G295(P) FACILITATORS AND BARRIERS OF CONTINUOUS POSITIVE AIRWAY PRESSURE USE IN NEWBORN CARE IN KENYA (PRELIMINARY RESULTS)

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Aim To describe the operational aspects of continuous positive airway pressure (CPAP) use in newborn care in Kenya.

Methods An ongoing nationwide survey of all health facilities in Kenya that use CPAP in newborn care. The mixed method approach used includes a standard questionnaire to describe CPAP use; key informant interviews and focus group discussions with the health care providers, to explore facilitators and barriers to CPAP use in newborn care. Descriptive statistics are used to analyse the quantitative data. A thematic framework is used to analyse the qualitative data.

Results Twenty-two health facilities in Kenya provide CPAP in newborn care, but only 18 (82%) have agreed to participate in the survey. To date the survey has been conducted in 9 (50%) of these facilities, all of which are public county referral facilities that have been using CPAP in for ≤ 2 years. All of them use commercial bubble CPAP acquired predominantly through donor funding and have ≤ 3 machines per newborn care unit. Only 7/9 (78%) of the newborn care units had a doctor or nurse who had received training on the use of CPAP, and this was often on the job clinical training. The main indications for initiating CPAP were respiratory distress and suspected pneumonia. The main barriers to CPAP use in newborn care were inadequate training of health care providers on the use of CPAP, health care provider strikes and staff shortages, and inadequate support with management of equipment when donor support ended. The main facilitators were good leadership both at the unit and facility level that supported the sustainability of CPAP use in newborn care and peer support from carers whose newborns had survived following CPAP use.

Conclusion The scale-up of CPAP use in newborn care in Kenya is well accepted by health care providers, but there are significant challenges with the sustainability of this intervention. Going forward, implementation strategies need to ensure that all staff working in newborn care units are adequately trained to safely administer CPAP, and that the health facilities are empowered to maintain the CPAP machines or have ready access to this support.

G296(P) IMPLEMENTATION OF A NEONATAL MINIMAL DATASET IN A LOW INCOME COUNTRY

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Aim To embed a neonatal minimal dataset into routine neonatal care in a low income country (LIC) to inform and promote quality improvement (QI).

Method In May 2016, we implemented the collection of a subset of data items held on the National Neonatal Research Database (UK) into a NGO funded neonatal unit in Haiti. Data were recorded at admission, discharge, and daily using

standardised forms. Data were analysed for a six month period (1 st May to 31 st October 2016) to determine data completeness and provide feedback to staff for QI.

Results Data completeness was high for gestational age (GA) (98%), mode of delivery (100%), origin of admission (100%), outcome at discharge (94%) but lower for feeding at discharge (61%), temperature within an hour of admission (75%) and cause of death (73%). 301 babies were admitted in the six month period (72% term ≥ 37 weeks; 11% 34 to < 37 weeks; 12% 30 to < 34 weeks; 3% 28 to < 30 weeks). 58% were born by vaginal delivery and 41% caesarean section (24% emergency, 17% elective). 73% were inborn, 23% from the community and 3% from another hospital. 58% were hypothermic (temp $< 36.5^{\circ}\text{C}$) and 5% had a temperature of $< 34^{\circ}\text{C}$. Overall mortality rate was 9%; by GA 28 to < 30 weeks (22%); 30 to < 34 weeks (31%); 34 to < 37 weeks (9%); ≥ 37 weeks (4%). Among babies born 30 to < 34 w, the commonest cause of death was gastrointestinal haemorrhage. Among term babies, the most common cause of death was unknown or hypoxia. 34 babies received CPAP for a median 4 days (interquartile range 2–5). 79% received some breast milk during admission and 47% were exclusively breast fed at discharge.

Conclusion Our preliminary data have informed QI programmes aimed to reduce hypothermia on admission and mortality rates. We have shown that although it is feasible to collect a minimal dataset in a LIC setting, completeness of data can be a challenge, and we recommend regular feedback to neonatal staff to reinforce the importance of complete and accurate data to drive improvements in clinical care and outcomes.

G297(P) GUTS, GERMS AND IRON: A SYSTEMATIC REVIEW OF THE EFFECT OF IRON SUPPLEMENTATION AND FORTIFICATION ON DIARRHOEA IN CHILDREN AGED 4 TO 59 MONTHS

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Aims The dramatic results of recent trials have highlighted the possible adverse relationship of iron supplementation on infectious disease mortality. A large body of *in-vitro* evidence has also shown the reliance of multiple gut-pathogens on high physiological iron concentrations. The administration of oral iron during public health campaigns may stimulate pathogen proliferation at the expense of the host, thus increasing the the risk of diarrhoea. The relationship between iron administration and diarrhoea needs to be established, revisited and contextualised within the context of recent developments in the understanding of both iron regulation and the iron-gut axis.

Methods Randomised control trials of iron supplementation or fortification which reported diarrhoeal outcomes in children aged 4 to 59 months were identified from a systematic search of five databases: Medline, EMBASE, Global Health, Web of Science and Cochrane Central Register of Controlled Trials (CENTRAL). A narrative synthesis of included studies was conducted with study quality assessed using the Cochrane Risk of Bias Tool. The protocol for this review was registered in the International Prospective Register for Systematic Reviews (PROSPERO): CRD42017067297.