East of England Neonatal ODN
(Hosted by Cambridge University Hospitals)

Supporting statement for Trusts implementing Electronic Prescribing and Medicines Administration for Neonatal and Paediatric Patients

Executive summary

There are currently a number of suppliers of Electronic Prescribing and Medicines Administration (EPMA) Systems available to the NHS. All of which provide a variety of options available for allowing prescribing and administration of medicines to patients. However, some of these current EPMA systems have not been fully developed in order to manage the complexity of prescribing and drug administration in neonates.

The East of England Neonatal ODN encourages Trusts implementing EPMA to ensure that any EPMA system that is introduced to a Trust meets safe requirements for prescribing of **all** medicines to the neonatal and paediatric population.

Recommendations

1. Trusts should not introduce an EPMA system where prescribing for all groups of patients (neonates, paediatric and adults) cannot be fully undertaken for **all** medications including complex drug infusions.
2. As a minimum, when Trusts are looking to implement EPMA, a neonatal and paediatric doctor, nurse and pharmacist specialising in neonate and paediatrics, should be involved in system review and discussions around choice of EPMA system
3. Trusts that have implemented EPMA should, as per the GIRFT Neonatology report, assess whether it is suitable for neonatal use and if not review whether it can be suitably adjusted and if this is not possible look at an alternative system. This should be included on their local risk register.
4. Resources should be included within any business case for all areas of on-going support and development of an EPMA system, in order to be reactive in a timely manner to new developments and changes in how neonatal and paediatric patients are treated and update the EPMA system accordingly.
5. EPMA systems used for neonatal and paediatric prescribing and administration should meet the prescribing and administration recommendations in this document and also BAPM recommendations.

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Background

Electronic Prescribing and Medication Administration (EPMA) is already established in some East of England Trusts, with a variety of system providers in place. EPMA can provide a number of advantages for Trusts in how they work, prescribe and administer medicines to patients, with immediate access for prescribing and administration of medicines, prescription legibility, providing standardisation, conforming with Trust formularies, decision support etc

The Neonatology GIRFT report recommends roll out of EPMA for neonatal care and recognises that this will require a high level of involvement from the neonatology team and neonatal pharmacists to ensure that the design is fit for purpose. It also recommends that where EPMA has been implemented, but has been assessed as not safe for neonatal use that the system must be suitably adapted or an alternative product used.

EPMA systems vary in their ability to manage prescribing for all groups of patients (neonates, paediatrics and adults) within a Trust. Some systems have already been procured and are in use in the East of England, with some felt to be unsuitable for prescribing for neonatal and paediatric patients, or unable to cope with all aspects of neonatal and paediatric prescribing, resulting in dual prescribing systems in place, with some prescribing within an EPMA system and some on paper prescription charts. This has the potential to lead to medication related incidents occurring due to having to switch between paper and electronic records. Some Trusts are currently in the process of looking to implement EPMA

The British Association of Perinatal Medicine (BAPM) recently published a Toolkit for Implementation of a Neonatal Electronic Record which helps identify some considerations for Trusts procuring an EPMA system.

The East of England Neonatal ODN encourages neonatal centres looking to introduce EPMA to their units, to engage with their local Trust procurement process to ensure that the EPMA system is suitable for use in these vulnerable patient groups.

Recommendations

1. Trusts should not introduce an EPMA system where prescribing for all groups of patients (neonates, paediatric and adults) cannot be fully undertaken for **all** medications including complex drug infusions. Only a single EPMA system should be used for prescribing of **all** medications.
2. As a minimum, when Trusts are looking to implement EPMA a neonatal and paediatric doctor, nurse and pharmacist specialising in neonates and paediatrics should be involved in system review and discussions around choice of EPMA system

3. Trusts that have implemented EPMA should, as per the GIRFT Neonatology report, assess whether it is suitable for neonatal use and if not review whether it can be suitably adjusted and if this is not possible look at an alternative system. Is should be included on their local risk register.
4. Resources should be included within any business case for on-going support and development of an EPMA system, in order to be reactive in a timely manner to new developments and changes in how neonatal and paediatric patients are treated.
5. EPMA systems should meet the prescribing and administration recommendations (Appendix 1) for neonates and paediatrics.

References

1. Implementing a Neonatal Electronic Health Record The British Association of Perinatal Medicine. Feb 2024
2. Neonatology. Getting it right first time (GIRFT) Programme National Speciality Report NHSE April 2022
3. NHS England » Supporting clinical decisions with health information technology Aug 2023

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Appendix 1 – EPMA requirements for neonatal and paediatric patients

THEME	EPMA REQUIREMENTS
Use of weights for dosing	An EPMA system needs to manage different weights recorded for neonatal and paediatric patients and how these are used to calculate doses e.g. actual weight, estimated weight and working weight.
Dose rounding	Dose rounding must be appropriate for neonatal and paediatric patients, in order that doses can accurately be measured within safe drug dependant parameters
Warning alerts	An EPMA system must have a warning alert system that is practical for users. This must include in-built dosing parameters to allow for warnings where a significantly incorrect dose has been prescribed; warnings for duplicate prescriptions; warnings for significant interactions.
Drug infusions	An EPMA system needs to allow prescribing of intravenous drug infusions (e.g. morphine, inotropes) to allow prescribing in line with the regional neonatal drug monographs and local paediatric guidelines. The prescription builds must allow for different concentration options and diluents associated with each drug. The administration record must also allow nursing staff to document details of the infusion rate in both ml/hr and actual dose being administered.
Intravenous fluids / Parenteral nutrition	An EPMA system must allow intravenous fluids (including additives) to be prescribed for babies based on their fluid volume requirements. Ideally an EPMA system should be able to manage calculations regarding how much additive to add into an IV fluid solution. An EPMA system must allow parenteral nutrition to be prescribed to allow administration to be documented on a Medication Administration Record (MAR).
Complex prescriptions	An EPMA system must be able to allow complex prescriptions for neonates and paediatrics to be prescribed e.g. Insulin variable rate infusions, steroid weaning regimens.
Timing / scheduling of medicines	An EPMA system must be flexible enough to fit into the clinical practice of a neonatal or paediatric unit.
Formulary and prescription build	An EPMA system must allow for specific prescription builds and drug choice options based on neonatal / paediatric clinical team users. Prescribers must not be expected to adapt prescriptions that have been designed for other patient groups (e.g. adults) in the Trust or have options for drug builds inappropriate for use in neonates or paediatrics.
Ad-hoc prescribing instructions	Where possible an EPMA system must allow the addition information related to a prescription in a free-text field. e.g. instructions for how to crush and disperse a tablet in water.

THEME	EPMA REQUIREMENTS
Antimicrobial stewardship	An EPMA system must support antimicrobial stewardship with antibiotic indication included on prescription and prompts for the duration of therapy.
Therapeutic monitoring	An EPMA system must allow medications such as gentamicin to have their prescriptions held whilst awaiting results of blood levels.
Order sets	Where possible an EPMA must allow development of order sets to allow multiple orders for prescriptions and blood tests etc to be placed at the same time.
Drug administration	An EPMA system must have a Medication Administration Record (MAR) which is easy to view, highlights omitted or late medication administration and allows documentation of specific medicines information such as Batch Number for certain drugs (e.g. immunisations, blood products).
	An EPMA system must allow scanning of patient ID bar-codes and ideally also support Bar-code Medicine Administration (BCMA) during medicines administration.
Fluid balance	An EPMA system must be able to use the documentation from the MAR to provide fluid input data to be included within the input/output record of fluid balance for the patient.
Integration	An EPMA system must have the ability or potential to integrate with other medical equipment such as ventilators, monitoring observations and drug infusion pumps.