

# Supporting skin-to-skin care in the neonatal unit

This article describes a project aimed at increasing the number of babies receiving skin-to-skin care in the neonatal unit by highlighting the benefits of kangaroo care to parents and staff and introducing a number of simple measures.

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**K**angaroo care (KC) is a technique of holding a newborn, low birthweight or premature infant in an upright position, skin-to-skin, against the chest of the mother or other family member (**FIGURE 1**). Rey and Martinez first described KC in Columbia in the early 1980s<sup>1</sup> where lack of equipment and problems of high mortality and abandonment were common, especially among low birthweight infants. They found that infant mortality and morbidity reduced substantially with KC. Subsequently many 'high tech' neonatal nurseries have adopted KC as the benefits for mothers and their infants are well recognised<sup>2</sup>. In this setting, skin-to-skin care is more often intermittent than continuous<sup>3</sup>.

## Evidence-based benefits of KC

There are many reported benefits of KC. Many studies have looked at the benefits of skin-to-skin care on parent-infant bonding and attachment. A causal relationship between early physical contact and subsequent security of attachment between infant and mother has been found<sup>4</sup> and following KC, parents are more sensitive to their infants with increased 'affectionate touch' between parent and infant and between spouses<sup>5</sup>.

It has long been noted that KC increases a mother's milk production and helps in the establishment and maintenance of breastfeeding<sup>6-8</sup>. In a systematic review on efficacy and cost-effectiveness of interventions to promote or inhibit breastfeeding, it was noted that skin-to-skin contact increases the duration of breastfeeding prior to, and for one month after, discharge from hospital<sup>9</sup>.

Other studies have shown decreased variation in heart and respiratory rates, improved oxygenation, less bradycardia, fewer and shorter apnoeic episodes and



**FIGURE 1** Kangaroo care with the father.

more stable skin and core temperatures (through conduction of heat from the parent)<sup>10-12</sup>.

## Setting up the project

In 2011, a group of interested nurses and allied health care professionals set up a working group to raise the profile of KC and to increase the number of babies receiving skin-to-skin contact. The inspiration for the project came from attendance at two key events: the Baby Friendly Hospital Initiative for Neonatal Wards conference and workshop in Uppsala, 2011 and a Yorkshire and Humber Health Innovation & Education Cluster (HIEC) meeting.

Skin-to-skin care was already encouraged on the unit and a guideline was in place (**FIGURE 2**), but it was used on an *ad hoc* basis rather than being in regular and consistent practice. The hospital was working towards Baby Friendly accreditation at this time and the benefits of skin-to-skin care on lactation were discussed with mothers. Baby Friendly

## Keywords

kangaroo care; skin-to-skin care; breastfeeding and lactation; developmental care

## Key points

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1. An ongoing project to raise the profile of kangaroo care and to increase the number of babies receiving skin-to-skin contact is described.
2. The introduction of a few simple measures has led to an increase in the number of babies receiving kangaroo care.
3. Future plans include further training, education workshops and addressing the way forward for babies requiring humidity.

Kangaroo care may be considered if none of the following contraindications apply:

- physiological instability
- need for frequent suctioning
- frequent apnoeic episodes
- oxygen requirement greater than 50%
- chest drain *in situ*
- umbilical catheter *in situ*
- need for continuous sedation or paralysing agents
- NEC or suspected NEC
- gastroschisis or omphalocele (prior to treatment)
- need for humidity

**FIGURE 2** Criteria for suitability for kangaroo care, according to the unit guideline (2009).

standards require that KC will be encouraged and that local guidelines to ensure best practice regarding frequency and duration of skin-to-skin contact are available<sup>13</sup>.

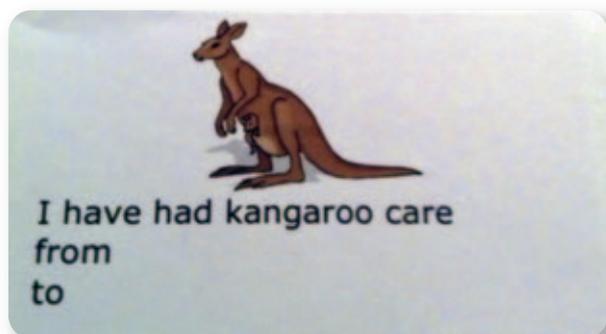
The working group commenced a service evaluation of all areas of the neonatal unit and transitional care ward to establish the background number of babies receiving skin-to-skin care. The aim was to stage the introduction of measures and audit throughout the project.

### Initial measures



**FIGURE 3** Laminated card displayed at the cot.

All parents received the Bliss skin-to-skin booklet in their admission pack. Written information has been found helpful and valuable for parents who find retaining spoken information difficult at stressful times<sup>14</sup>.



**FIGURE 4** Kangaroo care sticker for the baby's chart.

A laminated card was designed – ‘I’m ready for kangaroo care’ (**FIGURE 3**) – that was displayed in a baby’s cot space when it was deemed appropriate. This served as a reminder to the nurse that KC was appropriate for the baby in their care and to the parents of that baby, that kangaroo care could be something they could expect from their baby’s care that day. It also informed other parents in the room that KC was something that they could look forward to, as it has been shown that parents find it important to be able to envisage what their future might hold<sup>14</sup>.

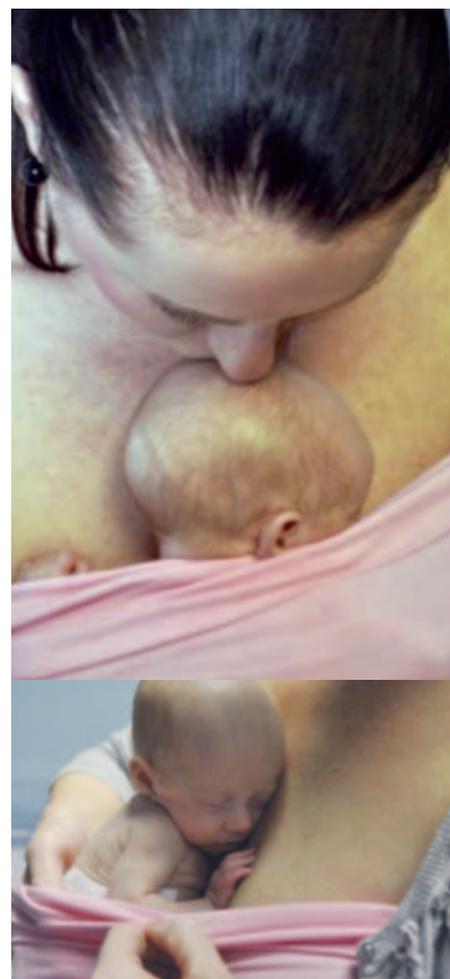
Kangaroo stickers were also designed (**FIGURE 4**), with a space for recording the length of time the baby received skin-to-skin contact; the stickers were stuck onto the baby’s chart, which helped in the audit trail.

### Ward rounds

Teamwork and good communication empowers all staff and is important for the effectiveness of new practices<sup>15</sup>. Perhaps one of the most significant steps of this initiative was the early inclusion of the senior medical team and their contribution to the decision to include suitability for KC as part of the ward round discussion. This multidisciplinary approach involved all staff and parents on the ward round allowing discussion of any concerns, from any party, as to the suitability or the practicality of KC. The decision was recorded in the medical notes, nurse handover sheet and observation charts so that all staff were aware of the decision and could provide medical support, if necessary. Previously the nurse alone had made this decision.

Research shows parents are more satisfied with their communication with doctors when they are included in ward round discussion<sup>14</sup> and Baby Friendly guidelines<sup>13</sup> highlight the importance of involving the parents as partners in care.

Studies have shown that parents want to be given the opportunity to discuss KC and want to be supported to hold their babies skin-to-skin<sup>14</sup>. Involving the parents in the decision-making process about when their baby may be ready for KC was fundamental to the project. Wall space was allocated for posters and



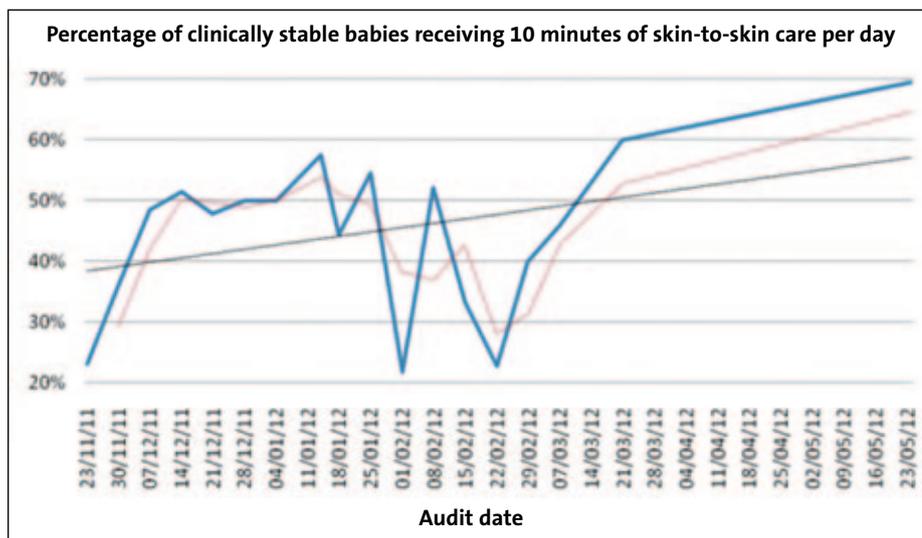
**FIGURE 5** A ‘boob tube’ designed for use during kangaroo care.

photographs of KC in progress – parents say they like seeing storyboards and photograph albums from babies who have previously been on the unit<sup>14</sup>. This encouraged parents to ask about KC for their own baby. Even if their baby was not quite ready for skin-to-skin care, the parents could look forward to the expectation of KC.

### Further measures

The unit embraced the Baby Friendly initiative to ensure comfortable chairs were available for extended periods of KC. Chairs specifically for KC were sourced and purchased; currently there is at least one chair for each room on the neonatal unit. The chairs are on wheels so that they can easily be moved from room-to-room; they recline and generally encourage long periods of skin-to-skin care.

The Best Beginnings Small Wonders DVD has been made available to all staff and parents on the neonatal unit. A chapter in this DVD depicts KC, encouraging parents to ask about KC with their baby. Information in this format has



**FIGURE 6** The number of babies receiving at least 10 minutes of skin-to-skin care per day.

been found to be useful to parents; to see and hear other parents talk about their experiences familiarises them with the neonatal environment and helps them to visualise what their future may hold<sup>14</sup>. It was envisaged that the DVD would introduce parents to the concept of KC, as something they could enjoy with their baby once it was stable, although use of the DVD in this project has yet to be audited.

During the course of the project, it was found that not all women feel comfortable with being 'exposed' during KC and that often they report feeling insecure with their baby in the KC position. To address these issues, 'boob tubes' were designed, sourced and made in various sizes (FIGURE 5). These were made from an unadorned, stretchy material and are entirely suitable for the skin of preterm babies.

## Results

At the start of the project in November 2011, 20% of clinically stable babies received skin-to-skin care. Six months later, this figure had risen to nearly 70% (FIGURE 6). From weekly audits, it was found that in the high-dependency unit almost 100% of babies received daily skin-to-skin care. In the intensive care unit fewer babies received it, probably because these babies are not always stable enough or meet the criteria for skin-to-skin care (FIGURE 2). Perhaps most surprisingly, the lowest numbers were found in the special care baby unit, although the feeling is that babies here tend to be cuddled rather than receive skin-to-skin care.

Anecdotally it was found that KC provided a familiar continuum for parents as their baby is moved around the different

areas of the neonatal unit. It has been reported that parents find the moving of their baby stressful<sup>14</sup> – different routines, different staff, etc. With KC, the parents find they can carry on with their routine of skin-to-skin care in any area of the unit and it is equally supported.

## Ongoing measures

Skin-to-skin care is now included in the induction training for new staff, including medical staff, highlighting just how important KC is as a therapeutic intervention on the unit and how it is supported by the team. Senior nursing staff and senior management also provide support, which helps to raise the profile of the project. Workshops have been developed for new and existing staff that want to update their confidence and skills in KC.

A KC awareness event is being planned – including teaching for all staff and workshops discussing the practicalities of KC, especially for ventilated babies. Staff who are confident in facilitating skin-to-skin care will make themselves available to support and mentor others. In doing this, it is hoped that all staff will gain confidence and competence in facilitating KC. The expectation is that the number of babies receiving KC will further increase, especially sicker, ventilated babies.

Preterm infants require close control of their thermal environment. It has been observed that during skin-to-skin care, body temperature can remain stable because the transfer of heat from parent-to-child balances the heat loss from a baby outside an incubator<sup>16</sup>. However, water loss during KC is higher than in incubator care, where the use of humidity can reduce

dehydration. A baby requiring a humidity-controlled environment therefore needs careful consideration by the senior medical team before KC can be initiated. The KC guideline will be reviewed to address the situation for babies requiring humidity.

## References

1. **Chapak N.** Rey-Martinez Kangaroo mother program: An alternative way of caring for low birth weight infants? One year mortality in two cohort study. *Pediatrics* 1994;94:804-10.
2. **Warren I., Bond C.** *A Guide to Infant Development in the Newborn Nursery*. The Winnicott Foundation, 2010.
3. **Nyqvist K.** State of the art recommendations: Kangaroo mother care application in a high tech environment. *Acta Paediatr* 2010;99:812-19.
4. **Anisfield E., Casper U., Nozyce M., Cunningham N.** Does infant carrying promote attachment? An experimental study of the effects of increased physical contact on the development of attachment. *Child Dev* 1990;61:1617-27.
5. **Feldman R., Weller A., Sirota L., Eidelman A.L.** Testing a family intervention hypothesis: The contribution of mother- infant skin to skin contact (kangaroo care) to family interaction, proximity and touch. *J Fam Psychol* 2003;17:94-107.
6. **Nyqvist K.** How can kangaroo mother care and high technology care be compatible? *J Hum Lact* 2004;20:72-74.
7. **Furman L., Kennell J.** Breastmilk and skin to skin kangaroo care for premature infants. *Acta Paediatr* 2000;89:1358-63.
8. **Hake-Brooke S.J., Anderson G.C.** Kangaroo care and breastfeeding of mother- preterm infant dyads 0-18 months: a randomised controlled trial. *Neonatal Netw* 2008;27:151-59.
9. **Renfrew M.J. et al.** Breastfeeding promotion for infants in neonatal units: a systematic review and economic analysis. *Health Technol Assess* 2009; 13:1-146.
10. **Bauer K. et al.** Effects of gestational and postnatal age on body temperature, oxygen consumption, and activity during early skin to skin contact between preterm infants of 25-30 weeks gestation and their mothers. *Paediatr Res* 1998;44:247-51.
11. **Fohe K., Kropf S., Avenarius S.** Skin to skin contact improves gas exchange in premature infants. *J Perinatol* 2000;20:311-15.
12. **Ludington-Hoe S.M. et al.** Randomised controlled trial of Kangaroo Care: cardio respiratory and thermal effects on healthy preterm infants. *Neonatal Netw* 2002; 23:39-48.
13. **UNICEF.** *Guide to the Baby Friendly Initiative Standards* [Online]. Available from: [www.unicef.org.uk/Documents/Baby\\_Friendly/Guidance/Baby\\_Friendly\\_guidance\\_2012.pdf](http://www.unicef.org.uk/Documents/Baby_Friendly/Guidance/Baby_Friendly_guidance_2012.pdf) [Accessed: 27 Dec 2012].
14. **NCT. POPPY Project** [Online]. Available from: <http://poppy-project.org.uk> [Accessed: 27 Dec 2012].
15. **Ohlinger J. et al.** Development of potentially better practices for the neonatal intensive care unit as a culture of collaboration: communication, accountability, respect and empowerment. *Pediatrics* 2003;111:e471.
16. **Karlsson V. et al.** Early skin to skin care in the extremely preterm infant: Thermal balance and care environment. *J Pediatr* 2012;161:422-26.