Case Study

Australian Department of Health – National HPV Vaccination Program Register
## Project Overview:

The project encompassed the scoping, development, implementation and operation of the National HPV Vaccination Program Register (NHVPR), Australia’s first national adolescent/adult vaccination register. In 2008, VCS was contracted by Health to establish the NHVPR. The contract included scoping and implementation of all ICT infrastructure required to support operations, incorporating the ‘green-field’ development of a Registry information system to receive, process and register school-based vaccination doses (via web portal), provide a reminder system to support completion of the dose schedule, and the generation, analysis and reporting of information to stakeholders and for Program evaluation.

VCS worked closely and effectively with Health and all stakeholders to deliver the project successfully on time and on budget within very tight timeframes. The success of the implementation and the NHVPR’s operations is reflected in the fact that the contract has been renewed multiple times and has now been successfully operating for over nine years.

## Outcomes Achieved:

NHVPR services have supported the operations of school vaccination services around Australia and improved rates of HPV vaccination coverage by facilitating monitoring of coverage (including Aboriginal and Torres Strait Islander coverage), supporting course completion through overdue dose reports, history statements and reminder letters, and providing high level advice and support about HPV vaccine program issues (such as when there was a cold chain breach).

The NHVPR was announced as a part of the HPV vaccination program at the end of 2006, with vaccination commencing in April 2007. Legislation to support the NHVPR was not passed until September 2007. A contract to deliver the NHVPR was not executed until February 2008. VCS implemented an interim Register and telephone information service in July 2008 and the NHVPR in December 2008 and successfully uploaded, cleaned and processed over 3 million vaccination notifications for the vaccination catch up program from all types of providers on multiple different types of forms, with all payments to GPs for notification successfully implemented. This responsiveness to an urgent government need, and the recognised quality of the Register and the services it provides, are a testament to VCS’s capacity to deliver business solutions in a tight time frame. An independent review of the Register conducted in 2014 highlighted that VCS met all contract requirements on time and on budget and delivered the Register successfully and collaboratively to a high level of satisfaction to all key stakeholders.

Our outcomes and outputs to date include 8.9 million notifications received, 2.7 million consumer communications sent, 1.7 million GP payments, 98,000 phone calls and 11,000 enquiry emails received, 1,780 jurisdictional reports automatically uploaded to on-line user accounts and 237 data requests processed. We have published extensively in the peer-reviewed literature using registry data, in collaborative partnerships with state and territory program managers and other researchers, reporting vaccine coverage, vaccine impact, program evaluation and documentation of registry methods and their impacts.

## Relevance:

**Health/Public (National) Sector Experience:** The NHVPR and associated systems and services are provided under contract with the Australian Department of Health which includes reporting against service levels and performance indicators. VCS routinely meets all performance measures. Throughout our development and operation of the register, we have worked in the health sector, engaging closely and effectively with both national and jurisdictional stakeholders and program managers to deliver important health services. Our engagement in the effective provision of registry services to support vaccination builds upon our long track record (over 50 years) of working in and supporting public health programs at both a jurisdictional and national level.

**Complex Stakeholder Engagement:** This project has required initial and ongoing complex stakeholder engagement, with initial registry design and development requiring effective engagement and relationship building with Health and the jurisdictional programs, each of whom deliver immunisation differently according to local systems. The successful delivery and ongoing operation of the register, with a documented very high degree of stakeholder satisfaction in an independent registry review, is a testament to our performance in achieving ongoing productive working relationships with the parties who manage the program the registry exists to support. Our early understanding of the varied needs of state and territory programs informed the design of the platform such that all outputs can be configured by jurisdictions.
**Complex IT Integration** VCS was the systems integrator responsible for the establishment of this national Register, and continues to provide ongoing technology support. The application platform was co-designed with key stakeholders including government and jurisdictional representatives, developed and deployed with desktop and web presentation layers, included flexible integration and processing functions to support a diverse range of stakeholder systems and data formats, with third party products integrated into the platform to provide ‘best of breed’ functionality. In establishing the register, VCS implemented and integrated the necessary development and operational infrastructure on schedule and within budget. Network technologies (WAN/LAN/Internet), security, hosting, server infrastructure, desktops and peripherals, website development and content management system, business intelligence/reporting platform, data migration, data entry/mailhouse providers, contact centre, GP payment, and BCP and DR were established and integrated to provide a holistic and co-ordinated service to support the national Program.

At the commencement of the HPV vaccination program, and before the establishment of the NHVPR, all State and Territory Health Departments independently designed their own consent and dose record forms that captured minimum data requirements and sought consent for information to be forwarded to the National Register. The systems put in place for the collection and notification of administered HPV doses to the HPV Register varied from different electronic immunisation databases (used by five jurisdictions to varying degrees), to electronic spreadsheets, hard-copy consent forms and direct data entry through the web interface. The NHVPR accommodated all of these methods and provided a method for electronic data transfer to the Register via a common portal.

**Innovation to respond to changing business needs:** VCS has always planned ahead in relation to potential system changes that will be required for the Register due to pending policy changes. For both the addition of the bivalent HPV vaccine to the Register, and the addition of the ability of the Register to capture and handle vaccination courses delivered to males, VCS began specification, development and testing of these system changes in anticipation of their required implementation as part of the program at our own risk. Our track record in developing and maintaining ongoing strategic relationships with stakeholders who share our vision regarding cancer control, and our expert clinical and public health knowledge, allow us to confidently and effectively horizon scan.

In relation to the male program, this approach proved extremely expedient and enabled the Register to commence accepting male vaccinations simultaneous with program roll out even though an amendment of the contract was only achieved one month prior to program implementation.

In 2007 VCS identified a gap in policy advice for immunisation providers, where a vaccine recipient has been delivered HPV vaccine doses at closer than the recommended intervals. The VCS epidemiologist supporting the NHVPR prepared a briefing paper, including a comprehensive review of the scientific literature and policies adopted internationally, which was then referred by the Department of Health to the Australian Technical Advisory Group on Immunisation for consideration. The outcome was the preparation of the Chief Medical Officer’s Guidelines for Revaccination, which enabled the reassessment of vaccine recipients with doses administered too close, from a status of ‘incomplete’ to ‘clinically complete’ based on age and days between course commencement and completion. This reduced the need for additional doses of the HPV vaccine to be administered to more than x vaccine recipients.

The canVAX information system was adapted to support the new rules for course completion including the creation of a new vaccine completion status and the subsequent issuing of Completion statements by the NHVPR to all vaccine recipients affected. This streamlined operations and reduced the clinical burden on immunisation providers to review their own vaccine recipients who had completed the course at shorter than recommended dose intervals to determine whether a fourth dose was required or not.

**Change Management:** Throughout the NHVPR project, VCS has led and enabled effective change management by the program across Australia, from initial inclusion of the HPV vaccine registry processes into the effective delivery of vaccination and follow up actions when the vaccination course is not completed, through to the doubling of workload for immunisers with the inclusion of males into the program and registry. As well as operating the registry, we have supported program change effectively through membership of advisory and implementation committees for the program and as official spokespeople for the program in the media, with the Department of Health using our reputation as an Not for profit non-government organisation with a long standing reputation for quality and public health expertise to support promotion of the program changes.
Programme management: VCS designed the register explicitly to support effective management of the National HPV Vaccination Program. The registry provides an easy to use solution for immuniser providers to search for consumers, obtain the vaccination status of consumers, upload vaccine notifications (whether a single notification or many thousand either entered ad hoc on the spot into the system, from simple spreadsheet records or from a point of care database system), receive reports listing consumers overdue for their next dose and receive reports about their data quality and program coverage and metrics. The registry also supports consumers directly by providing correspondence, maintaining the NHVPR website and a telephone information service.

As the responsible system integrator, VCS utilised strong programme management and stakeholder engagement to ensure that schedules for the various project streams and suppliers were co-ordinated and integrated into a single over-arching plan resulting in a highly co-ordinated and successful delivery, on time and within budget. This included the operational deliverables such as recruitment and training of staff during the establishment and transition phase of the project.

Ongoing Operations Management: Since 2008, VCS has operated NHVPR to a standard of excellence for compliance and reporting and high level achievements against Key Performance Indicators (KPIs). We have met 100% of all of our KPIs over the last six years.

VCS is responsible for supplier and vendor engagement, the provision of incident and problem management, capacity management, change, security monitoring and management (note: Australian government ‘badged’ web portal), release and deployment, server hosting infrastructure, and application upgrades and system enhancements.

Scalable and Extensible services: The HPV register platform was developed as an extensible and scalable platform with a view to being able to accommodate multiple vaccine initiatives (i.e. using different vaccines and or accommodating differing vaccination schedules). Our system and services have readily accommodated, with stability, efficiency and high data quality, the initial mass catch up program (where all females aged 12 to 26 years nationally were offered HPV vaccine), the steady state requirements of routine vaccination of girls, and the change to a gender neutral program with more limited catch up vaccination of males.