



## Background Information

**Oacis, an open architecture information system, is an enterprise-wide clinical information system that allows clinicians to immediately access patient records in real time anywhere across the South Australian metropolitan public health system to provide a better quality health service to the community.**

There are 82 public hospitals across South Australia with eight major public metropolitan hospitals servicing 75% of the State's population of 1.5 million people.

The eight metropolitan public hospitals include:

- Flinders Medical Centre (FMC)
- Lyell McEwin Health Service (LMHS)
- Modbury Hospital (MPH)
- Noarlunga Health Service (NHS)
- Repatriation General Hospital (RGH)
- Royal Adelaide Hospital (RAH)
- The Queen Elizabeth Hospital (TQEH)
- Women's and Children's Hospital (WCH)

### Demographic

#### Metropolitan Adelaide as per DHS Annual Report 2002-03

<b>Average daily available beds</b>	2,626
<b>Accident &amp; Emergency Attendance p.a</b>	309,971
<b>Outpatient Visits p.a</b>	1,308,903
<b>Inpatient Separations p.a</b>	243,452

Historically, in the South Australian healthcare system, each hospital maintained independent medical records

covering a patient's history as it related to their site.

The Department identified the need to improve clinical information in 1990, to enable clinical best practices and thereby improve the quality of care. The Department purchased a system that would link the infrastructures of the eight metropolitan public hospitals as well as the multiple departmental systems operating within each hospital site.

The objective of the Oacis Programme was to revolutionise the way information is stored, distributed and accessed in the South Australia healthcare system. The vision was an enterprise-wide, patient-centric clinical information system providing clinicians with access to cumulative patient information to the point of care. The **Oacis** clinical information system was chosen as the solution.

From this, the Programme initiated a pilot of the system in 1996-97 in the renal units of four of the metropolitan public hospitals to test and evaluate the benefits and outcomes able to be achieved.

After the success of the pilot programme, the clinical information system was identified as being able to deliver better quality healthcare through preventing

adverse outcomes and reducing waste. This then set the benchmarks, identified challenges and benefits that the Oacis Programme would have for the community, the health care system, the Department, the State and Australia as a whole.

The State Government approved extension of the system to the eight metropolitan public hospitals to support the Department's strategic directions; *'to improve the quality and safety of services, to strengthen and re-orient services towards prevention and primary healthcare, to develop service integration and cooperation, and to adopt whole of government approaches to advance and improve health status'*.

This has resulted in major upgrading and provision of new infrastructure to allow each site to operate the clinical information system effectively and efficiently while still incorporating their existing internal systems. It offers the opportunities in the future to build on this to also incorporate all hospitals and community services in the State.

The Oacis Programme, the largest of its type in Australia, operating within the Department's Projects Branch, ICT Services, comprises a series of projects that are delivering benefits to the health care sector via information technology.

## Usage Statistics

As at 30 June 2004

<b>Total Users Trained</b>	11,256
<b>Total Active Users</b>	3,523
<b>Hours of Usage in June</b>	71,560
<b>Av. Hours of Usage Per Month Per Clinician</b>	20.31
<b>Clinical Units Enabled</b>	70+

The **Clinical Display** module provides a single point of access to the integrated

on-line patient record including; demographics, encounters, outpatient appointments, medications, laboratory results, radiology reports, theatre procedures and emergency department attendances. This allows the clinician to view a comprehensive history in real time that charts and displays information and results without having to wait for paper records to be delivered. This has resulted in the patient receiving a more thorough assessment as to their health care needs within less time. It is the platform from which other initiatives have stemmed including Clinical Order Management, Separation Summary and the Clinical Reporting Repository.

The Clinical Display module is fully operational and is fully deployed across seven of the eight hospitals and selected satellite facilities.

The **Separation Summary** module communicates information from the clinical information system to General Practitioners (GP) and other providers about a patient's hospital encounter to ensure continuity of ongoing health care. The summary gives a comprehensive account of the encounter, tests and continuing care requirements and is sent to the patient's GP. The Separation Summary has been developed with extensive consultation with Healthcare Practitioners.

The Separation Summary module is currently implemented across Lyell McEwin Health Service and Women's and Children's Hospital as well as select locations within Flinders Medical Centre, Noarlunga Health Service, the Queen Elizabeth Hospital and the Repatriation General Hospital.

The Department supported the South Australian Divisions of General Practitioners Inc (SADI) to develop a State-wide GP registry to complement the Separation Summary. The GP Registry is a central, accurate and up-to-date Registry of a GPs contact details to facilitate the delivery of reliable and timely patient communication from hospitals to the GPs.

The **Clinical Order Management** is an electronic ordering system for diagnostic, therapeutic, medical and surgical patient services and incorporates best practice information into multi-disciplinary order sets. This enables clinicians to order imaging, laboratory and other diagnostic and therapeutic services electronically.

The management of services for the patient's ongoing health needs are sent directly from the clinician to the service provider. Significant savings potential have been identified due to the reduction of duplicate and unnecessary ordering.

Clinical Order Management has been implemented in all dialysis units, across the Lyell McEwen Health Service, and select locations in the Royal Adelaide Hospital. The Royal Adelaide Hospital has also been the site of the first bi-directional orders interface that allows imaging orders to be transmitted electronically direct to the Imaging Department.

#### Statistics for Separation Summary

As at 30 June 2004

Finalised in April	2,222
<b>Total Final Summaries to June</b>	<b>16,375</b>

#### Statistics for Clinical Order Management

As at 30 June 2004

Laboratory orders in June	19,895
Imaging orders in June	2,762
<b>Total orders in June</b>	<b>22,657</b>
Total Laboratory orders to June	208,343
Total Imaging orders to June	31,919
<b>Total orders to June</b>	<b>240,262</b>

The **Clinical Reporting Repository** provides clinicians with the capability to query, analyse, and explore the

substantial clinical data held across the patient population in the data repository (the clinical data warehouse). The repository facilitates tracking of trends over time and is leading to higher quality healthcare. This allows for research and reporting to be completed which has previously not been possible.

Via the Clinical Reporting Repository, de-identified data can be selected for research in accordance with national ethical and State legal requirements for research and privacy. The repository contains over five years of clinical information for the majority of South Australia's population and can provide researchers with unparalleled access to the clinical history of an almost entire public hospital population set.

The Clinical Reporting Repository was piloted in the reporting areas of clinical outcomes, encounter clusters and renal reporting during 2003. The Clinical Reporting Repository is now managed as a production system. The Programme is currently in design stage and is rolling out specific reporting requests across all hospitals.

The **Pharmacy Order Management** module is an electronic ordering system for prescribing inpatient, outpatient and discharge medications utilising a standard format that will improve the accuracy of ordering and reduce medication delays and errors.

Pharmacy Order Management, integrated with decision support and reference information provided by First Databank's Australian knowledge database, improves the legibility, accuracy and completeness of medication orders which will improve the quality and safety of medication prescribing, dispensing and administration.

Pharmacy Order Management is currently being developed and will be piloted within the metropolitan hospitals in last quarter 2004.

The extended implementation of the clinical information system began in July 2001. The delivery of workstations for the hospitals began in September 2002. A total of 2,605 workstations have been rolled-out as at June 2004. The implementation of Oacis Clinical Display to seven of the eight hospitals was completed by December 2002 with a total

of 11,256 clinical users trained as June 2004.

The rollout of workstations to the final hospital has been delayed because of issues around infrastructure, interface development and the lack of a security model due to the different organisational structure of this hospital.

