Maternal & Newborn Clinical Management System (MN-CMS)

Electronic Medications Management and Medication Safety

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eHealth Ireland

Maternal & Newborn
Clinical Management System
MN-CMS

OVERVIEW

- Where to begin?
- Project planning
- Go live
- Lessons learnt
- Optimisation
- Ongoing projects

WHERE TO BEGIN?
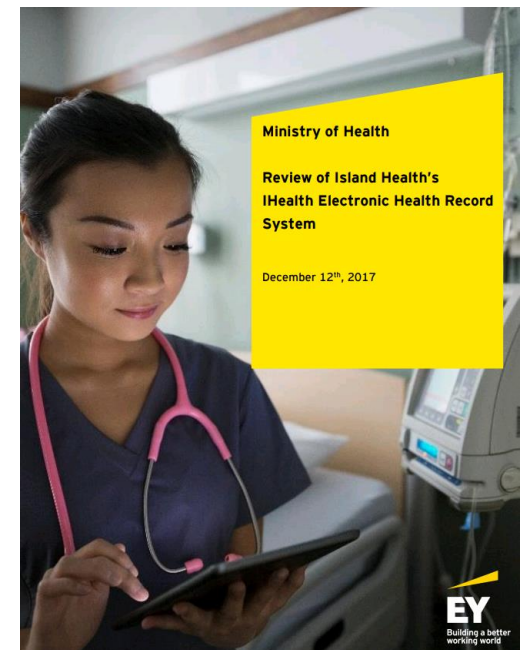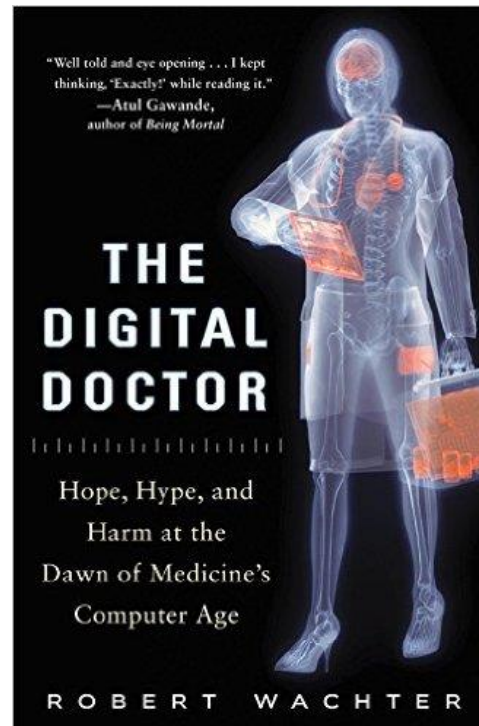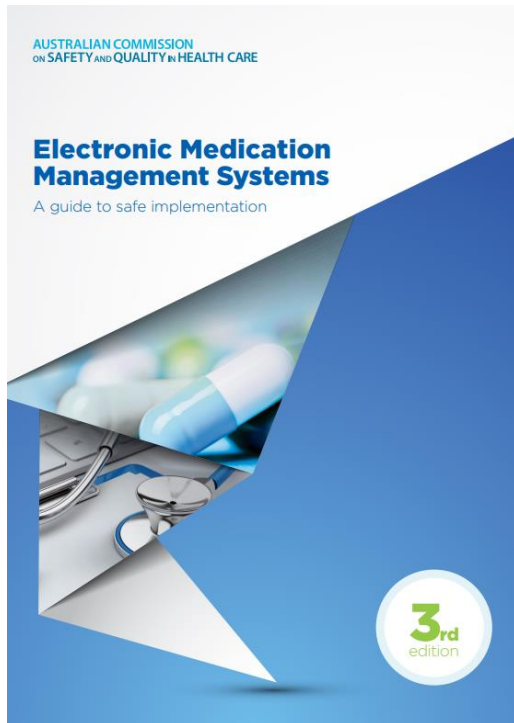
THE LOURDES HOSPITAL INQUIRY

An Inquiry into peripartum hysterectomy at Our Lady of Lourdes Hospital, Drogheda.

REPORT

Of

JUDGE MAUREEN HARDING CLARK S.C.,

January 2006

➢ A comprehensive, effective, user friendly IT system must be installed and become operational immediately.

➢ All midwifery staff must have or receive basic computer skills to input, access and transmit data electronically. The best training is 'on the job'. Information should be inputted into the system promptly as each patient is cared for on the labour ward and before she goes to the post natal ward. The use of Midwifery websites should be encouraged for increasing awareness of changing practice in the treatment of common problems.

➢ All patient records should be in standard format from which key data can be extracted for internal and external audit.

➢ As with the obstetricians, relevant key data should be forwarded electronically to the body charged with collecting, reviewing and auditing such statistics.

Inquest rules on Royal Shrewsbury Hospital paracetamol overdose

A 68-year-old woman died from an overdose of paracetamol three weeks after being admitted to the Royal Shrewsbury Hospital with a fractured hip, a coroner ruled this afternoon.

THE IRISH TIMES

Woman died from allergic reaction

THE IRISH TIMES

Patient died after being given drug to which he was allergic

High Leverage

MOST EFFECTIVE

Forcing functions and constraints
(e.g., removal of a product from use)

Automation or computerization
(e.g., automated patient-specific dispensing)

Medium Leverage

MODERATELY EFFECTIVE

Simplification and standardization
(e.g., standardized paper or electronic order sets)

Low Leverage

LEAST EFFECTIVE

Rules and policies
(e.g., policies to prohibit borrowing doses from other areas)

Reminders, checklists, double checks
(e.g., independent double checks for high-alert medications)

Education and information
(e.g., education sessions on high-alert medications)

SYSTEM-Based

PERSON-Based

HIERARCHYᴏꜰ**EFFECTIVENESS**

https://www.ismp-canada.org/download/ocil/ISMPCONCIL2013-4_EffectiveRecommendations.pdf

Project Overview

- Design Event
- Workflows
- Test scripts
- Build
- Vendor testing
- Future state validation
- Interfaces

- System test/fix (2 cycles)
- Integration test/fix (2 cycles)
- End user training
- Go-live

| Go Live - CUMH | 5th February 2016 |
Go Live – Kerry General	26th February 2016
Go Live – Rotunda	21st March 2016
Go Live – NMH	15th April 2016

Project Planning

- Senior clinical leadership essential
- Engage early!
- Don't underestimate resourcing for medications build (and post go-live)
- Standardise processes in advance
- Baseline measurements – engage academia
- Learn from previous implementations
  - Go on site visits
  - Engage in relevant networks
- Local multidisciplinary working groups
- Engage prescribers early and embed in teams

Vision for Medication Use Process

- Simple workflows

- Timely

- Standardised for safety

- Support prescribers and midwifery/nursing staff in safe practice

- Forcing functions & constraints where essential

- Address risks of known high alert medications/processes/populations

"The upshot is that it is much easier to identify a minefield when you observe others wandering into it than when you are about to do so."

THINKING, FAST AND SLOW

DANIEL KAHNEMAN
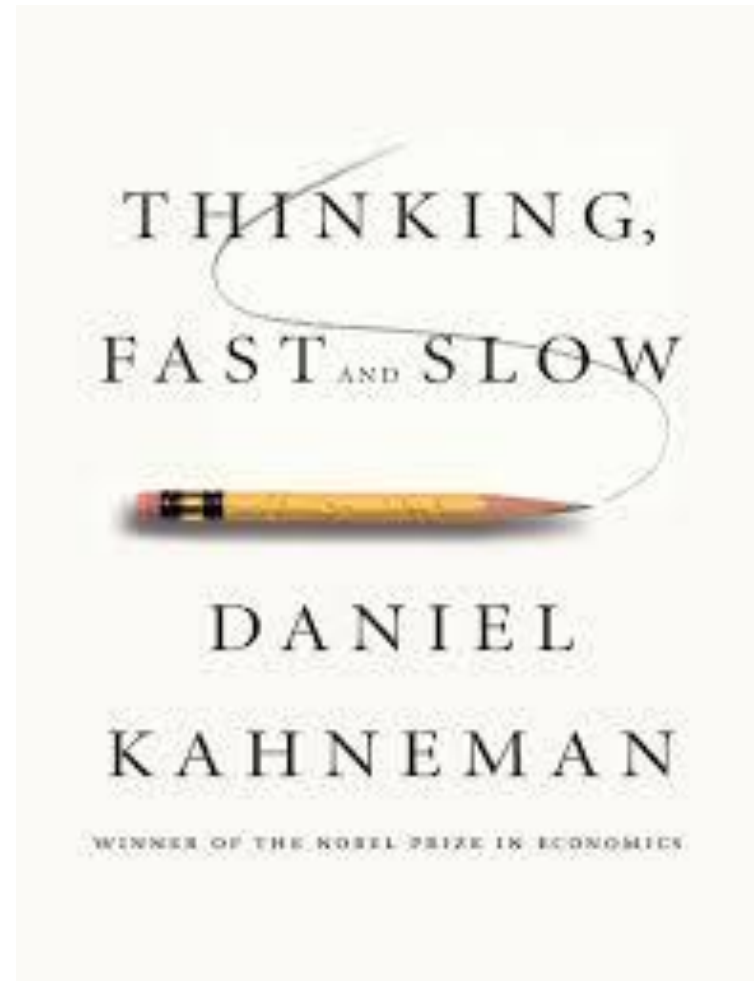
WINNER OF THE NOBEL PRIZE IN ECONOMICS

Unexpected Increased Mortality After Implementation of a Commercially Sold Computerized Physician Order Entry System

Yong Y. Han, Joseph A. Carcillo, Shekhar T. Venkataraman, Robert S.B. Clark, R. Scott Watson, Trung C. Nguyen, Hülya Bayir and Richard A. Orr

Results. Among 1942 children who were referred and admitted for specialized care during the study period, 75 died, accounting for an overall mortality rate of 3.86%. Univariate analysis revealed that mortality rate significantly increased from 2.80% (39 of 1394) before CPOE implementation to 6.57% (36 of 548) after CPOE implementation. Multivariate analysis revealed that CPOE re-

Pittsburgh

- Specific order sets designed for critical care were not created.
- Changes in workflow were not sufficiently predicted, resulting in a breakdown of communication between nurses and physicians.
- Orders for patients arriving via critical care transportation could not be written before the patients arrived at the hospital, delaying life-saving treatments.
- Changes, unrelated to the CPOE system, were made in the administration and dispensing of medication that further frustrated the clinical staff, for example:
  - At the same time the CPOE system was installed, the satellite pharmacy serving the neonatal ICU was closed and medications had to be obtained from the central pharmacy, delaying treatment.
  - Emergency prescriptions were required to be preapproved, and all drugs were moved to the central pharmacy.

Health IT and Patient Safety
Building Safer Systems for Better Care

INSTITUTE OF MEDICINE

Seattle

- Researchers visited Pittsburgh to learn about problems associated with their implementation of the CPOE system.
- Intensive care staff was actively involved during the design, build, and implementation stages.
- Specific order sets were designed for ICU and pediatric ICU before implementation.
- New order sets, based on the most frequently used orders, were created to help reduce the time it takes a clinician to enter orders Beccaro et al., 2006; Han et al., 2005).

Health IT and Patient Safety
Building Safer Systems for Better Care

INSTITUTE OF MEDICINE

Use of Temporary Names for Newborns and Associated Risks

PEDIATRICS Volume 136, number 2, August 2015

Jason Adel
Amisha Ra
Andrew Ra

New Naming Convention for Single Births	New Naming Convention for Multiple Births
- No longer use Babyboy/Babygirl for the first name - For single births, newborns are given temporary names as follows: - The mother's first name (up to a maximum of 10 characters) 1 character suffix ("s") 3- to 4-character gender (boy or girl) **Example:** Babygirl Smith → Judysgirl Smith	- No longer use Babyboy/Babygirl for the first name - For multiple births, newborns will be given temporary names as follows: - First-digit numbering (1, 2, etc) - The mother's first name (up to a maximum of 10 characters) 1 character suffix ("s") 3- to 4-character gender (boy or girl) **Example:** BabygirlA & BabygirlB → 1Judysgirl & 2Judysgirl

National standard demographic dataset and guidance for use in health and social care settings in Ireland

January 2016

Safer Better Care

Health Information and Quality Authority
An tÚdarás Um Fhaisnéis agus Cáilíocht Sláinte

- Opportunity to reduce the documented high risk of misidentification of newborns due to similarities in baby names and Medical Record Numbers.

- Reviewed the current format and contributed revised based on Adelman format to HIQA

- New Standardised Naming Convention adopted nationally by HIQA and MN-CMS

SPECIAL NOTICE

THERE IS ANOTHER PATIENT WITH THE SAME OR SIMILAR NAME

CHECK !!

HOSPITAL

Patient List

UHK Emly

All Patients - UHK Emly

Alerts	Name	Room	Bed	Sex	Age	MRN
	Zzztest, Twinone Bethsgirl	Room 01	Cot A	Female	21 hours	132708
	Zzztest, Twintwo Bethsboy	Room 01	Cot B	Male	21 hours	132709

Discern: Open Record - Zzztest, Twinone Bethsgirl (1 of 1)

Cerner

Same Name Alert

There are **1** actively admitted patients with the same name within this ward (UHK Emly). Please verify you are entering the correct patient's chart.

Patients

Zzztest, Twintwo Bethsboy

OK

U.S. Department of Health and Human Services

AHRQ Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

PSNet
PATIENT SAFETY NETWORK

| PSNet ▾ | Search... | 🔍 |

minimize alert fatigue in CPOE systems:

- Increase alert specificity by reducing or eliminating clinically inconsequential alerts.

- Tailor alerts to patient characteristics and critical integrated clusters of physiologic indicators. For example, incorporate renal function test results into the alert system so that alerts for nephrotoxic medications are triggered only for patients at high risk.

- Tier alerts according to severity. Warnings could be presented in different ways, in order to key clinicians to alerts that are more clinically consequential.

- Make only high-level (severe) alerts interruptive.

- Apply human factors principles when designing alerts (e.g., format, content, legibility, and color of alerts).

https://psnet.ahrq.gov/primers/primer/28/alert-fatigue

MSA! ARTICLES

Your attention please... Designing effective warnings

February 28, 2019

- Target audience
- Source credibility
- Clinical importance
- Font size/text format
- Signal words- Caution/warning/danger
- Colour
- Message content/length
- Affirmative wording
- Pictorials
- Placement
- UX and Risk perception

https://www.ismp.org/resources/your-attention-please-designing-effective-warnings-0

Go Live

Go Live

THE ROTUNDA HOSPITAL DUBLIN

Maternal & Newborn Clinical Management System

MN-CMS

MEDS TEAM MN-CMS GO-LIVE

22	PHARMACISTS FROM 5 HOSPITALS
1,094	HOURS OF MEDS TEAM SUPPORT
7,515	INPATIENT MEDICATION ORDERS
10,695	TOTAL MEDICATION ORDERS
19,542	TOTAL MEDICATION ADMINISTRATIONS
56,082	DRUG CHART OPENS

Lessons Learnt

- Preparatory D&T Meetings- future orders, discontinuation, group medication protocols
- Senior nursing/midwifery staff as super-users
- Roll out hardware early to enable familiarisation
- Prescriber-pharmacist pairs for medication order migration
- Local knowledge in the command centre
- Consider extent of data migration
- Floor walkers
- Login fairs
- Wear runners!

Optimisation

- Workflow issues
- Reporting
- Ongoing training
  - Written guidance
  - Learning styles
  - Case-based learning
  - Videos
  - Small group teaching
  - Positive deviance

Ongoing Projects

- Gynaecology implementation
- SMART on FHIR- Thrombocalc
- High Tech Hub integration
- Electronic transmission of PN orders
- Bidirectional pump integration (NICU/Oxytocin)
- Clinical Pharmacy Worklist
- Insulin optimisation
- Patient Photo
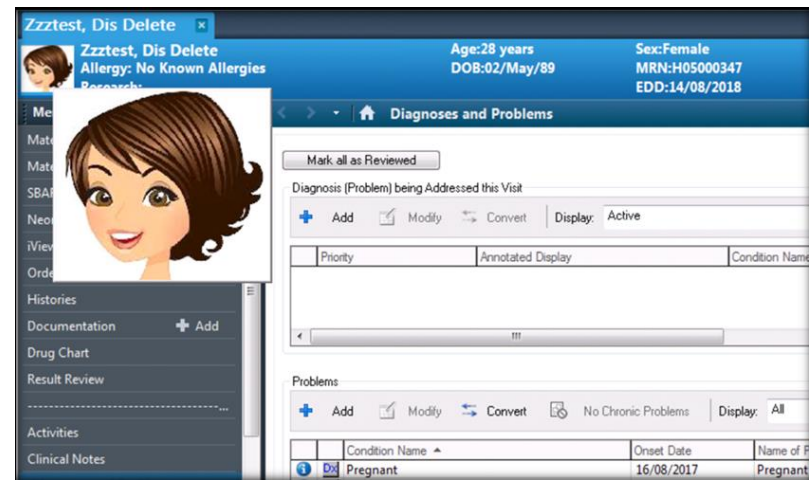
Neonatal Medication Safety Bundle

Pharmacy Staff - Negatives

- Complex processes- electrolytes, PN, insulin
- Controlled drug prescriptions
- SALADs- still issues
- Prescription verification
- Temptation to work remote from the patient
- Remote ordering
- Difficult navigation of clinical documentation
- Reports

Pharmacy Staff - Positives

- Clear, unambiguous prescriptions
- Time-saving
- Simultaneous access
- Work remotely from ward if required
- Legibility
- Care plans
- Built in calculators
- Links to resources
- Access to results
- Clinical Pharmacy Worklist
- Allergy checking
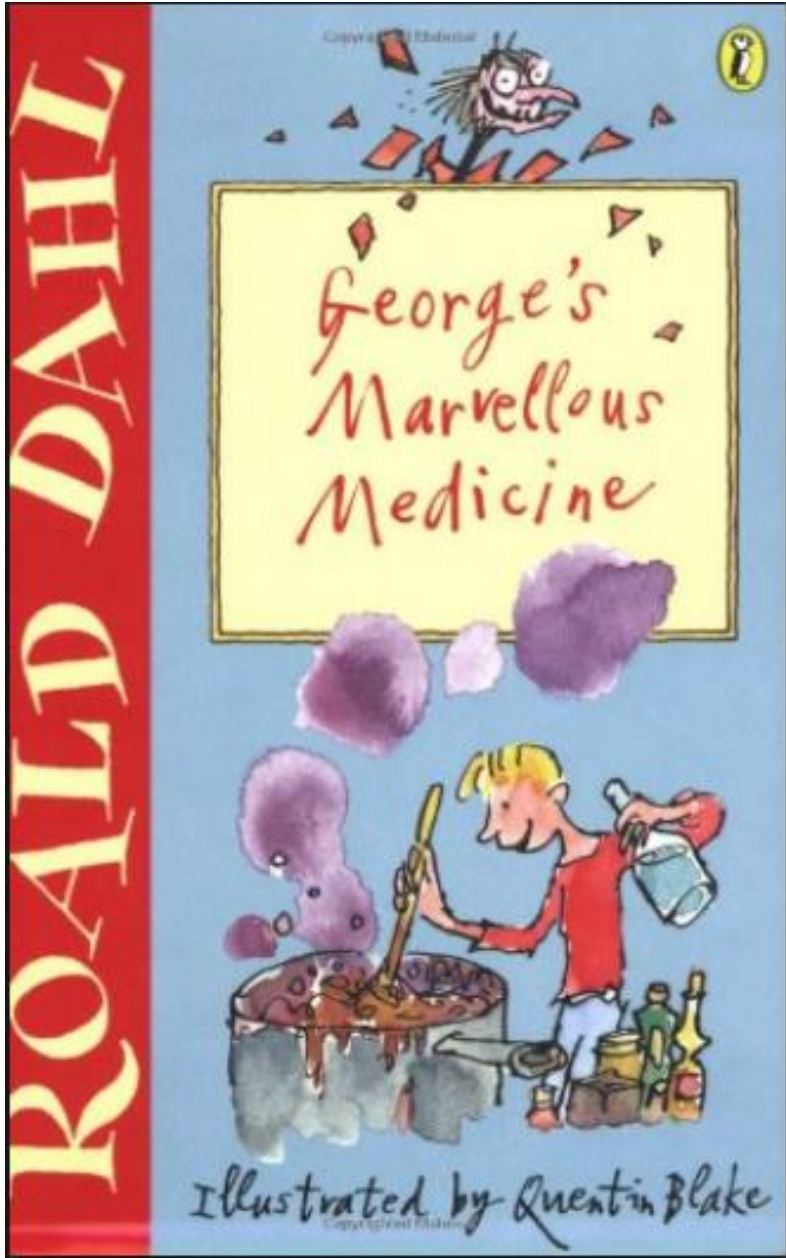
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