Medical Device Integration at CUH
Scope, rollout, considerations & benefits to support others

@my_eHospital
The Trust

- 2 hospitals: Addenbrooke’s & The Rosie
- 1,000 beds approx.
- 65,000+ inpatient episodes
- 127,000+ day case attendances
- 110,000+ ED attendances
- 40,000+ Surgical operations
- 5,500+ births
- 9,000+ staff
- £850m turnover
- 740,000+ Outpatient episodes

Catchment pop.
530,000 DGH
4m specialist

2016/17 activity
100+ hospital staff seconded to the programme team

Included 19 consultants, 8 senior nurses, 9 pharmacists + operational, administrative & other clinical staff

First Epic system to incorporate UK workflows and local, national and professional guidelines

Today 95% of CUH requested changes to the Epic system are made by CUH’s own Epic qualified staff within the eHospital team
Creation of a digital environment

Fully integrated EPR
one patient, one record,
one system, one place
(integrated healthcare)

Same information viewed by the clinical team vital for patient care and safety

Latest IT equipment
6,750 new ones,
500+ laptops,
800+ mobile/handheld devices

Use of mobile & handheld devices
Real-time information recorded at the patient’s bedside

Mobile apps factory
Clinical care clinical trials

Medical devices integrated
All physiological monitors & ventilators in
40 theatres and 148 high-dependency areas integrated

Releasing time to care
saving 124 WTE nurses through documentation always to hand & eliminating data transcription

Use of mobile & handheld devices
Real-time information recorded at the patient’s bedside
What is Medical Device Integration (MDI)

MDI
- Patient Monitors
- Ventilators
- Anaesthetic Carts
- Cardiac Output Monitors
- Infusion devices
- Haemofiltration devices
- Nitric Oxide inducers

Pathology interfaces

Point of care
- Glucose meters
- Blood Gas Analysers
- Urine analysers

Pathology Interface
- Lab Analysers
MDI – Data Flow

- High Acuity Patient Room
  - Continuous Data Collection
  - Infusion Pump
  - Smart Bed
  - Ventilator
  - Dialysis

- Med-Surg Patient Room
  - Periodic Data Collection
  - Smart Bed
  - Low Acuity Monitor with Chart Xpress
  - Vital Signs Monitor

- Hospital Network
  - Directory Server
  - LDAP
  - Hospital Network Monitor
  - Gateway
  - 2net™ Hub
  - 2net™ Mobile

- SmartLinx
  - Control Center
  - Directory Server

- SmartLinx Data
  - Authentication

- PLATFORM

- Atlantis
  - 2net™ Hub
  - 2net™ Mobile

- Global Digital Exemplar
  - Technology transforming health and care
Infrastructure considerations

- Devices standardisation
- Mounting solutions
- Touch screen vs. keyboard & mouse
- Screen sizes
- Network access
- Network & server capability
- Licensing
- Support & help desk
Process considerations

• Project management
• Filtering of data ‘background noise’
• Staff training
• Switch over process
• Business continuity
• Daylight Saving Time change
• Responsibilities:
  ➢ Clinical Engineering, Middleware, EPR
## Workflow challenges

<table>
<thead>
<tr>
<th>Critical Care</th>
<th>Anaesthesia / Theatres</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Patient linkage</td>
<td>• Auto-filing / data validation</td>
</tr>
<tr>
<td>• Manual data validation/verification</td>
<td>• Shadow charting</td>
</tr>
<tr>
<td>• Manual entry of non-captured data</td>
<td>• Transfer from induction room to theatre</td>
</tr>
<tr>
<td>• Mobile equipment / DIM mounting</td>
<td>• Manual entry of non-captured data</td>
</tr>
</tbody>
</table>
Benefits of MDI

In Critical Care & Intra-op
- Released time to care
- £2.6m equiv. annual staff time saving
- Reduced errors associated with manual charting
- Data collection at shorter intervals

In Anaesthesia / Theatres
- Anaesthetist can focus on patient
- Increase in productivity
- Decreased turnaround time

Across both areas
- Improved data accuracy (data & units)
- Device / patient evidence
- Incident reporting
- Devices usage statistics
- Devices location tracking
Future MDI – Intelligent Care Everywhere

Patients & devices now freely move between care settings necessitating informed connected care that surrounds the patient.
Future MDI at CUH

1. SmartLinx IQ

2. MDI connectivity in ED & cardiac services

3. Mobile equipment via RFID
Questions
Answers