JAC Computer Services Ltd. is a subsidiary of Mediware Information systems

Targeting the four pressure points of medication errors in hospitals

Every patient who is prescribed medication is exposed to the risk of medication errors. It is reported that one in six patients will experience an event during a stay in hospital which could cause a medication error. The four points that hold the greatest risk of medication errors are:

- At the point of prescribing
- During transcription of the prescription and supply of the drug
- While the drug is being administered
- As a result of incorrect or incomplete discharge information to the GP

In December 2001 the Audit Commission published "A spoonful of Sugar" which stated that medication errors happen too often and their effects on the patients and the NHS can be profound. Amongst the recommendations was to use IT technology in implementing Electronic Prescribing and the use of automated dispensing robots.

JAC has actively put these recommendations into practise with the development of its Electronic Prescribing and Medicines Administration (EPMA) system as part of an Integrated Medicines Management solution.

As a result, JAC now has the largest installed base of EPMA systems in UK Hospitals. In addition, over 50% of our pharmacy-customer base is using one or more dispensing robots as an integral part of their medicines management systems.

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At the point of prescribing

The JAC solution enables the clinician to prescribe at the bedside with the patient's details and full medication history displayed. Drugs are selected by the clinician from a single, central drug file which is matched to the hospital formulary. Default route, dose and frequency information is pre-configured by the pharmacy department to reduce the risk of errors.

The EPMA system can also incorporate clinical decision support; providing warnings to prescribers at the point of care of drug allergies, drug-drug interactions, therapeutic duplicates etc.

During transcription of the prescription and supply of the drug

The JAC solution does away with transcription errors through automatic, electronic communication of prescriptions between the EPMA and Pharmacy Stock Control (PSC) systems. Prescribed items cannot be dispensed until the prescription has been electronically verified by a pharmacist – who has the added advantage of being able to view the patient's entire prescription (including PODs etc) and medication history.

Once verified, the prescription is dispensed, again without any transcription, and the use of a single drug file in both JAC's EPMA and PSC systems ensures that no matching errors occur. Electronic selection, labelling and dispensing of items by using a dispensing robot (without manual intervention) further reduces errors during the supply process.

While the drug is being administered

As the majority of medication errors in hospitals take place during the administration process, the use of an integrated Medicines Administration system with e-prescribing can have a far greater impact on reducing medication errors than e-prescribing alone.

Nurses using JAC's EPMA system are presented at the patient's bedside with a clear and legible electronic drug chart. The information clearly identifies the patient, using patient wristband barcode scanning where in use, what medications are due, what doses are required and information on previously administered doses. The colour of pharmacist-verified prescriptions and unverified prescriptions differ to provide an additional and immediate visual aid for nurses and remove ambiguity over administration directions.

As a result of incorrect or incomplete discharge information to the GP

Whether using JAC's full Medicines Management system or just the Ward Medicines Management module within JAC's PSC system, an Immediate Discharge Summary letter for a patient's GP can be produced. This letter can be configured to contain various details from a patient's medication history, including what drugs the patient had been admitted on, which drugs were stopped and the reasons for stopping them, what drugs were prescribed and given, and what drugs the patient was discharged on.

This information can be printed out as a clear and legible letter or electronically transferred to either the hospital's discharge letter system or directly to a GP's IT system via a portal.