EPMA
Electronic Prescribing & Medicines Administration

Post Implementation Review
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Project Summary

The OBC for EPMA was approved in December 2012, the FBC in December 2013 and the contract for the JAC EPMA system was signed in March 2014. DoH funding was awarded as part of the Safer Hospitals, Safer Wards scheme and as part of that award the Trust is required to complete a Post Implementation Review detailing lessons learnt. The Trust has yet to implement EPMA in A&E and Paediatrics and this will be done after JAC have released their next major version of the system, likely to be mid 2017.

Implementation started in early 2014 with go live planned for October 2014. This was delayed due to the late delivery of v2014 of the system, agreed as part of the contract.

Four early adopter wards went live in February 2015. The system was upgraded before the rollout commenced in May 2015 in a phased way. EPMA is live on all medical and surgical wards and all theatre and recovery areas in Chichester, Worthing and Southlands.

All areas of the Trust were in scope other than Critical Care and Chemotherapy.

For WSHT EPMA was the first 24/7 system it implemented and as such it faced some ‘new’ problems relating to 24 hour support and how to manage out of hours support in particular. Some items are general system issues, ie password resets and others need specific Pharmacy input.
Why is the Trust better post EPMA?

- Single view of current and historical drug record
- Improved clarity of communication among clinical staff
- Medicines administration information attached to chart and easily accessible by prescriber
- Scheduling prompts and supports administration of medicines
- Better documentation and availability of data for audit to work towards reducing missed doses
- Clear Audit trial of all medicines prescribed and administered. All modifications are signed and dated
- Patient allergy information available at time of prescribing
- 3rd party software creates conflict messages warning prescribers of allergy status and drug interactions
Why is the Trust better post EPMA? (Contd)

• System conflict log provides clear evidence of warnings being headed or reasons for warnings being overridden
• Legible and complete prescriptions
• Improved quality of care as queries are reduced
• Efficiencies delivered as paper is no longer chased
• Ability to properly inform GP of medication changes
• Single drug database allowing influence and control of drug choice
• Concurrent standardised drug storage (drug trolleys and PODs) and foundation of medicine processes
• Standard protocols and drug data sets used across all sites
Why is the Trust better post EPMA? (Contd)

- Possible to add protocol information directly to drug to ensure correct use of 1\textsuperscript{st} line choice e.g. IV biphosphonate
- Availability of data for audit and reporting purposes
- Easily accessible information available for RCA of incidents occurring during previous spells
- VTE assessment completion rates significantly improved as forces completion on admission
- Creation of real time alerts of poor prescribing of high risk drugs e.g. gentamicin > 400 mg
- Creation of a reports supporting a range of safety and performance issues
- Continuous Infusions charted with start/stop time and dates and including intermediate rate changes
### Phased Rollout

<table>
<thead>
<tr>
<th>Date</th>
<th>Area</th>
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</thead>
<tbody>
<tr>
<td>Feb 2015</td>
<td>4 early adopter medicine wards; 2 fast &amp; 2 slow moving wards</td>
</tr>
<tr>
<td>May 2015</td>
<td>7 medicine wards Chichester starting with Emergency Floor</td>
</tr>
<tr>
<td>Jun 2015</td>
<td>7 elderly medicine wards Worthing</td>
</tr>
<tr>
<td>Jul 2015</td>
<td>6 remaining medicine wards Worthing starting with Emergency Floor</td>
</tr>
<tr>
<td>Sept 2015</td>
<td>10 Surgical wards, both sites</td>
</tr>
<tr>
<td>Jan 2016</td>
<td>Main theatres and recovery both sites including Chantonbury, pre-op assessment, CTC/Pagham</td>
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<tr>
<td>Feb 2016</td>
<td>Donald Wilson House (rehab unit)</td>
</tr>
<tr>
<td>Mar 2016</td>
<td>Connaught Suite (DSU for eyes)</td>
</tr>
<tr>
<td>Apr 2016</td>
<td>DSU Chichester</td>
</tr>
<tr>
<td>Jun 2016</td>
<td>DSU Southlands</td>
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<tr>
<td>Aug 2016</td>
<td>Maternity Chichester</td>
</tr>
<tr>
<td>Sept 2016</td>
<td>Maternity Worthing</td>
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<tr>
<td>2016</td>
<td>Ongoing implementation in Outpatients</td>
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Key Facts about EPMA

• 2,675 drugs set up in the database
• 3,500 users have completed training/have a JAC logon
• 109 drug trolleys have been rolled out
• 148 laptops have been put on the wards
• 22 arms, with PCs, fitted to anaesthetic machines
• JAC installed on 1,200+ PCs across the Trust
Lessons Learnt

Throughout the project, lessons learnt have been put into practice for subsequent phases/work. This report captures lessons under the following headings:

- Project Resources
- Training & Access to EPMA
- Go Live Support
- Equipment & IT
- Communications
- Reporting
- System Configuration & Testing
- Benefits Realisation
- Business as Usual Support
Project Resources

• Reporting structure – Project Manager reporting to Head of Medicines Management; accountable to Project Board
• Project Team
  – External Project Manager, Band 8C Pharmacist, Band 7 Pharmacist, Band 6 Pharmacy Technician, 2 Band 7 Nurses plus additional pharmacist for medical ward rollout
• Clinical Lead – Urology Consultant
• Speciality Leads as required
• Clinical Advisory Group
  – Made up of variety of clinical staff from all disciplines and divisions
## Project Resources – Project Team

<table>
<thead>
<tr>
<th>What happened</th>
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</thead>
<tbody>
<tr>
<td>VERY dedicated core project team – project would not have been a success without their hard work</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What worked well</th>
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<tbody>
<tr>
<td>• Multi-disciplinary team (pharmacist, nurse, doctor) provided clinical credibility. An Identifiable team member from the same professional background who understands user’s role and requirements for the system</td>
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<tr>
<td>• Each member used their profession specific skills and experience to collaborate on new processes ensuring all specialities are considered</td>
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<tr>
<td>• Provided perspective as different professions view Issues differently ensuring that all aspects are considered and solutions are more likely to be effective.</td>
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<tr>
<td>• Multidisciplinary team ensures awareness and adherence to different departmental guidelines</td>
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<td>• Wearing EPMA shirts made team easily identifiable at go live and beyond</td>
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<td>• Dedicated office space on both sites with space to store equipment (ie new drug trolleys, PCs, etc)</td>
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<td>• Helpline number manned 24/7 provided users with immediate access to credible support</td>
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<table>
<thead>
<tr>
<th>What could have been better</th>
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<tbody>
<tr>
<td>• Difficult for team of 5 to manage go live on one site whilst still supporting the other site BUT we did manage! Ideally team needed to have additional 1 to 2 members</td>
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<tr>
<td>• More involvement from Pharmacy staff at go live on the wards</td>
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# Project Resources – Clinical Lead

## What worked well

- Urology Consultant who provided clinical credibility for the project
- Chair of Clinical Advisory Group (CAG), ensuring the group fulfilled their quality assurance role for the project – lots of value in allowing staff to discuss their concerns and input to configuration decisions
- Established CAG sub-groups to discuss specific issues – options taken back to CAG for decision
- Acted as link between CAG, Project Board and Project Team
- Securing engagement from all clinical staff roles
- Part of team visiting other sites – gained useful insight to be able to share with colleagues, particularly in relation to theatres
- Presentation at specific meetings such as Medical Staff Committees
- Introduced team members into departments that were otherwise difficult to gain entry to
- Lead Anaesthetist vital in securing buy in from her colleagues – key part of team in building protocols required for theatre implementation

## What could have been better

- Face to face CAG meetings – difficult to get the time right; only held meetings when decisions needed to be made otherwise email update sent
## What happened

The Project Board agreed EPMA training should be mandatory for all users. eLearning modules, including an assessment, were developed and they sit on platform which is accessible outside the trust network. Before a logon is issued doctors need to complete 2 Prescribing modules and nurses need to complete 2 Medicines Administration modules. Nurses working under PGDs also need to complete the Prescribing modules. All agency nurses also must complete the training before working at the Trust and where possible locum doctors.

## What worked well

- Efficient way to get a large number of staff through training
- Ability to monitor who has done the training – daily updates sent to ward managers prior to go live date. Team had access to the rosters to check that all shifts were covered by EPMA trained staff for the first week.
- EPMA team nurses spent time on the wards providing one to one support with training – helped with IT resistant staff.
- Single or double sided training guides produced, available via intranet and some laminated and attached to drug trolley.
- EPMA trouble shooting guide produced and attached to drug trolley focusing on how to resolve common IT and other issues.
- Agreed process with Temporary Staffing for agency nurses and locums to get access to the training before doing their first shift.
- EPMA set up being used in the Simulation Suite as part of their training.
- Development of electronic prescribing assessment for junior doctor intake in August 2016.
## Training & Access to EPMA (Cont’d)

### What could have been better

- Training frustrating for users due to single and double clicking set-up. Difficult to replicate JAC in a static screen training system.
- Failure of on-line training to always record update scores which meant users had to do the assessment again in order to get access to EPMA. User problems with browsers/pop up blocking doing the training on non Trust computers, particularly a problem with agency nurses.
- Training could have covered more but would have made it very long – hard to get the balance right.
- Lots of nurses don’t have Trust email account so couldn’t set up their own training account – EPMA team had to do bulk of training account set up and still have to do this.
- Locums are commonly using the system untrained and like many Trusts we do not have an answer to this issue.
- Locums not using the EPMA system if booked at short notice – don’t do the training because no time available to do it and therefore use paper charts.
- Lots of consultants took a long time to complete their EPMA training.
- Allowing access to a dedicated training system account so users could ‘play’ at prescribing and administering.
## Go Live Support

### What happened

Two wards per week went live with first electronic drug round usually taking place at lunchtime on Tuesday for Ward 1 and Wednesday for Ward 2. Where possible, wards next to one another went live in the same week. Theatres went live at the beginning of the day. Maternity ward went live before Delivery Suite. Floor walking support provided for a week to all areas going live.

### What worked well

- Providing floor walking support – most nurses accompanied on their first drug round
- EPMA team worked early, mid and late shifts covering wards from 0730-midnight with late shift covering On Call overnight
- EPMA Team Nurse covering overnights on Emergency Floor at Worthing – easier to manage a large area (60+ beds)
- Team member attended ward huddle on go live day/week providing progress report from team perspective. It was also a good opportunity to hear about issues
- Competent, frequently used agency staff helped to provide support on wards going live as they “had used it before” on a LIVE ward
What could have been better

- Team had to get nurses logged on with their smartcards – most nurses hadn’t used them before EPMA. The team had to support them setting up SSO and generally support SSO/Smartcard issues
- Poor mobile phone reception on some wards so difficult to cover On Call whilst doing late working on wards
- Team quickly needed to become ‘IT’ experts – all problems with devices, etc became EPMA problems - poor IT skills among some nursing staff
- Team members not prepared for level of On Call support required
- Availability of and process to manage the distribution of SSO cards for locum doctors and agency nurses
- As agency nurses do not have SSO cards and therefore use generic ward logons to log on to a computer before logging into EPMA. Lots of ward logons became locked thus preventing anyone from using the generic ward logon
## Equipment & IT

### What happened

New standard drug trolley, with laptops was introduced to all wards, replacing old style drug trolleys. Average of 3-4 required per ward. One COW per ward for doctors to use. SSO devices as standard. JAC installed on all existing PCs in area going live. In theatres a mini PC on an arm was attached to the anaesthetic machines.

### What worked well

- Two styles of drug trolley trialled on four Early Adopter wards for 4 months. Staff from these wards were encouraged to visit one another’s wards in order to evaluate drug trolleys. Feedback received used to inform choice of trolley.
- Walking the wards with Estates to identify where additional power sockets were required; detailed planning to ensure sockets available before go live.
- New equipment was delivered to the ward well ahead of go live – this gave staff time to get used to it AND let them know the system was really coming.
- IT built the PCs, EPMA team tested them and then tested them again in situ – helped reduce problems on go live day.
- Single IT resource doing PC build for early phases gave us consistent build.
- Explaining to the IT engineers what the project was about so they understand impact of on users if the IT is not working.
- SSO good for most people but also comes with problems, ie locums with generic account access using the system with no training.
- Setting up interface alerts so the EPMA team members are emailed if the interfaces between PAS and JAC fails. Allows the team to proactively manage the system in the event of an interface issue.
### What could have been better

- Not enough power sockets on wards – installation work had to be paid for but was not part of the original business case
- Problems with Kiosk logons/generic ward logons – frustrating for EPMA team who had to fix general IT issues
- Not enough equipment or right spec for some – budget and system constraints
- Issues with locum SSO cards – left to EPMA to sort if cards not available, etc. Clear process developed by IT for management of these cards but not enforced or used by the wards
- Issues with SSO and witnessing controlled drug administration – still needs work
- JAC install on new PCs – inconsistent build; EPMA not advised of new asset IDs. Process developed and agreed with IT re EPMA and PC build
- Out of hours interface support – not 24 hours at the beginning of the project
# Communications

## What happened

Intranet pages set up. Standard communications messages sent out in run up to go live and post go live. Attended as many meetings as possible. Explained what the system would give clinicians

## What Worked Well

- Displaying posters on wards reminding staff about go live – also informing patients and families
- Putting up training details posters in staff rest rooms and the back of staff toilet doors
- Meeting with ward manager and ward staff when planning go live date – take away the fear
- Attending face to face meetings with clinicians – clinical governance, physicians meetings, etc
- Targeting junior doctors - slots on education sessions before and after go live.
- Keeping matrons and ward managers updated with go live progress
- Walking around the hospital wearing EPMA shirts reminded staff to ask questions about the system
- Single contact number for support

## What could have been better

- Set up on line forum to allow users to provide feedback – none received!
- Email used to remind doctors to complete their training – not best way to communicate – difficult to engage with them. Also involved Operations Directors
- Divisional representation good at Project Board but ownership less so
### Reporting

#### What happened

Some quick reports available via EPMA System Manager. Larger reports and ones to be made available to wide audience written by Systems Development Team. Still lots of scope to develop reports.

#### What worked well

- Developing a set of reports to track ADTs on PAS v ADTs on JAC – these allowed us to monitor any issues and action if necessary
- Using expertise of Systems Development Team to bring data from different systems together
- Using tested methods of share data amongst Pharmacy staff
- Quick reports/alerts built by EPMA System Manager and circulated via automated email
- VTE daily and monthly reporting – consistently over 95% per month

#### What could have been better

- Business case to include a dedicated reporting resource for a fixed term – getting access to data in a new system is key to improving/informing practice and realising the benefits
- System implementation has gone well but still lots of opportunities to be got from the system but these rely on reporting
## System Configuration & Testing

### What happened

System Configuration done by team of 3 plus a Band 2 doing the bulk of drug database build. All project team members tested the system. Specific part of system (ie theatre protocols) were tested by relevant staff from that department.

### What worked well

- Having specialist input into the configuration, ie anaesthetist for theatre protocols
- Specialists doing the testing, eg micro pharmacists, anaesthetists, etc
- In many cases had in date protocols from which data sets could be produced

### What could have been better

- Some conflict with availability of interface team and test environments
- Only one person could access drug database at a time (system constraint)
- System training for configuration from JAC relied on a ‘perfect’ patient
- Differing work practices across the sites. In some cases unable to gain consensus
## Benefits Realisation

### What happened

| Small number of cash releasing benefits and lots of qualitative benefits identified as part of the business case. However they are not available from Day 1 as they need new ways of working to bed in. Post go live additional benefits have been identified and reports have been developed which track data to allow benchmarking to do done immediately post go live and tracked thereafter |

### What could have been better

- Not enough baseline measurements taken ‘pre-implementation’ – makes it difficult to demonstrate any improvement / benefit
## Business As Usual Support

### What needs to be considered

- Long term plan for system support – team of 5 supporting EPMA 24/7. System support needs to be part of what the hospital does as it moves from paper to electronic. Support roles require different skills – basic system support and specialist JAC/Pharmacy knowledge.
- Battery replacement programme needed for laptops on drug trolleys – batteries started to degrade 12 months after being put on wards.
- Clear agreement on who, ward or IT, pays for spares and repairs for drug trolleys and laptops.
- Introducing electronic prescribing assessment for junior doctors – this was done for the first time in August 2016 and all parties agreed it was successful.
- Business Continuity process essential to manage unplanned downtime. Consideration needs to be given to different areas particularly if they are on different sites.
- Regular reminder training sessions for the EPMA team in how to use the Emergency Chart Production system (used in business continuity downtime procedure).
- Continuing IT role – management of interfaces and any issues; timely fixes for EPMA equipment.
- Setting up Clinical Decision Group to monitor use of system, investigate and recommend changes/enhancements to configuration and system set-up.