The Australian maternal vaccination landscape in 2025 and beyond: New recommendations and strategies to improve uptake

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Background

Pregnant individuals and infants aged <6 months (<6 m) have a higher risk of acquiring respiratory infections than the general population.[1] These infections are predominantly influenza, whooping cough (pertussis), respiratory syncytial virus (RSV), and COVID-19. Once acquired, the increased risk also applies to hospitalisations, intensive care unit admissions, stillbirths and maternal and infant deaths.[1–3] The burden of illness for each infection differs in pregnancy and infancy. For example, influenza affects both pregnant people and infants <6 m of age; the highest burden of pertussis and RSV infections occurs among infants <6 m of age, and COVID-19 infections affect pregnant people more than infants. Acute respiratory infection mortality is considerably higher among First Nations Australian pregnant and infant populations than among their non-Indigenous counterparts.[4–6]

In Australia, influenza vaccination has been recommended since 2000 and pertussis vaccination since 2014 in Queensland and 2015 in the remaining states and territories.[7] In 2021, COVID-19 vaccines were recommended in pregnancy and funded under Emergency Measures during the pandemic.[8] Although they are no longer funded or routinely recommended for pregnancy, COVID-19 infection still poses a serious risk of morbidity and mortality in pregnancy, so vaccination is appropriate at any stage for those at a higher risk.[9] In 2024, a birth dose of the monoclonal antibody nirsevimab was introduced to reduce RSV infections, followed by Abrysvo vaccine for RSV recommended in the third trimester of pregnancy in January 2025.[10] Influenza and COVID-19 vaccines are neither licenced nor recommended for use in infants <6 m of age.[11] Infants require three doses of a pertussis vaccine to be considered fully immunised, which does not happen until they reach 6 m of age.[11] Infants aged 0–6 m therefore remain vulnerable to respiratory infections in the absence of other interventions. Vaccinations administered during pregnancy (referred to as maternal vaccination from herein) have become an effective and safe strategy to reduce these infections.[12] Protection is provided to the pregnant person and their unborn infant through the mechanism of maternal antibody transfer. Protection against infection can take up to 14 days following vaccination, so if the infant is born at least two weeks after vaccination in pregnancy, then they will be protected. Also, infants should not require a birth dose of nirsevimab if they were born at least two weeks after RSV vaccination is given in pregnancy.

In Australia, all vaccines recommended in pregnancy are free. They are also all inactivated which means they cannot cause an infection from the intended vaccine. The timings of each vaccination and their target group for protection are shown in Box 1.

Factors affecting vaccine uptake

Although all recommended maternal vaccines are free in Australia, their uptake remains sub-optimal,[13] and this trend has been consistent globally,[14,15] even prior to the pandemic. Uptake is particularly poor for influenza vaccination nationally, and substantial variation exists across the country. Some studies suggest that the poor uptake is due to a lack of awareness that the vaccine is recommended during pregnancy, concern that the vaccine causes influenza, or that other vaccines are being preferred in pregnancy

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Box 1. Vaccines recommended during pregnancy, their optimal timing, and target population

Current Australian maternal vaccination schedule

Vaccine	*Target group for protection*	*Recommended timing in pregnancy*
Influenza	Pregnancy and early infancy	Any gestation if pregnant during influenza season
Pertussis[a]	Infants aged <6 months	20–32 weeks gestation
RSV[b]	Infants aged <6 months	28–36 weeks gestation

[a]Booster vaccine (contains diphtheria, tetanus, and acellular pertussis).
[b]Respiratory syncytial virus.

over influenza that are framed at protecting their infant rather than themselves.[16,17] For example, with pertussis vaccination—framed at protecting infants—uptake ranges between 65% and 80% compared to ~33% and 60% for influenza which is predominantly framed at maternal protection despite the dual benefit to infants.[13] Though not widely circulated in the media, pregnant women are still dying in Australia from influenza infection each influenza season, resulting in the death of their fetus. Vaccine-provider recommendations from a general practitioner (GP), midwife, or obstetrician remain the highest known predictors of maternal vaccination uptake,[18,19] so a stronger message needs to be sent from this group advising that protecting the pregnant person also means protecting their infant. Concerns about vaccine safety and effectiveness by prospective parents, midwives, GPs, obstetricians and other vaccine providers remain factors that detract from vaccine uptake in pregnancy,[20] with some GPs requesting local population safety and effectiveness data that they can provide to patients for local context (personal communication, April 2025 National Vaccine Safety forum).

With respect to safety, data have shown that there is no increased risk in adverse pregnancy outcomes such as preterm birth, low infant birthweight, small for gestational age, or stillbirth after receiving influenza or pertussis vaccination during any stage of pregnancy.[21,22] Preliminary safety studies have not identified any adverse maternal or infant outcomes from maternal COVID-19 vaccinations.[23] Abrysvo vaccination is registered from 24 to 36 weeks gestation; however, administration is currently recommended between 28 and 36 weeks gestation until further safety and efficacy data have been updated.[10]

Vaccination coverage, and therefore protection against disease, is also influenced by equity. Families living in remote areas and in lower socioeconomic regions report lower rates of vaccination uptake in pregnancy than those in non-remote living families and those in higher socioeconomic areas.[24] This is partly attributable to barriers in physical and financial access. This is important because the highest burden of respiratory infections is among families living remotely and in lower socioeconomic areas.[25] Although the vaccines are free, there are often out-of-pocket healthcare provider expenses. Along with improving vaccine equity, the health literacy of consumers and vaccine providers needs consideration. Clear, concise messaging about the disease burden and subsequent complications from infection is imperative, as is clear, translatable messaging about vaccine safety and effectiveness. These strategies can increase consumer and vaccine-provider confidence and acceptability[20] and must be applied within the Australian context given our diverse cultures, ethnicities and populations. Primary healthcare services are the main point of contact for maternal vaccination, mostly in the GP setting; however, as pregnancy progresses, if shared antenatal care arrangements (a combination of GP visits with antenatal clinic care) transition to predominantly hospital-based pregnancy care, then vaccine administration needs to become the responsibility of the hospital/private antenatal care provider to ensure continuity of care.

Midwives are already expected to cover an enormous load during antenatal visits; however, they are critical in increasing maternal vaccination uptake. Some facilities in different jurisdictions provide opportunistic vaccination in antenatal clinics, and this would increase uptake substantially if rolled out nationally. For example, maternal pertussis vaccination uptake increased from 20% to 90% when a vaccination was offered by Australian midwives in one routine antenatal care setting.[26] Nurse immunisers or other vaccine providers based at antenatal clinics with written standing orders to enable immediate vaccination have proven to be a valuable addition in this space,[27] mitigating the need for additional GP visits and associated costs to the pregnant person. Ongoing consultation and engagement with midwives in vaccination policy, programs and planning is essential however, as is ensuring that vaccine administration is within their scope of practice prior to embedding this into routine clinical practice. Some jurisdictions provide online accreditation to formalise these skills with the completion of modules contributing to professional development points. While this is one strategy to increase the workforce capability, it comes at a financial cost to the midwife, which would be a disincentive for some. Providing free, recent, local evidence-based information to midwives on the safety and effectiveness of vaccines in pregnancy will also be critical to improving their uptake.

Strategies to increase maternal vaccination uptake

Addressing inequity and reaching specific populations where maternal vaccine uptake is declining is required. Vaccine inequity disproportionately affects First Nations families. Compared to non–First Nations and culturally and linguistically diverse pregnancies, we found pertussis vaccination in pregnancy was ~20% lower among First Nations Australians, and this has subsequently led to higher rates of pertussis infections among First Nations infants.[4,24] Strategies to increase maternal vaccination among First Nations families in Australia involves increasing the provision and access to culturally appropriate, affordable health care.[28] First Nations peoples view vaccination positively, with children having some of the highest vaccination rates in the country (such as fully vaccinated 5-yr olds).[29] Access is more than a physical location; it is also about trust, timing and appointment-booking systems and cultural safety of the program and the staff, such as creating designated vaccination hubs run by First Nations healthcare workers and immunisers and resources and education tools designed with input from First Nations community members. Language and visual artwork relays information to community members and supports health literacy.

While maternal vaccination rates were declining prior to the pandemic, the rise of misinformation on social media platforms has

contributed to declining uptake, particularly among the vaccine hesitant and ex-vaccinators.[30] Strategies are needed to reach these groups which could include initiating and ongoing engagement to understand their concerns and needs and then co-creating podcasts and short videos using an FAQ-style approach and myth-busting clips for social media. Clear, transparent, jargon-free communication and explanations of safety and effectiveness data between all stakeholders is needed and disseminated among all relevant healthcare professionals and the maternal community.

Public health importance

The barriers and facilitators of maternal vaccination uptake are known. Growing the maternal vaccination workforce with opportunities for more education, clearer vaccine safety and effectiveness messaging, and culturally appropriate strategies specific to First Nations and other culturally and linguistically diverse families are all required to increase the uptake of vaccinations in pregnancy. This needs to include culturally and linguistically specific educational resources and brochures. Increasing uptake needs to be a priority among all levels of government and in the front of mind for vaccine and healthcare providers, particularly with maternal RSV vaccine now added to the schedule.

Conflicts of interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Serves in an editorial capacity for *ANZJPH*-LMc. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Ethics aproval

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