

Read how JAC are helping  
**Heart of England NHS  
Foundation Trust** extend  
the reach of their medicines  
management systems through  
implementing **EPMA for  
a large multi-site Trust.**

**Electronic Prescribing and Beyond**

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in association with



MEDICINES MANAGEMENT

**“We’ve gained real added value by unlocking the potential of EPMA and have realised even more benefits by accessing the wealth of patient data stored in the system.”**

**Niall Poole MRPharmS** Electronic Prescribing Project Manager  
Heart of England NHS Foundation Trust

#### **Customer needs met**

- **Trust-wide roll-out of Electronic Prescribing well advanced**
- **Improved patient safety through complete, unambiguous prescriptions**
- **Using electronic prescribing data as a powerful audit & reporting tool**
- **Plans for closer control of ward medicine stocks**
- **Enhanced patient experience**

#### **Executive summary**

Heart of England NHS Foundation Trust has worked with JAC to successfully deploy Electronic Prescribing and Medicines Administration (EPMA) at Birmingham’s Heartlands Hospital. EPMA is now active on seven surgical wards and their associated theatres. The

deployment will extend to 24 wards (including non-surgical) by January 2009, and across the Trust’s Solihull and Good Hope Hospitals by the end of 2009.

At Heartlands Hospital, JAC’s EPMA system has automated key processes, reduced prescribing and drug administration errors, and improved staff efficiency. Furthermore, together with JAC, the Trust’s electronic prescribing project team is also using powerful auditing and reporting tools to help key staff, such as pharmacists, doctors, clinicians and microbiologists, monitor prescribing and infection control protocols quickly and accurately.

#### **Proving the case for electronic prescribing**

In 2003, in line with then-current Department of Health and National Programme for IT guidelines, the Foundation Trust decided to start its electronic prescribing programme with pharmacist Niall Poole as project manager.

**“The Trust had already been using the JAC Pharmacy Management system for a number of years, and the company’s new EPMA solution fully integrated with it,”** said Niall.

The Heartlands Hospital thoracic surgery ward was chosen for the initial deployment, because the majority of its patients are direct admissions and discharges – in effect making the ward a mini-hospital. This semi-closed environment means minimal inter-ward transfer of patients, cutting the complications and risks inherent in transferring patient records.

**“The initial goal was to prove the safety benefits of EPMA, and to explore the impact of its use on all ward staff – nurses, doctors, pharmacists and others,”** said Niall.

**“We saw quickly the benefits of better accuracy and clarity of prescriptions, reduced paperwork and better audit trails using the JAC system. Staff also warmed to the system, especially nurses, as they were able to administer medicines and do more at the patient’s bedside, using laptop computers on the Trust’s wireless network.”**

**“We found that nurses’ acceptance of the system was a key factor, as nursing staff have wider experience of EPMA’s front-line use. This success also helped us build the case for wider deployment of e-prescribing.”**

### In practice – rolling out across 7 wards & theatres

The initial EPMA deployment on the thoracic ward ran for two years, to mid-2005. During this time, Niall's project team built a strong quality case for widespread EPMA deployment.

**“All users on the thoracic ward experienced the benefits of better management, consistency and error reduction, which were key to convincing the Trust Board that EPMA should be rolled out widely,”** said Niall.

According to Niall, the e-prescribing case was based on realising three core benefits:

#### 1 Clarity and quality of prescription

E-prescribing's accuracy, compliance in filling out prescription forms, audit trails, avoidance of duplication, and reduction of interpretation errors were the primary driver for EPMA rollout. Furthermore, it ensures that only those drugs on the medicines index can be prescribed, enabling formulary management.

#### 2 Faster TTA process

“The JAC solution picks up the patient discharge letter automatically, and helps generate the patient's To Take Away (TTA) prescription, accelerating the discharge process and removing possible transcription errors. It means the patient can go home without unnecessary delay, which improves their experience,” said Niall.

#### 3 Control of ward stocks

“As EPMA also integrates with the Pharmacy Management system, we plan to implement semi-automated stock control for medicines. This will reduce the need for manual stock-checking on wards, and help to free up staff time,” added Niall.

Based on the quality case, EPMA was then deployed in the ENT ward and theatre in 2005, where it enjoyed similar acceptance and success. The e-prescribing rollout has continued, with the JAC solution now live on seven wards and their theatres in the Heartlands Hospital.

#### Audits add value

From using EPMA on the thoracic ward, Niall's project team realised the wealth of patient data as well as prescribing and administration records accruing in the system could also be used to benefit other functions on the ward.

The team believed the EPMA data, which was previously available only on paper records, could help provide quick answers to questions about protocols and treatments, both to review previous practice and improve future care.

To explore this, the project team – with advice from JAC – developed a reporting tool for thoracic clinicians that could access and explore EPMA data in the JAC system, and use it together with data from other systems to conduct in-depth audits.

Prior to EPMA deployment, this type of audit would involve extracting prescribing data from paper forms, reviewing notes and drug charts. From previous audits done in this way, the Trust estimated around 20 minutes per patient was needed to decipher drug charts, collate data and input it to a spreadsheet for analysis. Even for a 100-patient audit, this would mean 33 hours of work for data collection alone – and furthermore, with risks of loss of data quality or interpretation errors.

The project team, with advice and support from JAC, were able to export and view the data from EPMA using Crystal Reports, which can derive values and display results in a format that is easily manipulated.

**“Using this method to access the JAC database, we found the time needed for data collection was cut significantly. Audits that would have taken several days could now be done in minutes, enabling EPMA data to be used as an investigative tool to help identify historic issues and improve practice,”** said Niall.

#### Reporting benefits – infection control

Based on this initial experience of using EPMA data for retrospective auditing, Niall Poole and his team looked to develop a reporting solution that would help clinicians with day-to-day tasks and assessments, using the current, up to date information from each ward.

To achieve this, the team, again with input and support from JAC, developed a web-based tool that would take specific data from the EPMA system and present it to authorised staff, including ward pharmacists and microbiologists.

Information is updated hourly so that, for example, pharmacists can access their ward's web page and see which patients have TTA medication prescribed; which have new or changed prescriptions requiring a pharmacist's check; and which have discontinued prescriptions or missed doses in the last 24 hours, or outstanding pharmacy interventions.

Similarly, microbiologists can review current antibiotic prescriptions and histories from their own web reporting pages, giving them an at-a-glance overview of patients' current status, with alerts included for specific antibiotics. This gives in-depth analysis and reporting abilities.

The team also plans to extend this reporting capability to play a key role in infection control. This will give key staff access to data on which patients have been prescribed eradication therapy for MRSA, when the diagnosis was made, and how quickly treatment was administered.

Niall says: **"Without e-prescribing in place, this level of information would not be available. It would simply be impossible to collate the data every morning from paper-based systems. Using the data from the JAC system, the web**

**pages help senior staff to quickly assess the situation on the ward, and give rapid access to the patients' EPMA records, lab results and the Trust's EPR system. This enables more timely action and responses."**

### **E-prescribing: the future**

The JAC EPMA solution will be deployed on 24 wards and their theatres in Heartlands Hospital by the start of 2009, and rollout is scheduled for completion in the Trust's Solihull and Good Hope Hospitals by December 2009 – extending the benefits of EPMA Trust-wide.

Niall also intends to further develop web-based daily reporting capabilities for staff. Planned refinements include the ability to cross-reference and overlay data sets, and automatically flag up patients with particular needs or requiring attention, such as those taking antibiotic combinations, to give more granular reporting.

Niall said: **"Working with JAC to access and exploit the rich data in EPMA has given us tremendous value, enabling us to study how drug prescribing and administration impacts on other areas of practice. This data, together with information from other relevant patient information systems, helps us audit and improve our techniques and protocols, and helps clinicians make fully-informed decisions – so we know we are doing the right thing."**

### **About JAC's EPMA system**

JAC has the largest installed base of Electronic Prescribing and Medicines Administration (EPMA) systems in UK hospitals. These systems improve patient safety by reducing prescribing and administration mistakes that could result in medication errors and adverse drug events.

EPMA also facilitates wider improvements in clinical practice, including: reductions in paperwork and transcriptions; improved audit trails for medication; performance monitoring and intelligence; enhanced reporting capability to review practice, improve future care and deliver management and financial information such as reporting for PbR; greater consistency and continuity of care between primary and secondary care settings; and more effective communication between hospital departments and pharmacies.

The system incorporates the UK's leading drug database, to support safe and effective electronic prescribing through its clinical checking. This allows the system to check for drug-drug interactions, sensitivities, drug doubling and duplicate therapy, therefore reducing the risk of medication errors and increasing patient safety.

**Find out how JAC's electronic prescribing solution can deliver measurable benefits to your organisation.**

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