

Working Systems Solutions & Global Health

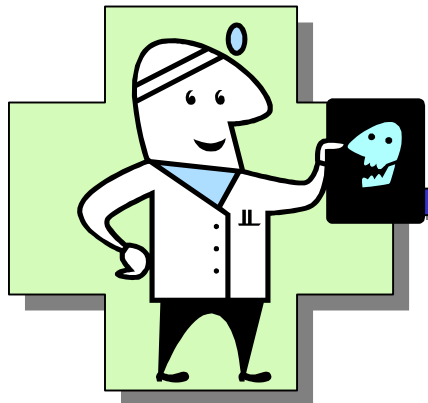
Innovative health solutions

Background

- Divisions ↔ Locum
- First Locum sale – 1995 – ‘advertising free’
- “Cottage Industry”
 - GPCG Management Committee
 - MSIA
- 1999 – HotHealth
- 2000 – Global Health/KPMG
 - SQL version of Locum

E-transformation of Health Care

Traditional medicine



Illness Model

- Provider focus
- Consumers passive
- Institution centralised
- Episodic illness
- Healthcare providers as authorities
- Poorly coordinated services
- Fragmented health information

Information Age health care



Wellness Model

- Person focus
- Consumers supported to be active
- Community distributed
- Lifelong health and wellness
- Healthcare providers as partners
- Well coordinated services
- Well integrated health data

Continuity of Care

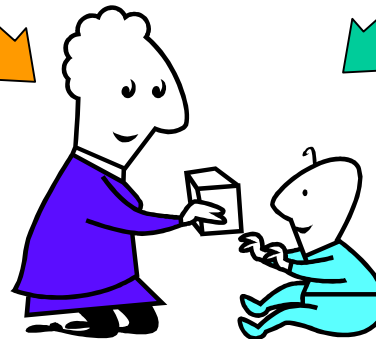
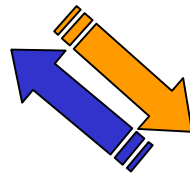
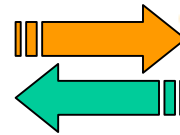
HOSPITAL CLINICAL SYSTEM

- Discharge Summaries
- Emergency Dept. attendances
- Outpatient visits



COMMUNITY CLINICAL SYSTEM

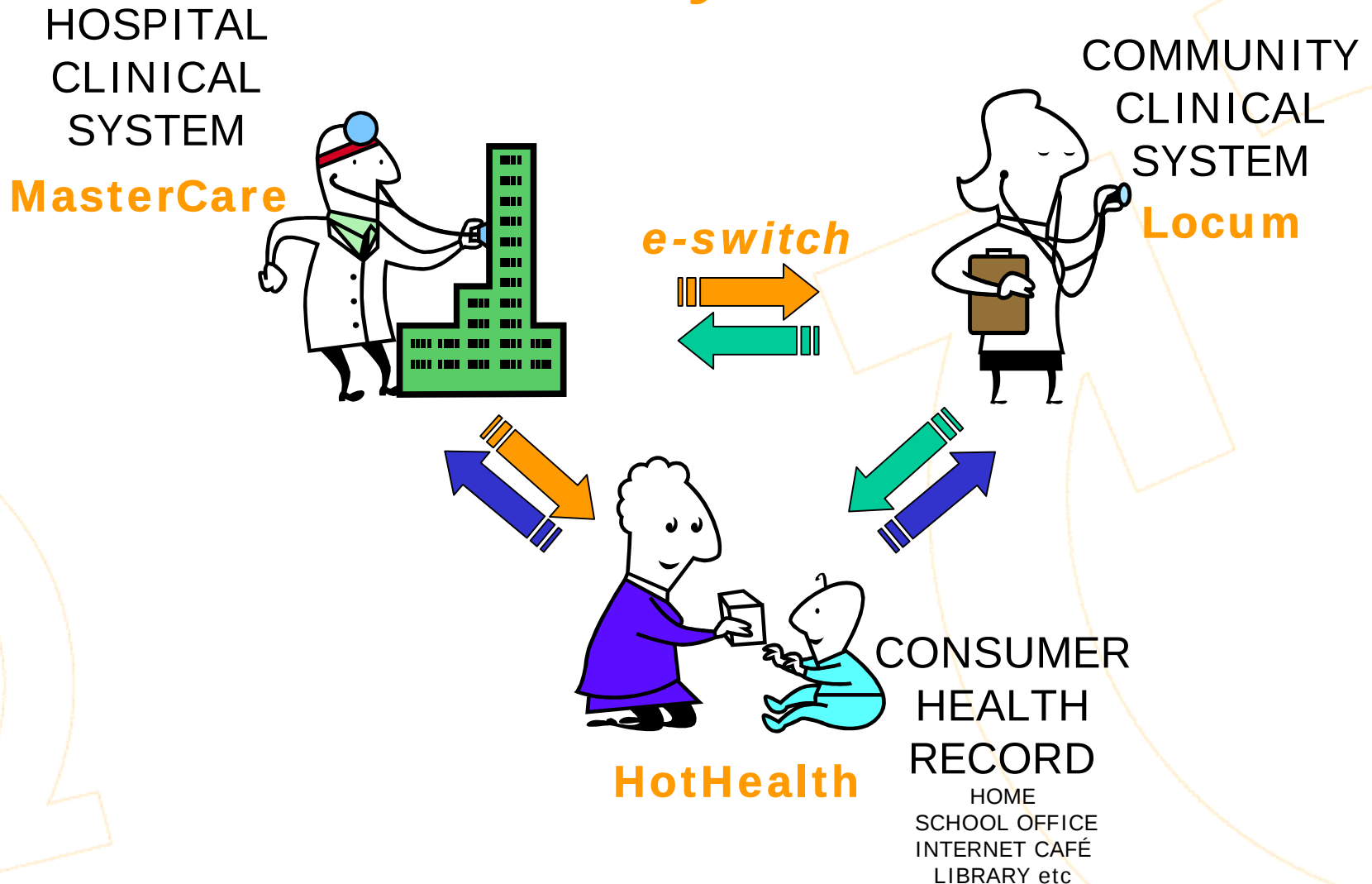
- Consultation Summaries
- Test results
- Referrals



CONSUMER HEALTH RECORD

HOME
SCHOOL OFFICE
INTERNET CAFÉ
LIBRARY etc

Continuity of Care



<Locum3>

Community Clinical System

Locum3 - DEMO DATABASE

File Patients Scripts Paperwork Recalls Tools Help
Dr. Andrew Aardvaark - 765432
Wednesday, 25th April 2001, 2:36 PM

Mrs Annie Aardvaark
23 Main Street
Somewhere 1234

H: 98765654
Dob: 9 Aug 1962 Age: 38 Sex: F

File ID: 00002-02
MC No: 3214 45678 9 3

Name	Age
Alfred Aardvaark	40
Adelaide Aardvaark	12

Main
Snapshot
Medication
Documents
Prevention
Investigation
Tools

Snapshot

Clinical Problems

Description	Date
○ appendicitis	16 Jan 2001
○ RIF Pain	16 Jan 2001

Notes

Allergy No Known Allergies.
Recall There are active recalls.
Progress Notes Pathology results which have not been marked as notified
Alcohol - wine
Pregnancy LNMP: 23 Nov 2000, Now: 22 weeks by LNMP, EDD: 30 Aug 2001
Pregnancy Now: 21 weeks by scan, EDD Scan: 2 Sep 2001
Immunisation No Tetanus or ADT recorded in last 10 years
Prevention Record Family History
Prevention Discuss Tobacco
Prevention Discuss Alcohol
Prevention No Blood Pressure recorded last 12 months

Current Medication

Drug	Strength	Form	Dose	Freq	Instructions	Due

Family History

Consultation Progress Notes



- Flexible, template driven - html
- Shortcuts to frequently used formats or text
- Incorporates - Drop down lists, Checkboxes, Tables, digital photos and a unique set of 3D body images

Locum3 - Features

- ✓ Flexible Security module
- ✓ Snapshot - overview
- ✓ Clinical Summary
 - Current/Past problems
 - Family History
 - Immunisations
 - Measurements
 - Current Medication list
- ✓ Medication Management
- ✓ Inbox
- ✓ Clinical Progress Notes
- ✓ Documents/Referral generation
- ✓ Recall management
- ✓ Pathology module
- ✓ Radiology download
- ✓ Preventive Health prompts
- ✓ Patient Education
- ✓ Clinical Tools

<HotHealth>

Consumer Clinical System

Personal Health Record (PHR)

Definition:

“Gartner defines PHR’s as Internet accessible repositories for storing information that helps describe an individual’s health status and that are optimised primarily for consumer use.”

(Gartner Research note TU-11-1881, Defining the Personal Health Record, July 2000)

PHRs will be a key component of our emerging e-health environment

PHR Predictions

“By 2004, the personal health record will become the foundation environment for managed health applications (**0.7 probability**)”

(Gartner Group, November 1999)

“Personal Health Records are an extension of the **consumer-empowerment movement** that is hitting healthcare big time”

(Modern Healthcare, February 2000)

“The benefits Personal Health Records deliver make it an **inevitability**”

(First Consulting Group, May 2000)

What is HotHealth?

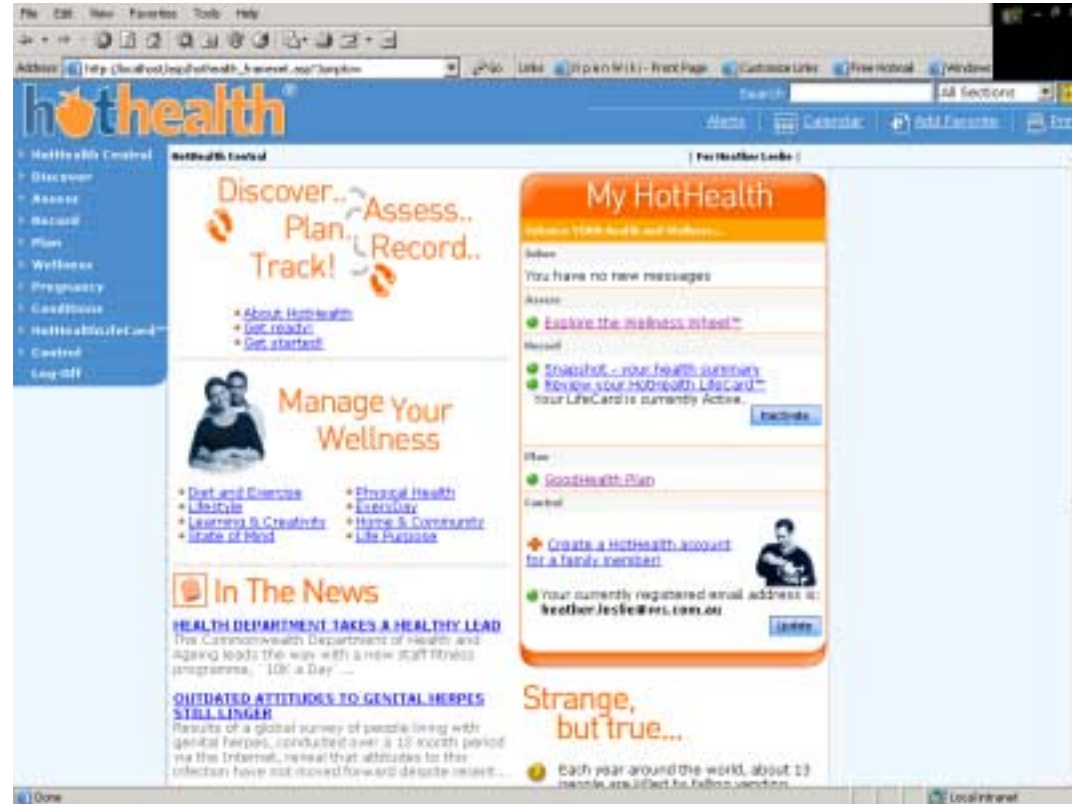
- Online Personal Health manager
 - Health Promotion & Wellness
 - Optimising Chronic Condition Management
- Support consumers to:
 - be more informed and pro-active about their health
 - Self Care
 - partner more effectively with their providers
 - communicate with providers and share health information securely
 - Shared Care

Benefits to consumer

- Access to personal health information
 - single, life-long health record
 - emergency record
 - anywhere, anytime
- Empowers & enables
 - age/gender-specific health promotion
 - chronic condition management and coordination
- Integrates
 - “3D” - Information & tools in context
 - direct consumer input with uploads from providers
 - Best practice recommendations
- Control - privacy, consent & authorisation
- Enables a shared care model

Benefits to provider

- Provider keeps their complete clinical record
 - Control over uploading to patient record
- Encourages provider/patient partnership
 - Share pertinent parts of health record with patients
 - Share care plans/discharge information etc
- Access to selected patient health data
 - emergency record, or more with authorisation
 - anywhere, anytime
- Integrates
 - Direct consumer input with uploads from providers
- Enables a shared care model – benefits all participants



UNEQUIVOCALLY { **PATIENT**
CONSUMER
MEMBER } **-CENTRIC**

SEPARATE PROVIDER VIEW

File Edit View Favorites Tools Help

Address http://localhost/asp/hothealth_frameset.asp?JumpTo= Links Open Wiki - Front Page Customize Links Free Hotmail Windows

hothealth® Search All Sections Go

Alerts Calendar Add Favorite Print

HotHealth Central

- Discover
- Assess
- Record
- Plan
- Wellness
- Pregnancy
- Conditions
- HotHealthLifeCard™
- Control
- Log-Off

Pregnancy | For Heather Leslie |

Pregnancy

I want to know more! I am pregnant!

You are 21 weeks and 6 days pregnant. Your estimated due date is Wednesday, October 15, 2003.

[Update your due date](#)

Shape Your Pregnancy

- [Start your pregnancy plan](#)
- [Record your previous pregnancies](#)
- [Journal your pregnancy](#)
- [Stop! I am no longer pregnant](#)

Choices!

- [Create a Birth Plan](#)
- [Pack your bag](#)
- [Plan to Take a Holiday](#)
- [Baby Gear](#)
- [Early Parenting](#)
- [Pregnancy Health Care](#)
- [Labour](#)
- [Delivery](#)
- [After the Birth](#)

Journal

[Make a pregnancy journal entry.](#)

127 Days To Go!

4 Hours
47 Minutes
47 Seconds

Stages of pregnancy...

Week 21 to 24
[View presentation!](#)

Pregnancy Plan Deactivate This Plan Add New Activity

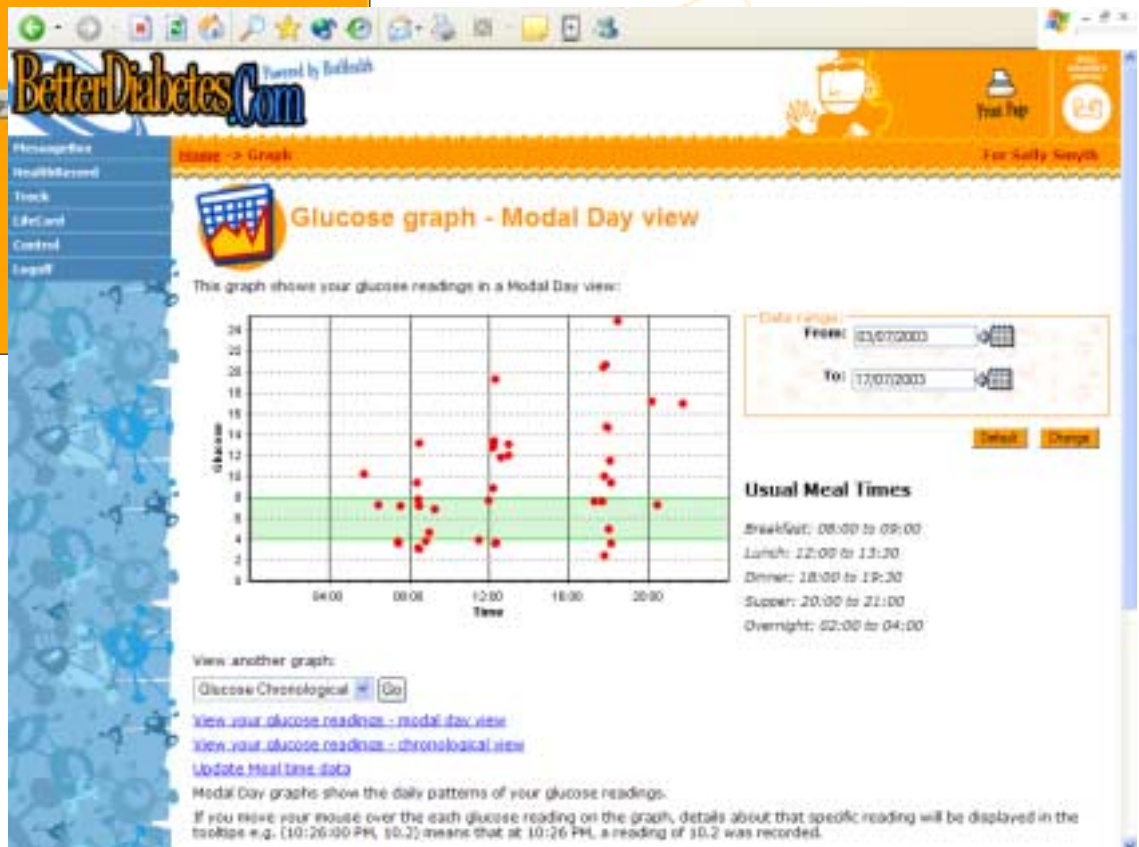
Local intranet

Practical applications...

- Life-long health care
 - Pregnancy→Birth→Infancy→Childhood→→→Adult
- Shared health care
 - Antenatal – GP/hospital/midwives
 - Chronic conditions – asthma, diabetes, palliative care symptoms
- Targeted community health initiatives
 - Quit Smoking/Pap Smears/Depression
 - Consumer clinical decision support
- Day to Day
 - Optimising Condition management
 - Scheduling appointments
 - Encouraging compliance
 - Eg use of SMS messages/Pagers for medication reminders

...and more

- **Health@home**
 - RDNS/GP liaison
 - Hospital In The Home
 - Patient monitoring - real-time/remote
 - Diabetes
 - Palliative Care – pain and symptom control
- **Health@work**
 - Occupational Health & Safety campaigns
- **Health@school**
 - Immunisation history
 - Excursion/Camp emergency record
 - Asthma/Diabetes Management plan



BetterDiabetes.com

- Example of shared-care model
- Shared Diabetes Record:
 - History & background
 - ‘Snapshot’ - recent clinic consultation, test results
 - Immediate glucometer readings/graphs
- Secure messaging via HotHealth server
 - Patient initiates request, including authorisation and consent
 - Patient@Home ↔ Diabetes Educator@RCH
- Management advice
 - Real-time
 - Remote
 - In context
 - Record retained for medico-legal purposes

TUESDAY, APRIL 20, 2004 • THE AGE
theage.com.au

Manage

CASE STUDY INTERNET HEALTH RECORDS

Online boost for diabetes service

A Melbourne trial aims to make life easier for teen diabetics and their carers, writes Sue Cant.

Teenagers with diabetes are logging internet health records in a test that experts hope will pave the way for a boom in online patient records.

Instead of using a scrapbook to record blood glucose readings, they are loading them directly onto PCs through their blood glucose meters.

The system allows them to upload the information from their hard disk through a web browser to a special internet site, BetterDiabetes, where the records are kept and, with permission, are accessible by doctors and nurses.

Dr Fergus Cameron, head of diabetes services at the Royal Children's Hospital in Melbourne, says that glucose readings are taken four times a day to ensure a diabetic's sugar level is managed. If the blood sugar level is too high, patients can fall into a coma.

Melbourne diabetics' health



Dr Fergus Cameron with brothers Andrew and Stephen Amos (right), both diabetics, who are part of Melbourne's Royal Children's Hospital online trial.

their blood glucose levels.

Poor record keeping makes it difficult for doctors to establish trends and manage the disease.

There are 300 patients, aged 1-18, testing the system, which has been designed by IT and medical staff at the hospital and clinicians involved in HotHealth. "It's a major step forward," Heather Leslie, from

to the site, which was developed to give all people a method of accessing their health records, also relieves the pressure on nursing staff.

There are only three nurse educators for 1200 diabetes patients at the hospital. They take up to 50 calls a day and spend five days teaching patients when they are first

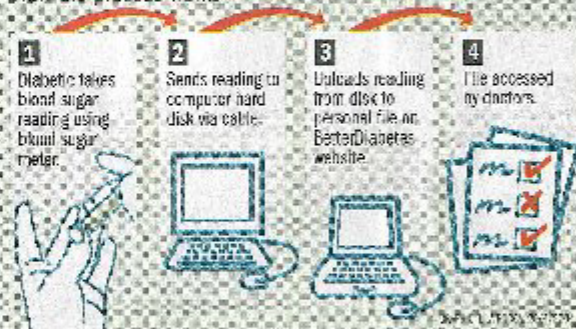
"The nurses can do their job better and more quickly while the kids are building their history of diabetes on the web and they can have a complete record of their health," Leslie says.

Cameron says workload for the diabetes nursing staff is "horrendous".

With the new program,

MONITORING BLOOD SUGAR

How the process works



interrupted during information sessions and arrange for follow-up calls in emergency cases.

They can also archive the queries to ensure proper management.

"Management of workload and archiving of advice are critical for us," Cameron says. "You can also manipulate the data to address specific clinical questions that might arise."

The HotHealth site, set up by a group of clinicians including Leslie in 1999, also makes the records more interactive. HotHealth is the general health and wellness site and BetterDiabetes

infrastructure.

It is useful for both patients and doctors who can build graphs and track height, weight and average blood sugar control.

Every three months the children have to consult in person with doctors, who rely on the "tatty scrapbooks" to understand the health of the child.

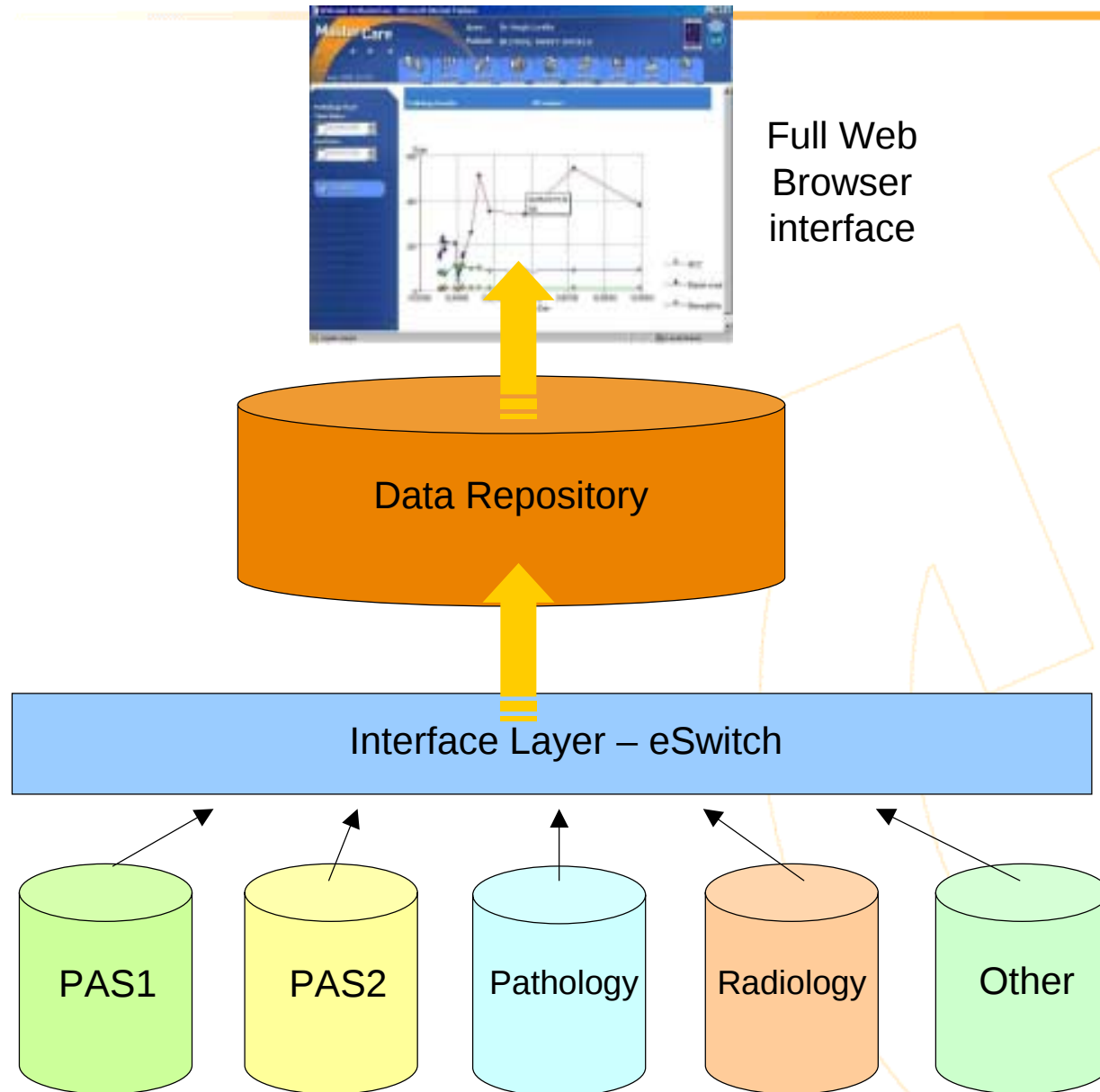
"They have rough ideas about readings but they don't see the trends evolving," Leslie says.

"It's an ideal scenario for diabetes because they need feedback about management of the disease (and) there are an

<www.hothealth.com>
<www.betterdiabetes.com>

<MasterCare>

Hospital Clinical System



MasterCare - Features

- ✓ Pathology result reporting
- ✓ Radiology result reporting
- ✓ Other clinical and administrative data
- ✓ Full, flexible Electronic Discharge Referral
- ✓ Clinician/Ward/Unit patient lists
- ✓ General practitioner access
- ✓ Medication Management - soon

Welcome to MasterCare - Microsoft Internet Explorer

MasterCare

C L A R A

FEEDBACK

Jun 21 10:38

User: Dr Hugh Leslie
Patient: BLANK, BRONWYN

THE ROYAL WOMEN'S HOSPITAL

back log-off search list results history tools print help

Discharge Summary - Patient Demographic Details

123456-W BLANK, BRONWYN (F) 1 Jan 1961 (41 yrs)

Discharge Summary Pages

- ◆ Patient Demographic Details
- ◆ [Abdo Pain/Append - Diagnoses/Co-Morbidities](#)
- ◆ [Abdo Pain/Append - Procedures/Complications](#)
- ◆ [Abdo Pain/Append - Discharge & Follow Up](#)

Patient Details

UR#: 123456
Name: BLANK, BRONWYN
DOB: 01/01/1961
Sex: F
Address: 10 SOMEWHERE STREET
MELBOURNE 3000
Phone: 9123 4567

Adm. Date: 20/12/2001 12:00 Discharge Date: 23/12/2001 12:00
Ward 21 Expected Discharge Date: 21 Jun 2002
Unit

SAVE AS WORK IN PROGRESS SAVE AS INTERIM SAVE AS COMPLETE PREVIEW NEXT

Local intranet

Welcome to MasterCare - Microsoft Internet Explorer

MasterCare

C L A R A

FEEDBACK

Jun 21 10:47

User: Dr Hugh Leslie
Patient: BLANK, BRONWYN

back log-off search list results history tools print help

Discharge Summary Pages

- ◆ Patient Demographic Details
- ◆ Abdo Pain/Append - Diagnoses/Co-Morbidities
- ◆ Abdo Pain/Append - Procedures/Complications
- ◆ Abdo Pain/Append - Discharge & Follow Up

Discharge Summary - Abdo Pain/Append - Discharge & Follow Up

123456-W BLANK, BRONWYN (F) 1 Jan 1961 (41 yrs)

Discharge Medications	Route	Dose	Frequency	Duration	Hosp Pharm?
Amoxicillin Trihydrate	oral	250 mg	3 x daily	5 days	YES
Paracetamol	oral	2 x 500mg	6 hourly	2 days	NO

Discharge Instructions

Appendicitis
Appendicitis - PADE

Diet - Your child may eat and drink as desired. It is usual for appetite to be reduced for a few days.
Bath or shower - Your child may bath or shower as normal. The wound is covered by a waterproof plastic dressing.
Dressing - The dressing may be removed after 7 days or your surgeon will do this at your follow up visit. Stitches are dissolving and do not need to be removed.
Activities - Your child may resume light activities and exercise when desired. Avoid rough or contact games and heavy lifting as applicable.
Your child may return to school when walking comfortably and feeling fit.
Pain - Paracetamol (Panadol or Dymadon) may be given according to the instructions on the bottle. Do not give more than 6 doses in 24 hours.

Done Local intranet

MasterCare - Preview Discharge Summary - BRONWYN BLANK -- Web Page Dialog

MELBOURNE 3000
Phone: 9123 4567

Adm. Date: 20/12/2001 12:00 **Discharge Date:** 23/12/2001 12:00
Ward 21

Admission Weight 65

Final/Principal Diagnosis
Acute suppurative appendicitis
Meckels diverticulum
xfgfhgh

Discharge Medications	Route	Dose	Frequency	Duration	Hosp Pharm?
Amoxicillin Trihydrate	oral	250 mg	3 x daily	5 days	YES
Paracetamol	oral	2 x 500mg	6 hourly	2 days	NO

Discharge Instructions
Diet - Your child may eat and drink as desired. It is usual for appetite to be reduced for a few days.
Bath or shower - Your child may bath or shower as normal. The wound is covered by a waterproof plastic dressing.
Dressing - The dressing may be removed after 7 days or your surgeon will do this at your follow up visit. Stitches are dissolving and do not need to be removed.

Close

Australian Doctor,
March 12, 2004

Dr Sprogis ... "[The patient] walked through my door the day after discharge and all the available information was waiting for me."

SEARCH

for the Holy Grail

The move to electronic discharge summaries is on the horizon. But with several trials under way is there any chance of a fairytale ending?

Stumbling blocks to electronic discharge summaries

- GPs and hospitals not equipped with, or unwilling to use, new technology
- Policy problems: hospitals not open to sharing data

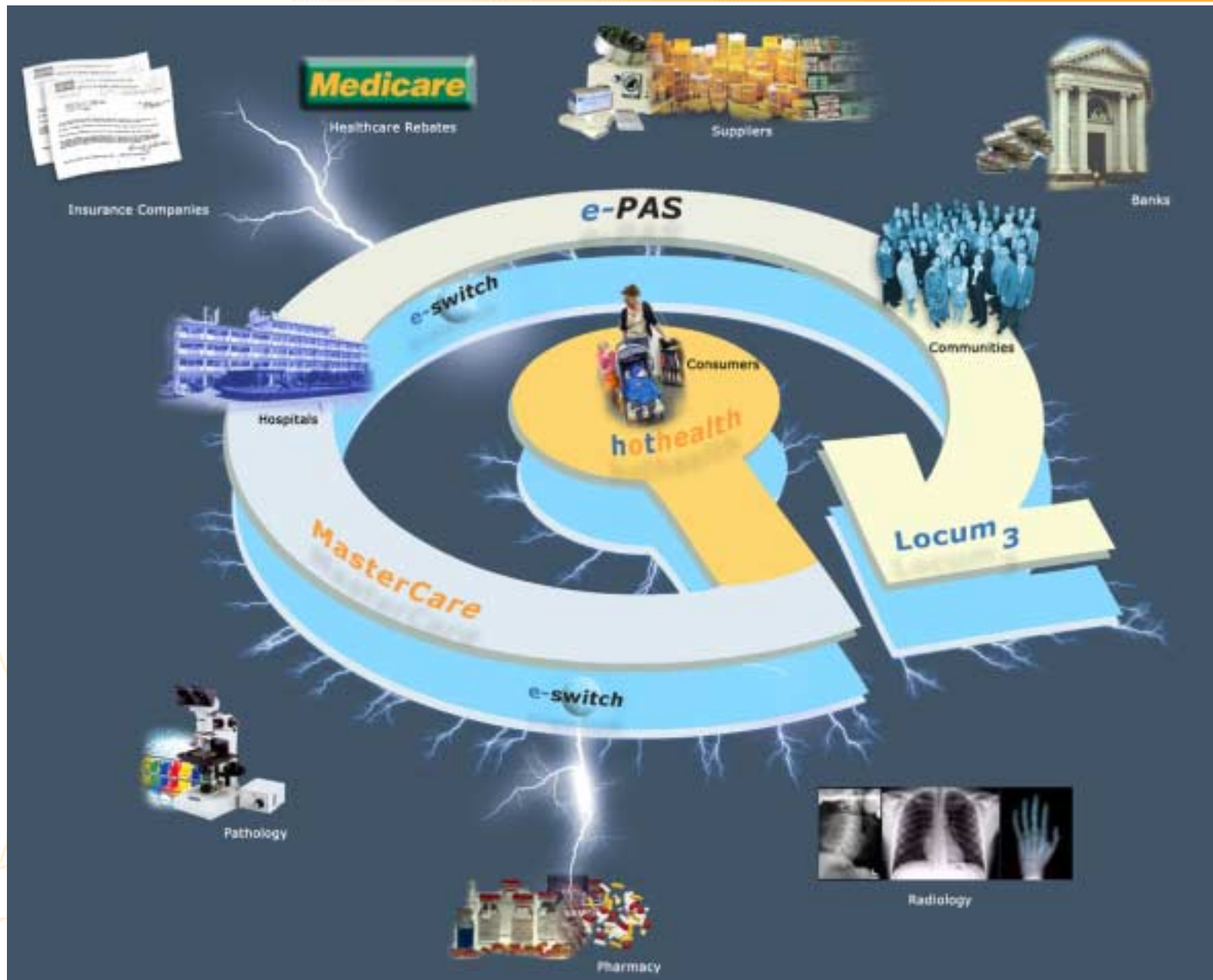
pled with differing needs in different hospital wards.

"The most recent program ... has been in development for about 18 months," she says. "We've been considering privacy and security issues, and trying to ensure GPs have secure systems."

More Recent Background

2001 – GH Acquired by Working Systems Solutions (ASX:WSS)

- IT Company with strong health focus
- 30% of hospitals use WSS PAS
- E-Learning – Uni-U
- Professional Services
- E-switch messaging engine
- Currently, 60 staff
 - Melbourne 23
 - Perth 34
 - Sydney 2
 - Singapore 1
- Aggregated all Health assets through the **Global Health** brand – the health business of WSS which represents 80% of our business & revenue.



Milestones

- PAS - legacy systems = 300+ hospitals
 - New e-PAS – live in 5 sites, another 2 before end financial year
- Womens & Children's Health – MasterCare across dual campus, incl eDRS
- NSW Health – eDRS (Australian Doctor March 12, 2004)
 - Hunter AHS & Northern Sydney - live
 - SE Sydney & New England before end financial year
- Royal Children's Hospital - BetterDiabetes – 325 patients, 5 DNE
- www.FamilyGP.com.au - HotHealth as a self-care consumer portal
- Canning Division - GPReferralNet for After-hours clinic and Diabetes Referral to community health centre; HeSA
- E-switch - Embedded in all GH clinical products
 - in over 30 Health settings - HIC Online and Eclipse
 - Non-Health - Woodside Petroleum, Wilson Parking
- Locum Doctor's desktop used by over 400 clinicians
 - MediConnect, PaGSIP, ADRAC
- MHAGIC - Mental Health case management for ACT
- KConFab @ Peter MacCallum – breast cancer research database

→Applications for HealthConnect