The Digital Hospital Experience
St. Stephens Digital Hospital

September 2015
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Executive Director
UnitingCare Health

- The Wesley Hospital
  - 535 overnight beds
  - 21 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 Hervey Bay
  - 96 beds
  - 5 operating theatres

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

Going Digital in Hervey Bay
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
What has been achieved?

- A fully digital hospital – minimal use of paper
- Fully computerised medication ordering system
- All medications in single dose blister packs
- All technology seamlessly linked to the EMR
- Care pathways built into the EMR
- All equipment and patients GPS tracked
- Pre-admissions completed online and integrated with the EMR
- Discharge details sent directly to referring GP’s software
Key Learnings from Visits to US Fully Digital Hospitals

- Treat project as a change management piece, not an IT installation
- Develop a close working relationship with your IT vendor
- Engage with your Doctors upfront and involve them in the detailed design of the system
- Employ project personnel with a thorough knowledge of full EMR implementation
- Focus strongly on staff education pre go-live and educated IT support on the ground post go live
- Ensure no lag time from IT system and ease of logging on and off
St. Stephens Hospital Hervey Bay – Patient Room
St. Stephens Hospital Hervey Bay – Data Centre fibre connections
Clinical Transformation and Work Redesign Teams

- Device Integration
- SurgiNet
- CareNet
- Medication Management
- Admin Function
- Medical Doctor Team
- Anaesthetics Doctor Team
- Surgical Doctor Team
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
Doctor Engagement

Partnership Model with VMPs

Pre implementation

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

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
- AnywhereRN allows nurses to remotely queue medication removal from ADC
- GP Notifications provides immediate discharge summary information to referring GPs, as well as to VMPs’ rooms
# Unit Dose Packaging

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
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<tbody>
<tr>
<td><strong>Blister packs</strong></td>
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Paracetamol Cumulative Maximum Dose Alert

Dose Verification

The 24hr Paracetamol dose will be 6000 mg (including this administration), which exceeds the maximum daily dose of 4000 mg.
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
Benefits Realisation Study

- **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

- **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
Example of Benefit from Integrated EMR

- Post-op patient not progressing as expected
- Nurse escalates issue - patient condition reviewed by senior clinical nurse
- All test results easily accessible on EMR
- Doctor contacted - able to open chart remotely, review patient progress, consider further investigations and manage patient care
- No need for copying, scanning, faxing or phone orders
- Real-time access to latest patient observations, clinical status and nursing interventions.
The Wesley & St Andrew’s Research Institute

- Engaged January 2014 for help with statistical rigor
- Development of Clinical Outcomes and Operational Efficiency Monitoring System (COOEMS) for benefits realisation study (June 2016)
- Research studies regarding work life and patient and family experience in digital hospital
  - Point of care device study comparison study: nursing utilisation of fixed computers in patient rooms vs workstations on wheels (WOWs) (September 2015)
  - Time and motion nursing study (September 2015)
  - Patient and family experience Press Ganey survey (September 2015)
eHealth Benefits

- **PricewaterhouseCoopers (PwC)**
  - Analysis of total costs
  - Analysis of direct financial benefits
  - Analysis of an ‘economic value’ to indirect benefits such as efficiency, patient safety, and quality benefits to the hospital, patients, and community
  - Identification of additional components

- **July 2015**
  - Initial impact assessment for SSHB and UCH

- **July 2016**
  - Results based upon actual 12 months (July 2015-June 2016)
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
Key Learnings and Observations to this Point in Time

- Underestimated work required on infrastructure upgrades for the group
- Doctor engagement has been positive
- Required close connection between all parts of IT services as upgrades, repairs, fixes in one part can have negative impacts on EMR applications
- Underestimated initial and ongoing staff education
- Train as many superusers as you can
- Likely to take up to 3 years to truly bed the system down
Future Steps

- HIMSS 7 certification
- Expansion of EMR across UCH dependent on benefits realisation study
- Population Health Hervey Bay region
- Assisting other Australian and International hospitals who are going fully digital.