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ARTICLE

From speculative to real: community attitudes towards government COVID-19 vaccine mandates in Western Australia from May 2021 to April 2022

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Abstract
Many governments employed mandates for COVID-19 vaccines, imposing consequences upon unvaccinated people. Attitudes towards these policies have generally been positive, but little is known about how discourses around them changed as the characteristics of the disease and the vaccinations evolved. Western Australia (WA) employed sweeping COVID-19 vaccine mandates for employment and public spaces whilst the state was closed off from the rest of the country and world, and mostly with no COVID-19 in the community. This article analyses WA public attitudes during the mandate policy lifecycle from speculative to real. Qualitative interview data from 151 adults were analysed in NVivo 20 via a novel chronological analysis anchored in key policy phases: no vaccine mandates, key worker vaccine mandates, vaccine mandates covering 75% of the workforce and public space mandates. Participants justified mandates as essential for border reopening and, less frequently, for goals such as protecting the health system. However, public discourse focusing on 'getting coverage rates up' may prove counter-productive for building support for vaccination; governments should reinforce end goals in public messaging (reducing suffering and saving lives) because such messaging is likely to be more meaningful to vaccination behaviour in the longer term.

Keywords: vaccination; mandatory; COVID-19; policy; attitudes

1. Introduction

During the pandemic, governments employed mandates for COVID-19 vaccines to drive high uptake. Vaccine mandates impose consequences on the unvaccinated to promote compliance, attempting to change the behaviour of those who would otherwise refuse (Attwell *et al.*, 2021*a*). COVID-19 vaccine mandates took a range of forms, including vaccine passports for access to public spaces, and requirements for some fields of employment (Attwell *et al.*, 2021*a*). Private and non-government entities such as businesses and universities also instituted their own requirements for staff, customers, students and clients (Beyer, 2021; Morris, 2021; Attwell *et al.*, 2022*a*).

A number of attitudinal studies have been undertaken globally about the public acceptability of COVID-19 vaccine mandates (Attwell *et al.*, 2021*a*; Caserotti *et al.*, 2022; Stead *et al.*, 2022), many identifying factors associated with mandate support (Smith *et al.*, 2021; Slotte *et al.*, 2022; Sprengholz *et al.*, 2022) and some focusing on affected occupational groups (Riccò *et al.*, 2021; Attwell *et al.*, 2022*a*, 2022*b*, 2022*c*; Dietrich *et al.*, 2022; Lee *et al.*, 2022; Woolf *et al.*, 2022).

As we would expect, support for COVID-19 vaccination is generally a strong predictor of support for mandates. Recent quantitative and qualitative studies in Australia found that public attitudes towards COVID-19 vaccine mandates have generally been positive (Attwell *et al.*, 2021*a*; Smith *et al.*, 2021). A German quantitative study explored the public's changing attitudes towards mandates over time (Sprengholz *et al.*, 2022), but ultimately mandates were not introduced there. Little is known about how attitudes towards vaccine mandates change as the policies are implemented in one's own jurisdiction.

A recent contribution (Attwell *et al.*, 2022*b*) outlined an analytical framework to inform research on vaccine mandates, providing an analysis of the policy lifecycle from (a) *emergence* to (b) *policy design*, (c) *policy decision-making*, (d) *policy implementation* and finally (e) *evaluation*. The article identifies how different types of research questions gain prominence depending on the phase(s) of the cycle a particular study focuses on. Studies focused on the *emergence* of a mandate may analyse who is deploying the mandate, and the target population. At the *design* level, questions move to the target population and setting (e.g. employees in their workplaces, or the general public in hospitality settings) as well as the consequences (what happens to members of these target populations who do not vaccinate). The *decision-making* stage looks at why governments or the private sector introduce mandatory vaccination policies and their justifications for doing so. *Implementation* attracts questions around how mandates are announced and enforced, while *evaluation* interrogates the mandate's impact on the target population, including their attitudes towards the policy as well as their intended or actual uptake of vaccines. Because this present article analyses the changing attitudes of the public towards mandates both before and after their introduction, it covers the entirety of the policy cycle. However, in focusing on evolving public attitudes in Western Australia, it concentrates predominantly on *emergence* and *evaluation*, considering how the population reacts to the possibility – and then to the established reality – of mandatory vaccination policies for COVID-19. Public attitudes may inform whether or how governments introduce mandates; there is strong empirical evidence for public opinion affecting government decisions on other policy issues (Burstein, 2003). Public attitudes also connect to the perceived legitimacy of policies. Questions of legitimacy and related perceptions of the utility and value of vaccine mandates may underscore whether the general population and co-opted enforcement agents (such as hospitality workers checking vaccine certifications) comply with their requirements (Helps *et al.*, 2018; Navin *et al.*, 2021; Harvey and Attwell, 2022).

2. Policy background

In Australia, police powers and decision-making for pandemic control measures rest largely with state governments. This meant that during the pandemic, decisions about internal border closures, lockdowns, and vaccine mandates were undertaken at a subnational level (Gillespie *et al.*, 2022; Rizzi and Tulich, 2022). WA employed the country's most sweeping COVID-19 vaccine mandates in 2021 and 2022. It provides a novel case compared to other jurisdictions inside and outside Australia, because most governments introduced vaccine mandates in a context where the disease was present in the community. This meant that people's attitudes towards mandates – and indeed the vaccines themselves – were informed by lived experience of the pandemic and the risks posed by going to workplaces, hospitality venues and community events. By contrast, WA implemented its mandates in a context of virtually no community transmission of the disease, due to the successful adoption of an elimination strategy (Gillespie *et al.*, 2022). In the early days of the pandemic, the state government erected a hard border preventing the entry of new arrivals or returned travellers, requiring hotel quarantine for the few who were permitted to enter. This largely kept COVID-19 out of the community, and – until early 2022 – the few community cases were met with short, sharp lockdowns of the metropolitan region that stopped the disease from spreading further.

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A second important factor underpinned WA's vaccine mandates: the state's vaccine rollout faced challenges due to national supply problems. Australia's reliance on the Oxford AstraZeneca vaccine (now called VaxRevia) was undone by a safety scare (Gillespie *et al.*, 2022). In states like WA, where there was no community transmission, authorities advised younger people to wait for Pfizer vaccines and many were denied access to AstraZeneca (Australian Government Department of Health and Aged Care, 2021; Gillespie *et al.*, 2022). Scarce Pfizer vaccines and the lack of local transmission led to a sluggish rollout. While at-risk populations and health professionals were eligible from February 2021 and older people began to receive access sequentially by age, most Australian aged under 50 could not access Pfizer vaccines until after July 2021. By this time, New South Wales was experiencing an outbreak of the Delta variant and the Australian Technical Advisory Group on Immunisation (ATAGI) advised residents to accept any available vaccine. The state of Victoria was soon in the same situation. As noted above, this meant that COVID-19 vaccine mandates introduced in those states were governing populations in markedly different circumstances from WA.

2.1 Phase 1: no mandates

Previously published attitudinal research found that some Western Australians delayed COVID-19 vaccination early in the rollout on the basis of not feeling at risk of contracting the disease (Carlson *et al.*, 2022*a*). Some were waiting for the announcement of a border reopening, while others were hesitant because communications and outreach to minority populations were late to commence; still others were delayed due to access barriers (Carlson *et al.*, 2022*b*). The state government wanted to reopen borders only once vaccination rates were sufficiently high to prevent an outbreak from overwhelming the health system. Yet some people were not going to vaccinate until they perceived a strong reason to do so, particularly because waiting meant that others could be vaccinated ahead of them, making them feel more secure about the vaccines' risk and safety profile. During this time, a small-scale vaccine mandate applied only to workers in the state's quarantine hotels who faced high exposure to the virus and might bring it into the wider community (Government of Western Australia, 2021*a*). For the rest of the population, vaccines remained voluntary. On top of a large public communication campaign, 'Roll Up for WA', and a range of pop-up clinics and vaccine access opportunities across the state, it became evident that vaccine mandates might be required to attain vaccination coverage rates high enough for the government to feel confident opening the border.

2.2 Phase 2: key worker mandates

Introducing vaccine mandates for some key occupational groups was a decision that the WA government made in concert with other state and national governments. On 8 August 2021, the WA Government announced that residential aged care workers would need their first dose of a COVID-19 vaccine by 17 September 2021 in order to access residential aged care facilities (and hence keep their jobs), in keeping with a national agreement (Australian Government Department of Health, 2021*a*). On 2 September 2021, the government announced a healthcare worker vaccine mandate, with tier one healthcare workers including intensive care units, respiratory wards and emergency departments to have had their first dose by 1 October and second dose by 1 November (Government of Western Australia, 2021*b*). Second tier workers, including other health care and health support workers, required their first dose by 1 November and second dose by 1 December (Australian Government Department of Health, 2021*c*). All other health workers required their first dose by 1 December and their second by 1 January 2022. Mining is a key sector in WA; the state government mandated vaccinations for all mining and resource sector workers, announcing on 5 October that these individuals would require their first dose by 1 December 2021 and their second dose by 1 January 2022 (Government of Western Australia, 2021*d*).

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2.3 Phase 3: mandates cover 75% of the workforce

Following targeted mandates, the state's largest round of employment mandates was announced on 20 October 2021 (Government of Western Australia, 2021*e*). These combined with existing mandates to cover 75% of the state's working population (Shine, 2021). Grouped into two categories, workers in professions considered high transmission risk, vulnerability risk or necessary/critical to the safety of the community were required to receive one dose by 1 December and their second dose by 31 December. The second group, including industries and workforces deemed critical to the ongoing delivery of business and functioning of the community, required their first dose by 31 December 2021 and their second by 31 January 2022. This mandate covered workers in supermarkets, schools, critical infrastructure and restaurants.

For all workforce mandates introduced by government, implementation and enforcement rested with the employer in the first instance. This placed a significant burden on employers, who became liable to pay fines up to $100,000 for failure to require and adequately store evidence of vaccination by their workers (Government of Western Australia, 2021*f*). Individual workers in breach of the mandate were liable to pay fines up to $20,000. Falsification of proof of vaccination would attract prosecution for fraud (Trigger, 2022).

An update provided on 22 December required any WA worker who came under a vaccine mandate to have a third dose within one month of being eligible to do so (Government of Western Australia, 2021*g*).

2.4 Phase 4: public space mandates

The WA government announced on 13 January 2022 that public space mandates (vaccine passports) would be implemented from 31 January. Two vaccination doses were required to enter spaces including, but not limited to, public and private hospitals, all hospitality venues, indoor entertainment venues, gyms, major stadiums and large events (Government of Western Australia, 2022*a*). WA did not add a third dose to this requirement, which was withdrawn on 29 April (Government of Western Australia, 2022*b*).

2.5 Border reopening

The '75% of the workforce' and public space mandate announcements were inextricably linked to government decision-making about reopening the closed state border (Government of Western Australia, 2021*h*). Because WA was in a unique position of being able to vaccinate its population ahead of reopening, government discourse promoted the idea that high coverage rates were needed to safely reopen without inviting a surge of cases, to limit the number of serious cases needing hospitalisation and to best protect the vulnerable (Government of Western Australia, 2022*c*). Premier Mark McGowan stated that the aim of 'mak[ing] sure that we are prepared and our vaccination rates are right, particularly for those who are older or immunocompromised' (Shine, 2022). Government officials attributed high coverage to a 'safe, sensible and responsible' reopening, and pointed to 'WA being one of the only places in the world to achieve a high third dose rate before widespread community transmission'. The emphasis on the need for high coverage rates was so strong that the initial plan to reopen was delayed on 20 January 2022, with McGowan declaring the objective of getting the third dose vaccination coverage rate 'up above at least 80%, perhaps 90%' from its rate (at the time) of 25.8% for people aged over 16 years (Carmody, 2022).

3. Research background

The research team conducted a large qualitative project regarding community attitudes towards COVID-19 vaccines between January 2021 and April 2022. Prior to the development and registration of COVID-19 vaccines, we sought to understand the ways that government might

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mandate the population's receipt of them, and how the public thought and felt about such strategies, particularly in light of emergent epidemiological factors. Analysing qualitative interview data collected from 44 West Australians up to May 2021, the team found nuanced attitudes amidst overall support for hypothetical vaccine mandates (Attwell *et al.*, 2021*a*).

This present article picks up where that one left off, using data collected from May 2021 until April 2022. As noted above, in May 2021, vaccine mandates remained hypothetical for the vast majority of the population. In the ensuing period, COVID-19 vaccine mandates were introduced in WA, other Australian states, and across the world. This prompted the research team to seek to understand how the Western Australian public regarded COVID-19 vaccine mandates across a period of significant local, national and international mandate policy implementation.

4. Methods

Between 16 May 2021 and 20 April 2022, we interviewed 151 members of the Western Australian public about their attitudes towards COVID-19 vaccine mandates. As per the previous study described above, this study of mandate attitudes formed part of a broader study of people's vaccination information sources, the influence of their social networks on decision-making and their views of other vaccine policy and programme features such as safety surveillance. The sub-studies were designed to operate in two distinct ways. We recruited specific population groups who were important to the rollout's success based on their demographic characteristics or employment and reported these findings by group. However, we also sought to monitor real-time community sentiment regarding important features of vaccine policy, such as programme changes, mandates, and vaccine safety surveillance; for these studies we utilised data collected across the life of the project or – as in the case of the present paper – from its second half. In these cross-cutting sub-studies, we focused on the shared attributes of participants living through dynamic policy and disease settings rather than emphasising their employment or other group characteristics. This approach underpins the present work.

The method implemented in this present study was based on a protocol published by Attwell *et al.* (2021*b*). In brief, individuals belonging to a range of community cohorts and employment categories were targeted for qualitative interviews and recruited via media promotion, word-of-mouth and snowballing. Interested individuals signed up via an online REDCap survey (Harris *et al.*, 2009, 2019), which collected demographic data and contact details. Prospective participants were telephoned or emailed to organise a face-to-face or telephone interview.

Interviews were conducted by experienced qualitative researchers and junior researchers under their supervision. Interviews were approximately 60 minutes in length, with discussions of mandate policies lasting between 5 and 25 minutes depending on the expansiveness of interviewee responses to the mandate questions, the policy settings at the time, and how much explanation was required to help the researchers reach a shared conceptual understanding with participants. All interviews followed a semi-structured guide that our interdisciplinary study team collaboratively designed and tested with volunteers, adapting it over time to reflect contemporary events and policy settings. The mandate questions explored attitudes towards types of potential or real mandatory vaccination polices, the circumstances in which participants would support mandates, and exemption categories (see Appendix A; see also detailed question guide for entire project in open access protocol (Attwell *et al.*, 2021*b*)). In the earlier policy phases, context was offered during interviews of real-life mandates that were coming online elsewhere, with interviewers asking more specific questions as the mandate policy landscape changed. Some questions were not asked or answered in detail across all interviews due to rapidly evolving disease and policy developments (Attwell *et al.*, 2021*b*).

During the period of this present cross-cutting study (May 2021 to April 2022), the team were interviewing older Australians over 65 (3), people with comorbidities (10), workers in healthcare (31), aged care and education sectors (11), parents with children aged under 18 (with the 45

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parents asked detailed questions about their vaccination views as individuals), people who lived in regional areas (20), people from culturally and linguistically diverse backgrounds who were proficient in English (11) and pregnant women (8). Some participants belonged to more than one category. Data collection within sub-studies generally covered more than one policy phase due to the lengthy timelines associated with recruitment. The purposive recruitment of the cohorts described above is reflected in the demographic characteristics of the participant group as a whole, as well as during specific policy phases (Table 1). While this was clearly not a representative sample of the WA population, participants were important to WA's vaccination policy either because they were in public-facing roles that supported societal functioning, or because they were at risk of being insufficiently considered during the vaccine rollout, making their voices valuable. More generally, the wider project sought to capture the relationship between lived experience and attitudes and perceptions of all participants to stand in for the population of WA, which is diverse in many ways (e.g. employment, background, age). Accordingly, the present cross-cutting study represents answers to questions asked of all participants in their capacity as WA residents, rather than as members of any specific group. Each participant was interviewed once and hence appears in only one phase.

Participants in a purposively recruited vaccine hesitant and refusing sample of 17 individuals were excluded from this cross-cutting study and will be reported elsewhere (manuscript in development); we felt that including this group would distort our focus on mainstream population groups in a context of widespread vaccine uptake. However, some interviewees recruited in other population and workforce groups also reported being hesitant about vaccinating against COVID-19 and are included here.

All interviews were audio recorded and transcribed verbatim, then specific questions and answers pertaining to COVID-19 mandates were collated for the present study. Some occupational groups (healthcare and aged care workers) had been asked additional questions about mandates applying to their specific professions. As that data were specific to those occupational group experiences, we excluded it from this study; some of it has been reported elsewhere (Attwell *et al.*, 2022*c*). However, all participants' general attitudes towards mandates are included in the present study.

All participants provided informed verbal or written consent to be interviewed and pseudonyms have been used. Ethics approval was granted by the Child and Adolescent Health Services Human Research Ethics Committee (RGS0000004457).

Data were coded by the second author through an iterative process using NVivo 20. Interviewees were grouped and analysed by date. We constructed four policy phases to reflect WA's mandate announcements, since announcement rather than enforcement date provided the cue for action. The first, 'no mandates', ran from 16 May 2021 to 7 August 2021. The second phase, 'key worker mandates', ran from 8 August 2021 to 19 October 2021. The '75% workforce phase' ran from the announcement on 20 October 2021 to 12 January 2022, when the 'public space' phase layered over the top of workforce mandates. The final interview conducted in this fourth phase was on 20 April 2022 (see Figure 1 for dates, policy overview and interviews per phase). Phase-based analysis was employed after data collection for the wider project ceased, and the constantly evolving policy landscape meant that we could never know during data collection whether a type of mandate would be introduced or not, hence how long a particular phase would last. For these reasons, the number of people in each phase differs (this was also affected by external factors such as the holiday shutdown during the third phase). As we had almost ceased data collection by the time that public space mandates were announced, the sample was particularly small for that phase, reflecting operational constraints and compromises within a dynamic large-scale project. All employment mandates were subsequently withdrawn after our data collection ceased, on 1, 10 and 15 June 2022, except for some people employed in health and social sectors (Government of Western Australia, 2022*b*).

Participants' mandate attitudes within each phase were analysed deductively as a set based on the answers they provided in the interviews. First, we used the framework developed for the

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Table 1. Demographic characteristics of interviewees

Phase	Characteristic	Number (%)
1: '*no mandates*' From 16 May to 7 August 2021 *N* = 66	*Median age (years)*	47.5
	Female	46 (70%)
	Born in Australia	35 (53%)
	Religion	
	Christian religion	33 (50%)
	No religion	27 (41%)
	Industry of employment	
	Education and training	9 (14%)
	Health care and social assistance	41 (62%)
	Other	16 (24%)
	University degree	55 (83%)
	*SEIFA score**	
	1–4	17 (26%)
	5–7	11 (17%)
	8–10	38 (57%)
2: '*key workers*' 2 September–19 October 2021 *N* = 50	*Median age (years)*	41.5
	Female	17 (34%)
	Born in Australia	32 (64%)
	Religion	
	Christian religion	13 (26%)
	No religion	29 (58%)
	Industry of employment	
	Education and training	11 (22%)
	Health care and social assistance	14 (28%)
	Other	25 (50%)
	University degree	39 (78%)
	*SEIFA score**	
	1–4	18 (36%)
	5–7	9 (18%)
	8–10	23 (46%)
3: '*75% workforce*' 20 October 2021–12 January 2022 *N* = 25	*Median age (years)*	36.5
	Female	19 (76%)
	Born in Australia	16 (64%)
	Religion	
	Christian religion	8 (32%)
	No religion	15 (60%)
	Industry of employment	

(*Continued*)

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Table 1. (*Continued.*)

Phase	Characteristic	Number (%)
	Education and training	11 (44%)
	Health care and social assistance	6 (24%)
	Other	8 (32%)
	University degree	21 (84%)
	*SEIFA score**	
	1–4	5 (20%)
	5–7	8 (32%)
	8–10	12 (48%)
4: '*Public space*' 13 January–April 2022 *N* = 10	*Median age (years)*	33.5
	Female	7 (70%)
	Born in Australia	7 (79%)
	Religion	
	Christian religion	4 (40%)
	No religion	6 (60%)
	Industry of employment	
	Education and training	2 (20%)
	Health care and social assistance	3 (30%)
	Other	5 (50%)
	University degree	5 (50%)
	*SEIFA score**	
	1–4	1 (10%)
	5–7	3 (30%)
	8–10	6 (60%)

*The SEIFA (Socio-Economic Index For Areas) is a ranking system developed by the Australian Bureau of Statistics. It ''ranks areas in Australia according to relative socio-economic advantage and disadvantage" based on information gathered from the Census. This data was developed from the ''Ranking within State or Territory" > Decile numbers from the 2016 ''Postal Area (POA) Index of Relative Socio-economic Advantage and Disadvantage" [1]. The higher the number, the more well-off the area is, based on postcodes. 1. Australian Bureau of Statistics. 2033.0.55.001 Socio-Economic Indexes for Australia (SEIFA), 2016. 2016. Available from: https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/2033.0.55.0012016

earlier mandates attitudes study (Attwell *et al.*, 2021*a*) to classify participants as either supporting, having nuanced perspectives or opposing mandates of various types or applied to various target groups. Inductive analysis was subsequently conducted upon the interview transcripts within each set to ascertain attitudes and beliefs typical to each phase, with a focus on mandates-as-speculative versus mandates-as-real-policy. Once all phases were analysed, trends and patterns that changed over time were investigated across all the sets, building upon the inductive coding to draw out the emergent themes reported here.

5. Results

We coded 151 participants within the four different phases. Figure 1 provides a policy overview of the four phases, including the numbers of participants included in each phase based on time of interview. Table 1 reports their demographic characteristics.

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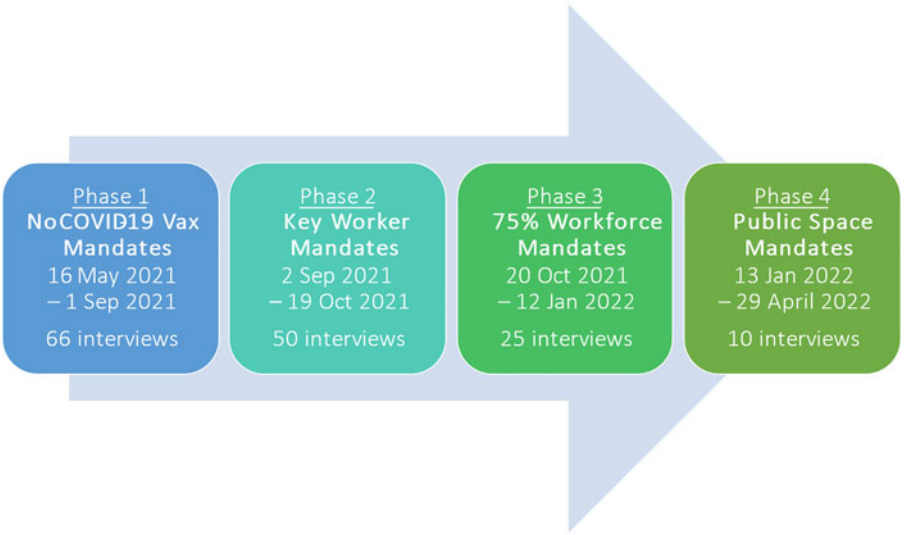

Figure 1. Policy phase overview and interview numbers.

5.1 General overview

Several of our findings were in keeping with the previous paper (Attwell *et al.*, 2021*a*), when mandates were hypothetical. Participants generally supported the government mandating COVID-19 vaccines, particularly for travel. Some continued to regard mandates introduced by government as having greater validity compared to private businesses introducing such measures, while others believed it was highly legitimate for private businesses to make their own rules for their employees and visitors. Participants supported government mandates for some occupations more than for others, particularly aged and healthcare workers, education workers and additional essential sectors such as fly-in-fly-out mining. As the government added additional categories of worker to the suite of mandates, participants in later phases articulated support for workers in a wider range of public-facing roles being subject to vaccine requirements. Participants also demonstrated a more nuanced understanding of how mandates are designed and operate (e.g. they could spontaneously discuss the role and function of medical exemptions without the interviewers needing to explain such details) compared to the previous study. We cannot trace a causal relationship between these increasing levels of 'mandate literacy' and support for mandates as a policy measure. However, shared common understanding between interviewers and participants, especially about exemptions, helped us to capture participants' views about how coercive the policies should be, and for whom.

A novel development was the increase in participants articulating the necessity of mandates for opening the WA border, which is a major theme elaborated below. Nevertheless, participants in phases 1 and 2 also recognised that mandates would not be viable while vaccine supply issues remained in place.

> *If everybody that could have it did have it and there were medical … exemption[s], that would be fine, and then make a rule that everyone had to have it. But … my son can't get it 'cause they're not to the under 40s yet.* Trish (No Mandates)

A minority of participants in the earlier phases ('No mandates' and 'key workers') depicted themselves as not in a rush to vaccinate *and* not in a rush for the WA government to reopen the state's border. These participants therefore opposed the use of mandates to hasten these events.

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Attwell *et al.* (2022*a*) described the concept of 'collective requirements', whereby governments would use vaccine targets to determine the imposition or removal of other disease-control policies. The most pertinent example of this to emerge in WA during the study period was the 'carrot' of the border reopening only once a particular vaccination target was achieved. The government also threatened that residents of regions with low coverage would be subject to internal closures (McGuirk, 2021; Kagi 2022). Collective requirements remained supported throughout the present study as a 'fair' measure. However, the reasoning behind them changed over time as participants focused specifically on how high vaccination coverage rates could unlock new policy settings regarding lockdowns (earlier phases) and border reopening (later phases).

In the earlier phases, support for collective requirements focused on how high vaccination rates could reduce the need for lockdowns every time there was an instance of community transmission.

> *I think that lockdowns are really restrictive and hopefully the more people they get vaccinated, the higher the rates are. Then maybe we wouldn't have to see lockdowns that are so harsh. I think that they really impact people and businesses as well.* Sara (No Mandates)

As time progressed, the focus of support for collective requirements was no longer avoiding lockdowns, but instead pushing vaccination rates high enough to open the state's borders safely.

> *We can't be locked down and sort of closed off forever, so we do have to open at some point, and I think that's really probably the safest and most logical choice to make as a percentage of us are protected by the vaccine.* Zaara (75%)

Some participants also expressed that collective requirements would help to protect regional areas and the state's remote Aboriginal communities from being infected by visitors following the state's reopening.

> [*I*]*t's actually a sensible approach, because 80%* [*vaccine coverage*] *only covers the metro area because that's where people live, most people in WA, and it won't actually mean an increase in vaccination rates in regional WA. It's down to maths and public health measures … 90% is needed. There's a lot of vulnerable remote Aboriginal communities and there's a lot of regional centres that have poor health infrastructure.* Jia (75%)

5.2 Treating high coverage as the goal: mandating vaccines for border reopening

Participants' support for mandates and collective requirements drew upon shifting logics over time, with attitudes towards both policies becoming increasingly oriented towards the state's reopening. For residents – following the lead of the state's government – vaccination coverage rates were inextricably linked to speculation and anticipation of the border reopening. This meant that other people's vaccine acceptance affected the entire population. The level of vaccine coverage in the community would have implications for limiting the spread of disease once the border reopened, but it would also determine the conditions and timeline for when this reopening would occur, as discussed above. Participants thus constructed their support for vaccine mandates and collective requirements in part because they saw these policies as facilitating a return to pre-pandemic movement and lifestyle within and beyond Australia. From such a perspective, mandates were not agency-constraining, but agency-enabling. You might not have a choice about vaccinating, but the policies would deliver other – very tangible – freedoms.

The apparent core purpose of vaccine mandates – protecting public health – often appeared within such reasoning as a distinctly second-tier consideration. Attaining high vaccine coverage – a purely instrumental objective from a public health perspective – became the key focus. This

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was articulated eloquently by Rachel, who discussed how vaccine mandates were a successful strategy 'over east', in other Australian states where the disease was rampant.

> *I think* [*mandating vaccines has*] *worked well for over east in getting the vaccination numbers up. It seems to have been an incentive for those States to get vaccinated because it means that they do get those freedoms back again faster, so it seems to have been a successful approach there.* (Rachel, 75%).

The vaccine mandates that Rachel described in Australia's eastern states were accompanied by legitimating discourses that highlighted how vaccinated individuals were best placed to begin interacting with each other, escaping lockdowns and re-joining what Victorian Premier Daniel Andrews called 'the vaccinated economy' (Boaz, 2021). Victorians could reclaim individual freedoms and opportunities by becoming vaccinated, even if their neighbours or friends chose to stay locked down. Rachel went on to reflect that WA's COVID-19 mandates worked differently.

> *WA seems to be having to go more for the mandating to get the same numbers* [*as the Eastern states*] *because they don't have … people being locked down and having that incentive to get vaccinated, or the fear of getting the virus and getting really sick. Because it's not here at the moment….* Rachel (75%)

The logic of the 'vaccinated economy' – freedom from lockdowns for workers and for people seeking to enjoy social and public spaces – did not work in WA. Businesses and schools had remained largely open and a semblance of 'normal life' continued unabated within the state's closed borders. (This privilege was not lost on our participants: Jurgen (75%) described it as being like 'Christmas every day'.) Likewise, public fear of the disease remained muted without community transmission, incapable of driving up voluntary vaccination. Because WA was in a holding pattern for much of 2021, with no date to reopen, limited access to vaccines, and little to no community spread, public discourse frequently focused on vaccine coverage rates as the only thing that would drive a new policy setting of open borders. The border opening was not something that could be achieved differentially for vaccinated and unvaccinated individuals, as per the policy settings of the 'vaccinated economy' in Victoria. The population really was, as the saying goes, 'all in this together'. Accordingly, participants commonly discussed lifting vaccine coverage rates as an end in itself. Even though they were thankful for the reprieve from disease that the state's border closure had achieved, it was time to reopen, and collective requirements and vaccine mandates were seen as key to achieving this.

> *We have to open up, … we can't be locked up, we can't be kept … Look, it's been great… but we're gonna have to open the borders, and when you do that, COVID will come into the State. And look, it needs to happen. And this is why we need to get as much people vaccinated as possible.* Jurgen (75%)

However, once the reopening became imminent, participants started to talk in more detail about the core purposes of mandates, such as their reduction of the spread and severity of disease. During the 75% and 'public space' phases, the circumstances of WA's reopening began to play out in more expansive reflections about protecting the vulnerable and the state's '*hospital system*' (Zaara, 75%). Damien (75%) framed his support in terms of WA's '*large population of people who are immune compromised, elderly, disabled in some way*', reflecting that '*it's more about how your actions of not taking the vaccine is going to affect other people, and if two jabs can stop me from accidentally killing four people then I'll take two jabs*'.

Using this same logic, most participants supported the government raising the percentage of coverage needed for reopening WA's border under the state's collective requirement to 90%.

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I was a bit taken aback when they jumped to 90% before they would open it up … But look, if it means another month that's nothing out of two years, really, if it means that less people will be affected or die. Maira (75%)

5.3 Shifting goalposts

Despite often indicating a belief that COVID-19 vaccines would provide high levels of protection against infection, participants – particularly in later periods – also began to reflect on vaccines being '*perhaps not as effective as they thought* [*they were*] *going to be*' (Rachel, 75%). This affected their support for mandates.

It's a bit hard to understand the reason behind the mandates when the vaccine … doesn't completely stop people passing on the virus to others, so that people who are vaccinated can still be going into aged care and passing it onto residents. Rachel (75%)

For Sheena, mandates made sense when high vaccination rates could support disease elimination. She used the example of polio vaccine mandates in the 1950s in several countries, describing the population being '*very happy to have polio vaccination and the eradication of that as a disease*'. Sheena used this logic to express that '*mandating a COVID vaccination for as many people as who can have it is appropriate*' but that she felt uncomfortable '*forcing people who are ideologically opposed to it*' (Key Workers).

Participants also began to take a longer view, reflecting on what life in WA might look like after reopening. Some began to add in a time period qualification to their mandate support:

I agree with it because people aren't … getting done. And if I want to be able to go into one of those places and be safe. I want to know that I'm in there with other people who are vaccinated not unvaccinated, so I agree with that… I don't know how I'll feel about it if, in two years' time, they're still [*mandating the vaccines*]. Phoenix (Public Space)

The final few participants interviewed for this project were asked about mandating third doses of the vaccine, as this was coming onto the policy agenda. Most supported the inclusion of a third dose, and again employed reasoning about protecting the health system.

Absolutely. Anything else, hospitals will fill up, you know. The initial strains gave us one set of strategies and then Delta came along, and we had another set of strategies, and now it's Omicron. You know, two [*doses*] *probably would've done the job with Delta, but it's sure as hell not doing it with Omicron and we need those third shots in arms to make sure the system doesn't get overwhelmed.* Redgum (Public Space)

However, Phoenix (Public Space) thought the line should be drawn at two mandated doses:

I think if you've got the two and you're comfortable with that you should not be forced to then have the third … there should be a certain amount of choice around that.

5.4 Public space mandates: the final battle for reopening

By the time that the WA government announced its public space mandate, a date for reopening had been set (although it was subsequently postponed), and the 75% workforce mandate had been announced nearly three months prior. Public space mandates had long been a discussion point, especially as other states introduced them as a means of reopening after lockdowns.

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However, public space mandates presented a unique proposition in WA: they would exclude unvaccinated people from social and community life in a context of no community transmission, and hence could not rely upon a 'real-time' rationale of keeping those spaces safe for others. To use Victorian Premier Dan Andrew's framing, public space mandates in WA would create a 'vaccinated economy', but they would do so overnight and in a context where nothing else had changed. This meant that the optics would be quite different. Nevertheless, participants generally supported public space mandates, both prior to and after this became policy. They often drew upon unvaccinated people's capacity to infect others and the social relations implicit in vaccination decisions in their endorsement.

Michelle (75%) said of a vaccination requirement for public spaces '*I don't see a problem with it, personally*', and noted that it made her feel safer, reflecting that '*a lot of people have had the vaccination for a reason, to protect people or protect themselves*'. From such a perspective, vaccine refusal was not simply a personal matter, as Zaara (75%) concurred: '*You're putting yourself at risk and then that puts people who can't be vaccinated to risk so it's not their choice, so it's your choice…[Y]ou can make that choice for yourself but you're still affecting people who can't have that choice… I don't see a problem with saying: you're not vaccinated, you don't get to participate*'.

Other participants were less enthusiastic about public space mandates compared to employment mandates for key workers, but nevertheless believed it was a worthwhile policy. It was legitimate for government to 'up the stakes' of vaccine refusal when the population mingled in social spaces, and for vaccine refusers to bear the exclusion.

> *It's one of those things where you can choose. And if you feel so strongly about it* [*that*] *you're not going to get vaccinated, you then need to be willing not to go into restaurants and gyms… and all of those other restrictions to keep the majority of us safe*. Polly, (Public Space)

Some participants felt uncomfortable about excluding people from public spaces and noted issues with implementation and the pressures placed on businesses to enforce.

> *It's clearly been very difficult to set up and a major hurdle for all sort of people in all sorts of situations, let alone specific cases*. Redgum, (Public Space)

However, these individuals nevertheless still supported the policy. Those who spoke against it, particularly before reopening, were concerned about the discriminatory aspect of the measure in the context of no community spread of COVID.

> *It would be pretty upsetting again for the people who aren't being vaccinated, just because we haven't needed to be vaccinated for the last two years…* [*I*]*n WA it's not running rampant, it's not spread, so why would you need to then 'up the defence' against it, if we're already beating it?* (Dylan 75%).

6. Discussion and conclusions

This study of 151 Western Australians regarding vaccine mandate attitudes over time allows a series of observations following the lifecycle of the policy from *emergence* to *evaluation*. We found continued support for employment, travel and public space mandates as these moved from speculative to real.

In analysing how discourses about mandates changed over time, we uncovered that participants increasingly focused on mandates as a means of attaining high vaccine coverage required to reopen WA's border. Then, as this reopening became imminent, they extended their focus to the core purposes that high vaccination rates are instrumental to achieving, such as limiting the

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spread of illness and protecting the vulnerable. Participants discussed the latter both in the terms of preventing infection and keeping the health system functioning.

Preventing infection and protecting the vulnerable also re-emerged as goals once public space mandates came onto the policy agenda, reflecting the findings of previous scholarship that mandates focused on social interaction often prompt people to think in terms of limiting the spread of disease and making spaces safe for others (Attwell *et al.*, 2021*a*; Attwell and Navin, 2022). This focus on safety may have been particularly pertinent because uncertainty and fear were such features of the pandemic, even in WA. Public space mandates could be seen as providing reassurance that the relative risk of infection would be reduced, even if it could not be prevented, as WA finally reopened.

The distinction between instrumental objectives and the core purposes they contribute to achieving was an important theme in this study, and likely reflects WA's unique COVID-19 experience. The emergency context of COVID-19 prompted governments to protect human life, critical infrastructures and societal functioning, often in a context of high uncertainty and perceived zero-sum outcomes (Boin and Lodge, 2021). Vaccines became an important weapon in governments' arsenal to mitigate the impacts of the virus. In routine childhood immunisation programmes, achieving high vaccination rates generates community protection, often called 'herd immunity', when most of the population is vaccinated and the disease cannot circulate. This protects people who cannot be vaccinated or for whom vaccines do not produce an immune response. The prominence of the idea of community protection renders high vaccine coverage rates as a perceived end goal or core purpose in itself, since high rates produce the ideal state of a society free from the relevant disease. This reasoning has underpinned policymakers' support for mandating childhood vaccines, particularly because mass vaccination protects the vulnerable, including the immune-compromised (Attwell and Navin, 2022).

For much of the COVID-19 pandemic, policymakers, the scientific community and the public employed a 'herd immunity' rationale, aspiring to vaccination programmes that could eliminate or eradicate the disease and restore 'normal life' (Bardosh *et al.*, 2022; Chapman *et al.*, 2022; Weinberg, 2022). This may have been particularly resonant in WA because brief lockdowns and closed borders had managed to maintain 'normal life' inside the state's bubble. Absent the clear and present danger of the virus in the community, and facing a shortage of vaccine supply for the first half of 2021, some individuals opted to 'Wait Awhile' for a greater sense of threat, even when they could access vaccines (Carlson *et al.*, 2022*a*). As evidence emerged from the rest of the world that the virus was outstripping vaccine efficacy, focus moved instead to the vaccines reducing serious illness in individuals, thereby also reducing individuals' capacity to spread the disease to others. This change in focus nevertheless supported the reasoning that COVID-19 vaccination offers social benefits, but – as some of our participants noted – the community protection case for mandating vaccinations is less clear when vaccinated people are still infectious.

In such a context, it is noteworthy that 'getting coverage rates up' remained a central basis of support for COVID-19 vaccine mandates throughout our study period, and that this goal began to stand in for another goal: border reopening. The state government had set the terms for reopening during the frequent press conferences emblematic of adaptive governance during the pandemic (Roberts *et al.*, 2023). The government impressed upon the population that the destruction and chaos experienced in other states and countries would be avoided if the state achieved high vaccination rates. This rationale underpinned the delay of the reopening in January 2022, in the context of the Omicron variant and during a period in which adults could newly access third doses and children under 12 could access first doses (Government of Western Australia, 2022*d*). It is likely that for both the highly popular state government and for the public, reopening had to 'succeed', particularly in light of external political opposition to the state's long closure.

The logic of 'lifting coverage rates' by using mandates thus served the goal of making WA's reopening a success. Participants still articulated the protective properties of high vaccine

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coverage rates, invoking 'the system' and 'hospitals', as well as reciprocity and obligation, as they justified public space mandates excluding unvaccinated people from social spaces where they might infect others. However, 'lifting coverage rates' became somewhat divorced from the end goal of a functional society, and simply turned into a criterion to be satisfied for reopening.

Attwell *et al.* (2021*a*) asked people their views about mandates in a context where there were no mandates, but also very few vaccines! By contrast, participants in this present study were more likely to have been vaccinated, especially as time progressed. It is also worth noting that support for mandates, collective requirements, and changes to coverage targets would be inextricably linked to the immense popularity of the McGowan Labor Government and the significant political capital it accrued during the pandemic. Western Australians resoundingly rewarded Labor for keeping COVID-19 out of the state at both state and federal elections during the pandemic (Green, 2021; Mayes, 2022).

This study has limitations and strengths, and indicates areas for future research. As qualitative research, it cannot be generalisable to the WA population or any broader group. There was a heavier weighting of people working in healthcare and social assistance compared to the general population. Such people may be more oriented towards collectivist goals and supportive of mandates than people in other professions, especially due to regular interactions with vulnerable clients who are at risk of infection. Data were collected by different researchers, which may have impacted its quality and content, although this was mitigated by the supervision of a core team of three researchers, including the lead author. The core team trained other researchers and ensured consistent use of the standardised protocol and question guide (although questions evolved over time to reflect new disease and policy settings). Analysis for the present study was conducted by a single researcher (the second author) in regular supervision with the lead author, which facilitated consistency of the analytical approach. There were different numbers of participants interviewed over different phases, including a relatively small number in the final phase with the end of data collection for the project. This poses a challenge for analysis in terms of diversity in demographic and mandate sentiment during that phase, for which we did not reach thematic saturation. However, the data still allowed us to analyse the evolution of attitudes in a dynamic policy setting, and represented a balance between what was feasible and what would have been ideal from a research design perspective. We have not compared the same individuals' attitudes over time. Difficulty interviewing participants during the festive shutdown between 2021 and 2022 unfortunately coincided with some significant policy developments towards the end of our data collection period – this was yet another challenge of conducting research in a dynamic policy setting with finite resources and without the ability to predict policy changes ahead of time for the purpose of research design. The location of this research in WA, with its unique context, is both a limitation and a strength. The experience may not tell us about public attitudes towards mandates in the context of rampant disease, as was the case in much of the world. However, it can help us to understand the problems that temporary disease elimination can generate in terms of people delaying vaccine uptake, and how vaccine mandates become very attractive to populations in settings where individuals are relying upon each other to collectively create the conditions for reopening.

Future research conducted in a similar scenario could map attitudinal changes towards mandates in real-time across the same individuals, either qualitatively or quantitatively. It would also be beneficial to map the findings of this present research to official state government discourse over time, and to measure alignment with key political talking points – for example, the shift in emphasis from lockdowns to reopening, and the focus on high coverage rates for reopening as an end in itself.

Most of WA's vaccine mandates have now been rolled back, and the state's uptake of fourth and subsequent doses of the vaccines has been sluggish compared to the extremely high coverage of the three mandated doses (Australian Government Department of Health and Aged Care, 2022). Western Australians were willing supporters of vaccines and mandates ahead of the state's reopening.

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However, re-joining the rest of the world has led both the government and the public to tolerate low booster coverage rates in a setting of high disease burden but low morbidity and mortality. For many reasons, widespread vaccine mandates for COVID-19 would be highly inappropriate now.

More broadly, looking back on the justifications for vaccine mandates based on 'lifting coverage rates', this strategy may have proved counter-productive in the longer term, even as it served the much-needed goal of reopening the state's border. WA's coverage of the fourth (non-mandated) dose in eligible people was amongst Australia's lowest (Bridges, 2023). There were numerous reasons for this (including high rates of COVID-19 in the community and recent infection being a contraindication for vaccination). However, it indicates a missed opportunity for earlier mandate messaging to make the case for how vaccination benefits the individual and the collective. We recommend that governments seek to reinforce core purposes in public messaging (reducing suffering, saving lives and maintaining a functional health system) rather than focusing on the instrumental objective of high coverage rates. Such messaging is more inclined to motivate people's behaviour in the longer term – especially once mandates are removed.

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References

Attwell K and Navin MC (2022) How policymakers employ ethical frames to design and introduce new policies: the case of childhood vaccine mandates in Australia. *Policy & Politics* **50**, 526–547. https://doi.org/10.1332/030557321X16476002878591

Attwell K, Rizzi M, McKenzie L, Carlson SJ, Roberts L, Tomkinson S and Blyth C (2021*a*) COVID-19 vaccine mandates: an Australian attitudinal study. *Vaccine* **40**, 7360–7369. https://doi.org/10.1016/j.vaccine.2021.11.056. Available at https://www.sciencedirect.com/science/article/pii/S0264410X21015309

Attwell K, Carlson S, Tchilingirian J, Harper T, McKenzie L, Roberts L, Rizzi M, Westphal D, Effler P, Hughes C, Swift V and Blyth CC (2021*b*) Coronavax: preparing community and government for COVID-19 vaccination: a research protocol for a mixed methods social research project. *BMJ Open* **11**, e049356. https://doi.org/10.1136/bmjopen-2021-049356

Attwell K, Roberts L and Ji J (2022*a*) COVID-19 vaccine mandates: attitudes and effects on holdouts in a large Australian university population. *International Journal of Environmental Research and Public Health* **19**, 10130. https://doi.org/10.3390/ijerph191610130

Attwell K, Rizzi M and Paul KT (2022*b*) Consolidating a research agenda for vaccine mandates. *Vaccine* **40**, 7353–7359. https://doi.org/10.1016/j.vaccine.2022.11.008

Attwell K, Roberts L, Blyth CC and Carlson SJ (2022*c*) Western Australian health care workers' views on mandatory COVID-19 vaccination for the workplace. *Health Policy and Technology* **11**, 100657. https://doi.org/10.1016/j.hlpt.2022.100657

Australian Bureau of Statistics (2016) 2033.0.55.001 Socio-Economic Indexes for Australia (SEIFA), 2016. Available from: https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/2033.0.55.0012016.

Australian Government Department of Health (2021*a*) COVID-19 vaccination to become mandatory for residential aged care workers. Available at https://www.health.gov.au/news/announcements/covid-19-vaccination-to-become-mandatory-for-residential-aged-care-workers (accessed 31 January).

https://doi.org/10.1017/S1744133124000069 Published online by Cambridge University Press

Australian Government Department of Health (2021*b*) COVID-19 vaccination to become mandatory for Western Australian health care workers. Available at https://www.mediastatements.wa.gov.au/Pages/McGowan/2021/09/COVID-19-vaccination-to-become-mandatory-for-Western-Australian-health-care-workers.aspx (accessed 31 January).

Australian Government Department of Health and Aged Care (2021) ATAGI statement on AstraZeneca vaccine in response to new vaccine safety concerns. Available at https://www.health.gov.au/news/atagi-statement-on-astrazeneca-vaccine-in-response-to-new-vaccine-safety-concerns

Australian Government Department of Health and Aged Care (2022). COVID-19 vaccination statistics. Available at https://www.health.gov.au/our-work/covid-19-vaccines/vaccination-numbers-and-statistics#jurisdictional-data (accessed 23 November 2022)

Australian Government Department of Health and Aged Care (2022, 23 November 2022). COVID-19 vaccination statistics. Retrieved 25 November 2022, from https://www.health.gov.au/our-work/covid-19-vaccines/vaccination-numbers-and-statistics#jurisdictional-data.

Bardosh K, de Figueiredo A, Gur-Arie R, Jamrozik E, Doidge J, Lemmens T, Keshavjee S, Graham JE and Baral S (2022) The unintended consequences of COVID-19 vaccine policy: why mandates, passports and restrictions may cause more harm than good. *BMJ Global Health* **7**, e008684. https://doi.org/10.1136/bmjgh-2022-008684

Beyer M (2021) BHP, MinRes mandate COVID vaccination. *Business News*. Available at https://www.businessnews.com.au/article/BHP-MinRes-mandate-COVID-vaccination (accessed 11 November).

Boaz J (2021) The Victorian Premier says the state is heading for a 'vaccine economy', here's what that might look like. *ABC News*. Available at https://www.abc.net.au/news/2021-09-06/daniel-andrews-vaccine-passport-double-vaccinated/100435606 (accessed 2 March 2023).

Boin A and Lodge M (2021) Responding to the COVID-19 crisis: a principled or pragmatist approach? *Journal of European Public Policy* **28**, 1131–1152. https://doi.org/10.1080/13501763.2021.1942155

Bridges A (2023) Western Australia's uptake of fourth COVID-19 booster second-lowest in the country. *ABC News*, 10 January, 2023. Available at https://www.abc.net.au/news/2023-01-10/fourth-covid-vaccine-booster-rates-lagging-in-western-australia/101838870

Burstein P (2003) The impact of public opinion on public policy: a review and an agenda. *Political Research Quarterly* **56**, 29–40. https://doi.org/10.2307/3219881. Available at http://www.jstor.org/stable/3219881

Carlson SJ, McKenzie L, Roberts L, Blyth CC and Attwell K (2022*a*) Does a major change to a COVID-19 vaccine program alter vaccine intention? A qualitative investigation. *Vaccine* **40**, 594–600. https://doi.org/10.1016/j.vaccine.2021.12.021

Carlson SJ, Edwards G, Blyth CC, Nattabi B and Attwell K (2022*b*) 'Corona is coming': COVID-19 vaccination perspectives and experiences amongst culturally and linguistically diverse West Australians. *Health Expectations* **25**(6), 3062–3072. https://doi.org/10.1111/hex.13613

Carmody J (2022) Mark McGowan announces delay to WA border opening amid fears Omicron will 'cripple' state. ABC News. Available at https://www.abc.net.au/news/2022-01-20/wa-border-opening-delayed/100771492 (accessed 2 March 2023).

Caserotti M, Gavaruzzi T, Girardi P, Sellaro R, Rubaltelli E, Tasso A and Lotto L (2022) People's perspectives about COVID-19 vaccination certificate: findings from a representative Italian sample. *Vaccine* **40**, 7406–7414. https://doi.org/10.1016/j.vaccine.2022.08.016

Chapman G, Al Imam MH, Khan A, Smoll N, Adegbija O, Kirk M, Khandaker G and Wiley K (2022) 'Scary to get, more scary not to': COVID-19 vaccine acceptance among healthcare workers in Central Queensland, Australia, a cross-sectional survey. *Communicable Diseases Intelligence* **19**, 1–20. https://doi.org/10.33321/cdi.2022.46.30

Dietrich LG, Lüthy A, Lucas Ramanathan P, Baldesberger N, Buhl A, Schmid Thurneysen L, Hug LC, Suzanne Suggs L, Speranza C, Huber BM, Tarr PE and Deml MJ (2022) Healthcare professional and professional stakeholders' perspectives on vaccine mandates in Switzerland: a mixed-methods study. *Vaccine* **40**(51), 7397–7405.

Gillespie JA, Buchanan J, Schneider CH and Paolucci F (2022) Covid 19 vaccines and the Australian health care state. *Health Policy and Technology* **1–8**, 100607. https://doi.org/10.1016/j.hlpt.2022.100607. Available at https://www.sciencedirect.com/science/article/pii/S2211883722000132

Government of Western Australia (2021*a*) Mandatory COVID-19 vaccination for hotel quarantine workers. Government of Western Australia. 20 April. Available from https://www.wa.gov.au/government/announcements/mandatory-covid-19-vaccination-hotel-quarantine-workers (accessed 1 May 2024).

Government of Western Australia Department of Health (2021*b*) At-risk frontline healthcare workers – Phase 1a. Retrieved July, 2021, from https://www.healthywa.wa.gov.au/Articles/A_E/Coronavirus/COVID19-vaccine/Health-care-workers

Government of Western Australia Department of Health (2021*c*) Health care and emergency services workers – Phase 1b. Retrieved July, 2021, from https://www.healthywa.wa.gov.au/Articles/A_E/Coronavirus/COVID19-vaccine/Health-care-and-emergency-services-workers

Government of Western Australia (2021*d*) COVID-19 vaccine required for workers in the resources industry. Government of Western Australia: Media Statements. Available at https://www.mediastatements.wa.gov.au/Pages/McGowan/2021/10/COVID-19-vaccine-required-for-workers-in-the-resources-industry.aspx (accessed 21 March).

Government of Western Australia (2021*e*) Mandatory COVID-19 vaccination policy to further protect WA. Government of Western Australia: Media Statements. Available at https://www.mediastatements.wa.gov.au/Pages/McGowan/2021/10/Mandatory-COVID-19-vaccination-policy-to-further-protect-WA.aspx (accessed 31 January 2023).

Government of Western Australia (2021*f*) Mandatory vaccination FAQs. Retrieved 21 March, 2023, from https://ww2.health.wa.gov.au/~/media/Corp/Documents/Health-for/Infectious-disease/COVID19/Vaccination/COVID19-Mandatory-vaccination-FAQs.pdf

Government of Western Australia (2021*g*) COVID-19 vaccination third dose now mandatory to keep WA safe. Government of Western Australia: Media Statements. Available at https://www.mediastatements.wa.gov.au/Pages/McGowan/2021/12/COVID-19-vaccination-third-dose-now-mandatory-to-keep-WA-safe.aspx (accessed 31 January 2023).

Government of Western Australia (2021*h*) WA's safe transition plan to provide a soft landing out of pandemic. Government of Western Australia: media statements. Available at https://www.mediastatements.wa.gov.au/Pages/McGowan/2021/11/WAs-Safe-Transition-Plan-to-provide-a-soft-landing-out-of-pandemic.aspx (accessed 21 March).

Government of Western Australia (2022*a*) Proof of vaccination to be expanded state-wide from January 31. Government of Western Australia: media statements. Available at https://www.mediastatements.wa.gov.au/Pages/McGowan/2022/01/Proof-of-vaccination-to-be-expanded-State-wide-from-January-31.aspx (accessed 31 January 2023).

Government of Western Australia (2022*b*) Public health and social measures to ease as WA's soft landing secured. Government of Western Australia: media statements. Available at https://www.wa.gov.au/government/announcements/public-health-and-social-measures-ease-was-soft-landing-secured (accessed 31 January).

Government of Western Australia (2022*c*) WA's safe transition plan and full border opening from March 3. Government of Western Australia: media statements. Available at https://www.mediastatements.wa.gov.au/Pages/McGowan/2022/02/WAs-Safe-Transition-Plan-and-full-border-opening-from-March-3.aspx (accessed 2 March 2023).

Government of Western Australia (2022*d*) Full border opening delayed as part of updated transition plan. Government of Western Australia: media statements. Available at https://www.mediastatements.wa.gov.au/Pages/McGowan/2022/01/Full-border-opening-delayed-as-part-of-updated-transition-plan.aspx (accessed 2 March 2023).

Green A (2021) Western Australia election 2021 results. Available at https://www.abc.net.au/news/elections/wa/2021/results?filter=all&sort=az

Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N and Conde JG (2009) Research electronic data capture (REDCap) – a metadata-driven methodology and workflow process for providing translational research informatics support. *Journal of Biomedical Informatics* **42**, 377–381. https://doi.org/10.1016/j.jbi.2008.08.010

Harris PA, Taylor R, Minor BL, Elliott V, Fernandez M, O'Neal L, McLeod L, Delacqua G, Delacqua F, Kirby J, Duda SN and REDCap Consortium (2019) The REDCap consortium: building an international community of software platform partners. *Journal of Biomedical Informatics* **95**, 1–10. https://doi.org/10.1016/j.jbi.2019.103208

Harvey J and Attwell K (2022) Children, COVID, and confusion: how frontline workers cope with the challenges of vaccine mandates. *Australian Journal of Public Administration* **82**(3), 346–367.

Helps C, Leask J and Barclay L (2018) 'It just forces hardship': impacts of government financial penalties on non-vaccinating parents. *Journal of Public Health Policy* **39**, 156–169. https://doi.org/10.1057/s41271-017-0116-6. https://doi.org/10.1057/s41271-017-0116-6

Kagi J (2022) Western Australia is reopening to the world. These are the rules you'll need to follow. ABC News. Available at https://www.abc.net.au/news/2022-02-19/wa-reopening-covid-explainer/100845108 (accessed 2 March 2023).

Lee JT, Hu SS, Zhou T, Bonner KE, Kriss JL, Wilhelm E, Carter RJ, Holmes C, de Perio MA, Lu P-J, Nguyen KH, Brewer NT and Singleton JA (2022) Employer requirements and COVID-19 vaccination and attitudes among healthcare personnel in the U.S.: findings from national immunization survey adult COVID module, August – September 2021. *Vaccine* **40**(51), 7476–7482. https://doi.org/10.1016/j.vaccine.2022.06.069. Available at https://linkinghub.elsevier.com/retrieve/pii/S0264410X22008386

Mayes A (2022) Election 2022: WA sees huge swing away from the Liberals, with Swan, Pearce, Hasluck lost. ABC News. Available at https://www.abc.net.au/news/2022-05-21/wa-election-result-liberal-loss-alp-gain/101077652 (accessed 15 January).

McGuirk R (2021) Western Australia sets 90 per cent vaccination target for reopening. Stuff. Available at https://www.stuff.co.nz/world/australia/300447662/western-australia-sets-90-per-cent-vaccination-target-for-reopening (accessed 15 January).

Morris M (2021) Shepparton food processor SPC is the first company in Australia to mandate COVID-19 vaccination of all staff. ABC News. Available at https://www.abc.net.au/news/2021-08-05/spc-first-australia-company-to-mandate-covid-vaccine-staff/100351492 (accessed 21 March).

Navin MC, Kozak AT and Attwell K (2021) School staff and immunization governance: missed opportunities for public health promotion. *Vaccine* **40**, 7433–7439. https://doi.org/https://doi.org/10.1016/j.vaccine.2021.07.061. Available at https://www.sciencedirect.com/science/article/pii/S0264410X2100952X

Riccò M, Ferraro P, Peruzzi S, Balzarini F and Ranzieri S (2021) Mandate or not mandate: knowledge, attitudes, and practices of Italian occupational physicians towards SARS-CoV-2 immunization at the beginning of vaccination campaign. *Vaccines* **9**, 889. https://doi.org/10.3390/vaccines9080889

Rizzi M and Tulich T (2022) All bets on the executive(s)! The Australian response to COVID-19. In Grogan J and Donald A (eds), *Routledge Handbook of Law and the COVID-19 Pandemic*. London: Routledge, pp. 457–470.

Roberts L, McKenzie L, Carlson SJ, Tomkinson S and Attwell K (2023) Reopening to the world: how safety, normality and trust in government shape young adults' COVID-19 vaccine intentions. *Australian Journal of Political Science* **58**, 105–123. https://doi.org/10.1080/10361146.2022.2142516

Shine R (2021) Mandatory vaccination to be introduced for most WA workers, Mark McGowan says. ABC News. Available at https://www.abc.net.au/news/2021-10-20/covid-vaccination-to-be-mandatory-for-most-wa-workers/100552664 (accessed 21 March).

Shine R (2022) Mark McGowan has doubled down on WA's hard border – but with rising COVID cases, it may not last. ABC News. Available at https://www.abc.net.au/news/2022-01-30/wa-premier-mark-mcgowan-reopening-date-decision/100788876 (accessed 2 March 2023).

Slotte P, Karlsson LC and Soveri A (2022) Attitudes towards mandatory vaccination and sanctions for vaccination refusal. *Vaccine* **40**(51), 7378–7388. https://doi.org/10.1016/j.vaccine.2022.05.069. Available at https://linkinghub.elsevier.com/retrieve/pii/S0264410X22006971

Smith DT, Attwell K and Evers U (2021) Support for a COVID-19 vaccine mandate in the face of safety concerns and political affiliations: an Australian study. *Politics* **42**, 447–539. https://doi.org/10.1177/02633957211009066. Available at https://journals.sagepub.com/doi/abs/10.1177/02633957211009066

Sprengholz P, Korn L, Eitze S, Felgendreff L, Siegers R, Goldhahn L, De Bock F, Huebl L, Böhm R and Betsch C (2022) Attitude toward a mandatory COVID-19 vaccination policy and its determinants: evidence from serial cross-sectional surveys conducted throughout the pandemic in Germany. *Vaccine* **40**(51), 7370–7377. https://doi.org/10.1016/j.vaccine.2022.01.065

Stead M, Ford A, Eadie D, Biggs H, Elliott C, Ussher M, Bedford H, Angus K, Hunt K, MacKintosh AM, Jessop C and MacGregor A (2022) A 'step too far' or 'perfect sense'? A qualitative study of British adults' views on mandating COVID-19 vaccination and vaccine passports. *Vaccine* **40**(51), 7389–7396. https://doi.org/10.1016/j.vaccine.2022.05.072. Available at https://linkinghub.elsevier.com/retrieve/pii/S0264410X2200696X

Trigger R (2022) Fake COVID-19 vaccination certificates used by Australians to beat mandates and enter venues. ABC News. Available at https://www.abc.net.au/news/2022-02-17/fake-covid-19-vaccination-certificates-used-to-beat-jab-mandates/100839824 (accessed 2 March 2023).

Weinberg J (2022) Trust, governance, and the Covid-19 pandemic: an explainer using longitudinal data from the United Kingdom. *Political Quarterly* **93**, 316–325. https://doi.org/10.1111/1467-923X.13131

Woolf K, Gogoi M, Martin CA, Papineni P, Lagrata S, Nellums LB, McManus IC, Guyatt AL, Melbourne C, Bryant L, Gupta A, John C, Carr S, Tobin MD, Simpson S, Gregary B, Aujayeb A, Zingwe S, Reza R, Gray LJ, Khunti K, Pareek M and Uk-Reach Study Collaborative Group (2022) Healthcare workers' views on mandatory SARS-CoV-2 vaccination in the UK: a cross-sectional, mixed-methods analysis from the UK-REACH study. *EClinicalMedicine* **46**, 101346. https://doi.org/10.1016/j.eclinm.2022.101346

Appendix A

Questions about vaccine mandates

What are your thoughts on rules/guidelines for the vaccine roll-out? For example:

- Do you think the vaccine should be mandated/compulsory?
- For everyone or just some groups?
  - For example, in certain types of employment like Fly-in-Fly Out mining workers, health care workers, aged care workers, education workers.
  - To attend festivals/sporting events, travel overseas or interstate, restaurants, cinema or religious gatherings, etc.).
- Who should be exempt, and why? (e.g. medical reasons, personal beliefs, already have antibodies from having the virus?)
- How should mandates be implemented? Should there be incentives to vaccinate or penalties for not doing so? (e.g. entitlements from Centrelink, tax rebates, fines)
- At what point (if any) do you think vaccine mandates would be appropriate based on % vaccine coverage in the population?
- Do you think it would be appropriate for restrictions to be removed or imposed depending on vaccine uptake)? (e.g. social distancing, large events)
- How do you feel about business/industries implementing their own mandates to employees/consumers?
- How should people have to prove they're vaccinated? (if anti-mandate, what would you be most comfortable with?) Any privacy concerns?

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