



Literature Review: Bed-sharing and Co-sleeping

Prepared for ACM by Professor Jeanine Young, Karen Watson and Dr Lauren Kearney (2014)

To be read in conjunction with the ACM position statement on Bed-sharing and Co-sleeping

Introduction

The issue of infant care practices is multifaceted and requires a holistic interpretation of relevant data to guide quality advice and practice by health care professionals and services. The ACM supports the facilitation of women and their families making informed choices in maternity and child care, including decisions about where their baby sleeps.

Definitions

Various terms have been used in the literature to define shared sleep environments between infants and their carers including co-sleeping, bed-sharing and room-sharing. McKenna and colleagues (1993) include both bed-sharing and room-sharing practices in a definition of co-sleeping:

Co-sleeping from the standpoint of the infant may be defined as sleeping either in contact with another person (in someone's arms, passively touching while lying in bed) or close enough to access, respond to or exchange sensory stimuli such as sound, movement, touch, vision, gas and olfactory stimuli (McKenna et al. 1993, p264).

In developing guidelines for increasing the safety of shared sleep environments whilst supporting breastfeeding families, UNICEF (2004) has differentiated between co-sleeping and bed-sharing. UNICEF (2004) defines co-sleeping as a mother and/or her partner (or any other person) being asleep on the same sleep surface as the baby; while bed-sharing refers to bringing baby onto a sleep surface when co-sleeping is possible, whether intended or not.

The term 'sharing the same sleep surface' is also used in this literature review, which includes the practices of bed-sharing and co-sleeping on the same sleep surface. This terminology, consistent with SIDS and Kids (SIDS & Kids 2013; Queensland Health 2013), allows for differentiation of the risks associated with solitary sleeping (baby sleeping in a separate room), room-sharing and environments in which the baby and caregiver share the same sleep surface.

The definitions used for co-sleeping and bed-sharing in this ACM position statement are consistent with definitions used in safe sleeping guidelines nationally (SIDS and Kids 2013; Qld Health 2013) and internationally (UNICEF 2004; Infant Sleep Information Source (ISIS) 2013) by health professionals and policy development, and allow for differentiation of the risks associated with solitary sleeping, room sharing and environments in which baby and caregiver share the same sleep surface.

Bed-sharing refers to bringing a baby onto a sleep surface when co-sleeping is possible, whether intended or not (UNICEF 2004; ISIS 2013; Queensland Health 2008; 2013).

Co-sleeping is defined as a mother and/or her partner (or any other person) being asleep on the same sleep surface as the baby (UNICEF 2004; ISIS 2013; Queensland Health 2013).

Room-sharing, bed-sharing and co-sleeping practices

Room-sharing reduces the risk of sudden infant death (Scragg et al 1996; Blair et al 1999; Fleming et al 2000; Mitchell 2007; Moon et al 2007). Please see Glossary for definition of room-sharing. SIDS and Kids therefore recommends sleeping with a

baby in a cot next to the parents' bed for the first six to twelve months of life (SIDS & Kids 2013). An evaluation of factors associated with day-time deaths demonstrated that the adverse effect of unsupervised sleep recognised for night-time practice was also significant for day time sleeps, and was particularly associated with side sleeping and head covering (Blair et al 2006). Room-sharing facilitates rapid response to a baby's needs; more convenient settling and comforting of babies than compared to sleeping in a separate room; and closer mother-infant contact and communication (McKenna & McDade 2005). As room-sharing reduces the risk of sudden infant death and babies of smokers are at an increased risk, current advice is that parents who are smokers are encouraged to room-share (but *not* share the same sleep surface), as long as the room that baby sleeps in is kept smoke-free (SIDS and Kids 2008).

Co-sleeping is considered the social norm for approximately 90% of the world's population, with two thirds of the world's cultures habitually practising mother-infant co-sleeping on the same bed or sleeping surface (McKenna & McDade 2005). This proportion is much higher if the definition of co-sleeping is extended to include room-sharing (Morelli et al 1992; McKenna et al 2007).

Within our culturally diverse society the practice of sharing a sleep surface with a baby is a common parenting choice (Abel et al 2001; McKenna & McDade 2005; Tipene-Leach et al 2000). Reports in Australia suggest an incidence between 51-80% depending on infant age at time of measurement (Rigda et al 2000; Panaretto et al 2002; Schluter & Young 2002; Young et al 2008; Young & Thompson 2009). A small study conducted in South Australia demonstrated that around 40% of young babies spent some time sharing a bed for at least part of the night (Rigda et al 2000). A larger Queensland infant care practice study (n=2534) demonstrated that bed-sharing was common, being reported as their usual practice by 46% of parents when their infants were approximately three months of age. Although most infants (51%) were brought into bed for short periods (1-3 hours/night) during the night, almost a third (31%) bed-shared for 6 hours or more/night (Young et al. 2008; Young & Thompson 2009).

Bed-sharing, or sharing the same sleep surface, is the usual, often valued, and accepted way for Aboriginal infants and their parents to sleep (Desmosthesous & Desmosthesous 2011). A recent report highlighted that many Australian families, including Aboriginal mothers, found directives that advised parents not to bed-share or co-sleep were unhelpful and unrealistic, and wanted more information on enablers for safe bed-sharing and for both government and non-government organisations to evaluate and/or recommend those safest to use (Dodd 2012). More recently researchers in the area of sudden unexpected deaths in infancy have supported the need for further investigation of the role of sleep enablers that keep babies and parents close during the night while reducing the risk of unsafe sleep environments (Mitchell & Blair 2012).

Sharing the same sleep surface with a baby is a complex issue that encompasses many factors.

Benefits of bed-sharing

Bed-sharing with a baby has been associated with enhanced maternal-infant bonding and maternal responsiveness (Young 1998, 1999; Baddock et al 2012; McKenna & McDade 2005); improved settling with reduced crying (Young 1999); improved maternal and infant sleep and increased arousals (Mosko et al 1997a, 1997b; Young 1999; UNICEF UK Baby Friendly Initiative 2004); increased duration of breastfeeding (McKenna, Mosko & Richard 1997; McKenna & McDade 2005, Huang et al 2013; Colson et al 2013); and reduced formula supplementation (Pemberton 2005).

Breastfeeding is universally recognised as the optimal way to feed infants, due to the numerous health benefits for both infants and their mothers (World Health Organisation 2009). In Australia, breastfeeding initiation rates are high (96%), although rapidly decline to only 39% of babies exclusively breastfed to three months of age, with the figure falling to 15% by around six months (Australian Institute of Health and Welfare 2012). Breastfeeding and sharing a sleep surface constitute an integrated care system which is mutually reinforcing; breastfeeding promotes shared sleep which increases breastfeeding frequency and extends duration of

breastfeeding in months (McKenna & McDade 2005; Ball 2012; Huang et al 2013; Colson et al 2013).

Population-based analysis has confirmed that bed-sharing patterns (either in early infancy or throughout the first 15 months of an infant's life) significantly affect breastfeeding beyond the age of 12 months (Blair, Heron, & Fleming 2010; Colson et al 2013). There is a strong association between breastfeeding and infant sleep patterns, with breastfed babies exhibiting night waking behaviour that is necessary both for nourishment and for ongoing stimulation of breast milk production in the mother (Galbally et al 2013). Considering that breastfeeding is protective against SUDI (Hauck et al 2011), it is desirable to encourage and support exclusive breastfeeding; and bed-sharing is an infant care practice significantly associated with breastfeeding longevity.

A positive link has been identified between breastfeeding and co-sleeping (bed or room sharing) practices in early life to the appropriate early regulation of the hypothalamic-pituitary-adrenal axis (HPA-axis); or, the ability to respond and adapt to stressors (Beijers et al 2013; Tollenaar et al 2012). Regulation of this stress response is an important factor for psychological health (Lupien et al 2009). Another benefit of shared sleep is the long-term positive effect it has into adulthood. Longitudinal studies have suggested that those who shared the parental bed as babies and children become adults with higher self-esteem, and better social skills and emotional outcomes (Mosenkis 1998; Okami, Weisner & Olmstead 2002; McKenna & McDade 2005). Furthermore, infants who sleep in close proximity to their parents in their own bassinet are also at a reduced risk of SUDI (Carpenter et al 2004).

Bed-sharing in and of itself does not appear to increase the risk of SUDI; it is the circumstances in which it occurs (Ball 2012; Blair & Fleming 2012; Blair et al 2009; Sobralske and Gruber 2009; Vennemann et al 2012; Bergman 2013). Please see Glossary for definitions relating to Sudden Unexpected Death in Infancy (SUDI) and Sudden Infant Death Syndrome (SIDS).

Infant care practices and ethnicity are closely associated. Ball and colleagues (2012) highlighted how South-Asian families living in the United Kingdom have a lower rate of SIDS than white British families. Their study found that South-Asian families were significantly more likely to bed-share with their infants, yet their infant care practices were more likely to protect infants from the most important risk factors significantly associated with sudden infant death, including maternal smoking, alcohol consumption, drug use, sofa sleeping and solitary infant sleeping (Ball et al 2012).

Further to these findings, ethnic groups where co-sleeping is traditional practice and smoking rates are low, report low rates of sudden infant death and infant mortality (Balarajan, Soni Raleigh, & Botting 1989; Farooqi, Perry, & Beevers 1993; Gantley, Davies, & Murcott 1993; Gessner & Porter 2006; Lee et al 1989; McKenna & McDade, 2005). Kilkeny and Lumley (1994) reported a low incidence of SIDS in ethnic communities in Australia, mainly mothers of southern European origin from Greece, Italy, former Yugoslavia, and some Asian born mothers. The differences were not explained by social and perinatal risk factors, but maternal smoking was lower than Australian born mothers.

Studies of ethnic groups living within predominantly Western (white Caucasian) societies have also highlighted the increase in risk of sudden infant death associated with increasing periods of residence, which may be explained by the influence and adoption of Western infant care practices and increased prevalence of maternal smoking, sleeping separately from infants and not breastfeeding (Gantley, Davies, & Murcott 1993).

However, under some circumstances bed-sharing is also strongly associated with SUDI.

Hazardous infant sleep environments

An impoverished, urban home environment where bed-sharing occurs has been associated with an increased risk of SUDI (McKenna & McDade 2005). Blair and colleagues (2009) conducted a four-year population based case-control study in

south-west England exploring the sleep environments in which infants died suddenly and unexpectedly, in light of the success of the "Back to Sleep" health promotion campaign of the 1990s. A significant interaction between co-sleeping and parental drug use, alcohol use prior to sleep, sofa sharing and/or smoke exposure was demonstrated in babies who died (n=80 SIDS infants) compared to the controls (n=87). Although a significant association between sudden infant death and co-sleeping was found overall (54% SIDS versus 21% controls) there was no association without these hazardous circumstances. "Much of this excess may be explained by a significant multivariable interaction between co-sleeping and recent parental use of alcohol or drugs (31% v 3% random controls) and the increased proportion of SIDS infants who had co-slept on a sofa (17% v 1%)" (Blair et al 2009, p.1). Maternal smoking during pregnancy, preterm birth and infant pillow use were also associated with sudden infant deaths. Only 6% of SIDS infants were found co-sleeping amongst non-smokers who had not consumed alcohol or drugs or used a sofa compared to 10% of controls. The authors found that despite the markers for socioeconomic deprivation, many of the SIDS infants had co-slept in an unsafe environment immediately preceding their death, and this factor is amenable to change (Blair & Fleming 2012; Blair et al 2009).

These findings are also consistent with a recent Australian Coroner's report from Victoria examining infant deaths from 2008 to 2010, in which alcohol or drug use was present in 70% of infant deaths associated with co-sleeping (Bugeja, Dwyer, & McIntyre 2012). In addition, the NSW Child Death Review Team (2012) reported consistent findings, highlighting one or more modifiable SUDI risk factors were present in 47 of 48 deaths, including the infant sharing a sleep surface with a drug or alcohol affected adult (NSW Child Death Review Team 2012).

Case-control studies have found that if the mother smoked or consumed alcohol the risk of bed-sharing with their infant was significant, especially when the infant was aged <8 weeks (Blair, et al., 2009; Carpenter, et al., 2004; Carpenter et al 2013). Similarly, the risk of bed sharing has been found to be more pronounced when coupled with a soft sleep surface, pillow use, maternal smoking and younger infant age (Fu, Moon, & Hauck 2010; Carpenter et al 2013). The combination of recent

maternal alcohol consumption and co-sleeping with an infant on a soft shared surface (bed or sofa), have been identified as the strongest predictors of SIDS (Blair & Fleming 2012; Blair et al 2009; Fleming et al 2012; Carpenter et al 2013).

A recent study (Carpenter et al 2013) that reviewed data from five case-control studies reported that for babies under 3 months of age there was a five-fold increase in the risk of SIDS when bed-sharing even when parents did not smoke, or the mother had not taken alcohol or drugs. However, this study did not account for maternal alcohol consumption in the last 24 hours or illegal drug use in three of these studies, and partner alcohol and drug consumption was not measured in any study, which poses a considerable limitation in interpretation of findings. Interestingly this study also did not include data from the in United Kingdom (Blair et al 2009) which measure these variables, and only found a significant interaction between co-sleeping and parental drug use, alcohol use prior to sleep, sofa sharing and/or smoke exposure (Blair et al 2009; Blair and Fleming 2012).

Further, unintentional suffocation is becoming increasingly recognised as a significant contributor to SUDI. Unsuitable bedding, temporary sleeping arrangements and a co-sleeping partner have been attributes of accidental suffocation deaths of infants (Hayman, Dalziel, & Baker 2012).

Bed sharing death data often include infant deaths while sleeping on a sofa with a parent. For most sofa-sharing deaths sofa-sharing was not the usual practice and often parents unintentionally fell asleep while settling and feeding their infant (Kendall-Tackett, Cong, & Hale 2010). A recent meta-analysis (Fleming, et al., 2012) found a 23-fold pooled risk for sofa-sharing which is almost 8 times the pooled risk for bed sharing. Parental alcohol and drugs use were implicated, in addition to low birth weight and mechanical suffocation by wedging (Fleming, et al 2012). In the UK SWISS study, a sixth of all SIDS deaths occurred when an infant co-slept on a sofa with a parent. Most parents unintentionally fell asleep whilst feeding and some explained they used the sofa as they did not want to bring baby into the parental bed (Blair & Fleming 2012) as they had been told this was a risk.

In 2014, analysis from two case-control studies conducted in the United Kingdom was published which specifically aimed to quantify whether there is risk of sudden infant death associated with bed-sharing in the absence of known hazards and to explore the interactions with other known significant predictors of sudden infant death to better understand the potential risks for babies. These studies had included data collection relating to breastfeeding status, smoking, alcohol consumption, drug and medication use, and sofa-sharing. The risk of sudden infant death was not significantly associated with bed-sharing in the absence of sofa-sharing, alcohol consumption and smoking. For babies less than 3 months of age, the same proportion of SIDS infants and control infants bed-shared in the absence of these hazardous conditions and the difference was not significant. However, for infants older than 3 months of age, bed-sharing in the absence of other hazards was significantly protective (OR 0.08 [95% CI: 0.01-0.52] p=0.009). The authors concluded that to give blanket advice to all parents never to bed-share with the baby does not reflect the evidence, and that such advice may influence parents to seek alternative, more dangerous sleep surfaces such as a sofa (Blair, Sidebotham, Pease, Fleming 2014).

In summary, the risk associated with shared sleep surfaces is significantly increased by the presence of other known risk factors for sudden infant death including antenatal and postnatal exposure to tobacco smoking, prone sleep position, parental drug (prescribed or illicit) and alcohol consumption, soft sleep surfaces, multiple bed-sharers, maternal sedation and obesity. Sleeping on a sofa with a baby significantly increases the risk and should be avoided. Babies most at risk of SUDI are those born preterm, of low birth weight, and babies less than 11 weeks of age (Blair et al 2006; Blair et al 2009; Trachtenberg et al 2012, Carpenter et al 2013; Fleming et al 2000, CCYPCG 2012; NSW Child Death Review Team 2005, 2012).

When health services issue strict health promotion messages about safe infant sleep, it can leave parents "...educationally stranded without safety information" (McKenna & McDade 2005, p. 135) which is specific to their own practice and home environment.

Sharing the same sleep surface with a baby is a complex issue that encompasses many factors. Valued practices, including bed sharing with a baby, need recognition in order to make public health messages effective (Abel, et al 2001; Tipene-Leach et al 2000, Fetherston & Leach 2012).

Some groups, including the American Academy of Pediatrics (American Academy of Pediatrics: Task Force on Sudden Infant Death Syndrome 2011) have adopted a strategy to advise parents to never bed-share. Similarly, public health bodies at a local level in the United States and the United Kingdom launched aggressive anti-bed sharing campaigns which were counterproductive and served more to offend parents than inform (Blair & Fleming 2012; Mitchell & Blair 2012). However, the International Society for the Prevention and Study of Infant Death (2012) has publically condemned this approach (<http://www.ispid.org/>).

In Australia, SIDS and Kids launched the revised national public health campaign "Sleep Safe, My Baby" in May 2012 with six key messages (Mitchell et al 2012; Young et al 2012):

1. *Sleep baby on the back from birth, not on the tummy or side*
2. *Sleep baby with head and face uncovered*
3. *Keep baby smoke free before birth and after*
4. *Provide a safe sleeping environment night and day*
5. *Sleep baby in their own safe sleeping place in the same room as an adult care-giver for the first six to twelve months*
6. *Breastfeed baby*

SIDS and Kids promotes a separate sleeping space in the same room as a caregiver for babies, however supports informed decision making by parents and provides evidence based advice for parents who share a sleep surface with their baby (SIDS and Kids 2012; 2013). Some Australian states have established guidelines consistent with the national SIDS and Kids approach, and international UNICEF recommendations (UNICEF UK Baby Friendly Initiative, 2012), such as Queensland Health's safe infant sleeping guidelines (Queensland Health 2013).

This risk minimisation approach is further supported by Fetherston and Leach (2012) who used Baum's six-step framework for examining the competing principles involved in the bed-sharing and breastfeeding debate and arrived at a positive construct using ethical considerations. Recommendations from this analysis included that families should receive messages tailored to their specific circumstances and risk factors, rather than a risk elimination approach that includes advice against any bed-sharing (Fetherston and Leach 2012).

It is evident that innovative approaches are required to engage high risk parents in discussion about safe infant sleeping together with the provision of practical support and strategies. For vulnerable families who choose to, those who do not intend to but do fall asleep, or those who have no option but to, share a sleep surface with their baby, novel approaches are required if we are to achieve a further reduction in sudden infant deaths.

Tools to enable safer bed-sharing

There is limited published literature evaluating practical safe sleep enablers which allow for close parent-baby proximity and bed-sharing, but within a safer infant sleep environment, and no published studies relating to the use or effectiveness of portable sleep spaces in Australian communities. A recent report has highlighted that many Australian families wanted more information on enablers for safe bed-sharing and which ones were recommended (Dodd 2012).

Side-car cots

Ball and colleagues (2011) conducted a randomised non-blinded parallel trial comparing sidecar cribs with standalone cots, in terms of effect on breastfeeding duration and exclusivity measured until 26 weeks postnatal age by telephone follow-up in 870 mothers and their infants. No statistically significant difference was found between the sidecar crib group and the stand-alone cot group in duration of any breastfeeding or exclusive breastfeeding, adjusting for maternal age, education, previous breastfeeding and delivery type. Bed-sharing was not more frequent once home in the side-car cot group either. The use of the sidecar cot in this study was to

evaluate its effect on breastfeeding exclusivity and duration, and effect on future bed-sharing by the infant and mother. Whilst enhanced infant safety is a natural consequence of the sidecar cot, it was not the focus of this research study (Ball et al 2011).

This finding varies from an earlier study also conducted by Ball and colleagues (2006) which involved an overnight video trial, where a clear divergence occurred between the sidecar cot and stand-alone cot groups in terms of breastfeeding initiation and frequency. When comparing rooming in (baby in same room, but stand-alone cot) with bedding in (baby on same sleep surface as parent, either in sidecar cot or parent bed) a significant increase in the frequency of breastfeeding attempts occurred.

Mothers and infants experiencing unhindered opportunity for night-time breastfeeding showed greater breastfeeding effort...than when the infants were physically separated by sleeping in a plastic bassinette (stand-alone cot) (Ball et al 2006, p.1008).

The development of sufficient prolactin receptors are dependent on frequent breastfeeding (Kent 2007), especially at night which this study affirmed can be affected by infant sleep location. Night-time breastfeeding is of vital importance in the early days in terms of establishing lactation and the infant learning how to suckle (Riordan & Wambach 2010, Galbally et al 2013), and in this study this was aided by the use of the sidecar cot.

In addition, Tully and Ball (2012) conducted a randomised trial with a parallel design to compare the interactions between mother-infant dyads with a post-natal side-car cot, or stand-alone bassinette. Participants were women who had delivered their baby via caesarean section. Sufficient video observations were captured for 33 mother-infant dyads. Differences in breastfeeding frequency, maternal sleep and midwife presence were not statistically different between the two groups. However, overwhelmingly mothers expressed enthusiasm for the side-car cot, stating it permitted visual and physical access to their infants, enabled emotional closeness

and facilitated breastfeeding. Infant safety was observed to be compromised in the stand-alone group, with one mother placing her new baby on a pillow to sleep while bed-sharing. Further, the researchers' filming revealed the mobility limitations of mothers who had a recent caesarean section and the stand alone cot, which introduced unanticipated risks to infants in terms of suboptimal handling (Tully & Ball 2012).

These studies primarily aimed to investigate the impact bed-sharing (both in parental bed and within the side-car cot) had on breastfeeding. As an unanticipated observation in the Tully & Ball (2012) study, the authors concluded the stand alone bassinets may be an institutionalised risk for infants of mothers after a caesarean, and consequently found the side-car cots a safer option for the infants. Limitations in generalisability remain, however, as trials were only conducted in hospital and did not explore the impact that safe sleep enablers have on breastfeeding and safe sleeping space in the home environment. Side-car cots are also relatively expensive and are only suitable for use until the infant is around four months of age. This may be financially beyond the reach of many families most vulnerable to SUDI. Further to this, logistically many bedrooms in modern homes (or indeed caravans or other homes occupied by disadvantaged families) cannot fit a full infant cot or bassinet within close proximity to the parent sleeping space.

Wahakura

The Wahakura is a natural, flax woven portable infant sleeping basket, which has been traditionally used by Maori communities in New Zealand (Mitchell & Blair 2012; Tipene-Leach & Abel 2010). It is approximately 36 cm x 72 cm in size and is culturally attractive and has been identified as particularly appealing amongst the Maori communities as it facilitates valued close proximity of parent and infant at night (Tipene-Leach 2012). This device is easily transportable, and can be taken anywhere the infant goes, assisting in the provision of a more consistent sleep environment for the infant. When distributed to families the Wahakura comes with specific 'rules' by which it would be used more safely:

- Smoke-free environment

- Face up, face clear
- Flat surface, no pillows, no loose blankets, no toys
- Put baby back into the Wahakura after feeding
- No intoxicated adults
- Take the Wahakura everywhere for every sleep

There has previously been very little data published examining the Wahakura however there is a randomised controlled trial currently underway in New Zealand, assessing the risks and benefits of this device. Families are randomised to receive a bassinette or Wahakura. Overnight sleep-video, oximetry, infant body temperature, maternal salivary oxytocin, and infant urinary cotinine are monitored at one month; and breastfeeding, attachment and sleep data is collected from interviews at 1, 3 and 6 months of age (Baddock et al. 2012).

Pēpi-pod Sleep Space and the Pēpi-pod Program

Wahakura are difficult to make and expensive to access. An alternative, the Pēpi-pod Sleep Space, is the little sister of the Wahakura, born of the same idea, but addressing the need for scale and access. The Pēpi-pod Sleep Space is a general purpose polypropylene box transformed into an infant bed through addition of a culturally suitable fabric cover and an upholstery-density, fabric covered, tight fitting mattress. The Pēpi-pod Program comprises the Pēpi-pod Sleep Space as a safe sleep enabler, safe sleeping education for the family, and the family's role in spreading safe sleeping messages.

Cowan and colleagues explored the use of the Pēpi-pod Program to enhance the safety of infants during the 2011 Christchurch, New Zealand earthquakes (Cowan et al. 2013). Pēpi-pods (n=642) were distributed shortly after the initial earthquake to families most affected by the earthquake and subsequent tremors. One hundred families responded to the feedback survey on the use of the Pēpi-pod Program. The parent reported benefits of the Pēpi-pod Program included: having the baby close, peace of mind, safe bed-sharing, portability, and assistance with infant settling. The interim findings of this novel and innovative portable infant sleep space are promising, with the New Zealand Ministry for Health committing to the distribution of

approximately 4000 Pēpi-pods and health promotion education throughout selected health boards in New Zealand during 2011-2012 for particularly vulnerable families (Cowan et al. 2013).

Whilst the interim findings of this study are positive, it is unknown how effective this intervention would be, or how well it would be accepted in other at-risk populations, such as our Indigenous Australians who co-sleep as a cultural norm but also experience much higher rates of sudden unexpected deaths in infancy compared to their non-Indigenous counterparts.

A Queensland pilot (n=5) with five Aboriginal families from metropolitan, rural and remote areas was conducted during 2013 to determine acceptability and feasibility of a culturally appropriate adaptation of the New Zealand Pēpi-pod Program. Positive parent experiences of using the Program to support safe infant sleep practices were reported and related to safety, convenience and portability. Parent responses highlighted that the Pēpi-pod Program was acceptable to participating Aboriginal and Torres Strait Islander families. Study design and methodology proved feasible through engagement with existing maternal and child health services demonstrating the potential for long term support and sustainability (Young, Craigie, Hine, Kosiak, Cowan 2013). A trial of the Pēpi-pod Program sleep space (target n=300 families) is currently underway in Queensland (2013-2015) with ten participating health services which provide care to Aboriginal and Torres Strait Islander families with young infants (Young, Craigie, Watson 2014).

The Role of Health Professionals

SIDS made up 7% of all infant deaths in Australia during 2010 (27 deaths per 100 000) with 94% of those deaths occurring between 29 days and 1 year post birth of an infant (AIHW 2012a). In Queensland, SUDI including SIDS and fatal sleeping accidents, is the third leading category for death of a child under 1 year of age (36.3 deaths per 100 000) (AIHW 2012b; CCYPCG 2012). While much progress has been made since the implementation of the Back to Sleep campaign in 1991, several studies conducted in Queensland have contributed to a body of evidence that strongly

suggests improvements can be made in the implementation of safe infant sleeping recommendations by both health professionals and parents that will reduce the risk of sudden infant death (Douglas, Buetter & Whitehall 2001; Panaretto et al 2002; Schluter & Young 2002; Young, Schluter & Francis 2002; Young & O'Rourke 2003; Young et al 2008; Young et al 2009; Young, Higgins and Raven 2013). Results from these studies demonstrate current advice relating to safe sleeping recommendations may not be received, or may not be implemented, by a proportion of the population at risk. These studies highlighted several areas specific to modifiable risk factors and the uptake of safe sleeping messages that could be addressed by improved parent education provided by health professionals (Young et al 2009; Young, Higgins and Raven 2013).

Research has demonstrated that the knowledge parents had of risk factors; information provided by health professionals; printed material distributed by hospitals and health services; the attitudes and behaviours of nurses and midwives; and whether alternative settling techniques were provided, all contributed to the decisions parents made in caring for their baby (NSW Child Death Review Team 2005; 2012). Recent studies conducted in Queensland (Schluter & Young 2002; Young & Thompson 2009; Young et al 2009) and in the United States (Colson & Cohen Joslin 2002) have demonstrated that parents who received health advice relating to their baby's sleeping position were significantly more likely to use the supine (on the back) position for sleep compared to parents who did not report receiving health advice. These findings have important implications for parent education by all health professionals caring for families with young infants.

Health professionals are in a unique position to educate parents and caregivers about sudden unexpected infant death. All health professionals who have contact with families with young infants have to the power to directly influence the behaviour of parents and caregivers, by modelling safe infant sleep practices while the infant is in hospital and by providing parents with information and support strategies, to ensure parent practices used at home are consistent with public health safe sleeping recommendations.

SIDS and Kids and the Australian College of Midwives have endorsed the Safe Infant Sleeping eLearning program developed by Young and colleagues (2013b) in collaboration with the Clinical Skills Development Centre, Queensland Health. This evidence-based educational resource, available nationally and by free access at www.sdc.qld.edu.au/courses/103 has been specifically designed to support health professionals working in hospital and community facilities as they role model and educate parents about safe infant sleeping recommendations. The guidelines for clinical practice and parent education contained within the education program are consistent with the principles for achieving best practice contained within the ACM position statement.

Greater efforts must be made to communicate and encourage safe sleep practices among all parents and carers. Reducing the rate of sudden infant death requires knowledge and action by parents, caregivers and all health care providers. In summary, evidence suggests many benefits of parents sharing a sleep surface with baby, particularly as a strategy to support breastfeeding and facilitate maternal contact and responsiveness. However, research also clearly shows that sharing a sleep surface with a baby increases the risk of SIDS and fatal sleeping accidents in some circumstances. There is currently insufficient evidence to issue a blanket statement either for or against this practice. No environment is risk free. McKenna and McDade (2005) suggest that bed-sharing outcomes are best conceptualised on a benefits-risk continuum with outcomes being determined by the presence or absence of known adverse or protective factors.

In consideration of the many documented benefits of shared sleeping, the need to promote and support breastfeeding, the high prevalence of shared sleep environments, and the right of parents to make informed choices about their baby's care, the ACM supports the recommendation that parents should be provided with information that includes benefits, risks and strategies to reduce the risk and increase safety associated with shared sleep environments, should they decide or have no option but to share a sleep surface with their baby (Blair et al 1999; Young 1999; Blair et al. 2006; McKenna, Ball & Gettler 2007). Please see Appendix A: Risk Minimisation Approach for Home Environments for strategies to reduce the risk of sudden

unexpected deaths in infancy, including SIDS and fatal sleeping accidents, associated with co-sleeping and bed-sharing environments.

This risk minimisation recommendation is consistent with, and supported by, recommendations for health professional practice proposed by UNICEF (2004, 2005), the Royal College of Midwives (RCM 2004) and SIDS and Kids (SIDS & Kids 2012, 2013).

Future Research

There is limited Australian research on the prevalence and incidence of bed-sharing and co-sleeping in contemporary Western societies and Indigenous communities using current definitions which differentiate between shared sleeping environments. Further research examining the unique nature of the postnatal maternity environment, factors which influence health professional current clinical practice, and the impact of health professional modeling in relation to ongoing maternal co-sleeping and bed-sharing behaviours is required (Drever-Smith, Bogossian and New 2013).

Glossary

Definitions of terms used in this position statement and supporting documents

Term	Definition / Explanation / Details	Source
Bed-sharing	Bed-sharing refers to bringing baby onto a sleep surface when co-sleeping is possible, whether intended or not.	<p>UNICEF Leaflet "Sharing a bed with your baby: A guide for breastfeeding mothers" (May 2008) available www.babyfriendly.org.uk/pdfs/sharingbedleaflet.pdf</p> <p>UNICEF U.K. Baby Friendly Initiative (2004). <i>Babies sharing their mothers' bed while in hospital: A sample policy</i>. UNICEF UK Baby Friendly Initiative, London.</p> <p>Infant Sleep Information Source (2013) Definitions of terms used on this site. Available 18 October 2013 from http://www.isisonline.org.uk/hcp/research_evidence/definitions/</p>
Co-sleeping	Co-sleeping is defined as a mother and /or her partner (or any other person) being asleep on the same sleep surface as the baby.	<p>UNICEF Leaflet "Sharing a bed with your baby: A guide for breastfeeding mothers" (May 2008) available at www.babyfriendly.org.uk/pdfs/sharingbedleaflet.pdf</p> <p>UNICEF U.K. Baby Friendly Initiative (2004). <i>Babies sharing their mothers' bed while in hospital: A sample policy</i>. UNICEF UK Baby Friendly Initiative, London.</p> <p>Infant Sleep Information Source (2013) Definitions of terms used on this site. Available 18 October 2013 from http://www.isisonline.org.uk/hcp/research_evidence/definitions/</p>
Sharing the same sleep surface	Includes the practices of <i>bed-sharing</i> and <i>co-sleeping on the same sleep surface</i> . This terminology allows differentiation of the risks associated with solitary sleeping (baby sleeping in a separate room), room-sharing, and environments in which the baby and caregiver share the same sleep surface	<p>SIDS and Kids (2013) Information Statement: <i>Sleeping with a baby</i>. Original .September, 2007. Melbourne: SIDS and Kids. Downloaded 18th October 2013 from http://www.sidsandkids.org.au</p> <p>Queensland Health. (2008) <i>Safe infant care to reduce the risk of sudden unexpected deaths in infancy: Policy statement and minimum practice standards</i>. Brisbane: Maternity, Child Health and Safety Branch, Queensland Health. [ISBN: 9781921447280] http://www.sidsandkids.org/wp-content/uploads/Safe-Infant-Sleeping-Policy-Statement-and-Guidelines.pdf</p>

Term	Definition / Explanation / Details	Source
SUDI	SUDI is defined as the "sudden, unexpected death of an infant usually occurring during sleep, in which the cause is not immediately obvious". SUDI is essentially a research classification, and refers to a broad category of sudden and unexpected deaths which include Sudden Infant Death Syndrome (SIDS), infections or anatomical or developmental abnormalities not recognised before death, fatal sleep accidents due to unsafe sleep environments, and sudden unexpected deaths that are revealed by investigations to have been the result of non-accidental injuries.	The State of Queensland (Commission for Children and Young People and Child Guardian Queensland) (2013) <i>Annual Report: Deaths of children and young people, Queensland 2012-2013</i> . Commission for Children and Young People and Child Guardian Queensland, Brisbane. Sidebotham P, Bajanowski T, Keens T, Kenner T, Kerbl R, Kurz R, Mitchell EA, Moon R, Taylor B, Venneman M, Young J, Zotter H. (2010) Proposal for an international classification of SUDI: A response to Blair, Byard and Fleming. <i>Scandinavian Journal of Forensic Science</i> 16(1): 9-11
SIDS	Sudden Infant Death Syndrome (SIDS) is defined as "the sudden and unexpected death of an infant under one year of age, with onset of the lethal episode apparently occurring during sleep, that remains unexplained after a thorough investigation including performance of a complete autopsy and review of the circumstances of death and the clinical history." SIDS is a subset of SUDI and is a classification of exclusion.	The State of Queensland (Commission for Children and Young People and Child Guardian Queensland) (2013) <i>Annual Report: Deaths of children and young people, Queensland 2012-2013</i> . Commission for Children and Young People and Child Guardian Queensland, Brisbane. Krous H, Beckwith J, Byard R, Bajanowski T, Corey T, Cutz E, Hanzlick R, Keens T, Mitchell, E. (2004) Sudden infant death syndrome and unclassified infant deaths: a definitional and diagnostic approach. <i>Pediatrics</i> 114(1): 234-238.
Fatal sleeping accident	A death occurring during sleep, as a result of an accident, such as a fall, or suffocation, or mechanical asphyxiation. Fatal sleeping accidents are explained deaths that meet SUDI criteria.	Commission for Children and Young People and Child Guardian Queensland (2013) <i>Annual Report: Deaths of children and young people, Queensland 2012-13</i> . Commission for Children and Young People and Child Guardian Queensland, Brisbane.
Passive smoking	Refers to breathing tobacco smoke in the environment.	Centre for Community Child Health (2006) <i>Preventing Passive Smoking Effects on Children: Practice Resource</i> . Victorian Government: Centre for Community Child Health. www.rch.org.au/ccch
Environmental tobacco smoke (ETS)	Refers to smoke from the end of a lit cigarette or breathed out by a smoker.	Centre for Community Child Health (2006) <i>Preventing Passive Smoking Effects on Children: Practice Resource</i> . Victorian Government: Centre for Community Child Health.
Room sharing	Refers to sleeping the baby in a cot or other separate sleeping surface in the same room as the parents.	SIDS and Kids (2008) Information Statement: <i>Room-sharing</i> . September, 2008. Melbourne: SIDS and Kids. http://www.sidsandkids.org.au

Appendix A: Risk Minimisation Approach for Home Environments

In consideration of the many documented benefits of shared sleeping, the need to promote and support breastfeeding, the high prevalence of shared sleep environments in contemporary Australian society and the right of parents to make informed choices about their baby's care, the Australian College of Midwives supports the recommendation that parents should be provided with information that includes benefits, risks and strategies to reduce the risk and increase safety associated with shared sleep environments, should they decide or have no option but to share a sleep surface with their baby (Young 1999; Blair et al 2009; Blair et al 2014; Baddock 2011; Ball 2012; McKenna, Ball & Gettler 2007).

This risk minimisation approach is consistent with, and supported by, recommendations for health professional practice proposed by UNICEF (UNICEF 2012, Blair & Inch 2012, Infant Sleep Information Source 2013), the Royal College of Midwives (Royal College of Midwives 2004) and SIDS and Kids (SIDS and Kids 2012; 2013).

Suggested strategies to reduce the risk of sudden unexpected deaths in infancy, including SIDS and fatal sleeping accidents, associated with co-sleeping and bed-sharing environments once at home

In order to provide parents with information to allow informed choices about safe sleeping practices relating to shared sleep environments, parent education should include the following information:

It is *not* safe to share a sleep surface with a baby if:

- Either parent is a smoker
- Either parent is under the influence of alcohol or illicit drugs
- Either parent is under the influence of medication that causes sedation, is excessively tired, or obese.

If parents choose to share a sleeping surface with their baby, the following strategies have been demonstrated to reduce the risk of sudden unexpected deaths in infancy, including SIDS and fatal sleeping accidents (Queensland Health 2008; SIDS and Kids 2012, 2013; Infant Sleep Information Source 2013, Australian Breastfeeding Association 2013):

- Sleep baby on the back from birth – never on the tummy or side.
- If baby lies on his or her side to breastfeed, baby should be returned to the supine (back) position for sleep.
- Make sure the mattress is firm and flat (not tilted or elevated)
- Make sure that bedding cannot cover baby's face or overheat baby (use lightweight blankets and remove pillows, doonas and other soft items from the environment that could cover baby);
- Sleep baby beside one parent only, rather than between two parents, to reduce the likelihood of baby becoming covered by adult bedding (unless sleep enabler that provides for a separate sleep surface and infant bedding is being used)
- Ensure partner knows baby is in the bed.
- As an alternative to bedding, an infant sleeping bag may be used so that the baby does not share the adult bedding. (N.B. Do not wrap baby if sharing a sleep surface as this restricts arm and leg movement).
- Make sure baby cannot fall off the bed. A safer alternative is to place the mattress on the floor (be aware of potential situations where baby can become trapped). Do not place pillows at the side of the baby to prevent rolling off.
- Pushing the bed up against the wall can be hazardous. Babies have died after being trapped between the bed and the wall.
- Never place a baby to sleep in a bed with other children or pets (see SIDS and Kids Frequently Asked Questions for specific advice about the safest way to sleep twins at www.sidsandkids.org)

- **Babies must never be left alone on an adult bed or put to sleep on a sofa, bean bag, waterbed or soft, sagging mattress.**
- Three sided-cots (a cot with one side down) may be available for purchase that can be attached to the side of the bed at the same level so that the baby has a separate environment but is still in contact with a parent during sleep. *Please note that currently there is no Australian standard for three-sided cots.*

References

- Abel S, Park J, Tipene-Leach D, Finau S & Lennan M. (2001) Infant care practices in New Zealand: a cross cultural qualitative study. *Social Science and Medicine* 53(9): 1135-1148.
- American Academy of Pediatrics: Task Force on Sudden Infant Death Syndrome (2011) SIDS and Other Sleep-Related Infant Deaths: Expansion of Recommendations for a Safe Infant Sleeping Environment. *Pediatrics* 128(5): e1-e27. Originally published online October 17, 2011; DOI: 10.1542/peds.2011-2285.
- Australian Breastfeeding Association. (2013) Breastfeeding, Co-sleeping and Sudden Unexpected Deaths in Infancy. (Authors: Kam R, Young J). Available from www.breastfeeding.asn.au/bfinfo/breastfeeding-co-sleeping-and-sudden-unexpected-deaths-infancy.
- Australian Institute of Health and Welfare. (2012a) *A Picture of Australia's Children 2012*, Cat. no. PHE 167. AIHW, Canberra.
- Australian Institute of Health and Welfare. (2012b) *Australia's Health 2012*. Australia's Health series no. 13. Cat. no. AUS 156. AIHW, Canberra.
- Baddock S. (2011) Co-sleeping: an ecological parenting practice. In Davies, L., Daellenbach R. & Kensington M (eds). (2011) *Sustainability, Midwifery and birth*, Routledge, London, pages 207-217.
- Baddock SA, Tipene-Leach D, Tangiora A, Williams S, Jones R, & Taylor B. (2012) Methodology and recruitment into a randomised control trial to evaluate sleeping options for New Zealand babies. *Paper presented at the 2012 International Conference on Stillbirth, SIDS and Infant Survival*, Baltimore, Maryland.
- Ball H. (2012). The latest on bed sharing and breastfeeding. *Community Practitioner* 85(1): 29-31.
- Ball H, Moya E, Fairley L, Westman J, Oddie S, Wright J. (2012) Infant care practices related to sudden infant death syndrome in South Asian and White British families in the UK. *Paediatric and Perinatal Epidemiology* 26(1):3-12. doi: 10.1111/j.1365-3016.2011.01217.x. Epub 2011 Aug 18.
- Ball HL, Ward-Platt MP, Howel D, Russell C. (2011) Randomised trial of side car cot use on breastfeeding duration (NECOT). *Archives of Diseases in Childhood* 96(7): 630-634.
- Ball HL, Ward-Platt MP, Heslop E, Leech SJ, Brown KA. (2006) Randomised trial of infant sleep location on the post-natal ward. *Archives of Diseases in Childhood* 91(12): 1005-10.
- Balarajan R, Soni Raleigh V, Botting B. (1989) Sudden infant death syndrome and post-neonatal mortality in immigrants in England and Wales. *British Medical Journal (Clinical research ed.)* 298(6675): 716-720.
- Beijers R, Risken-Walraven M, De Weerth C. (2013) Cortisol regulation in 12-month-old human infants: Associations with infants' early history of breastfeeding and co-sleeping *Stress* 16(3): 267-277.
- Bergman, AB 2013, Bed Sharing per se is not dangerous [Editorial], *Journal of the American Medical Association*: 167(11):998-999. doi:10.1001/jamapediatrics.2013.2569.

Blair P, Fleming P. (2012) Bed-sharing advice - an alternative strategy? Paper presented at the 2012 International Conference on Stillbirth, SIDS and Infant Survival, Baltimore, Maryland.

Blair P, Heron J, & Fleming P. (2010) Relationship between bed sharing and breastfeeding: Longitudinal, population based analysis. *Pediatrics* 126(5): e1119-1126.

Blair P, Inch S. (2012) The health professional's guide to "Caring for your Baby at night". In UNICEF UK Baby Friendly Initiative (Ed.). London: UNICEF.

Blair PS, Sidebotham P, Berry PJ, Evans M, Fleming PJ. (2006) Major epidemiological changes in sudden infant death syndrome: a 20 year population-based study in the UK. *The Lancet* 367(9507): 314-319.

Blair PS, Sidebotham P, Pease A, Fleming PJ. (2014) Bedsharing in the absence of hazardous circumstances: Is there a risk of sudden infant death syndrome? An analysis from two case-controlled studies conducted in the UK. *PLOS One* September 9(9): e107799. DOI:10.1371/journal.pone.0107799.

Blair PS, Fleming PJ, Smith IJ, Ward-Platt M, Young J, Nadin P, Berry PJ, Golding J and the CESDI SUDI Research Group. (1999) Babies sleeping with parents: case-control study of factors influencing the risk of the sudden infant death syndrome. *British Medical Journal* 319(7223): 1457-1462.

Blair PS, Sidebotham P, Evason-Coombe C, Edmonds M, Heckstall-Smith EMA, Fleming, P. (2009). Hazardous cosleeping environments and risk factors amenable to change: case-control study of SIDS in south-west England. *British Medical Journal* 339(b3666). Available at doi: <http://dx.doi.org/10.1136/bmj.b3666>.

Bugeja L, Dwyer, J, McIntyre, S. (2012) *Sleep-related infant deaths and the role of co-sleeping: a case series study in Victoria Australia*, Coroners Court of Victoria, Australia.

Carpenter R, Irgens I, Blair P, England P, Fleming P, Huber, J, Jorch G, Schreuder P. (2004) Sudden unexplained infant death in 20 regions in Europe: case control study. *The Lancet* 363(9404): 185-191.

Carpenter R, McGarvey C, Mitchell, EA, Tapping DM, Vennemann MM, Smuk S, Carpenter JR. (2013) Bedsharing when parents do not smoke: is there a risk of SIDS? AN individual level analysis of five major case-control studies. *British Medical Journal Open* 2013, 3:e002299. doi:10.1136/bmjopen-002299.

Colsen ER & Cohen Joslin S (2002) Changing Nursery Practice Gets Inner-city Infants in the Supine Position for Sleep. *Archives of Pediatrics and Adolescent Medicine* 156(7): 717-720.

Colson ER, Willinger M, Rybin D, Heeren T, Smith LA, Lister G, Corwin MJ. (2013) Trends and Factors Associated with Infant Bed-Sharing 1992-2010. *JAMA Pediatrics* Published Online September 30, 2013. doi:10.1001/jamapediatrics.2013.2560.

Commission for Children and Young People and Child Guardian [CCYPCG] Queensland, The State of Queensland) (2012) *Annual Report: Deaths of children and young people, Queensland 2011-2012*. Commission for Children and Young People and Child Guardian, Queensland, Brisbane.

Cowan S, Bennett S, Clarke J, & Pease A. (2013) An evaluation of portable sleeping spaces for babies following the Christchurch earthquake of February 2011. *Journal of Paediatrics and Child Health* 49(5): 364-8. doi: 10.1111/jpc.12196. Epub 2013 Apr 11.

Desmosthesous C, & Desmosthesous T. (2011). *The Indigenous Safe Sleep Project: Closing the gap on knowledge, resources and access in Queensland*. Brisbane: SIDS and Kids Queensland.

Dodd J. (2012) *Evaluation of the Department of Health Western Australian Operational Directive Statewide Co-sleeping / Bed-sharing Policy for WA Health Hospitals and Health Services*. Collaboration for Applied Research and Evaluation : Telethon Institute for Child Health Research under contract with the Department of Health, Western Australia.

Douglas T A, Buettner PG, Whitehall J. (2001) Maternal awareness of sudden infant death syndrome in North Queensland, Australia: An analysis of infant care practice. *Journal of Paediatrics and Child Health* 37(5): 441-5.

Drever-Smith C, Bogossian F, New K. (2013) Co-sleeping and Bed sharing in Postnatal Maternity Units: A review of the literature and critique of clinical practice guidelines. *International Journal of Childbirth* 3(1): 13-27. <http://dx.doi.org/10.1891/2156-5287.3.1.13>

Farooqi S, Perry IJ, Beevers DG. (1993) Ethnic differences in infant-rearing practices and their possible relationship to the incidence of sudden infant death syndrome (SIDS), *Paediatric and Perinatal Epidemiology* 7(3): 245-252.

Fetherston CM, Leach JL. (2012) Analysis of the ethical issues in the breastfeeding and bedsharing debate. *Breastfeeding Review* 20(3): 7–17.

Fleming PJ, Blair PS, Bacon C, Berry J. (Eds) (2000) *Sudden unexpected deaths in infancy: the CESDI SUDI studies 1993-1996*. London: The Stationery Office.

Fleming P, Vennemann M, Moon R, Kiechl-Kohlendorfer U, Hauck F, Byard R & Blair P. (2012) Sofa-sharing: A meta-analysis, *paper presented at the 2012 International Conference on Stillbirth, SIDS and Infant Survival, Baltimore, Maryland*.

Fu L, Moon R, Hauck F. (2010) Bed sharing among black infants and sudden infant death syndrome: Interactions with other known risk factors, *Academic Pediatrics* 10(6): 376-382.

Galbally M, Lewis AJ, McEgan K, Scalzo K & Islam A (2013) Breastfeeding and infant sleep patterns: an Australian population study. *Journal of Paediatrics and Child Health* 49(2): E147-52. doi: 10.1111/jpc.12089. Epub 2013 Jan 21.

Gantley M, Davies DP, Murcott A. (1993) Sudden infant death syndrome: links with infant care practices, *British Medical Journal (Clinical research ed.)* 306(6869): 16-20.

Gessner BD, Porter TJ. (2006) Bed sharing with unimpaired parents is not an important risk for sudden infant death syndrome. *Pediatrics* 117(3): 990-991.

Hauck F, Thompson J, Tanabe K, Moon R & Vennemann M. (2011). Breastfeeding and reduced risk of sudden infant death syndrome: A meta-analysis. *Pediatrics* 128(1): 103-110.

Hayman R, Dalziel S, Baker N. 2012, The context and circumstances of unintentional suffocation in place of sleep in New Zealand. *Paper presented at the 2012 International Conference on Stillbirth, SIDS and Infant Survival, Baltimore, Maryland*.

Huang I, Hauck FR, Signore C, Airong Y, Tonse NKR, Huang TTK, Fein SB. (2013) Influence of bedsharing activity on breastfeeding duration among US mothers. *JAMA Pediatrics* Published Online 23rd September, 2013. doi.10.1001/jamapediatrics.2013.2632.

Infant Sleep Information Source (ISIS): Information for Parents and Carers Collaboration between Durham University Parent-Infant Sleep Laboratory, La Leche League, National Childbirth Trust and UNICEF UK Baby Friendly Initiative funded by the Economic and Social Research Council (ESRC). <http://www.isisonline.org.uk/>

Kendall-Tackett K, Cong Z & Hale T. (2010) Mother-infant sleep locations and nighttime feeding behaviors: US data from the Survey of Mothers' Sleep and Fatigue. *Clinical Lactation* 1(1): 27-36.

Kent JC. (2007) How Breastfeeding Works. *Journal of Midwifery and Women's Health* 52(6): 564-570.

Kilkenny M, Lumley J. (1994) Ethnic differences in the incidence of the sudden infant death syndrome (SIDS) in Victoria, Australia 1985-1989. *Paediatric and Perinatal Epidemiology* 8(1): 27-40.

Lee NN, Chan YF, Davies DP, Lau E, Yip DC. (1989) Sudden infant death syndrome in Hong Kong: confirmation of low incidence. *BMJ (Clinical research ed.)* 298(6675): 721.

Lupien SJ, McEwen BS, Gunnar MR, Heim C. (2009) Effects of stress throughout the lifespan on the brain, behaviour and cognition. *Nature Reviews Neuroscience* 10(6): 434-445. doi: 10.1038/nrn2639. Epub 2009 Apr 29.

McKenna JJ, Ball HL, Gettler LT. (2007) Mother-infant cosleeping, breastfeeding and sudden infant death syndrome: what biological anthropology has discovered about normal infant sleep and pediatric sleep medicine. *American Journal of Physical Anthropology* 134(Supplement 45): 133-61.

McKenna J & McDade T. (2005) Why babies should never sleep alone: A review of the co-sleeping controversy in relation to SIDS, bedsharing and breastfeeding. *Paediatric Respiratory Reviews* 6(2): 134-152.

McKenna J, Mosko S, Richard, C. (1997). Bedsharing promotes breastfeeding. *Pediatrics* 100(2 Pt 1): 214-9.

McKenna J, Thoman EB, Anders TF, Sadeh A, Schechtman VL, Glotzbach SF. (1993) Infant-parent co-sleeping in an evolutionary perspective: implications for understanding infant sleep development and the sudden infant death syndrome, *Sleep* 16(3): 263-282.

Mitchell EA (2007) Recommendations for sudden infant death syndrome prevention: a discussion document. *Archives of Disease in Childhood* 92(2): 155-159.

Mitchell E & Blair P (2012) SIDS prevention: 3000 lives saved but what can we do better? *New Zealand Medical Journal* 125(1359): 50-56.

Mitchell E, Freemantle J, Young J, Byard R. (2012). Scientific consensus forum to review the evidence underpinning the recommendations of the Australian SIDS and Kids Safe Sleeping Health Promotion Programme - October 2010. *Journal of Paediatrics and Child Health* 48(8): 626-633. doi:10.1111/j.1440-1754.2011.02215.x

Moon RY, Horne RS, Hauck FR (2007) Sudden infant death syndrome. *Lancet* 370(9598):1578-89.

Morelli GA, Rogoff B, Oppenheim D, Goldsmith D (1992) Cultural Variation in Infants' Sleeping Arrangements: Questions of Independence, *Developmental Psychology*. 28(4): 604-613.

Mosenkis J. (1998). *The effects of childhood co-sleeping on later life development*. MSc, The University of Chicago.

Mosko S, Richard C, McKenna J. (1997a) Infant arousals during mother-infant bed sharing: implications for infant sleep and sudden infant death syndrome research. *Pediatrics* 100(5): 841-849.

Mosko S, Richard C, McKenna J. (1997b) Maternal sleep and arousals during bedsharing with infants. *Sleep* 20(2): 142-150.

NSW Child Death Review Team. (2012) NSW Child Death Review Team - Annual Report 2011. Sydney: NSW Ombudsman.

NSW Child Death Review Team. (2005) *Sudden Unexpected Deaths in Infancy: the New South Wales experience*. Sydney: NSW Commission for Children and Young People, NSW Child Death Review Team, 2005.

Okami P, Weisner T, Olmstead R. (2002) Outcome correlates of parent-child bedsharing: an eighteen-year longitudinal study. *Developmental and Behavioral Pediatrics* 23(4): 244-253.

Panaretto KS, Smallwood VE, Cole P, Elston J, Whitehall JS. (2002) Sudden infant death syndrome risk factors in north Queensland: A survey of infant-care practices in Indigenous and non-Indigenous women. *Journal of Paediatrics and Child Health* 38(2): 129-134.

Pemberton, D. (2005). Breastfeeding, co-sleeping and the prevention of SIDS. *British Journal of Midwifery* 13(1): 12-18.

Queensland Health (2013) Safe Infant Sleeping, Co-sleeping and Bed-sharing: Guideline for Safe Infant Sleeping, Co-sleeping and Bed-sharing. Version 1.0 Effective 1 July 2013. QH-GDL-362: 2013

Queensland Health. (2008) Safe infant care to reduce the risk of sudden unexpected deaths in infancy: Policy statement and minimum practice standards. Brisbane: Maternity, Child Health and Safety Branch, Queensland Health. Acknowledged Author: Dr Jeanine Young [ISBN: 9781921447280] Available <http://www.sidsandkids.org/wp-content/uploads/Safe-Infant-Sleeping-Policy-Statement-and-Guidelines.pdf>

Riordan, J & Wambach, K (Eds.) (2010) *Breastfeeding and human lactation*. 4th edition Sudbury, MA: Jones & Bartlett Learning.

Rigda RS, McMillen IC, Buckley P (2000) Bed sharing patterns in a cohort of Australian infants during the first six months after birth. *Journal of Paediatrics and Child Health* 36(3): 181-188.

Royal College of Midwives (2004) *Bed-sharing and cosleeping: Position Statement No.*

Schluter PJ, Young J. (2002) Reducing the risk of Sudden Infant Death Syndrome: what infant care practices are being used by primary care-givers in Queensland? *Neonatal, Paediatric and Child Health Nursing* 5(2): 27-35.

Scragg RKR, Mitchell EA, Stewart AW, Ford RPK, Taylor BJ, Hassall IB, Williams SM, Thompson JMD (1996) Infant room-sharing and prone sleep position in sudden infant death syndrome, *Lancet* 347(8993): 7-12.

Sidebotham P, Bajanowski T, Keens T, Kenner T, Kerbl R, Kurz R, Mitchell EA, Moon R, Taylor B, Venneman M, Young J, Zotter H. (2010) Proposal for an international classification of SUDI: A response to Blair, Byard and Fleming. *Scandinavian Journal of Forensic Science* 16(1): 9-11.

SIDS and Kids (2013) Information statement: *Sleeping with a baby*. First published September, 2007. Canberra: SIDS and Kids. <http://www.sidsandkids.org> (Being updated in 2013 by December 2013).

SIDS and Kids (2008) Information Statement: *Room-sharing*. September, 2008. Melbourne: SIDS and Kids. <http://www.sidsandkids.org.au>

SIDS and Kids (2012) *Safe Sleeping: A guide to assist in sleeping your baby safely*. Melbourne: SIDS and Kids. www.sidsandkids.org

Sobral Mc, Gruber Me. (2009) Risks and benefits of parent/child bed sharing. *Journal of the American Academy of Nurse Practitioners*, 21(9): 474 - 479. DOI: 10.1111/j.1745-7599.2009.00430.x

Tipene-Leach, D (2012) The Pēpi-pod: A bed-sharing 'safer' sleeping environment for SIDS prevention. Paper presented at the 2012 International Conference on Stillbirth, SIDS and Infant Survival, Baltimore, Maryland.

Tipene-Leach, D & Abel, S (2010) The Pēpi-pod and the safe sleeping environment, *Journal of Primary Health Care* 2(1): 81.

Tipene-Leach D, Abel S, Finau S, Park J, Lenna M. (2000) Maori infant care practices: implications for health messages, infant care services and SIDS prevention in Maori communities. *Pacific Health Dialogue* 7(1): 29-37.

Tollenaar MS, Beijers R, Jansen J, Risken-Walraven JMA, de Weerth C. (2012) Solitary sleeping in young infants is associated with heightened cortisol reactivity to a bathing session but not to a vaccination. *Psychoneuroendocrinology* 37(2):167-177. Available doi.org/10.1016/j.psyneuen.2011.03.017.

Trachtenberg FL, Haas EA, Kinney HC, Stanley C, Krous HF. (2012) Risk factor changes for sudden infant death syndrome after initiation of back-to-sleep campaign. *Pediatrics* 129(4): 630-8. Available doi:10.1542/peds.2011-1419.

Tully K, Ball H. (2012) Postnatal unit bassinet types when rooming-in after cesarean birth: implications for breastfeeding and infant safety *Journal of Human Lactation* 28(4): 495-505. Published online 2012 August 22. doi: [10.1177/0890334412452932](https://doi.org/10.1177/0890334412452932)

UNICEF UK Baby Friendly Initiative. (2012) *Caring For Your Baby at Night: A guide for parents*. In UNICEF UK Baby Friendly Initiative (Ed.). London: UNICEF.

UNICEF UK Baby Friendly Initiative. (2004) *Babies sharing their mothers' bed while in hospital: A sample policy*. London: UNICEF UK Baby Friendly Initiative.

Vennemann, M Hense, H Bajanowski, T Blair, P Compojer, C Moon, R & Kiechl-Kohlendorfer, U (2012) Bed-sharing and the risk of Sudden Infant Death Syndrome: Can we resolve the debate?, *The Journal of Pediatrics* 160(1): 44-48.

Young, J. (1998) Bedsharing with babies: the facts. *RCM Midwives Journal* 1(11): 338-341.

Young J. (1999) *Night-time behaviour and interactions between mothers and their infants of low risk for SIDS: a longitudinal study of room-sharing and bed-sharing*. PhD, University of Bristol (United Kingdom), Bristol.

Young J, Battistutta D, O'Rourke P, Thompson JMD. (2008). *Infant Care Practices Related to Sudden Infant Death Syndrome in Queensland 2002*. Brisbane: Queensland Health.

Young J, Craigie L, Hine H, Kosiak M, Cowan S. (2013) Safe Sleep Advice to Safe Sleep Action: Trial of an Innovative Safe Infant Sleep Enabler – The Pēpi-Pod. Australian College of Midwives 18th Biennial Conference: Life, Art and Science in Midwifery. 30 September – 3rd October 2013, Wrest Point, Tasmania. *Women and Birth: Journal of the Australian College of Midwives* 26(Supplement 1): S40. <http://dx.doi.org/10.1016/j.wombi.2013.08.219>.

Young J, Craigie L, Watson K. (2014) Safe Sleep Advice to Safe Sleep Action: A model for creating change in Aboriginal and Torres Strait Islander Communities. Themed Panel Presentation, The 2014 International Conference of Stillbirth, SIDS and Baby Survival, Amsterdam, 18-21st September, 2014.

Young J, Higgins N, Raven L. (2013) Reach, Effectiveness and Sustainability of a Safe Infant Sleeping eLearning Program. Australian College of Midwives 18th Biennial Conference: Life, Art and Science in Midwifery. 30 September – 3rd October 2013, Wrest Point, Tasmania. *Women and Birth: Journal of the Australian College of Midwives* 26(Supplement 1): S21. <http://dx.doi.org/10.1016/j.wombi.2013.08.281>.

Young J, Schluter P, Francis D. (2002) Final Report: Nursing knowledge, attitudes and practice relating to SIDS risk factors and Reduce the Risk of SIDS messages 2002. Royal Children's Hospital & HSD, Queensland Health: Brisbane.

Young J, Thompson J. (2009). Recommendations for real life: the nature of shared sleep environments in Queensland and implication for effective safe infant sleeping messages. *Forensic Science, Medicine and Pathology*, 5(2): 115.

Young J, O'Rourke P. (2003) Improving attitudes and practice relating to Sudden Infant Death Syndrome and the Reduce the Risk messages: The effectiveness of an educational intervention in a group of nurses and midwives. *Neonatal, Paediatric and Child Health Nursing* 6(2): 4-14.

Young J, Watson K, Ellis L, Raven L. (2012) Responding to the evidence: Breastfeed baby if you can – the sixth public health recommendation to reduce the risk of sudden unexpected death in infancy. *Breastfeeding Review* 20(1): 7-15.

Young J, Williams A, Ramsbotham J, Higgins N. (2009) Consistent and collaborative approaches to reduce preventable deaths: a Safe Infant Sleeping educational resource designed for health professionals. *Forensic Science, Medicine and Pathology* 5(2): 126-127.

World Health Organisation (2009) *Infant and Young Child Feeding: Model chapter for textbooks for medical students and allied health professionals*. World Health Organisation, Geneva.