

Brief Report

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Barriers and Facilitators to COVID-19 Vaccine Rollout among Health Professional Students: A Qualitative Study from an Organizational Stakeholder Perspective

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Abstract

Objectives: To explore barriers and facilitators experienced by Australian organizational stakeholders in implementing COVID-19 vaccine rollout for health professional students.

Methods: A qualitative study using semi-structured interviews with organizational stakeholders, including senior health department staff, university clinical placement coordinators, and clinical educators across Australia from November 21 to December 20, 2022, via ZOOM. An inductive and then deductive thematic analysis was conducted, guided by the Theoretical Domains Framework.

Findings: Nineteen participants were interviewed. Five key domains were generated: environmental context and resources, attention, decision-making, and goals, professional role and identity, emotion, and optimism. Barriers included top-down communication, inconsistent messaging, and limited vaccine access, leading to negative emotions. Enablers included teamwork, adaptability, and optimism.

Conclusions: The findings offer insights into operational challenges and support during the vaccine rollout. These lessons should inform strategies to overcome similar barriers in future large-scale health interventions or emergency responses.

Introduction

The vaccination mandate for Australian health care workers for vaccine-preventable diseases (VPDs) is considered justified by reducing the risk of infection transmission, including the risk of health care workers infecting vulnerable patients. Before the COVID-19 pandemic, state or territory health policies required health care workers to provide evidence of vaccination or immunity (e.g., for hepatitis B, measles, or mumps) based on their work role risk level. Until recently, health professional students were required to be vaccinated against COVID-19 to undertake clinical placement throughout their study programs.

During the COVID-19 pandemic, the Australian Federal government strongly recommended vaccination against COVID-19 for health professional students entering high-risk settings, such as health facilities, but did not mandate it. This left decision-making on mandating this to state and territory governments, which, in turn, informed education provider vaccination requirement decisions. While scholarly interest in COVID-19 vaccination within health care settings and public health is growing,^{1–5} there is a paucity of literature addressing the experiences surrounding the implementation of the COVID-19 vaccine rollout in Australia. This paper aimed to explore the barriers and facilitators experienced by organizational stakeholders in implementing the COVID-19 vaccine rollout, especially in mandatory COVID-19 vaccination for health professional students.

Methods

Study Design

This was a qualitative study. In preparing this manuscript, we followed the consolidated criteria for reporting qualitative research guidelines (COREQ).⁶ We received ethical approval from the University of the Sunshine Coast Ethics Committee (A211644).

Participants

Participants were chosen purposefully, including those with first-hand experience in the implementation and/or enforcement of the COVID-19 vaccine rollout, including mandatory vaccination requirements for health professional students in Australia. This included state/territory level senior health department staff, university clinical placement coordinators, and clinical educators in health care environments. Participants were purposively recruited via the researchers' professional networks. All participants who were approached consented to participate in the study.

Data Collection

Interviews were conducted between November 21 and December 20, 2022, via ZOOM. An interview guide (see [Supplementary Material](#)) was developed based on our previous work,^{1,2} guided by the Theoretical Domains Framework (TDF).⁷ We piloted the interview guide with two stakeholders and made refinements accordingly. The interviewers (YC, JL, and FL) have extensive experience in qualitative research and had no prior working relationship with the participants. Member checking was performed at the conclusion of each interview, with any issues addressed immediately. Interviews continued until data saturation was achieved. All interviews were recorded via ZOOM and transcribed verbatim before being imported to NVivo software.

Data Analysis

A thematic analysis approach was utilized with data familiarization, coding, and theme identification and refinement.⁸ The two authors (YC and MT) independently analyzed the data inductively by immersing themselves in the data before categorizing the data into codes and sub-codes. A third author resolved disagreements in the data analysis process. Following that, the first author grouped the codes thematically, and a further deductive analysis was undertaken guided by the TDF.⁷ Three authors (YC, MT, and FL) met three times to discuss the data analysis findings. Finally, the other authors checked all codes, sub-codes, and themes, which were discussed and finalized in multiple team meetings.

Findings

Nineteen participants were interviewed ([Table 1](#)). Interview time ranged from 11 to 35 minutes, totaling 495 minutes. Most participants were female (18, 94.7%) and resided in Queensland, Australia (16, 84.2%). Data analysis revealed 5 key domains. We present the domains and themes with supporting quotes and summarize them in [Table 2](#).

Environmental Context and Resources

Information dissemination barriers

Participants reported receiving constantly changing and confusing information during the vaccine rollout, described as “*changing minute by minute*” (ID 1) or “*unpredictability of messaging*” (ID 15). This led to the difficulty of “*keeping up with all those changes*” (ID 5). Hence, participants stated that having an appropriate plan in place was almost impossible. University staff also reported confusing messages from industry partners, such as health

Table 1. Participant characteristics (N = 19)

	n (%) or median (IQR)
Age (n = 14)*	52 (46.3–58.3)
Gender	
Female	18 (94.7)
State	
Queensland	16 (84.2)
Northern Territory	2 (10.5)
New South Wales	1 (5.3)
Position	
Education	10 (52.6)
Health care	7 (36.9)
Government	2 (10.5)
Years of working in this role	6 (2.0–11.0)
Employment status	
Full time	18 (94.7)
Highest education	
PhD	2 (10.5)
Masters	10 (52.6)
Post-graduate	3 (15.8)
Degree	3 (15.8)
High School	1 (5.3)
Role in COVID-19 vaccination	n = 38 ^a Responses n (%)
Decision makers on vaccination policy	6 (15.8)
Responsible for vaccine rollout	7 (18.4)
Dissemination of vaccine information	11 (28.9)
Management of educational programs, including the vaccine uptake in a health care organization	6 (15.8)
Management of educational programs, including the vaccine uptake in an educational institution	6 (15.8)
Others	2 (5.3)

Note: An asterisk * indicates the number of participants with data available. IQR, Interquartile range.

^aPlease note that each participant can provide multiple responses (n = 38).

bureaucrats, that they believed were open to interpretation ([Table 2](#), Q1).

Information was disseminated through multiple layers, which often contributed to communication delays. In universities, senior management first interpreted the health department and senior bureaucrats' directives before releasing information to staff and students. Similarly, in health care, communication flowed from health executives to various health departments and services, and then to individuals. This multi-layered approach prolonged information filtering, leading to inconsistencies and difficulties for health care workers who needed timely updates and clarity before engaging with university staff on student clinical placements ([Table 2](#), Q2).

Table 2. Domains and themes

TDF domains	Themes	Quote	Quote details
Environmental context and resources	Information dissemination	Q1	<i>It was very difficult, because there were staff members, say enrolled nurses, and they could continue working, but because they were there in the capacity of the student, they weren't able to continue placement. (ID 7)</i>
		Q2	<i>We were literally told, on Monday night, that by Wednesday night, everyone needed to be vaccinated, and we're talking about 1000s of people here. So, the challenge was getting that message out as soon as possible. (ID 6)</i>
	Resources	Q3	<i>On the one hand, it was hold back, hold back, we've only got a small amount of vaccine, and there's go, go, go, vax more vax more, and then hold back, hold back so, we were very cautious and careful and really constrained in terms of who was eligible and who wasn't. (ID 10)</i>
Attention, decision-making, and goals	Conveying one message consistently to the students	Q4	<i>It was the constant provision of as much and as current information that we had, that we were able to get out to them, as well as everything that was on the television and being spoken about in the media. ... The reality is if you don't get vaccinated, you will not be going on placement. (ID 17)</i>
	Priority decision-making based on the goals of various stakeholders	Q5	<i>In a perfect world? Yes. But there were actually logistical difficulties in providing vaccinations for everyone we were expected to provide vaccinations to. ... And so there had to be some prioritisation [that staff get vaccination first]. (ID 2)</i>
		Q6	<i>Once you explained things a little bit differently, and with the rationale behind it, you all made them understand a workforce strategy versus a student placement strategy. (ID 14)</i>
Professional role and identity	Being role models for the public	Q7	<i>Isn't it great to have health care providers who are looking after patients at a time where we're all worried about this pandemic? So, I think healthcare students probably saw themselves as providing a vital service and saw themselves in that positive light that the general community we're portraying. (ID 15)</i>
	Teamwork and collaboration	Q8	<i>So, I can't think of a single thing that made it easier apart from the fact that I just have a really amazing team here. Fortunately, we made the decision to form a compliance team that does all pre-placement compliance, not just vaccination. (ID 6)</i>
Emotion	Exhaustion due to the workload	Q9	<i>So, we've traditionally had a couple of 100 over 200 students a week in our placement. It made it difficult to keep track of students coming and going in relation to meeting their requirements. ... because they missed so many weeks or days for whether they got COVID, around the vaccine, or around lockdowns, they all individually require different hours [to complete their placement]. (ID 7)</i>
	Frustration with students' strong emotional responses	Q10	<i>I guess it did get very frustrating for students, because they're like going well, we've gone and had all of our vaccinations, but now you're telling me we can't go. (ID 1)</i>
Optimism	Being optimistic about the unknown	Q11	<i>But one of the things that the pandemic really taught us as education providers is the fact that we can now deliver so many more education courses online, or blended, ... it really fast-tracks into that sort of 20th-century thinking. (ID 8)</i>
	A sense of pride for what was achieved	Q12	<i>I think what we do well was amongst the chaos, the organised chaos. We came up with ways in our systems where students could safely come back and still have their orientation and all the safety messages. (ID 7)</i>

Note: TDF, Theoretical Domains Framework.

Resources

Being unable to choose a preferred vaccine was an issue at the start of the vaccine rollout. Holding personal preferences for vaccine type, combined with vaccine availability, initially led to prolonged waiting times for vaccination. As a result, participants said the students had to find their own vaccination source (Table 2, Q3).

There was also a lack of sufficiently qualified staff to administer vaccinations in health care settings, insufficient vaccination sites for staff and students to get vaccinated, and inefficient booking systems. Consequently, people were unable to receive vaccinations when they were eager to do so.

Attention, Decision-making, and Goals

Conveying one message consistently to the students

Participants frequently mentioned that it was important to deliver a consistent message to students that clinical placement would be

impossible without complying with vaccination requirements. This frequent, consistent messaging prompted students to decide whether they would be prepared to be vaccinated (Table 2, Q4).

Priority decision-making based on the goals of various stakeholders

Government-defined vaccination priority groups posed challenges. Participants noted that most students were aged between 18 and 24 years, who were ineligible early on because vaccines were reserved for the more at-risk, older population. This led to debate about whether students should have the same access to vaccination. Government officials responsible for the rollout opposed treating students the same as staff (Table 2, Q5).

University staff generally agreed that double standards occurred between students who were removed from their clinical placement due to not being vaccinated and staff who were able to continue regardless of the staff's vaccination status. On the other hand, some

health care staff assumed that this occurrence was attributed to insufficiency in providing supervision for health professional students and different levels of duty of care. Those who were in higher government positions saw the rationale to balance between keeping patients safe and continuing clinical placement (Table 2, Q6).

Professional Role and Identity

Being role models for the public

Participants felt a responsibility to set a good example for the public by getting vaccinated and saw themselves as future health leaders. Hence, they followed the health leaders' directives, made decisions quickly based on the directives, and provided expert advice on infection prevention and control. Other participants also saw this role modelling amongst health professional students (Table 2, Q7):

Teamwork and collaboration being enablers

Teamwork and collaboration occurred through liaising with health care facility executives to make collaborative decisions, such as ensuring health professional students followed vaccine rollout measures. Participants acknowledged and appreciated the teamwork within their organizational unit during these unprecedented circumstances (Table 2, Q8).

Emotion

Exhaustion due to the workload

University staff often felt exhausted and frustrated during the COVID-19 vaccination rollout due to overwhelming working hours, with tasks such as constantly requiring clarity of the disseminated information, feeling behind in obtaining the updated information, tracking student placement, and managing replacing students' missing placement time to enable them to complete their studies (Table 2, Q9).

Frustration with students' strong emotional responses

University staff frequently reported that students were frustrated when they were not allowed to continue their clinical placement. University staff often bore the brunt of students' frustrations, as some believed university staff were responsible for placement disruptions (Table 2, Q10).

Optimism

Being optimistic about the unknown

Participants held a positive attitude toward working in the "unknown" as part of a team. One participant described it as "*flying by the seat of our pants*" (ID 7) and having to manage as best they could. University staff also saw positive changes in how they worked had resulted from the pandemic (Table 2, Q11).

A sense of pride for what was achieved

Participants commonly shared that most professionals remained adaptable during the uncertain time. Hence, university staff felt a sense of pride in their achievements while working in a system that prevented business as usual. Similarly, health care workers expressed pride in ensuring staff and patient safety, preserving relationships with the university, and managing rapidly changing situations (Table 2, Q12).

Discussion

We have identified 5 key domains, including 1) environmental context and resources, 2) attention, decision-making, and goals,

3) professional role and identity, 4) emotion, and 5) optimism. Our findings provide policymakers in government, health care, and universities with our lessons learnt to better respond to future health crises.

Effective communication was essential to maintaining population cooperation and trust during the COVID-19 vaccine rollout.^{1–3} In future situations, communication must focus on what to say in a message, how to convey the message, and whether the message is impactful and persuasive during pandemics and beyond.⁹ Overwhelming and confusing communication during the vaccine rollout led to distrust, as reported in a qualitative study on health professional students' COVID-19 vaccination attitudes.² Similarly, our participants reported communication issues. Policymakers should develop, test, and routinely adopt communication strategies in non-pandemic conditions to work effectively in future pandemics.^{1,2,9}

Vaccine availability, accessibility, and workforce issues were reported during the COVID-19 vaccine rollout.^{4,5,10} Our participants shared similar issues with vaccine supply and accessibility, and suboptimal booking systems that hindered the start of the vaccine rollout. As resourcing issues can lead to inconvenience,¹⁰ vaccine hesitancy,⁹ and delayed vaccine rollout, appropriate resources must be available and accessible before implementing similar large-scale health interventions or emergency responses, including but not limited to future pandemics.⁵

Teamwork was essential to enable seamless coordination across multiple stakeholders during the COVID-19 vaccine rollout.^{5,10} Local governments, health care organizations, and universities should collaborate to communicate with the general public about vaccination programs.⁵ Our participants shared their teamwork through collaboration between health care organizations and universities to enable COVID-19 vaccine-related decisions. Policymakers must have strategies to promote teamwork and collaboration to increase vaccine uptake in similar future pandemics.^{3,4}

Our participants expressed frustrations with the vaccine rollout, citing long hours and increased stress, echoing findings in previous studies.^{9,10} In a qualitative study, vaccine providers reported increased workloads from the rollout on top of existing COVID-19-related duties.¹⁰ Additionally, university staff felt health professional students were disadvantaged, as reflected in a qualitative study reporting "a bit double standard" perception by health professional students.² Furthermore, frustrations came from the resentment of health professional students who mistakenly believed university staff disrupted their clinical placement. A future rollout strategy should include promoting strong communication and developing a resilient and caring culture for all professionals involved in such events.

Despite challenges, our participants remained optimistic and proud of their achievements during the vaccine rollout. Such sentiments are not uncommon nationally and internationally, with studies reporting similar findings.^{9,10} The success of the COVID-19 vaccine rollout instils hope, strengthening future public health infrastructure and pandemic preparedness.

Strengths and Limitations

This is the first study to explore barriers and facilitators to the COVID-19 vaccine rollout in Australia using the TDF.⁷ While nationwide, the recruitment strategy was uneven, with most participants from Queensland, suggesting a selection bias. Social desirability bias may also have influenced responses. Despite these limitations, our findings offer valuable reflections to improve future rollout strategies.

Conclusion

Our findings add to existing literature by highlighting barriers and facilitators to the COVID-19 vaccine rollout from an organizational stakeholder perspective. Key challenges included suboptimal communication, insufficient resources, and negative emotions. Enablers were teamwork, collaboration, and adaptability. These insights can help policymakers in government, health care, and universities develop strategies for future large-scale health interventions or emergency responses.

Supplementary material. The supplementary material for this article can be found at <http://doi.org/10.1017/dmp.2026.10326>.

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