



Government of **Western Australia**
Department of **Health**

Western Australian Immunisation Strategy 2013–2015



Delivering a **Healthy WA**

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Acronyms

ACIR	Australian Childhood Immunisation Register
AEFI	Adverse Events Following Immunisation
AGPN	Australian General Practice Network
AHPC	Australian Health Protection Committee
AIA	Australian Immunisation Agreement
AMS	Aboriginal Medical Service
ATAGI	Australian Technical Advisory Group on Immunisation
CAHS	Child and Adolescent Health Services
CDCD	Communicable Diseases Control Directorate
CDNA	Communicable Diseases Network of Australia
CIC	Central Immunisation Clinic
DIPO	Divisional Immunisation Program Officer
DoE	Department of Education
DoHA	Department of Health and Ageing
GPII	General Practice Immunisation Incentive
HCW	Health Care Worker
IPO	Immunisation Program Officer
ML	Medicare Local
NPAEV	National Partnership Agreement for Essential Vaccines
NCIRS	National Centre for Immunisation Research and Surveillance of Vaccine Preventable Disease
NHMRC	National Health and Medical Research Council
NIC	National Immunisation Committee
NIP	National Immunisation Program
NNDSS	National Notifiable Diseases Surveillance System
NPHP	National Public Health Partnership
PBAC	Pharmaceutical Benefits Advisory Committee
PBPA	Pharmaceutical Benefits Pricing Authority
PHU	Public Health Unit
RIC	Regional Immunisation Coordinator
TGA	Therapeutic Goods Administration
VPD	Vaccine Preventable Diseases
WACHS	WA Country Health Service
WA Health	Western Australian Public Health System
WAGPNet	Western Australian General Practitioner Network
WANIDD	Western Australian Notifiable Infectious Diseases Database
WHO	World Health Organization



Message from the Minister for Health

Immunisation is well recognised as one of the most effective health measures a society can undertake. According to the World Health Organization (WHO), vaccination is second only to clean water as the public health intervention with the greatest impact globally.¹

In Western Australia, vaccines have greatly reduced the burden of infectious diseases and continue to protect our population from potential outbreaks of serious communicable illnesses, including poliomyelitis, measles, rubella and meningitis.

Given their impact on the health of individuals and communities, it is understandable that measuring and improving immunisation rates for vaccines in the national schedule is a primary output of the new National Health Care Agreement.

Achieving and maintaining high rates of vaccination coverage calls for an ongoing commitment from many private and public stakeholders including General Practitioners, Child and Adolescent Health Services, Country Health Services, Area Health Service Chief Executives, the Divisions of General Practice, Public Health Units, Aboriginal controlled community health organisations, local government Medicare locals and more.

It is imperative that we sustain the momentum built since the inaugural Western Australian Immunisation Strategy was developed in 2008, and concentrate on delivering tangible, quantifiable outcomes that will benefit the people of Western Australia.

This document gives clinicians, administrators, policy makers and regulators a clear direction on WA Health's priorities for delivering immunisation services. Over the next three years, we will ensure the strategic objectives in this plan are met as we create a system of immunisation service delivery that best meets the needs of both individuals and communities for years to come.

I am pleased to endorse the *Western Australian Immunisation Strategy 2013–2015*.

Hon Dr Kim Hames
MINISTER FOR HEALTH

¹ Bulletin of the World Health Organization: 2008 Volume 86, Number 2, February 2008, 81-160

Message from the A/Director General

Vaccines have had an enormous impact on health.

Death and disability from what were once referred to as the ‘common diseases of childhood’ are now rare in WA. Today these illnesses are known as ‘vaccine preventable diseases’ (VPDs).

A child born in Western Australia today can be protected against 16 serious illnesses, including cancers caused by human papillomavirus and hepatitis B virus, with vaccines funded under the National Immunisation Program. Adolescents and adults can also benefit from vaccinations through protection against influenza, pertussis, tetanus, invasive pneumococcal disease and more.

WA Health is committed to providing excellent immunisation services to all Western Australians, and promoting the vital role that immunisation plays in the health of our community.

Vaccines not only help prevent disease, they are also highly cost-effective. In a recent analysis performed for the routine childhood vaccinations, \$5 of direct medical costs were saved for every \$1 expended on immunisations. Another \$11 is saved in indirect costs (for example, time off work, loss of productivity). From both a medical and economic perspective, we have strong evidence to support our efforts to make high-quality immunisation services available to all Western Australian communities.

WA Health recently signed the National Partnership Agreement for Essential Vaccines (NPAEV). This Agreement contains several performance benchmarks for assessing the quality of immunisation services. Meeting these benchmarks will go a long way towards ensuring WA immunisation services are world class, and as such, they are reflected in the objectives of the *Western Australian Immunisation Strategy 2013–2015*.

Ironically, vaccines have been so effective in preventing many serious diseases that their significant contribution in achieving this status is at risk of fading from public consciousness. We simply cannot afford to become complacent about protecting our communities through vaccination. All sectors of our State’s health care system need to make attaining and sustaining best-practice immunisation services a top priority.

WA Health has an unwavering commitment to protect the health of our citizens through vaccination. I urge everyone across our health system to work together to ensure successful implementation of the *Western Australian Immunisation Strategy 2013–2015*.



Professor Bryant Stokes
A/DIRECTOR GENERAL



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Executive summary

Immunisation is frequently cited as one of the greatest medical breakthroughs in human history. Research has shown vaccinations to be the most effective medical intervention for reducing morbidity and mortality from infectious diseases, surpassing even the notable contribution of antibiotics.

Despite the overall success of immunisations and ready availability of safe and effective vaccines, many vaccine-preventable diseases (VPDs) still occur in Australia. The consequences of this include increased doctor visits, absence from work and school, hospitalisation, even permanent disability or premature death. In fact, in the decade between 1989 and 1998, 581 deaths were recorded in Australia from diseases that could have been prevented by vaccines on the current childhood immunisation schedule (measles, tetanus, pertussis, mumps, *Haemophilus influenzae* type b, diphtheria and hepatitis B).

Immunisation coverage in WA is generally lower than other jurisdictions in Australia. Public and private immunisation service providers here must work together and be proactive in addressing sub-optimal vaccine uptake so that our communities are fully protected from VPDs.

The *Western Australian Immunisation Strategy 2013–2015* provides a vision for improving immunisation services in WA over the coming years. The Strategy articulates 12 ‘Objectives’ to establish a comprehensive framework for enhancing all aspects of immunisation program service delivery. This includes specific strategies to:

- improve immunisation rates among children entering school and in geographic areas with low vaccination rates
- improve immunisation rates among Aboriginal* populations
- expand access to immunisation services by increasing the capacity of existing health care providers to vaccinate
- improve the immunisation consent process throughout WA
- sustain mechanisms to ensure robust surveillance and follow-up of suspected adverse events following immunisation
- enhance surveillance for vaccine-preventable diseases
- ensure stakeholder involvement in immunisation planning
- meet the performance benchmarks in the National Partnership Agreement for Essential Vaccines.

All immunisation stakeholders – public and private providers and the community in general – should review this strategy and consider the gravity of its importance. It is WA Health’s aim that it will be a powerful tool for establishing programs and partnerships that strengthen our capacity and resolve to protect the health of our communities through immunisation.

* Throughout this document the word “Aboriginal” refers to both Aboriginal and Torres Strait Islander people.



1. Purpose

The purpose of the *Western Australian Immunisation Strategy 2013–2015* (the Strategy) is to provide clear direction for immunisation stakeholders on how to optimise immunisation service delivery across the State, within the context of national policy.

2. Goal, aims and objectives

The goal of the *Western Australian Immunisation Strategy 2013–2015* is to protect individuals and populations from vaccine-preventable diseases (VPDs).

The overarching aims of the Strategy are to:

- achieve or sustain high levels of immunisation coverage across WA, with equity of access to vaccines and immunisation services, including communities that have special needs because of remote location or socio-cultural or economic factors
- provide safe, high-quality vaccines and immunisation services that generate and maintain public confidence and adherence to vaccine regimens
- ensure cost-effective use of vaccines and efficient immunisation services that minimise waste
- have timely and effective monitoring of immunisation coverage and surveillance of VPDs and the occurrence of adverse events following immunisation (AEFI)
- have clear communication with the public and providers about VPDs, vaccines and AEFI.

These aims are reflected in performance benchmarks in the National Partnership for Essential Vaccines, and consistent with those of the proposed new National Immunisation Strategy.

In order to achieve the aims listed above, 12 Objectives have been established, with a set of strategies around each. These objectives are:

Objective 1: Increase vaccine coverage in areas of low immunisation coverage

Objective 2: Increase vaccination coverage for Aboriginal people

Objective 3: Decrease vaccine wastage and leakage

Objective 4: Increase vaccination coverage of four year olds

Objective 5: Increase vaccination coverage of high school students

Objective 6: Increase vaccination coverage of adults

Objective 7: Improve informed consent for vaccinations

Objective 8: Increase immunisation workforce capacity

Objective 9: Improve surveillance for vaccine preventable diseases

Objective 10: Improve vaccine safety monitoring

Objective 11: Improve communication with stakeholders and the community

Objective 12: Encourage and support applied immunisation research.

3. Background

3.1 Immunisation in Australia – roles and responsibilities

In Australia, immunisation policy is a shared responsibility between the Commonwealth Government and State and Territory Governments. The Commonwealth Government sets the national immunisation agenda by developing, recommending and directing policy, procuring vaccines and evaluating program activities on the advice of expert committees and research centres. The State Government of Western Australia is responsible for vaccine acquisition and distribution, immunisation program implementation, ensuring excellence in service provision, and program monitoring and evaluation.

Although key immunisation policies are established nationally, jurisdictions vary widely in how they implement and organise immunisation services.

3.2 The economic case for vaccination

If left unchecked, the heavy personal toll on patients and their families in terms of suffering, morbidity and mortality, vaccine preventable diseases creates an enormous financial burden on society. Analysts recently reported on the cost-effectiveness of vaccinating a single birth cohort in the United States with vaccines against diphtheria, tetanus, pertussis, *Haemophilus influenzae* type b, polio, measles, mumps, rubella, hepatitis B and varicella.² The vaccines and immunisation schedule evaluated in the study are nearly identical to those given to children in Australia as part of the routine immunisation schedule. Both countries are highly developed with roughly comparable standards of living and access to advanced health care. The analysis found for every dollar expended, the routine childhood vaccination program saves more than \$5 in direct costs and approximately \$11 in additional costs to society. If the results are applied to WA, the net savings over the lifetime of a single birth cohort would be \$79 million in direct health care expenditures, and \$339 million from a societal perspective.

In the US assessment, the costs taken into account included vaccines and their administration, parent travel and time lost, and adverse events associated with these vaccines. WA is not required to purchase most vaccines used in the State because they are provided by the Commonwealth as part of the National Immunisation Program. Therefore, from a WA fiscal perspective, the benefit to cost ratio of implementing the childhood vaccination program is even greater.

It is clearly in our interests, both medically and financially, to maximise vaccination coverage in WA.

² Zhou F, Santoli J, Messonnier ML, Yusuf HR, Shefer A, Chu SY, Rodewald L, Harpaz R. Economic Evaluation of the 7-Vaccine Routine Childhood Immunisation Schedule. *Arch Pediatr Adolesc Med*. 2005 Dec;159(12):1136-44.



4. Roles and responsibilities for immunisation at the national level

Australia has an excellent record of achievement in immunisation against VPDs. Nationally, immunisation coverage, especially of infants and children, has reached very high levels over the last 15 years. The National Immunisation Program (NIP), which is delivered under an agreement between the Australian Government and the State and Territory governments known as the National Partnership Agreement for Essential Vaccines (NPAEV), provides free vaccines in accordance with a schedule determined by national experts. The NIP Schedule has expanded greatly over the last two decades. It now covers up to 16 VPDs compared with just six VPDs in 1986.

4.1 Immunise Australia and the Seven Point Plan

Many of the major tenets of our current national immunisation policy were first articulated in 1997 with the *Immunise Australia: The Seven Point Plan*.

This plan's development resulted from ongoing concerns about inadequate immunisation rates in Australia and continuing outbreaks of VPDs in the 1990s. The seven points are outlined below, and elements of the first five points still underpin the national approach to immunisation policy today.

1. **Initiatives for parents.** Financial incentives were introduced through family assistance payments for children who are fully immunised for age.
2. **A bigger role for General Practitioners.** In 1988, the General Practice Immunisation Incentive (GPPI) Scheme was introduced to give financial incentives to GPs providing childhood immunisations.
3. **Monitoring and evaluation of immunisation targets.** In 1996, the Australian Childhood Immunisation Register (ACIR) was introduced to provide quarterly reports on immunisation rates.
4. **Education and research.** In 1997, a provider education strategy was launched to increase service provider commitment to promote and participate in childhood immunisation and increase use of the ACIR. In addition, the National Centre for Immunisation Research and Surveillance (NCIRS) was created in 1997 to conduct applied research.
5. **School entry requirements.** School entry requirements were introduced to ensure parents provided their child's immunisation history on enrolment for school.
6. **Immunisation days.** In 1997, mass immunisation days were arranged, targeting under seven-year-old children.
7. **Measles eradication incorporating the measles control program.** A large measles control campaign was implemented nationally in 1998.

4.2 Australian Technical Advisory Group on Immunisation (ATAGI)

The ATAGI provides scientific and technical advice on all aspects of immunisation and reports directly to the Commonwealth Minister for Health and Ageing. ATAGI's specific roles are to:

- determine the Australian Standard Vaccination Schedule (ASVS) and recommend and approve changes to the ASVS as new vaccines become available.
- advise the Pharmaceutical Benefits Advisory Committee (PBAC) on matters relating to the ongoing strength of evidence pertaining to existing, new and emerging vaccines in relation to their effectiveness and use in Australian populations.
- produce the Australian Immunisation Handbook, Australia's paramount reference resource for vaccination, for the approval of the NHMRC.
- consult with the National Immunisation Committee (NIC), the Communicable Diseases Network Australia (CDNA), the Australian Drug Evaluation Committee (ADEC) and the Adverse Drug Reactions Advisory Committee (ADRAC), on matters relating to the implementation of immunisation policies, procedures and vaccine safety.

4.3 The National Immunisation Committee (NIC)

The NIC is the peak body responsible for overseeing the development, implementation and delivery of the Immunise Australia Program. NIC has jurisdictional representation and reports to the Australian Health Protection Committee (AHPC) through the Communicable Disease Network Australia. The current terms of reference are to:

- provide leadership for policy development, implementation and ongoing review of the Immunise Australia Program
- consult and negotiate with stakeholders on the development of national immunisation priorities and strategies regarding service delivery, incentive structures, and the Australian Childhood Immunisation Register (ACIR)
- establish task-oriented, time-limited working groups as required
- collaborate with other peak immunisation related committees (including the ATAGI and CDNA), on issues relating to immunisation policy development and program implementation
- liaise with the National Centre for Immunisation Research and Surveillance (NCIRS) in relation to immunisation research priorities
- promote collaboration between local, state, national and international organisations to inform national immunisation policy
- report to the Australian Health Ministers' Advisory Council (AHMAC) through CDNA, and AHPPC.

4.4 The Pharmaceutical Benefits Advisory Committee (PBAC)

The PBAC is an independent statutory body established on 12 May 1954 to make recommendations to the Minister about which drugs and medicinal preparations should be made available as pharmaceutical benefits.



Since 2006, this Committee has been responsible for approving vaccines for listing on the National Immunisation Program (NIP), and is required by law to consider the effectiveness and cost of a proposed benefit compared to alternative therapies. The Commonwealth Pharmaceutical Benefits Branch determines a nationally negotiated price for all new vaccines.

4.5 The National Immunisation Program (NIP)

The NIP was established in 1996 as a joint initiative between the Australian Government and the jurisdictions. The NIP provides vaccines funded by the Australian Government as covered under the National Partnership Agreement for Essential Vaccines (NPAEV) for the Childhood Immunisation Program, School Immunisation Program and Adult Vaccination Program.

The NPAEV requires the States and Territories to report against performance indicators reflected in the Objectives of the *Western Australian Immunisation Strategy 2013-2015*.

4.6 Australian Childhood Immunisation Register (ACIR)

The ACIR established in 1996 is a national register administered by Medicare Australia which records details of vaccinations given to children under 7 years living in Australia.

Health professionals and health departments use ACIR to monitor immunisation coverage levels and service delivery, and identify regions at risk during disease outbreaks. ACIR data also:

- enables immunisation providers and parents or guardians to check on the immunisation status of an individual child, regardless of where the child was immunised
- forms the basis of an optional immunisation history statement which informs parents and guardians of their child's recorded immunisation history
- provides information about a child's immunisation status to help determine eligibility for the Australian Government's Child Care Benefit and Maternity Immunisation Allowance family assistance payments
- provides information for the delivery of incentive payments and feedback reports to eligible immunisation providers.

Childhood immunisation coverage is reported quarterly by ACIR. Data on the proportion of children fully vaccinated for age is provided for three age cohorts:

- the 12 <15 month age cohort (1-year-olds), providing information on coverage for scheduled immunisations at two, four and six months
- the 24 <27 month age cohort (2-year-olds), providing information on coverage for scheduled immunisations up to and including 12 months
- the 60 <63 month age cohort, (of 5-year-olds), providing information on coverage for the scheduled immunisations up to and including four years.

ACIR is one of the most comprehensive immunisation registers in the world and a

potentially powerful tool for improving immunisation coverage. As it is a medical record that can follow the child across providers throughout Australia, it is critical that all immunisations administered to a child are entered onto ACIR.

Medicare Australia has recently redescribed existing ACIR Field Officer positions into Business Development Officers (BDO). ACIR Field Officers in WA have been central to ensuring that ACIR childhood immunisation data were accurate and that immunisation data were consistently uploaded from general practices to the register. These efforts positively impacted WA immunisation coverage rates. The new BDO positions will instead assist providers, practices and external stakeholders with enquiries across a broad range of Medicare programs, in addition to ACIR. It is possible therefore that the effort dedicated to ensuring the completeness of ACIR data will be diminished.

Another development likely to adversely impact ACIR-derived childhood immunisation coverage rates is a change to the definition of what constitutes a “fully vaccinated” child. Vaccination coverage calculations produced by ACIR currently do not include four routinely recommended childhood vaccines. This will change on 1 July 2013 when vaccinations against pneumococci, rotavirus, meningococcal C, and varicella will be added into the ACIR calculations. The anticipated result of including these four vaccines in the definition of fully vaccinated will mean WA’s immunisation rates will drop from approximately 90% to 75-80%. While this drop will not reflect an actual degradation of coverage rates, but rather a change in the definitions used, it should serve as an added incentive to ensure the strategies to bolster immunisation services outlined in this document are comprehensively implemented.

There is currently no dedicated national immunisation register for adults or children over 7 years.

4.7 The General Practice Immunisation Incentives Scheme

The General Practice Immunisation Incentives (GPII) Scheme was introduced in 1998 by the Australian Government as part of the Immunise Australia: The Seven Point Plan and operated until 2012. The goal of GPII was to support GPs in playing a key role in the National Immunisation Program by providing financial incentives to GPs to monitor, promote and provide immunisation services to children under the age of 7 years.

The GPII Scheme originally consisted of three components:

- I. **Service Incentive Payments (SIP)** — The SIP was paid to GPs who notified the ACIR of a vaccination that completes an immunisation schedule for a child according to the NIP.
- II. **Immunisation Outcomes Practice Incentive Payments (PIP)** — The Immunisation Outcomes PIP was paid quarterly to practices that achieved 90% or greater immunisation coverage for children less than 7 years of age attending their practices.



III. **Immunisation Infrastructure Funding** — This funding was provided to the Divisions of General Practice and state based organisations (WA GP Network) to employ Division Immunisation Program Officer Network staff and a National GP Immunisation Coordinator.

The Department of Health and Ageing (DoHA) administers the GPPII scheme. On 1 October 2008 DoHA cancelled the SIP payment and on 1 May 2013 DoHA will discontinue the remaining components of the General Practice Immunisation Incentive (GPPII) scheme. DoHA acknowledges that discontinuing the GPPII will reduce incentive payments for immunisation but believes there are already sufficient processes in place to improve immunisation of Australian children, including:

- continuing funding to be provided to Medicare Locals for the development of strategies to increase immunisation coverage and to promote best practice childhood immunisation
- continuing payments to practitioners for notification of immunisations to the ACIR
- continuing payments to GPs through Medicare Benefits Schedule rebates for immunisation services
- linking eligibility for parents to receive Family Tax Benefit Part A supplement to the immunisation status of their children.

The extent to which the existing processes offset the impact of discontinuing the General Practice Immunisation Incentive scheme is yet to be determined.

4.8 Australian General Practice Network (AGPN)

The AGPN was established in 1998 as a national body representing 114 Divisions of General Practice and their state-based organisations across Australia. Over 95% of Australia's GPs were members of their local division. The major focus of the AGPN immunisation program was to support and encourage participation of general practitioners in the GPPII scheme as part of the NIP. The Western Australian General Practice Network (WAGPN) was the state-based organisation that coordinated the Divisions across WA.

In 2012 the AGPN was replaced by the Australia Medicare Local Alliance (AMLA).

4.9 Australia Medicare Local Alliance (AMLA)

The AMLA is currently the key agency to roll out the National General Practice Immunisation program which aims to support and encourage the provision of safe, effective and timely vaccinations in all areas of the country through general practice, community health services or other providers. The aim of this National General Practice Immunisation program is to actively engage with providers through Medicare Locals to achieve a high level of immunisation coverage across Australia.

Details on the National General Practice Immunisation Program and how the newly established Medicare Locals will support immunisation services in their areas of responsibility are still emerging. It is clear, however, that Medicare Locals are expected to commit to ensuring the success of childhood vaccination programs as evidenced by one of their Key Reporting Areas which states “Maintain or improve immunisation coverage rates for children”.



5. Roles and responsibilities for immunisation at the state level

5.1 Legislative framework

5.1.1 WA legislation governing immunisation service providers

Under the *Poisons Act 1964*, vaccines are classified as Schedule 4 drugs (i.e. ‘poisons that should, in the public interest, be restricted to prescription or supply by a medical practitioner, dentist, veterinary surgeon, or authorised nurse practitioner’). This legislation indicates that a registered nurse may administer vaccines, when authorised to do so by a medical practitioner.

On a population level it is not practical or medically necessary to have medical practitioners individually authorise each vaccination administered by nurses when following the published West Australian Vaccination Schedule.

In March 2010, in recognition of this, the Western Australian Department of Health issued the “Vaccine Administration Code” which establishes the necessary criteria for a registered nurse to administer a vaccine in accordance with the regulation 37B of the *Poisons Regulation 1965*. The Code, prepared by the Pharmaceutical Service Branch, Public Health Division of the WA Department of Health, is published under the authority of the Chief Executive Officer of the Department.

It states that all registered nurses employed by government administering vaccines in accordance with Regulation 37B must have successfully completed an accredited immunisation course and must maintain their competency through yearly updates.

The required competencies are demonstrated knowledge and understanding in:

- a. storage, transport and handling of vaccines (cold chain)
- b. obtaining informed consent for vaccination
- c. administration of vaccines as per National Health and Medical Research Council (NHMRC) Immunisation Guidelines
- d. cardiopulmonary resuscitation (CPR)
- e. the diagnosis and management of anaphylaxis
- f. documentation of vaccination and any critical incidents.

The “Vaccine Administration Code” is considered a temporary solution until such time that the *Poisons Act 1964* can be amended to permit nurses and other appropriately trained health care workers to administer vaccines according to the WA Vaccination Schedule without requiring authorisation for each individual vaccine dose by a medical practitioner.

5.1.2 Legislation governing vaccination and the public

Vaccinations are not mandatory in Australia. However, there is legislation requiring compulsory exclusion from school of unvaccinated individuals in the event of an outbreak of a vaccine preventable disease in a school setting (*School Health Act of 1999, Part 2, Division 3, Section 27*).

5.2 WA Immunisation Program overview

Immunisation services in WA can be conceptualised along four major programmatic themes:

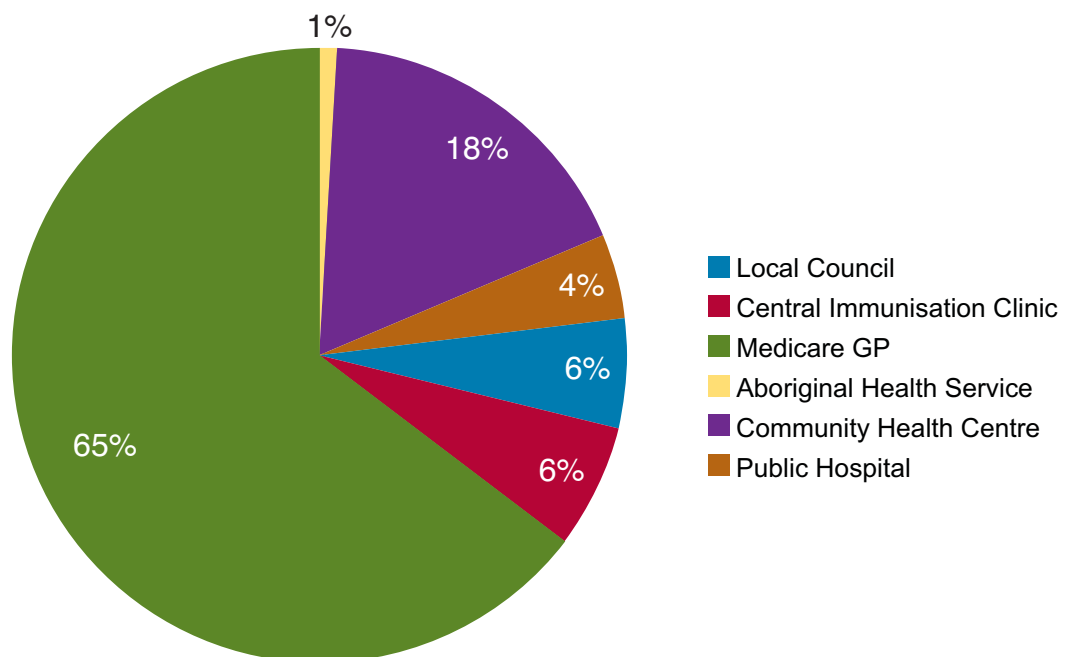
1. routine childhood vaccinations
2. school-based adolescent vaccinations
3. adult vaccinations
4. vaccinations for at-risk populations.

5.2.1 Routine childhood vaccination program

The childhood immunisation program strives to ensure all children under the age of 7 are vaccinated according to the National Immunisation Program, as represented in the WA immunisation schedule.

The majority of childhood immunisations in WA are provided by GPs (approximately 65%). Other major providers for the childhood vaccination program are community health/child and adolescent community health clinics, which account for approximately 18% of immunisations delivered to young children.

Figure 1: **Percentage of childhood immunisations administered by provider type in Western Australia as recorded in ACIR for quarter 1 January – 30 March 2011.**



The Central Immunisation Clinic (CIC) is a specialist service in Perth operated by the Child and Adolescent Health Services that accounts for an estimated 6% of all childhood vaccinations. In general, community health centres play a larger role in immunisation service delivery in country areas than in metropolitan areas. Other important immunisation service providers include local councils, public hospitals and the Aboriginal Health Services.



5.2.2 School-based vaccination program

The NIP provides vaccines to WA Health for immunisation of one adolescent age cohort, defined as a specific grade, of school children. In WA, the school-based vaccination program is offered at schools to students in Year 8.

The school-based vaccination program is primarily delivered by WA Health staff. In the Perth metropolitan areas, Child and Adolescent Health Services (CAHS) are responsible for implementing the school immunisation service. CAHS has established teams of nurses which visit schools and immunise children on site, with written consent from their parent/guardian. Several local councils in the metropolitan area are also involved in implementing this program. In the regions, population health units coordinate and deliver the service, under the direction of WA Country Health Service (WACHS).

In 2009, a statewide Year 8 vaccination database was established by WA Health to help ensure students are appropriately immunised by tracking the vaccination status of students who move between schools. The database also permits calculation of vaccination coverage rates and generates a paper-based vaccination record provided to each student at the end of the year.

Expanded, time-limited and school-based vaccination programs may also be used for catch-up immunisation initiatives when new vaccines are introduced into the NIP. For example, in 2007-2008 girls in Years 8 to 12 were offered human papilloma virus (HPV) vaccine at school as part of a national 'catch-up' program.

Students who miss out on vaccinations at school, due to either absence or for personal reasons, can be referred to their local WA Health immunisation clinic, participating local council immunisation clinics, or general practitioner for vaccination.

5.2.3 Adult vaccination programs

The NIP provides influenza and pneumococcal vaccines for certain age-eligible cohorts of adults. Adult vaccinations are predominantly administered by GPs in the metropolitan area, with increasing involvement of community and public health staff in regional and remote areas. At present, both influenza and pneumococcal vaccines are funded for specific age groups (i.e. all individuals aged 65 and older, and all Aboriginal and Torres Strait Islander people aged 50 and older).

5.2.4 Vaccinations for at-risk populations

Both State and Australian Government funds are used to provide vaccines to populations at higher risk of exposure or increased risk of experiencing a serious outcome from potential infection with certain vaccine preventable diseases. Current examples include:

- pneumococcal vaccination of Aboriginal people aged 15 to 49 years who have underlying conditions placing them at risk of invasive pneumococcal disease (IPD)
- influenza vaccination of persons of any age with underlying medical conditions placing them at risk of serious influenza infection
- influenza vaccination of health care workers in hospitals and clinics

- vaccines for refugees and/or humanitarian entrants who are unvaccinated or who have not completed a course of vaccination against diseases such as polio and measles
- a time-limited program which provides pertussis vaccine for parents, grandparents and other household carers of newborns less than six months old
- people with HIV infection, and people with chronic liver disease and/or hepatitis C.

5.3 Immunisation program service delivery in WA

The task to deliver comprehensive immunisation services throughout WA is challenging and complex that requires a vigorous commitment from many public and private stakeholders. Some key partners for building and sustaining robust immunisation services in WA are described below.

5.3.1 Prevention and Control Program, Communicable Disease Control Directorate (CDCD)

The Prevention and Control Program (PCP) leads State immunisation policy development. While the PCP does not deliver immunisation services directly to the public, it does work with immunisation stakeholders to improve WA vaccination programs in both the private and public sector. PCP has a number of roles including:

- representing WA on the National Immunisation Committee
- determining vaccines to be used for the Standard Western Australian Vaccination Schedule, in consultation with vaccine experts
- developing and disseminating policy about all aspects of immunisation programs
- coordinating vaccine supply and distribution within WA
- supporting the high school school-based vaccination program
- developing and overseeing the WA Immunisation Training and Certification Program
- coordinating the reporting of adverse events after immunisation
- managing data collection for immunisation coverage and surveillance for certain vaccine preventable diseases.

5.3.2 WA Country Health Service

In rural and remote areas, the WA Country Health Service (WACHS) provides the full range of community and school-based immunisation services. Given its scope, it is not surprising that WACHS is one of the largest immunisation providers for children and adults in WA.

Each of the Regional Public Health Units (PHUs) has a designated a Regional Immunisation Coordinator (RIC) – a public health nurse who serves as the primary interface between WA Health, CDCD, and local immunisation providers. In this pivotal role, RICs and other community health staff in regional areas perform the following duties:

- support immunisation services by providing expert vaccination advice to health professionals, community stakeholders and the general public



- support the WA Immunisation Training and Certification Course by organising local practicum placements and supervising and assessing students with regard to course exams clinical practice
- coordinate local immunisation programs for the adult population
- perform public health management of reports of vaccine-preventable diseases as required
- undertake local assessments to inform immunisation policy
- develop and coordinate projects to improve immunisation coverage in areas within their jurisdiction that have low rates, as determined by ACIR data
- manage reported cold chain breaches and provide reports on vaccine wastage in their jurisdiction to PCP.

5.3.3 Metropolitan Health Services

Metropolitan Health Services provide support for the childhood and adult immunisation programs through their Public Health Units (PHUs). The North and South Metropolitan Health Service PHUs have Regional Immunisation Coordinators who collaborate with CAHCS to optimise program delivery in the Perth metropolitan area. The metropolitan area RICs and other PHU staff:

- support immunisation services by providing expert vaccination advice to health professionals, community stakeholders and the general public
- support the WA Immunisation Training and Certification Course
- support local immunisation programs for the adult population
- respond to reports of vaccine-preventable diseases and advise on control measures as required
- support projects to improve immunisation coverage in areas within their jurisdiction with lower childhood vaccination rates, as determined by ACIR data
- give expert advice on the management of cold chain breaches, and report vaccine wastage in their jurisdiction to PCP.

5.3.4 Child and Adolescent Community Health

Child and Adolescent Community Health (CACH) provides a comprehensive range of health promotion and intervention community-based services to children and families during childhood and adolescence.

CACH is responsible for delivering community health services in the metropolitan area, with immunisations being part of their core business, and they also conduct childhood and school-based immunisation programs. Groups at risk of poorer health outcomes, such as Aboriginal people and newly-arrived refugees, are of particular focus.

Statewide policy advice, workforce development and research on child and adolescent community health issues are also provided.

5.3.4.1 Central Immunisation Clinic

Central Immunisation Clinic (CIC) is organisationally located in CACH, within CAHS. A Memorandum of Understanding between CAHS and the Public Health Division ensures the Prevention and Control Program has significant input into CIC operations, which in turn strengthen clinical governance and ensure the State's peak immunisation clinic plays an integral part of the statewide immunisation program.

The role of CIC is to:

- give expert advice by telephone and email to providers and the public on all matters relating to immunisation
- assist the PCP and RICs in the area of training and education of providers
- assess providers as part of the immunisation certification process
- take referrals from other immunisation providers because of difficulties, uncertainties or previous adverse immunisation experiences
- provide a comprehensive immunisation service to self referred parents who choose to have their children vaccinated at CIC
- receive, review, and respond to reports of suspected adverse events after immunisation reported through the WA Vaccine Safety Surveillance System (WAVSS)
- when indicated, provide clinical evaluation and service to children who have experienced an adverse event, with support from Princess Margaret Hospital for Children specialists.

5.3.5 Local Government Councils

Several Local Government Councils in metropolitan Perth operate immunisation clinics for children and adults. These councils also play an important role in the success of the high school immunisation program at schools within their respective jurisdictions.

5.3.6 Divisions of General Practice/General Practitioners

Up until 31 December 2012 the WA General Practice Network (WAGPN) has played a key role in supporting immunisation services in WA. These responsibilities included:

- supporting Divisions of General Practice to achieve the aims of NIP and improve immunisation coverage
- developing programs to better serve hard-to-reach populations
- improving the timeliness and quality of immunisation data that is forwarded from GP practices to ACIR
- assistance to Divisions of General Practice with low coverage rates
- ensuring integration of GP immunisation services with those of other vaccination providers.



Up until 2012, a full time Immunisation Program Officer (IPO) for WA provided support to all GP Divisions within the State, and represented WA GP interests at the national level. The Department of Health and Ageing also provided funding for a part-time position in each Division to employ a Divisional Immunisation Program Officer (DIPOs). These positions supported general practices by providing immunisation training, patient education resources, and expert advice on maintaining the cold chain, vaccine ordering and storage, and optimisation of immunisation recall-reminder processes.

As of 30 June 2012 many of the tasks performed by Divisions of General Practice were transferred over to the new Medicare Locals. As noted previously, the extent to which Medicare Locals will provide support for immunisation services has not yet been defined, but is anticipated to be substantial.

5.3.7 Silver Chain

Silver Chain's Remote Health Services plan and co-ordinate a range of needs including emergency care, disease control and prevention, and health promotion services which include immunisations.

5.4 Challenges to improving immunisation services in WA

Substantial challenges exist to deliver comprehensive vaccination programs across the age spectrum in any jurisdiction. WA is a large, diverse and unevenly populated area, which contributes to the complexity of delivering equitable immunisation services across the state.

Surprisingly, the greatest obstacles in providing optimal immunisation services in WA are not geographic barriers or distance. Rather it is being able to develop and sustain a strong commitment to the uniform delivery of high-quality immunisation services – which requires addressing barriers within the organisation and health care services in our state.

Providers in the public and private sectors deliver varying sets of services, and for which families have differing degrees of access. For immunisation in particular, improvements are needed about how responsibility for keeping children fully up-to-date with their vaccinations should be apportioned among parents, providers and health departments at local, state and national level.

Robust immunisation services need a coordinated effort and resources from many stakeholders. Misunderstandings about the role of each of these parties may inadvertently lead to gaps in service and sub-optimal vaccination coverage.

The recent transition from the General Practice Immunisation Incentive program operated by GP Divisions to Medicare Locals has added to the uncertainty about roles and responsibilities regarding immunisation services in WA. Medicare Locals are intended to be regional primary health care organisations working to connect primary health care services, including immunisation services, at the local level. Specifics on how immunisation initiatives undertaken by Medicare Locals will interface with those provided CAHS, WACHS, and local Public Health Units remain undetermined.

Responsibility for delivering immunisation services is arguably the most difficult to discern in metropolitan Perth. This is most likely because of several relatively recent departmental reorganisations, resulting in CACH delivering immunisation services to children (predominantly) and the public health responsibility for immunisations resting with the two metropolitan Health Services.

A recent CACH report – *Delivery of Immunisation Services across the Perth Metropolitan Area* – has helped to clarify some of the issues. But further progress is still needed to establish accountability and responsibility for delivering immunisation services in each agency, and to determine the staff and financial resources to be allocated for improving immunisation services in metropolitan Perth. These discussions should involve Medicare Locals in order to ensure optimal collaboration between all public and private immunisation service providers in WA.

Lastly, another major constraint to improving timely access to immunisation services in WA is the *Poisons Act 1964*. This Act should be revised to permit nurses and other trained and competent health professionals to administer the routine WA Immunisation Schedule vaccines under standing orders from a medical practitioner.



6. Key objectives of the WA Immunisation Strategy

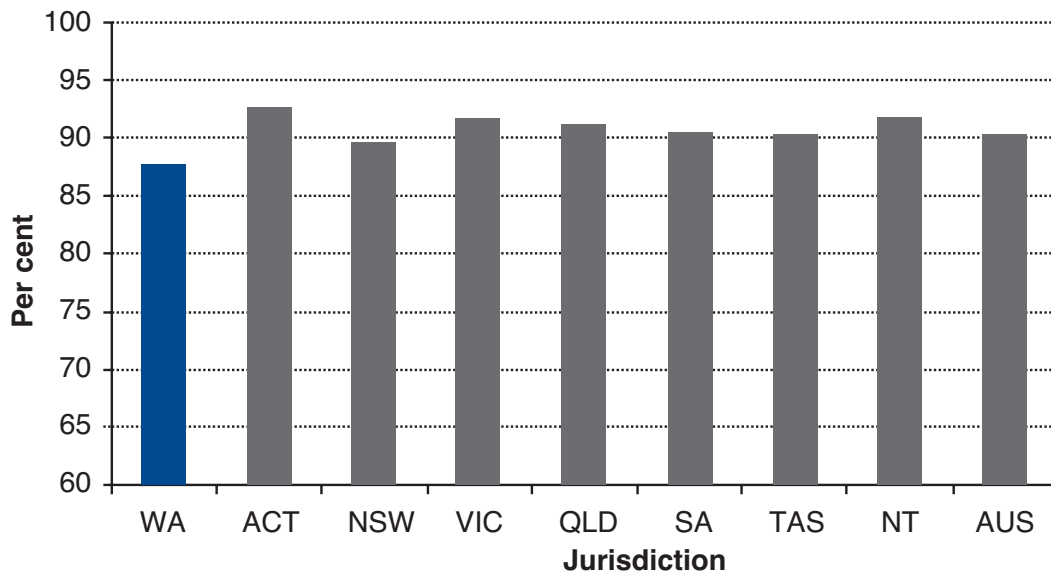
Objective 1: Increase vaccine coverage in areas of low immunisation coverage

Context:

This is a NPAEV performance benchmark that WA will be assessed against for reporting to COAG.

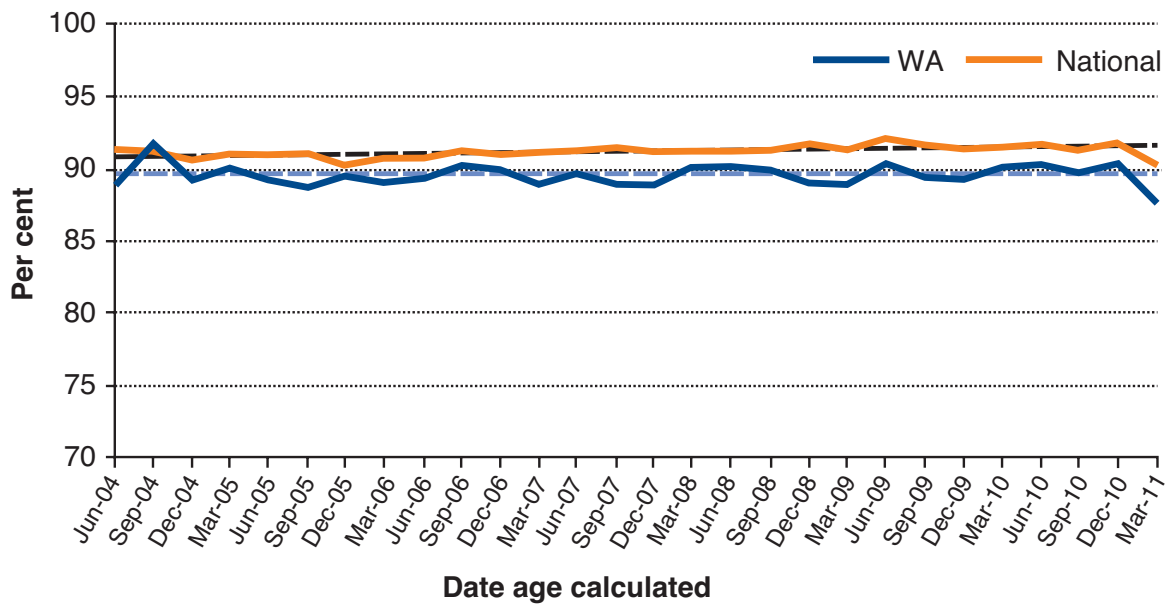
WA has slightly lower immunisation rates when compared to other Australian jurisdictions; WA often just misses attaining the generally accepted target rate of 90%.

Figure 2: Percentage of children aged 12-15 months fully immunised by state, for the latest quarter processed on 30 June 2011 (age calculated January to March 2011).



Source: Australian Childhood Immunisation Register.

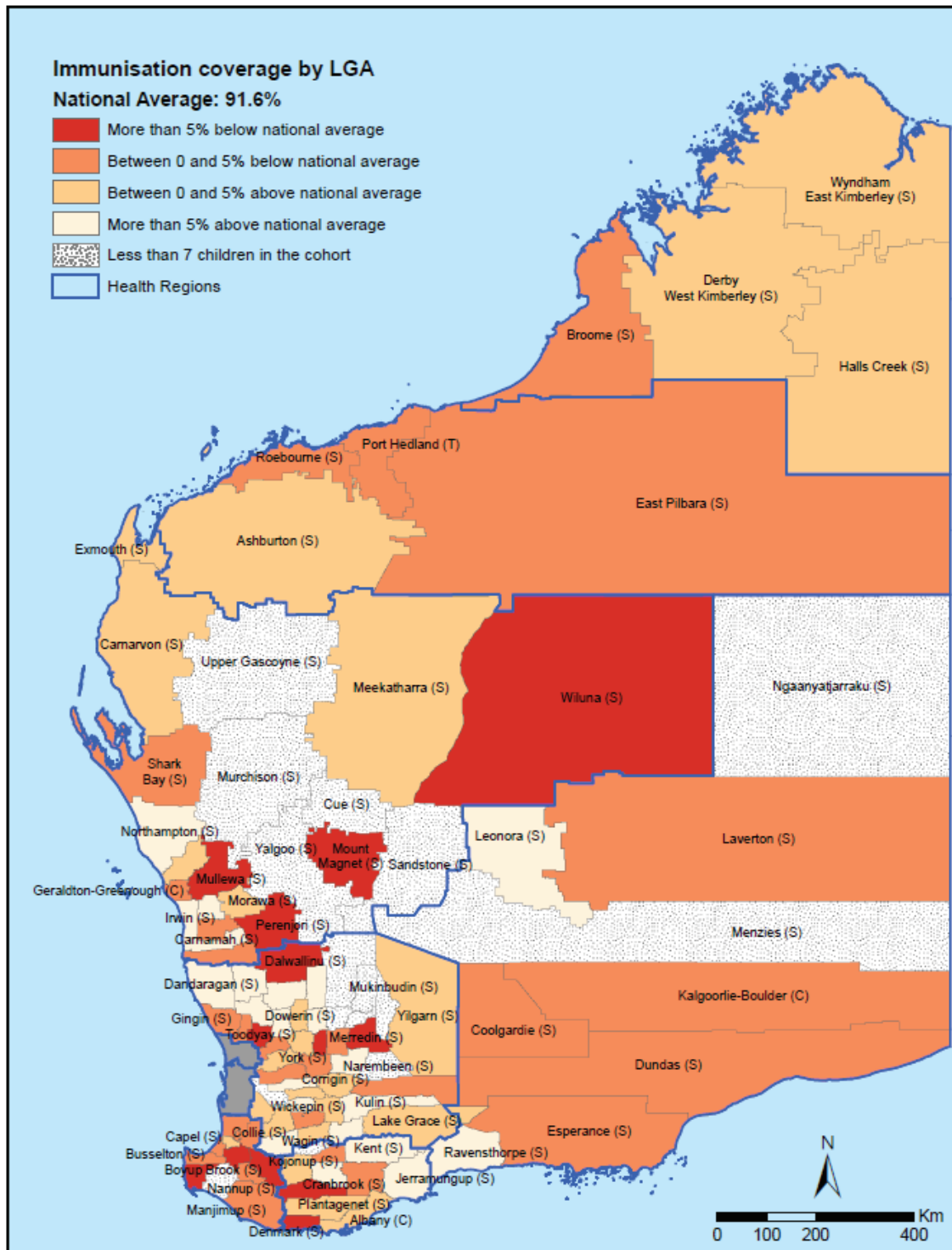
Figure 3: The lower immunisation rates in WA have been longstanding, going back as far as 2004.



Source: Australian Childhood Immunisation Register.



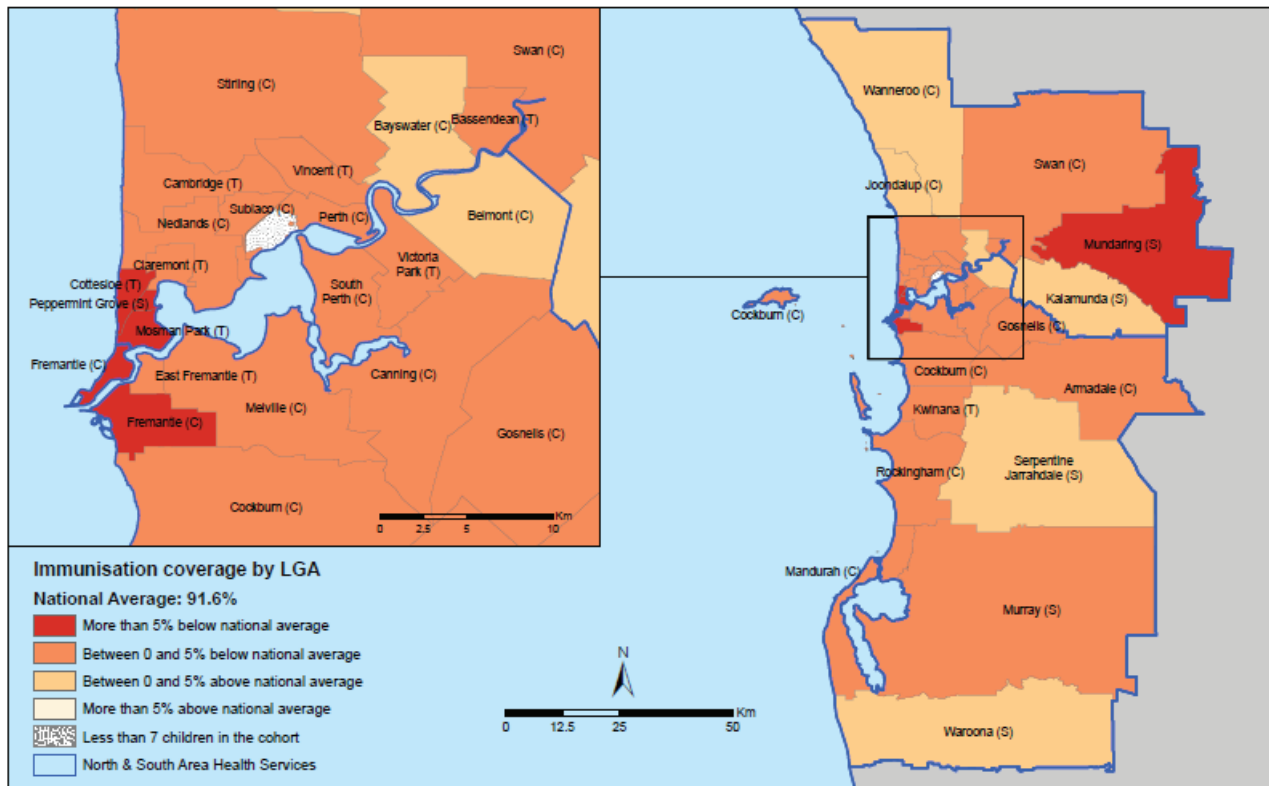
Figure 4: Immunisation coverage compared to national average by LGA, WACHS, ages 12 to <15 months, April 2010–March 2011.



Source: Australian Childhood Immunisation Register.

The problem of delayed or under-vaccination in WA is not limited to a single location in WA. Much of the Perth metropolitan area falls below the national average of 91.6% fully vaccinated for children aged 12 to 15 months.

Figure 5: Immunisation coverage compared to national average by LGA, Metropolitan Perth, ages 12 to <15 months, April 2010–March 2011.



Source: Australian Childhood Immunisation Register.

There is strong evidence that immunisation reminder recall systems can increase vaccination coverage rates.³

In describing immunisation registry-based recall systems, the head of the National Immunisation Program in the US has written “The coverage assessment tools with maximum effect are immunisation registries. A key strength is the capacity to list unvaccinated children by name and provide contact information.”⁴

Australia has a comprehensive childhood immunisation registry that facilitates immunisation reminder-recall. The ACIR registry includes virtually all WA children, but greater use could be made of its recall functionality.

To improve immunisation rates, support is needed to develop and implement robust immunisation recall procedures across the public sector in WA (regional and metropolitan) and promote their use in GP practices.

³ Briss PA, Rodewald LE, Hinman AR, Shefer AM, Strikas RA, Bernier RR, Carande-Kulis VG, Yusuf HR, Ndiaye SM, Williams SM. Reviews of evidence regarding interventions to improve vaccination coverage in children, adolescents, and adults. The Task Force on Community Preventive Services. *Am J Prev Med.* 2000 Jan;18(1 Suppl):97-140.

⁴ Papania M, Rodewald L. For better immunisation coverage, measure coverage better. *Lancet.* 2006 Mar 25;367(9515):965-6.



Consistent use of reminder-recall systems should be emphasised in areas of lower immunisation coverage, along with community-based programs designed with input from local stakeholders.

The impact of adopting universal, standardised reminder-recall practices will be objectively assessed by monitoring the number and proportion of children who receive reminders and subsequently vaccinated within four weeks of notification, and by monitoring overall vaccination coverage rates.

Strategies:

- 1a Ensure use of immunisation reminder recall systems at all government clinics statewide**
- 1b Promote use of immunisation reminder recall systems in general practice**
- 1c Centralised, systematic use of reminder letters for parents of children who are not fully immunised for age**
- 1d Develop and resource community-based programs in areas needing improvement with input from local stakeholders**
- 1e Promote opportunistic vaccination of children cared for at tertiary health services, as appropriate.**

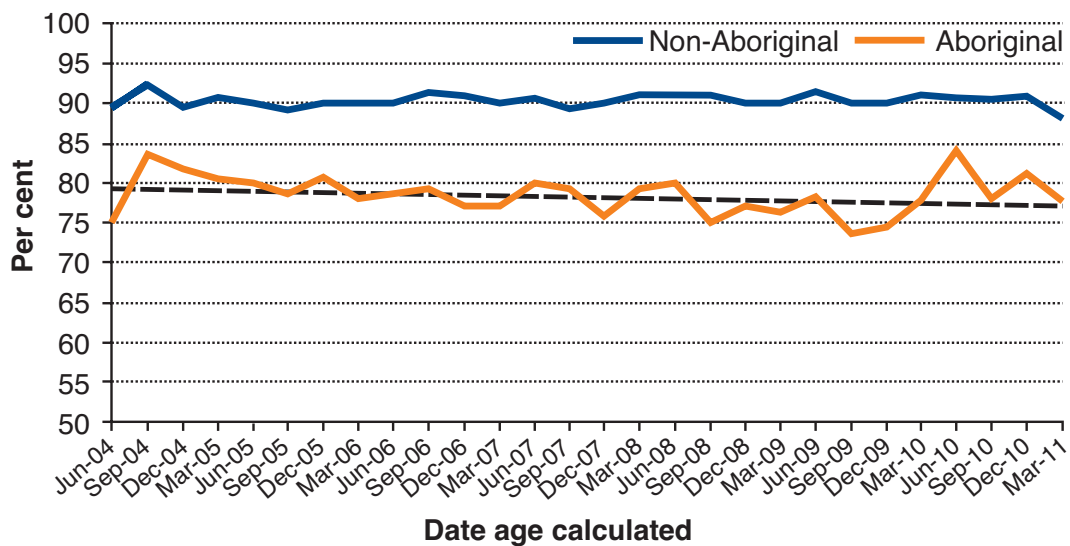
Objective 2: Increase vaccination coverage for Aboriginal people

Context:

This is a NPAEV performance benchmark that WA will be assessed against for reporting to COAG.

There is a substantive gap between immunisation rates among Aboriginal children and non-Aboriginal children. This gap in coverage has persisted over many years in WA, and there has been an overall downward trend in Aboriginal immunisation rates from 2004 until present. This negative trend is unlikely to reverse itself without effective intervention.

Figure 6: Percentage of children aged 12-<15 months fully immunised in Western Australia, by quarter and Aboriginality.

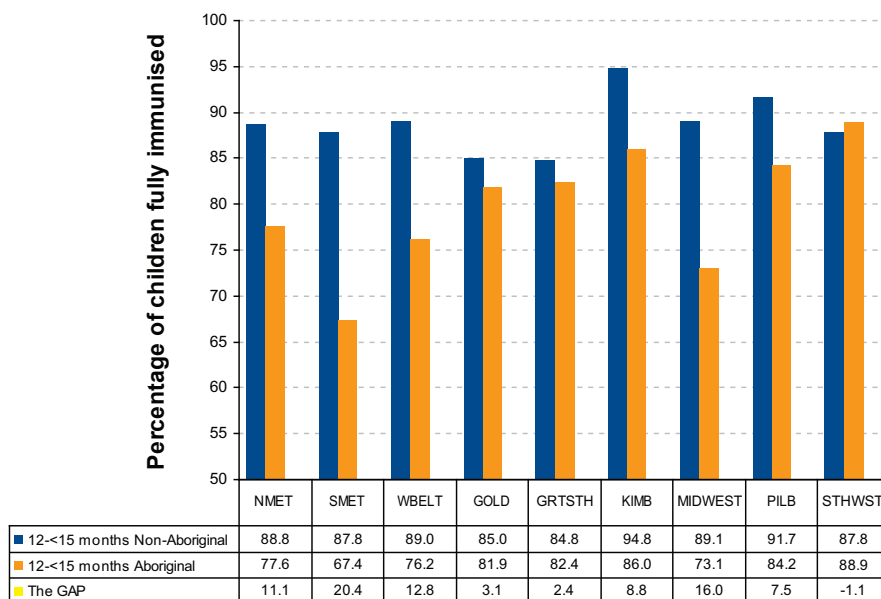


Source: Australian Childhood Immunisation Register.

The gap between vaccination rates for Aboriginal and non-Aboriginal children is observed in most Area Health Service jurisdictions in WA.

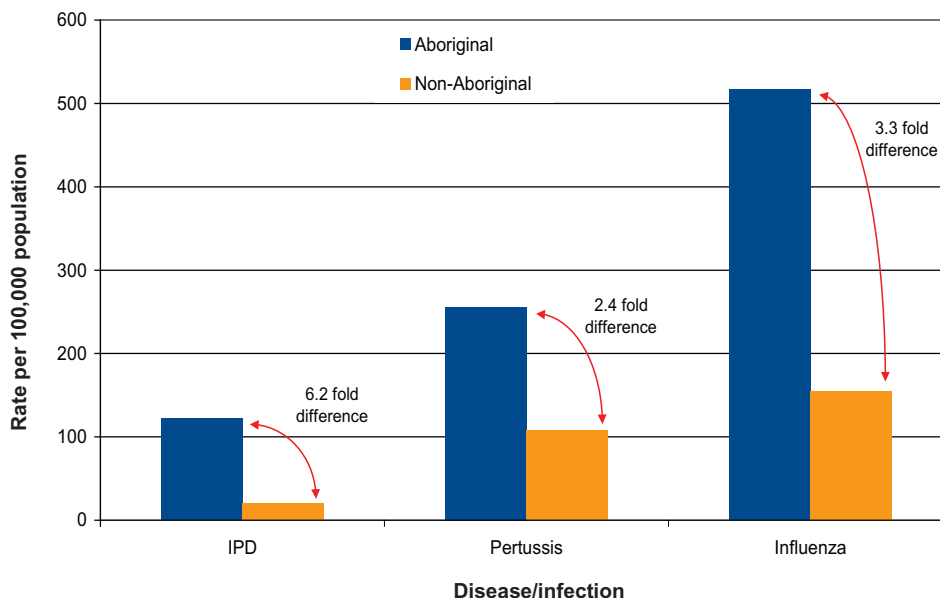


Figure 7: Percentage of children aged 12-<15 months immunisation coverage, for the quarter ending 31 March 2011.



Aboriginal children in WA have higher rates of vaccine preventable disease, such as invasive pneumococcal disease (IPD), pertussis, and influenza (see Figure 8).

Figure 8: Rates of reported invasive pneumococcal disease, pertussis and influenza infection among children aged 0-4 years, by Aboriginality, 2006-2011, Western Australia.



Randomised controlled trials have demonstrated that lay health workers, such as Aboriginal health workers (AHWs), “provide promising benefits in promoting immunisation uptake (RR 1.22, 95% CI 1.10 to 1.37; P = 0.0004).”⁵

Several states and territories already have programs in place to train AHWs to vaccinate (South Australia, Queensland, and Northern Territory).

In WA and nationally, AHWs holding a Certificate IV in Aboriginal and/or Torres Strait Islander Primary Care Health Care (Practice; HLT43907) are already trained to administer medicines by intramuscular injection, how to manage rare but potentially serious allergic reactions, and adherence to cold chain management of medicines.

Despite being trained in administering intramuscular injections, the *Poisons Act 1964* does not permit AHW to vaccinate without the supervision of a doctor. Yet what constitutes supervision is not clearly defined. The fact that standing orders for immunisation that could be administered by trained AHW are not legal in WA is a major barrier to expanding immunisation services to Aboriginal communities in WA.

The anticipated benefit of training and empowering AHW to vaccinate is higher immunisation rates in Aboriginal communities, with concomitant reduced mortality and morbidity from vaccine preventable disease.

In addition, the existing immunisation workforce should receive training to ensure service delivery is culturally appropriate. Plain English summaries of vaccination information should be considered to improve communication about immunisations.

Strategies:

- 2a Resolve legal barriers to vaccination by competent health providers, including Aboriginal health workers (AHWs)**
- 2b Train and empower AHWs to vaccinate through development of AHW Immunisation Competency Training Program**
- 2c Monitor vaccination rates among Aboriginal populations to identify potential subsets which may benefit from additional support for immunisations**
- 2d Work closely with Aboriginal community controlled health services and other stakeholders to develop culturally appropriate, community-based programs in areas needing improvement.**

⁵ Lewin S, Munabi-Babigumira S, Glenton C, Daniels K, Bosch-Capblanch X, van Wyk BE, Odgaard-Jensen J, Johansen M, Aja GN, Zwarenstein M, Scheel IB. Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases. *Cochrane Database Syst Rev.* 2010 Mar 17;3: CD004015.



Objective 3: Decrease vaccine wastage and leakage

Context:

This is a NPAEV performance benchmark that WA will be assessed against for reporting to COAG.

Vaccine wastage occurs when vaccine doses must be discarded because of exposures to temperatures outside the recommended range (i.e. a breach in the cold chain) or less commonly, because they have exceeded their expiration date.

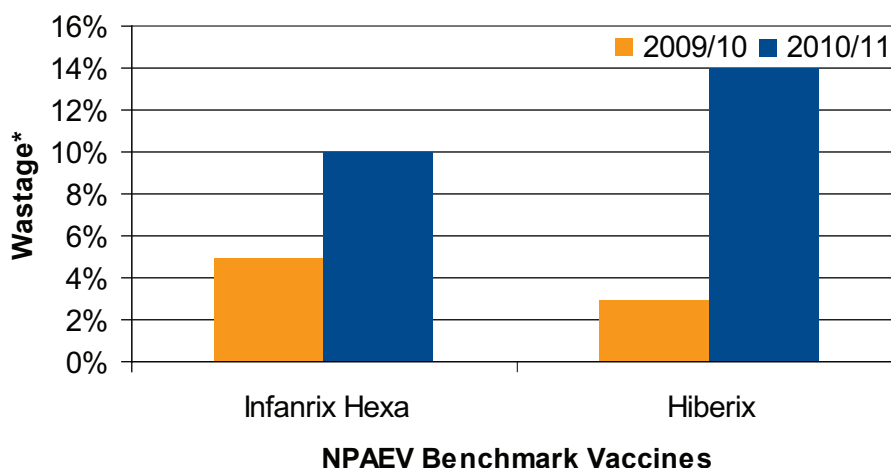
Vaccine leakage occurs when providers administer a NIP-funded vaccine to a person not in an eligible cohort. For example, government-procured hepatitis A vaccine administered to an adult international traveller when it is only funded under the NIP for Aboriginal children.

WA has historically had the highest rates of wastage and leakage of any state or territory in Australia, as determined by expenditures exceeding 105% of the age-eligible cohort for specific vaccines.

In the past, the relatively high rates of vaccine loss in WA were considered to be due to breaches in the cold chain, secondary to shipping vaccines over great distances and unpredictable equipment failure or power outages. While these factors certainly play a role, there are also indications that some vaccines are leaked to non-eligible cohorts.

In 2009, the NPAEV selected two vaccines to assess wastage in each jurisdiction (Infanrix Hexa and Hiberix). Wastage was defined as the number of doses of each of these vaccines purchased minus the number documented as given to age-eligible children in the ACIR registry and the number lost to uncontrollable events.

Figure 9: **WA Vaccine Wastage.**



*Wastage = no. purchased - (no. in ACIR + no. lost to uncontrollable events)

In 2009, WA met the NPAEV benchmark of less than 10% wastage. In 2010 WA was the only state not to meet the NPAEV wastage benchmark (the WA figure was 11%). It is likely the unprecedented loss of electricity power that followed the hail storm in March 2010 contributed to this failure. However, since vaccine doses lost due to “uncontrollable events” such as natural disasters, power outages and refrigeration failures, can be deducted from the total of lost vaccines for NPAEV purposes, underreporting of vaccine losses were likely to be a major contributor.

It is therefore critically important that providers report all NIP vaccine losses to WA Health. In addition, providers must restrict vaccine use to NIP eligible populations and ensure all doses given to children are entered in to ACIR.

To better account for vaccines distributed under the NIP, PCP has implemented a vaccine on-line ordering system; seven months after roll-out almost all practices in metropolitan Perth use this system and it will be phased into the country areas in late 2011. So far, there are 460 registered providers in the metropolitan area ordering online and 282 providers in regional areas have registered to use the system as it expands.

Ongoing review and analysis of provider vaccine ordering patterns will facilitate detecting vaccine requisition errors and order aberrations that may indicate substantial vaccine losses or systematic vaccine leakage. This can be addressed by respectively strengthening the cold chain and targeted education.

Strategies:

- 3a Implement and maintain a centralised, electronic vaccine ordering system statewide**
- 3b Educate providers on eligibility for government-procured vaccines**
- 3c Build vaccine ordering profiles for providers to facilitate detecting vaccine order errors and aberrations**
- 3d Establish and promote comprehensive web-based cold chain breach reporting, supported with education on responding to potential breaches**
- 3e Develop and distribute State cold chain breach response guidelines.**



Objective 4: Increase vaccination coverage of 4 year olds

Context:

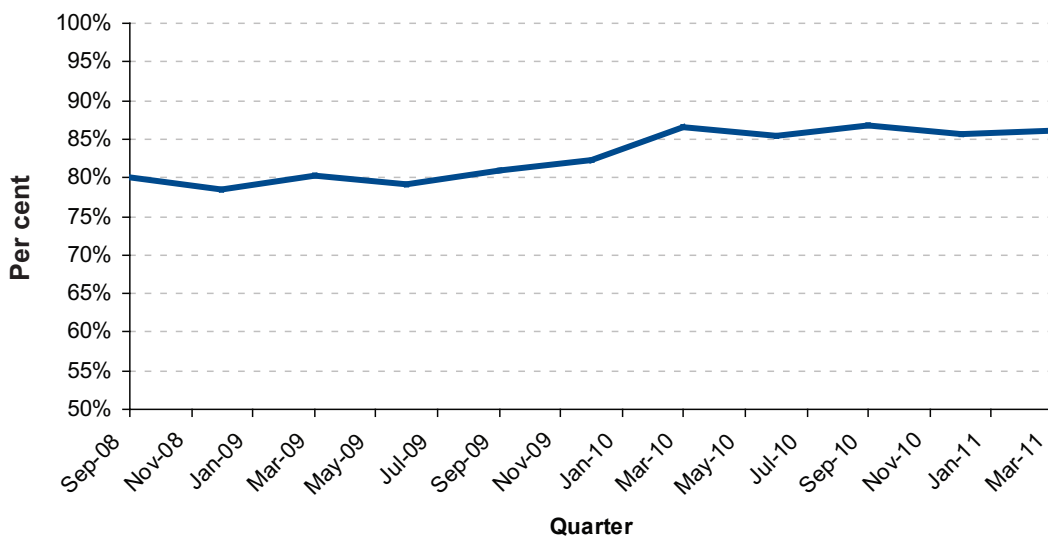
This is a NPAEV performance benchmark that WA will be assessed against for reporting to COAG.

Vaccination coverage for 5-year-olds is calculated using ACIR data. These rates directly reflect the proportion of children who have received the vaccinations recommended at 4 years of age by the time they are 5 years old.

Vaccination coverage rates for 5-year-olds in WA are among the lowest in Australia, and well below the NPAEV target of 90%. To prevent outbreaks of some VPDs, such as measles, coverage rates need to be 95% or higher.

While some improvement in WA has occurred over the last couple of years, further gains are necessary.

Figure 10: **Percentage of children aged 60-<63 months fully immunised in Western Australia, by quarter.**



Source: Australian Childhood Immunisation Register.

The single most effective and efficient means to achieve high vaccination rates among 4 year olds (i.e. children entering the educational system) is through school entry checks linked to follow-up of those who are not fully vaccinated for age. The effectiveness of school entry requirements has been recognised for many years as demonstrated by their inclusion as a major tenet of the *Immunise Australia: The Seven Point Plan of 1997*.

Currently in WA, parents are required to present their child's immunisation history when they are being enrolled in school. Limited immunisation data is then recorded into School Information System (SIS) at public schools. The completeness of immunisation record ascertainment at school entry is not precisely known, but is believed to be variable. Furthermore, systematic approaches to follow-up of children not fully vaccinated are still in development.

Only 1-2% of children have parents who are conscientious objectors to vaccination. This means that the majority of un- and under-vaccinated students come from households supportive of immunisation.

Experience from other settings indicates these parents are interested in having their children vaccinated and benefit from reminders and assistance to overcome barriers to accessing immunisation services.

To improve immunisation rates among 4 year olds, WA Health and the WA Department of Education (DoE) must collaborate to create systems to make sure all children have their vaccination status determined at pre-primary school entry.

Written protocols for encouraging and supporting parents to fully vaccinate their children should be established and rigorously implemented across the state. The relevant protocols and policies should be articulated in a Memorandum of Understanding between WA Health and Department of Education.

Strategies:

- 4a In collaboration with WA DoE, develop statewide policy for universal review of immunisation records of students at school entry**
- 4b Establish recall and reminder capacity within WA Health to assist the parents of school age entrants who are not fully vaccinated**
- 4c Establish the capacity to vaccinate school entrants at school-based clinics when warranted**
- 4d Work with daycares and mother/toddler groups to increase the proportion of children up-to-date on their vaccinations when they enrol in school.**



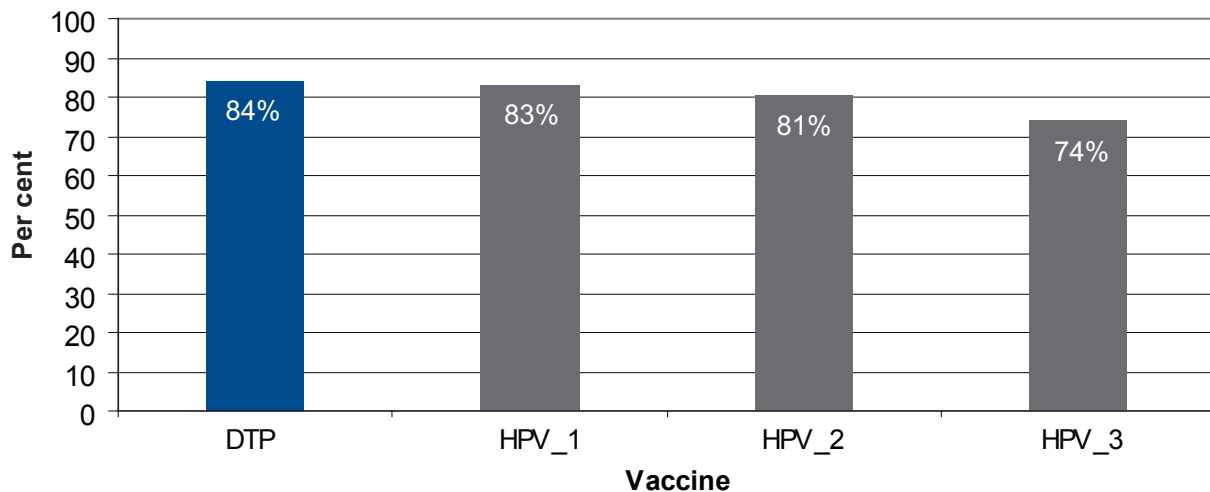
Objective 5: Increase vaccination coverage of high school students

Context:

School-based vaccination programs are an effective means to deliver immunisations to adolescents. With the assistance of schools, WA Health has successfully conducted school-based vaccination programs for many years.

In 2009, WA Health developed and deployed a statewide high school vaccination database. This database allows WA Health to accurately determine vaccination coverage levels among students and enables follow-up of students who have missed doses of vaccine in the school setting.

Figure 11: **Per cent of all Year 7 students vaccinated with one dose of dTpo (pertussis vaccine) and 1 to 3 doses of HPV vaccine (females only), 2010 school year.**



Source: *WA School-based Immunisation Register*.

Students who miss vaccine doses at school can be vaccinated through their GP. However, it is important that high school vaccinations in GP settings are reserved for students who have missed doses of vaccine at school or for other reasons can not be vaccinated at school.

If GP-delivered high school immunisations merely supplant vaccination services that could have been delivered in school, they will reduce the cost-effectiveness of the school-based vaccination program and potentially add office visit costs to other payers (Medicare/private insurance/out-of-pocket). In addition, if GP-delivered high school immunisations are not recorded in the statewide database vaccine coverage rates will be artificially diminished.

Strategies:

- 5a** Revise and improve high school consent form and processes
- 5b** Develop and distribute promotional material appropriate for students and parents
- 5c** Enhance, maintain and use the statewide school-based immunisation database to monitor vaccine uptake and facilitate recall for vaccination
- 5d** Enable GPs to provide vaccinations to high school students when the child is not vaccinated in the school setting
- 5e** Develop procedures that ensure vaccines given to high school students outside the school setting are captured in the statewide school-based immunisation database.



Objective 6: Increase vaccination coverage of adults

Context:

The aim of the adult immunisation program over the next several years will be to enhance immunisation services among healthcare workers, immigrants entering WA under humanitarian visa programs, and persons at increased risk of serious illness from influenza.

Persons at increased risk of serious illness from influenza. The administration of influenza vaccine to individuals at risk of complications of infection is the single most important measure in preventing or attenuating influenza infection and preventing mortality. Persons at increased risk include all individuals ≥ 65 years of age, Aboriginal people ≥ 15 years of age, pregnant women and individuals with certain underlying medical conditions (e.g. heart disease, severe asthma, diabetes). Eligibility for free seasonal influenza vaccine under the NIP was expanded to include all these groups in 2010.

With the exception of HPV vaccine, there is no immunisation registry for adults. Therefore data on annual influenza vaccine coverage among persons at increased risk of serious illness from influenza is obtained through telephone surveys and typically only routinely available for persons over 65 years of age. These data indicate that influenza vaccine coverage rates among the elderly are generally comparable to other jurisdictions, but may be decreasing somewhat in recent years.

Table 1: Percentage of persons aged ≥ 65 years reporting having had annual influenza vaccination in the current year.*

Calendar Year	Total WA	North Metro	South Metro	Total WACHS
2006	76%	77%	76%	74%
2007	78%	78%	81%	73%
2008	74%	76%	74%	69%
2009	73%	74%	75%	68%
2010	66%	64%	68%	64%

* Estimates from 2006-2009 can not be directly compared with 2010 estimates of seasonal flu uptake because the question was modified in 2010 to ask about vaccination since March of the same year instead of for 12 months prior to the interview.

Immunisation providers play an important role in promoting vaccination during adulthood and should seize every opportunity to identify and vaccinate eligible individuals.

Health care workers: Health care workers (HCWs) may be exposed to, and transmit, vaccine-preventable diseases such as influenza, measles, rubella and pertussis. Maintaining immunity in the health care worker population helps prevent transmission of vaccine-preventable diseases to and from health care workers and patients.

The likelihood of contact with patients and/or blood or body substances determines vaccination recommendations. Ideally health care workers should receive the vaccines they require before, or within the first few weeks of, employment, with the exception of influenza vaccine, which should be administered annually before the onset of the influenza season.

Medical facilities in WA are encouraged to formulate and implement a comprehensive immunisation policy for all health care workers. Each worker should be individually assessed for their vaccination needs, with recommended vaccinations provided by the employer. Examples of activities undertaken by health services in support of HCW vaccinations include conducting staff immunisation clinics in the workplace, promoting influenza vaccinations in newsletters, emailing vaccination reminders to staff, and documenting when staff decline vaccinations along with the rationale.

Refugees and humanitarian entrants: Many VPDs are endemic and/or epidemic in the countries of origin and transit of refugees and humanitarian entrants. In some instances, adult immigrants entering Australia, either as permanent residents or temporary visa holders, do not have adequate immunity against one or more diseases for which vaccination is recommended in Australia.

Catch-up immunisation is recommended for all refugees/migrants, unless reliable written documentation of previous immunisation is provided.

Catch-up vaccinations for refugees and migrants are not provided through the NIP, so these vaccines must be procured using State funds.

Strategies:

- 6a Establish robust procedures to assess influenza uptake in older and medically at-risk adults each year**
- 6b Develop and disseminate health promotion materials which encourage adult vaccination**
- 6c In collaboration with hospital infection control practitioners and/or occupation health and safety officers, and the Healthcare Associated Infection Unit, CDCD, establish and enforce policies for vaccination of HCWs in public health care institutions**
- 6d Develop capacity for centralised procurement and promotion for influenza vaccine of government-employed HCWs**
- 6e Establish a mechanism to fund vaccines not covered by the NIP that are needed for humanitarian entrants/refugees**
- 6f Establish procedures to track vaccine series completion among humanitarian entrants/refugees**
- 6g Develop programs to encourage vaccinations for populations at increased risk including emergency workers, child care workers, travellers, immunosuppressed individuals, men who have sex with men, and prisoners.**



Objective 7: Improve informed consent for vaccinations

Context:

A recommendation of *The Ministerial Review into the Public Health Response into the Adverse Events to the Seasonal Influenza Vaccine* was that more information about vaccines should be provided “to the public, to enable informed decisions about the vaccine before administration.”

To accomplish this, WA Health has embarked on an immunisation consent assessment project aimed at enhancing WA’s vaccination consent materials and processes. Research will be guided by a steering group that includes community participation representatives and other key stakeholders, such as the National Centre for Immunisation Research and Surveillance, Divisions of General Practice, and the Australian Medical Association (WA).

The assessment will engage WA parents and immunisation providers to inform the development of both immunisation consent resources and best practice protocols.

As of late 2011 the project plan includes:

- conducting a thorough review of immunisation consent processes currently used in WA, other jurisdictions in Australia, and internationally to identify best practices and materials
- conducting focus groups with parents to better understand their concerns and identify what information they need when thinking about vaccinating their children
- conducting focus groups with immunisation providers (nurses/GPs) to ascertain their perspective on how consent for immunisation is being addressed currently in practice
- developing standard-of-care consent materials and processes for use in WA
- producing training materials for providers on immunisation consent
- conducting a post-hoc assessment of the impact of efforts to improve the immunisation consent process, among both parents and providers.

Strategies:

- 7a Systematically assess parent/patient consent experiences and expectations**
- 7b Collaborate with providers in identifying areas for improvement in the immunisation consent process**
- 7c Develop and disseminate written consent materials and guidance on best practice**
- 7d Increase consent resources available for non-English speaking clients**
- 7e Develop capacity for proactive communication strategy to respond to emergent vaccine controversies.**

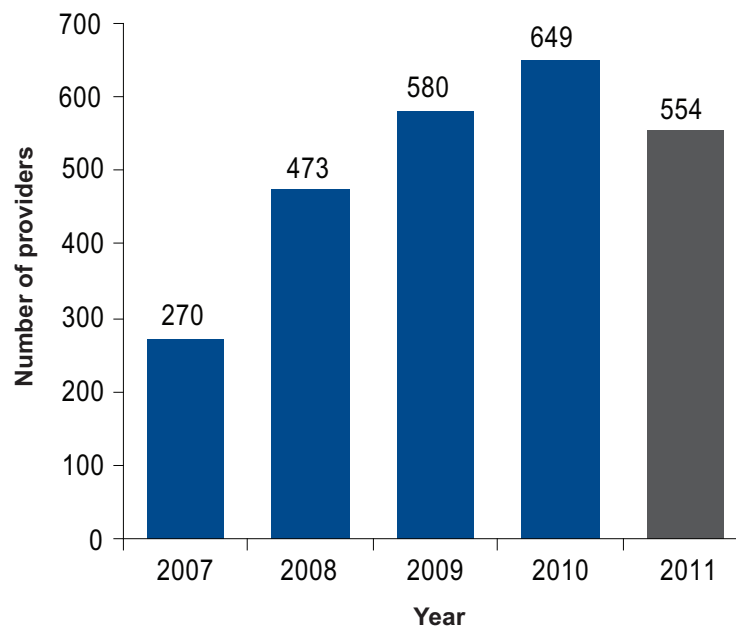
Objective 8: Increase immunisation workforce capacity

Context:

Critical to any successful immunisation program are competent, motivated health care providers. WA Health has demonstrated its commitment to ensuring a highly skilled immunisation workforce is available in WA by designing and operating the WA Immunisation Training and Certification Course accredited by the Australian Royal College of Nursing. This course trains providers from both the public and private sector. Successful completion of the course qualifies government-employed nurses to provide vaccinations in accordance with the WA Vaccine Administration Code. Currency in vaccination practice is maintained through annual immunisation updates.

WA has the lowest GP-to-population ratio in the nation. Optimising the use of nurses and other trained health care workers is, therefore, critical to WA's efforts to expand and improve immunisation service delivery. A positive development is that the number of providers enrolling in the Immunisation Certification Course has grown over the last several years as shown below (2011 figures are year-to-date to August).

Figure 11: **Number of providers enrolling in the WA Immunisation Certification Course, by year.**





A challenge created by increased enrolment in the Immunisation Certification Course is that participants are required to demonstrate competency through practicum placements and availability of placements has not kept pace with demand.

In addition, it would be prudent to facilitate immunisation training in university schools of nursing, so that nurses can enter the workforce already competent in immunisation theory and practice.

Despite being fully competent in vaccination service delivery, many nurses remain concerned that the *Poisons Act 1964* does not permit them to vaccinate without a doctor ('medical practitioner') sighting the patient and writing an order for the vaccine(s). The fact that standing orders for immunisation are not legal in WA is a major constraint to improving vaccination coverage in our state. Other jurisdictions in Australia permit nurses to administer vaccinations under standing orders and this practice should be made legal in WA, through appropriate revision of the *Poisons Act 1964*.

Strategies:

- 8a Strengthen WA Immunisation Certification Course enrolment and placement capacity**
- 8b Produce timely and relevant annual immunisation training updates**
- 8c Address real and perceived legal impediments to nurse-led vaccination services in WA**
- 8d Liaise with nursing schools to incorporate immunisation training into existing training pathways.**

Objective 9: Improve surveillance for vaccine preventable diseases

Context:

It is important to continually assess the impact of vaccines in our population to guide public health practice. Several measures have been implemented in WA in order to monitor vaccine efficacy across the spectrum of disease severity. These systems include:

The Sentinel Practitioners Network of Western Australia – SPN (WA)

The Sentinel Practitioner's Network of WA - SPN(WA) is a clinical practice surveillance system introduced in 2007 to measure the impact of the vaccine preventable diseases varicella, rotavirus and influenza in WA. SPN(WA) is a collaborative effort between the Communicable Disease Control Directorate (CDCD), PathWest (QEI Laboratory Medicine WA) and the Australian Sentinel Practice Research Network (ASPREN). SPN (WA) combines clinical encounter data with relevant laboratory information to enable assessments on the impact of current and future immunisation programs for important vaccine preventable diseases.

Each week, GPs participating in SPN (WA) record numbers of patients seen with and tested for influenza-like illness (ILIs), infectious gastroenteritis, chickenpox and shingles. Existing pathology providers forward specimens collected by SPN (WA) GPs to PathWest Medical Laboratory WA at QEII Medical Centre for testing. The data collected for WA is reported to stakeholders in a weekly email, *Virus WAch*, which summarises current activity of viruses responsible for ILIs, viral gastroenteritis and viral rashes.

The Emergency Department Sentinel Surveillance System

In 2007 Emergency Department Sentinel Surveillance (EDSS) was established, using the Emergency Department Information System (EDIS).

EDIS provides standardised coding data for a range of discharge codes at a number of EDs in Perth. Diagnosis codes are given to a patient once a diagnosis has been made by a registered medical officer. Nine government-funded Perth metropolitan EDs and one regional ED provide EDIS data to CDCD on a weekly basis.

A number of diagnosis codes are used to report on three conditions; respiratory viral presentations, infectious gastroenteritis and varicella. These data are reported in *Virus WAch* each week.

Over the next several years, WA will work to enhance the quality, representation and timeliness of the data produced by the existing surveillance systems. It would be particularly useful to link the vaccine administration data currently recorded in ACIR to that captured by the EDIS and TOPAS systems in use in WA hospitals and this initiative will be pursued with Medicare Australia.



Strategies:

9a Expand participation in SPN(WA)

9b Explore linking ACIR data to EDIS and TOPAS

9c Develop and promote tools to automate data extraction from existing practice management software

9d Improve representativeness of respiratory specimens submitted for testing.

Objective 10: Improve vaccine safety monitoring

Context:

On 22 April 2010, WA temporarily suspended paediatric influenza vaccinations in response to an increase in severe febrile adverse events among children. The WA Minister for Health subsequently ordered an enquiry into the public health response to the incident, chaired by Professor Bryant Stokes.

The Ministerial Review into the Public Health Response into the Adverse Events to the Seasonal Influenza Vaccine on adverse events following administration of Fluvax influenza vaccine in 2010 made 35 recommendations, which can be broadly grouped into governance, reporting and surveillance, communication with the public, and communication with vaccination providers.

Many of the recommendations from *The Ministerial Review into the Public Health Response into the Adverse Events to the Seasonal Influenza Vaccine* have already been implemented and work is underway to implement the remainder.

A key recommendation was to develop a web-based, user-friendly reporting system for adverse events following immunisation. In March 2011, DoH launched the WA Vaccine Safety Surveillance (WAVSS) system. This is arguably the best system in the country for monitoring the safety of vaccines as it allows for both the public and providers to report suspect adverse reactions to vaccines online 24 hours a day 7 days a week.



Other key developments in improving AEFI surveillance and response include:

- establishment of clinics for assessment and follow-up of persons reporting an AEFI, in collaboration with tertiary health services
- creation of an email-based system for rapid communication of important immunisation information to vaccination providers in WA
- enhanced linkages between CAHS and the WA Health with respect to governance of the Central Immunisation Clinic
- collaboration with *healthdirect* to ensure that suspected vaccination side effects reported to *healthdirect* by concerned individuals or parents are captured in the statewide reporting system



- establishment of the WA Vaccine Safety Advisory Committee (WAVSAC). WAVSAC will oversee the development, implementation and evaluation of statewide activities to monitor vaccine safety, and provide advice to the Director General of WA Health and the WA Minister for Health on matters relating to vaccine safety, when required. WAVSAC will also provide oversight to the implementation of the remaining recommendations from *The Ministerial Review into the Public Health Response into the Adverse Events to the Seasonal Influenza Vaccine*.

Strategies:

- 10a Maintain and improve the WA Vaccine Safety Surveillance (WAVSS) system activities**
- 10b Establish and support the WA Vaccine Safety Advisory Committee**
- 10c Establish and support staff resources required to sustain comprehensive AEFI detection and response capability in WA**
- 10d Establish and support specialist clinics to address reported adverse events following immunisation.**

Objective 11: Improve communication with stakeholders and the community

Context:

Providing wide-ranging immunisation services to a State as large and diverse as WA is a challenging and complex task. Achieving and maintaining high rates of vaccination coverage requires the ongoing commitment of many stakeholders including General Practitioners, the Divisions of General Practice, Aboriginal controlled community health organisations, and the Immunisation Alliance of WA from the private sector, and Child and Adolescent Health Services, Country Area Health Services, Area Health Service Chief Executive Officers, Public Health Units, and local government councils in the public sector.

The future success of the immunisation program depends on coordination between all stakeholders. WA Health is working towards a clear definition of the roles and responsibilities of all the agencies involved in the immunisation program. The aim is to avoid duplication of services, provide clear direction for all participants of the program and identify key organisations that are accountable for ensuring WA achieves its immunisation program objectives. The success of the program will depend on maintaining good communication between all stakeholders. The end result of this effort will be more comprehensive, more efficient, and more equitable immunisation service delivery in WA.

To facilitate communication between stakeholders and foster a shared vision for immunisation services, WA Health needs to ensure we have a robust and inclusive Immunisation Strategic Advisory Committee. Communication systems that permit timely dissemination of important immunisation information directly to providers who administer vaccines, whether in private practice or government service, are also needed.

Among health care providers and administrators, there is widespread recognition that immunisations are effective at protecting the health of our population and ultimately cost saving for the health care system. State-of-the-art vaccination programs must therefore be a key component of quality health care service delivery in WA. However, there are often competing demands for health care services. In this environment, implementing the principle that 'what gets measured gets done' may be helpful to ensure immunisations remain a high priority.

It is in this spirit that CDCD will help ensure Health Service CEOs, CACH and individual clinics receive regular reports on vaccination coverage for children from the communities they serve. The Divisions of General Practice/Medicare Locals will also be encouraged to continue promoting use of the coverage reports available to practitioners in the private sector.



Strategies:

- 11a Ensure regular consultation with the WA Immunisation Strategic Advisory Committee**
- 11b Develop a comprehensive electronic system for timely communication of information to immunisation providers**
- 11c Provide support to the non-government organisations that promote quality communication to consumers regarding vaccines and immunisation services**
- 11d Develop and obtain agreement on Operational Directives that clearly define immunisation related responsibilities and duties for stakeholders within WA Health**
- 11e Provide Health Services, CACH and individual government clinics with quarterly reports on childhood vaccination rates for review and action.**

Objective 12: Encourage and support applied immunisation research

Context

WA has an exemplary track record for contributing to medical science and applied public health practice in the area of immunisations and vaccine preventable disease. One of the major factors underpinning the success of these endeavours is the high degree of collaboration between multiple stakeholders across various departments and agencies.

Examples of the high-quality outputs from this teamwork include:

- implementation of the WA Influenza Vaccine Efficacy (WAIVE) study in children less than 5 years of age
- assessments of pandemic and seasonal influenza transmission in households
- serologic determination of pandemic influenza attack rates among children and pregnant women
- recommendations on practical means to improve participation in school-based immunisation programs.

The objective for the Strategy is to maintain and strengthen WA research collaborations to advance clinical and public health practice. Important findings from applied research will be communicated to immunisation stakeholders for consideration and implementation, as warranted.

Strategies:

12a Collaborate with Vaccine Trials Group, Telethon Institute for Child Health Research, PathWest, GPs and other stakeholders to foster applied immunisation research for the benefit of Western Australians, the nation and the global community.



7. Key Performance Indicators

Key performance indicators for implementation of the Western Australian Immunisation Strategy 2012–2014 are:

Indicator	Measurement tool	Target achievement date
Vaccination coverage rates in WA children 12-15 months old consistently > 90%	ACIR ¹	4th Quarter 2013
Vaccination coverage rates in WA children 24-27 months old consistently > 90%	ACIR	4th Quarter 2013
Vaccination coverage rates in WA children 60-63 months old consistently > 90%	ACIR	4th Quarter 2013
Influenza vaccination coverage in persons 65 and older > 70%	WA Wellbeing Surveillance System annual report	Achieved
Vaccination coverage rates among Aboriginal children equal to those of other children	ACIR	4th Quarter 2014
Vaccine wastage and leakage in WA less than 10%	CDCD vaccine distribution data and ACIR	Achieved
Maintaining or increasing coverage in agreed areas of low immunisation coverage ²	ACIR Coverage Reports and the Annual Immunisation Coverage Reports as produced by the National Centre for Immunisation Research and Surveillance	4th Quarter 2013

¹ ACIR = Australian Childhood Immunisation Register

² Areas of low immunisation coverage are those where immunisation coverage rates for 12 - <15 months and 60 - <63 months of age are more than 5% below national levels.

Appendix 1

Western Australian Immunisation Strategy 2013–2015 Objectives and Strategies at a glance

Objective 1: Increase vaccine coverage in areas of low immunisation coverage

Strategies

- 1a Ensure use of immunisation reminder recall systems at all government clinics statewide
- 1b Promote use of immunisation reminder recall systems in general practice
- 1c Centralised, systematic use of reminder letters for parents of children who are not fully immunised for age
- 1d Develop and resource community-based programs in areas needing improvement with input from local stakeholders
- 1e Promote opportunistic vaccination of children cared for at tertiary and other health services, as appropriate.

Objective 2: Increase vaccination coverage for Aboriginal people

Strategies

- 2a Resolve legal barriers to vaccination by competent health providers, including Aboriginal Health Workers (AHW)
- 2b Train and empower Aboriginal Health Workers to vaccinate through development of AHW Immunisation Competency Training Program
- 2c Monitor vaccination rates among Aboriginal populations to identify potential subsets which may benefit from additional support for immunisations
- 2d Work closely with Aboriginal Community Controlled Health services and other stakeholders to develop culturally appropriate, community-based programs in areas needing improvement.



Objective 3: Decrease vaccine wastage and leakage

Strategies:

- 3a Implement and maintain a centralised, electronic vaccine ordering system statewide
- 3b Educate providers on eligibility for government-procured vaccines
- 3c Build vaccine ordering profiles for providers to facilitate detecting vaccine order errors and aberrations
- 3d Establish and promote comprehensive web-based cold chain breach reporting
- 3e Develop and distribute cold chain breach response guidelines.

Objective 4: Increase vaccination coverage of 4 year olds

Strategies:

- 4a In collaboration with WA DoE, develop statewide policy for universal review of immunisation records of students at school entry
- 4b Establish recall and reminder capacity within WA Health to assist the parents of school age entrants who are not fully vaccinated
- 4c Establish the capacity to vaccinate school entrants at school-based clinics when warranted
- 4d Work with daycares and mother/toddler groups to increase the proportion of children up-to-date on their vaccinations when they enrol in school.

Objective 5: Increase vaccination coverage of high school students

Strategies:

- 5a Revise and improve high school consent form and processes
- 5b Develop and distribute promotional material appropriate for students and parents
- 5c Enhance, maintain and use the statewide school-based immunisation database to monitor vaccine uptake and facilitate recall for vaccination
- 5d Enable GPs to provide vaccinations to high school students when the child is not vaccinated in the school setting
- 5e Develop procedures that ensure vaccines given to high school students outside the school setting are captured in the statewide school-based immunisation database.

Objective 6: Increase vaccination coverage of adults**Strategies:**

- 6a** Establish robust procedures to assess influenza uptake in older and medically at-risk adults each year
- 6b** Develop and disseminate health promotion materials which encourage adult vaccination
- 6c** In collaboration with infection control practitioners and the Healthcare Associated Infection Unit, CDCD, establish and enforce policies regarding vaccination of HCW in public health care institutions
- 6d** Develop capacity for centralised procurement and promotion for influenza vaccine of government employed HCWs
- 6e** Establish a mechanism to fund vaccines not covered by the NIP that are needed for humanitarian entrants/refugees
- 6f** Establish procedures to track vaccine series completion among humanitarian entrants/refugees
- 6g** Develop programs to encourage vaccinations for populations at increased risk including emergency workers, child care workers, travellers, immunosuppressed individuals, men who have sex with men, and prisoners.

Objective 7: Improve informed consent for vaccinations**Strategies:**

- 7a** Systematically assess parent/patient consent experiences and expectations
- 7b** Collaborate with providers in identifying areas for improvement in the immunisation consent process
- 7c** Develop and disseminate written consent materials and guidance on best practice
- 7d** Increase consent resources available for non-English speaking clients
- 7e** Develop capacity for proactive communication strategy to respond to emergent vaccine controversies.

Objective 8: Increase immunisation workforce capacity**Strategies:**

- 8a** Strengthen WA Immunisation Certification Course enrolment and placement capacity
- 8b** Produce timely and relevant annual immunisation training updates
- 8c** Address real and perceived legal impediments to nurse-led vaccination services in WA
- 8d** Liaise with nursing schools to incorporate immunisation training into existing training pathways.



Objective 9: Improve surveillance for vaccine preventable diseases

Strategies:

- 9a Expand participation in SPN(WA)
- 9b Explore linking ACIR data to EDIS and TOPAS
- 9c Develop and promote tools to automate data extraction from existing practice management software
- 9d Improve representativeness of respiratory specimens submitted for testing.

Objective 10: Improve vaccine safety monitoring

Strategies:

- 10a Maintain and improve the WA Vaccine Safety Surveillance (WAVSS) System activities
- 10b Establish and support the WA Vaccine Safety Advisory Committee
- 10c Establish and support staff resources required to sustain comprehensive AEFI detection and response capability in WA
- 10d Establish and support specialist clinics to address reported Adverse Events Following Immunisation.

Objective 11: Improve communication with stakeholders and the community

Strategies:

- 11a Ensure regular consultation with the WA Immunisation Strategic Advisory Committee
- 11b Develop a comprehensive electronic system for timely communication of information to immunisation providers
- 11c Provide support to the non-government organisations that promote quality communication to consumers regarding vaccines and immunisation services
- 11d Develop and obtain agreement on Operational Directives that clearly define immunisation related responsibilities and duties for stakeholders within WA Health
- 11e Provide Area Health Services, CACH and individual government clinics with quarterly reports on childhood vaccination rates for review and action.

Objective 12: Encourage and support applied immunisation research

Strategies:

- 12a Collaborate with Vaccine Trials Group, Telethon Institute for Child Health Research, PathWest, GPs and other stakeholders to foster applied immunisation research for the benefit of Western Australians, the nation and the global community.

Appendix 2

WA Immunisation Strategy Key Partners

Strategies		Lead	Key Partners
Objective 1: Increase vaccine coverage in areas of low immunisation coverage			
1a	Ensure use of immunisation reminder recall systems at all government clinics statewide	CDCD	CAHS, AHS, PHU, LGC
1b	Promote use of immunisation reminder recall systems in general practice	CDCD	ML, RACGP, AMA, AMA
1c	Centralised, systematic use of reminder letters for parents of children who are not fully immunised for age	CDCD	CAHS, AHS, PHU, LGC
1d	Develop and resource community-based programs in areas needing improvement with input from local stakeholders	CDCD	CAHS, AHS, PHU, LGC, IAWA, ML
1e	Promote opportunistic vaccination of children cared for at tertiary and other health services, as appropriate	PMH	CAHS, CAHS, ML
Objective 2: Increase vaccination coverage for Aboriginal people			
2a	Resolve legal barriers to vaccination by competent health providers, including Aboriginal Health Workers	PHD	DLLS, AMS, RTO, AHS, AMA, AH, ML
2b	Train and empower Aboriginal Health Workers to vaccinate through development of an AHW Immunisation Competency Training Program	CDCD	AMS, RTO, AHCWA, AHS, AH
2c	Monitor vaccination rates among Aboriginal populations to identify potential subsets which may benefit from additional support for immunisations	CDCD	ML, PHU, AMS, CAHS, AH
2d	Work closely with Aboriginal Community Controlled Health services and other stakeholders to develop culturally appropriate, community-based programs in areas needing improvement	CDCD	ACHWA, AMS, PHU, AHA, CAHS, AH, IAWA, ML
Objective 3: Decrease vaccine wastage and leakage			
3a	Implement and maintain a centralised, electronic vaccine ordering system statewide	CDCD	Regional/state vaccine distribution centres, HIN
3b	Educate providers on eligibility for government procured vaccines	CDCD	PHU, ML
3c	Build vaccine ordering profiles for providers to facilitate detecting vaccine order errors and aberrations	CDCD	PHU



Strategies		Lead	Key Partners
3d	Establish and promote comprehensive cold chain breach reporting, supported with education on responding to potential breaches	CDCD	PHU, ML, CAHS, HIN
3e	Develop and distribute cold chain breach response guidelines	CDCD	PHU, ML
Objective 4: Increase vaccination coverage of 4 year olds			
4a	In collaboration with WA DoE, develop statewide policy for universal review of immunisation records of students at school entry	CDCD	DoE, CAHS, LGC, PHU
4b	Establish recall and reminder capacity within WA DoH to assist the parents of school age entrants who are not fully vaccinated	CDCD	CAHS, PHU, LGC
4c	Establish the capacity to vaccinate school entrants at school-based clinics when warranted	CDCD	DoE, CAHS, LGC, AHS
4d	Work with daycares and mother/toddler groups to increase the proportion of children up-to-date on their vaccinations when they enrol in school	CDCD	DoE, CAHS, LGC, AHS, ML
Objective 5: Increase vaccination coverage of high school students			
5a	Revise and improve High School consent form and processes	CDCD	DoE, CAHS, LGC, AHS
5b	Develop and distribute promotional material appropriate for students and parents	CDCD	CAHS, LGC, AHS, IAWA
5c	Enhance, maintain and use the statewide school-based immunisation database to monitor vaccine uptake and facilitate recall for vaccination	CDCD	DET, CAHS, LGC, AHS
5d	Enable GPs to provide vaccinations to high school students when the child is not vaccinated in the school setting	CDCD	ML, RACGP, AMA
5e	Develop procedures that ensure vaccines given to high school students outside the school setting are captured in the statewide school-based immunisation database	CDCD	
Objective 6: Increase vaccination coverage of adults			
6a	Establish robust procedures to assess influenza uptake in older and medically at-risk adults each year	CDCD	EB, ML
6b	Develop and disseminate health promotion materials which encourage adult vaccinations	CDCD	COM, IAWA, AH, ML
6c	In collaboration with infection control practitioners and the Healthcare Associated Infection Unit, CDCD, establish and enforce policies regarding vaccination of HCW in public health care institutions	CDCD	AHS, CMO, HOSP

Strategies		Lead	Key Partners
6d	Develop capacity for centralised procurement and promotion for influenza vaccine of government employed HCWs	CDCD	COM, CMO, HOSP
6e	Establish a mechanism to fund vaccines not covered by the NIP that are needed for humanitarian entrants/refugees	HEHS	CDCD, PHD, HCN
6f	Establish procedures to track vaccine series completion among humanitarian entrants/refugees	HEHS	CDCD, CACHS, AHS
6g	Develop programs to encourage vaccinations for populations at increased risk including emergency workers, child care workers, travellers, immunosuppressed individuals, men who have sex with men, and prisoners	CDCD	DPMU, prison health services, daycares, WAACS
Objective 7: Improve informed consent for vaccinations			
7a	Systematically assess parent/patient consent experiences and expectations	CDCD	PHU, TICHR, IAWA
7b	Collaborate with providers in identifying areas for improvement in the immunisation consent process	CDCD	AMA, RACGP, ML, CACHS
7c	Develop and disseminate written consent materials and guidance on best practice	CDCD	AMA, RACGP, ML, CACHS, PHU
7d	Increase consent resources available for non-English speaking clients	CDCD	IAWA, TICHR
7e	Develop capacity for proactive communication strategy to respond to emergent vaccine controversies	CDCD	COM, AMA, RACGP, TICHR, IAWA
Objective 8: Increase immunisation workforce capacity			
8a	Strengthen WA Immunisation Certification Course enrolment and placement capacity	CDCD	PHU, ML, CACHS, AMA
8b	Produce timely and relevant annual immunisation training updates	CDCD	AHS
8c	Address real and perceived legal impediments to nurse-led vaccination services in WA	PHD	DLLS, AMA, RACGP, ANA
8d	Liaise with nursing schools to incorporate immunisation training into existing training pathways	CDCD	UND, ECU, CURT, MURD, UWA
Objective 9: Improve surveillance for vaccine preventable diseases			
9a	Expand participation in SPN(WA)	CDCD	PATHWEST, ML
9b	Explore linking ACIR data to EDIS and TOPAS	CDCD	DLU
9c	Develop and promote tools to automate data extraction from existing practice management software	CDCD	ML, RACGP
9d	Improve representativeness of respiratory specimens submitted for testing	CDCD	PATHWEST, ML



Strategies		Lead	Key Partners
Objective 10: Improve vaccine safety monitoring			
10a	Maintain and improve the WA Vaccine Safety Surveillance (WAVSS) System activities	CDCD	CACHS/CIC, PHM
10b	Establish and support the WA Vaccine Safety Advisory Committee	CDCD	PMH
10c	Establish and support staff resources required to sustain comprehensive AEFI detection and response capability in WA	CAHS	CDCD
10d	Establish and support specialist clinics to address reported Adverse Events Following Immunisation	CAHS	PMH
Objective 11: Improve communication with stakeholders and the community			
11a	Ensure regular consultation with the WA Immunisation Strategic Advisory Committee	CDCD	
11b	Develop a comprehensive electronic system for timely communication information to immunisation providers	CDCD	HIN, RACGP, AMA
11c	Provide support to the non-government organisations that promote quality communication to consumers regarding vaccines and immunisation services	CDCD	
11d	Develop and obtain agreement on Operational Directives that clearly define immunisation related responsibilities and duties for stakeholders within WA Health	CDCD	AHS, CAHS
11e	Provide Area Health Services, CACH and individual government clinics with quarterly reports on childhood vaccination rates for review and action	CDCD	
Objective 12: Encourage and support applied immunisation research			
12a	Collaborate with Vaccine Trials Group, Telethon Institute for Child Health Research, PathWest, GPs and other stakeholders to foster applied immunisation research	CDCD	TICR, PATHWEST, UND, UWA, MURD, CURT, ECU

Key partner acronyms

Acronyms used in Appendix 2	
ACHWA	Aboriginal Health Council of Western Australia
AH	Aboriginal Health
AHS	Area Health Service
AMA (WA)	Australian Medical Association (WA)
AMS	Aboriginal Medical Service
CAHS	Child and Adolescent Health Service
CDCD	Communicable Disease Control Directorate
CIC	Central Immunisation Clinic
CMO	Chief Medical Officer, WA Health
COM	Communications Directorate
CURT	Curtin University
DLLS	Division on Legal and Legislative Services
DoE	Department of Education
DoH	Department of Health
DPMU	Disaster Preparedness and Mitigation Unit
EB	Epidemiology Branch
ECU	Edith Cowan University
HEHS	Humanitarian Entrant Health Service
HCN	Health Corporate Network
HIN	Health Information Network
HOSP	WA DoH Hospitals
IAWA	Immunisation Alliance of Western Australia
LGC	Local Government Council
ML	Medicare Local
MURD	Murdoch University
PATHWEST	PathWest Laboratory Medicine WA
PHU	Public Health Unit/AHS
RACGP	Royal Australian College of General Practitioners, WA Faculty
RTO	Registered Training Organisation
TICHR	Telethon Institute for Child Health Research
UND	University of Notre Dame
UWA	University of Western Australia
WAAC	Western Australian AIDS Council



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