

Communicating with patients and the public about COVID-19 vaccine safety: recommendations from the Collaboration on Social Science and Immunisation

Understanding the mental shortcuts people make and the values they bring to weighing risks is critical to informing effective risk communication

On 8 April 2021, the Australian Technical Advisory Group on Immunisation (ATAGI) made the Pfizer Comirnaty (BNT162b2[mRNA]) coronavirus disease 2019 (COVID-19) vaccine the preferred vaccine for adults aged under 50 years who have not received a first dose of the COVID-19 vaccine AstraZeneca (ChAdOx1-S).¹ This followed an established causal relationship between the AstraZeneca vaccine and a rare clotting condition named “thrombosis with thrombocytopenia syndrome” (TTS).² This decision has affected the COVID-19 vaccine roll-out nationally, given Australia’s limited vaccine portfolio — the AstraZeneca vaccine is the mainstay for Australia’s supply with 53.8 million doses secured, mostly through domestic production.^{3,4} ATAGI’s recommendation occurred 7 weeks into a roll-out affected by limited global vaccine supply, difficulties in coordination between the Commonwealth and state and territory governments, and intense media attention. With a limited supply of Pfizer vaccine doses available until later in the year, the recommendation imposes a significant delay in the timeframe in which Australians could be protected from COVID-19 and an ongoing vulnerability for the coming winter.

The risk–benefit analysis for the AstraZeneca vaccine is balanced between the risk of developing TTS and the benefit of preventing severe COVID-19. The equation is mainly affected by the amount of disease in the community and age of potential vaccine recipients. Older people are at greater risk from COVID-19, including intensive care unit admission and death. Rates of TTS are currently estimated to occur at 26 cases per million in people aged under 50 years, reducing to 16 cases per million in those aged 50 years and over.⁵ TTS is a serious adverse event that requires hospitalisation and has a death rate initially estimated at 25%.¹ Earlier case ascertainment may see this death rate reduce. It is not possible to determine who is at greater risk of developing TTS and cases must be identified early to receive timely non-heparin anticoagulant therapy. Knowledge about TTS continues to evolve.

This article outlines the potential impacts of the AstraZeneca vaccine safety concerns. It considers the relevant heuristics and values affecting patient decision making and proposes some practical strategies for effective communication by clinicians and governments. The recommendations have been collaboratively developed by members of the Collaboration on Social



Science and Immunisation (COSSI) steering group. COSSI is Australia’s leading network to inform immunisation policy and practice with high quality evidence from the social sciences. The authors reflect social science, clinical, Aboriginal, consumer and program perspectives. The steering group met on 14 April 2021 to formulate a set of observations and recommendations. These were grounded in knowledge from the field of risk communication, a specific guidance on communicating about COVID-19 vaccine safety from the World Health Organization,⁶ and our research in progress in Victoria, New South Wales and Western Australia examining public and professional attitudes to the COVID-19 vaccines.

Impacts of the AstraZeneca vaccine recommendation

The ATAGI recommendation on the AstraZeneca vaccine poses significant risk communication challenges for clinicians and governments. Even small risks associated with the AstraZeneca vaccine may be hard to tolerate in a country with limited local transmission, yet an outbreak remains almost inevitable. So far in Australia, tracking surveys have detected little to no reduction in willingness to have a COVID-19 vaccine.^{7,8} A decline in turnout observed among health care workers in NSW may reflect reduced confidence but also confusion and delay due to perceptions of vaccine availability.⁹

The impact of the perceived risk of TTS on younger women could be greater, given this group is already reported to be more hesitant about COVID-19 vaccination.¹⁰ Young women have been viewing media reports since the beginning of 2021 about their cohort’s

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vaccine intentions, likely creating a vaccine hesitancy norm which may affect behaviour. Furthermore, recent evidence suggests that people who are hesitant about vaccination may also lack trust in providers and governments — the very same institutions providing vaccine advice.¹⁰

Given the current limited supply of vaccines in Australia, the impact on the estimated 24% of Australians unsure about having a COVID-19 vaccine may not be fully seen until supply outstrips demand later in the year.¹¹ Such longer term impacts on confidence were seen after the 4-month suspension of influenza vaccination for children aged less than 5 years in 2010, where it took nearly a decade for safety concerns to abate.¹²

Each age group may struggle to understand the risks and recommendations for COVID-19 vaccines. Current information could turn into misinformation as it travels through different messengers.¹³ Given that people aged under 50 years can still agree to receive the AstraZeneca vaccine, they may seek a risk–benefit discussion with their doctor or other vaccination provider. Some people aged 50 years and over may wish to wait for the Pfizer vaccine later in the year, preferring to do nothing at present, despite the uncertainty around hotel quarantine and a possible increase in disease rates at any time.

Understanding and assessing risk

Understanding the mental shortcuts people make and the values they bring to weighing risks is critical to informing effective risk communication. People rely on heuristics to process risk information. These are mental shortcuts that allow them to make rapid judgements when dealing with large volumes of information.¹⁴ For example, people’s overestimation of low probability outcomes (“compression”) may make it difficult to give them a sense of scale when referring to a rare event such as TTS. Similarly, a serious but rare outcome, such as TTS, will be given more weighting if it is highly publicised (“availability”). Some people anticipate negative emotions because of a decision and thus avoid taking that course (“anticipated regret”), which may limit vaccine acceptance and affect a health care worker’s willingness to recommend the AstraZeneca vaccine. Relatedly, people may prefer to accept an outcome from doing nothing (not getting vaccinated) than an outcome from doing something (vaccinating; “omission bias”), and avoid taking risks when the outcome is uncertain (“ambiguity aversion”).

Heuristics are underscored by the values that affect how people think, feel and act on risk. Values relevant to vaccine decision making may include self-determination, fairness, minimising harm, and justice. For Aboriginal and Torres Strait Islander peoples, there are community and family obligations that will affect decisions and actions.

Clinical communication

Health care workers, especially those in primary care, will have a major role in helping people assess their

personal eligibility for a vaccine and weigh the risks and benefits.

Support valid consent

The presence of a rare but serious adverse event highlights the imperative to ensure valid consent for vaccination, defined in the *Australian immunisation handbook* as, “the voluntary agreement by an individual to a proposed procedure, which is given after sufficient, appropriate and reliable information about the procedure, including the potential risks and benefits”.¹⁵ ATAGI has developed guidelines and discussion resources for immunisation providers on agreeing consent for COVID-19 vaccination.¹⁶

Help people weigh risk and benefit

To provide information on probabilities, risk comparisons have become common, such as comparing TTS risk with clots from the oral contraceptive pill, smoking, and with deep vein thrombosis from long-haul flights. We recommend that comparisons use risks and outcomes to help people understand magnitude, not to communicate the acceptability of a risk. The risks and their outcomes should also be similar.

Numerical risk formats enable a precise understanding of risk.¹⁷ Verbal formats should be added for people with limited numeracy. Visuals, such as with icon arrays, also help people understand risk and benefit, particularly those with low health literacy or low English proficiency.¹⁸ The same denominator and time period should be used when comparing across risks; a smaller denominator makes the probability easier to understand.¹⁷

Since values and preferences are relevant to vaccine decisions, a health professional can elicit these as part of the weighing of vaccine risk and benefit using tools such as decision aids.¹⁸ When considering the benefits of vaccination, it may help to highlight the protection from vaccination for individuals and those around them, and to ask them what else they may value about being vaccinated.¹⁹ Knowing if others are being vaccinated also influences decisions.²⁰ Finally, a recommendation from a health care worker is a highly effective form of vaccination encouragement but should come with respect for autonomy.²⁰ The **Box** shows suggestions for structuring a vaccination conversation with a 55-year-old woman, for example, who has concerns about receiving the AstraZeneca vaccine.

Public risk communication

Communicate frequently about the process and outcomes

Governments should continue to communicate frequently and transparently. Ongoing policy decisions should involve a range of experts and stakeholders. Rationales should be clear. The ATAGI recommendation was timely and detailed; it included their various considerations, using clear and empathic language.¹ Moreover, it

Suggested structure when a patient is hesitant about vaccination, applied to a 55-year-old woman concerned about whether to have the AstraZeneca vaccine (ChAdOx1-S) for coronavirus disease 2019 (COVID-19)*

Communication practice	Example
Elicit questions and concerns	"You mentioned earlier some concerns about getting the COVID-19 vaccine. Can you tell me more?"
Acknowledge concerns	"It's understandable that you have some concerns."
Set brief agenda	"Let's go through that concern about the clotting risk for you and also the possible benefits of having the vaccine soon. How does that sound?"
Share knowledge	"Can I share what I know so far? The risk from the vaccine is small — it may affect 16 people in every million in your age group. It can be quite serious if not treated early. Here is some information showing the risks of the rare blood clotting syndrome alongside the risks of going to the ICU with COVID-19. I also have some information about what to look out for. This may help your decision."
Elicit potential motivation to vaccinate	"What might be important to you about having the vaccine now?"
Set out options, share tailored recommendation	"So if I could summarise, your options are to not vaccinate, to wait for Pfizer vaccine doses to be available later on, or to have the AstraZeneca vaccine right now. There are pros and cons of each option. Having looked at all the considerations, where are you leaning?" "I will respect whatever decision you make. I would like to see you get vaccinated sooner rather than later."
Continue the conversation	"If there is an outbreak, the risk from COVID-19 is increased. Could we revisit your decision then?"

ICU = intensive care unit. * Based on the Sharing Knowledge About Immunisation (SKAI) approach,²¹ (<http://providers.talkingaboutimmunisation.org.au/>). ♦

acknowledged inevitable trade-offs, such as an impact on confidence. The group includes consumer perspectives, which were actively sought throughout the process.

Make values explicit

We recommend that public communication is explicit about values, particularly when decisions are made about the acceptability of a risk to one's health, family, and social and economic life.²² It is vital that consumers are involved in decision processes and communication planning, as this helps ensure that decisions and messages are relevant and conversant with community values.

Use clear, accurate, actionable messages

Confusion among patients and providers is likely, owing to the complexity, nuance and dynamism of the changes; for example, misconstruing what "preferred" and "not recommended" mean (neither means the AstraZeneca vaccine is banned for people aged under 50 years), or uncertainty about appropriate consenting processes for individuals aged less than 50 years who choose the AstraZeneca vaccine. This will be intensified for key groups where information may not be tailored. Communicators announcing new risk information should inform audiences what it means for them and how they should respond. Messages should be developed with health literacy in mind and pre-tested to ensure they are understood and salient. Governments should continue to inform people about the vaccine recommendations over time — previous safety-related program changes showed that an ongoing deficit of information contributed to persistent vaccine ambivalence.²³

Promote vaccination but do not over-reassure

Highlight the benefits of vaccination that are relevant to people and resonate with their values, even in the context of low disease transmission. However, avoid over-reassuring people about vaccine safety with statements such as "the vaccine is safe for people over 50 years". Early overconfidence in rates of an outcome may also affect trust if data change. Signal the potential for estimates to be updated over time so the public are more ready for change.

Diversify communication channels and platforms

Research interviewees have told us they do not know where to look for reliable information that answers their specific questions. Multiple channels should be used and government information should be easy to access without having to search around. Many people rely on social media and messaging smartphone applications such as WhatsApp, but different platforms are preferred depending on age and cultural background. Television and radio, including community programming in different languages, are also important avenues for communication. The Commonwealth, state and territory governments should enable local public health entities to communicate with their own communities about vaccination so it is appropriately tailored.

Identify and address misinformation

Information about the vaccination program may become rumour and misinformation as it spreads through the community. Some of our research participants have shared vaccination myths that contribute to their hesitancy. Proactively debunk myths that are spreading widely or affecting behaviour.²⁴

Prioritise key groups for communication

Aboriginal and Torres Strait Islander people may value the opportunity to ask questions and have discussions rather than fit the characterisation of being hesitant. Consider the information needs of different health care worker groups as well. Vaccine providers need support and information to respond to queries, but other health care workers will also face questions and may not know how to respond. Health care workers considering vaccination for themselves are a key group since they may be more vulnerable to COVID-19, at risk of transmission, recommending the vaccine to their patients and are also trusted in their families and communities for health advice.

Use credible spokespeople

We recommend that public health, vaccinology, or medical professionals are the preferred voices to communicate about vaccine safety issues rather than politicians. Preliminary data from our research in Victoria and Western Australia showed that health professionals and advisory bodies are trusted more than politicians when discussing adverse events following immunisation that affect peoples' health. Both health care workers and members of the public prioritised in phases 1a and 1b preferred to hear information about vaccines from medical and scientific professionals.²⁵ Trusted spokespersons should spend time engaging with the community — attending community forums and answering questions to break down the gap between technical experts and the community. For people from culturally and linguistically diverse (CALD) communities, our national research suggests that CALD health professionals be the spokespeople, or that non-CALD health professionals partner with community and faith-based leaders.

Sustain trust

Trust in the Australian Government can directly affect trust in the vaccine program.¹⁰ Transparency and demonstrated efforts to work across the aisle will help to maintain and rebuild trust. The government's decision to assemble the National Cabinet for more regular meetings was a positive move towards a more unified response.

Use data to inform action

Public responses to vaccine safety issues can sometimes rely on anecdotes about impact and lack data to inform communication and planning. Data showing a decline in vaccination coverage do not disentangle the reasons for it to occur. While confidence in vaccine safety will inevitably be reduced in some people, others may face difficulty with booking an appointment or with perceived availability of the vaccine. A sole focus on hesitancy alone may

come at the expense of understanding and addressing other barriers to vaccination.

Monitor and evaluate

It is impossible to know if communication is effective unless it is evaluated. Mechanisms for monitoring public responses to information and barriers to vaccination can include reviews of hotline questions, social media listening, search analytics, pulse surveys, and qualitative research.

Conclusion

Achieving high COVID-19 vaccine coverage will be a significant challenge given Australia's supply, access and hesitancy challenges. Good risk communication and support for providers and the public to make decisions about vaccination are essential as we can work towards protecting all Australians, opening our borders, and continuing to live optimally with COVID-19.

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Competing interests: Julie Leask, Katie Attwell and Margie Danchin are Specialist Advisors to the Vaccine Safety Investigation Group of the Therapeutic Goods Administration. Julie Leask has been an unpaid advisor to the COVID-19 vaccine AstraZeneca Advisory Board. Katie Attwell and Margie Danchin sit on the Australian Technical Advisory Group on Immunisation (ATAGI) subgroup advising the Commonwealth on COVID-19 vaccination communications and confidence. They were not involved in the main ATAGI group advising on the vaccination recommendations on 8 April 2021. Holly Seal is a listed investigator on studies receiving funding from the NHMRC. She is also receiving funding for investigator-driven research from the NSW Ministry of Health. She has previously received funding from drug companies (Seqirus, GSK, and Sanofi Pasteur) for investigator-driven research and consulting fees to present at conferences and workshops and develop resources.

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