

# Business Intelligence

## Improvement Foundation



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40+ EMPLOYEES

“This solution has the potential to save lives and improve vaccination outcomes for Australians everywhere by speeding up and automating the reporting process.”



### About Improvement Foundation

Improvement Foundation (IF) provides expertise in the development and delivery of quality improvement techniques to bring about small and large systems change. IF supports improvement work by providing specialist change management advice and leading edge IT systems. A not-for-profit organisation, IF works in partnership with organisations and their frontline staff to help improve their services, enhance their systems and work more efficiently.

### The Vaccine Surveillance System

Following incidents of adverse reactions to a flu vaccine, some of which included death, the Western Australian Department of Health worked with IF and OBS to design and deliver a Vaccine Surveillance System (VSS) that would let the Department identify and monitor adverse vaccine reactions much faster than ever before. It was anticipated that this could result in better health outcomes for people in Western Australia (WA) and other States, since it could prevent the ongoing use of contaminated or compromised vaccines from the same batch.

Previously there was no automated solution available to help track and report adverse immunisation reactions. This made it difficult to immediately remove contaminated vaccines from use. However, it was important to be able to do this as quickly as possible to reduce the risk to the public.

### How it works

OBS and IF worked together to deliver a solution within six weeks. Colin Frick, Chief Executive Officer of the Improvement Foundation, said, “The VSS uses Microsoft SharePoint 2010 for administration and reporting.

When the patient attends a clinic for an immunisation, they opt in via the clinic’s system to participate in the VSS. Relevant data is stored in a Microsoft SQL Server database, integrated with SharePoint.”

This system is integrated with an SMS provider. 24 hours after receiving the immunisation, the patient is automatically contacted via SMS to ask whether they have experienced adverse effects. If the patient responds ‘no’, that data is recorded and the interaction ends. If the patient responds ‘yes’ then a second SMS is triggered.

The second SMS includes a link to an online 10-question survey delivered by an ASP.NET mobile website. They can quickly answer the questions, which elicit further information about the type and severity of their reaction.

The system is optimised for smartphone usage, making it extremely efficient and non-intrusive for participants. It delivers real-time information via the SharePoint reporting interface.

Colin Frick said, “The VSS cuts the adverse-reaction reporting time from weeks or months to days. This can save lives. In 2010 there were cases of severe illnesses and deaths related to a flu vaccine. It was weeks before adverse reactions were reported. Because the VSS includes the vaccine batch number and the areas that batch was sent to, potential issues can be stopped before lives are risked.

“... OBS has been with us from the beginning, partnering with us to create technology based solutions for our clients that improve their efficiency while achieving project and organisation goals.”

Colin Frick | Chief Executive Officer | Improvement Foundation

“The VSS stimulates a response from patients rather than relying on them to report adverse reactions, yielding more information, faster.

“The SharePoint-generated reports give administrators a dashboard view, showing them how the vaccination program is proceeding from a macro perspective. This aids in effective decision-making around vaccine distribution, awareness campaigns and so on.”

### Unique security capabilities

With the sensitivity surrounding patients’ personal data, the customer needs dictated that the VSS must include exceptionally strong security features.

The information is stored in a protected environment built by OBS. The Protected certification is defined by the Australian Signals Directorate and includes biometrics security features, auditing and logging. The information is stored in a physical, local data centre and personnel controls are in place to ensure patient privacy.

Colin Frick said, “This level of guaranteed security has dramatically increased the number of patients willing to opt-in to the system since they know that their details will be anonymised for reporting processes. This confidence in the security of the system was instrumental in its uptake and success.”

### Value to the public and to governments

The VSS delivers value to the public and to governments by identifying issues with vaccine batches sooner, reducing the potential for contaminated vaccines from being administered broadly.

This improves public safety through the twin outcomes of safer vaccines and an increased public awareness of the safety of vaccines, leading more people to vaccinate their children and increasing ‘herd immunity’.

Colin Frick said, “Previously reporting on immunisation reactions was manual, requiring vast amounts of people power to proactively telephone and follow up a sample of patients.

The automation delivered by this solution lets every single patient be followed up, making it more likely that adverse reactions will be reported.

“Additionally, the speed of delivery means that more comprehensive reporting on immunisation reactions is possible. Previously people may have neglected to report minor reactions because they forgot about them or didn’t consider them significant at the time. Now, because the SMS is received 24 hours after the immunisation, when any reactions are likely to be most apparent, people are more likely to report reactions as minor as redness or swelling at the injection site.”

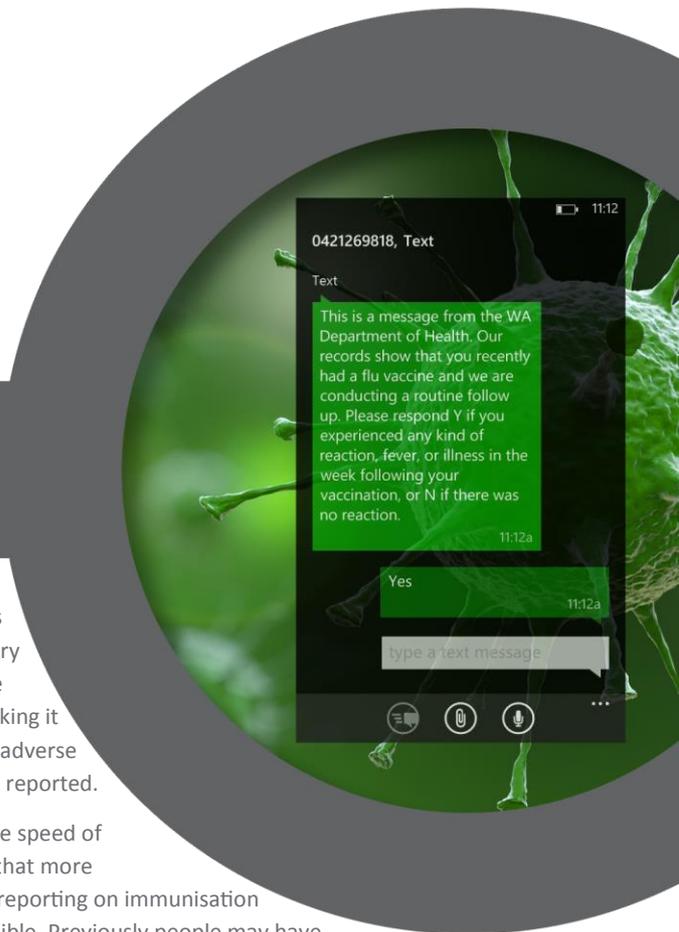
This information adds to the comprehensive picture of immunisation reactions being developed by researchers and lets them discover things that can make vaccines even safer or more effective. Additionally, location-based reporting means that it can become obvious if there is an issue with the way in which a particular provider administers the injection, which can potentially be rectified with training.

Colin Frick said, “Currently the solution is being used to track reactions to the flu vaccine but it can potentially be used to track reactions to all vaccines around the country.

“The VSS uses an elegantly-simple yet sophisticated solution to dramatically improve the comprehensiveness and efficiency of adverse-reaction reporting for immunisations. The mobile functionality combined with strong security has resulted in high uptake of the system, leading to more reliable statistics and a clear picture of the effects of vaccinations in people.

“This solution has the potential to save lives and improve vaccination outcomes for Australians everywhere by speeding up and automating the reporting process.”

“Improvement Foundation is quickly becoming recognised as an information technology leader in primary health care within Australia. OBS has been with us from the beginning, partnering with us to create technology based solutions for our clients that improve their efficiency while achieving project and organisation goals.”



### OBS

Melbourne | Sydney | Adelaide | Brisbane | Perth | Canberra  
P: 1300 733 627 | E: enquiries@obs.com.au | www.obs.com.au

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