A COVID-19 vaccination strategy to support uptake amongst Australians: Working paper

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About the Collaboration on Social Science and Immunisation (COSSI)

An initiative of National Centre for Immunisation Research and Surveillance (NCIRS) and the University of Sydney, COSSI was established in 2016 to better inform Australian immunisation policy and practice with high quality evidence from the social sciences by supporting capacity in research and evaluation, collaborations, and translations.

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Executive summary

Achieving high uptake of a safe and effective vaccine to control the spread of SARS-CoV-2 (COVID-19) is a public health priority. To support the COVID-19 vaccination goals and aims outlined by the Australian Government and the Australian Technical Advisory Group on Immunisation (ATAGI), the Collaboration on Social Science and Immunisation (COSSI) has developed a Six Point Strategy aiming to support the design and implementation of a COVID-19 vaccine program in Australia (see Box 1).

The information in this working paper draws on evidence from adult and child vaccination uptake studies conducted in Australia and other high-income countries, with a focus on strategies known to lead to high coverage and resilient vaccination programs. The concept for a Six-Point Strategy is inspired by the success of Australia's 7 Point Plan which led to significant improvements in childhood vaccination rates in the late 1990's.

The Six Point Strategy for COVID-19 vaccination uptake focuses on strengthening the following key foundational areas:

1. Program strategy
2. Provider support strategy
3. Access strategy
4. Broad and tailored communication campaigns
5. Community and professional engagement
6. Vaccination encounter support

The recommendations outlined are based on the best available literature structured according to five influences on vaccination gaps that have informed program planning in other countries: **Access, Affordability, Awareness, Acceptance and Activation**.[1]*

Box 1. Six-Point Strategy for COVID-19 vaccine introduction

1. Program strategy

a. Ensure that the supply and distribution strategy is equitable, transparent, adaptable, and clearly communicated to relevant professionals and the public
b. Implement monitoring of program performance (e.g., coverage, access, acceptance) across all target groups
c. Expand Immunisation Specialist Services to include adult referral (complex medical cases, adults with needle phobia etc) and assessment capability (with telehealth accessibility). These services exist now in each S/T (except NT) but mostly support children with complex care/medical needs and the management of adverse events following immunisation.
d. Ensure robust adverse event reporting, assessment, and communication systems

2. Provider support strategy

a. All States/Territories to introduce legislation which allows the accreditation of Aboriginal and Torres Strait Islander Health Practitioners to vaccinate
b. Enable the delivery of the immunisation program via Aboriginal Community Controlled Health Organisations
c. Upskill the nurse workforce to enable vaccine delivery outside of primary care (e.g. hospitals, community centres, and other suitable settings)
d. Extend Commonwealth payments for entering data on COVID-19 vaccination into AIR and ensure all immunisation providers are trained/supported to upload data
e. Develop a robust support package including provider updates, training webinars, skills-based workshops. Ensure CPD awardable to all relevant professions, including in primary/tertiary care and pharmacy.

3. Access strategy

a. Consult with range of communities about tailored opportunities for service provision to enhance accessibility. These may include travel health/vaccine clinics, pharmacy, hospitals etc. to maximise the occasions for vaccine delivery

b. Explore options for linking delivery to other vaccine encounters (i.e. vaccinating eligible parents at childhood vaccine clinics as campaign matures).
c. Establish a reminder (SMS/Email/App) and recall scheme (if multiple doses required).
d. Establish organisational policies to allow employees to attend on-site vaccination clinic as part of their workday and without having to "go off of the clock."
e. Promote opportunities to provide the vaccine(s) after hours and on weekends

4. Broad and tailored communication campaigns

a. Develop national and state coordinated campaigns with key messages (focus on value of vaccination/eligibility, prioritisation, free service, location of services, safety)
b. Adopt social/professional norming and values-informed messages as campaign matures
c. Develop targeted campaigns in conjunction with community stakeholders and members of diverse groups (focus on Aboriginal and Torres Strait Islander peoples, culturally and linguistically diverse communities, adults with chronic and/or high-risk health conditions)
d. Work with peak bodies (e.g. Heart Foundation, Asthma Australia, Cancer Council) and community groups (e.g. Migrant Resource Centres, Multicultural Community Services) to distribute messages about the vaccine.
e. Develop a central repository of COVID-19 vaccine resources, including regularly updated information on vaccine effectiveness and safety, tailored to different groups (including translated materials).
f. Invest in the R&D of vaccine communications, with research focused on evidence-based strategies to promote behaviour change and address misinformation.
g. Implement training to support evidence-based countering of misinformation online.
h. Develop a risk communication and management strategy for addressing any vaccination related events that may arise (e.g., Clustering of immunisation stress-related responses).

5. Community and professional engagement

a. Conduct behavioural insights research on the barriers and drivers of immunisation and use the findings to guide revisions in communication and delivery.
b. Undertake community engagement with key groups – community panels for vaccine prioritisation, distribution strategy and tailored communication.
c. Work with relevant colleges/associations to ensure consistency in messages and approach: RACGP, Pharmacy Guild, RACP, ACN, ACRRM, APNA, ACIPC (prior to and during the release of the vaccine).
d. Engage religious and community leaders in addressing questions concerns about vaccination. Seek advice from these leaders on vaccine communication and delivery.
e. Set up mechanisms for social media listening to identify messages that are being more readily shared. Use data to inform communication planning.
f. Ensure systematic collection of population survey data to capture the behavioural and social drivers of COVID-19 vaccination (pre-program implementation, short pulse surveys at licensure, rollout, and establishment). Gain additional explanatory in-depth insights from qualitative approaches such as in-depth interviews or focus groups.

6. Vaccination encounter support

a. Develop and support standardisation of pre-vaccination procedures: checklists for eligibility and contraindications; consent
b. Ensure that consent support materials meet minimum standards: vaccine to be given, disease targeted, minor common side effects, how to respond to AEFI e.g., reporting, need for prophylactic medications (if needed).
c. Develop and make available additional materials:
   - in-depth information on vaccine safety including rare serious AEFI with rates reported in trials.
   - adult vaccine hesitancy communication guidance for providers; tailored FAQ information addressing most common concerns; decision-aid for hesitant individuals.
d. Educate providers on pre-vaccination procedures, consent processes, addressing adult vaccine hesitancy; and post vaccination procedures including appointment booking and AEFI reporting.

*Relevance of strategies will depend on storage requirements for the vaccines, which will vary.

Background

The SARS-CoV-2 pandemic continues to bring high disease, social and economic burdens worldwide. Given the ongoing risk that COVID-19 poses to people with high-risk medical conditions and to older adults, there will be a need to support vaccine uptake in those population groups firstly and then to support the introduction more widely as the campaign matures.

To ensure high levels of vaccine uptake, a multifactorial and coordinated effort will be needed. This summary report outlines strategies that could improve COVID-19 immunisation uptake amongst adults based on a Six-Point Strategy to support the program preparation, roll-out, monitoring and evaluation.

Whilst Australia has robust immunisation programs and many examples of best practice when it comes to vaccination, there are still numerous barriers that have been identified which may affect adults seeking recommended and funded vaccines. These may include lack of understanding about the need or rationale for vaccination, variations in confidence around vaccine safety and benefits, lack of a recommendation from a healthcare provider and practical issues affecting ease of access [2].

Suboptimal vaccine uptake amongst adults is pervasive across Australian states and territories and for some VPDs, uptake is far below the World Health Organization (WHO) recommendation of 75% coverage among special-risk groups [3].

This summary report is intended to assist policymakers, healthcare professionals and third-party organisations with planning and delivering COVID-19 vaccine programs, enhancing and tailoring them according to what is known about the structural, social, and behavioural factors that may compromise uptake.

This report provides an analysis of:

- The 5 A's taxonomy that underpins the Six-Point Strategy (see Table below)
- Interventions that can be employed as part of the Six-Point Strategy to enhance access and acceptance of a future COVID-19 vaccine amongst eligible people.

Mapping the barriers to adult vaccination

The proposed strategies outlined in the Six-Point Strategy reflect the interventions and approaches that have been utilised or tested as part of routine vaccine programs. Underpinning the approach is the need to ensure equitable vaccination uptake across all population groups and ensure that appropriate focus is given to underserved and marginalised groups. Many of these communities have complex and multifactorial challenges including issues accessing vaccine services, health literacy and limited interaction with health services.

Psychological science has shown that enabling the vaccination behaviour directly (such as changing the location or the way the vaccine encounter occurs), can have a superior influence on vaccination behaviours than trying to just focus on changing what people think or how they feel [4]. Therefore, changes at the system level such as amending policies, changes to health service provision, optimising logistics are critical for supporting COVID-19 vaccination behaviours.

Our COVID-19 vaccine Strategy aims to address the Five A factors that influence vaccine uptake [1] :

Access*:* To support uptake, ensure ease of access including the convenience of the service, its location and clinic times.

Affordability: Removing any out of pocket costs for the vaccine and vaccination services strongly affects uptake [5]. Time itself is a cost barrier to vaccination/cost of travel and fear of job security can result in a 'reduced willingness'

Awareness*:* Practical knowledge about the vaccine recommendation and understanding about the groups recommended to have a vaccine improves uptake. Awareness needs to address barriers to understanding. To reduce inequities in vaccine uptake, consumers must have access to health resources that are comprehensible, culturally tailored and are appropriate for the consumer's health literacy skills [6].

Acceptance: Concerns about the safety and effectiveness of a vaccine (including adverse effects) and lack of confidence in vaccine benefits, can all affect uptake. A high perceived severity of a disease increases intention to vaccinate [7, 8]. Acceptance can also be affected by trust in providers, and for adults, formative childhood vaccination experiences [9].

Activation: This refers to the strategies that help people to act on good intentions and vaccinate - the final 'nudge' [4]. Effective strategies to activate include reminders via SMS, email/letter, or app. An opportunistic recommendation from a provider can also activate a person to be vaccinated.

Implementing the Six-Point Strategy: interventions to support COVID-19 vaccine uptake

The following are examples of key actions that could be undertaken to support the implementation of the individual components of the Six-Point Strategy. They include strategies targeted at system changes, those focused on ensuring community confidence through effective communication, and through facilitating access to population groups at higher risk.

a. Program strategy and provider strategy (Points 1 and 2)

Meaningful engagement with Aboriginal healthcare practitioners and workers and Aboriginal and Torres Strait Islander peoples is critical to ensure vaccination gains are not undone by the pandemic. These workers advocate for vaccination within their communities and enable people to access services. In some States and Territories, they can also vaccinate, under provisions in State poisons acts. This is considered to be a highly effective way to achieve high coverage through providing convenient and culturally respectful vaccination services. However, not all states currently enable them to be accredited. The National Immunisation Education Framework for Health Professionals currently does not have sufficient flexibility to enable Aboriginal Health workers from diverse communities (including those in remote settings) to meet the training requirements. Thus, for COVID-19 vaccination to reach all communities and continue the success of community led provision of preventive health services, it will be essential to modify training requirements under the Framework.

As nurses constitute the majority of the Australian healthcare workforce, they are well situated to make vaccination recommendations and to be a critical part of the delivery of the COVID-19 vaccine, especially in regional and remote areas. According to the Australian Primary Health Care Nurses Association (APNA), 60% of primary healthcare nurses provide an immunisation every day, while a further 18% immunise at least weekly [10]. While there is already a substantial involvement of nurses in the provision of immunisation programs, there are key revisions to practice that could enhance the practice. One area identified by the Australian College of Nursing (ACN) is the need to improve the access of nurses to the Australian Immunisation Register [11]. According to the ACN: '*in some*

situations, nurses may not be able to access AIR to assess or enter vaccinations associated with patient care and this may impact on the accuracy and completeness of AIR data'.

b. Access strategy (Point 3)

There is a need to support effective vaccination services in a range of other settings to ensure that all eligible adults in the community are reached. Efforts are needed to simplify and bring services closer to where adults live, work, study or frequent. **There may also be a need to promote clinics** outside of standard hours and on weekends. While it may require additional resources in terms of time, the provision of immunisation through home visiting may be another option to explore to support uptake in some population groups. Once the COVID-19 vaccine campaign has matured, there may be the opportunity to explore pairing the delivery (if safe and appropriate) and/or promotion for adults, with established programs such as the annual influenza vaccine campaigns. The COVID-19 vaccine campaign, may also present an opportunity for providers (with access to AIR) to discuss catch-up vaccine opportunities ('vaccination for healthy ageing') with adults including their needs for pneumococcal, influenza, herpes zoster (shingles), or dTpa. While this increases the workload for providers, it is critical that opportunities conversations occur, especially in situations where adults are not frequently attending primary care, and/or are at increased risk from vaccine preventable diseases due to age or a health condition.

People are motivated to act when they 1) are faced with stimuli that make them imagine what might happen, and 2) they evaluate the effect of that imagined scenario. The use of stimuli aligns with the dimension of activation from the Five-A's. Activation refers to the *actions that nudge people who intend to get vaccinated towards vaccine uptake.* These nudges can include reminder or prompts. Informing people of an upcoming vaccination or telling them that they have missed a vaccination might help to increase coverage and reduce the effect of disease preventable by vaccine. Based on a review of 75 studies aimed at evaluating whether reminding people to get vaccinated worked, a 2018 Cochrane review found that reminding people to have vaccinations likely increases the number of people who receive vaccinations by an average of 8 percentage points [12]. Targeted telephone calls to high risk adults (i.e. those with low levels of engagement with primary care) explaining the rational for vaccination and offering vaccination appointments.

c. Broad and tailored communication campaigns (Point 4)

Intrinsic to the COVID-19 vaccine campaign is a communication strategy that clearly delineates the goals, target audience, expected roles of the actors involved and the communication tools that will be used. Communication materials must ensure people consider the individual vaccine behaviours but also the influence of communication for others, especially for those in the community who may not be able to receive the COVID-19 vaccine. This can be framed around helping protect family and friends. There may be a need to draw on the emotional consequences of vaccination, anticipated regret, and the salience of consequences.

When selecting relevant spokespersons for campaigns, **it is *critical that the principles of equity and diversity are considered*.** Relevant spokespersons may need to vary in age and socio-economic background to ensure maximum reach and impact. A national communication strategy should aim to support the general public's understanding about the COVID-19 vaccine(s) including the value of receiving the vaccine, who is eligible (and reasons for prioritisation), and to support awareness about location of services/free access etc. Dedicated messages must focus on supporting understanding around safety/testing/licencing processes. While these universal messages are appropriate for the general public, these messages may not prompt action in all at-risk groups, nor will mass media messages have the same reach for all the intended audiences. In order to reduce vaccination inequalities, there will also be a need to integrate a tailored communication strategy.

There will also be a critical need to look beyond the traditional strategies used to promote childhood/routine immunisation programs. Public health messages will need to be distributed via a range of channels including both online and offline tools including social media, websites, local/national

radio (including ethnic radio broadcasters), TV, print media (posters, outdoor ads etc). The promotion of a COVID-19 vaccine will require partnerships with a range of civil society (i.e. patient organisations, ageing associations, multicultural community groups) and health organisations (i.e. immunisation advocacy groups, Peak Bodies, NGOs etc), to maximise the opportunity to reach the most at-risk populations. In order to support the flow of timely, consistent, and trusted information it is important to leverage the networks of these stakeholders.

Tailored communication campaigns will be needed for:

Aboriginal and Torres Strait Islander communities have successfully prevented COVID-19 in Australia, demonstrating the capacity for First Nations people to prevent the spread of disease when they have autonomy and representation at a national, state, and local leadership level. However, the public health measures to combat COVID-19 remain an ongoing cultural risk, with community encountering interruption of traditional family way of life, for example Aboriginal families often have multiple generations, extended family and including Elders living under one roof make it impossible to adapt to the new social norm of the public health measures [13]. Thus, to remove any structural and social barriers during any pandemic it will be essential to prioritise meaningful engagement with Aboriginal healthcare practitioners and communities early in the co-design of culturally appropriate communication resources.

***Culturally and linguistically diverse (CALD*)**: Some CALD community members may face language and other access barriers, such as limited health literacy (33% of people born overseas have adequate health literacy compared to 43% of the Australian-born population [14]). A recent study of online immunisation resources available in Australia directed at refugee and migrant populations found that majority of the resources examined are currently 'difficult to read'. The resources scored low in understandability, they were not easily identifiable on the web sites and often had medical jargon [15]. Communication materials must be co-designed with the communities of interest including community leaders, relevant community groups and members. This is especially critical when developing materials in languages other than English.

Adults with chronic or underlying health conditions: Healthcare professionals are viewed by the public as a trusted source for information on vaccination. However, insufficient knowledge about the vaccine or concerns about the appropriateness of a vaccine for people with chronic or immunosuppressive health conditions can be a barrier affecting provider communication. In these settings, these individuals may be receptive to information about a COVID-19 vaccine being disseminated by organisations whose main purpose is to promote the health and wellbeing of people who may be affected by a specific disease. Based on previous work undertaken looking at the perceptions of people with chronic health conditions (unpublished), it was suggested that peak bodies such as Heart Foundation, Cancer Council, MS Australia and others could play a role in promoting vaccination to their members. Information delivered by these groups would be relevant and credible.

d. Community and professional engagement (Point 5)

Informed and motivated health care workers can become important advocates and champions for immunisation in the health care setting. Other opinion formers may also be influential and be able to reach out to different target audiences. Community participation in immunisation service planning is important for promoting a sense of ownership and accountability. In addition to traditional providers, there may be others to partner with to support the promotion of the COVID-19 vaccine. They may include:

- Community leaders (including elders)
- Community-based traditional health providers
- Religious leaders and groups affiliated with religious institutions
- Community networks/groups i.e. mother's groups, youth groups

- Unions/associations

Traditional and religious community leaders can promote immunisation and provide practical information, such as session locations and schedules. Provide written information on immunisation and other health topics for these leaders to read during community announcements and after religious services. Involve community partners in regularly scheduled program microplanning and evaluations. These provide opportunities to learn about current community perceptions of services, to inform community leaders about the program and to plan activities that build community engagement while addressing relevant needs and concerns.

e. Vaccine encounter support (Point 6)

Certain communication approaches may negatively affect the vaccination experience and influence willingness to return and the individual's wider social network. For example, trying to convince vaccine-hesitant individuals by providing more facts may backfire and actually reduce their intention to vaccinate [16, 17]. Studies of parents have found they can feel confused, disrespected, or mistrustful and less likely to return for their child's next vaccination appointment, due to poor provider communication [18, 19]. Conversely, communication that is respectful and builds trust can assist hesitant parents to work through their concerns [20, 21]. A positive recommendation to vaccinate from a healthcare provider is the strongest predictor of vaccine uptake [4]. Thus, by improving provider communication skills contributes to improvements in trust and rapport between the patient and the provider, leading to more satisfying consultations [22]. More broadly, well managed vaccination encounters and good process enhance program resilience against shocks such as vaccine safety scares.

To support effective encounters, there needs to be training opportunities available to a wider range of providers including geriatricians, obstetricians-gynaecologists, cardiologists (and other relevant specialists), pharmacists, nurses, and midwives. These clinicians may not necessary be in a position to deliver a COVID-19 vaccine but may be perceived as a trusted source of information about the importance of vaccination and vaccine safety and effectiveness. They can also be strong vaccine advocates. Vaccination expertise exists primarily among paediatricians, general practitioners, and public health specialists. Thus, interprofessional collaboration in education and practice may be a solution to support this strategy.

Understanding the behavioural drivers of uptake

Prior to and during the implementation of a COVID-19 vaccine campaign, there is an ongoing need to ensure that we have a rich understanding of the factors affecting engagement with a COVID-19 vaccine program, and particularly of the enablers/strategies that could be used to support acceptance. It also requires an understanding of the needs of the providers and other stakeholders (including government, religious/community groups etc). To support the activities outlined in this report, COSSI strongly advocates for funding and resources to be set aside to ensure that behavioural insights research informs the program. Methods such as pulse surveys, qualitative interviews and/or focus groups or community panels and trials be undertaken to capture crucial information about community perceptions and concerns regarding the implementation of a new COVID-19 vaccine and immunisation program. The use of online panels and forums to allow for "rolling question and answer public-facing websites to address key questions and concerns in real time" may also be of assistance. Furthermore, consideration should be given to developing and supporting a no-fault vaccine injury compensation scheme in Australia, especially if mandatory vaccination is to be considered to improve uptake amongst certain groups [23].

Conclusion

Populations at risk of COVID-19 infection are diverse in social, behavioural, cultural and health practices as well as their understanding of and perceptions towards COVID-19. Drawing on the insights from National Immunisation Program, and the delivery of seasonal and pandemic influenza campaigns, provision of education resources alone is not enough. Provision of information and well-crafted messages alone and then assuming that the community will make the 'correct' decision to be vaccinated, will not work. Vaccination behaviours are shaped by a multitude of factors such as access, cultural beliefs, community, a person's identity and their norms, education, and socioeconomic status, as well as by philosophical beliefs. The Strategy outlined in this discussion paper aims to optimise the future delivery of COVID-19 vaccine(s). Research investment in understanding all the potential barriers and drivers is needed now.

Appendix

List of barriers and strategies to support uptake of a COVID-19 vaccine

Five A's	Barrier	Intervention	6 Point Strategy
Accessible	Vaccine not available at point of service delivery	Supply and distribution strategy	Program strategy
Accessible	Person ineligible for free vaccine due to residency status	Vaccine is free for all groups.	Access strategy
Accessible	Barriers to accessing vaccine delivery setting	Drop-in clinics near community centres/shopping centres etc Workplace vaccine programs Hospital based programs Mobile clinics Home visiting for highly home bound Pharmacy vaccination	Access strategy
Accessible	Service times inconvenient	Hospital/pharmacy-based vaccination programs delivered during/after hours and on weekends	Access strategy
Accessible	Service unwelcoming/discriminatory	Support Aboriginal Community Controlled Health Organisations and health practitioners and health workers in multicultural health to give vaccine	Program strategy Access strategy
Accessible	Availability of leave from work	Federal subsidies for workplace vaccination	Access strategy
Affordable	Service cost	Vaccine visit free for all eligible groups Provider incentives for bulk billing	Access strategy
Awareness	Eligible person not aware of recommendation	National and state campaigns Targeted communication campaigns involving key community groups/gatekeeper networks PHNs have KPIs focused on key group campaign reach metrics Consult with range of communities about service accessibility Focus on clear communication resources to support providers Resources appropriate for different CALD and First Nations groups	Broad and tailored communication campaigns
Awareness	Provider unaware of recommendation	Updates, training webinars, CPD point module, peak group engagement via Colleges	Provider support strategy
Awareness	Provider not having the vaccine themselves or recommending to specific population group (e.g., not identifying that adult is Aboriginal or Torres Strait Islander)	Bolster provider confidence in vaccine safety and effectiveness for themselves and patients through sources above. Incentives Legislate for all states to accredit Aboriginal and Torres Strait	Provider support strategy

		Islander health workers to vaccinate	
Acceptance	Fear vaccine side effect or serious reaction Fear alleged vaccine outcomes unsupported by evidence	Safety information tailored to different groups Evidence-based myth debunking Central platform where resources are frequently updates and easily accessible for the public	Broad and tailored communication campaigns Community and professional engagement
Acceptance	Experience of vaccine reaction, real or perceived	Establish adult AEFI reporting and specialist clinics in all states/territories with telehealth accessibility Educate providers on AEFI procedures Platforms for AEFI surveillance that enable data linkage i.e. hospital and community Advise on minimum standards for valid consent Hesitancy communication support package for PCPs	Provider support strategy Vaccination encounter support
Acceptance	Does not believe in vaccine necessity	Decision support tools	Vaccination encounter support
Acceptance	Mistrust doctor, medicine, government	Engage with local community/religious leaders and social media influencers Have strong, trusted, vocal vaccine advocates in the media, responding to vaccine safety concerns	Community and professional engagement
Acceptance	Applies a belief system that contradicts vaccination	Train providers in behaviour change counselling, e.g. Motivational Interviewing	Vaccination encounter support
Acceptance	Applies a doctrine that contradicts accepting vaccines	Engage religious leaders Address doctrinal concerns with factual information Adopt values-informed messaging	Community and professional engagement
Activation	Provider not recommending vaccine during 'other' clinical encounter (e.g., ED visit)	In-service updates for HCW in all encounters where eligible patient seen Engage with specialist colleges Build provider trust and confidence for themselves and patients	Provider support strategy Community and professional engagement
Activation	Forget/overcome by other priorities	SMS reminders and recalls scheme Community campaigns developed through community engagement and co-design with community and religious leaders ie radio, talking or listening groups	Access strategy

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