

Informed Decisions

Austin Hospital spearheads Victoria's \$300 million HealthSmart development

INSIDE:

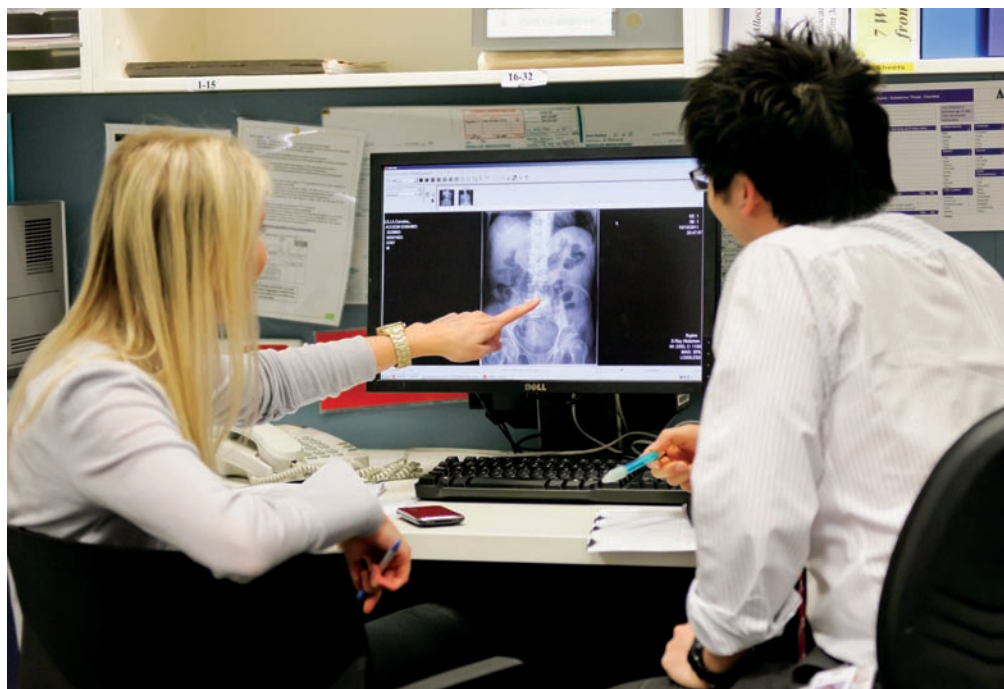
08 An Australian midwife's infant identification system is designed to boost newborn safety

21 Health information management systems need to be protected

22 ADF Ranks wound care vital in basic training for casualty management

Austin Health: Building patient first technology

WITH MORE THAN 30 YEARS DEVELOPING HOSPITAL INFORMATION SYSTEMS, AUSTIN HEALTH IS RE-ENGINEERING ITS SYSTEMS AND TRANSFORMING ITS WORK PLACE TO BUILD CRITICAL INFORMATICS CAPABILITIES AS PART OF HEALTHSMART, VICTORIA'S CONTROVERSIAL WHOLE OF HEALTH TECHNOLOGY PLATFORM, WRITES DAVID HUTCHINS



Patient information is easily accessed at Austin Health

AUSTIN Health's recent hosting of two significant international symposiums on Health Information Management Systems reflects its renown as a centre of excellence in health research and specialist work. Austin is now expanding its expertise to include developing and implementing leading health information management systems.

The events, The Clinicians IT Leadership Symposium and the Nursing Informatics Symposium, were draw card events of the 2011 Health Information Management Systems Society Asia Pacific Conference (HIMSS Asia Pac 2011).

Delegates toured Austin's primary campus in Heidelberg, to experience the hospital's advances in information management first hand.

However, unlike Austin's world renowned research and specialist work in cancer, liver transplantation, spinal cord injuries, neurology, endocrinology, mental health and rehabilitation, its labours to develop fundamental improvements in its information infrastructure, as part of the Victorian Government's whole of health HealthSmart system are likely to be its most challenging.

Despite an august history in developing hospital information systems and its current developments attracting national and international attention, its good work in HealthSmart may be overshadowed amid criticism that the HealthSmart system has suffered cost blowouts and requires more than \$95 million to salvage it.

On April 1st, Rafael Epstein wrote in *The Age*, that the Victorian Government would have to invest \$200 million into its health technology program, with as much as \$95 million to complete HealthSmart's original plan for a computer system linking 10 big hospitals and giving medical staff immediate access to patient records. Apparently, Victoria's Health Department suggested that \$100 million more will be needed to replace software, computers and electronic equipment outside the scope of the original HealthSmart proposal.

In October media reports erupted about the pressures, delays, and other challenges of Austin's emergency department. These reports underscore the fact that key areas of the health system are under strain and solutions must be found to ease the burden.

Easing the burden by developing and harnessing Health Information Management Systems solutions is a primary business mission of hospitals, health and aged care systems across the nation. Mandated by governments, as part of the drive to Patient Controlled Electronic Health Records (PCEHR), the mission is probably the nation's most significant change management exercise.

But speak with Austin's CEO Professor Brendan Murphy, Director Dept Intensive Care and Clinical Lead Electronic Health Records Program Associate Professor Graeme Hart, and Assistant Director of Nursing, Informatics Janette Gogler, and there is assurance and a common mantra.

'It's not about the technology; it's not even about the clinician; it's about putting the patient first'.

Being part of the nation's largest change management exercise is challenging enough, but combine it with developing, learning and introducing new technology to a work force under pressure, and government sponsors trying to micro-manage expenditure in a tight global budget, then the process becomes tricky.

But the Austin executives emit clarity, calm, experience and endurance, as well as a quiet commitment to complete the journey and deliver world class health information management systems that 'put the patient first'.

Federal and state governments have been hunting the holy grail of improved hospitals and healthcare for years. The nationwide health ICT transformation is expected to deliver it, which is why federal and state

governments are ordering the most ambitious integration of technology in health care since the stethoscope.

Reducing errors, finding greater efficiencies and obtaining better patient outcomes with strategic information technology is imperative, and Austin has been doing it for more than 30 years.

After many years using fairly conventional information technology, Austin implemented a new Patient Administration System (PAS) in the early 2000s, as part of an integrated electronic health record system. This was the MedTrak system, which is now called TrakCare and offered by Intersystems.

Professor Hart says this was very successful and encompassed outpatient scheduling, limited clinical documentation, pathology and radiology results viewing, electronic hospital discharge summaries, and a full Emergency Department system including clinical documentation, electronic orders for radiology and pathology and reporting.

"This was largely a successful implementation however financial constraints following implementation limited our ability to continue developing the system. In the ensuing years Austin implemented Agfa's Picture Archive and Communications System (PACS) and the InfoMedix Scanned Medical Record.

"In addition our clinical services are supported by a range of external and home grown speciality systems including ICU, cardiology, and respiratory medicine among many others," he says, adding that ultimately, all of these systems will be migrated into the HealthSmart Cerner Millennium program.

Hart says it also developed an academic, clinical business analysis and change management department known as the



"THE ICT SYSTEMS BEING DEVELOPED ARE NEW SYSTEMS, WITH GREATER SCOPE THAN PREVIOUS TECHNOLOGY AND ARE NOT LIKE APPLIANCES WHICH CAN BE WHEELED IN AND TURNED ON."

– BRENDAN MURPHY

Austin Centre for Applied Clinical Informatics.

"It aimed to leverage university and other external technical experts and bring together people within the hospital with an interest in the EHR. Students from LaTrobe University Health information Management, University of Melbourne Information Systems, Monash University, Central Queensland University Asia-Pacific Centre for Science and Wealth Creation, PhD students and the Smart Services

More people in health and community services choose HESTA than any other fund



Your super fund can make a lifetime of difference

✓ Run only to benefit members ✓ No commissions ✓ Low fees



hesta.com.au/super



Issued by H.E.S.T. Australia Limited ABN 65-016-888-695 AFSL 235,240 Trustee of Health Employees Superannuation Trust Australia (HESTA) ABN 64-071 740-331. Consider a Product Disclosure Statement before investing in HESTA's products. Call 1800-813-327 or visit our website for copies.



Austin's Dr Cliff Wiltshire CNC ICU - (left) and Director of ICU, Professor Graeme Hart.



Screens proliferate at Austin.

Collaborative Research Centre have all been part of our journey," he says, further qualifying Austin's health ICT credentials and collaborative approach.

Being battle savvy, but not battle weary, may explain the quiet assurance Austin executives convey. Hart says the knowledge and expertise built up during this development era contributed to the successful implementation of the previous projects as well assisting participation in HealthSmart and the Cerner program.

"In the external environment, Victoria's Department of Human Services introduced the HealthSmart whole of health ICT program around 2003 and the Clinical System – Cerner Millennium was selected in 2006. Austin decided using 'a whole-of-sector' electronic health record would ultimately have benefits in terms of training overheads, technology costs, infrastructure and services support that would not be sustainable independently," he says.

Austin provided people at a number of levels in the HealthSmart structure: on the original tender preparation group, acting on various steering and advisory committees, and providing expertise for user acceptance testing, clinical workflow testing, local customisation and pharmacy, pathology and radiology catalogue development.

The Royal Victorian Eye and Ear Hospital and Eastern Health were the first to introduce Release 1 of the clinical system and subsequently in June this year Austin and Peninsula went live with Release 2b of HealthSmart.

"This release incorporated electronic orders entry (pathology and radiology), results viewing, outpatient's medications, discharge summary, allergies and alerts. It has been a complex process to develop a 'state-build' standardisation in the software.

"It has taken longer than envisaged, and still has a long way to go. But this implementation is a critical foundation for the next step which is full cycle in-patient prescribing and medication administration," Hart says.

Austin CEO, Dr Brendan Murphy acknowledges the ICT-led transformation of his hospital's process and practices must, because of the incumbent complexities and quality issues, be realised over time.

"Everyone at Austin Health has been working extremely hard to ensure the information systems being developed and implemented meet all of the projected goals and satisfy all of the stakeholders. We are already seeing operational efficiencies and improvements in processes, particularly in the areas of medication management, and expect these trends to continue," he says

Despite Austin's long history in developing ICT systems, he maintains the ICT systems being developed are new systems, with greater scope than previous technology and are not like appliances which can be wheeled in and turned on.

"Developing these systems takes time and despite the frustrations and challenges inherent in such a massive undertaking, the hospital's community remains enthusiastic about completing the project and ultimately

harnessing it to improve patient outcomes.

"Essentially, its about developing greater capacities to drive up the quality of care, rather than just realising productivity gain to justify the investment. One is reliant on the other, because productivity gains without improving quality care is unrealistic.

"One of the challenges is to ensure that the systems being developed integrate all of the mandatory requests for the clinicians so we're getting the right work done. As the overriding principal is quality, we must not underestimate the scope of work being undertaken.

Noting some of the controversy surrounding HealthSmart, Murphy says that the health bureaucracy has been "very supportive" of Austin's drive to develop and implement the best systems.

"There is real political anxiety about IT contracts. Governments need a lot of convincing about these projects, which are significant investments in terms of expenditure and resource. It is a valid concern, arising out of some (historic) monumental ICT failures.

"However, in many circumstances, ours included, existing Health ICT simply didn't have the appropriate infrastructure, from cabling to computers, required to support the technological advances of the government's whole of health information vision. Generally, the health sector had not kept pace with the capital infrastructure required, which has amplified our task of migrating from the old systems to the new systems," Murphy says.

Fulfilling the charter to transform its information technology and management requires Austin has an agile and flexible approach to the project's scope and implementation. At the end of the day, the systems have to be complete, but attaining this requires hospital leaders to have adept and advanced knowledge of the technology they are introducing.

Murphy describes the Cerner Millennium system as comprehensive in its size and capability, which is an advantage, but it also presents a challenging learning curve.

"The Cerner product is huge. It's Big Bang. We have had to redo some things in our implementation, to ensure the best result. There has to be a level of flexibility and local input from clinicians and other stakeholders for the systems to be sufficient and this is something that evolves.

"In this scope of change management, it would be unbelievable to develop and implement such enormous systems without experiencing some problems, resolving these and moving forward. I have been pleasantly surprised that the problems and mistakes we have encountered have been resolved, relatively easily," he says.

Hart suggests massive implementations such as the HealthSmart implementation need a different development model than that which is generally applied in health.

"I think one of the fundamental issues with health infrastructure and IT spending is that it's project based rather than being systems based. Building the system skills and the knowledge base, and the history with key personnel can be lost as key people often change as projects within the system get completed. You really need to focus on building a team that has longevity. It's not a one-step journey. Our initial development framework with HealthSmart turned out to be not as timely and efficient as we required, and to everyone's credit, it is now becoming much more responsive. The Austin has been the first to trial an 'agile' development model that substantially reduces implementation times and provides more effective responses to clinical issues identified when workflows are implemented," he says.

With the many steps varying through systems development and deployment, Hart says that clinicians have to handle the transition between old and new technologies.

"Electronic health records and health informatics mean clinicians can sit at a terminal, access all of the patient's critical information, and still be looking at the computer to see pathology

results, images, and all the related information to that particular case.

"It means they are not constantly looking at, and tracking down, multiple items, pieces of paper, or films. However, the challenge for us now is that we still have some information residing in our old information system, some more coming into Cerner, some coming from medical records, and some on paper.

"So currently the onus remains on the clinician to ensure they have looked at all those sources of information, to make sure they have the complete story and that is a big challenge for them.

"So the quicker we can move across, and get rid of this transition stage the better, he says.

Change management is challenging, Hart says, in developing and implementing such far reaching health informatics systems, negotiating the countless transitions, from old systems to new is a major challenge.

Austin's assistant director of nursing, informatics, Janette Gogler, describes herself as a 'informatician', with 20 years experience in informatics. She concurs with Murphy and

Hart on the many challenging transitions, but maintains informatics will benefit clinicians and patients.

"Benefits and efficiencies are already being realised in areas such as mobile technologies for staff productivity. It used to be that community nurses would have a long day of patient visits and consultations and would have to return to the hospital at the end of the shift, to enter information and complete reports.

"As well as being inefficient these practices were prone to errors and insufficient currency. Mobile informatics systems enable nurses to enter these critical reports immediately, view other relevant information, and even communicate with the hospital, while they are with the patient," she says.

Gogler is a passionate advocate of harnessing the powers of information technology to improve patient outcomes.

"These systems can improve the quality of life of the workforce and the patient. Patients don't want to have to travel to visit a hospital and wait around for a consultation if they don't have to.

AUSTIN HEALTH: VITAL SIGNS

AUSTIN Health is the major provider of tertiary health services, health professional education and research in the northeast of Melbourne. It has a world class reputation for its research and specialist work in cancer, liver transplantation, spinal cord injuries, neurology, endocrinology, mental health and rehabilitation.

Austin Health comprises Austin Hospital, Heidelberg Repatriation Hospital and the Royal Talbot Rehabilitation Centre.

During 2008-09, its 6,402 staff treated a record 89,668 inpatients and 155,538 outpatients.

SERVICES OVERVIEW

Austin Health provides high quality patient care to the community and veterans and has achieved national and international recognition in many fields.

Specialist services include:

- Treatment for heart conditions
- Spinal injuries
- Head injuries
- Rehabilitation services
- Cancer
- Neurological disorders including epilepsy and stroke
- Liver and bone marrow transplant

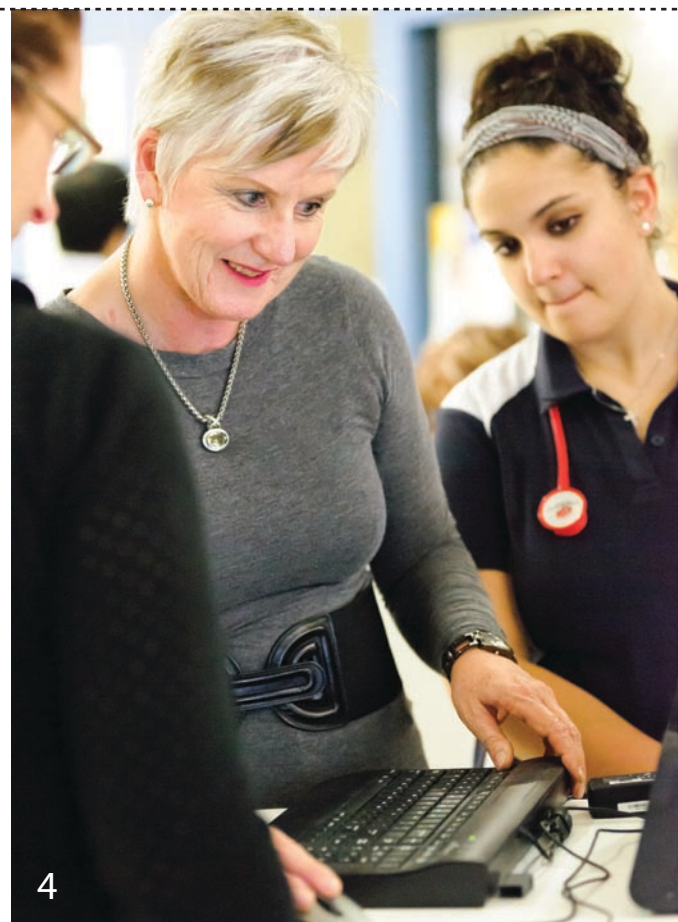
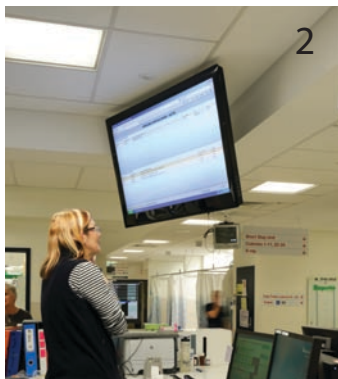
- Aged care
 - Thoracic disease (including asbestosis and mesothelioma)
 - Stress disorders
 - Vascular surgery
 - Orthodoxy surgery
 - Urology
 - Psychiatry - Including a mood disorders unit for mothers and babies, an eating disorders unit and a child and adolescent mental health unit
- Eight independent research institutions are based at Austin Health, where leading research on cancer, diabetes, respiratory disease, liver disease, heart disease, stroke, epilepsy and psychiatry is conducted.

STATE-WIDE SERVICES

Austin Health provides state-wide services including:

- Victorian Spinal Cord Service
- Victorian Respiratory Support Services
- Victorian Liver Transplant Unit
- Child and Adolescent Mental Health Service
- Vision

Austin Health to be renowned for excellence and outstanding leadership in healthcare, research and education.



1. Austin staff has information at their fingertips.
2. Easy access to Information is important.
3. Barcodes help ensure currency of information.
4. Assistant Director of Nursing, Informatics Janette Gogler (centre) checks patient information with Austin staff.

"With these systems, allowing remote monitoring these trips and congested waiting rooms could be a thing of the past," she says, adding that the quality of these systems are reliant on the nursing workforce.

"Nurses are the largest health care providers, but they do not influence health in the same way that doctors or independent practitioners do. However, it is important to work with nurses on any ehealth/informatics system implementation as they are the large integrators of clinical information, contributing up to 80 per cent of the medical records.

"As the largest health workforce any clinical system (ehealth) must be compatible with the business of nurses caring for the patient in all key environments such as the community, outpatients, and inpatients areas.

"By compatible, I mean the systems must add value through relevancy of information, accuracy, availability, and information flows. The work flows around entering information must not detract from the business of caring for patients, or nurses will devise workarounds,"

she says, adding that building effective informatics requires adequate time frames.

"It is essential that a business analyst observes the work flows of the entire patient journey and understands the associated information flows when these systems being implemented," she says.

Gogler says e-health systems give nursing the capability of measuring outcomes in real time, contemporaneously rather than retrospectively.

"We are not there yet, but are rapidly advancing to that point, which will impact on the range of interventions applied and their varying impacts on different case types. As present the e-health systems being developed are not nursing focussed in terms of entering nursing information, but this will come.

"Informatics will have increased impacts when they are in place and providing sufficient real time reports, alerting when patients are at clinical risks and when patients are already at risk with issues such as pressure sores," she says.

As an admitted convert to informatics, Gogler admits that for her the benefits far outweigh any negatives, if there are any, of the paradigm.

"I am a convert to informatics, so I don't see any negative impacts but sometimes ICT implementations, don't go so well. Often the 'sell' is bigger than the benefit for nurses.

"Usability is often overlooked in the development of any application. The systems are not designed for busy clinical people who are on their feet and working intimately with sick people.

Nursing is a very manual profession and is literally hands on. So the systems need to be efficient, easy to use and quick to come up with the information.

Professor's Murphy and Hart agree with Gogler, that the potential benefits of informatics are imperative and that it's critical that appropriate time and resources are allocated to ensuring these systems are the best they can be.

"These systems will assist, and in some cases automate, complicated processes that have been refined over many years. It's an enormous task with great potential, but this potential will only be realised with an appropriate and considered development," says Murphy. **HA**