



Case Study: Brisbane Waters Private Hospital

The introduction of smart technologies in a northern New South Wales community to facilitate timely access to patient data and clinical information across the continuum of care for heart disease and other chronically ill patients.

Situation.

Brisbane Waters Private Hospital (BWPH), situated in Woy Woy on the Central Coast of New South Wales, is a 95 bed facility providing cardiac services, intensive care, day procedures, medical, surgical, angiography, a chest pain emergency service and allied services.

The hospital acts as the central coast's critical care centre and is the only hospital on the central coast providing a complete range of cardiac services.

The Central Coast of New South Wales is considered to be one of the fastest growing regions in New South Wales and has a population of around 270 000. The central coast region has 300 general practitioners providing primary care services to the population.

The hospital has established a Chest Pain Emergency Service providing 24 hour support to members of the service via a triage call centre and provides immediate admission and cardiac treatment 24 hours a day.

The hospital has 3000 patients registered as part of its Chest Pain Emergency Service. The service was established to allow local general practitioners and cardiologists to register patients with known heart disease. The register has allowed the sharing of medical records and

immediate access to specialist care should a patient feel chest pain.

With an established chronic disease registry, Brisbane Waters Private Hospital was the ideal location to establish the "proof of concept" project in Australia to extend the communication and sharing of medical records for patients in the north coast region.

The project is aimed at providing information on individual patients across the continuum of care to facilitate better patient management through knowledge based care using advanced technologies.

Solution.

Smart Health Solutions, a division of Australian smart card solution provider, Smart Card Applications, has designed Smart Patient Data. Smart Patient Data enables the secure sharing of patient clinical data amongst healthcare providers. It provides a fully scalable basis for the Electronic Health Record.

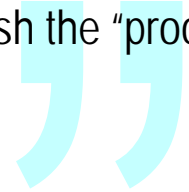
Smart Patient Data integrates web, smart card, advanced security technologies and interfacing applications to provide patient centric information across the continuum of care (primary, secondary and tertiary care).



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The product was designed by Smart Health Solutions with input from cardiologists, clinicians and administrators in the central coast region. The smart card carried by the patient acts as the security key to the data stored in remote locations and accessed over the Internet.

The cards hold data from some episodes of care, the remaining medical records are available via secure internet connection to data stored on secure servers provided by SUN Microsystems. The system holds both administrative and clinical data. The project ensures immediate access to the most recent clinical details of patients.

The application co-exists with existing primary care information systems and the Brisbane Waters Private Hospital patient administration system. Clinical summary notes are sent to the central patient data server.

Process.

After gaining support from the CEO of Brisbane Waters Private Hospital, Graham Mc Guinness, Smart Health Solutions formed partnerships and sponsors to begin the trial. Partners and sponsors in the project include SUN Microsystems, Schlumberger, Cable and Wireless, and National Office for Information Technology (ITOL). Smart Health Solutions then began to build the product for the project with

design coming from the healthcare providers.

Smart Health Solutions' technical staff worked with clinicians and administrators from both Brisbane Waters Private Hospital and the local Division of General Practitioners to design Smart Patient Data. Input was garnered from cardiologists and general practitioners to ensure that the information collected and displayed was exactly what clinicians required to make timely and information decisions regarding patient care. A multirepresentative Steering Committee has overseen the project since its inception.

The project began at Brisbane Waters Private Hospital in May 2000. Letters were sent from the CEO of Brisbane Waters Private Hospital to cardiac patients registered in the Brisbane Waters Chest Pain Emergency Service. The trial is voluntary and 500 patients participated in phase one of the project. Phase two is underway currently with the next round of patients to enter the trial expected to begin in March 2001.

Letters were sent in early February to patients. The target is 3000 and possibly more patients. 20 GPs in the North Coast area are using the software in their practices and the response by GPs has been positive and support from the Central Coast Division of General Practice excellent. Several specialists have now joined and a radiology practice is being installed.



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When a patient visits the general practitioner, they present their smart card to the GP. The GP inserts his/ her own smart card into the smart card reader attached to his PC to identify themselves followed by the patient smart card, identifying both the clinician and the patient and providing secure access to the patient's data. The clinician can enter new records and update current records every time an episode of care is performed.

The system allows immediate access to new data through the secure Internet connection. When a patient is admitted to hospital and receives treatment, all information relating to treatment and prescription is stored securely on the system. No more fragmented paper records.

Key Success Factors.

Key success factors in the Smart Patient Data trial have been:

- **Executive commitment:**
commitment from the executive level down to users has been extremely high
- **Community and clinician support:**
clinicians have been keen to undertake the project and have provided input into the design and functioning of the project
- **Speed of access:**
speed of access is fast which is important in order to get clinicians to use the system

Benefits.

Key benefits realised through the project include:

- **For hospitals and clinicians** Smart Patient Data provides immediate access to key administrative and clinical details twenty four hours a day across the Care Continuum.

- **The technology** and infrastructure was already available in all provider organisations and the application is simple and easy for general practitioners and cardiologists to use
- **For patients**, the smart card provides a secure and portable means to access their clinical details by various healthcare providers.
- **The potential** to save substantial amounts of money from repeat tests and prescription and other factors such as doctor shopping and medical fraud
- **The pilot project** provides proof of concept for advanced technologies in healthcare in Australia and has built upon European precedents in smart cards in health illegible hand written prescriptions.

Challenges/Barriers.

One of the biggest challenges is fragmentation of the health industry but initiatives by the Health Insurance Commission (HIC) and initiatives from the Electronic Health Records taskforce are paving the way to reducing this fragmentation. The common perception of doctors being technology dinosaurs is proving to be incorrect. The PIP program, at least on the Central Coast, has worked very well and doctors are using electronic means to store data and are increasingly establishing permanent Internet connections.

The Future.

A direct billing module will be developed later in 2001. Future expansion of the Central Coast project will include increased patients and doctors participating in the trial. Gosford Public Hospital, which is the "Principal Referral Centre" for the Central Coast Area Health Service, has also expressed interest in being included.