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Evidence-Based and Evidence-Informed Safe Sleep Practices:

A literature review to inform the Missouri Safe Sleep Strategic Plan

Prepared by NICHQ for the Missouri Safe Sleep Coalition, July 3, 2019

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Introduction

This review examines and compiles literature and analyses of current evidence-based safe sleep practice guidelines, policies and initiatives that provide health care provider training and modeling, increase infant caregiver knowledge and education, and promote safe sleep polices at the local, state and federal level. The National Institute for Children's Health Quality (NICHQ) conducted this review to inform and support the Missouri Safe Sleep Coalition's Safe Sleep Strategic Plan. The literature review will be complemented by Promising Practices for Safe Sleep, which further describes resources, programs and interventions that U.S. states, including Missouri, have utilized with promising results.

This review includes: current Sudden Infant Death Syndrome (SIDS) and Sudden Unexpected Infant Death (SUID) U.S. and Missouri data; evidence-based guidelines, specifically from the American Academy of Pediatrics (AAP)[1]; examples of evidence-based or evidence-informed interventions and educational programs; and, of importance, specific evidence regarding the impact of poverty, race and ethnicity on SIDS, SUID and infant mortality. Increasing health equity is a key theme of the review because of the importance of addressing high-risk or underserved populations that experience barriers to safe sleep practices.

SUID, SUDI and SIDS: Distinctions and Definitions from AAP Guidelines

Sudden Unexpected Infant Death (SUID), also known as sudden unexpected death in infancy (SUDI), is a term used to describe any sudden and unexpected death, whether explained or unexplained (including sudden infant death syndrome (SIDS) and ill-defined deaths), occurring during infancy. After case investigation, SUID can be attributed to causes of death such as suffocation, asphyxia, entrapment, infection, ingestions, metabolic diseases, and trauma (unintentional or nonaccidental).

SIDS is a subcategory of SUID and is a cause assigned to infant deaths that cannot be explained after a thorough case investigation including autopsy, a scene investigation, and review of clinical history. The distinction between SIDS and other SUIDs, particularly those that occur during an unobserved sleep period (i.e., sleep-related infant deaths), such as unintentional suffocation, is challenging, cannot be determined by autopsy alone, and may remain unresolved after a full case investigation. A few deaths that are diagnosed as SIDS are found, with further specialized investigations, to be attributable to metabolic (or other) disorders.[1]

SIDS, SUID and Infant Mortality in the United States

In 2017, over 22,000 infants died in the United States, a five percent decrease from 2013.[2] Yet, SUID rates have remained persistently high, with about 3,600 deaths occurring among U.S. babies each year. Twenty-six percent of SUIDs are caused by accidental suffocation and strangulation in bed, 38 percent by SIDS, and 26 percent from unknown causes.[3]

Several broad-scale, national actions released in the early 1990s—health care guidelines, public education and infant death reporting requirements—led to a significant decline in SUID rates:

- American Academy of Pediatrics Safe Sleep Recommendations (1992)
- Initiation of the Back to Sleep (now known as Safe to Sleep) campaign (1994)
- The release of the Sudden Unexplained Infant Death Investigation Reporting Form (1996).

Since 1999, the declines in SUID have slowed, and in 2017 there were of 93.4 SUIDs per 100,000 live births in the U.S. While SIDS deaths declined from 130.3 deaths per 100,000 live births in 1990 to 35.4 deaths per 100,000 live births in 2017, progress has slowed considerably since 1998. Concurrently, other causes of SUID have increased since the late 1990s, due to improvements in reporting and classification.[2] Unknown causes of infant mortality have been slowly increasing since 1998, with a current rate of 33.4 deaths per 100,000 live births. In addition, after a decline from 1990 to 1999, mortality rates for accidental suffocation and strangulation in bed have been increasing since 1999, with a current rate of 24.6 deaths per 100,000 live births.[3]

According to Missouri's Child Fatality Review Program 2017 Report, the number of infants who died in a sleep environment was enough children to fill four standard kindergarten classrooms.[5]

Missouri infant mortality rates and SUID rates are similar to or worse than national rates, with Missouri ranking 20th among U.S. states in infant mortality rates.[4] Missouri's infant mortality rate in 2017 was 6.2 live births compared to 5.8 for the U.S. In 2017, 76 percent of all infant deaths not related to medical causes were related to the infant's sleep environment. Eighty-four percent of infant sleep related deaths were determined to have been from suffocation and 54 percent occurred while the infant was sleeping in an adult bed, with 51 of 54 of those infant deaths occurring while the infant was sharing a sleep surface with an adult.[5]

The statistics below from Missouri's Child Fatality Review Program 2017 Report[5] point to the importance of focusing on social determinants of health and health equity in Missouri's safe sleep strategic planning process:

- Sixty-one percent of infants who died from SUID were white, 35 percent black, and 4 percent multi-racial.
- A black baby in Missouri is four times more likely to die of a sleep-related death than a white baby.
- Seventy-one percent of all infants who died from sleep related-deaths were in households receiving Medicaid.

SUID and SIDS can be prevented when parents and caregivers are supported in following recommended safe sleep practices. Between 2012 and 2015. the Pregnancy Risk Assessment Monitoring System (PRAMS) showed that 78.4 percent of Missouri parents reported placing babies on their backs to sleep.[6] In Missouri's Child Fatality Review Program 2017 Report there is evidence by cause of death that suggests improving safe sleep behaviors by parents and guardians could play a key role in reducing sleep-related deaths in the state.[5] There continues to be a need to improve caregiver education and contextual factors that support safe sleep practices. Evidence is clear that addressing caregiver and provider education and behaviors can reduce the risk of SUID.[7]

Evidence-based Safe Sleep Guidelines

In 2016, the AAP reviewed evidence for infant safe sleep practices that reduce the risk of SIDS and SUID, and the incidence of infant mortality.[7] The review resulted in AAP's Updated 2016 Recommendations for a Safe Sleeping Environment, with clear guidelines for increasing safe sleep and reducing sleep-related infant deaths.[1] The recommended guidelines are designated A-level by the AAP given the strength of the evidence supporting each. B- and C-level guidelines are not included in this review, given their lower level of evidence.

Summary of AAP Recommendations[1]

A-level recommendations

- Back to sleep for every sleep.
- Use a firm sleep surface.
- Breastfeeding is recommended.
- Room-sharing with the infant on a separate sleep surface is recommended.
- Keep soft objects and loose bedding away from the infant's sleep area.
- Consider offering a pacifier at naptime and bedtime.
- Avoid smoke exposure during pregnancy and after birth.
- Avoid alcohol and illicit drug use during pregnancy and after birth.
- Avoid overheating.
- Pregnant women should seek and obtain regular prenatal care.
- Infants should be immunized in accordance with AAP and CDC recommendations.
- Do not use home cardiorespiratory monitors as a strategy to reduce the risk of SIDS.
- Health care providers, staff in newborn nurseries and NICUs, and child care providers should endorse and model the SIDS risk-reduction recommendations from birth.
- Media and manufacturers should follow safe sleep guidelines in their messaging and advertising.
- Continue the "Safe to Sleep" campaign, focusing on ways to reduce the risk of all sleep-related infant deaths, including SIDS, suffocation, and other unintentional deaths. Pediatricians and other primary care providers should actively participate in this campaign.

While all the AAP A-level recommendations may be addressed in the Missouri Safe Sleep Strategic Plan, the following five recommendations drawn directly from the AAP guidelines are highlighted in this review as fundamental in successful state, community and city plans. [7]

1. **Back to Sleep for Every Sleep**
   Infants should be placed in the supine position for every sleep until the child reaches 1 year of age. Side sleeping is not safe and is not advised. Preterm infants are at an increased risk of SIDS, so they must be placed in the supine position as soon as possible. Prone or lateral sleep positions are acceptable if the infant is observed and awake, particularly in the postprandial period.

2. **Use a firm sleep surface**
   Infants should be placed on a firm sleep surface (e.g., mattress in a safety-approved crib) covered by a fitted sheet with no other bedding or soft objects to reduce the risk of SIDS and suffocation. A firm surface maintains its shape and will not indent or conform to the shape of the infant's head when the infant is placed on the surface. Soft mattresses, including those made from memory foam, could create a pocket (or indentation) and increase the chance of rebreathing or suffocation if the infant is placed in or rolls over to the prone position. A crib, bassinet, portable crib, or play yard that conforms to the safety standards of the Consumer Product Safety Commission (CPSC), including those for slat spacing less than 2-3/8 inches, snugly fitting and firm mattresses, and no drop sides, is recommended. Additionally, the sleeping environment should be free of hazards, such as dangling cords, electric wires, toys, or other cushions and bedding to avoid the risk of strangulation or suffocation.

3. **Breastfeeding is recommended**
   Breastfeeding is associated with a reduced risk of SIDS. Unless contraindicated, mothers should breastfeed exclusively or feed with expressed milk (i.e., not offer any formula or other nonhuman milk-based supplements) for six months, in alignment with recommendations of the AAP. The protective effect of breastfeeding increases with exclusivity. However, any breastfeeding has been shown to be more protective against SIDS than no breastfeeding.

4. **Room-sharing without bed-sharing**
   It is recommended that infants sleep in the parents' room, close to the parents' bed, but on a separate surface designed for infants, ideally for the first year of life, but at least for the first six months. There is evidence that sleeping in the parents' room but on a separate surface decreases the risk of SIDS by as much as 50 percent. In addition, this arrangement is most likely to prevent suffocation, strangulation and entrapment that may occur when the infant is sleeping in the adult bed. The infant's crib, portable crib, play yard, or bassinet should be placed in the parents' bedroom until the child's first birthday. Although there is no specific evidence for moving an infant to his or her own room before 1 year of age, the first six months are particularly critical, because the rates of SIDS and other sleep related deaths, particularly those occurring in bed-sharing situations, are highest in the first six months. Placing the crib close to the parents' bed so that the infant is within view and reach can facilitate feeding, comforting, and monitoring of the infant.

5. **Avoid soft, loose bedding**
   Keep soft objects, such as pillows, pillow-like toys, comforters, quilts, sheepskins and loose bedding such as blankets and unfitted sheets, away from the infant's sleep area to reduce the risk of SIDS, suffocation, entrapment and strangulation. Infant sleep clothing, such as a wearable blanket, is preferable to blankets and other coverings to keep the infant warm while reducing the chance of head covering or entrapment that could result from blanket use.

Evidence-informed Interventions and Programs

Hundreds of communities, states, organizations, government agencies and individuals have created and applied multiple interventions, programs, practices, campaigns, teaching methods and resources to spread the AAP guidelines to professionals, parents and caregivers. A significant amount of research demonstrates success in many of these interventions and practices, used both individually and collectively. Such successes found in the literature are accumulating to build the evidence base for certain interventions and practices. These are outlined here in the following categories: campaigns and health messaging, educating parents and other caregivers, health equity and cultural or community norms, and professional education for health care providers and supporters.

Campaigns and Health Messaging

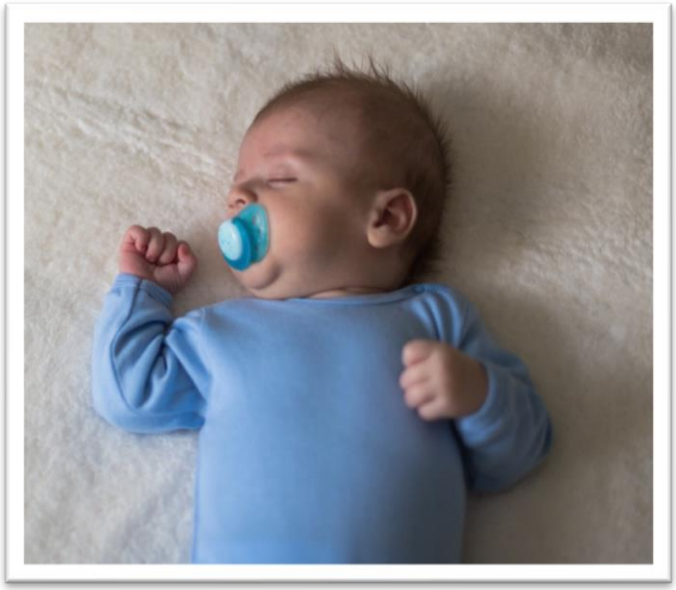
The primary health messaging campaign to promote safe sleep and prevent sleep-related SIDS is the Safe to Sleep Campaign®. Safe to Sleep was initiated in 1992 as the "Back-to-Sleep" campaign jointly by AAP, Eunice Kennedy Shriver Institute of Child Health and Human Development (NICHD), Health Resources and Services Administration's Maternal and Child Health Bureau (HRSA MCHB), and First Candle (then the SIDS Alliance). The campaign included public health advertising campaigns and educational materials and messages for families, parents and other caregivers.[8,9] The Safe to Sleep Campaign® has developed and spread health messaging to parents and caregivers, health professionals and community health workers, and the general public. The campaign focused on the then-new message that babies should be laid down to sleep on their backs, and the very name "back-to-sleep" focused solely on that practice. The campaign, and its simple, single public message, is credited with reductions in sleep-related infant mortality through the 1990s. With its broader name and messaging, Safe to Sleep continues to provide public health messaging resources to organizations and state health agencies, and has enabled states and organizations to spread clear, consistent evidence-based health messaging.

Safe Infant Sleep Interventions: What is the Evidence for Successful Behavior Change?[9] notes concern that the nature of public health campaigns with their focus on engaging and compelling brief messages, while effective in gaining attention, can be counter-productive if parents' questions and barriers to the message are not quickly addressed with educational and informational supports.[9 10]

Many states, cities, hospitals, and community organizations have used the Safe to Sleep Campaign as a foundation for messaging and images in building local campaigns to meet

the needs of their populations. In addition to the national Safe to Sleep Campaign, cities, states, hospitals and communities have developed their own health messaging campaigns to draw attention and encourage safe sleep practices in their locale.

The accompanying promising practices document includes the citywide public health campaign B'more Healthy Babies, along with Safe to Sleep and Cribs for Kids®, as lead campaigns with messages that address cultural and contextual barriers to practicing safe sleep.[11] From 2009-2017, B'more for Healthy Babies' accomplishments include: 35 percent decrease in infant mortality; 64 percent decrease in the black-white disparity in infant mortality; 49 percent decrease in teen births; 75 percent decrease in the black-white disparity in teen births; and a 71 percent decrease in sleep-related infant deaths.[11]



Evidence points to the following as contributing to successful campaigns: consistent, clear messages delivered through multiple media (e.g., YouTube, traditional advertising, hospital websites, posters, transit advertising); simple messages that are supported by further education and information; and messages that resonate with the community, such as those that have a call to community action (B'more for Healthy Babies asks Baltimore to "be more" for the community's children).[7]

Further, research shows that the images that accompany advertising messages can have a greater effect than the language used, and audits reveal inconsistent and inappropriate imagery associated with sleeping babies, which can serve to undermine messaging. In 2018, the New York State Perinatal Quality Collaborative conducted a review of all 123 birthing hospitals in the state, evaluating images of sleeping infants on each hospital's website. Of the 123 websites that were audited, over 20 percent included content that pictured unsafe sleeping environments for infants. [12]

Interventions Focused on Behavior Change Among Parents and Other Caregivers

Messaging and campaigns alone are not enough to create consistent behavior change in caregivers' practice of safe sleep behaviors. Creating an environment that surrounds parents with safe sleep messaging, support, encouragement, and the norms to practice these behaviors consistently continues to be the aim of targeted and broad-based community programs. These include hospital healthy newborn nurseries and neonatal

intensive care units that model and teach safe sleep to parents, family members and friends. Pediatricians, health centers, home visitors and community centers have developed educational programs for parents and other caregivers. Research shows the using multiple methods for teaching and messaging is key to behavior change. [9,13–15] These methods should include one-on-one education; mothers who received individual education on safe sleep were 2.2 times more likely to be placing their babies in a supine position at 3 months of age than mothers who did not receive one-on-one education.[9]

Practicing safe sleep behaviors has been an important component of Safe to Sleep from its earliest days through current practice. More than awareness, *parents need training in safe sleep practice*. Group classes in pre-natal and postpartum care at maternity and health centers, individual postpartum and pre-discharge from the hospital, pediatric and gynecologist follow-up appointments, home visiting professionals or nurses all are key touchpoints for initial training on safe sleep practices for new families [9,15–18]

Questions and counseling at outpatient visits or home visits provide opportunities to assess and reduce barriers to safe sleep by addressing cost of cribs, cultural or family norms, or smoking and substance use.

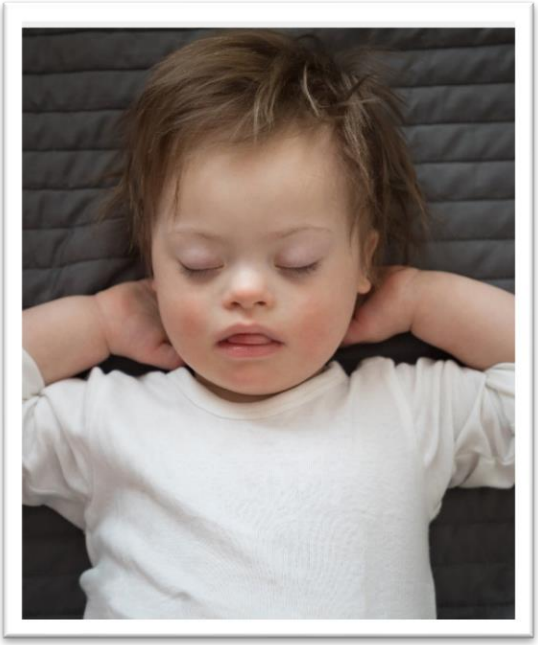
Health Equity, Culture and Tradition

Given the significant disparities in SIDS and SUIDS in the U.S. and in Missouri, addressing contextual factors around health equity, culture and tradition is important. This includes training and support for extended caregivers like family, community organizations, and other stakeholders to provide reinforcement of safe sleep education, knowledge, and practices.

There may be multiple barriers, systemic disparities and cultural norms that prevent adherence to safe sleep recommendations. Like other causes of infant mortality, SIDS mortality rates have notable and persistent racial and ethnic disparities. In the U.S., from 2010 to 2013, deaths from SUID among non-Hispanic black and American Indian/Alaska Native infants was more than double that of non-Hispanic white infants, with SIDS rates for Asian/Pacific Islander and Hispanic infants much lower than the rate for non-Hispanic white infants.[4] In St. Louis, African-American babies are three times more likely to die than white babies, and four times more likely to die of SIDS.[19]

One study shows that African Americans are twice as likely to place their infants in the prone position for sleep.[13] Using qualitative methods to investigate, results showed that mothers' decisions regarding infant sleep position were based on comfort and safety concerns. While having knowledge of the Safe to Sleep campaign and recommendations, mothers chose the prone position due to parental needs, perception of SIDS risk, and trusted sources of information. Minority populations are more likely to make decisions against medical staff recommendations due to a lack of trust toward the health care

system.[7,9,20] Additionally, cultural practices and traditions may result in cultural communities of African Americans, Latinos, American Indian and Alaskan Natives maintaining the belief that the prone position is the safest position.[20–22]



Financial inability to purchase a crib can lead to bed-sharing, causing higher rates of SIDS among low-income families.[9,14] Cribs for Kids® offers free or reduced-cost cribs to low-income families, along with a fitted sheet, wearable blankets, and safe sleep educational materials. These education and intervention efforts have been shown to increase parental knowledge of safe sleep practices, intended use of the supine position and avoidance of bed-sharing.[23] In Alleghany County, Pennsylvania, over 23,000 cribs have been distributed in low-income communities since 1998. A survey distributed to crib recipients found that 38 percent of infants would have slept in an adult bed with a parent if parents had not received a crib.[23]

Safe sleep practices and cultural norms have been studied in relation to social determinants of health, including housing, lack of health care access, and food insecurity. Social determinants are known to place families in situations where ideal safe sleep environment may not be available. Home visiting and WIC services have presented opportunities for assessing and teaching about safe sleep practices. Community supports like these help families feel less isolated and more empowered to practice safe parenting strategies including safe sleep [9,16,18,24,25]

Cribs for Kids® has developed an ambassador program to train community members, including extended family, friends and local businesses—anyone who wants to support safe sleep messages and practices. This program is listed in the accompanying promising practices document, and the evidence base for community efforts that support safe sleep norms is the basis of this work. [9,18,20]

Family members, such as grandparents, hold much influence over how parents care for their baby. A grandmother living in the household is a predictor for infants to be positioned on their stomach for sleeping. Between 2005 and 20017, the North Carolina Back to Sleep Program “recognized the need for effective messages and modeling of recommended behaviors, presented by trusted “voices” that resonate with the populations at high risk and that match their language and literacy levels.”[26] Through interviews and community focus groups, the influential role of grandmothers was

recognized, and safe sleep campaigns were adapted to engage grandparents to understand and practice safe sleep practices as well as promote these practices with new parents.[26] This program is further referenced in the promising programs document that accompanies this literature review.

Interventions Focused on Education of Professionals

Interventions focused on training health care professionals provide both safe sleep messages and appropriate modeling for families. These interventions facilitate behavior change at both the individual provider and the organizational level by increasing knowledge and awareness among providers, and by creating a culture of infant safe sleep safety.[7,18]

At birth hospitals and other health care facilities, staff behaviors are closely observed by parents and caregivers. Staff members modeling recommended behavior results in more parents adhering to proper safe sleep practices.[9,18,27] Investigators at Yale-New Haven Hospital discovered that only 37 percent of nursery staff placed their infants in the supine position, with parents reporting that they are more likely to place their infant in the prone position after observing health care professionals doing so.[9] In Missouri, training of nurses in NICUs and well-baby nurseries using the *Curriculum for Nurses Continuing Education Program on SIDS Risk Reduction* developed by NICHD and First Candle/SIDS Alliance, resulted in 80 percent of the participants scoring 90 percent or better on the post-test. The percent of nurses reporting using back-only position in the first 24 hours for healthy newborns increased from 26 percent to 50.2 percent and those who endorsed supine sleep increased from 45 percent to 70.8 percent.[11]

Educational trainings and mandatory completion of safe sleep curricula also increase the occurrence and effectiveness of safe sleep conversations between health care professionals and parents.[7,9] Along with proper sleep placement, parents are receiving more messages from providers about the benefits of breastfeeding, the dangers of co-sleeping, and misconceptions about the supine position.[14,28]

Interventions Focused on Legislation and Regulation

In 2010, the Commonwealth of Pennsylvania passed the Sudden Infant Death Syndrome Education and Prevention Act mandating consistent infant safe sleep education in all birth hospitals. Parents must receive safe sleep information prior to hospital discharge and sign that they have received and understand the information, increasing their exposure to educational materials.[6]

Statewide implementation of hospital policy intervention to increase knowledge among health care professionals has resulted in significant reductions in infants found in unsafe sleep situations while in the hospital.[18] Seventy-one hospitals in Tennessee adopted a safe

sleep policy that requires, at a minimum, staff trainings on AAP safe sleep recommendations, correct modeling of safe sleep practices, and parent education. The overall observance of infants, during unannounced audits, found with any risk factors of unsafe sleep decreased by over 45 percent after initiation of the policy.[7]

Cribs for Kids® offers a National Safe Sleep Hospital Certification Program, consisting of three levels of Safe Sleep Certification. Hospitals that meet the requirements of either level can apply free of charge. Below are the requirements for the highest level of certification:

- Develop a safe sleep policy statement incorporating the AAP's Infant Safe Sleep guidelines.
- Train staff on safe sleep guidelines, hospital's safe sleep policy, and the importance of modeling safe sleep for parents.
- Educate parents on the importance of safe sleep practices and implement these practices in the hospital setting.

State and local legislation can also mandate participation in national surveillance programs. The Centers for Disease Control and Prevention (CDC) supports SUID monitoring programs in 22 states and jurisdictions, covering about one in three SUID cases in the United States. The SUID and SDY (Sudden Death in the Young) Case Registry gathers information about the circumstances associated with SUID and SDY cases, along with information about the investigations of these deaths. The states and jurisdictions involved in the registry receive access to this data and analyze SUID and SDY trends and circumstances to develop strategies that prevent future deaths. Through this data, the Michigan Public Health Institute (MPHI) discovered an increase in infant deaths within families receiving child protective services. To address this issue, MPHI worked with the Michigan Department of Health and Human Services to develop an infant safe sleep training and a policy that requires that all child protection workers (e.g., foster care, child protective services) receive this training on safe sleep environments and behaviors. Because of SUID Case Registry staff efforts, approximately 3,500 workers in Michigan's 83 counties have been trained since October 2014. [29]

Additionally, the CDC has developed the Sudden Unexplained Infant Death Reporting Form. This form collects investigation data, infant medical history, pregnancy history to improve classification of sleep-related deaths. The data collected also produces information that researchers can use to recognize new threats and risk factors for SUIDs and SIDS.

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References

1. TASK FORCE ON SUDDEN INFANT DEATH SYNDROME TFOSID. SIDS and Other Sleep-Related Infant Deaths: Updated 2016 Recommendations for a Safe Infant Sleeping Environment. *Pediatrics*. 2016;138(5):e20162938. doi:10.1542/peds.2016-2938
2. Erck Lambert AB, Parks SE, Shapiro-Mendoza CK. National and State Trends in Sudden Unexpected Infant Death: 1990-2015. *Pediatrics*. 2018;141(3):e20173519. doi:10.1542/peds.2017-3519
3. Data and Statistics - SIDS and SUID | CDC. https://www.cdc.gov/sids/data.htm. Accessed July 1, 2019.
4. Stats of the State of Missouri. https://www.cdc.gov/nchs/pressroom/states/missouri/missouri.htm. Accessed July 1, 2019.
5. Corsi S. *MISSOURI CHILD FATALITY REVIEW PROGRAM 2017*. https://dss.mo.gov/re/pdf/cfrar/2017-child-fatality-review-program-annual-report.pdf. Accessed July 1, 2019.
6. Department of Health U, Services Centers for Disease Control H. *Pregnancy Risk Assessment Monitoring System (PRAMS) Prevalence of Selected Maternal and Child Health Indicators for Missouri, 2012-2015*.; 2012. http://www.cdc.gov/prams/pramstat/index.html. Accessed July 1, 2019.
7. Moon RY, TASK FORCE ON SUDDEN INFANT DEATH SYNDROME. SIDS and Other Sleep-Related Infant Deaths: Evidence Base for 2016 Updated Recommendations for a Safe Infant Sleeping Environment. *Pediatrics*. 2016;138(5):e20162940. doi:10.1542/peds.2016-2940
8. de Luca F, Hinde A. Effectiveness of the 'Back-to-Sleep' campaigns among healthcare professionals in the past 20 years: a systematic review. *BMJ Open*. 2016;6(9):e011435. doi:10.1136/bmjopen-2016-011435
9. Moon RY, Hauck FR, Colson ER. Safe Infant Sleep Interventions: What is the Evidence for Successful Behavior Change? *Curr Pediatr Rev*. 2016;12(1):67-75. doi:10.2174/1573396311666151026110148
10. Colson ER, Levenson S, Rybin D, et al. Barriers to Following the Supine Sleep Recommendation Among Mothers at Four Centers for the Women, Infants, and Children Program. *Pediatrics*. 2006;118(2):e243-e250. doi:10.1542/peds.2005-2517
11. Weblet Importer. http://www.healthybabiesbaltimore.com/about-bhb. Accessed July 2, 2019.
12. Are Your Hospital's Website Images Safe-Sleep Friendly? https://www.nichq.org/insight/are-your-hospitals-website-images-safe-sleep-friendly. Accessed July 1, 2019.
13. Oden RP, Joyner BL, Ajao TI, Moon RY. Factors influencing African American mothers' decisions about sleep position: a qualitative study. *J Natl Med Assoc*. 2010;102(10):870-872, 875-880. doi:10.1016/s0027-9684(15)30705-7
14. Hauck F, Tanabe K, McMurry T, community RM-J of, 2015 undefined. Evaluation of bedtime basics for babies: a national crib distribution program to reduce the risk of sleep-related sudden infant

deaths. *Springer*. https://link.springer.com/article/10.1007/s10900-014-9957-0. Accessed June 2019

15. de Luca F, Hinde A. Effectiveness of the 'Back-to-Sleep' campaigns among healthcare professionals in the past 20 years: a systematic review. *BMJ Open*. 2016;6(9):e011435. doi:10.1136/bmjopen-2016-011435

16. Meisner C, Rocca Rivarola M. Impact of an educational intervention to improve adherence to the recommendations on safe infant sleep. *Arch Argent Pediatr*. 2016;114(3):223-231. doi:10.5546/aap.2016.eng.223

17. Price SK, Gardner P, Hillman L, Schenk K, Warren C. Changing Hospital Newborn Nursery Practice: Results from a Statewide "Back to Sleep" Nurses Training Program. *Matern Child Health J*. 2008;12(3):363-371. doi:10.1007/s10995-007-0243-y

18. Salm Ward TC, Balfour GM. Infant Safe Sleep Interventions, 1990–2015: A Review. *J Community Health*. 2016;41(1):180-196. doi:10.1007/s10900-015-0060-y

19. Fetal-Infant Mortality Review - GenerateHealth. https://generatehealthstl.org/programs/maternal-infant-health/fetal-infant-mortality-review/. Accessed July 1, 2019.

20. Oden RP, Joyner BL, Ajao TI, Moon RY. Factors Influencing African American Mothers' Decisions About Sleep Position: A Qualitative Study. *J Natl Med Assoc*. 2010;102(10):870-880. doi:10.1016/S0027-9684(15)30705-7

21. Gollenberg A, Fendley K. Is it Time for a Sudden Infant Death Syndrome (SIDS) Awareness Campaign? Community Stakeholders' Perceptions of SIDS. *Child Care Pract*. 2018;24(1):53-64. doi:10.1080/13575279.2016.1259155

22. Hwang SS, Rybin D V., Heeren TC, Colson ER, Corwin MJ. Trust in Sources of Advice about Infant Care Practices: The SAFE Study. *Matern Child Health J*. 2016;20(9):1956-1964. doi:10.1007/s10995-016-2011-3

23. Carlins EM, Collins KS. Cribs for Kids: Risk and Reduction of Sudden Infant Death Syndrome and Accidental Suffocation. *Health Soc Work*. 2007;32(3):225-229. doi:10.1093/hsw/32.3.225

24. July B. *Safe Sleep Change Package*.; 2017. https://static.nichq.org/prevention-toolkit/resources/safe_sleep_driver_diagram.pdf. Accessed June 18, 2019.

25. Aitken ME, Rose A, Mullins SH, et al. Grandmothers' Beliefs and Practices in Infant Safe Sleep. *Matern Child Health J*. 2016;20(7):1464-1471. doi:10.1007/s10995-016-1945-9

26. *Dialogue Creates Effective Risk Reduction Training NORTH CAROLINA PROMISING PRACTICES FOR CULTURAL AND LINGUISTIC COMPETENCE IN ADDRESSING SUDDEN INFANT DEATH SYNDROME AND OTHER INFANT DEATH*. https://nccc.georgetown.edu/documents/SIDS_northcarolina.pdf. Accessed July 2, 2019.

27. Kellams A, Parker MG, Geller NL, et al. TodaysBaby Quality Improvement: Safe Sleep Teaching and Role Modeling in 8 US Maternity Units. *Pediatrics*. 2017;140(5):e20171816. doi:10.1542/peds.2017-1816

28. *AMERICAN ACADEMY OF PEDIATRICS Task Force on Infant Sleep Position and Sudden Infant Death Syndrome Changing Concepts of Sudden Infant Death Syndrome: Implications for Infant Sleeping Environment and Sleep Position*.; 2000. www.aappublications.org/news. Accessed July 1, 2019.

29. Evidence Base for Safe Sleep Interventions – NAPPSS. http://www.nappss.org/evidence-base/. Accessed June 2019