

# Australia needs an expanded immunisation register for further improvements in vaccine delivery and program evaluation

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*The absence of information on immunisation after the age of 7 years leaves a public health void*

The Australian Government currently funds the Australian Childhood Immunisation Register, including financial incentives for vaccine providers and parents, to update and record vaccinations given to children up to 7 years of age.<sup>1</sup> The register provides information enabling appropriate updating of vaccination status for young Australian children. It also provides invaluable data on immunisation coverage, allowing ongoing evaluation, at a population level, of implementation, impact on disease, and vaccine safety for current childhood vaccination programs.

However, this information is not available for vaccines administered after 7 years of age, the number of which is steadily increasing with the availability and funding of new vaccines as part of the National Immunisation Program. In 2007, a separate register was developed for human papillomavirus vaccine. But, in the absence of a register for other vaccines administered after age 7, providers, clinical researchers and assessors of program implementation must rely on self-reported vaccination status or on locating vaccination records. In some other countries there are alternatives for accessing data on vaccination status at a population level (eg, the records of health maintenance organisations providing private health cover for sub-populations in the United States,<sup>2</sup> or population-based linked databases such as a government-run initiative in Catalonia, Spain<sup>3</sup>), but none exist at present in Australia.

In 2006, the Australian Government Department of Health and Ageing announced a scoping exercise to examine the need for a “whole-of-life” immunisation register.<sup>4</sup> It is illuminating to consider some key points informing this important debate relating to vaccination of elderly Australians. These have included the potential impact of relying on self-report to vaccinate elderly Australians, as well as improvements in program evaluation and opportunistic vaccination that might occur with the introduction of an expanded immunisation register.

Influenza vaccine and 23-valent pneumococcal polysaccharide vaccine (23vPPV) have been funded in Australia for people aged  $\geq 65$  years since 1998 and 2005, respectively. They have proven benefit against confirmed influenza and invasive pneumococcal disease in this age group. Yet current assessment of coverage achieved by the program is limited to annual telephone surveys based on self-reported data from about 1000 people from each jurisdiction, and excludes residents from institutions such as aged-care facilities.<sup>5</sup> Adverse events are reported via passive surveillance to the Therapeutic Goods Administration. Such an approach is likely to provide much poorer population estimates than accessing an effective register for the entire population. In addition, providers vaccinating individuals must continue to rely on self-report or location of vaccination records, and there is no facility for evaluating program implementation in other recommended at-risk groups such as Indigenous adults.

The most recent of two Australian studies examining the validity of self-reported 23vPPV and/or influenza vaccination

status in elderly people, which included almost 3000 Victorians, confirmed that self-report is problematic.<sup>6</sup> Compared with provider-confirmed dates of influenza vaccination in the previous year, self-report had low specificity (56%) and over-estimated true coverage by 10% (86% versus 76%) — estimates that fall within the range provided by earlier studies.<sup>7–10</sup> Estimates for validity of self-reported 23vPPV status in the previous 5 years (76%–85%)<sup>7</sup> are also consistent with these earlier studies. Further improvements in vaccination coverage for elderly Australians with 23vPPV and influenza vaccine are warranted, given recent population coverage estimates of 71%–79% (influenza vaccine)<sup>5,7,11</sup> and 51%–53% (23vPPV).<sup>5,7,11</sup>

A study of opportunistic vaccination among 4772 elderly hospital inpatients<sup>11</sup> revealed a zero in-hospital opportunistic vaccination rate, despite virtually all unvaccinated subjects having had multiple visits (an average of 12) to vaccine providers in the community or the same hospital in the year before admission. Furthermore, only 2% of the inpatients had had their 23vPPV or influenza vaccination status recorded during admission — an omission previously cited as the single most important factor impeding opportunistic vaccination.<sup>12</sup> Providers clearly have competing priorities and are failing to fully implement vaccination policy. Given the difficulties inherent in relying on self-reported vaccination status or written records, a register would greatly improve ascertainment of vaccination status among elderly people and potentially contribute to delivery of more vaccinations.

Influenza vaccine and 23vPPV for the elderly are just two examples. It is highly likely that a national vaccination register would also improve the delivery and assessment of other vaccines received after age 7. An expanded register with the facility to include current and new National Immunisation Program vaccines beyond the 0–7-year age group could improve vaccination status and prevent over-vaccination. It would also allow evaluation of programs and monitoring of adverse events, and would be a valuable addition to any future national data linkage system that included health care records and drug prescription data, for which Australia has the potential to be a world leader.<sup>13</sup> How Australia chooses to record vaccination status for all of its citizens will require careful consideration of costs and will no doubt be examined by the current scoping exercise. Assessment of the issue should include the potential human costs of incomplete vaccination and suboptimal monitoring of adverse events related to vaccination.

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