



REPORT

PHARMACY SERVICE PROVISION TO EAST OF ENGLAND NEONATAL UNITS

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Introduction

The Lead Pharmacist for the East of England Neonatal ODN started in post in January 2024. As part of initial scoping work and to acquire information that will be useful for forthcoming projects regarding medicine use in neonates and to provide some initial recommendations for the Neonatal ODN, a survey was sent to all neonatal unit pharmacists in the East of England.

Questions focussed around these areas: -

1. Workforce

The survey requested the following information

- Number of WTE pharmacists at each grade funded for their unit. This would allow an assessment of pharmacy staffing in each unit compared to national staffing standards from the Neonatal and Paediatric Pharmacy Group (NPPG) and as recommended from the GIRFT Neonatology workforce report and by BAPM
- How the pharmacy provision is funded (by pharmacy or by neonatal service)
- Does the pharmacist attend the neonatal ward round
- Does the unit have an independent prescribing pharmacist and if so what areas are they prescribing for.

2. Pharmacy services

The survey requested the following information

- Does the pharmacy service provide a Centralised IV additive service (CIVAS), apart from parenteral nutrition? If so, what product areas does this cover.
- Does the unit have any parent / carer administration schemes in place to train parents on how to administer medicines prior to discharge
- Does the pharmacy routinely prepare TTO medicines in advance of discharge (at least 1 day before discharge)

3. Technology (e-prescribing, Infusion pumps)

The survey requested the following information

- Is e-prescribing used for neonatal prescribing? If so, what system is used and does it meet the required needs of the users.
- What make and model of pump is used for infusions of IV fluid bags / PN and for infusions via syringes.
- If the syringe pump has 'smart pump' features, are these used and who maintains the drug library.

4. IV monograph use

The survey requested the following information

- Which units are using the East of England regional neonatal IV monographs hosted by the Medusa Injectable Medicine website
- If the regional monographs are not used, what are the barriers or reasons for this?

5. Training requirements

The survey requested the following information

- Would unit pharmacists find having some visits from the ODN neonatal pharmacists beneficial (for teaching / peer review shadowing / discussion of practice)? If so what type of support would be useful?

Summary of recommendations

Recommendation	Actions	Owners	Timescale from date of publication
1. Increase staffing level of unit pharmacists in line with national staffing recommendations.	a) To prepare a template business case for each unit to modify locally to support the case for increasing neonatal pharmacist	Lead pharmacist – neonatal ODN	6 months
2. Improve discharge planning of medications to neonates and access to patient information around medications	a) To work with unit pharmacists and nursing leads to develop a process for parent / carer administration of medicines	Lead pharmacist – neonatal ODN OND transitional care group Unit pharmacists Unit nursing leads	12 months
	b) To work with unit pharmacists to review how medicines are prescribed and prepared in advance (>24 hours) of discharge date	Lead pharmacist – neonatal ODN Unit pharmacists	6 months
	c) To review how parent information medicines booklet on Medicines for Children website can be adopted in East of England.	Lead pharmacist – neonatal ODN OND transitional care group Unit pharmacists Unit nursing leads	6 months
3. Ensure roll out of electronic prescribing systems in Trusts are suitable for all aspects of neonatal prescribing	a) Lead pharmacist – neonatal ODN to prepare summary document of aspects that a neonatal e-prescribing system must be able to fulfil to support Trusts looking at EPMA	Lead pharmacist – neonatal ODN	6 months
	b) Neonatal unit to inform Lead pharmacist – neonatal ODN of any plans for Trust to implement e-prescribing (EPMA).	EoE neonatal units	ongoing
	c) Lead pharmacist – neonatal ODN to work with unit pharmacists and clinical/nursing leads to ensure Trust business plan for implementing e-prescribing covers appropriate neonatal prescribing.	Lead pharmacist – neonatal ODN Unit pharmacists Unit medical / nursing leads	ongoing

Recommendation	Actions	Owners	Timescale from date of publication
<p>4. Implement 'smart pump' technology in units that have syringe pumps with this technology available</p>	<p>a) Lead pharmacist – neonatal ODN to obtain drug library template for each syringe pump in EoE and standardise the pump drug libraries used for main drug infusions used in EoE. This will reduce workload for unit pharmacists, who will only be required to review and authorise the drug library locally with their teams.</p>	<p>Lead pharmacist – neonatal ODN Unit pharmacists</p>	<p>6 months from publication of national standard infusion recommendations</p>
	<p>b) Implement national standard infusion concentrations. This will require following actions</p> <ul style="list-style-type: none"> - Phased introduction of drugs - IV monograph updates - Drug library updates - Teaching 	<p>Lead pharmacist – neonatal ODN PaNDR Unit pharmacists / nurses / clinicians ODN PDN</p>	<p>6-24 months from publication of national standard infusion recommendations</p>
<p>5. Improve number of units that are using the regional IV monographs and obtain feedback from users</p>	<p>a) Review usage of IV monographs at ODN peer reviews</p>	<p>Lead pharmacist – neonatal ODN Neonatal ODN peer review teams</p>	<p>Ongoing</p>
	<p>b) Survey users of IV monographs for feedback (with aim to publish at a conference)</p>	<p>Lead pharmacist – neonatal ODN</p>	<p>6 months</p>
<p>6. Training available to all unit pharmacists to support development</p>	<p>a) Lead pharmacist – neonatal ODN will undertake visits to unit pharmacists to understand their training and development needs and also</p>	<p>Lead pharmacist – neonatal ODN</p>	<p>Ongoing but to start within 6 months</p>
	<p>b) WhatsApp group available for unit pharmacists</p>	<p>Lead pharmacist – neonatal ODN</p>	<p>Already in place since survey</p>
	<p>c) Establish regional meetings for unit pharmacists</p>	<p>Lead pharmacist – neonatal ODN</p>	<p>6-12 months</p>

Results

The survey was distributed to pharmacists at all 17 Trusts in East of England where neonatal services are provided.

A response from received from 15 Trusts: -

Addenbrooke's Hospital
Basildon Hospital
Bedford Hospital
Broomfield Hospital
Colchester Hospital
Hinchingbrooke Hospital
Ipswich Hospital
James Paget Hospital
Lister Hospital
Luton and Dunstable Hospital
Norfolk and Norwich Hospital
Peterborough Hospital
Princess Alexandra (Harlow) Hospital
Southend Hospital
Watford Hospital
West Suffolk Hospital

1. Workforce

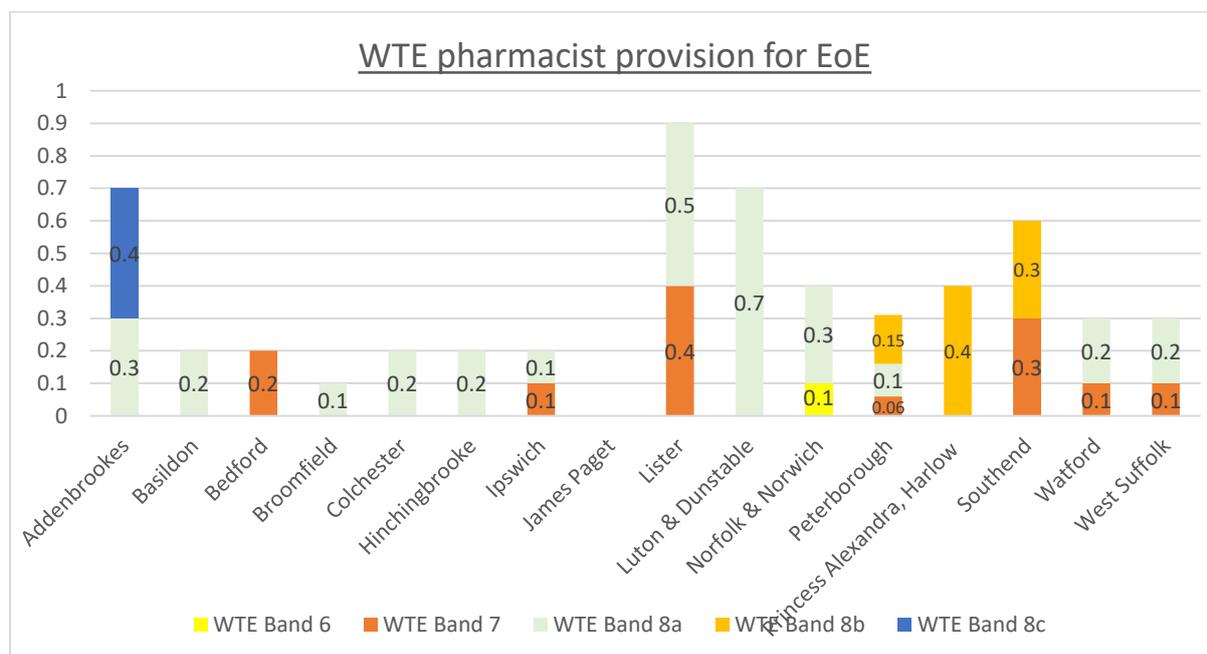
National NPPG staffing standards state the following recommendations

Staffing Recommendations

In centres with neonatal ICU or HDU cots, the lead senior pharmacist time should be funded at Agenda for Change (AFC) Band 8a or equivalent as a minimum. Clinical pharmacist cover can, however, be provided by a Band 7 or equivalent with support from the senior neonatal pharmacist. In centres with only SCBU cots, the lead pharmacist time should be funded at a minimum of AFC Band 7 or equivalent, with appropriate support from a more senior pharmacist as required. In terms of funded time:

- The neonatal pharmacist must have sufficient time allocated to fulfil their specialist role. In practice, a team of individuals is usually required to deliver the clinical pharmacy service to the neonatal service. There should be a minimum of 0.12 whole time equivalent (WTE) pharmacist for a 5 day service (and 0.168 WTE for a 7 day service) for each funded Intensive Care cot, for every two funded High Dependency cots and for every four funded Special Care cots.
 - This staffing resource is required to allow sufficient “non-patient-facing” time to support the full range of clinical pharmacist activities, including (but not limited to) guideline development, medicines governance, multidisciplinary education and training, development and maintenance of electronic prescribing and administration systems, as well as quality improvement work.
 - Where the staffing resource falls short of the recommended level, direct patient care will be prioritised over other activities.
 - A team-based approach helps to ensure service resilience, succession planning and provide the necessary educational and professional support.
 - The specified WTEs include a 20% uplift to enable service continuation during planned and unplanned leave.
- The pharmacist must attend daily multidisciplinary ward rounds
 - Pharmacists working in neonatal care should be encouraged to be active independent prescribers.

From the centres that replied to the survey, the following graph shows the amount of WTE and band of pharmacist funded for those units.



The following graph shows the discrepancy between actual pharmacy provision compared with the expected NPPG staffing standards, based on cot numbers and types in each unit.

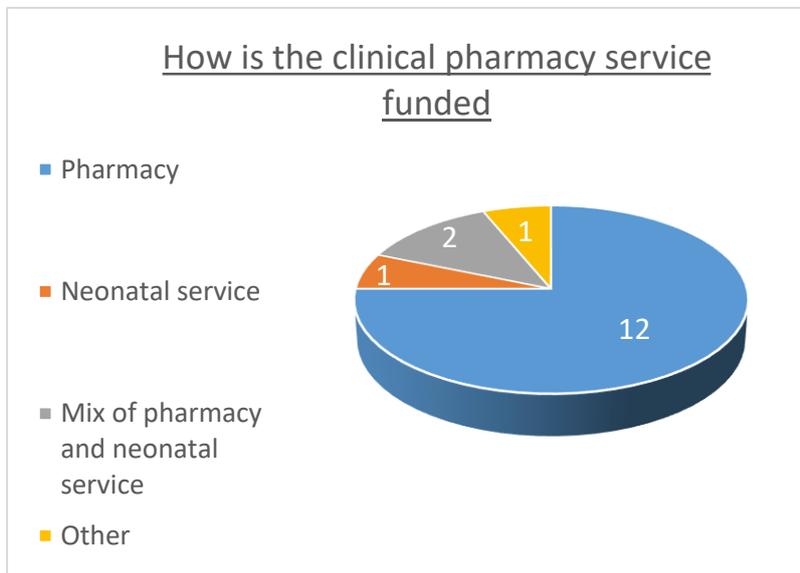


This demonstrates a significant shortfall in pharmacy provision to all of these units. It is particularly concerning that the three NICU's (Addenbrooke's, L&D and N&N) have a significant shortfall in pharmacist provision.

Name of Trust	WTE Staffing requirement (based on NPPG staffing standards)	Actual staffing (WTE)	Deficit (WTE)
Addenbrookes	2.76	0.7	2.06
Basildon	0.99	0.2	0.79
Bedford	0.51	0.2	0.31
Broomfield	0.9	0.1	0.8
Colchester	0.72	0.2	0.52
Hinchingbrooke	0.42	0.2	0.22
Ipswich	0.81	0.2	0.61
James Paget	0.6	0	0.6
Lister	1.56	0.9	0.66
Luton & Dunstable	2.34	0.7	1.64
Norfolk & Norwich	2.01	0.4	1.61
Peterborough	0.93	0.31	0.62
Princess Alexandra (Harlow)	0.78	0.4	0.38
Southend	0.75	0.6	0.15
Watford	1.14	0.3	0.84
West Suffolk	0.48	0.3	0.18
Total	17.7	5.71	11.99

For the 15 units who replied to the survey there should be a total of 16.92 WTE pharmacists based on national standards.

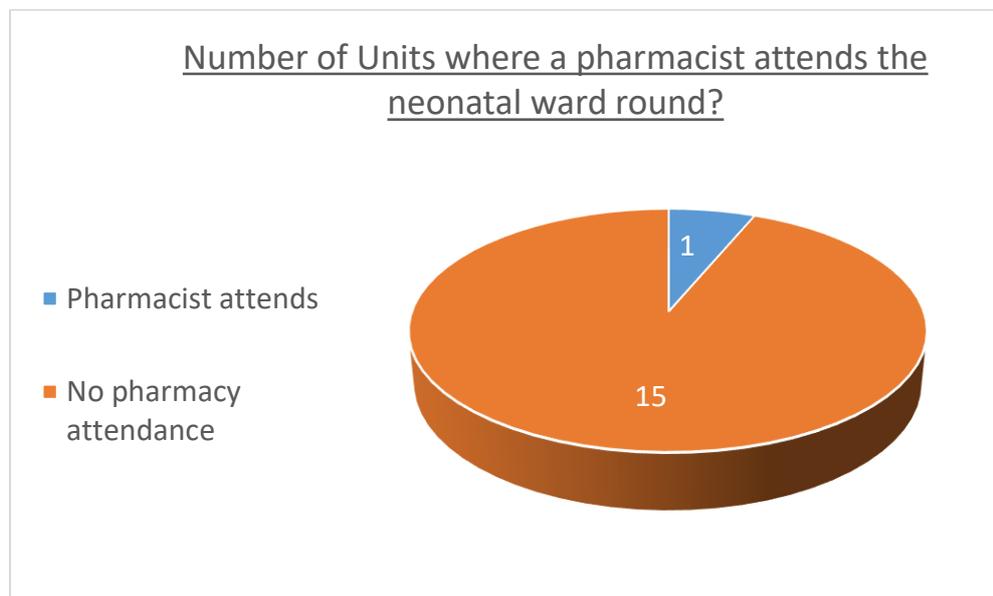
Currently these 14 units have a total of 5.31 WTE pharmacists with a deficit of 11.61 WTE pharmacists



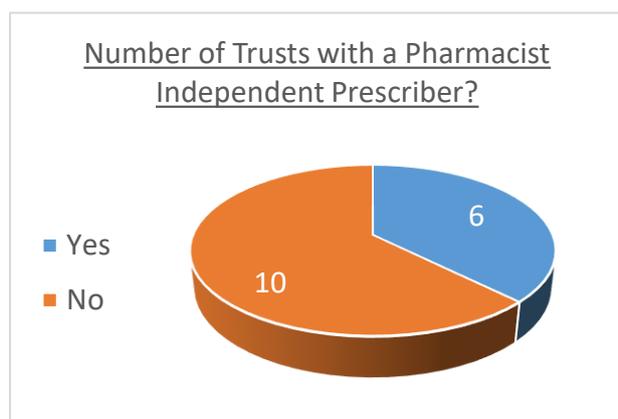
This chart shows how the neonatal clinical pharmacy service is funded. Historically many clinical pharmacy services were funded internally from within the pharmacy budget, however as clinical specialities require more pharmacy input to meet the governance needs these service require, internal funding from specific service areas is now generally required

Pharmacist attendance at ward rounds

In the one unit (Luton & Dunstable) where a pharmacist attends the ward round, this will be only for specific babies where there are many related pharmaceutical issues to be discussed.



Number of Trusts with a Pharmacist Independent Prescriber



6 pharmacist prescribers were prescribing in the following areas: -

- All aspects, particularly including PN and antibiotics
- All aspects, mainly starting vitamins, iron supplements
- Discharge medications (if incorrectly prescribed by medical team), plan to prescribe TPN
- Palivizumab
- Probiotics

1 pharmacist was only using their prescribing qualification on an ad-hoc basis for basic prescriptions and was not an active prescriber.

Workforce summary

The service results show a significant shortfall in WTE pharmacy resource for neonatal units in the East of England. The GIRFT neonatal report highlights drug safety as an area of importance and that medication related events are one of the top three reasons for incident reporting in most neonatal units, particularly in LNUs.

It is good to see a number of pharmacists working as active prescribers within their units. With increased staffing available, it would hopefully be possible for pharmacists to actively attend the neonatal ward round on a regular basis.

Recommendation

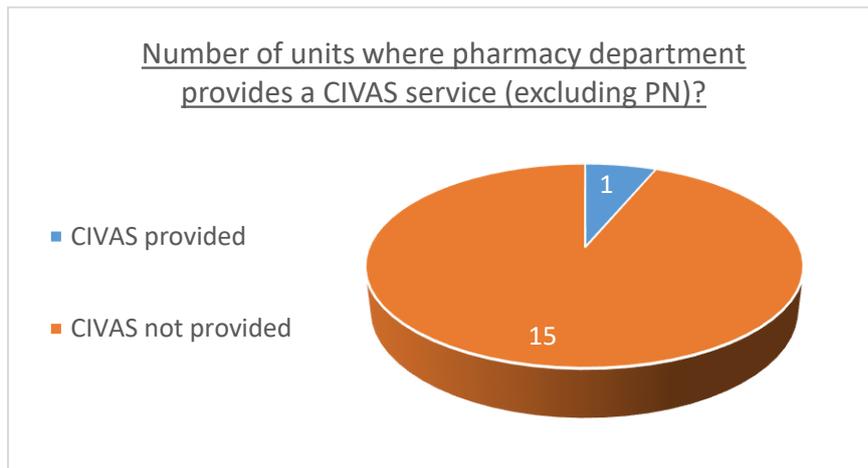
The Lead Pharmacist for neonatal ODN will prepare a template business case that can be used by each unit to support funding for additional pharmacist support.

2. Pharmacy Services

a) Centralised Intravenous Additive Service

The GIRFT Neonatology report recommends that there should be an increase in the use of ready-to-use standardised concentrations of drugs and infusions, prepared in pharmacy aseptic services or by external suppliers, and reduce local drug preparation in neonatal units

The following chart shows the number of pharmacy departments providing a CIVAS service (other than for Parenteral Nutrition).



For this 1 pharmacy department (Addenbrooke's Hospital), standard concentration dinoprostone syringes for infusion are prepared Mon-Fri 9-5.

Ability to provide ready to made products will be limited and difficult to achieve where pharmacy departments do not have a pharmacy aseptic unit, or do not have capacity or resources within their current unit.

The current national aseptic services review is analysing how aseptic services and sterile products are managed. Standardisation of neonatal and paediatric IV infusions and preparation of pre-made products has been discussed as part of this review [NHS England » Assurance of aseptic preparation of medicines](#)

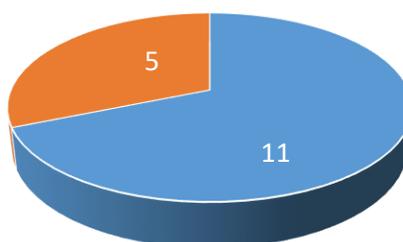
b) Parent / Carer administration schemes and discharge medicines

These schemes allow parents/carers whose babies are in a SCBU environment, to start learning how to administer their baby's medicines before discharge. Very often a baby may be in hospital for several months and then at the point of discharge there is a rush to organise a supply of discharge medicines and quickly explain to the parent / carer how medicine should be administered. A parent / carer administration scheme uses the time on SCBU to start teaching parents / carers how to administer medicines so that they can start to take autonomy for the medicine administration. This also means that the supply of medication is available at the point of discharge without creating any delays to the discharge process. Usually medicines that are administered include vitamins and supplements, iron, diuretics. However if a specialist medication e.g. diazoxide is required, then parents / carers will have the opportunity to learn how to administer this.

The following chart shows the number of units which have a parent / carer administration scheme in place.

Number of units that have a 'Parent/Carer medicine administration scheme in place

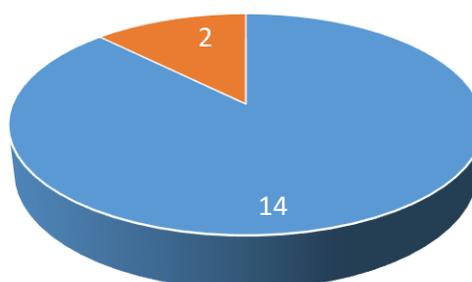
- Parent admin scheme in place
- No Parent admin scheme



The following chart shows the number of units where pharmacy routinely prepare discharge medicines in advance of the discharge date.

Number of units that routinely prepare TTO medicines in advance of discharge

- TTO prepared in advance
- TTO not prepared in advance



Pharmacy service summary

The Lead Pharmacist for neonatal ODN will work with the neonatal ODN transitional care group and with unit pharmacists to investigate how parent / carer administration schemes could be introduced to those units that currently do not do this.

In addition unit pharmacists will be encouraged to work with their teams locally to improve preparation of medications prior to discharge.

Recommendations

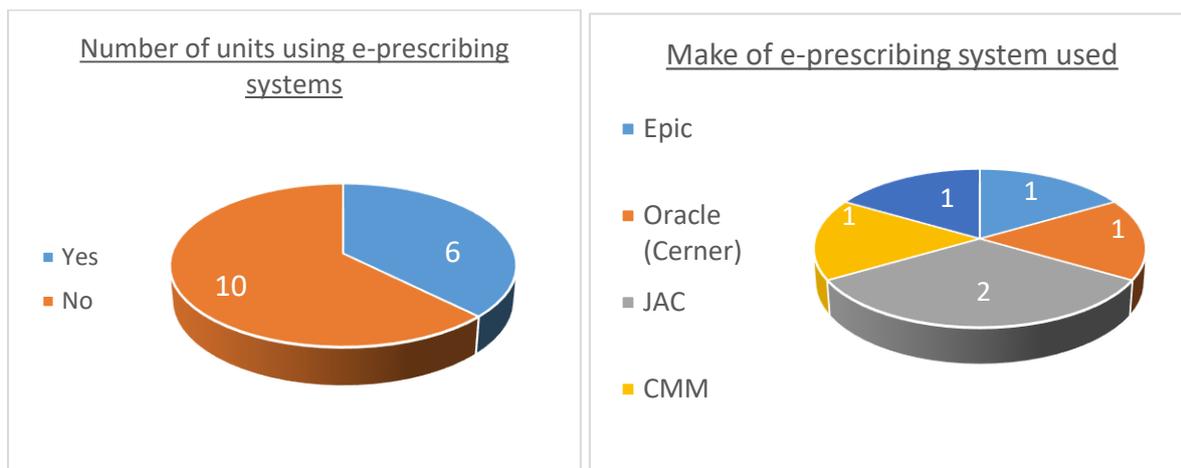
1. Lead ODN pharmacist will work with unit pharmacists and nursing leads to develop a process for parent / carer administration of medicines
2. Lead ODN pharmacist will work with unit pharmacists to review how medicines are prescribed and prepared in advance (>24 hours) of discharge date
3. To review how parent information medicines booklet on Medicines for Children website can be adopted in East of England.

3. Technology (e-prescribing, Infusion pumps)

a) Electronic prescribing

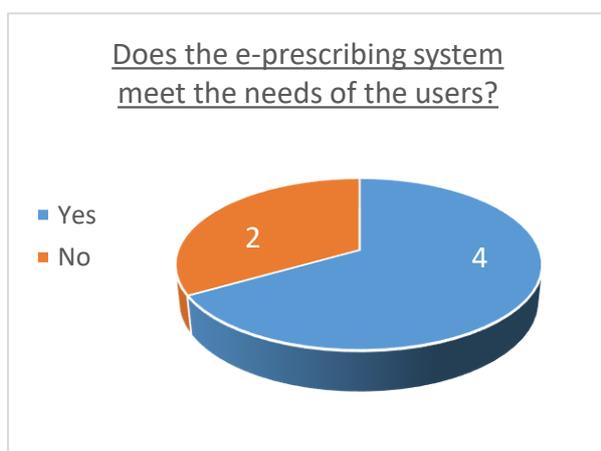
The GIRFT Neonatology report recommends prioritising rolling out suitable electronic prescribing systems for neonatal care. These require a high level of involvement from neonatology teams and neonatal pharmacists to ensure the design is fit for purpose. Where the existing trust prescribing system is not deemed safe for neonatal use, it must be suitably adapted, or an alternative product used.

The following charts show how many units are currently using e-prescribing for neonates and which e-prescribing system is used.



The 6 neonatal units using e-prescribing are: -
 Addenbrooke's Hospital – Epic
 Ipswich Hospital - Badgernet
 James Paget Hospital - CMM
 Norfolk and Norwich Hospital – JAC
 Princess Alexandra (Harlow) Hospital
 West Suffolk Hospital - Oracle (Cerner)

This chart shows how many of the five e-prescribing systems meets the needs of the users



It was noted that the JAC system used in Norfolk and Norwich hospital did not meet the needs of users as it cannot be used for fluids or infusions. At Ipswich Hospital drugs have to be prescribed on the Trust Evolve system for dispensing/GP but the summary is done on Badgernet, so two different systems are in place.

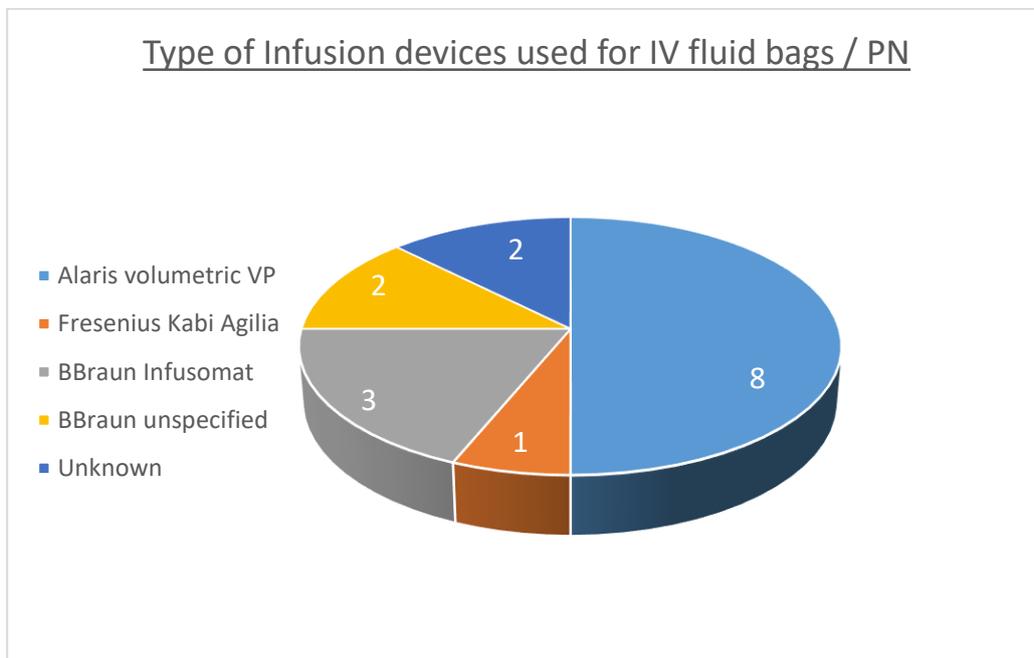
Noted that EPMA is available at 2 out of the 3 Mid and South Essex sites, with roll out currently underway in adults at a third site. The next priority over 3-5 years is for paediatrics and neonates to switch to EPMA. Colchester Hospital currently have a plan for Epic to be rolled out across the Trust in 2025

b) Drug infusion pumps

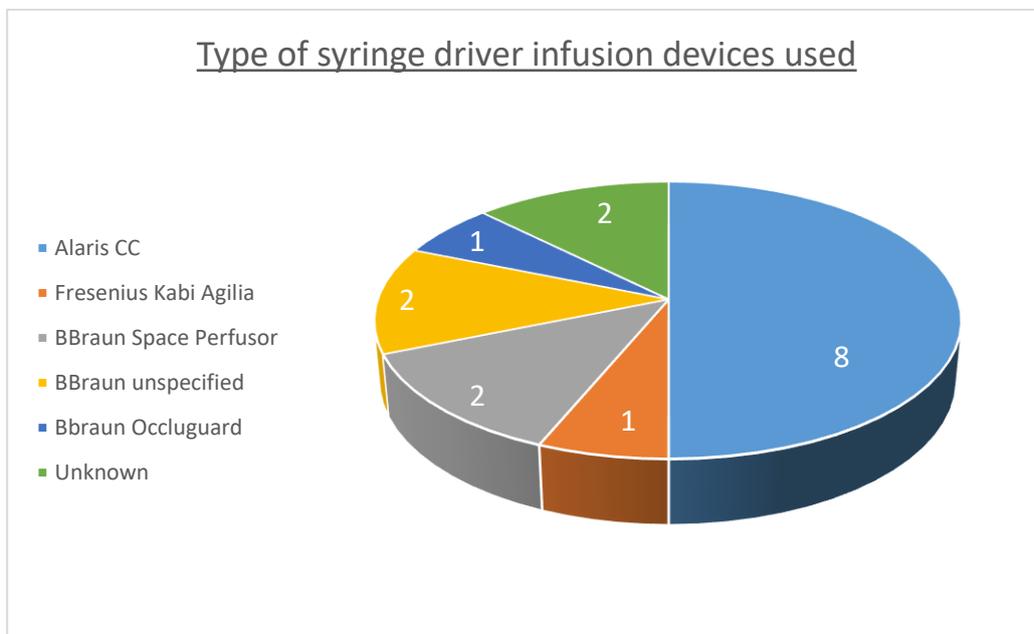
The GIRFT Neonatology report recommends Implementation of smart pump technology in conjunction with advice and recommendations found in HSIB smart pump report and audit the impact on medication errors in neonates.

Use of smart-pump technology goes hand in hand with the implementation of standardised infusions.

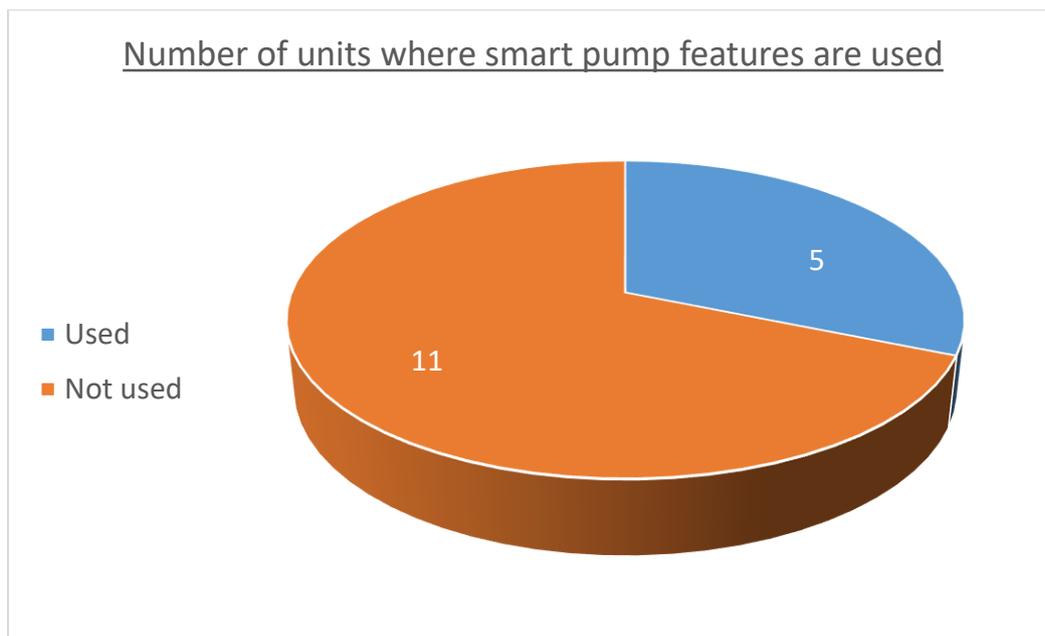
i) What type of infusion pump is used for TPN aqueous solutions and IV fluid bags



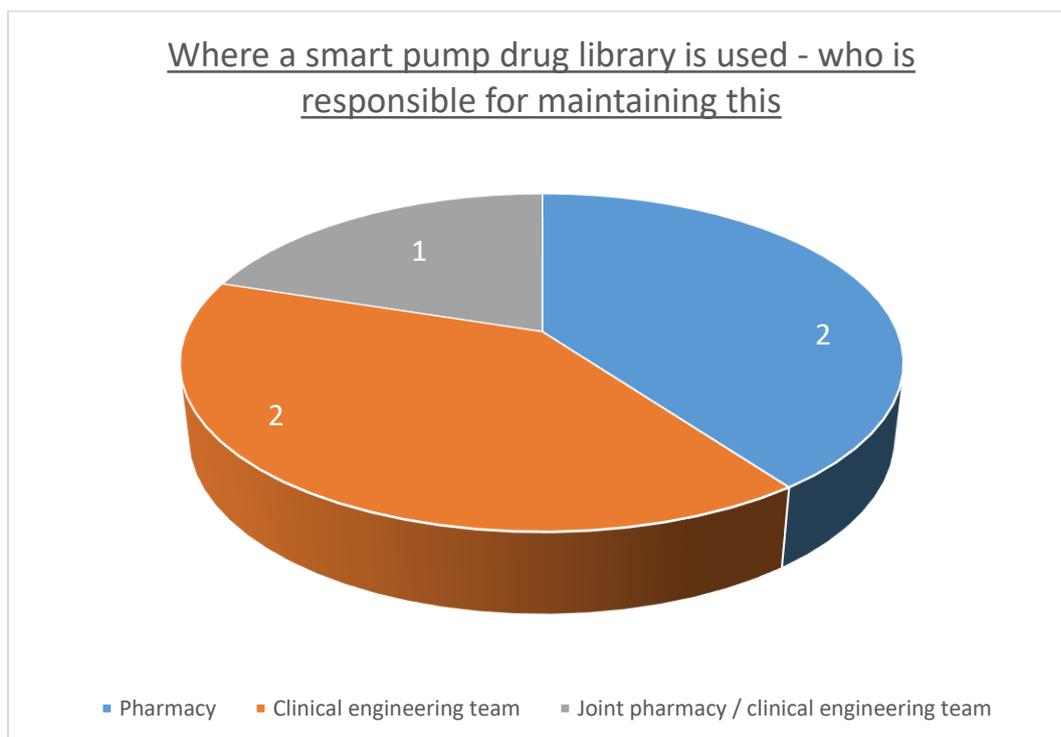
ii) What type of syringe pump is used for infusions of medicine via a syringe



iii) Are 'Smart-pump' feature used in syringe drivers?



iv) Where a 'smart-pump' drug library is used, who is responsible for maintaining this



Technology summary

Use of EPMA is still to be introduced to many of the units in East of England and it is noted that one unit that has e-prescribing is not able to use this for all their prescribing needs.

The recent BAPM toolkit publication – Implementing a neonatal electronic healthcare record, will also help support neonatal e-prescribing requirements.

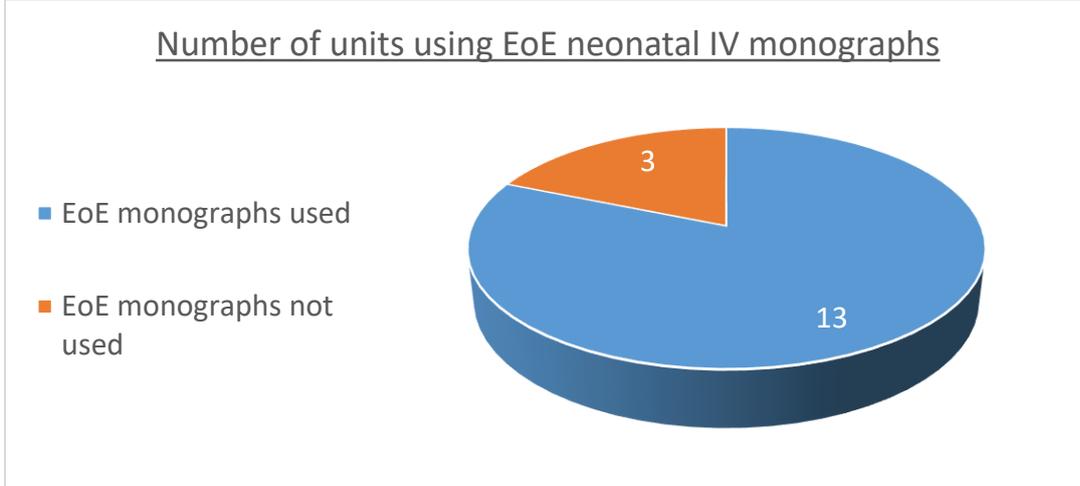
Many units do not appear to be using 'smart-pump' drug library technology within their units. This may be due to lack of resources to manage and maintain the drug library. As the East of England moves towards implementation of standard drug infusions, use of smart-pump drugs libraries will be integral to supporting safe use of drug infusions.

Recommendations

1. Lead ODN pharmacist will prepare summary document of aspects that a neonatal e-prescribing system must be able to fulfil to support Trusts looking at EPMA.
2. Neonatal unit to inform Lead pharmacist – neonatal ODN of any plans for Trust to implement e-prescribing (EPMA).
3. Lead ODN pharmacist to work with unit pharmacists and clinical/nursing leads to ensure Trust business plan for implementing e-prescribing covers appropriate neonatal prescribing.
4. Lead ODN pharmacist to obtain drug library template for each syringe pump in EoE and standardise the pump drug libraries used for main drug infusions used in EoE. This will reduce workload for unit pharmacists, who will only be required to review and authorise the drug library locally with their teams.
5. Implement national standard infusion concentrations. This will require following actions
 - Phased introduction of drugs
 - IV monograph updates
 - Drug library updates

4. IV monograph use

The following chart shows the number of units using the East of England regional IV monographs



The three units not currently using the regional monographs are: -

- Addenbrooke's Hospital – plan to start using March/April 2024
- Luton & Dunstable - The pharmacist is using the EoE monographs. The doses of some drugs e.g. dexamethasone are different to their current regimen. There was also an incident when nurses didn't follow the procedure on the monograph properly ending up with a 4 x overdose.
- Norfolk and Norwich - Have in-house formulary with different layout. Aiming to use network monographs but will need training in-put where there are differences with our current practice.

IV monograph summary

The Lead Pharmacist for neonatal ODN has contacted the pharmacist at L&D to gather more information around the overdose incident and which monograph this related to.

A survey for users of the IV monographs will be developed and circulated to EoE units during 2024 to obtain feedback on use. Following this, the Lead Pharmacist for neonatal ODN will contact other national neonatal pharmacists for their thoughts on expanding these monographs to become a national set of NICU monographs.

IV monograph summary

The 3 NICUs are currently not using the regional IV monographs. Addenbrooke's Hospital plan to start using in March / April and Norfolk & Norwich Hospital are also aiming to use.

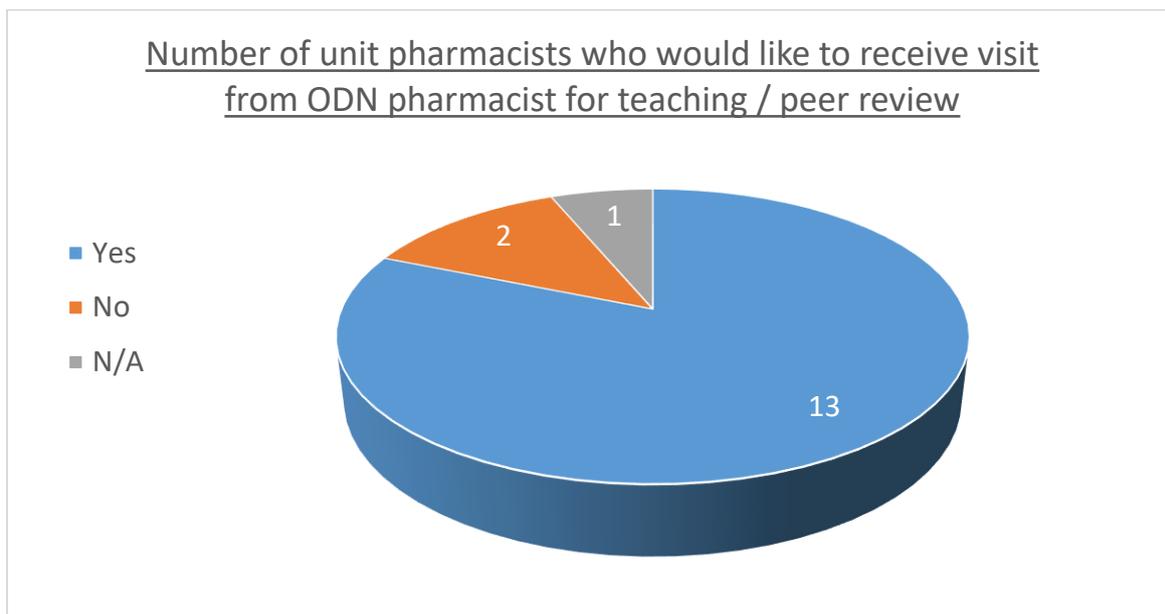
The Lead Pharmacist for neonatal ODN has contacted the pharmacist at L&D to gather more information around the overdose incident and which monograph this related to.

Recommendations

1. Review usage of IV monographs at ODN peer reviews
2. Survey users of IV monographs for feedback (with aim to publish at a conference)

5. Training requirements

The following chart shows the number of unit pharmacists that would like to receive a visit from the Lead ODN pharmacist for teaching/peer review



Nearly all unit pharmacists were interested in the following aspects of support from the Lead ODN pharmacist

- Support with PN pharmaceutical queries
- Peer review support
- Support for new pharmacists in post
- Group training for when regional guidelines are implemented
- Opportunity to visit NICU in tertiary unit to see more complex babies
- Development of training materials for new pharmacists
- PaNDR medicine management processes
- Research
- Guide to oral drugs
- Explore ready-made intubation drugs
- Guideline review

Pharmacist Training summary

All unit pharmacists will benefit from having support from the Lead ODN pharmacist.

Recommendations

1. Lead pharmacist – neonatal ODN will undertake visits to unit pharmacists to understand their training and development needs and also
2. Whatsapp group available for unit pharmacists
3. Establish regional meetings for unit pharmacists

References

1. [Clinical practice guideline. Medication safety: Best practice for effective paediatric ward rounds.](#) RCPCH/NPPG Joint standing committee on medicines. December 2023
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