kangaroo mother care

A practical guide

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ABBREVIATIONS

LBW	Low birth weight
KMC	Kangaroo mother care
RCT	Randomized controlled trial
RDS	Respiratory distress syndrome

GLOSSARY

Terms in this glossary are listed under key words in alphabetical order.

Age

Chronological age: age calculated from the date of birth.
Gestational age: age or duration of the gestation, from the last menstrual period to birth.
Post-menstrual age: gestational age plus chronological age.

Birth

Term birth: delivery occurring between 37 and 42 weeks of gestational age.
Preterm birth: delivery occurring before 37 weeks of gestational age.
Post-term birth: delivery occurring after 42 weeks of gestational age.

Birth weight

Low-birth-weight infant: infant with birth weight lower than 2500g (up to and including 2499g), regardless of gestational age.

Very low-birth-weight infant: infant with birth weight lower than 1500g (up to and including 1499g), regardless of gestational age.

Extremely low-birth-weight infant: infant with birth weight lower than 1000g (up to and including 999g), regardless of gestational age.

Different cut-off values are used in this guide since they are more useful for clinical purposes.

Body temperature

Hypothermia: body temperature below 36.5°C.

Growth

Intrauterine growth retardation: impaired growth of the foetus due to foetal disorders, maternal conditions (e.g. maternal malnutrition) or placental insufficiency.

Milk/feeding

Foremilk: breast milk initially secreted during a breast feed.

Hind milk: breast milk remaining in the breast when the foremilk has been removed (hind milk has a fat content and a mean caloric density higher than foremilk).

Alternative feeding method: not breastfeeding but feeding the baby with expressed breast milk by cup or tube; expressing breast milk directly into baby's mouth.

Preterm/full-term infant

Premature or preterm infant: infant born before 37 weeks of gestational age.

Preterm infant appropriate for gestational age (AGA): infant born preterm with birth weight between the 10th and the 90th percentile for his/her gestational age.

Preterm infant small for gestational age (SGA): infant born preterm with a birth weight below the 10th percentile for his/her gestational age.

Full-term infant small for gestational age (SGA): infant born at term with birth weight below the 10th percentile for his/her gestational age.

Small baby: in this guide, a baby who is born preterm with low birth weight.

Stable preterm or low-birth-weight infant: a newborn infant whose vital functions (breathing and circulation) do not require continuous medical support and monitoring, and are not subject to rapid and unexpected deterioration, regardless of intercurrent disease.

Note: Throughout this document babies are referred to by the personal pronoun "she" or "he" in preference to the impersonal (and inaccurate!) "it". The choice of gender is random.

1. Introduction

1.1 The problem – improving care and outcome for low-birth-weight babies

Some 20 million low-birth-weight (LBW) babies are born each year, because of either preterm birth or impaired prenatal growth, mostly in less developed countries. They contribute substantially to a high rate of neonatal mortality whose frequency and distribution correspond to those of poverty.[1, 2] LBW and preterm birth are thus associated with high neonatal and infant mortality and morbidity.[3, 4] Of the estimated 4 million neonatal deaths, preterm and LBW babies represent more than a fifth.[5] Therefore, the care of such infants becomes a burden for health and social systems everywhere.

In affluent societies the main contributor to LBW is preterm birth. The rate has been decreasing thanks to better socioeconomic conditions, lifestyles and nutrition, resulting in healthier pregnancies, and to modern neonatal care technology and highly specialised and skilled health workers. [6-8]

In less developed countries high rates of LBW are due to preterm birth and impaired intrauterine growth, and their prevalence is decreasing slowly. Since causes and determinants remain largely unknown, effective interventions are limited. Moreover, modern technology is either not available or cannot be used properly, often due to the shortage of skilled staff. Incubators, for instance, where available, are often insufficient to meet local needs or are not adequately cleaned. Purchase of the equipment and spare parts, maintenance and repairs are difficult and costly; the power supply is intermittent, so the equipment does not work properly. Under such circumstances good care of preterm and LBW babies is difficult: hypothermia and nosocomial infections are frequent, aggravating the poor outcomes due to prematurity. Frequently and often unnecessarily, incubators separate babies from their mothers, depriving them of the necessary contact.

Unfortunately, there is no simple solution to this problem since the health of an infant is closely linked to the mother's health and the care she receives in pregnancy and childbirth.

For many small preterm infants, receiving prolonged medical care is important. However, kangaroo mother care (KMC) is an effective way to meet baby's needs for warmth, breastfeeding, protection from infection, stimulation, safety and love.

1.2 Kangaroo mother care – what it is and why it matters

Kangaroo mother care is care of preterm infants carried skin-to-skin with the mother. It is a powerful, easy-to-use method to promote the health and well-being of infants born preterm as well as full-term. Its key features are:

- *early, continuous and prolonged skin-to-skin contact between the mother and the baby;*
- *exclusive breastfeeding (ideally);*
- *it is initiated in hospital and can be continued at home;*
- *small babies can be discharged early;*
- *mothers at home require adequate support and follow-up;*
- *it is a gentle, effective method that avoids the agitation routinely experienced in a busy ward with preterm infants.*

It was first presented by Rey and Martinez,[9] in Bogotá, Colombia, where it was developed as an alternative to inadequate and insufficient incubator care for those preterm newborn infants who had overcome initial problems and required only to feed and grow. Almost two decades of implementation and research have made it clear that KMC is more than an alternative to incubator care. It has been shown to be effective for thermal control, breastfeeding and bonding in all newborn infants, irrespective of setting, weight, gestational age, and clinical conditions.[10, 11]

Most published experience and research concerning KMC comes from health facilities, where care was initiated with the help of skilled health workers. Once a mother was confident in the care she gave her baby, she continued it at home under guidance and with frequent visits for specialised follow-up.

Evidence of the effectiveness and safety of KMC is available only for preterm infants without medical problems, the so-called stabilised newborn. Research and experience show that:

- *KMC is at least equivalent to conventional care (incubators), in terms of safety and thermal protection, if measured by mortality.*
- *KMC, by facilitating breastfeeding, offers noticeable advantages in cases of severe morbidity.*
- *KMC contributes to the humanization of neonatal care and to better bonding between mother and baby in both low and high-income countries.[12, 13]*
- *KMC is, in this respect, a modern method of care in any setting, even where expensive technology and adequate care are available.*
- *KMC has never been assessed in the home setting.*

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