Introduction
This audit assessed if WA Health (Health) has an effective approach to immunising children. The audit reviewed the delivery of immunisation services by the Public Health division of the Department of Health, Child and Adolescent Health Service (CAHS) and WA Country Health Service (WACHS).

Background
Immunisation is a simple and effective way of protecting and reducing the spread of serious diseases in the community. According to the World Health Organisation it is second only to clean water as an effective public health intervention, and surpasses the contribution that antibiotics have made to reducing disease worldwide. Research shows every dollar spent on immunisation saves $5 of medical costs and $11 of indirect costs like time off work.¹

Immunisation is a shared responsibility between the Commonwealth and state and territory governments. In 2013, the Commonwealth set the national immunisation strategy and schedule which runs until 2018. State and territory governments develop and deliver programs that align with the national strategy.

WA Immunisation Program Schedule (Appendix 1) outlines the immunisations recommended for children from birth to 5 years. These routine immunisations protect children from 14 preventable diseases. Adolescents aged 10 to 15 years are immunised as part of a schools vaccination program against 5 preventable diseases. All immunisations are provided free of charge under the national immunisation program by state and territory governments.

In 2009, the National Partnership Agreement on Essential Vaccines (NPAEV) was established. WA Health is a partner to the NPAEV. The agreement sets high immunisation targets for children, adolescents and adults as the more people that are immunised, the less opportunity a disease has to spread².

Agreed NPAEV targets for children and adolescents, include:

- immunise more than 90% of infants (12-15 month olds), toddlers (24-27 month olds) and school beginners (60-63 month olds). In June 2016, the state had around 215,000 children aged 0-5 years
- maintain and increase coverage rates for vulnerable groups and minimise disparities between Aboriginal and non-Aboriginal Australians
- demonstrate progress towards immunising 90% of adolescent girls (12-13 year olds) against Human Papilloma Virus (HPV). Boys have been immunised since 2013 but the national target set in 2009 still only applies to girls. There were around 30,000 adolescents enrolled in year 8 in WA schools in 2015.

Health is responsible for setting the state’s immunisation program and providing high-level services and guidance such as the purchase and transport of vaccines to immunisation service providers. These include general practitioners (GPs), some local government authorities, WACHS (regional WA) and CAHS (metropolitan Perth).

Health developed the state’s first Western Australian Immunisation Strategy in 2008. The 2013-15 strategy and the 2016-20 strategy followed. The current strategy aims to provide clear

¹ Western Australia Immunisation Strategy 2013-2015
direction on how to optimise service delivery across the state. Its objectives include increasing vaccination coverage for young children, Aboriginal people, adolescents and adults, to improve support for immunisation providers and communication with stakeholders and the community, and to encourage and support applied immunisation research.

The Immunisation Strategy Implementation Steering Committee (Committee) oversees implementation of the strategy. Key stakeholders on the Committee, include CAHS, WACHS, GPs and the Department of Education.

Health and its service providers rely on the Commonwealth’s Australian Immunisation Register (AIR) to record and monitor immunisations. AIR holds immunisation records for all Australians born after 1989. The Commonwealth Department of Human Services maintains AIR.

Health also uses its own school-based immunisation database to record and monitor immunisations given to adolescents through school vaccination programs. It created this database to record adolescent immunisations, as prior to 2016 AIR only captured immunisation records for children 0-7 years.

In 2015-16, WA spent more than $44 million of state and Commonwealth funds on its immunisation program. This included $38 million spent on vaccines. The proportion of these costs that relate to childhood immunisation is unknown.

Audit conclusion
Overall, Health’s approach to immunisation is effective. Since 2013, there has been a small but consistent upward trend of 1.15% in the number of WA children immunised and at June 2016 was above the 90% national target for children 0-5 years.

Health has an effective and focused approach to improving areas of low immunisation. However, some children are at higher risk of falling through the gaps in service provision. Around 1.5% of children are not immunised because their parents consciously object. Included in the remaining 7%, are children who are not immunised because they are harder to identify and target. Health’s 2016-20 WA Immunisation Strategy appropriately focuses on some at risk children, such as new migrants and those in state care, but not the homeless and those whose births are not registered.

Aboriginal children, particularly infants and toddlers, remain below the 90% national immunisation target. Lack of access to services is not the issue as nearly half the children not immunised live in the metropolitan area. Health has made several concerted efforts to improve rates and these have been successful but ongoing efforts are required to ensure rates do not fall once the programs finish.

Key findings
• Health has achieved the national target to immunise more than 90% of children. Since 2013, there has been a 1.15% increase in rates for children (0-5 years). Health meets the NPAEV requirement and protects a high number of WA children against preventable diseases. However, there are still at risk areas:

  o Aboriginal children, infants and toddlers, are immunised at a lower rate than non-Aboriginal children and are therefore at greater risk of preventable diseases. In June 2016, only 84.6% of Aboriginal infants and 84.5% of Aboriginal toddlers were immunised. This is less than the 90% national target and less than the national average for Aboriginal infants (90.5%) and toddlers (88.5%). However, a new approach introduced by Health in May 2016 is already showing results.

  o Infants and toddlers (0-2 years) are at higher risk of falling through the gaps. Health is missing opportunities to increase the immunisation rates for these children:

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3 Immunisation rates for children in Christmas and Cocos Island are included in WA coverage rates.
- 24% (1,624 of 6,651) of all children aged 0-2 years do not have any GP details recorded in AIR. Health does not know if these children have been immunised and is limited in its ability to follow up.
- Health stops sending reminder letters to GPs of children overdue for their vaccinations after a child turns 2 years even if the child has not been fully immunised.

- Significant improvement is required to achieve the NPAEV target to fully immunise 90% of adolescent girls with the HPV vaccine:
  - In 2015, 76% of adolescent girls were immunised. Only 74% of boys received the vaccine but they are not included in the target that was set in 2009.
  - In 2015, 80% of non-Aboriginals and 59% of Aboriginals received all 3 doses of the HPV vaccine. This number is skewed by the 5,452 adolescents that received all 3 doses but their consent form did not state if they were Aboriginal or not. This skewed data means Health cannot reliably target low adolescent HPV immunisation rates.

- Since 2016, Health has had suitable strategies to ensure at-risk children like school absentees and dropouts, and children and adolescents in state care or prisons are immunised. Over time, targeting these at risk children should improve the adolescent rates and provide greater levels of protection against HPV.

- The 2016 strategy acknowledges that immunisation rates for new migrant children need to improve. Approaches by Health include helping to translate overseas immunisation records for adding into AIR and offering catch-up vaccines. However, identifying these children in the first instance is not easy and unless identified, these children may miss essential vaccines.

- There are no statewide targeted approaches to immunise children whose births are not registered (mostly Aboriginal), homeless children and children of conscientious objectors. Further, Health does not know how many children and adolescents are in these at risk categories. Without suitable strategies, these children remain at risk.

- WACHS’ targeted planning and delivery of immunisation services has contributed to almost 2% higher immunisation rates in regional WA compared to metropolitan Perth.
  - WACHS’ practices include active monitoring of regional immunisation rates and development of action plans and projects when regions fall below the 90% target.
  - CAHS relies on Public Health and the Committee for advice on how to manage those suburbs in metropolitan Perth with historically low immunisation rates. It is still to fully implement the recommendations from its 2013 Improving immunisation outcomes 2013-2015 review.

- Under Health’s current service agreement with WACHS and CAHS, annual reporting of immunisation rates for fully immunised infants, Aboriginal infants, and adolescents is required but not for toddlers, school beginners, and other higher risk categories. This means Health cannot fully assess performance and take timely action to improve immunisation rates.

- Health has been unable to access important information contained in the AIR to more effectively plan and deliver immunisation services:
  - The Commonwealth Department of Human Services has denied Health access to some AIR information. Although Health receives a range of high-level reports, the information is limited to age group and indigenous status. Child information is not included. Having access to date, place of birth and service provider information could allow Health to assess the effectiveness of strategies such as those for new
migrants. The Department cited that it could not release the information because of confidentiality provisions in the *Health Insurance Act 1973*.

- The AIR information that Health receives on children who are overdue for immunisations is split into 4 separate reports. Health uses this information to send out reminder letters to GPs but first must merge and cleanse the data – a time consuming process.

- Service providers raised concerns about data validation and upload issues in AIR resulting in under-reporting of immunisation rates. For example in August 2016 and September 2016, CAHS found 44% of the 107 records it reconciled with its own system were out-of-date as the children had been immunised.

**Recommendations**

1. **By June 2017,** Health should:
   a. **For all children,** particularly Aboriginal infants and toddlers, focus its resources and strategies on improving rates by:
      - extending its reminder letters to GPs from 0-2 years to include children over 2 years that are still overdue for vaccinations
      - continuing to work with service providers to ensure timely and complete information is uploaded to AIR. In particular, to include GP details and new migrant immunisation records.
   b. **For adolescent HPV immunisations,** focus its resources and strategies on improving rates by:
      - revising the adolescent consent form to include service provider details
      - continuing to develop strategies to improve the uptake of all 3 doses of the vaccine
      - working with service providers to ensure parental consent forms are completed in full including whether a child is Aboriginal or not.
   c. **Strengthen agreements with service providers** to include regular reporting against performance indicators for children, adolescents and at risk categories.

2. **By June 2017,** CAHS should:
   a. consider and implement relevant outstanding recommendations from its 2013 review *Improving immunisation outcomes 2013-2015*.

3. **By December 2017,** Health should:
   a. **develop ways to improve immunisation rates** for homeless children, children whose births have not been registered and children of conscientious objectors
   b. **pursue its request for access to additional AIR information** from the Department of Human Services
   c. **consider ways to access children’s place of birth information** to identity and target new migrants in need of catch-up vaccines.
Agency responses

Child and Adolescent Health Service (CAHS)
The Child and Adolescent Health Service accepts the findings of the Office of Auditor General Performance Audit on Improving immunisation rates of children in WA.

One of CAHS key service delivery goals is to improve immunisation rates for Western Australian children. CAHS is committed to improving immunisation rates for all children in the metropolitan area in partnership with Communicable Disease Control Directorate (CDCD) and other key stakeholders.

CAHS acknowledges that General Practitioners (GPs) are the majority provider of childhood vaccinations, therefore GPs contribute significantly to overall immunisation coverage, particularly in metropolitan Perth, where GPs deliver approximately three quarters of all childhood immunisations. As the statewide coordinator of the National Immunisation Program, CDCD is well placed to work with GPs to maintain and improve immunisation performance, including reminder letters to GPs for children who are overdue.

Engagement with the community is critical in improving immunisation rates. CAHS will continue to target ‘hard to reach’ families and plays an important role in the provision of services to vulnerable clients, including new migrants. CAHS will continue to work with CDCD to improve immunisation rates for other vulnerable population groups.

In 2013 CAHS undertook a review of its Immunisation Services. The Report of the Review into Child and Adolescent Community Health Immunisation Services: 2013-2015 contains 47 recommendations on improving childhood immunisation rates, of which 29 have been fully implemented, with the remaining relevant recommendations in progress.

Department of Health – Public Health division
'The Department accepts the findings of the report “Improving Immunisation Rates of Children in WA”. However, we do not accept the recommendations:

- to revise the adolescent consent form. The consent forms for 2017 have already been printed. In 2018, Health plan to disband the School Based Immunisation Program (SBIP) database, and instead ask immunisation providers to report directly to the Australian Immunisation Register (AIR).

- for children whose births have not been registered. The recommendation is not considered a justified area of focus as these children are not precluded from accessing immunisation services.

- for children of conscientious objectors. Health cannot identify these children which limits our ability to target this group. The National Centre for Immunisation Research and Surveillance is a specialist research group that is developing resources for engaging with conscientious objectors.'

WA Country Health Service (WACHS)
WACHS supports the key finding: WACHS’ targeted planning and delivery of immunisation services has contributed to almost 3% higher immunisation rate in regional WA compared to Metropolitan Perth; further active monitoring, development of action plans and projects will continue when regions fall below the 90% target.

WACHS is supportive of the Department of Health (DoH) extending reminder letters to GPs to include all children over 2 years overdue for vaccinations. WACHS regions send reminders to families for children when immunisations are due and overdue regardless of age, letters from the DoH to GPs for all ages would complement this process.
WACHS agrees to continue to work with service providers to ensure timely and complete information is uploaded to the Commonwealth’s Australian Immunisation Register (AIR). WACHS is working with GPs and the WA Primary Health Alliance representatives to ensure that AIR data is improved. WACHS will further work with service providers to ensure information uploaded to the AIR includes GP details and new migrant immunisation records.

WACHS notes there would be benefit in strengthening DoH and Health Service Provider Agreements to include regular reporting against a greater number of Immunisation Indicators. WACHS will continue to work with DoH to develop immunisation indicators and reporting processes.

WACHS notes the finding for DoH to revise the consent form to include service providers. This will support the initiatives to improve adolescent HPV immunisation rates WACHS commenced in 2015. WACHS will continue to work to improve the uptake of all 3 doses of the vaccine and associated data capture; this includes working with parents to ensure consent forms are fully completed.

WACHS notes DoH will strengthen agreements with service providers to include regular reporting against performance indicators for children, adolescents and ‘at risk’ categories. WACHS will continue to work with DoH to develop immunisation indicators and reporting processes.