

Title: Proposed neonatal nutrition network

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Background

Globally, neonatal mortality contributes 46% to under 5 mortality and this proportion is rising. Most neonatal deaths occur in sub-Saharan Africa and South Asia, particularly in low birth weight (LBW) infants (<2500g comprised of preterm and small for gestational age infants). Gut structure and function are immature in these highly vulnerable infants and this impairs early nutrition that underlies adverse events such as necrotising enterocolitis (NEC) and sepsis and, longer term, impaired growth, brain, lung and other organ development. Evidence for feeding regimens that most effectively establish oral feeds in low income countries is weak. Novel nutritional interventions such as pre/probiotics, buccal colostrum and lactoferrin may improve gut function thereby improving nutrition and longer-term outcomes.

Methods

In collaboration with Liverpool School of Tropical Medicine, we plan to establish a network of neonatal units (NNUs) in Kenya and Nigeria to support future research on nutrition interventions for LBW infants and other essential interventions to improve the outcomes of this vulnerable group. Planned 1st year activities are to:

1. Engage with stakeholders to ascertain current feeding practices on NNUs and review the evidence for these.
2. Develop clinical diagnostic algorithms for common and life-threatening conditions in LBW newborns.
3. Establish a central database across the network to describe the patient population (e.g. gestation, birthweight, birth asphyxia), key outcomes (e.g. duration of admission, weight gain, major morbidities e.g. jaundice, sepsis, NEC and mortality).
4. Pilot processes for sample collection to support evaluation of affordable nutrition interventions in LBW infants.

Results

The outputs will be enhanced capacity across the network in sharing data using standardised definitions, to undertake clinical research and improve care of LBW newborns.

Conclusions

Establishing the link between NNUs in Kenya and Nigeria will facilitate valuable learning to design interventional studies which can be replicated in other resource poor settings.