

Additional Questions from the May 3, 2010 Panel Session of the City of Milwaukee Health Department's Safe Sleep Summit

Note: the below questions were hand-written on cards or submitted by email during the panel session. As there was not enough time to respond to all questions during the session, the City of Milwaukee Health Department (MHD) sent these questions to each panelist and gave them the opportunity to answer any of them, at their discretion. The MHD also contributed some responses to the below questions.

Panelists:

- Dr. Fern Hauck, Associate Professor of Family Medicine and Public Health Sciences and Director, International Family Medicine Clinic, University of Virginia
- Dr. Patricia McManus, Executive Director, Black Health Coalition of Wisconsin
- Dr. Brian L. Peterson, Milwaukee County Medical Examiner
- Dr. Emmanuel Ngui, Assistant Professor of Pediatrics Medical College of Wisconsin
- Julia Means, Blanket of Love, Columbia St. Mary's

1) I understand not bed sharing but how does room sharing in separate beds prevent SIDS [Sudden Infant Death Syndrome]. Is this just a way for parents to feel close but not in the same bed?

Dr. Hauck: We don't know for sure why room-sharing without bed-sharing is protective, but we have some theories. One is that the babies are sleeping more lightly because there is more movement around them (so they cannot get into as deep a sleep, which can contribute to the final pathway in SIDS). Another is that the baby is comforted by being close to the parents and the parents can monitor and keep an eye on the baby, without the risks associated with being in the same bed.

Dr. Peterson: Research has shown room-sharing is protective, but the reasons are unclear.

2) How many babies have died from co-sleeping in Milwaukee had mitigating factors such as alcohol, drugs, cigarette smoke?

Dr. Peterson: In probably 95% of our cases, babies are found to have neither drugs nor alcohol in their systems. We are now also looking for nicotine and cotinine (nicotine metabolite) in our infant toxicology screen to document smoke exposure.

MHD: In 2005-2008, less than 18% of caregivers of infants who died were using alcohol or drugs while sleeping with their babies, but these same low numbers are not seen with cigarette smoke. Infants

were exposed to 2nd hand smoke in nearly 68% of all co-sleeping infant death cases in the same time period.

3) How many babies that have died in Milwaukee from co-sleeping had too much bedding or pillows?

MHD: In 2005-2008, nearly 80% of all Milwaukee infants who died of SIDS/overlay or accidental suffocation were sleeping in a place with pillows, blankets, quilts, or other soft objects.

Dr. Peterson: While we have had deaths in which both excessive bedding and a dead infant are found in the same space, I would hesitate to make the association causal [to say that one caused the other]. We track such data, but do not have enough information to make the "died from _____" leap in most cases.

4) How many families safely co-sleep in Milwaukee?

MHD: Bed-sharing is riskier for a baby than sleeping in a safe crib. An analogy might be wearing a bicycle helmet: it's possible to ride carefully without your helmet, but it's safer to wear it. Of course, many people do ride without a helmet, and many people who ride a bicycle without a helmet never crash or get hurt, but that doesn't mean that riding without your helmet is "safe." Again, bed-sharing is riskier for a baby than sleeping in a safe crib.

5) How many babies have passed from SIDS in cribs?

Dr. Peterson: I have seen SIDS deaths in about every imaginable sleep setting. The number that occur in cribs probably relates exactly to community practice, that is, to the total number of babies put to sleep in cribs. If EVERY baby were put to sleep in a safe crib, I suspect that our annual SIDS total would decrease a bit, but would not be zero.

MHD: In Milwaukee, 18% of SIDS and accidental suffocation infant deaths occurred in cribs, bassinets, or Pack 'n Plays[®] from 2005-2008. However, in all but 2% of these cases (4 babies) there were other risk factors seen, such as soft-bedding, or prone or side sleep position. Nearly three quarters of SIDS deaths did involve bed-sharing.

Dr. Hauck: Babies do die in cribs, but this number is getting smaller and smaller, and generally there are other factors involved, such as the baby sleeping on his stomach, exposure to cigarette smoke, or other well established risk factors for SIDS. It is also possible that

a baby can die in a crib through an entrapment or other condition if the crib does not meet the recommended standards. More recently, drop down crib sides have been found to cause some entrapments or suffocations, and these cribs are not going to be manufactured any longer for this reason.

6) How do the rates of babies that die while co-sleeping compare to the rates of infants who die from murder or accidents (falling, drowning, etc.)?

Dr. Peterson: It is hard to discuss rate when the total number is so low. Let's just note that natural death in infancy (and SIDS is considered natural death) is much, much more common than homicide or accident.

MHD: From 2005-2008, there were 12 infant homicides compared to 90 infant deaths of SIDS/overlay/accidental suffocation. There were no deaths of infants (babies less than 1 year old) due to accidental drownings or falls during that time.

7) Many lactation advocates believe that breast feeding is growing at an increasing rate, not bed sharing. Dr. Hauck, please share sources that suggest the contrary.

Dr. Hauck: Here is some information from my slides and the sources to support that bed-sharing is on the rise. Many lactation advocates are recommending that mothers bed-share in order to breastfeed more successfully and for longer duration. There is no evidence that bed-sharing is needed for mothers to successfully breastfeed.

- Bed sharing all night long has more than doubled in past 10 years from 6% to 13% (Willinger M, 2003, National Infant Sleep Position Survey, Published in Archives Pediatrics and Adolescent Medicine 2003;157:43-49.)
- More recent study: 1/3 bed share in first 3 months, 27% at 12 months. (Hauck FR, 2008, Infant Feeding Practices Study II, Published in Pediatrics 122:S113-S120.)
- Higher numbers in low SES [socioeconomic status], certain ethnic groups (African Americans, Latinos) - more than 50% may be bed sharing all night long (from the Willinger study).

Other references to show increased bedsharing rates:

- Rigda RS, et al. Bed sharing patterns in a cohort of Australian infants during the first six months after birth. J Paediatr Child Health 2000;36:117-121.

- Blair PS, Ball HL. The prevalence and characteristics associated with parent-infant bed-sharing in England. Arch Dis Child 2004;89:1106-1110.

8) Even though you have statistics regarding the white/black disparity, I believe you have very much missed the main obvious cause. Milwaukee is 3rd in the nation for teenage pregnancy. Especially amongst the black population – many black teens continue to have multiple babies before the age of 21. Teaching amongst all teens to prevent pregnancy will definitely decrease the deaths amongst all infants. Don't dismiss some of the obvious, but difficult subjects to talk about ... Teenage pregnancies, especially amongst blacks.

MHD: We believe that reducing teenage pregnancy would result in a small decrease in infant mortality, as well as numerous other benefits. Reducing teen pregnancies is a very important public health priority, and we are addressing the issue through a variety of programs. This summit was focused on a different cause of infant mortality – unsafe sleep – which is important for teen mothers as well as for parents of any age.

Dr. Ngui: In addition to working hard to reduce teen pregnancy, we need to provide education and training on safe sleep to teen mothers. Data from WISH show that the risk of SIDS is higher for teen mothers than for older mothers.

9) Safe sleep doesn't make sense as a message to the black community. To sleep safely to many culturally, means co-sleeping, bed sharing! What alternative message should we have?

Dr. Hauck: We need to emphasize that safe sleeping does not have to mean bed-sharing, and quite the contrary, bed-sharing has been found to be risky (increased risk of SIDS and suffocation deaths). I think that we need to take a positive approach, encouraging mothers to continue their vigilance over their babies by sleeping close to them, but not in the same bed with them. Thus, the “proximate but separate” message is a good one to promote and it is what the AAP recommends. Mothers can use a Pack 'n Play[®] type crib, which has a bassinet feature for younger infants. The crib can be placed next to the mother's bed so she can be close to the baby, bring her into bed for comforting and feeding, and put her easily back into her crib when mom goes back to sleep.

10) What are we doing to research the Hispanic population since we know they have the lowest rate of SIDS?

Dr. Hauck: There is not a lot of research yet specifically looking at the Hispanic population, although I am aware of some researchers who are trying to get grant funding to conduct focus groups with Hispanic women to better understand the sleep and other practices that may be contributing to this lower risk. I agree that this would be very worthwhile research!

11) In order to assist low income parents who cannot afford cribs, Pack 'n Play® or travel cribs are donated. What is your opinion about the safety and/or SIDS reduction of these cribs? In other words, are they safe as an alternative to a traditional crib?

Dr. Hauck: Yes, Pack 'n Play® cribs are an excellent option for several reasons:

- 1) They are less expensive and thus parents are more likely to afford them, or they can be obtained by crib donation programs which are now in almost every state;
- 2) They are portable, so parents can take them with them if they move or stay with other relatives;
- 3) They are small enough to fit in the mother's room, and ideally beside her bed.

It is very important, however, that they be assembled properly (all sides click firmly into place so the crib cannot collapse on the baby) and that the parents do not put soft, thick, fluffy blankets or pillows under the baby for sleep. The mattresses that come with the Pack 'n Play® cribs should be used and not padded with extra materials. Only the crib sheet that fits the mattress tightly (that comes with it) should be used.

Dr. Peterson: If used properly, they are safe and will reduce risk compared to other options. The problem is we have seen many cases in which the free Pack 'n Play® is used for storage or other purpose, and not as a sleep space.

12) Can you address any risks of providing Pack 'n Plays® to refugee patients? Many of the refugee patients for example say they sleep on the floor with their newborns. They may accept the Pack 'n Play® but will they use it properly and if not, is that more risky than sleeping the way they are familiar with? There are limited resources for follow-up after discharge for refugees to continue to support safe sleep practices.

Dr. Hauck: Generally, refugees have a lower risk profile for SIDS because smoking is rare, and breastfeeding is common, as is use of the supine [laying on the back] position. Many refugees "co-sleep" in such a way that may be relatively safe, such as you indicate, e.g.,

on a firm surface on the floor, alone with the baby (husbands sleep in another room, in a separate bed, etc). Even so, it is appropriate to offer a Pack 'n Play[®] and provide instructions and demonstrate assembly, as you would with any recipients of the crib. It is very important to stress supine sleeping [sleeping on the back], and using only the thin mattress pad and mattress cover that comes with the crib, and not using thick blankets or pillows under the baby. If the mothers prefer to bed-share on a firm surface, or on the floor, then be sure to talk about avoiding heavy coverings or loose coverings, pillows, overheating, etc.

Dr. Peterson: The risk is not in the provision of Pack 'n Plays[®] - the risk is in the population that will not use the Pack 'n Play[®] but chooses to co-sleep instead.

13) What are the risk factors for infants sleeping in car seats due to no crib?

Dr. Hauck: There are not a lot of data on this to my knowledge, but the recommendation is to avoid this. The baby's head can pitch forward during sleep (since the baby would be sleeping at an angle, rather than flat), potentially cutting off the airway and causing suffocation. The padding in car seats may also be too soft, and can present a potential hazard especially if the baby turns his head into the padded material.

Dr. Peterson: There are not enough data to know. It depends on the car seat, restraint system, and so forth.

MHD: Car seats are meant for transporting infants safely from one place to another. They were never meant as a bed for extended sleep times. A 2007 article in Archives of Disease in Childhood studied infant death in 'sitting devices' like car seats, swings, or bouncy seats. The greatest risk was for infants younger than two months olds. A young infant's neck muscles, chest and arm muscles are not developed enough to keep their heads upright in the seats. Every baby should have a crib.

14) What does the current research say about the role of swaddling (i.e. HALO[®] Sleep Sack)?

Dr. Hauck: There has not been a lot of research on swaddling and the risk of SIDS or suffocation. One early study from Tanzania showed an increased risk of SIDS when babies were placed prone (on their stomach) and swaddled, implying that the babies could not move out of an unsafe situation (e.g., face down). Swaddling is being promoted as a way to help fussy babies sleep more comfortably on

their backs. It is likely safe to encourage swaddling, as long as the baby is sleeping on his/her back, the swaddling blanket is light, and securely tucked around the baby (no loose ends to cover the face or get tangled up in), and the hips should be flexed in a natural position (to avoid hip dislocation). Sleep sacks with a swaddle feature are another option, avoiding the problem of too loose or too tight swaddling/improper technique.

15) What is the thought behind the pacifiers as a protective factor?

- Dr. Hauck: There are several theories as to why pacifiers are protective:
- 1) the pacifier reduces the arousal threshold of the baby, i.e., babies who use pacifiers arouse more easily from a potentially hazardous situation;
 - 2) pacifiers keep the airway open through the positioning of the tongue;
 - 3) pacifier users are more likely to sleep on their backs.

A good reference is: Hauck FR, Omojokun OO, Siadaty M. Do pacifiers reduce the risk of sudden infant death syndrome? A meta-analysis. *Pediatrics* 2005;116:e716-e723.

- Dr. Peterson: Use of a pacifier probably helps provide a breathing space around the face in case the infant moves to a prone [lying on the stomach] position.

16) What can we do / what is being done about the marketing of crib bumper pads, etc. and positioning devices? (I have been asked by families “why if we know it’s dangerous is this soft stuff everywhere”?)

- MHD: We have sent letters to the manufacturers of these devices, and we work with national organizations that have the clout to work with these companies. This is a slow process. Individual voices often have much more influence. We urge you to consider boycotting the manufacturers of these products, write letters to them or to your elected representatives, and to inform the store managers who carry these products of the dangers to infants.

17) What about native Americans cradle boards? And those hippie/Bohemian Mayan slings women use?

- MHD: Cradle boards have been shown to be safe and have been used for many, many years. However, they are not usually seen outside the Native American community. Baby slings are now shown to be unsafe; there have been a number of recalls in the past few weeks.

18) Are those things that attach to one side of the parent's bed safe? Not sure what they are called.

Dr. Hauck: These are called bedside co-sleepers. To my knowledge, I have not heard of any reports from the CPSC [Consumer Products Safety Commission] that there have been deaths in these and thus they are PROBABLY safe. But that is qualified. They need to be secured properly, so that there are no gaps between the co-sleeper and the mother's side of the bed (the ones that I have seen have straps that are secured between the mattress and box spring of the adult bed). Some countries recommend against these co-sleepers (I believe Canada is one) because of inadequate safety data. If it was a choice between the co-sleeper and bed sharing in the same bed, I would recommend the co-sleeper.

MHD: One such device is called the bedside crib, which attaches to the adult bed so that both the adult mattress and the baby's mattress are at the same level. The cost, approximately \$125, is equal to the cost of a crib and more than a Pack 'n Play[®]. However, most are the size of a bassinet and could not be used beyond the first few months of a child's life.

19) Are there any medical conditions that a baby could have which could increase risk of choking/aspiration on breast milk/formula when placed on back and thus would make this exception to "sleep on back" rule?

Dr. Peterson: Yes, but such conditions would commonly be diagnosed at (or before) birth and be treated and corrected.

Dr. Hauck: There are now very few exceptions to the back sleeping rule:

- 1) Acutely ill neonates/preemies (these infants will be monitored, in the NICU [neonatal intensive care unit], so they represent a different subset of infants)
- 2) Infants with symptomatic or life-threatening gastro-esophageal reflux (reflux is usually less in the prone position).
- 3) Infants with certain upper airway malformations such as Robin syndrome (there are fewer episodes of airway obstruction in the prone position).

The American Society of Gastroenterology no longer recommends prone sleeping for infants with mild or moderate reflux

20) You mentioned revising the current AAP [American Academy of Pediatrics] policy, but should we be encouraging Coleman's Fan Study?

Dr. Hauck: I believe that you are referring to De-Kun Li et al's paper on fans and SIDS in the Kaiser Permanente Study from California (published in Archives of Pediatrics and Adolescent Medicine in 2008). This was the first and only study to date to find that fan use in the room where the baby was sleeping appeared to be protective against SIDS. There was also a study several years ago that found that an open window or door was associated with lower risk.

This makes sense to our understanding of SIDS, in that air flow (from a fan or open window) could disperse potentially a build-up of exhaled CO₂ [carbon dioxide] around the baby, preventing asphyxia. The Li study did not ask for details about the fans—ceiling or standing models/desktop models. It is difficult to advise parents on the basis of just one study and it may be too soon to know for sure.

If parents wanted to use a fan, I cannot think of any reasons to oppose this, except making sure that there was no way the infant could be harmed by the fan (a desk fan falling over into the crib, for example, or being pulled by the baby if the baby is older).

21) You mentioned that Fans will be discussed at next AAP Task Force. Why?

Dr. Hauck: See above. In addition, the fan issue has received a lot of media attention and parents want to know what to do about fans. The AAP Task Force therefore would like to review the evidence and make a recommendation about this.

22) This may be just a technical question – but can you tell me if there is a difference between SUDI and SUID? Which is preferred?

MHD: These acronyms refer to the same thing: Sudden Unexpected Infant Death and Sudden Unexpected Death in Infancy. Different communities and medical professionals use them interchangeably.

Dr. Hauck: No, some people prefer SUDI and others SUID. There is no difference in meaning between them.

Dr. Peterson: Verbally, yes, but technically, no - they are interchangeable.

23) Dr Hauck - What is your recommendation regarding SIDS, SUID, SUDI classification Type I and II vs. unintentional suffocation? CDC vs. white paper analysis.

Dr. Hauck: I am not entirely sure which specific classification schemes you are referring to in your question. The scheme proposed by Krous et al

(Pediatrics 2004;114:234-238) describes a category I (IA and IB) SIDS, Category II SIDS, and “unclassified” (deaths that do not meet the criteria in the above categories but for which alternative diagnoses of natural or unnatural conditions are uncertain, including cases for which autopsies were not performed).

I prefer the schemes that use this kind of approach, i.e., a more inclusive diagnosis of SIDS, with more details about the conditions under which the death occurred. As Krous and coauthors justify this approach in their paper, I agree with a more inclusive and descriptive classification scheme to allow for more diagnostic consistency to monitor trends over time in the U.S. and internationally, and to assist in the development of new theories of SIDS causation within different subsets.

There are going to be cases where unintentional suffocation would be a more apt diagnosis, but this would have to be supported by sufficient evidence from the scene investigation and autopsy (granted, most cases of deaths while bed-sharing do not have autopsy findings that would confirm a suffocation). I don't believe that simply the occurrence of bed-sharing should result in a suffocation cause of death classification.

24) What is being done in Milwaukee to identify vulnerable children (premature infants, etc.) and direct services toward them to prevent SIDS?

MHD: We must rely on medical care providers to identify vulnerable infants and give their parents and caregivers the information they need. MHD does teach healthcare and social service providers throughout the community about Safe Sleep.

25) In the 1960's we had commercials for don't drink and drive. Of the 16 SUDI deaths how often was alcohol involved and could that message be sent and received in a positive manner in Milwaukee, the former “Beer Capital of the World”? Such as “Don't drink and sleep with your infant”.

Dr. Peterson: My suggestion would be to view co-sleeping like driving. Don't do it if drunk, using drugs, or extremely tired.

MHD: Of the 16 infant deaths related to unsafe sleep in 2008, the caregiver was using alcohol in four of the deaths.

26) The co-bedding ad makes no sense – the room looks like a nice hotel room as opposed to what an environment of infant just dies probably looks like. The room shown is very attractive compared to what it most likely was like where the infant died.

MHD: The image is symbolic and to some extent generic. Babies in Milwaukee have died in many different types of rooms or environments. The point is not what the room looks like; the point is that it is an adult bed, and it's not safe for babies to sleep there.

27) How many babies that have died from co-sleeping in Milwaukee took place on a couch or two twin beds pushed together?

Dr. Peterson: I would estimate one third or so.

MHD: According to our data from 2005-2008, 15% (14 infants) died while sleeping on a couch or a chair. The investigations of these deaths do not show that twin beds pushed together are seen in infant deaths in Milwaukee, so the combined total is almost certainly higher than 15%.

Whether or not it's a couch or a twin bed or any other sized bed, the fundamental problems are 1) putting an infant to sleep on some sort of soft surface (e.g., an adult bed or a couch), and 2) then worsening the situation by having an adult sleeping on the same surface (in the same bed, chair, or couch) as the infant.

28) What is the best way to reach the baby's grandma when mom is 14 and mom knows about safe sleep and grandma insists on putting baby on tummy and grandma does respect mom's authority because mom is a young teen and mom has no power with her own mom?

MHD: There are various ways to educate a baby's grandmother about safe sleep, and many opportunities for health professionals and other providers to interact with her and provide the facts and the recommendations. It is important when educating parents about safe sleep that we empower them to share this knowledge with other caregivers of their infant.

29) Have any studies looked at focusing safe sleep messages on grandmothers?

MHD: We are aware of one study: Flick L et al. "The influence of grandmothers and other senior caregivers on sleep position used by African American infants". Arch Pediatr Adolesc Med 2001;155:1231-7. Also, some States have started their own campaigns. Virginia has partnered with AARP to help grandmothers get the latest information about Safe Sleep and prenatal care issues, and North Carolina has published a Promising Practice paper on Baby's Easy Safe Sleep Training which focuses on the entire family.

30) A lot of hospitals are giving out Pack 'n Plays[®] as a way to ensure a safe sleep environment for new babies; however, many mothers (in particular, young mothers) are afraid to disclose their need for a safe place for their baby to sleep because they feel that they will be viewed as an unfit mother. What do you feel can be done to address this issue so that these families will be able to obtain a safe place for their babies to sleep & not have the fear that their babies will be taken from them if they disclose information necessary for them to be eligible to receive a Pack 'n Play[®]?

MHD: Developing a rapport with mothers is key to learning more about their barriers to care. When assessing needs, hospital staff and other care professional can ask open-ended questions while displaying a non-judgmental attitude. Educating mothers about the resources available to them will reduce the fear of being viewed as an unfit mother.

31) For Julia Means: If people are giving the “correct” answer rather than real one, how can we as RNs better elicit the “real” response?

Ms. Means: The best way to get the REAL Answer is through relationship.

32) How do we engage the other systems that touch the lives of these families in spreading the word about safe sleep?

MHD: There are many organizations helping to share information about safe sleep. The Safe Sleep Summit was one attempt to engage other organizations, sectors, and systems in this issue. Such efforts will continue.