E-health and the Digital Hospital

Presentation to The Quantum Leap Health Innovation: Making Quality Count
9 September 2014
Richard Royle
UnitingCare Health
Executive Director
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- The Wesley Hospital
  - 536 overnight beds
  - 20 operating theatres
  - 19 ICU beds

- St Andrew’s War Memorial Hospital
  - 250 beds
  - 15 operating theatres
  - 15 ICU beds

- The Sunshine Coast Private Hospital
  - 190 beds
  - 8 operating theatres
  - 12 ICU/CCU beds

- St Stephen’s Hospital
  - Maryborough 60 beds
  - Hervey Bay 96 beds

UnitingCare Queensland
- UnitingCare Health
- UnitingCare Communities (Lifeline)
- BlueCare

Going Digital in Hervey Bay
Creating a High Performing Healthcare System

1. Clinical Care, Clinical Technology and Infrastructure
   ▪ Clinicians, Equipment and Facilities

2. Organisational Culture
   ▪ Studer Living Values

3. Information Technology
   ▪ Integrated EMR Architecture
   ▪ Digital Devices
   ▪ Clinical Transformation
St Stephen’s Hervey Bay New Digital Hospital

- July 2010 – Federal Government sought submissions via Health and Hospitals Fund for projects to improve access to regional and rural health services
- May 2011 – Government announced $47.1M grant to UCH towards developing Australia’s first fully integrated digital hospital
  - $25.9M towards construction costs
  - $21.2M for ehealth
- June 2012 – contract signed with Federal Government
- July 2012 – Project Director for ehealth appointed – Connie Harmsen
- 13 October 2014 – St Stephens Hospital Hervey Bay takes its first patient
Welcome to the future of healthcare in Hervey Bay
Collaboration with Cerner

Richard Royle & Neal Patterson
October 2012
St. Stephens Hospital Hervey Bay – Patient room
St. Stephens Hospital Hervey Bay – Data Centre fibre connections
St. Stephens Hospital Hervey Bay – Data Centre cabling
Digital Elements

29 Cerner Millennium Applications eg:
- PowerChart
- Medications Management
- Surginet
- Anaesthesia

20 Devices eg:
- Patient entertainment system
- Barcode scanning
- Real Time Location System (RTLS)
- Nurse call
- CareAware Vitals Link
- CareAware RoomLink
- CareAware Capacity Management Flow

External Service Providers and Systems and Interfaces eg:
- Laboratory
- Radiology
- Food management system

Necessary ICT infrastructure eg:
- Remote Hosting Option (RHO)
- Local ICT and IT peripherals (Workstations, Scanners, etc.)
- Networks
Clinical Transformation and Work Redesign Teams

Device Integration

Surgical Doctor Team

Anaesthetics Doctor Team

Medical Doctor Team

Admin Function

SurgiNet

CareNet

Medication Management

Going Digital in Hervey Bay
Work Redesign UCH Team Composition

62 Staff
- 15 St Stephen’s Hospital
- 8 The Wesley Hospital
- 8 St Andrew’s War Memorial Hospital
- 2 The Sunshine Coast Private Hospital
- 29 UCH corporate (pharmacists, quality, eHealth, ISD)

27 Doctors
- 7 St Stephens
- 4 St Andrews
- 9 Wesley
- 5 Sunshine Coast
- 2 corporate
Guiding Principles for Work Redesign Teams

- We will do what is best for the patient
- Patient safety is our primary objective
- Design principles will be based on what is best for UCH as a whole, following 80/20 rule: 80% can be used at any UCH hospital, 20% can be facility specific
- Design will be clinician-driven and support standardization of clinical “best practices” and medical decision-making
- All design work will incorporate Australian National Standards, ISO, Hospital licensing, UCH Policies & Procedures, Guidelines and Best Practice
- Proactively identify, manage and resolve issues to maintain the project timeline, effectively utilize resources, and ensure design decisions are aligned with the Guiding Principle
- Design must be benefit driven and focused on improving performance of the organization for the long-term future

Going Digital in Hervey Bay
Doctor Engagement

Partnership Model with VMPs

Early clinical input
Clinical champions early and continuous involvement in work redesign teams

Targeted learning approach
- VMP specific training - Learning by doing
- Performance based learning

Implementation (Go LIVE)
VMP support services
- 1:1 support
- Real time learning
- On the floor support. Rounding with VMPs

Post Implementation
VMP input into evaluation teams
- Ongoing performance support
- VMP Coaches development

Tailored VMP support during each stage
EMR elements that help clinicians

- One record, multiple users, multiple locations: no chasing around to access the record
- No more trying to read Doctors’ handwriting
- Able to get reports quickly and not have to search for them amongst faxes
- When call Doctor in rooms or at home, they can access the record as we discuss the patient’s condition, clarifying sometimes confusing discussions
- Will receive reminders when things are due, eg tasks, dressings
- Able to add orders and start processes without the Doctor physically present
- Easy documenting of care plans
- Clinical support tools and links with clinical alerts personalised for patients
EMR elements that help clinicians

- Easier investigation of incidents and discrepancies
- Can see exactly who did what when
- Able to easily find missing, misplaced, borrowed equipment and confused, wandering pts
- Able to place an order, request a service and not have to worry/remember to phone them
- Can easily find information from past encounters
- Single Sign On with “tap on, tap off” provides quick and easy access for clinicians to the EMR
- GP Notifications provides immediate discharge summary information to referring GPs, as well as to VMPs’ rooms
Closed Loop Medication Administration System

- Patient is admitted
- Medications are ordered (Cross checked at time of ordering)
- Pharmacy verification occurs
- Medications dispensed via Automated Dispensing Cabinets
- Patient Barcode identifier is scanned
- Medication is scanned
- Medication is digitally signed for
Automated Dispensing Cabinets
Medication errors in hospitals are not uncommon, can be expensive, and are sometimes harmful to patients.

CPOE helps reduce medication errors through:
- Avoiding issues with poor handwriting or incorrect transcription
- Drug dosing support
- Alerts about harmful interactions
- Clinical decision support

Two key studies found similar results:
- Processing a prescription through an electronic ordering system reduces the likelihood of a drug error by 48%:
  - 17.4 million errors were averted in US hospitals using CPOE over a 3 year period (2006-2008) – Journal of American Medical Information Association 20 Feb 2013
  - 66% reduction in errors in two Australian teaching hospitals
  - “Effects of two commercial electronic prescribing error rates in hospital inpatients: A before and after study” Westbrook et al, PLOS Medicine, January 2012
Expected Benefits for UCH per Leadership Workshop Feb 2013

Improve Patient Safety

- Decrease number of avoidable clinical incidents
- Improve timeliness to identify and respond to deteriorating patients
- Improve timeliness of results verification and action
- Improve utilisation of care protocols and order sets

Improve Risk and Quality Measures

- Increase frequency of pain assessments and decrease pain assessments with level of 5

Increase Efficiency

- ALOS below national average
- Increase actual operating time per theatre
- Decrease overtime expense
- Decrease paper expense

Improve Medications Management

- Reduce medication errors and ADEs
- Improve medication specific communication between hospital and GPs, specialists, and other community healthcare providers
- Medication reconciliation on admission and discharge
- Reduce medication turn around times

Increase Patient, Family, Community Satisfaction

- Decrease RiskMan incidents related to complaints
- Increase patient satisfaction
- Increase nursing time at bedside

Improve Staff and Doctor Satisfaction

- Increase staff satisfaction
- Increase doctor satisfaction
Federal and State Regulatory Challenges: Medications

- Commonwealth Legislation
  - The National Health Act 1953: governs operations of the Pharmaceutical Benefits Scheme
  - The National Health Regulations 1960: requirements for prescribing pharmaceutical benefits
  - Therapeutic Goods Act and Regulation: regulates manufacturing, quality and safety
  - Poisons Standards

- State and Territory: Queensland
  - Health Act 1937: defines framework for medicine, poisons and health regulations
  - Health Regulations 1996: authorises obtaining, possession, prescribing, dispensing, supply, administering, manufacturer and wholesale
  - Health Regulation 1996: further definitions for administrative aspects of Drugs and Poisons including dispensaries, sterile dispensing, labelling
Population Health Management

A five to ten year journey

UCH and UCQ have a unique organisational structure to provide population health management in Hervey Bay

“Population Health is committed to improving the heath and wellbeing of Australians and to reducing preventable mortality and morbidity caused by chronic disease. “

Australian Government Department of Health 1st August 2013
Department of Health PHD homepage

Population health management is a model for helping providers and payers assess the populations they serve across the continuum of care to:

- Prevent those who are well from becoming ill
- Improve quality of life and enhance health outcomes for
  - those who have developed one or more chronic conditions
  - the least advantaged communities and social groups
Population Health Management

Information technology as catalyst: Turning data into action
- Use predictive analytics to identify and build the right programs, and actions
- Reduce costs
- Improve community health

Engage patients in a personalised way
- Access their health information
- Connect with their care team
- Engage in their health
PCEHR Review

- Report submitted December 2013
- Report released May 2014
- Federal Health Minister agreed in principle with all 38 recommendations
- Some recommendations followed up with community/industry consultation (eg opt out)
- Awaiting final Cabinet decision
Key Issues from PCEHR review

- Governance structure changes required
- Solid platform in place to progress eg IHI, SnoMed
- Focus on one or two core data pieces eg pathology, medications
- Opt out following success on core data pieces
- Add flag to clinical author if patient has removed any information
- Actively enable decentralisation of information across multiple data repositories
- Reset policy standards to enable interoperability and insist on standards adherence
Questions?
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