

Maintaining momentum on immunisation in Australia



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The introduction of the National Immunisation Program 20 years ago was a catalyst for immunisation in Australia, resulting in significant improvements in immunisation coverage rates, reduced morbidity from diseases covered through the Program, and high community acceptance and support. At the same time, concerns about vaccine safety have grown, a paradoxical result of the success of vaccination and driven by a small cohort with strong anti-vaccination views. Vaccination is one of public health's greatest successes – while it's important to celebrate its success, we must also not become complacent. There is more work to be done, particularly to ensure those most at risk are also able to enjoy the benefits of immunisation.

The 1997 launch of the Immunise Australia Program (now known as that National Immunisation Program) proved to be a major catalyst for immunisation in Australia, establishing incentives for GPs and parents to immunise, school entry requirements, and national infrastructure to support policy and program improvements¹. Since that time, the risks of vaccine preventable diseases have fallen with significantly improved immunisation coverage rates for all² and Aboriginal and Torres Strait Islander children³, as well as increases in the number of diseases covered by the National Immunisation Program⁴.

Immunisation is often identified as one of the most effective public health intervention in Australia and globally. Its value has been demonstrated in Australia through reduced morbidity, with the *Haemophilus influenzae* type b, measles⁵, and meningococcal C⁶ vaccination programs providing excellent examples of the health impact of vaccines. In addition, whilst the economic impact of

vaccines is often assumed, Reyes *et al.*'s⁷ review of rotavirus vaccine implementation in Australia was able to demonstrate the economic value of the vaccination program. Finally, while it is difficult to quantify the value society places on wellness, there are almost constant calls for new and expanded vaccination programs to be funded by the Australian Government.

Whilst we have not had a recent, representative survey of community attitudes towards vaccination, research⁸ and smaller scale surveys⁹ have consistently demonstrated strong support for immunisation. However, there remains a small group of parents with concerns about vaccine safety for their children¹⁰, particularly for influenza vaccines¹¹, vaccine components, and (debunked) links to syndromes or disorders¹². These concerns are often heightened by misinformation distributed from an even smaller group of ideologically driven anti-vaccination campaigners, who use social media and other strategies to create anxiety, particularly in vaccine hesitant parents.

Over time, as vaccine preventable diseases have become less common, people's perceptions of the relative risks of the diseases versus the risks and benefit of vaccination have become skewed. The safety record of current vaccines is very good¹³, but monitoring and reporting of adverse events following immunisation has become increasingly important to provide the community with information about, and assurance of, vaccine safety. The Australian Government has recently funded the AusVaxSafety National Surveillance System. AusVaxSafety is a world leading, national, active vaccine safety surveillance system that currently monitors three National Immunisation Program vaccines and will soon grow to monitor and report on all Program vaccines¹⁴. Importantly,

the system has capacity to monitor vaccines used in the time of a pandemic, when vaccines may be required to be quickly distributed and administered.

Despite high coverage rates nationally (now at 93.7% for five-year-old children), the practical barriers and perceived safety concerns have resulted in significant geographic variation in immunisation coverage rates¹⁵, contributing to pockets of disease transmission risk in some local areas. There are also appropriately unvaccinated populations at increased risk of vaccine preventable diseases, such as newborn babies and those who are immunocompromised. Australians travelling abroad are not always fully immunised, leaving them prone to infections such as measles – 75% of measles cases in Australia in 2014 were imported or import-related with the remaining 25% of unknown source¹⁶.

There is also a need to think carefully about how immunisation is presented to the community. At the same time as parents are asking for evidence based information to support decision-making¹⁰, the online debate is often overwhelmed by those with strong anti-vaccination views.

We know that perception matters and that people's knowledge about and experiences with diseases shape their views about vaccination. For example, seasonal influenza causes the greatest burden of all vaccine preventable diseases in Australia¹⁷, yet the community's attitudes towards the importance of seasonal influenza vaccines do not align with the burden. Parents also worry about the appropriateness and timing of vaccines, particularly hepatitis B at birth and human papillomavirus for early adolescents. On the other hand, relatively rare yet potentially catastrophic diseases (for example invasive meningococcal disease) or those that can have a disproportionate burden amongst infants (for example pertussis) have captured the community's focus and desire for vaccination.

A further public health advantage of vaccination, not widely appreciated by the community, is its role in reducing antibiotic usage and hence the growth in antimicrobial resistance. This is currently well demonstrated with pneumococcal vaccination¹⁸, but vaccines under development (such as for Group A streptococci) could have an even greater impact on antimicrobial resistance.

While the goal should be to eradicate vaccine preventable diseases in Australia and globally, disease management is more realistic in some cases. Low or waning vaccine effectiveness can make controlling transmission of some diseases very difficult (e.g. acellular pertussis¹⁹ or influenza vaccines^{20–22}). Further, high vaccine costs or relatively low cost-effectiveness may make it difficult for some

vaccines to be listed on the National Immunisation Program Schedule (for example, the Pharmaceutical Benefits Advisory Committee has assessed and rejected the cost-effectiveness of meningococcal B vaccination programs on three occasions²³). In addition, disease importation continues to be a challenge, particularly for measles, and the reliance on globally coordinated actions means control activities in Australia are reliant on those in other, sometimes developing countries. Finally, an ability to survive long periods without a human host (e.g. tetanus) makes eradication a long-term strategy for some infections.

Overall, Australia has made great progress over the past 20 years in managing vaccine preventable diseases, a success highlighted by the AIHW's Australian Burden of Disease project which showed a relatively low burden of infectious diseases.

While celebrating the success of the program, it is important to not become complacent. There is more to be done, including continued efforts to improve immunisation coverage rates in targeted geographic areas, amongst at risk populations such as Aboriginal and Torres Strait Islander people, and, more broadly, amongst adults²⁴. The National Immunisation Program Schedule must be constantly under review, as new evidence emerges, so that we can provide the best contemporary protection for the community. Finally, we must be ever vigilant to monitor and correct, with scientifically based communications, the factually incorrect and irresponsible claims of the small but vocal anti-vaccination movement.

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Biographies

Masha Somi has a BA/BEC (Hons, 1st) and PhD from The Australian National University. Her doctoral research investigated socioeconomic inequalities in malaria outcomes in rural Tanzania. Dr Somi has almost 20 years experience in the Australian Public Service, the last 8 as a senior executive in the Australian Government Department of Health.

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