

# **APPENDIX B**

## SURVEY RESULTS

# **THE ANGLISS HOSPITAL IN COLLABORATION WITH DEPARTMENT OF HUMAN SERVICES**

Scoping Survey of Existing Maternity Services Information  
Systems

## **DETAILED REVIEW AND COMPARISON OF MATERNITY SERVICES INFORMATION SYSTEMS IN VICTORIA**

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# CONTENTS

- 1     **METHODOLOGY**.....3
- 2     **SURVEY RESULTS** .....4
- 2.1   **TASMANIA** .....4
- 2.2   **SOUTH AUSTRALIA** .....4
- 2.3   **NEW SOUTH WALES** .....5
- 2.4   **QUEENSLAND** .....6
- 2.5   **WESTERN AUSTRALIA**.....6
- 2.6   **AUSTRALIAN CAPITAL TERRITORY** .....6
- 2.7   **NEW ZEALAND**.....6
- 2.8   **NORTHERN TERRITORY**.....6
- 2.9   **SUMMARY OF MATERNITY SERVICES INFORMATION SYSTEMS BY HOSPITAL** .....7
- 2.10   **CANDIDATE SYSTEMS FOR MATERNITY SERVICES INFORMATION SYSTEMS REVIEW ‘CHOICE’  
REPORT** .....7
- 2.11   **CONCLUSION**.....11

# 1 METHODOLOGY

As part of the Detailed Review and Comparison of Maternity Services Information Systems in Victoria, the consultants, Health Outcomes International conducted a market research survey to determine which systems were being used by hospitals in the region.

The scope of the survey included Health or Human Services Departments from each State, Area Health Services in New South Wales, and selected maternity hospitals, in Australia and New Zealand.

The survey respondents were asked to identify maternity services information systems being used in their jurisdiction, or area, contact names of key users, and contact details of the vendors supplying the system.

After the surveys were received, respondents and nominated contacts were telephoned by the consultants to answer some basic scoping questions regarding the relevant maternity services information systems. The consultants have interviewed a number of key users face-to-face and inspected demonstrations of some of the systems.

The results of the survey and follow up questions are outlined below.

## 2 SURVEY RESULTS

### 2.1 TASMANIA

Two responses were received from the Tasmanian Department of Health and Human Services. Homer is the Hospital Information System. Obicare was mentioned as a system favoured by clinicians in some evaluations performed by the Tasmanians between 1998 and 2001, although specific sites and scope of the study (intrastate, interstate) were not outlined. The other response received indicated that there were no maternity services systems in Tasmania presently.

### 2.2 SOUTH AUSTRALIA

Womens and Children Hospital: using an old in-house dBase based system.

Queen Elizabeth Hospital: using in-house system which is based on Microsoft Access. They are currently running the old and new systems in parallel, as they are uncertain of the new system's stability. They are unable to report on Perinatal Data Collection with their system, although most of the data is being collected.

Modbury Hospital: adapting PANCH (now The Northern Hospital) database for their needs. Not live yet, and previously have been using manual systems.

Phone call received from South Australian Department of Human Services Rural Branch. There are no Maternity Information Systems in rural South Australia.

#### TERRANOVA

Flinders Medical Centre is using a product called Healthware from a New Zealand based company called Terranova. Healthware uses a Microsoft Sequel Server database, with an Access database as the vehicle to operate queries and the interface to the user. The reports are web-based, using a browser such as Internet Explorer.

The system is multiuser and can be accessed at a satellite hospital, Noarlunga Hospital. Midwives can record significant antenatal information at Noarlunga. However, antenatal information cannot be recorded at Flinders due to lack of hardware in the antenatal suites.

Perinatal statistics reports are collected and reported. ACHS also can be reported as a standard report. Discharge summaries are sent to the GP using html reports.

Adhoc reports can be designed via Access. Two midwives have sufficient training to design adhoc reports, and the vendor will provided assistance if necessary.

Support is delivered from New Zealand, and Flinders staff are satisfied with the amount of support they have received.

## 2.3 NEW SOUTH WALES

Project Officer of the NSW Midwives Data Collection (MDC) replied to our query. The MDC currently receives data from 66% of the 86,500 births in NSW. The Project Officer gave the consultants several contact names which were followed up.

### OBSTETS

OBSTETS is a system developed by clinicians in one of the New South Wales Area Health Services (AHS), and enhanced by the NSW Department of Health for Statewide usage. The system is written in Cognos Powerhouse and run on the Department of Health's VAX platform.

The system is run by a consortium of 13 Area Health Service users (60,000 babies annually between health services), which meet bi-monthly. The users include 6 out of 7 Level 3 maternity services hospitals in New South Wales. The consortium is currently seeking funds to re-develop the system on a Personal Computer platform, with a web enabled interface. The aim of this shift in platforms is to enable GPs to access the system for shared care purposes.

The OBSTETS system:

- can report to the MDS (electronically) and ACHS Clinical Indicators as standard reports;
- is Multiuser;
- Links to PMI, HospPath, PIMS;
- Enables Midwives in each site are trained to design adhoc reports which can be exported to Excel for analysis;
- Discharge Summaries are standard reports that can be tailored to each individual site;
- Antenatal visits clinical information can be entered at time of visit;
- Booking module part of the system.

Another 2 Area Health Services have old systems and are awaiting the re-development of OBSTETS.

### WOLLONGONG SHARED CARE

Wollongong Hospital has a 'Shared care' based system which has been enhanced to supply the Midwives Data Collection extract (electronically). The 'Antenatal Shared Care Database' has similarities in functionality to OBSTETS. However, the key difference is the platform - the shared care database is on a PC platform whilst OBSTETS uses VAX.

The system uses Access, but is not multi-user. The GPs are sent paper sheets to complete re antenatal visits. The sheets are sent back to the hospital where they are recorded into the database.

It can report ACHS clinical indicator and can provide discharge summaries to the GP. The system is currently being enabled to link to the PMI.

### MIDISTATS

PC based system developed in Tweed Heads, being used by Christo Rd Private and seven other private hospitals in New South Wales and Queensland. The system uses a Paradox database, which can be networked for multi-user usage. The system can report to the MDS electronically, and clinical indicators. There is no charge for adhoc reports as they are built into the annual licence fee. The system links to the PMI.

## **2.4 QUEENSLAND**

Ipswich Hospital: Obicare

Verbal feedback received from Queensland Health and their Perinatal Data Collection Unit believed that Obicare was not being supported by Queensland Health, and enhancements were not being planned for the future. Queensland Health stated that the system was currently a high risk product, with possibly large data flaws, and issues with integrity. Queensland Health believes that only three public hospitals in Queensland are using Obicare.

## **2.5 WESTERN AUSTRALIA**

King Edward / Princess Margaret Hospital are using an old version of Obicare that has been considerably modified. The version they are using runs on Microsoft Access Version 2, which dates back to the mid-1990s. They no longer are supported by Queensland Health and the hospital designs all modifications as required. The hospital is planning to upgrading the database to Access 1997.

## **2.6 AUSTRALIAN CAPITAL TERRITORY**

### **PANDA (PERINATAL AND NEWBORN DATA ACCESS)**

Canberra Hospital were intending to upgrade their Obicare system, but the vendor Queensland Health were having difficulties rolling the system out.

As a consequence, Canberra Hospital then decided to create their own system, and is launching it on the 26<sup>th</sup> November 2002. Most interesting about this system is that it is a web based system. The system uses a Microsoft Sequel Server with IIS web based platform. Data input and reporting is through Internet Explorer 6. Currently, it is not enabled for offsite providers to use the system as it is on an intranet that is behind the ACT Government Firewall.

Antenatal visits are recorded at the time of consultations. Can report Perinatal data and ACHS clinical indicators. There is a one-way link to the PMI.

## **2.7 NEW ZEALAND**

Middlemore Hospital: use Terranova

Christchurch Women's Hospital: CareSys-Jade.

## **2.8 NORTHERN TERRITORY**

Jade are a health system provider that have contracts with various hospitals in Australia, New Zealand, and the United Kingdom. Jade supply most of the health IT needs to Territory Health in the Northern Territory.

The Jade Hospital Information Systems at the five public hospitals in the Territory are centrally run from Darwin via a NT Server environment across a Wide Area Network. There is a common Client Master Index across the system, including Community Health Services. The Community Health Services use a JADE product that is linked to the hospital system, but does not include the Birthing Module, although this can be achieved.

The system can link to Pathology and Pharmacy systems as well as the PMI.

PDCU data can be collected together with clinical indicators. Adhoc reports are organised through the Territory Health Information Services and are not charged for by the vendor. Discharge summaries are generated routinely.

Support for the system is supplied mainly from New Zealand, and was reported as excellent by the representative from the NT Department of Health and Community Services who was consulted.

## 2.9 SUMMARY OF MATERNITY SERVICES INFORMATION SYSTEMS BY HOSPITAL

System	Hospital
Healthware	Flinders Medical Centre, South Australia Middlemore Hospital, NZ
Obicare	Ipswich Hospital, Queensland + 2 other public hospitals in Queensland King Edward / Princess Margaret Hospital, WA
OBSTETS	13 NSW Health Services including: Royal Hospital for Women Royal North Shore Hospital Nepean Hospital
Midistats	8 private hospitals in NSW and QLD
CareSysNT-Jade	Christchurch Women's Hospital, NZ Royal Darwin Hospital linked to Alice Springs, Katherine, Gove, Tennant Creek hospitals.
In house systems	Queen Elizabeth Hospital, SA
	Women's and Children Hospital, SA
	Canberra Hospital, ACT
	Wollongong Hospital (Shared Care system)

## 2.10 CANDIDATE SYSTEMS FOR MATERNITY SERVICES INFORMATION SYSTEMS REVIEW 'CHOICE' REPORT

The maternity services systems that were found to exist in other jurisdictions in Victoria were subjected to a preliminary analysis to determine their suitability or candidacy of inclusion in the 'Choice' report that is to be the main product of this project. The preliminary analysis used seven criteria that are considered to be crucial for the assessment of maternity services information systems. Two systems widely used in and supported from Victoria were also subjected to the preliminary analysis.

The seven criteria are classed into mandatory and highly desirable and are shown below.

#### **MANDATORY**

- Able to be significantly supported in Victoria;
- A maternity service information system module to be available as a stand-alone commercial product;

#### **HIGHLY DESIRABLE**

- Use of contemporary technologies;
- Records and reports on information required for Perinatal Data Collection Unit;
- Records and reports on ACHS clinical indicators;
- Adhoc reports can be generated efficiently, cost-effectively, and in a timely manner; and
- Networked system can be used by multi-users.

The results of the preliminary analysis are outlined below.

### **2.10.1 SYSTEMS USED IN NON VICTORIAN JURISDICTIONS**

#### **HEALTHWARE**

Healthware possesses the basic functionality criteria of able to submit manual and electronic reports for perinatal statistics and ACHS Clinical Indicators, has the technical capacity to be used networked offsite for shared care arrangements, is multiuser, and adhoc reports can be designed without significant cost. The support, although generally delivered remotely by the vendors Healthware is produced by Terranova from New Zealand, and is described as possessing good-excellent functionality by users. Healthware also uses contemporary technologies to deliver its functionality.

It is recommended that Healthware is included in the 'Choice' report.

#### **JADE**

JADE Cade Community is a hospital information system that can record and report extensive maternal information. The functionality that is available in Care Community is extensive and would fulfil the minimum criteria for inclusion in the 'Choice Report'. The types of functions include recording and reporting of perinatal statistics and clinical indicators, use of contemporary technologies, and multi-user functionality. Care Community has other desirable features such patient alerts for medical conditions that can be customised, links to the PMI, and other modules, and antenatal modules

However, the vendor has stated that currently there is no stand alone product that could be utilised as a maternal module. The information is all currently contained in the hospital information system Care Community. The maternity services information cannot be isolated and sold as a discrete unit currently. At this stage, JADE do not intend to create an isolated maternity services module to be available as a commercial product for use by hospitals in Victoria.

It is not considered appropriate to include JADE in the 'Choice' Report as their product does not include a discrete maternity services module that can be purchased by Victorian hospitals.

#### **OBSTETS**

OBSTETS is a maternity services information system that is managed as part of a consortium of 13 Area Health Services in New South Wales. The system currently runs on VAX platforms but the consortium is attempting to access funds to upgrade to more contemporary environment.

The feedback from the users and developers indicates that the system fulfils the minimum criteria for inclusion in the 'Choice' report, with electronic submission of perinatal statistics, recording and reporting of ACHS clinical indicators, a multi-user network, and accessible adhoc reports that can be accessed by staff members. Other desirable features include links to the PMI and pathology, and an antenatal booking module. However, the technology underpinning OBSTETs is not contemporary, consisting of a VAX platform, although plans are to upgrade to a Personal Computer environment.

Initial feedback received from the New South Wales Midwives Data Collection Unit indicated that hospitals outside New South Wales could not be part of the consortium. However recent feedback from an OBSTETs Systems Administrator and the consortium Chairperson indicates that Victorian hospitals and health services are able to access the OBSTETs consortium. The consortium fees relate to the maintenance, upgrades and support of the system. The requirements of the New South Wales Midwives Data Collection may be different from the Victorian Perinatal Data Collection Unit, and may result in inconsistencies in the needs of the users and consequent design of the database. The impact of any inconsistencies in recording and reporting of data between the states is unclear at this stage.

The main issue with the OBSTETs system is that the environment on which it operates is a legacy platform that is unlikely to be well supported in Victoria. Although an upgrade to a Personal Computer platform is planned for Obicare, no timeframes have been set nor has funding been secured.

It is recommended that the OBSTETs system is included in the 'Choice' report.

#### **OBICARE**

Obicare was developed by Queensland Health a number of years ago. However, Obicare does not appear to be supported from Queensland Health. Queensland Health view the product as a high risk venture with serious data flaws. Queensland Health also do not intend to upgrade Obicare. One interstate hospital that was using Obicare for their maternity services information needs has recently migrated to another product due to the lack of support from the vendor, and their requirement for a more contemporary product, which could not be fulfilled by Obicare.

Due to the lack of ongoing support by Queensland Health, it is recommended that Obicare is not included in the 'Choice' report.

#### **PANDA**

PANDA commenced live operation at The Canberra Hospital, where it was developed, in late November 2002. PANDA uses contemporary web-based technology to provide the interface for forms and reports. The system is able to export results of reports in commonly used applications such as Excel or Word.

The system will report electronically to the Perinatal Statistics and has the capability to do so on using an automatic batch run. The system has a report generator built into it which can design adhoc reports that can be saved to be used at a later date if necessary.

The major issue with PANDA is that the system is early in its lifecycle. The Canberra Hospital are keen to have the product commercialised. To achieve this, between November 2002 and March 2003, The Canberra Hospital need to train staff to function as support staff for the product. The Canberra Hospital acknowledge that a small quantum of work is required in designing reports and completing help information for PANDA.

As PANDA meets minimum requirements of inclusion, it is recommended that PANDA is included in the 'Choice' report.

#### **MIDISTATS**

Midistats is currently being used in eight private hospitals in New South Wales and Queensland. Although it has been used exclusively in the private hospital environment to date, feedback from users has indicated that it would be suitable in the public hospital sector.

Feedback from users and documentation received from the developers indicates that Midistats seems to fulfil the requirements of the minimal criteria for the 'Choice' report with recording and reporting perinatal statistics, and ACHS clinical indicators, adhoc reports can be designed by the vendor, and are included in the annual licence fee. The system is designed for use on single or networked Personal Computer environment and uses a client-server methodology. The vendors have indicated that support could be provided to users in Victoria, as they are planning capacity due to interest in Midistats from Victorian private hospitals.

As the system fulfils the minimum criteria, it is recommended that Midistats is included in the 'Choice' report.

## **2.10.2 SYSTEMS USED AND SUPPORTED FROM VICTORIA**

### **eBOP**

eBOP possesses the functionality that would justify inclusion in the report of this project, with a perinatal statistics recording and reporting, and a contemporary system, that uses a Personal Computer environment. It also can produce discharge summaries, records extensive antenatal information, and can link to the PMI.

However, a potential limiting factor to commercialisation is its ownership structure. Eastern Health will possess the intellectual property of eBOP as of December 2002. The Program was originally developed at the Angliss Hospital for internal use. When the product was near completed, Angliss became part of the newly formed Eastern Health area network, which then managed development of the product.

Subsequently, the product was refined by the Centre for Medical Informatics (CMI). In November 2002, CMI appeared to still have control of the development of the product, but were scheduled to hand over the intellectual property of the product to Eastern Health in December 2002. Eastern Health will support the product, have the capability to modify the product, and can create new reports and queries.

The Information Technology Department at Eastern Health were uncertain whether eBOP will be commercialised when approached by the consultants for this review in November 2002. The main reason for their reluctance to make the product available is that Eastern Health is in the core business of providing health services, not developing, marketing, selling, and supporting information technology. Therefore eBOP could be considered as not a commercial entity that is available for purchase by hospitals in Victoria.

However, Eastern Health did not rule out commercialising the product in the near future. If their intention was to commercialise eBOP, Eastern Health's preferred model of development is to seek partnership arrangements with companies specialising in information technology development, marketing and support.

eBOP is currently used by all the hospitals in Eastern Health that provide maternity services in the area – Box Hill, Angliss, and Healesville. eBOP will be fully supported by the respective IT departments at each of the hospitals above. It is possible that the product may be available to other hospitals in Victoria, and it would be locally developed and supported. It is recommended that eBOP is included in the 'Choice' Report.

### **BOS**

BOS is in a transition phase presently with a new version (Version 5) of the system installed at Wodonga District Hospital and due to be gradually rolled out over a series of locations.

BOS Version 4 has considerable penetration in the maternity services information system market in Victoria with hospitals using the system including Dandenong, Monash Medical Centre, Sandringham, Werribee Mercy, Mercy Hospital for Women, and Geelong Hospitals. The feedback regarding the system from the users has been very positive, and the system appears to meet minimum criteria to warrant inclusion in the report.

Version 4 uses a J-based platform, which is a legacy system, whilst Version 5 uses a Personal Computer SQL environment. Support has been rated as excellent by users at one hospital. A report generator has been recently installed which has enabled the adhoc reports to be efficiently produced by expert users. Perinatal statistics and ACHS clinical indicators can be recorded and reported by Version 4 and 5 of the system.

BOS has widespread market penetration in Victoria, and it appears to meet the criteria of the preliminary analysis, then it is recommended that BOS is included in the 'Choice' report. Version 5 will be assessed against the functional statements.

## **2.11 CONCLUSION**

The 'Choice' Report for the Maternity Services Information Systems Review Project will review the following systems against functional specifications:

- Healthware;
- OBSTETS
- PANDA;
- Midistats;
- EBOP; and
- Birthing Outcomes System (BOS).