

# Australian Government Department of Health and Ageing

Australian health agency improves cancer screening process, completeness of medical records, and realizes 923% ROI over three years using Adobe® LiveCycle® ES solutions

## Australian Government Department of Health and Ageing

[www.cancerscreening.gov.au](http://www.cancerscreening.gov.au)



### Industry

Government

### Challenges

- Improve completeness and accuracy of data on the National Bowel Cancer Screening Program Register
- Encourage health professionals to provide information to the National Bowel Cancer Screening Program Register
- Speed completion and submission of forms for busy medical practitioners

### Solution

- Benefits and Services Delivery  
Australian Department of Health and Ageing is using Adobe LiveCycle ES solutions to automate capturing and routing of information on participants in the National Bowel Cancer Screening Program.

## Bowel cancer statistics

In Australia, there are approximately 12,600 new cases of bowel cancer and 4,700 deaths from the disease each year. If bowel cancer is detected before it has spread beyond the bowel, the chance of surviving at least five years after diagnosis is 90%. The risk of developing bowel cancer rises sharply and progressively after the age of 50.

## A lifesaving service

The Australian Department of Health and Ageing (DoHA) is a federal government agency. The department's role is to achieve the government's priorities for health and ageing by developing policies, managing programs, and undertaking research and regulation activities. The department also leads and works with other government agencies and stakeholders delivering health services to Australian citizens. One such service is the National Bowel Cancer Screening Program, which aims to reduce the incidence of, and death from, bowel cancer—one of the most common forms of cancer in Australia—by offering people screening in the privacy of their own homes through the use of a faecal occult blood testing (FOBT) kit.

Every year, more than 1.5 million screening program invitations are sent to Australians aged 50, 55, or 65 years to participate in the program. Eligible people are sent an FOBT kit, which can be completed at home and mailed to a designated pathology laboratory for analysis. If a test result is positive, the participant is invited to contact his or her medical practitioner who will generally make a referral for a colonoscopy.

## Data-gathering matters

Health professionals associated with bowel cancer screening for a participant who has returned a positive FOBT result are the participant's usual doctor, specialist colonoscopist, and specialist histopathologist, who analyse submitted samples for any pre-cancerous and/or cancerous tissue. Each of these health professionals should provide information to the National Bowel Cancer Screening Register. When the Bowel Cancer Screening Program commenced, capturing data was done manually by filling out a paper-based report detailing the results of the test.

### Quantitative Results

- Estimated return on investment (ROI) of up to 923% over a three-year period
- Slashed time to catch and correct errors on forms
- Recouped investment in LiveCycle ES solutions in only one month

### Qualitative Results

- Improved legibility of data on forms
- Increased accuracy of data received
- Improved completeness of data
- Accelerated and simplified form completion
- Provided assurance for health professionals that forms have been submitted

### Systems At A Glance

- Adobe LiveCycle Process Management ES
- Adobe LiveCycle Forms ES
- Adobe LiveCycle Reader® Extensions ES
- Adobe LiveCycle Rights Management ES
- Platform:
  - Form rendering and pre-populating run on: Sun™ Java™ 1.5, JBOSS 4, MySQL 5
  - Form submission platform runs on: .NET 3.5, SQL Server 2005, IIS 6.0, SSL (For secure submission of forms)

*“Adobe LiveCycle ES solutions are helping the Australian Department of Health and Ageing provide an electronic reporting option for health professionals who provide medical services to participants in the National Bowel Cancer Screening Program... Now that the department has forms in place, it will proceed to enhance functionality by including features such as pre-population of data, interaction with client software, and automated updating of the national register.”*

Alan Keith,  
Director of Bowel Screening Programs,  
Australia Department of Health and Ageing

Reports were then typically sent to the Register by facsimile. The mostly manual, paper-based process presented challenges for doctors. Data on forms could be incomplete or sometimes illegible, requiring Register staff to follow-up with the health professional. This process was time consuming for Register staff and a distraction for busy health professionals.

Says Director of Screening Alan Keith, “The manual process for collecting and disseminating information is cumbersome and expensive, and the information gathered can be incomplete. We wanted to find a solution to automate capturing and managing data related to bowel cancer screening.”

### Smart forms make the difference

Keith and his colleague, Business Analyst Geoff Gillett, began looking for an electronic solution that would enable bowel-screening results to be generated completely and accurately and entered into the National Bowel Cancer Screening Register.

To address its challenges, the Department of Health and Ageing worked with the Department of Innovation, Industry, Science, and Research to implement SmartForms. SmartForms are Portable Document Format (PDF) forms converted from non-interactive documents to interactive and dynamic documents using Adobe LiveCycle. They retain the look, feel, and content of the original version. SmartForms can reach a wide audience because they are accessed using the free and ubiquitous Adobe Reader. SmartForms was ultimately the ideal solution to help the Department of Health and Ageing automate the process of collecting and collaborating on information from individuals participating in the National Bowel Cancer Screening Program.

Keith and Gillett focused first on helping to ensure that the information gathered from individuals participating in the program was complete and accurate. SmartForms would speed completing and submitting forms as platform- and application-independent Adobe PDF files. Today, doctors can download a form from the cancer screening website, complete the form on their computers and submit the completed form to the National Bowel Cancer Screening Program Register via a secure electronic process. They also have the option of saving or printing the form.

When other functionality is added to the forms such as pre-population of data, thus minimising the effort required for reporting to the National Bowel Cancer Screening Program Register, this process should really take off. For example, in relation to histopathology, current data return rates are very low. However, if the department can implement a largely automated process, there is likely to be a dramatic increase in the reporting rate.

### A focus on cost-effective government services

In addition to its potential lifesaving benefits for Australian citizens, the economic benefits of the solution were evident immediately. The estimated reduction in costs, through productivity gains and operational cost reductions, is significant.

With the initial release of the electronic forms, the National Bowel Cancer Screening Program Register is still manually updated. However, automatic Register update is certainly on the radar and that change will have a major impact on the costs associated with maintaining the Register.

At the same time, the medical data management application built on Adobe LiveCycle ES is helping the Department of Health and Ageing improve legibility of forms received and increase the accuracy of data before it is entered into the National Bowel Cancer Screening Register. A breakdown of the efficiencies gained includes the reduction of the:

- Cost of distributing hard-copy forms by sending forms electronically
- Amount of time spent manually detecting and correcting errors on forms
- Follow-up work required where information is illegible or missing

*"In less than five months, use of the electronic forms reached more than 8% of total forms submitted, and there is strong indication that use of the forms is accelerating. This was achieved with no citizen training and limited publicity, clearly demonstrating that the forms were easy to access, use, and submit."*

Alan Keith,  
Director of Bowel Screening Programs,  
Australia Department of Health and Ageing

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**Ensuring responsive, quality care**

Although providing cost-effective and efficient government services is crucial, the ultimate aim for the Department of Health and Ageing is to help Australia's population become healthier and detect diseases like cancer early so they stay healthier and do not generate the economic costs associated with cancer. One way is to use the patient information obtained through screening in the wider health system to help improve bowel cancer detection rates and participation in the program.

Australia's Department of Health and Ageing wants to tap into the National Bowel Cancer Screening Register to keep better track of people participating in the program and ensure they are provided with follow-up. To do this, the Register has to become more sophisticated and this is already happening. Adobe LiveCycle ES solutions are helping the Department ensure that proper, complete, and accurate data is collected. This will also help in maximising the data provided by health professionals to the National Bowel Cancer Screening Register.

**Privacy Statement**

The information collected for the National Bowel Cancer Screening Program is personal information and includes sensitive clinical data. The department is required to comply with federal privacy legislation that protects personal information and as a result the implementation of electronic forms must meet the obligations imposed by this legislation.



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