PSPU
Policy & Strategic Planning Unit
Health Department

unicef

POLICY BRIEF 1

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KANGAROO MOTHER CARE: AN INTERVENTION TO SAVE PREMATURE BABIES

EXECUTIVE SUMMARY:

Kangaroo Mothercare Care (KMC) is a method of care practiced on preterm low birth weight babies, where the newborn is held skin to skin with his/her mother, father & substitute care givers. Evidence supports that KMC is associated with decreased mortality among newborns particularly among LBW babies. KMC also increases the likelihood of exclusive breastfeeding upto 4 months of age and decreases risk of newborn sepsis, hypothermia, hypoglycemia and hospital readmissions. Mothers had positive perception about KMC and preferred it to incubator care. KMC is a low cost quality improvement intervention

BACKGROUND:

Neonatal mortality contributes to two-thirds of all deaths under the age of five years globally. The three major causes of deaths are asphyxia, infections, and complications due to prematurity and low birth weight. Each year about 20 million infants of low birth weight are born worldwide, 95% of which live in developing countries and this imposes a heavy burden on their healthcare and social systems . Pakistan has an NMR of 55/1000 live births (PDHS 2012-13).

Birth Weight is major determinant of new born survival. Low birth weight (LBW) is a cause of 60% to 80% of neonatal deaths. Prematurity is the major cause of neonatal mortality accounting for 29% of the 3.6 million neonatal deaths every year. One major reason for LBW and premature babies being at risk of illnesses and deaths is that they lack the ability to control their body temperature. A cold new born stops feeding and is more susceptible to infections.

STANDARD THERMAL CARE:

In most countries incubators is the standard thermal care however they are not sufficiently available in many developing countries. Incubators can also become a source of infection due to poor maintenance, sharing of single incubator by more than one baby due to insufficient incubators. Moreover, as child is away from mother this disrupts breastfeeding practices and maternal child bonding Given the cost of incubators and the operational and programmatic challenges, making incubator care available and accessible to the majority of families of LBW babies is simply not an option in most developing countries. Fortunately, there is an alternative approach which is Skin-to-Skin Care is recommended for all babies immediately after delivery to ensure warmth. It is also a recommended method when transferring sick new born to a health facility.

KANGAROO MOTHER CARE:

This initiative was developed by a team of paediatricians in Colombia, was invented in 1978 and developed in 1994.Now Kangaroo Mothercare is recognised by global experts as an integral part of newborn care. For premature and lowbirth babies.

KMC is not the routine skin to skin care that WHO recommends immediately after delivery for every birth to ensure warmth in first two hours. LBW infants require SSC for longer period of time depending on their weight and condition. KMC is early, prolonged and continuous skin to skin contact between mother and her low birth weight infant, both in hospital and after discharge until at least 40th week of postnatal gestation with ideally exclusive breastfeeding and prevention and management of infections and breathing difficulties.

KMC for LBW babies is initiated in the hospital after the condition of the baby is stabilized. Infants who are not stable and require medical attention can practice intermittent KMC (spending some hours in the KMC position, gradually increasing the time as the baby gets stronger). Early discharge after delivery is a hallmark of the KMC approach and occurs when the baby is suckling well and growing, and when the mother or family caregiver demonstrates competency in caring for the baby on her own. The pair is discharged to continue KMC at home with an agreed-upon schedule for follow-up visits at the hospital, outreach clinic or at home to monitor the health of the baby

Countries implementing KMC Globally

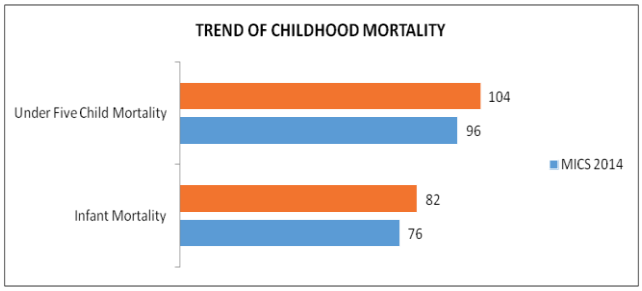
AFRICA	ASIA	AMERICA
Democratic Republic Congo	Bangladesh	Bolivia
Ghana	Indonesia	Dominican Republic
Malawai	Nepal	El Salvador
Nigeria	Vietnam	Guatemala
Rwanda		Nicaragua
Senegal		Paraguay
Tanzania		
Uganda		
Zimbabwe		

IMPLEMENTATION OF KANGAROO MOTHERCARE:

In kangaroo care, the baby wears only a small diaper and a hat and is placed in a flexed (fetal position) with maximal skin-to-skin contact on mothers chest. The baby is secured with a wrap that goes around the naked torso of the adult, providing the baby with proper support and positioning (maintain flexion), constant containment without pressure points or creases, and protecting from air drafts (thermoregulation). If it is cold, the parent may wear a shirt or hospital gown with an opening to the front and a blanket over the wrap for the baby.

For premature babies, this method can be used continuously around the clock or for sessions of no less than one hour in duration (the length of one full sleep cycle.) It can be started as soon as the baby is stabilized, so it may be at birth or within hours, days, or weeks after birth.

TREND OF INFANT MORTALITY RATE IN PUNJAB:



Infant mortality rate for the four years preceding the two surveys (MICS 2011 &2014) show a declining trend. Infant mortality rate has decreased by 6 percent over the last four years, from 82 per 1000 live births in 2011 to 76 per 1000 live births in 2014.The NMR in Punjab is 63/1000 Live Births however unfortunately Punjab could not achieve the MDGs for IMR and MMR. Despite increase in deliveries by skill birth attendants and increase in ANC the indicators have not shown significant improvement. In order to achieve the SDG targets of ending by 2030 all preventable deaths of newborns and children under 5 and reduce NMR to 12 per 1000 Livebirths and under 5 mortality to 25/1000 Livebirths, the Government of Punjab needs to implement innovative evidence based, cost effective interventions.

EVIDENCE:

This section reviews the evidence on KMC from developed and developing countries with regards to Infant Mortality & Morbidity, Premature deaths, breastfeeding and thermal protection.

Before starting the review, it was essential to highlight the two important aspects: time of initiation of KMC, daily and overall duration of skin to skin contact. Many other factors may also be associated with the effects observed in studies e.g. social conditions, environment ,healthcare & more importantantly services of health staff for KMC.A meta analysis of 124 studies conducted by **[Boundy O,etal;2016]** found following key analysis about KMC:

MORTALITY:

Compared with Conventional care, KMC was associated with a 23% lower risk of mortality. Among 11 studies reporting mortality during the first 45 days of life, there was 21% decrease in mortality with KMC whereas 7 studies reporting mortality at 3, 6 or 12 months of age showed 41% lower mortality in the KMC group. Among LBW babies <2000 g, KMC decreased mortality by 36%. Exclusive Breast feeding, early discharge and close followup showed a protective effect of KMC against Mortality.

BREAST FEEDING:

KMC increased the likelihood of exclusive breastfeeding at hospital discharge or 40-41 weeks by 50%.

TEMPERATURE:

Compared with conventional care, KMC was associated with 78% lower risk of hypothermia and 23% lower risk of hyperthermia. Mean body temperature of infants receiving KMC was 0.24^{o} higher than controls.

INFECTION:

Studies showed no statistical difference between KMC and control group related to risk of infection during study follow-up but after infection type stratification, KMC was associated with 47% lower risk of sepsis. All studies examined sepsis and necrotizing enterocolitis were among <2250 g at birth. Among randomized control trails, KMC decreased risk of infection by 49%.

RESPIRATION & OXYGENATION:

KMC was associated with lower respiratory rate and higher oxygen saturation.

HOSPITAL STAY:

KMC decreased the likelihood of hospital readmission by 58%. Study reported that length of hospital and NICU stays stratified by birth weight and found shorter hospital stays in the KMC group among infants <1500 g and in length of NICU stay among infants 1201-1500 g.

STUDY CONDUCTED IN BANGLADESH:

KMC was implemented in two selective districts of Bangladesh for 8 months (August 2015-March 2016) with an objective to assess the responsiveness of Public Health System to roll out KMC. This study found that the practice of providing KMC to LBW babies was seen as a significant change. Besides training, innovation and improvisation other aspects of the health system are also important including infrastructure, human resource, community mobilization, behavior change family support to facilitate and continue KMC. This study showed significant benefits in term of acceptability, feasibility, improved growth and reduced infections among new-borns **[Neogi SB,etal; 2016]**.

STUDY CONDUCTED IN AFRICA:

About 113 mothers that were in the KMC unit and those had come for follow up two weeks after discharge before the study took place included in this study. **[ChisengaJZ,etal;2015]** found that Mothers had a positive attitudes towards KMC once fully aware of its benefits. Mothers preferred KMC to incubator care.

STUDY CONDUCTED IN AMERICA:

[Broughton EI,etal;2013] examined the costs of implementing KMC in a referral hospital in Nicaragua, including training, implementation and ongoing operating costs and also assessed the economic impact on health system when KMC was implemented in other hospitals of country. They took 46 randomly selected infants before implementation were compared to 52 after implementation. They found that Neonates after implementation had lower lengths of hospitalization by 4.64 days and 71% exclusively breastfed. The intervention cost US$ 23,113 but the money saved with shorter hospitalization, elimination of incubator use and lower antibiotic and infant formula costs made up for this expense in 1-2 months. Extending KMC to 12 other facilities in Nicaragua is projected to save approximately US$ 166,000 or US$ 233,000 after one year.

KANGAROO MOTHERCARE INITIATIVE IN PUNJAB:

Kangaroo Mothercare Initiative has been implemented successfully in Punjab with the support of UNICEF. Master trainers were trained in Vietnam and now trainings are underway in Services Hospital. KMC Project was implemented in Services Hospital, Lahore with the aim to reduce mortality and morbidity in low birth weight infants. More than 150 children have been provided KMC care in Services hospital with promising results.

Seeing the high NMR in Pakistan and Punjab, evidence suggests that Kangaroo Mother care initiatives is an affordable and effective way of saving lives of newborns especially in developing countries where incubators are limited.

SUCCESS STORY OF KANGAROO MOTHERCARE IN SERVICES HOSPITAL

Mrs Sajida 30 yr old P5+0, 2 alive issues delivered a female baby at 34 weeks gestation on 17th July 2016 with birth weight of 2.2 kg and her APGAR Score was good. Mother was kept in Kagaroo Mothercare position for 7 days in hospital and was discharged after counselling for KMC. Mother kept baby in KMC position upto 40 weeks of gestation at home with weekly follow ups in services hospital. At one month Baby was stable, achieved milestones according to her age and gained weight.

WAY FORWARD:

- Seeing the success of this project in Services Hospital, it should be introduced in other Tertiary carehospitals as well as in THQ and DHQ hospitals in Punjab.
- KMC requires SSC for prolonged period so once mother and child are discharged, there is need for continuous support in the community and in this regard to ensure sustainability of this intervention the role of Community Workers is pivotal. Hence there is need for training of this work force in KMC and utilization of their services to promote it.
- There should be Government commitment for taking lead role to promote KMC for sustainability because evidence showed that KMC in low income countries has been donor-driven .
- There is need for awareness campaigns on KMC services, provision of counseling, support and assistance which can help motivate mothers and their families to comply with the guidelines of KMC services.

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