Abstract G257(P) Table 1 Free text comments from DCH(UK) training course and pilot examination

The Best aspects of the course and pilot were	The friendly nature of the examiners and their courteous manner
	Very systematic training, effective for everybody
	Instilling in the care-provider, compassion and empathy for the patient
	Extensive teaching
	Conveying the simple but effective message, that practice makes perfect
	Making us realise there is a human being in distress at the end of our stethoscope and not just a subject
	"Empathetic dealing" with patients was highlighted (In India, I did not have this kind of teaching)
Suggestions to improve the course and pilot	Each session should have more time and more than one case per session
	On-line lecture series
	Everything was excellent
	Should be a 3-4 day course
	Make it a 5 day training programme
Further comments	An approach to integrate knowledge, skills and human consideration in order to improve child health delivery.
	It was an amazing learning experience!
	Such training sessions at least once a month.
	A very impressive programme, needs to be repeated
	Was a wonderful learning experience So useful!
	An excellent programme to acknowledge ones weaknesses and ways to improve!

Methods A retrospective review of the PICU admission records and patient medical notes was undertaken for all patients admitted to the PICU from 1st November 2011 until 31st October 2012. Patient information was anonymised and key data was extracted including basic demographics, history of presenting complaint, investigations, management and outcome on the PICU.

Results The PICU had 10 beds, 7 ventilators and 1 haemodialysis machine. There was a shortage of staff with only 1 doctor and 2 nurses at night. Routine investigations were available although microbiology culture was rarely performed.

407 patients were admitted with the majority being infants (range 0–16 years). The furthest distance travelled was 907Km for a child with lead poisoning. Most patients were admitted for less than 5 days. The peak admission period was during the rainy season which corresponds to the peak incidence of dengue. 64 patients (17.5%) presented with dengue shock syndrome or dengue haemorrhagic fever.

The principle reasons for admission included status epilepticus (26.5%); pneumonia (20%); dengue (17.5%); multi-organ failure (14.2%); septicaemic shock (11.7%); and encephalitis (9.5%). Other important reasons for admission were meningitis; gastroenteritis; post-measles complications; diphtheria; snake bite; Beriberi (including Wernicke's encephalopathy); tetanus; rabies; malaria; late haemorrhagic disease of the newborn; malnutrition; tuberculosis; HIV; and poisoning (organophosphates; traditional medicine). All patients with a viper bite died of complications including shock, acute renal failure and pulmonary haemorrhage. The majority of patients with diphtheria were managed with a tracheostomy. Overall mortality on the PICU was 34%.

Conclusions This study provides a unique insight into the local disease burden, resources available and challenges faced in providing paediatric intensive care. The relatively high incidence of vaccine preventable diseases is of particular concern. Key priorities include support for the development of nurse and doctor training; staff retention; evidence-based guidelines; data management including follow-up; referral pathways; access to routine investigations; and a reliable supply of essential medications and equipment.

G259(P) A SYSTEMATIC REVIEW OF HEALTH WORKER-LED INTERVENTIONS TO REDUCE MORTALITY IN LOW BIRTH WEIGHT NEONATES IN LOW AND MIDDLE-INCOME INSTITUTIONAL SETTINGS

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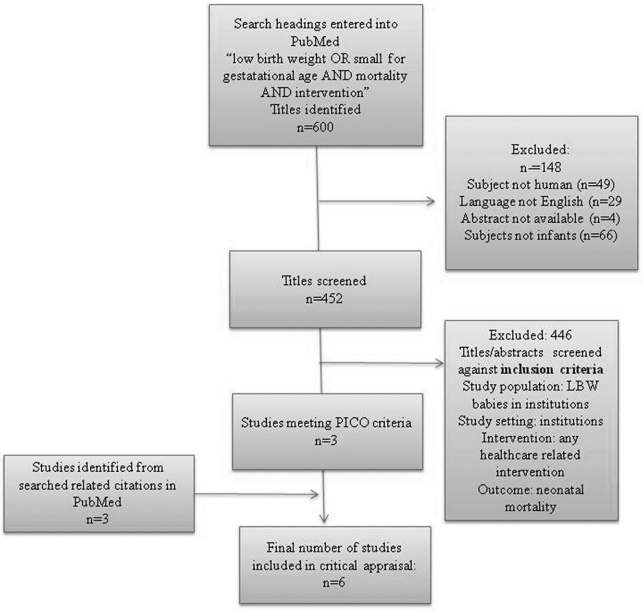
Aim The majority of the 3.3 million annual neonatal deaths worldwide occur because proven and simple interventions dependent upon skilled human resources are not implemented. 60–80% of these deaths occur in low birth weight (LBW) neonates less than 2.5 kg, with 96.5% of the 20 million LBW neonates being born in the developing world.

The aim of this research is to carry out the first systematic literature review on health worker-led interventions to reduce mortality in LBW neonates in institutional settings in low and middle-income (LMIC) countries.

Methods We conducted a systematic review of studies meeting our inclusion and exclusion criteria until October 2014 (Figure 1). We searched Pubmed/MEDLINE, Popline, and Cochrane databases utilising a combination of the search terms "low birth weight" or "small for gestational age" and "mortality" and "intervention". We included all studies of health worker led facility-based postnatal interventions in LMIC that assessed



Abstract G259(P) Figure 1

Abstract G259(P) Table 1 Summary of studies reviewed

Authors	Type of study	Subjects	Country, setting location	Objective	Interventions	Outcomes
Agarwal, R. *et. al*, 2007	Before and after	7938 live births before with 282 infants <1500g and 74 <1000g, 7311 live births after with 262 <1500g and 66 <1000g.	India, low resource obstetric teaching hospital	To evaluate impact of simple interventions on neonatal mortality.	Package included: rational admissions and early discharge, maternal involvement, asepsis routines, enteral feeding, protocol-based management, rational antibiotics and nurse training.	NMR declined during the intervention period as compared to control period (20.3 versus 29.3 per 1000 live births; relative risk 0.69, 95% confidence interval (CI) 0.57 to 0.85).
Arif & Arif, 1999	Prospective matched case control study	361 LBW (151 case; 211 control)	Pakistan, urban hospital	To randomize LBW babies to care inside an incubator by nurses or care by mother at bedside	Care in an incubator by nurse or care by mother at mother's bedside	Mortality rate decreased by 57% when infant's were cared for by mothers, p<. 001
Conde-Agudelo, A., Diaz-Rossello, J., 2014	Systematic review- 18 RCT	2571 LBW infants	13 hospitals in LMIC and 5 hospitals in high income countries	To ascertain whether or not there is evidence to support the use of KMC in LBW infants instead of conventional care	Kangaroo mother care with mother or caregiver	Overall, KMC was associated with a statistically significant reduction in the risk of mortality at discharge or 40–41 weeks' postmenstrual age (3.2% vs 5.3%; typical RR 0.60, 95% CI 0.39 to 0.92)
Msemo, G. *et. al*, 2013	Before and after	1000 LBW infants before and 7,423 LBW after	Three major referral hospitals in Tanzania, 4 regional hospitals, 1 district hospital	To assess if a new education program to improve delivery room stabilization and resuscitation can decrease early neonatal death in LBW and non LBW infants	Helping Babies Breathe-simple interventions to improve delivery room stabilization and resuscitation	NMR decreased from 61 per 1,000 live births to 29 per 1,000 live births, RR 0.48; 95% CI 0.35–0.6, P< .0001
Mufti, P., Setna, F. & Nazir, K., 2006	Before and after	2498 LBW babies (971-term, 1527 preterm)	Karachi, Pakistan, large teaching hospital	To improve newborn care and survival rates of LBW babies through the training of medical and nursing staff	Training of medical and nursing staff including neonatal resuscitation	The NMR decreased from 22.4 to 12.3 per 1,000 live births. Early NMR was used or death of a live born infant over 500g in the first 7 days of life.
Van Der Mei, 1994	Non-controlled descriptive study	567 LBW infants	Agogo Hospital, Ashanti region in Ghana	To establish the survival rate in the neonatal period with the scale up of neonatal care	Simple staff training program and inclusion of mothers in the provision of newborn care	The mortality rate was 26.8 per 1,000 live births, the researchers felt this was a favorable outcome with small changes in care provision

Abbreviations used: NMR- neonatal mortality rate, LBW- low birth weight, KMC- kangaroo mother care

the outcome of neonatal mortality in LBW infants. We excluded articles with abstracts not available, articles that were not in English, and research with subjects not human or subjects not infants.

Results We identified six studies reporting LBW neonatal mortality outcomes for health worker led interventions or a package of interventions in institutional settings in LMIC (Table 1). We employed the Hierarchy of Evidence framework, which evaluates health care interventions, to rank the strength of research evidence as excellent, good, fair or poor (Table 2). Only one study received an excellent ranking, the systematic review on kangaroo mother care (KMC), which included randomised controlled trials that demonstrated a statistically significant decrease in neonatal mortality rates.

Conclusion The literature review demonstrates the limited evidence on health worker-led facility-based postnatal interventions to decrease mortality in LBW infants. Even where adequate evidence exists for impact of interventions on LBW mortality, for example, KMC, there has yet to be consistent scale-up. Further research is necessary utilising more rigorous methodology to ascertain effectiveness of interventions, as well as to identify cost-effective and sustainable strategies to allow for widespread implementation and dissemination of proven interventions.