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-

Build it [right] and They Will Come

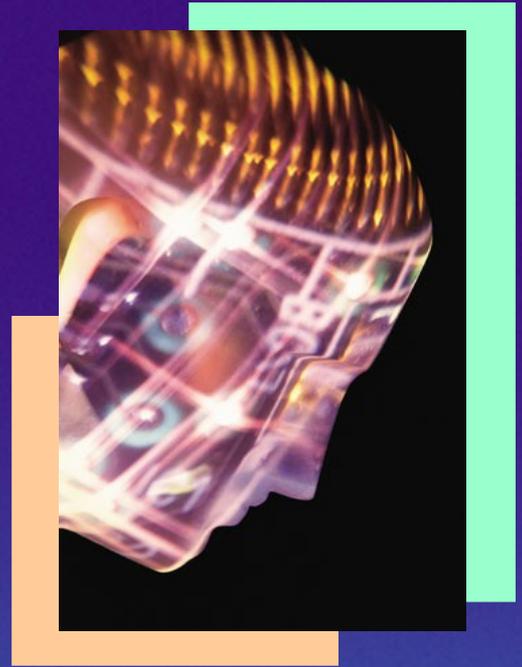
Clinical Portal Technology

CNIA 2007

Elizabeth Nemeth, RN, BScN, MN
Consultant



when [IT] really matters



-
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-

Two multi-site corporations:

William Osler Health Center 

Walton Healthcare Services 



when [IT] really matters

William Osler Health Centre



One of the largest hospitals in Ontario comprised of acute care hospitals one under construction with a total of _____ beds after redevelopment



Regional Referral Centre

Offers acute and ancillary health care services

William Osler Health Centre



bed hospital

Comprehensive range of health care services including expanded cancer cardiac and dialysis programs and regional pediatrics



when [IT] really matters

WOLFE Statistics

Serves ~ million residents within a geographic area of over square kilometers

Beds

Physicians

Staff

Volunteers

Emergency Visits

Births



when [IT] really matters

Halton Healthcare Services



Multi site healthcare organization



Provides access to three of the best community hospitals in the province



Takes pride in offering some of the finest technology and healthcare expertise available



when [IT] really matters

HHS Statistics

Serves over 10,000 residents of the growing communities of Milton, Oakville, Clarkson and Halton Hills

- Beds
- Physicians
- Staff
- Volunteers
- Emergency Visits
- Births



when [IT] really matters

Life was good...





and then **WHEN** ...



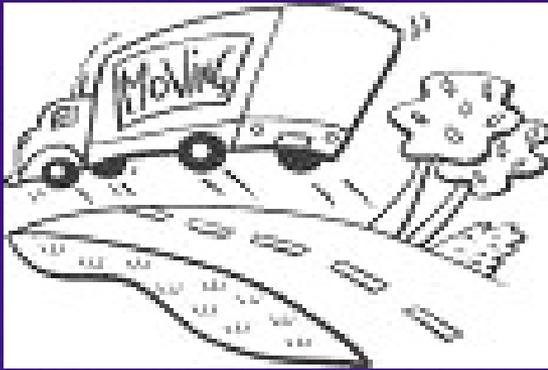
when [IT] really matters



...this thing
came right out of left field...



when [IT] really matters



The Ministry of Health decided that the Georgetown Hospital would move from the William Osler Hospital Corporation to Halton Healthcare Services



when [IT] really matters

Opportunity or Challenge



The Need



Technology needed to combine data from unrelated systems from multiple organizations into an integrated view

Needed a process for ensuring safe consistent care for the population of Georgetown



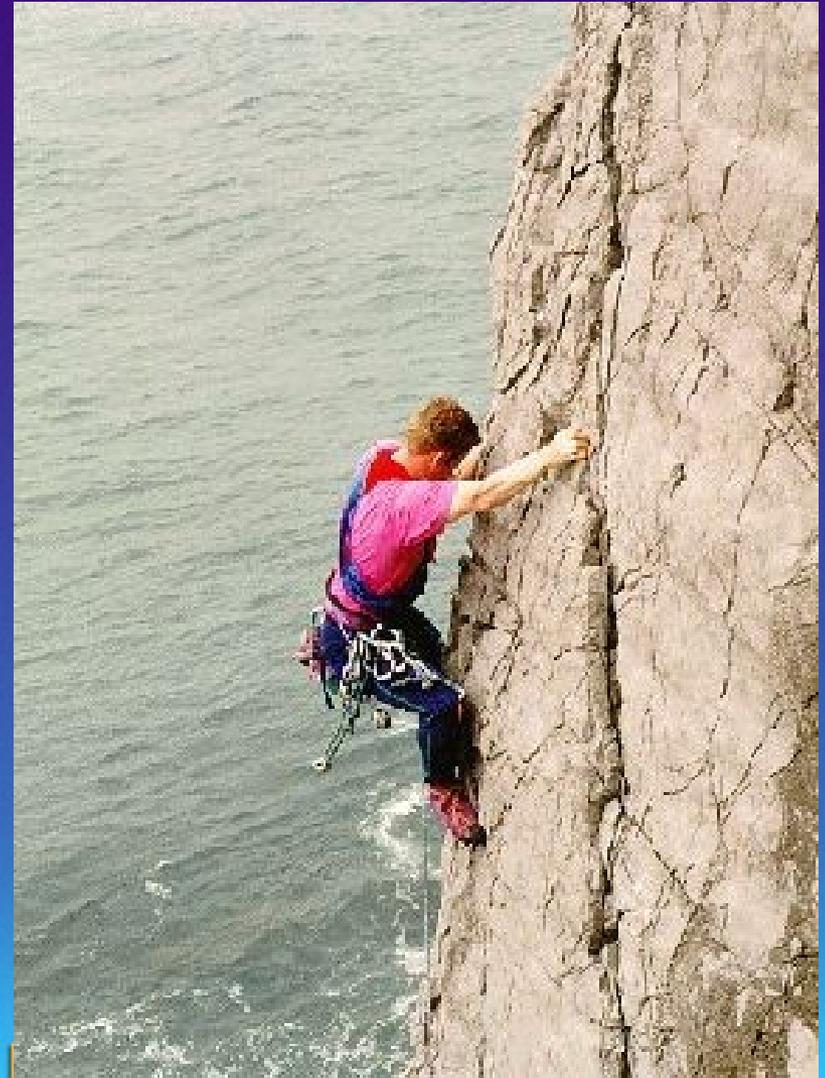
when [IT] really matters

The Challenge

WHO was in WIN
HIS was in WIN

Disparate systems

Many vendors multiple
platforms no
communication



Other Challenges...

WHIC was Meditech Magic and HIS was Client Server

Care of patients would continue to be provided by both corporations with the need to share information

Securing patient data that met HIPAA legislation



when [IT] really matters



 solution was needed quickly

 and then someone whispered...

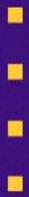
“Portal”



when [IT] really matters

What is a Portal





“ single integrated ubiquitous
and useful access to information
data applications and people”



when [IT] really matters

Advantages of Portal Technology

One sign on with point and click simplicity

Access any system application any time anywhere – **REAL TIME**

Security and audit trails

Seamless view of disparate systems



when [IT] really matters

Advantages of Portal Technology

Provides Patient matching

Plan care for next day's clinic or rounds

Plan organize discharge summaries
from home

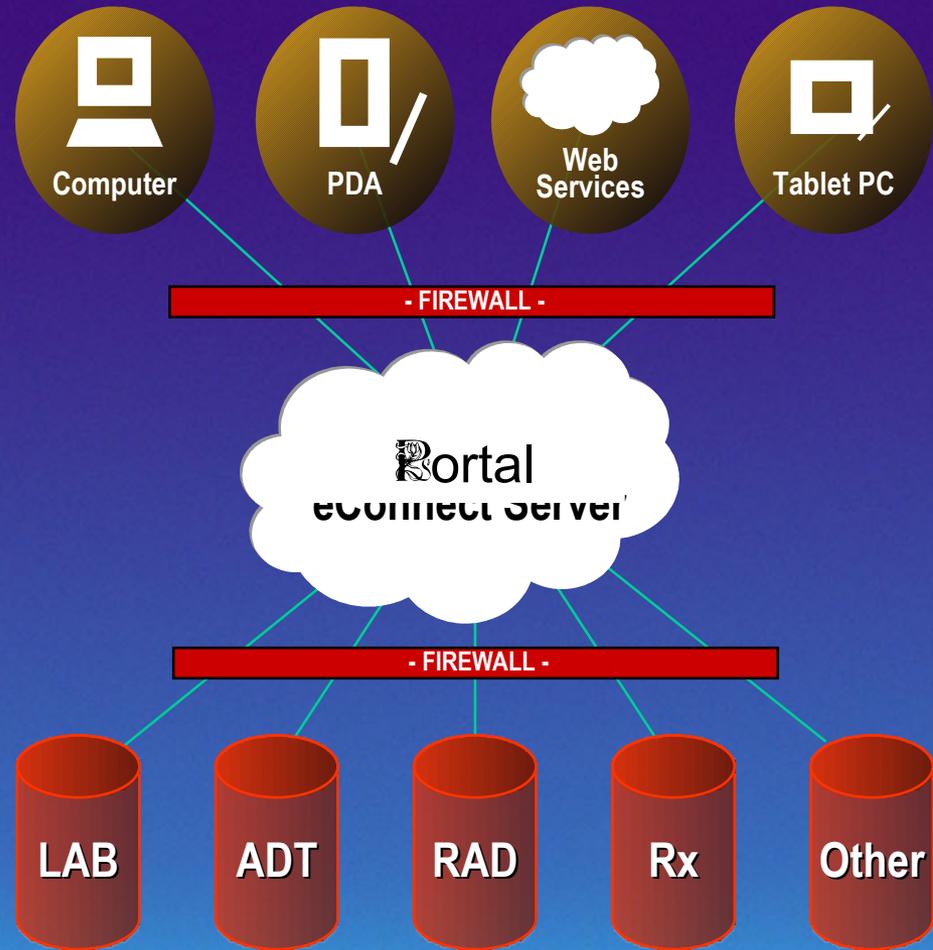
View images and reports on line in
office



when [IT] really matters

Tier Design

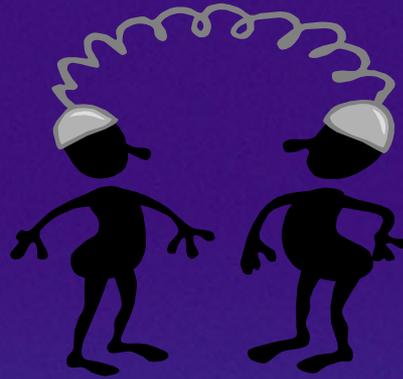
- Client Tier
- Application Server
- Database Tier



Stakeholder Systems

when [IT] really matters

Implementation



-
-
-
-

Core group formed to develop the overall design and functionality

Consultation with clinicians and analysts to determine module function displays

Portal had to match current functionality

Phases

Defining Requirements

Determining metrics and
report metrics

Establishing clean data
policies

Technical build for
requirements

Soliciting feedback

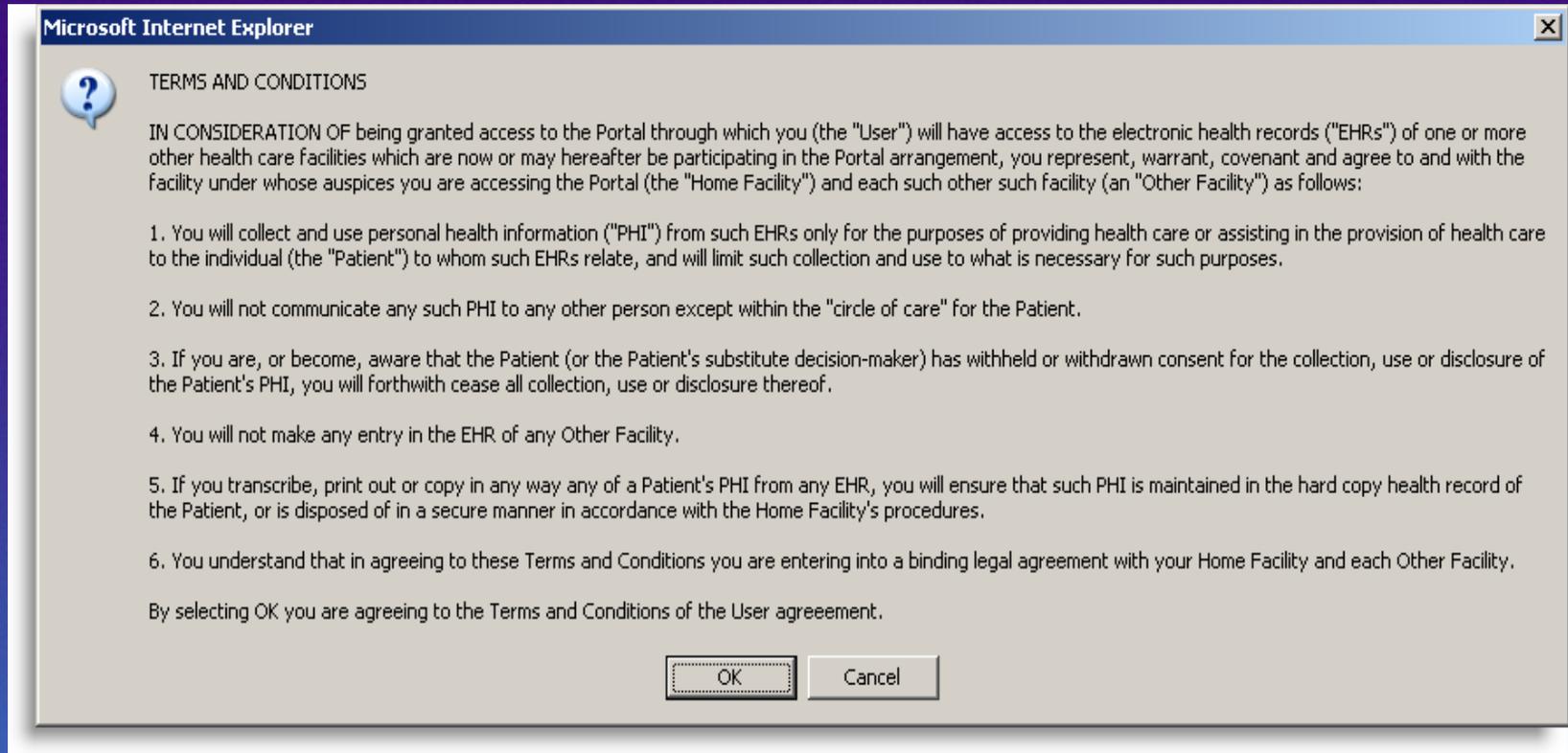
System Safeguards

- Authentication of Name and Password for each individual

- System Lock Out that is predefined by each facility

- Access of the system is audited

Confidentiality Security



All users view and agree to the terms and conditions each time they access the portal by clicking OK.

REACH

Rapid Electronic Access to
Clinical Health Information



William Osler Health Centre | Halton Healthcare

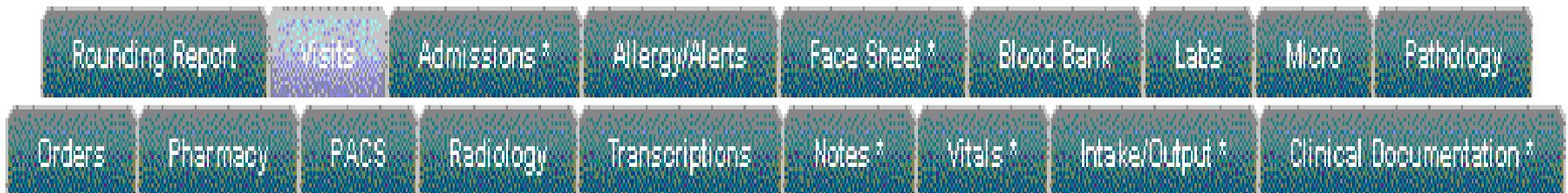
Rapid Electronic Access to Clinical Health information



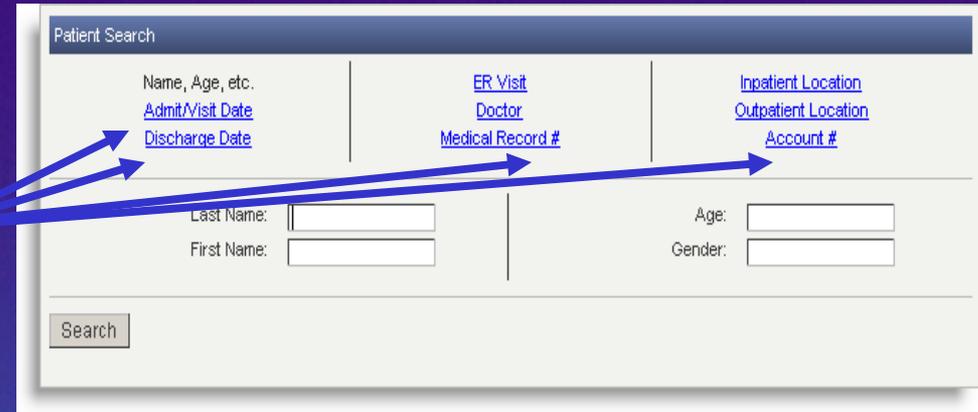
when [IT] really matters

■
■
■
■

READY allows each user to customize the view to better suit their own needs



Variety of search options



Patient Search

Name, Age, etc.
[Admit/Visit Date](#)
[Discharge Date](#)

[ER Visit](#)
[Doctor](#)
[Medical Record #](#)

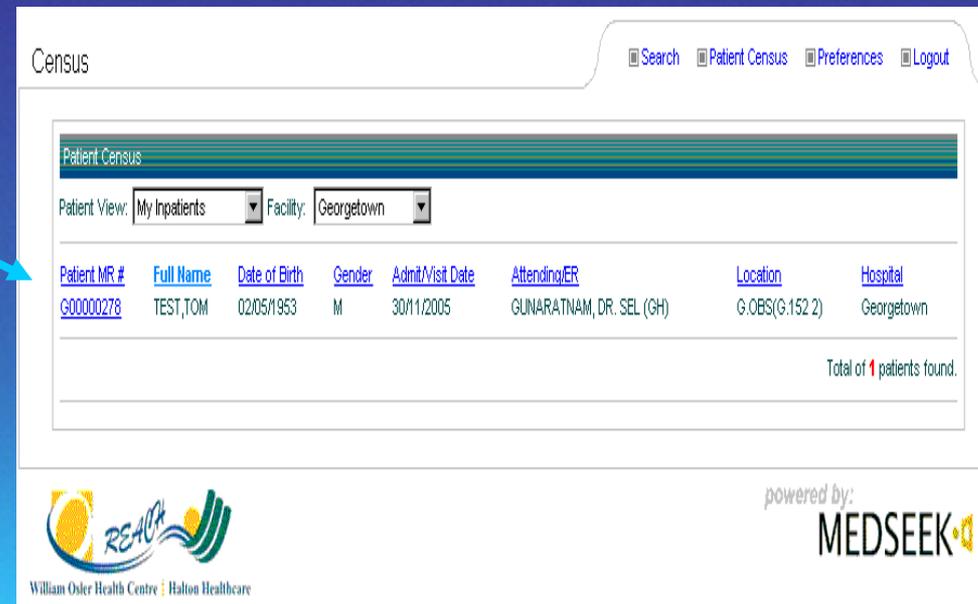
[Inpatient Location](#)
[Outpatient Location](#)
[Account #](#)

Last Name:
First Name:

Age:
Gender:

Search

Physicians are presented with their census of any patients associated with them



Census

[Search](#) [Patient Census](#) [Preferences](#) [Logout](#)

Patient Census

Patient View: Facility:

| Patient MR # | Full Name | Date of Birth | Gender | Admit/Visit Date | Attending/ER | Location | Hospital |
|------------------------------|---------------------------|-------------------------------|------------------------|----------------------------------|------------------------------|--------------------------|--------------------------|
| G00000278 | TEST, TOM | 02/05/1953 | M | 30/11/2005 | GUNARATNAM, DR. SEL (GH) | G.OBS(G.152.2) | Georgetown |

Total of 1 patients found.

powered by: MEDSEEK

William Osler Health Centre | Halton Healthcare

Labs

Display: Days Back: View Labs:

| Name | Status | Type | Collected Date | Hospital |
|---|----------|-----------|------------------|-------------------|
| <input checked="" type="checkbox"/> GLUCOSE-RANDOM | Complete | CHEMISTRY | 06/02/2006 09:36 | OakvilleTrafalgar |
| <input checked="" type="checkbox"/> GLUCOSE-RANDOM | Complete | CHEMISTRY | 06/02/2006 09:36 | OakvilleTrafalgar |
| <input checked="" type="checkbox"/> GLUCOSE-FASTING | Complete | CHEMISTRY | 06/02/2006 09:35 | OakvilleTrafalgar |
| <input checked="" type="checkbox"/> GLUCOSE-RANDOM | Complete | CHEMISTRY | 06/02/2006 09:35 | OakvilleTrafalgar |
| <input checked="" type="checkbox"/> GLUCOSE-RANDOM | Complete | CHEMISTRY | 06/02/2006 09:35 | OakvilleTrafalgar |

Lab Summary

Display: Days Back: Type:

| Collected Date | Test | Result | Reference |
|------------------|---|------------|-----------|
| 03/06/2006 06:45 | ALKALINE PHOSPHATASE (ALKP) | 308 (H) | 40-130 |
| | CALCIUM (tCA) | 2.15 (L) | 2.19-2.57 |
| | Test Name: COMPLETE BLOOD COUNT Status: COMP | | |
| | LEUKOCYTE COUNT (tLKC) | 19.1 (# H) | 4.0-11.0 |
| | ERYTHROCYTE COUNT (tERC) | 4.18 (L) | 4.30-5.60 |
| | HEMOGLOBIN (tHB) | 131 | 130-170 |
| | HEMATOCRIT (tHCT) | 0.38 (L) | 0.39-0.49 |



results will display for all visits

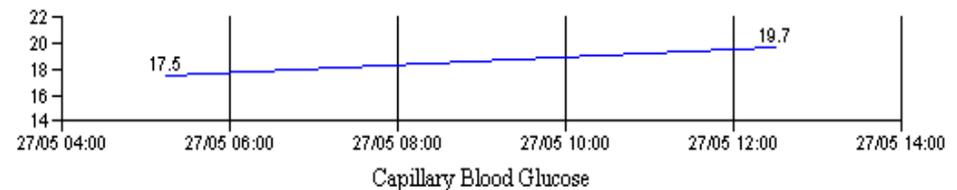
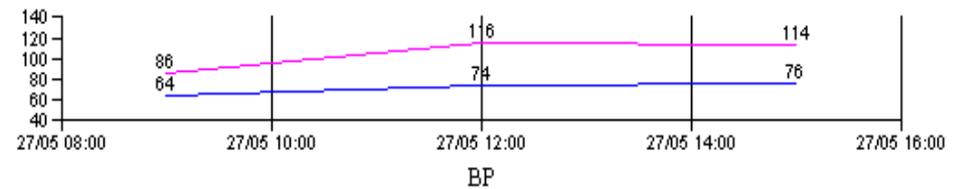
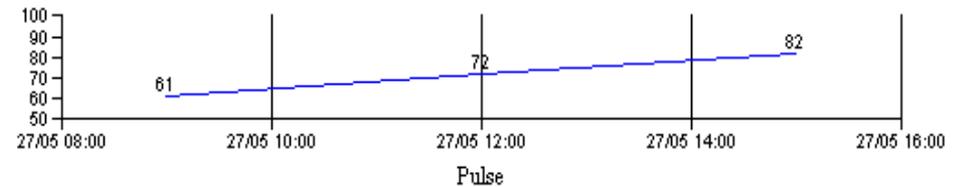
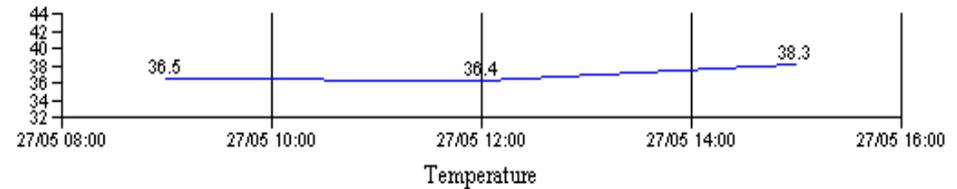
Click on name of the lab test to view detail

Vitals *

Days Back:

<< >>

| | 27/05/2006 05:15 | 27/05/2006 09:00 |
|-------------------------|---------------------|---------------------|
| Temperature - C | | 36.5 |
| Temperature Source | | Tympanic |
| Pulse Rate | | 61 |
| Pulse Location Modifier | | |
| Pulse Location | | |
| Pulse Method | | Oximeter |
| Pulse Rhythm | | |
| Pulse Strength | | |
| Respiration Rate | | 24 |
| Respiration Depth | | Shallow |
| Respiration Effort | | Short of Breath |
| O2 Delivery Method | Nasal Cannula | Nasal Cannula |
| Oxygen Flow Rate | 2.0 | 2.0 |
| FiO2 | | |
| O2 Saturation | 98 | 90 |
| Blood Pressure | | |
| Systolic | | 86 |
| Diastolic | | 64 |
| Mean | | 71 |



Intake

Output

Intake/Output *

Timescale: Days Back:

| | 27/05/2006 12:00 | 28/05/2006 12:00 | 29/05/2006 12:00 | 30/05/2006 12:00 | 31/05/2006 12:00 | 01/06/2006 12:00 |
|-------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Intake Totals: | 2290 | 4150 | 1800 | 2420 | 2387.5 | 525 |
| Output Totals: | 1150 | 1950 | 1000 | 1700 | 2150 | 1800 |
| Balance: | 1140 | 2200 | 800 | 720 | 237.5 | -1275 |
| Intake: Intake, Oral Amount | 1200 | 1650 | 1100 | 1145 | 1200 | |
| Intake, IV Amount | 1090 | 2500 | 700 | 1275 | 1187.5 | 525 |
| Output: Output, Urine Amount | 1150 | 1950 | 1000 | 1700 | 2150 | 1800 |

Clinical Documentation

Notes

Notes *

Category: All

| Date | Category | Text |
|----------------------------------|---------------------------|--------|
| 31/03/2006 10:45 | Nurse | F:Admi |
| 05/03/2006 05:55 | Nurse | THIS N |
| 28/02/2006 09:22 | Spiritual Support | SPIRIT |
| 28/02/2006 09:18 | Speech Language Pathology | SLP NK |

Note Detail

Notes Notes Detail

Author:

F: Rd Initial assessment
 A: See pt care activity nutrition assessment form for full details. Provide 7500KJ diabetic soft with addition of 4oz diabetic resource tid. Pt moderate nutrition risk.

Clinical Documentation *

| Date | Name | Type |
|------------------|--|------|
| 29/04/2006 21:24 | Teach. Surgical** | RN |
| 29/04/2006 21:12 | GI Gastrointestinal Assessment** | RN |
| 29/04/2006 21:11 | Cardiovascular Assessment | RN |
| 29/04/2006 21:11 | Cardiovascular Assessment | RN |
| 29/04/2006 21:11 | Respiratory Assessment Adult (NUR)** | RN |
| 29/04/2006 21:11 | GU Genitourinary Assessment** | RN |
| 29/04/2006 21:09 | VS: Vital Signs * | RN |
| 29/04/2006 21:09 | IV: Site Peripheral/Central** | RN |



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Portal Administration Reporting Auditing

Audit Trail

Statistics

MOTD

Modules

Users

Mirror Data

Engine Test

Reports

Reports

Usage

[View](#)

[Export to Excel](#)

Overrides By User

[View](#)

[Export to Excel](#)

Account Status

[View](#)

[Export to Excel](#)

Benefits Achieved

-
-
-
-
- Enhanced communication

- Integrated and accessible information

- Secure access

- Collaborative tool

- Data encryption

- Internet access world wide

- Single sign on



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Moving Forward



healthtech

when [IT] really matters

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-
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Creating a Culture of Acceptance

Implementing technology is
easy...

Establishing the culture might be
a bit more difficult

Baker



when [IT] really matters

-
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-
-

Right information

Right time

Accessibility

Regular feedback from end users

Scheduled

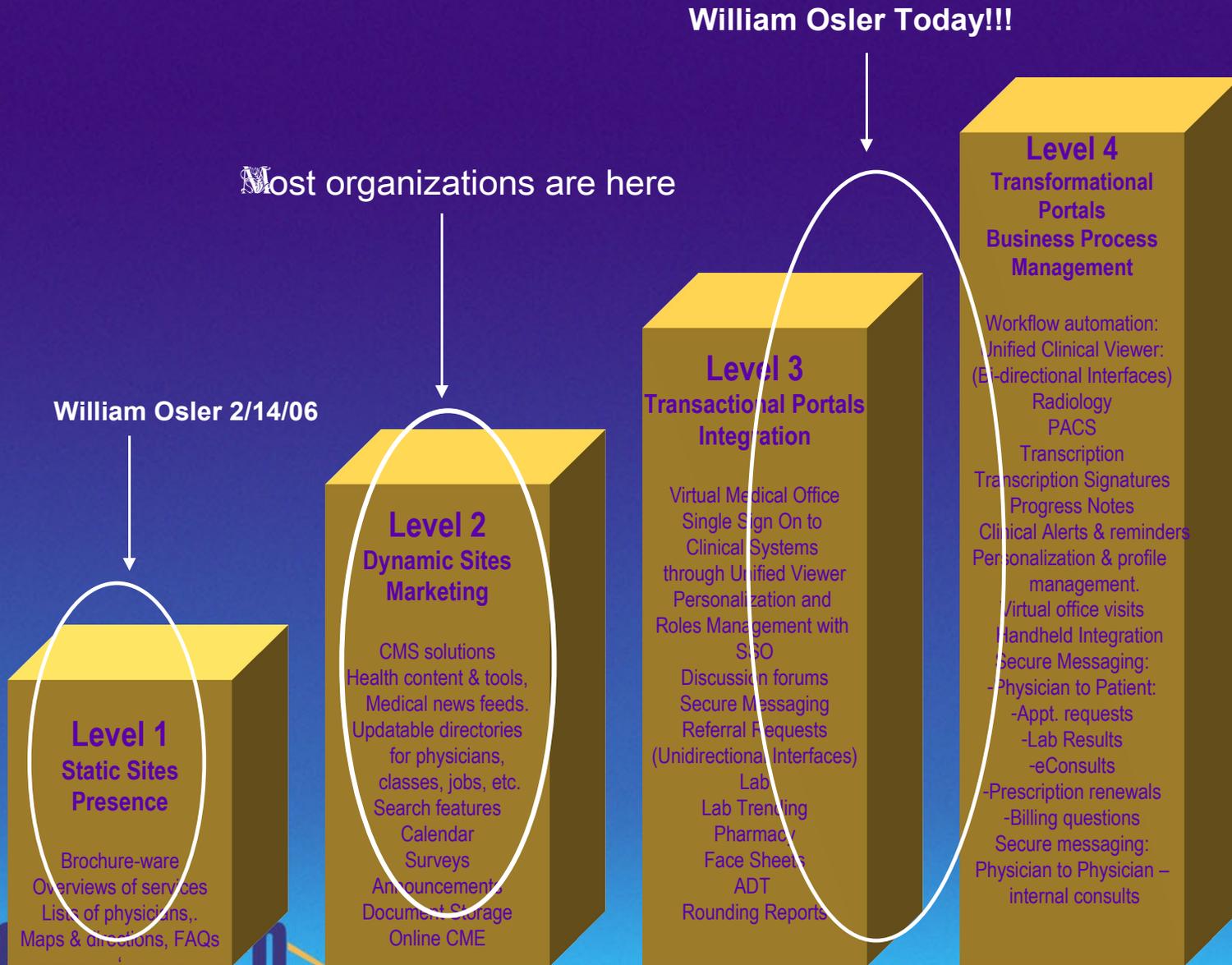
upgrades enhancements

to ensure adoption acceptance is

ongoing



Clinical & Financial Value



Most organizations are here

William Osler 2/14/06

William Osler Today!!!

when [IT] really matters

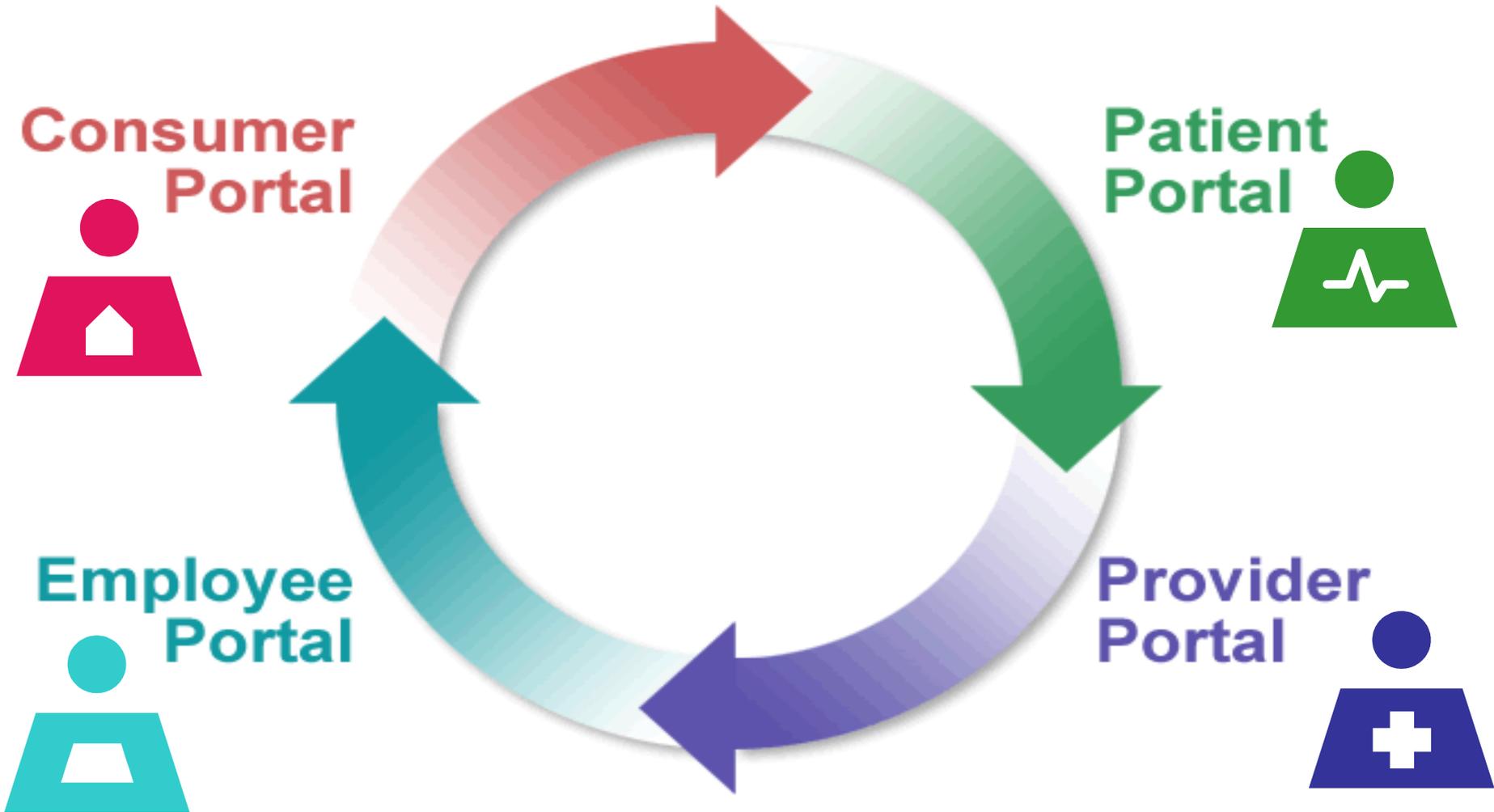
Complexity & Comprehensiveness

(2004, Gartner Group)

Transformation



- Improve efficiency interaction service communication information and outcomes for all internal external customers using web based technology





PLEASE

Consumer Portal



when [IT] really matters



**WILLIAM
OSLER
HEALTH
CENTRE**

ETOBICOKE GENERAL HOSPITAL
PEEL MEMORIAL HOSPITAL
BRAMPTON CIVIC HOSPITAL



Here for you... caring for you

Patients and Visitors

Careers at Osler

Programs and Services

Construction News

Volunteer at Osler

Foundation

■ [About Us](#)

■ [Your Patient Care Team](#)

■ [Nursing at Osler](#)

■ [News & Information](#)

■ [Physicians at Osler](#)

■ [Quick Poll](#)

■ [Quick Links](#)

■ [Contact Us](#)

Construction
Updates



Donate Now
CanadaHelps.org



PHYSICIAN PORTAL

+ - Text Size

Welcome to William Osler Health Centre.

William Osler Health Centre is one of the largest hospital corporations in Ontario

As a regional referral centre, we provide programs and services to nearly one million area residents in the growing and diverse communities of Etobicoke, Brampton and the surrounding area. Our hospitals include Etobicoke General Hospital, Peel Memorial Hospital (Brampton) and the new Brampton Civic Hospital slated to open in the Fall of 2007.

Our value statement is *Here for you...caring for you*. We will never forget why we are here - to care for people and to care about people. We are committed to enhancing people's lives and health, not just through our own activities, but as a partner in the broader health care community.

What's New

[CENTRAL REGISTRATION DESK GOES LIVE AT ETOBICOKE GENERAL HOSPITAL](#)

Monday June 26, 2006

Community Calendar

Search Our Site

go!



[Wait Times](#)



[Emergency Dept. Tips](#)



[Send an e-Greeting](#)



[Our Patients' Stories](#)



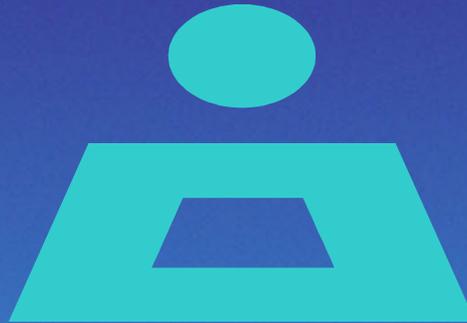
[FAQs](#)



[Pay Your Bills On-line](#)



Employee Portal



when [IT] really matters



**WILLIAM
OSLER
HEALTH
CENTRE**

ETOBICOKE GENERAL HOSPITAL
PEEL MEMORIAL HOSPITAL
BRAMPTON CIVIC HOSPITAL

Here for you... caring for you



[Grasp - MistroClef](#)

[Software Applications](#)

[My e-mail](#)

[Employee Sandbox](#)

[WOHC Telephone Directory](#)

[Links](#)

- [Osler in the News](#)
- [Osler Voice](#)
- [Corporate Information](#)
- [Human Resources](#)
- [Library](#)
- [Research](#)
- [Help](#)
- [Feedback](#)



What's New on OslerNet

- Health Links [in the Links Section](#)
(05/14/07)
- Nursing Week Presentation [in the Staff Memos](#)
(05/11/07)
- May 2007 In The Know [Under Library](#)
(05/10/07)
- Nursing Week Schedule [in the Staff Memos](#)
(05/9/07)

Corporate Memos

REFER YOUR FRIENDS.....CASH IN AND WIN!

The Employee Referral Program has been revised for a limited time only beginning May 14th and will end June 29, 2007.

We need your help in recruiting the following hot jobs.

[.... more](#)

[Community Calendar](#)

Search this site [go!](#)

- [Careers at Osler](#)
- [Emergency Preparedness](#)
- [Policies and Procedures](#)
- [Health Professionals](#)

Brampton,
15°C [click for forecast](#)

Brampton

Today is Monday
May 14, 2007

10:49:48 AM



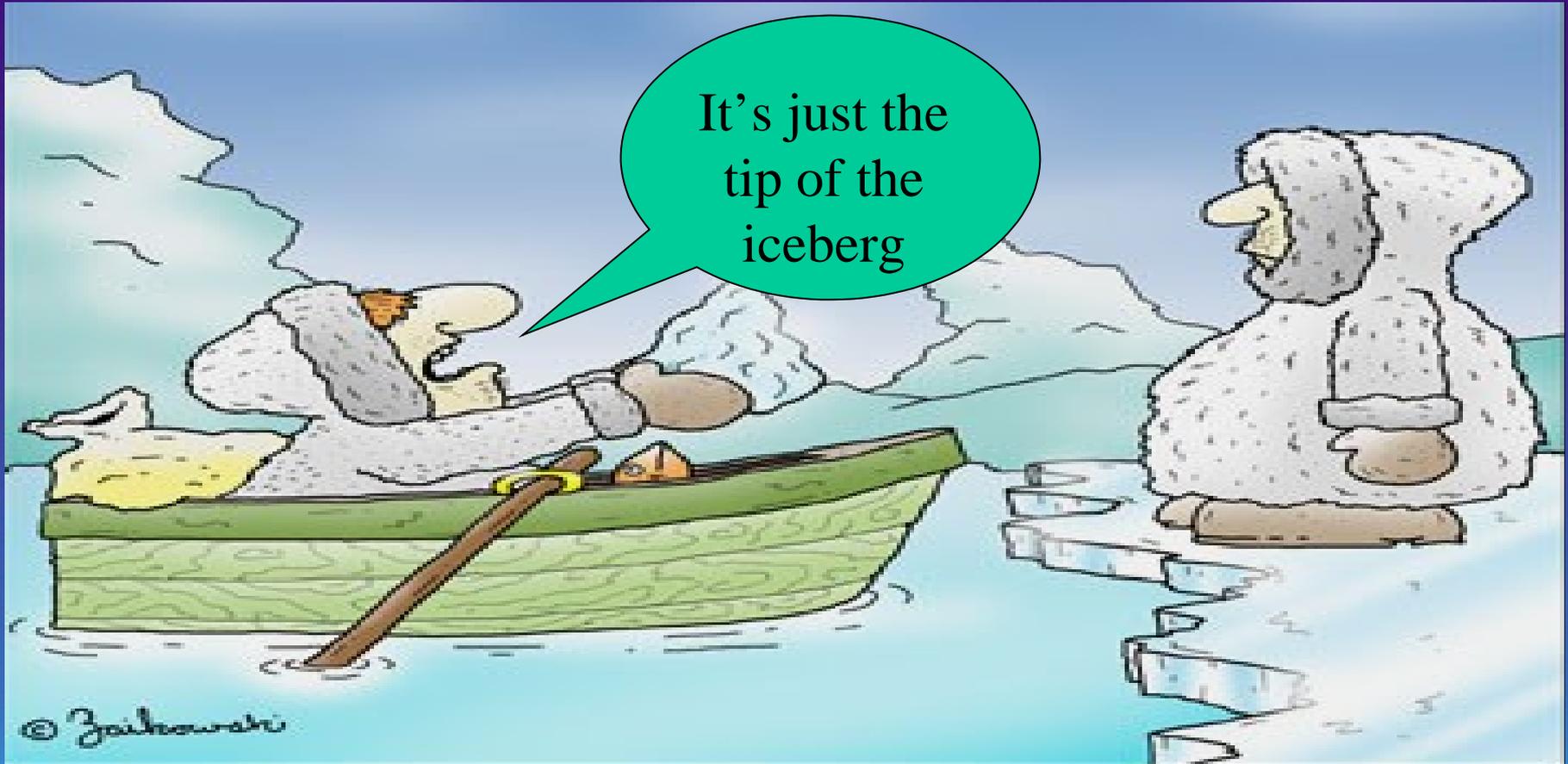
PHASE 2

Provider Portal



when [IT] really matters

The Bigger Picture



One Stop Shopping

methodology for system wide integration by

- Having various applications and systems across an integrate delivery network in sync
- Single launching pad linking all clinical financial and demographic data to facilitate clinician s needs
- Facilitating enhancing patient care processes between patients physicians hospitals



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On the Path



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Inside the Provider Portal

My favorites RSS

Secure messaging

Applications REACH

RR

Search Engines

E Sign

E Learning

E mail

Scheduling

Calendar

Applications

Census list integration

Health card swiping

Alerts

Department Directory

On line EMOs

Credentialing

Healthcare News

Dash Boards

Announcements



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**WILLIAM
OSLER
HEALTH
CENTRE**

ETOBICOKE GENERAL HOSPITAL
PEEL MEMORIAL HOSPITAL
BRAMPTON CIVIC HOSPITAL

Here for you... caring for you



OslerNet

Other Applications

My e-mail

e-Learning

WOHC Telephone Directory

Links

My Clinical Applications

- [Test Page](#)
- [CCO-Opis 2005](#)
- [DocRoster](#)
- [Criticall](#)
- [eCHN](#)
- [Meditech](#)
- [Ontario Drug Database](#)
- [PACS](#)
- [TREAT](#)
- [Pharmacy & Therapeutics](#)
- [Pharmacy Formulary](#)
- [RIS \(Siemens/Novius\)](#)
- [Tomcat](#)
- [PICIS](#)
- [Pulsecheck](#)

Physician Library Resources



William Osler Health Centre | Halton Healthcare
Rapid Electronic Access to Clinical Health information

What's New at Osler

This is where you can add any items of interest [...more](#)

Patient Census

Messages

You can add any message text you would like in this static page [...more](#)

Search this site

go!



[Physicians Opportunities](#)



[Policies and Procedures](#)



[Frequently Asked Questions](#)



[Foundation](#)



[Help](#)



[Medical Staff Office](#)

healthtech

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The Future



healthtech

when [IT] really matters

Current Patient

Collapse

Full Name: SMITH, JANE
Date of Birth: 05/05/1973

MR#: 400043
SSN: 564-85-7895

PA#: 4000049
Gender: F

Change Patient: JANE SMITH

Admissions Cardiology ER Forms GI Imaging Labs

MAR Messaging OB Order Status Pharmacy Radiology Rounding Reports Transcriptions Vitals I/O

Imaging Detail

Imaging Imaging Detail

Calcification of Aortic Arch



CHEST PA AND LATERAL

Comparison: None.

Findings: The cardiomeastinal silhouette is normal in size and configuration. Atherosclerotic calcification of the aortic arch is present. The lungs are clear. No pleural disease is evident. Osseous structures are unremarkable.

IMPRESSION:

1. Mild aortic arch atherosclerotic calcification. Otherwise unremarkable chest.

Price W. Halford, M.D.
PWH:am

dd:10/14/02
dt:10/15/02

The chest X-ray shows a normal sized heart and lungs. There is no evidence of pleural effusion or pulmonary vascular congestion. There is mild atherosclerotic calcification of the aortic arch.

“Unified Viewer”
Imaging / PACS
and reports

Current Patient

Collapse —

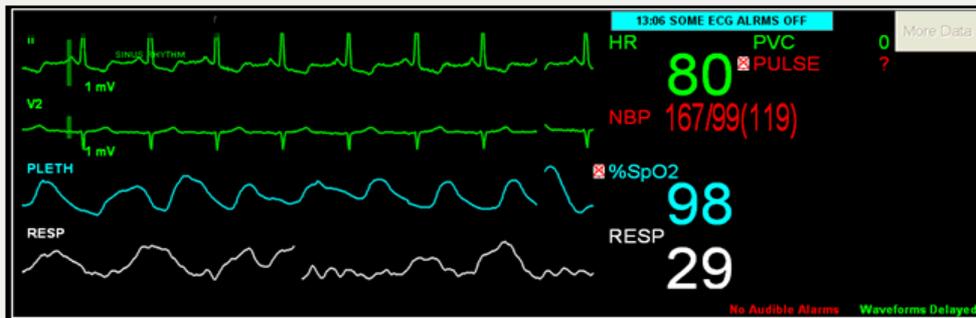
Full Name: SMITH, JANE
Date of Birth: 05/05/1973

MR#: 400043
SSN: 564-85-7895

PA#: 4000049
Gender: F

[Admissions](#)[Cardiology](#)[ER](#)[Forms](#)[GI](#)[Imaging](#)[Labs](#)[MAR](#)[Messaging](#)[OB](#)[Order Status](#)[Pharmacy](#)[Radiology](#)[Rounding Reports](#)[Transcriptions](#)[Vitals I/O](#)

Vitals Bedside Information

[TPR / BP](#)[IO Breakdown](#)[Bedside](#)[Capillary Glucose](#)[Notes](#)

Ability to view
monitoring systems in
real time

Transcriptions

Security Style Search Patient Census Preferences Logout

Full Name: JANE SMITH MR#: 400043

Expand +

- Admissions
- Cardiology
- ER
- Forms
- GI
- Imaging
- Labs
- MAR
- Messaging
- OB
- Order Status
- Pharmacy
- Radiology
- Rounding Reports
- Transcriptions
- Vitals I/O

Transcription

Show: This Visit

| Doctor | Report Type | Date | Time | Admit Date | Discharge Date | Electronic Signature |
|--------------------------|---|----------|-------|------------|----------------|----------------------|
| Grossenbacher, William O | Discharge Summary Report | 01/28/98 | 16:45 | 01/26/98 | 01/28/98 | Pending |
| Travis, Thomas | History & Physical Report | 01/28/98 | 6:45 | 01/26/98 | 01/28/98 | Pending |
| Travis, Thomas | Cervical Spine Report | 01/28/98 | 6:45 | 01/26/98 | 01/28/98 | Pending |

Found 3 reports.

eSign Transcriptions

Transcription | Transcription Detail

[Printable Copy](#)

PATIENT: Smith, Jane
ROOM#: _____
ACCT#: 4000049
MR#: 400043
ADMIT DATE: 02/26/98
DISCHARGE DATE: 02/27/98
ATTENDING: Bill Jones, M.D.

Explorer User Prompt
Script Prompt:
Please enter your PIN and select OK to sign this transcription.

DISCHARGE SUMMARY

HISTORY

Jane is a 24 year old female para 2, 0,5,2, ega at 36 and 6/7 weeks who presented to the hospital in early labor. we observed her over the day of 23rd. she changed her cervix and went on to labor on her own. She had an uneventful normal spontaneous vaginal delivery. She delivered a 2,895 gram male infant with Apgars of 9 and 9 over an intact perium. Placenta ws intact. She did coplain of headache during labor. She has multiple reasons for headaches including history of migrane headaches, history of panic attacks and depression. She also had a wet pap at the time of epidural placement. she did get a Saline patch at completion of the delivery. Postpartum, she complained of jaw pain and swelling. She has very poor dentition. I put her on Cleocin and reminded her to make a dental appointment during the week. She was discharged to home on the morning of postpartum day #2.

DISCHARGE MEDICATIONS:

- Darvocet ad Ibuprofen for pain.
- Phenergen for nausea.
- Cleocin 300 mg one P.O. t.i.d., #21, for her teeth.

FOLLOW-UP:

Once again, follow-up with a dentist within the week. Follow-up in our office in 6 weeks for postpartum visit.

Electronically Signed _____
Bill Jones, M.D.

KB/jn
DD: 02/27/98
DT: 02/27/98

Ability to eSign Transcriptions

Full Name: JANE SMITH MR#: 400043

Expand +

Admissions Cardiology ER Forms GI Imaging Labs MAR

Messaging OB Order Status Pharmacy Radiology Rounding Reports Transcriptions Vitals I/O

Lab Detail

[Labs](#) Lab DetailName: SMITH, JANE
SSN: 564-85-7895
Gender: FTime: 01/05/2005 15:20
Status: Final
MR#: 400043

Lipid Panel

| Observation | Abnormal | Result | Range |
|----------------------|----------|-------------|-----------------|
| CHOL/HDL RATIO | | 2.1 mg/dl | |
| HDL Cholesterol | | 90.0 mg/dl | view optimal |
| LDL CHOL Calculated | | 88.0 mg/dl | less than 130.0 |
| Total Cholesterol | H | 310.0 mg/dL | less than 200.0 |
| Triglyceride | | 77.0 mg/dL | less than 150.0 |
| VLDL CHOL Calculated | | 15.0 mg/dl | |

[Push!](#)powered by:
MEDSEEK

eMessaging

Messages from Provider Portal (lab result shown here) can be “pushed to physician” after Clinician review

Current Patient Collapse

| | | |
|---------------------------|------------------|--------------|
| Full Name: SMITH, JANE | MR#: 400043 | PA#: 4000049 |
| Date of Birth: 05/05/1973 | SSN: 564-85-7895 | Gender: F |

- Admissions
- Cardiology
- ER
- Forms
- GI
- Imaging
- Labs
- MAR
- Messaging
- OB
- Order Status
- Pharmacy
- Radiology
- Rounding Reports
- Transcriptions
- Vitals I/O

Admissions Patient Information

- Patient
- [Guarantor](#)
- [Insurance](#)
- [Employer](#)
- [Diagnosis](#)
- [Contact](#)
- [Admit Form](#)
- [Face Sheet](#)

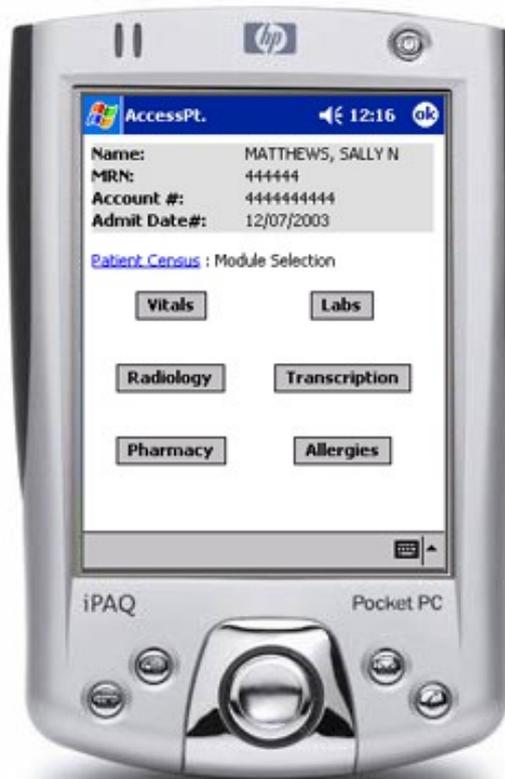
| | |
|--|----------------------|
| Address: 580 PEAR CIRCLE JACKSON MS 39211 | Phone: (601) 2658412 |
| County: 25 | Country: USA |

Gender: F
Marital Status: M
Age: 24

Attending: 331 - JONES, BILL
Admitting: 469 - LEE, JEFFER
Referring: 171 - SMITH, ROBI
Floor: 274

DOB: 06/08/1933
Race: W

ation: 02/25/1998
itting: 02/25/1998
arge:
Date:



Integration to
PDA's

Portal Project Expansion

-
-
-
- To continue to collaborate with **GIN** partners to expand promote the use of **REACH**

Internally e health strategy is to improve

Clinician Experience

Patient Experience

Consumer Experience

Employee Experience

Disease Management

Community Experience



when [IT] really matters

Lessons Learned

Clear vision – planning of scope of the portal essential

Assign Project Manager early

Develop Project Charter – this becomes helpful

Map out implementation phases – define success appropriately

Pay attention to the details

Understand the user – adjust training

Lessons Learned

COMMUNICATION

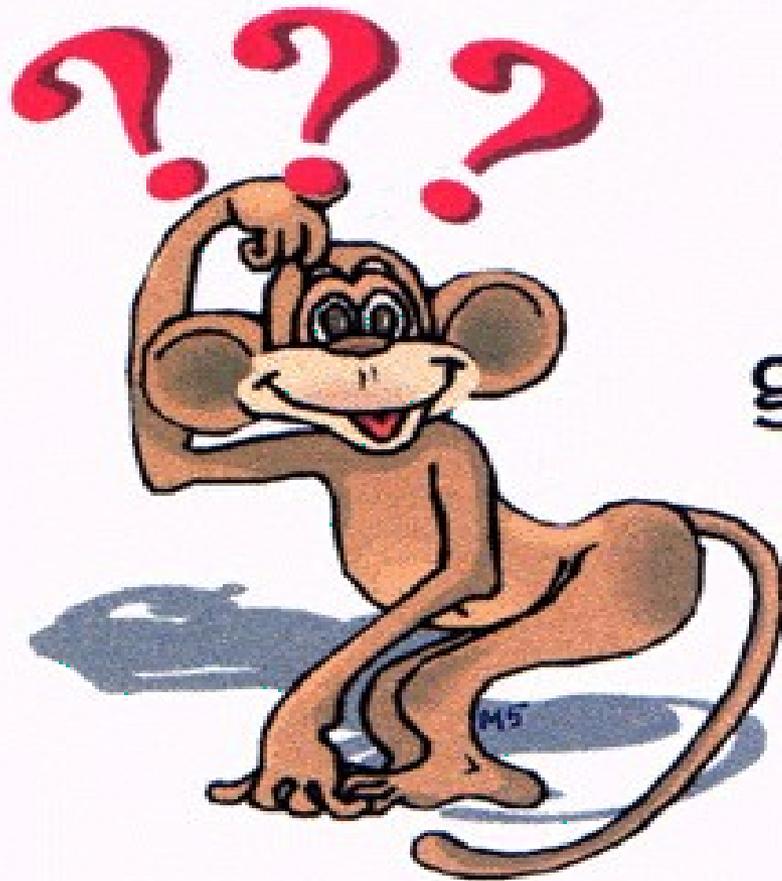
Weekly conference calls with vendor and partner hospitals invaluable to address issues

Development of Steering Committee to provide direction leadership acts in advisory capacity to senior team

Involving *even more* clinicians early is invaluable

healthtech

when [IT] really matters



Questions
are
guaranteed in
life;
Answers
aren't.



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