Moving Beyond "Abstinence-Only" Messaging to Reduce Sleep-Related Infant Deaths

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Sudden unexpected infant death (SUID), the leading cause of post-neonatal infant mortality in the US,[1] encompasses sudden infant death syndrome (SIDS) as well as other causes such as accidental suffocation and strangulation in bed. In 2013, SIDS and SUID accounted, respectively, for 39.7 and 87.0 deaths per 100 000 live births. There have been persistent racial and ethnic disparities in these outcomes, with SIDS and SUID rates of African American infants (73.3 and 172.5, respectively) and American Indian/Alaskan Native infants (78.3 and 169.6, respectively) remaining more than twice those of white infants.[1,2]

Since 1992, the American Academy of Pediatrics (AAP) has addressed this health threat by periodically issuing and updating infant safe sleep recommendations. The initial AAP recommendation was a response to compelling evidence associating SIDS with prone sleeping. Following guidance disseminated in 1988 in the Netherlands and adopted by New Zealand, Australia, and the United Kingdom,[3] the AAP guidelines focused primarily on sleep position, specifying that infants should be placed supine for all sleep including naps. The National Institute of Child Health and Human Development (NICHD) adopted this message in 1994 as the cornerstone of its *Back to Sleep* campaign, a comprehensive public awareness effort that is credited with reducing the incidence of SIDS in the US from 130 deaths per 100 000 live births in 1990 to 55.5 per 100 000 by 2001.[4] Unfortunately, the pace of this decline slowed considerably in the early 2000s,[5] and racial disparities were also stubbornly resistant to change. Revised AAP guidelines released in 2005 and 2011 attempted to again move the needle by addressing additional risk factors (eg, smoke exposure, bed sharing, soft or loose bedding, overheating, alcohol or drug use) and protective factors (eg, approved sleep surface, breastfeeding, pacifiers, room sharing, prenatal care, immunizations, supervised tummy time when awake).[6,7] The 2011 AAP guidelines served as the foundation for a new high-profile NICHD public awareness campaign (branded *Safe to Sleep*), along with numerous campaigns and interventions at the state and local levels. Still, despite these expanded efforts, the SUID rate did not decline substantially in the decade and a half after the release of the 2005 AAP recommendations. Although SIDS rates did decline during this period, the proportion of SUIDs attributed to accidental suffocation and strangulation in bed in the US increased. This is likely because, as reported by the Centers for Disease Control and Prevention (CDC), coroners and medical examiners have increasingly classified SUID that occurs in the context of bed sharing as accidental suffocation and strangulation in bed or unknown cause rather than SIDS.[1] The CDC's SUID Initiative has piloted a system to improve the investigation and classification of SUID to reduce inconsistencies and obtain a clearer understanding of SUID etiology and continued disparities.[8]

The AAP released newly revised safe sleep guidelines,[5] with the most notable change being a greater stress on the importance of room sharing without bed sharing for at least the first 6 months of life. There was also a clear acknowledgement that it is common for parents to bring their infants into the adult bed for comfort and breastfeeding; however, there remains a strong admonition against bed sharing.

Given the reality of high rates of sleep-related infant deaths along with marked disparities between groups, we advocate for a new approach to safe infant sleep promotion that is grounded in harm reduction principles. Such an approach will provide evidence-based guidance for parents and caregivers to address modifiable risk factors and be more responsive to the intense demands of parenting. We frame our proposal with a focus on parent–infant bed sharing to illustrate how a harm reduction approach may more holistically address the familial context in which infant sleep takes place. Bed sharing is particularly relevant because its reported rates have increased as SUID and SIDS rates have stagnated.

We have characterized the way that the AAP safe sleep recommendations have been translated into campaigns and other messaging as "abstinence only," particularly where bed sharing is concerned.[9] Such an approach focuses on the dangers associated with bed sharing and omits discussion of how those risks might be mitigated short of eradicating the behavior. Similar to the "abstinence only" approach to sex education, or the "just say no" approach to drug use, safe sleep campaigns have endorsed a strong and unwavering abstinence position regarding the target behavior.[10] Even though the most recent AAP guidelines[5] have acknowledged the reality (and perhaps

ABC	Alone, back, crib
CDC	Centers for Disease Control and Prevention
NICHD	National Institute of Child Health and Human Development
AAP	American Academy of Pediatrics
SIDS	Sudden infant death syndrome
SUID	Sudden unexpected infant death

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inevitability) of some bed sharing,[11,12] health professionals in the US are reluctant to acknowledge the complex reality of families' lives and to suggest strategies for mitigating risk.[13] A recent literature review that included studies from multiple countries concluded that existing research does not support an unambiguous anti–bed-sharing stance. These authors highlight the need for interdisciplinary research with stronger study designs as well as a more nuanced approach to these complex biological, physiological, and cultural issues.[12]

Harm reduction theory can provide a useful framework for acknowledging parental motivations for bed sharing, understanding how parents use professional advice on infant sleep and safety, and promoting safer sleep behavior. This approach to behavior change is guided by a set of principles concerning the management of high-risk behaviors.[14,15] Harm reduction has been most often applied to risks related to illicit drug use, but has also been used with a wider range of behaviors such as alcohol use, safer sex, tobacco use, and eating disorders.[16] This evidence-based approach, which focuses on reducing risk rather than eliminating the target behavior, has potential for decreasing infant sleep-related deaths in the US. Over the years, AAP statements have varied in the extent to which they have incorporated harm reduction–style messaging regarding bed sharing, so a review of these trends is useful at this point.

Evolution of AAP Recommendations Regarding Bed Sharing

The AAP recommendations against parent–infant bed sharing have evolved over time in response to emerging research and knowledge regarding SIDS and other forms of SUID. Bed sharing was first addressed in 1997[17] in response to work from the Mother-Baby Behavioral Sleep Laboratory, which argued that mother–infant cosleeping developed as an evolutionarily adaptive response that enhanced infant survival.[18] The AAP's position at that time was that, "there are no scientific studies demonstrating that bed sharing reduces SIDS," but they did include strategies for reducing risk, such as eliminating soft bedding and avoiding smoking "if mothers choose to sleep in the same bed with their infants."[17] The AAP report issued in 2000 expanded on the bed-sharing recommendations and cautioned that, "Bed-sharing or co-sleeping may be hazardous under certain conditions" and detailed the potential risks and ways they could be minimized.[19] This report also cautioned against cosleeping on sofas or with other children.

A major shift in the tone of the AAP's recommendations occurred in 2005.[6] Based on new case-control studies, the AAP concluded that there was a significant risk associated with bed sharing, particularly for infants younger than 12 weeks of age and even in the absence of maternal smoking. The 2011 AAP guidelines,[7] along with the associated NICHD *Safe to Sleep* campaign, took an even stronger stance against parent–infant bed sharing. Although a number of risks for SIDS and SUID were identified, including the use of duvets or other fluffy bedding, parental smoking and alcohol or drug use, and failure to breastfeed,[20] safe sleep guidelines were often translated into state and local public education campaigns that highlighted an abstinence-only approach focused rather narrowly on "ABC" (alone, back, crib) messaging.[9] As noted, the most recent AAP guidelines continue to caution against routine bed sharing, but have to some extent embraced more of a harm reduction approach in that they provide guidance for modification of the adult bed to mitigate some of the risk.[5] However, given the apparent appeal of strict abstinence-only messaging in the safe sleep realm, it remains to be seen whether the new guidelines will result in state and local campaigns adopting more harm reduction messaging.

Despite the strong and persistent ABC focus of safe sleep messages, significant numbers of parents do not fully adhere to these guidelines. The proportion of parents across racial and ethnic groups in the US who report that they usually share a bed with their infant has more than doubled in the last 20 years. In 1993, 6.5% of parents reported usual bed sharing, and by 2010 this had increased to 13.5%.[21] There is substantial variation in these trends across populations. In 2010, 38.7% of mothers of non-Hispanic black infants reported usual bed sharing, whereas for mothers of Hispanic infants, the proportion was 20.5%. Bed sharing was more common among mothers with less than a high school education compared with those who had completed college, and was also higher among those in lower income households.

The prevalence of bed sharing becomes even more striking when mothers are asked whether they ever sleep with their infant, rather than where the baby "usually" sleeps. A nationally representative telephone survey found that 45% of babies spent at least some time at night in bed with an adult in the 2 weeks before the survey.[22] In a sample of mothers in Georgia, 70% of mothers reported ever sharing a bed with their infants.[23] Seventy-six percent of mothers in Oregon reported bed sharing with their infants at least some of the time.[24] A study using Maryland Pregnancy Risk Assessment Monitoring System data revealed that fully 65% of parents said that they slept with their baby in the first 3 months of life.[25] Similarly, Hauck et al[26] found that up to 65% of mothers report ever lying down or sleeping with their infants; they also found that bed sharing rates by age of infant ranged from 27% to 42.5%, with the lowest rates of bed sharing among 12-month-old infants. A national survey of primarily breastfeeding mothers found that although 31% of infants started the night sharing a sleep surface with an adult, 59% of infants were doing so by the end of the night.[27] Similarly, a recent study by Batra et al[28] found that infant sleep location often changed during the night, frequently to a less safe location.

Mandansky and Edelbrock[29] distinguish between reactive and nonreactive cosleeping (ie, bed sharing). They define reactive cosleeping as that which occurs in response to a child's sleep problems rather than a deliberate choice based on preference. Ramos[30] makes a similar distinction characterizing nonreactive cosleeping as "intentional," and found that intentional cosleepers were more likely than their reactive peers to frequently bed share all night and to endorse bed sharing as a preferred arrangement, consistent with their parenting philosophy. It may be that parents who are intentional bed sharers