- Any variations in practice according to the level of care and in the different nations of the UK.

Methods

- Read Literature on neonatal blood culture bottle use to inform questionnaire design.
- Telephone survey Feb–March 2014.
- Interviewee: medical staff or nurse-in-charge only.

Results

- All 204 neonatal units were surveyed.
- Number using single = 197/204 (96.1%); paired =8/204 (3.9%).
- 11/197 using single, occationally use paired.
- Paired: England 3/170 (1.8%); Scotland 2/15 (13.4%); Wales 0/12 and NI 3/7 (42%) (Figure 1).
- Level of care: NICU 2/55(3.6%), LNU 5/90(5.6%) and SCBU 1/59(1.7%) (Figure 2).

Conclusions

- There is general uniformity in the type of bottle used- single aerobic bottles.
- As the 'gold standard' investigation for neonatal sepsis, it needs to follow evidence-based traditions to improve yield.
- There is a need to be aware of when an anaerobic bottle should be included rather than a 'box-standard' approach.

PO-0534 PREDICTIVE VALUES OF PRENATAL AND NEONATAL TESTING INDICATIONS FOR THE DIAGNOSIS OF CONGENITAL CYTOMEGALOVIRUS (CMV) INFECTION

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Background and aims Despite its major public health impact, there is currently no official screening policy to identify Congenital CMV Infection (CCI) and neonatal testing is based mostly on clinical indications. We aimed to characterise the currently employed clinical indications for CMV testing in neonatal urine samples, and to examine their positive predictive values.

Methods All prenatal and neonatal records of newborns that had urine sample analysed for congenital CMV between 2009 and 2013 at the Virology Laboratory, Hadassah Medical Centre, Jerusalem, Israel, were retrospectively reviewed. The clinical indications for CCI evaluation were obtained, and their positive predictive values were determined.

Abstract PO-0534 Table 1 Clinical indications tested for congenital CMV infection

Clinical indication	% of all urine samples	Positive predictive value (%)	95% CI
Maternal seroconversion	41.7	7	[5.9–7.6]
IUGR/SGA	38	1.6	[0.8–2.7]
Failed OAE screening	10.4	2.9	[1.1–6.5]
Head circumference <10th percentile	9.7	1.9	[0.5–5.4]
Thrombocytopenia	6.3	4.3	[1.8–6.7]

Results Of 1625 neonates tested, 58 (3.56%) were positive for CCI. The leading clinical indications for testing and their positive predictive values are shown in the Table.

Interestingly, we further identified differences in the distribution and predictive values of the clinical indications between ethnic subpopulations.

Conclusions As suspected maternal CMV infection during pregnancy yielded the highest predictive value and detection rate of CCI, we suggest that in the absence of general neonatal screening policy, prenatal maternal CMV screening should be considered as a primary option for the early identification of CCI. The cost-benefit of this screening approach needs further evaluation.

PO-0535 SUSTAINABLE REDUCTION OF POSITIVE BLOOD CULTURES IN A TERTIARY NEONATAL INTENSIVE CARE UNIT: IMPACT OF INFECTION PREVENTION AND CONTROL MEASURES OVER A 5 YEAR PERIOD

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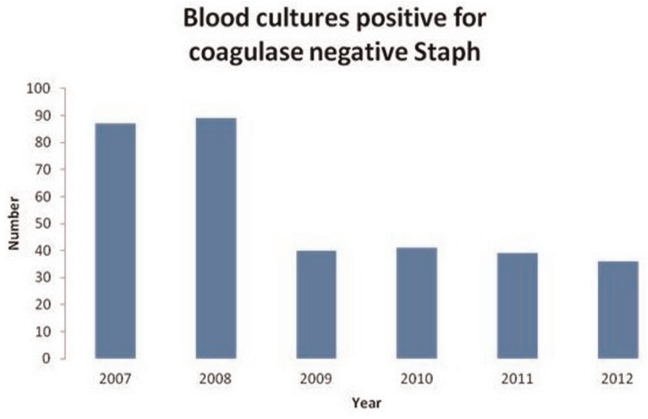
Background and aims Infection is one of the major causes of mortality and morbidity amongst preterm babies in neonatal intensive care units (NICUs). Preterm babies have immature immune systems, poor skin integrity and have repeated invasive procedures making them vulnerable to blood stream infections. Hand hygiene, low nurse: patient ratios, environmental colonisation (especially of water systems) and injudicious use of antibiotics, all contribute to infection in preterm babies.

The NICU at Homerton University Hospital, is a large tertiary level unit serving a high-risk population. In October 2005, we discussed the Epic Guidelines and introduced a number of infection care bundles with the aim to reduce the number of positive blood cultures.

Method From 2005 to 2007, we adapted the adult visual inspection score (VIP) for peripheral IV cannulae. From 2008 to 2010 the care bundles included dedicated cleaned trollies with sterile packs for insertion of intravenous cannulas, blood cultures and obtaining blood samples from arterial lines and we used a closed system of suctioning and closed system to sample arterial blood. We used sterile cotton wool for taking blood from heel prick. In May 2010 we introduced 0.5% chlorhexidine for all



Abstract PO-0535 Figure 1

Abstract PO-0535 Table 1

Year	2007	2008	2009	2010	2011	2012
Negative blood culture	442	487	509	466	571	640
Positive blood culture	148	127	75	82	76	71
Total blood cultures	590	614	584	548	647	711
Positive blood cultures as% of total	25%	21%	13%	15%	12%	10%

sterile procedures and a separate thermometer for each cot. Throughout the 5 years we carried out education, training sessions and audit on aseptic techniques.

Here, we compared the rate of positive blood cultures before and after the introduction of measures infection care bundles.

Results Data on the number of blood cultures and the percentage that were positive during the calendar years 2007–2012 are shown in the Table.

The number of blood cultures performed during the 6 year period increased as a result of increased activity during that period (data not shown). After the introduction of the care bundles, the rate of positive blood cultures halved and was maintained at the lower level. There number of blood cultures positive for coagulase negative staphylococcus, Staphylococcus aureus and E coli was halved. There was no change in the number of positive blood cultures for GBS and pseudomonas infection.

Conclusions Introduction of infection care bundles following the Epic Guidelines involved a change in culture in the Neonatal unit. The most important changes that resulted in a reduction of CONS were the introduction of sterile packs on disinfected trollies and the use of 0.5% chlorhexidine. Previous studies have shown that introduction of care bundles to reduce positive blood culture or blood stream infection were not sustainable. We have shown that introduction of infection care bundles and sustained education and training can result in a persistent reduction in blood stream positive blood cultures.

PO-0536 CIRCULATING BACTERIAL DNA AND LIPOPOLYSACCHARIDE PRECEDING NECROTISING ENTEROCOLITIS IN PRETERM INFANTS

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Introduction Loss of barrier function of the intestinal wall resulting in translocation of bacteria and bacterial toxins is regularly cited in the pathogenesis of necrotising enterocolitis (NEC) but objective evidence before the onset of NEC is limited.

Objective To make serial measurements of bacterial DNA and LPS endotoxin in a population of preterm babies and compare those who developed NEC with those who did not.

Methods 16SrRNA Real-time PCR and ELISA were used to detect the presence of bacterial DNA and LPS endotoxin in blood and plasma from infants <31 weeks gestation sampled weekly for 4 weeks from 14 days.

Results Eighty six infants were enrolled [median (range) gestation 26.5 (23–30) weeks and median (range) birth-weight 859 (572–1800) g]; 23 infants (26%) developed NEC (any NEC) of whom 13 (15%) had ≥Bells Stage II NEC.

Bacterial DNA was detected in 5 infants, 3 of whom subsequently developed NEC. Babies with bacterial DNA were more likely to have ≥Bells Stage II NEC ($p = 0.03$) but not to have any NEC.

Fourteen babies were positive for LPS, 7 of whom developed NEC. LPS endotoxinaemia was associated with development of any NEC ($p = 0.04$) but not with ≥Bells StageII NEC.

Only 2 babies were positive for both16S rRNA and LPS all of whom developed ≥Bells Stage II NEC.

Conclusion Circulating bacterial DNA and endotoxin, probably entering the blood stream via the intestinal wall, were detected in a cohort of preterm babies and associated with the subsequent development of NEC.

PO-0537 IS VERTICAL ENTEROVIRUS INFECTION TRANSMISSION POSSIBLE BY BREAST MILK?

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Introduction Enterovirus infections are frequent in childhood. Especially in the neonatal period these can cause severe neonatal infections. Transmission either occurs vertically or nosocomially. Breast milk as a possible source of vertical infection has only been described in a single case.

History We report the case of a preterm infant of 32 weeks of gestation delivered by caesarean section due to severe maternal enterovirus infection.

Pregnancy was unremarkable until 31 5/7 weeks of gestation, when the mother suffered from meningitis and was admitted to the prenatal ward. Due to clinical deterioration a caesarean section was performed. Maternal CSF as well as anal swab contained echovirus type 30.

Clinical Course Within the first days after birth the neonate developed clinical signs of infection (CRP 1.5 mg/dl, platelets 18.000/µl). Antibiotic therapy was initiated and the patient´s condition slowly improved.

Neonatal virus PCR's from nasopharynx and rectum yielded echovirus type 30. Additionally breast milk was tested and a copy number of more than 8 million copies per ml was quantified. At that stage we detected only a moderate amount of Enterovirus in the maternal anal swab while the maternal oral swab had already turned negative again.

Conclusion Enterovirus infections in neonates are more frequent than previously recognised. Transmission by breast feeding according to the viral load in the breast milk is more than likely.

PO-0538 DEEP VENOUS THROMBOSIS AND STREPTOCOCCUS PYOGENES INFECTION IN A HEALTHY NEWBORN – A RARE ASSOCIATION

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