant detection in the USA (Feb 1–May 15, 2021) and the second with clear dominance by the delta variant (July 10–Aug 31, 2021).[4] Patient characteristics are described in the appendix. During the delta surge, patients were more likely to be younger and female, and there were lower rates of comorbidities. Comparing delta and pre-delta timeframes, and adjusting for age, race, ethnicity, gender, body-mass index, diabetes, hypertension, chronic obstructive pulmonary disease, cardiovascular disease, and kidney disease, there was a significant increase in the risk of hospitalisation (HR 1·93 [95% CI 1·84–2·03]), ICU stay (odds ratio 2·29 [2·12–2·47]), and death (HR 2·15 [1·93–2·39]). Stratifying by age (<50 years *vs* ≥50 years), we found that although not statistically different, the increase in risk of death with the delta variant seemed higher for those younger than 50 years (HR 3·31 [2·05–5·34]) than those aged 50 years and older (2·09 [1·88–2·34]).

See Online for appendix

These results show that in a population of unvaccinated VHA patients, infection with the delta variant conferred an approximately two-fold increased risk of hospitalisation, consistent with previous studies.[1,2] Furthermore, the concomitant increase in risk of ICU admission and death, despite controlling for numerous risk factors, is concerning. Better powered studies should examine whether the increase in risk is disproportionately large in those younger than 50 years. A limitation of the study is that the VHA population has high rates of comorbidities and might not be reflective of the US population. However, our analysis reports an increase in risk between variants within the same population, rather than providing an estimation of absolute risk. Considering that vaccination still protects against adverse outcomes due to the delta variant,[5] evidence of delta variant infection increasing the risk of hospitalisation and death among all age groups should inform vaccination policies.

We declare no competing interests. This study used data created and maintained by the Veterans Health

See Online for appendix