

# HDSS

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# Data Love Potion No 9

“Data development should reflect, not drive practice – data should be collected as a by-product of service delivery or administrative practice.”

Australian Institute of Health and Welfare (AIHW)  
Principle No 9 of good data development

“people-focussed, knowledge-focussed”

One of seven priority areas:

e-health and communications technology

# Priority Area: e-health and communications technology

health

*“An obvious and essential means to improve knowledge management within and across the health system – and one of our richest opportunities to address the metropolitan health care system priorities – is the use of the most sophisticated e-health and communications technology available.”*

# Data > Information > Knowledge

90's > Data

00's > Information

10's > Knowledge

Information + Access + Understanding = Knowledge

# Electronic Medical Record

*A system through which public hospital and health service staff caring for patients can fulfil their duties without any need for paper medical records and where the data stored in the electronic record is in computable form, supportable by real time decision support.*

Health Services Act 1988

No. 49 of 1988

Part 7—Miscellaneous Provisions

s. 141

- (ii) subject to the regulations (if any), by a person engaged or employed by or on behalf of a public hospital or a denominational hospital by means of an electronic records system established for the purpose of enabling the sharing of information in or between public hospitals and denominational hospitals for the treatment of patients at any time; or

# Office of the Chief Information Officer

- First implementation in the country of the new national medicines terminology has been cut over at Eastern Health and Eye and Ear



# EMR: like building a cathedral

*No Australian hospital has an electronic medical record*

*There are hospitals with electronic medical records*



# EMR

- A quality and safety tool for clinicians
- Needs an experienced design authority so that everything joins together safely and effectively

allergies recorded in multiple software systems and in free text so not contributing to automated alerts

fractured system wide process (eg ED systems with it's own admission/discharge process conflicting with the patient management system admission/discharge

inconsistent patient identifier practices across a health service

- Needs the input of applied informaticians; arguably Chief Medical/Nursing/Clinical Information Officers

## Equality: major tertiary versus other

- 1980's: % eligible receiving thrombolytic treatment for AMI
- 2010's: % eligible receiving thrombolytic treatment for stroke

Question:

Why isn't more important that rural and remote health care provides have access to automated and sophisticated clinical decision support so as to improve access and equality to best practice?

# Victoria: content rich, informatics skills and assets poor

health

## Deep Vein Thrombosis Imaging Request

UR: \_\_\_\_\_ DOB: \_\_\_\_\_  
 Name: \_\_\_\_\_ M/F: \_\_\_\_\_  
 Address: \_\_\_\_\_ Phone: \_\_\_\_\_

WC  Vets  
 Private  
 Other.....

ED cubicle no.....  
 Monitored Yes / No  
 Outpatient clinic no.....

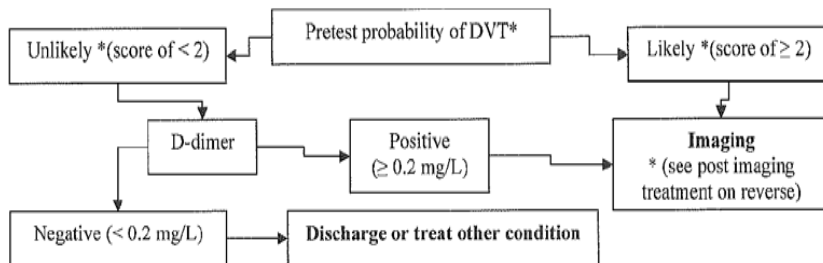
**Pretest probability of DVT\*** (in patients with symptoms in both legs, the more symptomatic leg is used)

(\* Decision rule reference on reverse)

- Calf swelling of more than 3 cm compared with the asymptomatic leg (measured 10 cm below tibial tuberosity) 1
- Paralysis, paresis or recent plaster immobilisation of the leg 1
- Previously documented deep vein thrombosis 1
- Recently bedridden for 3 days or more, or major surgery within the previous 12 wks 1
- Localised tenderness along the deep vein system 1
- Swelling of entire leg 1
- Pitting oedema greater in the more symptomatic leg 1
- Collateral superficial veins (nonvaricose) 1
- Active cancer, or cancer treatment within the past 6 months 1
- Alternative diagnosis at least as likely as DVT -2

Score .....\*\*

\*\* A score of 2 or more indicates that the probability of deep vein thrombosis is likely; a score of less than 2 indicates that the probability of deep vein thrombosis is unlikely.



## Adult Head Injury Imaging Request (>16 years)

UR: \_\_\_\_\_ DOB: \_\_\_\_\_  
 Name: \_\_\_\_\_ M / F  
 Address: \_\_\_\_\_ Phone: \_\_\_\_\_

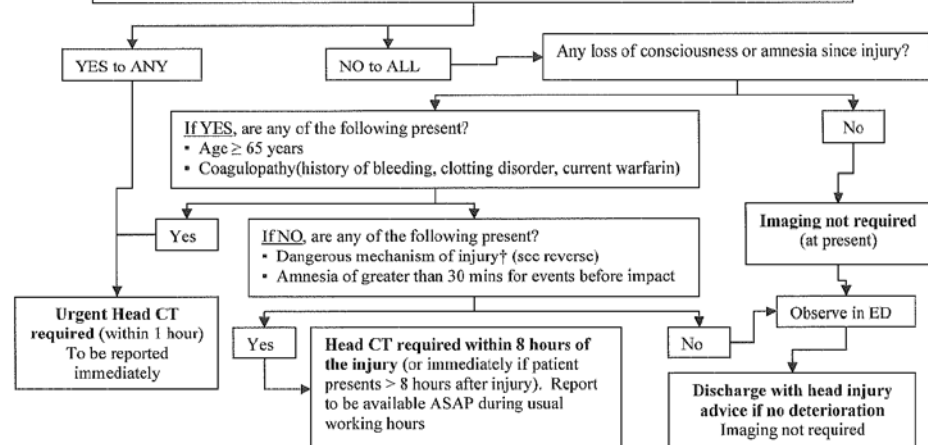
WC  Vets  
 Private  
 Other.....

ED cubicle no.....  
 Monitored Yes / No

## Selection of patients for Head CT following head injury (\* reference on reverse)

Are any of the following present?

- GCS < 13 at any point since the injury
- Suspected open or depressed skull fracture
- Any sign of basal skull fracture (haemotympanum, 'panda' eyes, CSF otorrhoea, Battle's sign)
- Post traumatic seizure
- > 1 episode of vomiting
- GCS 13 or 14 at 2 hours after the injury
- Focal neurological deficit



Examination Requested  
 Clinical Details

Contrast Allergy Yes/No Serum Creatinine .....

Pregnant Yes/No Metformin Yes/No

Requesting/Approving Consultant

Registrar

HMO/intern

Copy of report to:

Signature..... Name .....



# EMRs: SAVE LIVES

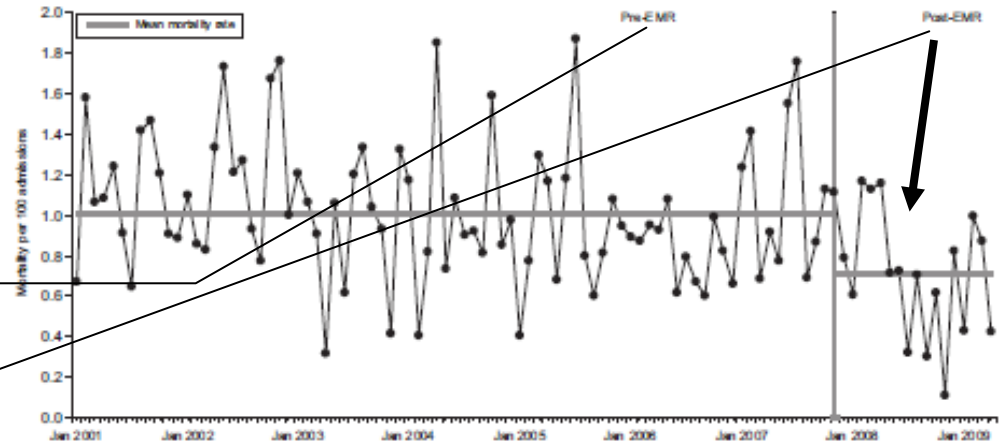
## PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

**FIGURE 1**  
Hospital-wide mortality rate per 100 discharges

Pre-EMR

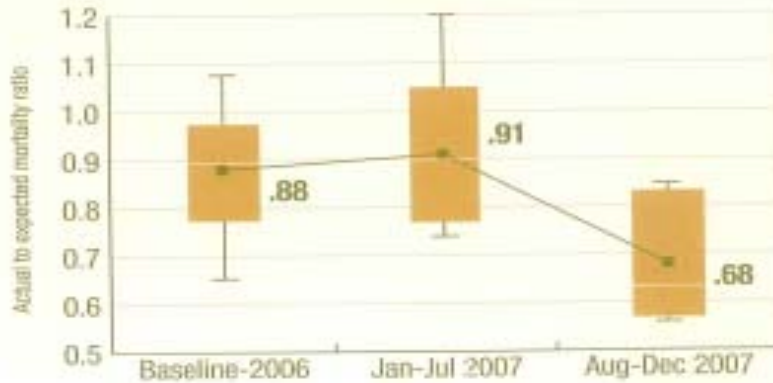
Post-EMR



**FIGURE 1**  
Hospital-wide mortality rate per 100 discharges according to month (excluding the obstetrical population). The pre-EMR period was between January 1, 2001, and October 31, 2007, and the postintervention period was between November 1, 2007, and April 30, 2009.

### Sepsis Alert

Automated alert saves lives

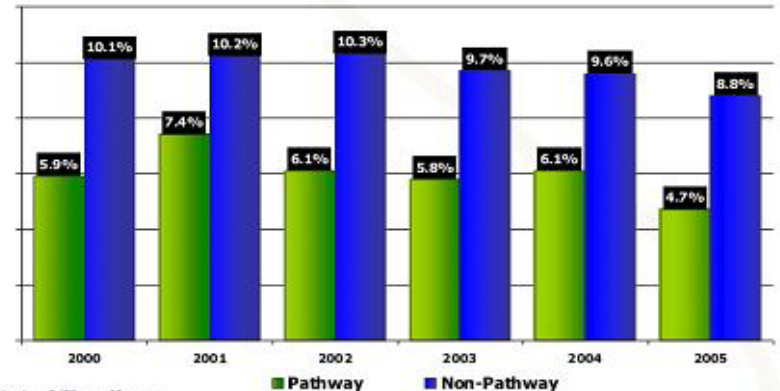


p=0.027

Based on all deaths, regardless of diagnosis

© Massachusetts General Hospital

### Evidence-Based Practice - Pneumonia Mortality Rate Pathway -vs- Non-Pathway



Clinical Excellence  
Healthcare That Is Safe

\* All Data from MEDal

Pathway = 25,724 Patients Non-Pathway = 38,509 Patients

# EMRs: SAVE LIVES

# PEDIATRICS®

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mortality-rate reduction. On the basis of our findings, we estimate that 36 children's lives were saved in 18 months at the LPCH in association with the CPOE implementation. The poten-

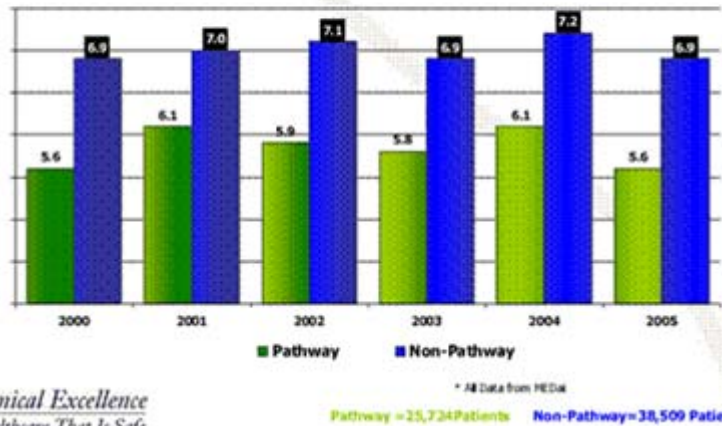
**CONCLUSION:** Implementation of a locally modified, commercially sold CPOE system was associated with a statistically significant reduction in the hospital-wide mortality rate at a quaternary care academic children's hospital. *Pediatrics* 2010;126:e000

CPOE: Computerised Physician Order Entry = Electronic Medical Record

# Sustainability

## Reduced Length of Stay

### Evidence-Based Practice - Pneumonia LOS Pathway -vs- Non-Pathway

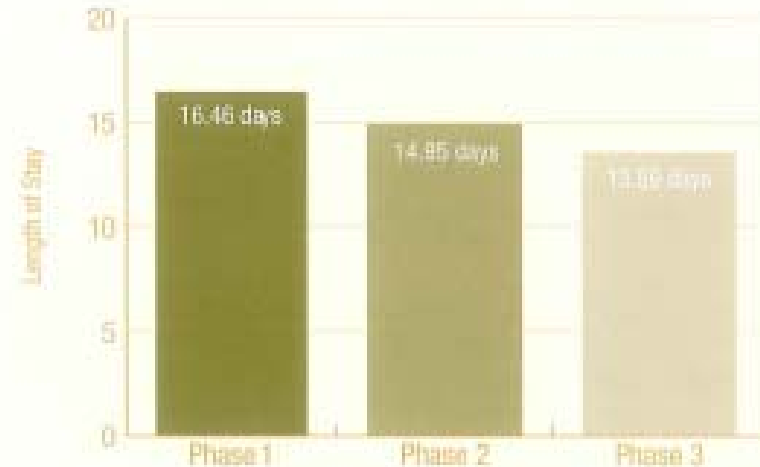


Clinical Excellence  
Healthcare That Is Safe

Methodist North's length of stay for septic patients fell from 16.5 days to 13.6 days. This, in conjunction with more appropriate coding of sepsis, has saved the hospital an estimated \$2 million.

### Sepsis Alert

Boosting the bottom line by reducing length of stay

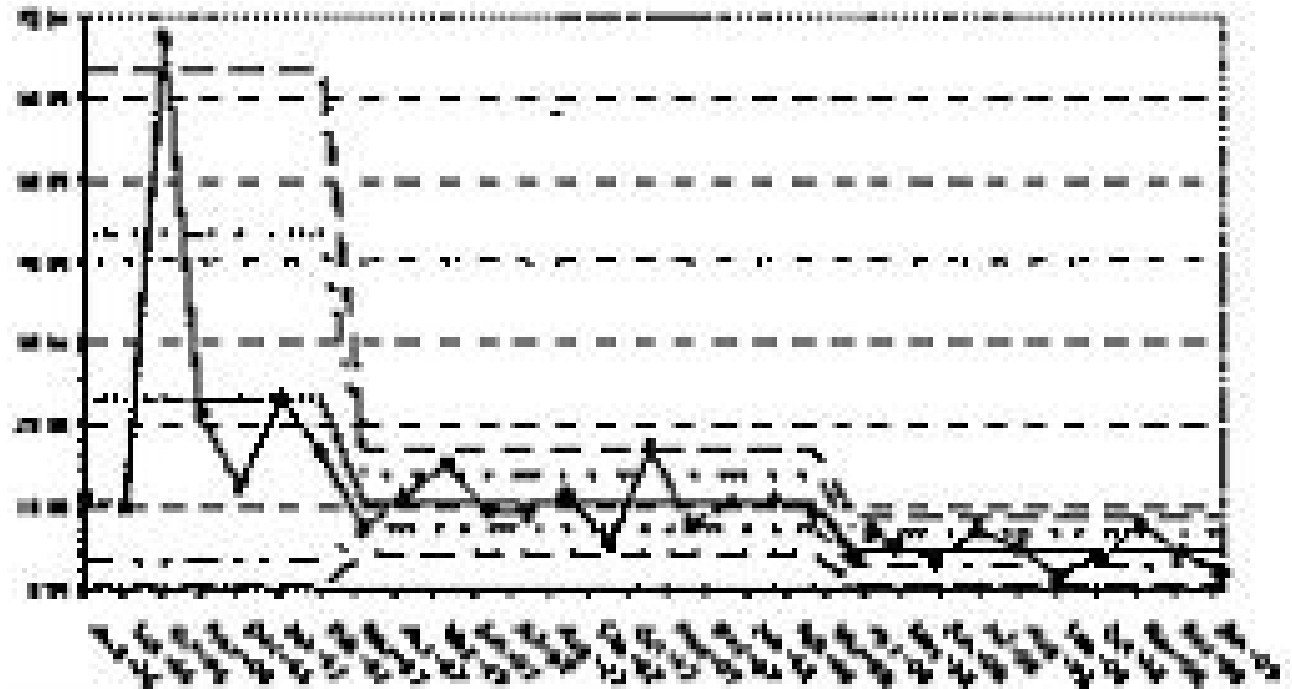


Source: Methodist North Hospital

# EMRs: Efficient Use of Scarce Resources

Blood transfusions down from 37% to < 5%:  
and more appropriate

Orthopedics



# EMR: coroner's call?

## Recent Western Australian Coroner's Case:

31 year old mother of 3 died while being given an anaesthetic for a routine elective hernia repair because known information about her anaesthetic risk at one public hospital did not automatically come across to the hospital where the operation was being performed

# National Health Reform: e-health is one of the 8 nominated streams

health

## National Identifiers

Legislation passed, identifiers have been generated

## Personally Controlled Electronic Health Record

Business case endorsed by AHMC

*“healthcare provider organisations “including state/territory health departments” **will be expected to fund**, implement, operate and maintain appropriate ..... **patient and clinical management systems** and **ensure these systems incorporate the appropriate integration capabilities** required to send and receive information to/from the national IEHR system”*

Commonwealth announced \$467 Million, broadly in line with first 2 years of the business case

Melbourne East General Practice Network announced by DoHA as a lead site

PCEHR concept of operations has been released

# Remembering your e-health acronyms: Hippos and Hippies

health

- Identifiers x 3
  - IHI (patient)
  - HPI-I (professional)
  - HPI-O (organisation)
- Individual Electronic Health Record (IEHR), now called Personally Controlled Electronic Health Record
- PC-EHR



# Office of the Chief Information Officer

Questions?