



CAN WE PREVENT INFANT SLEEP-RELATED DEATHS? What You Need to Know Now

A Provider Competency



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Developed by

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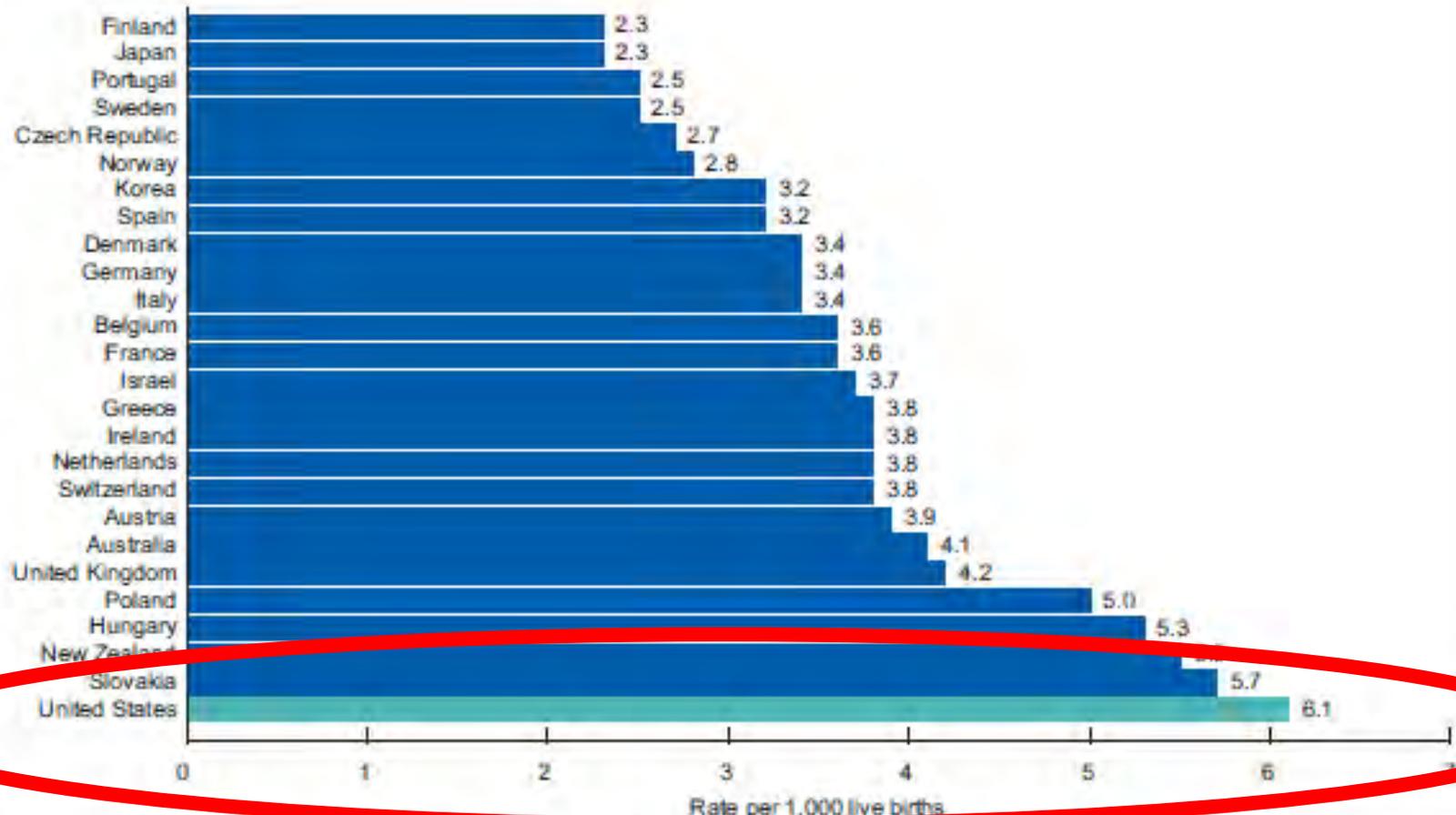
Michael Goodstein, M.D.

Objectives

Upon completion Health Care Providers & Clinical Staff (HCP/CS) will be able to:

- Define SIDS and SUID (Sudden Unexpected Infant Death).
- List the critical infant sleep safety messages for parents and caregivers.
- Describe their key role as educators to parents and caregivers about infant sleep safety.
- Describe ways that one can effectively communicate infant sleep safety messages to parents and caregivers.

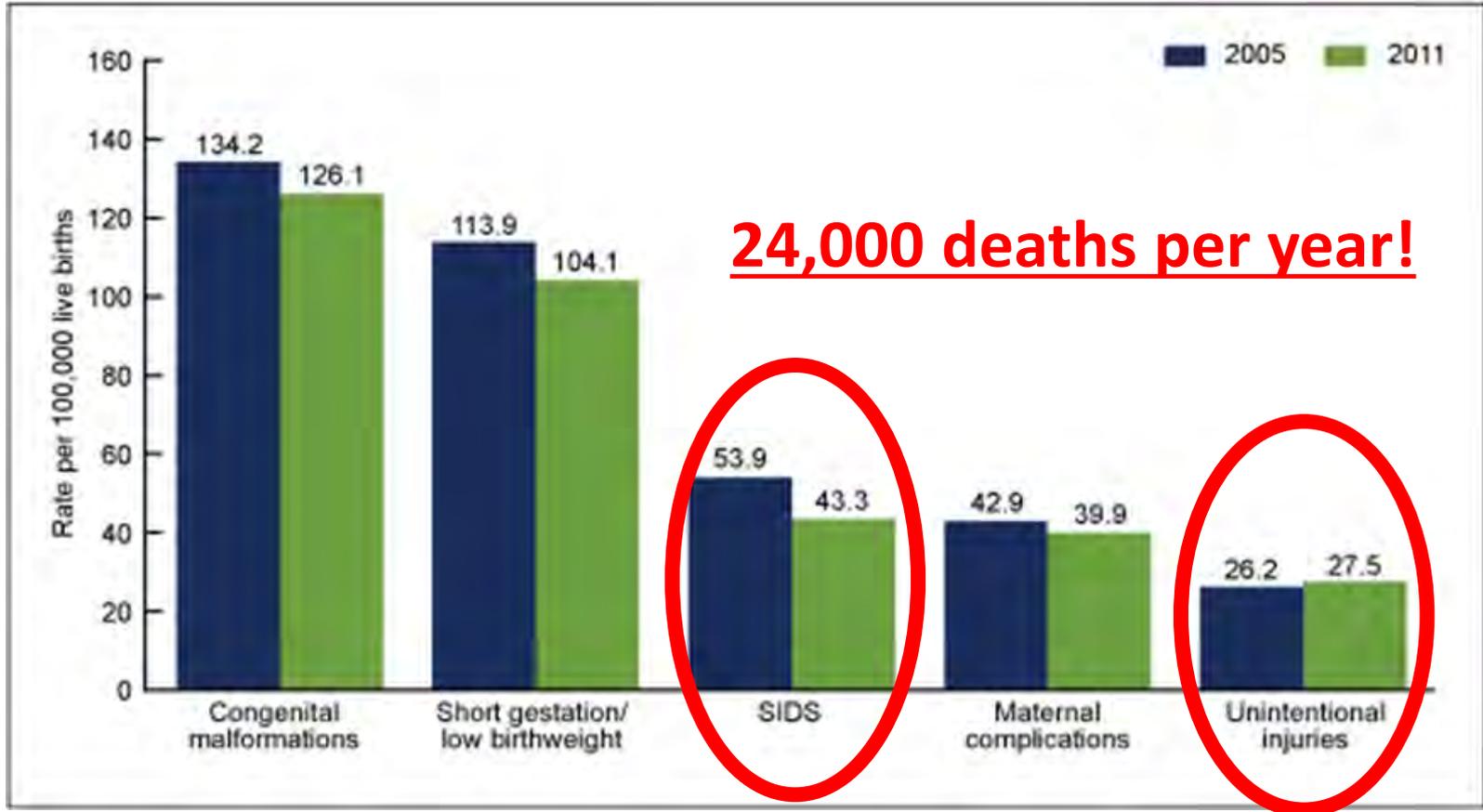
Compared to other wealthy nations, the US ranks 26 of 29 for infant mortality rate!



NOTES: Canada's 2010 data were not available from the Organisation for Economic Co-operation and Development (OECD) at the time of manuscript preparation. The 2009 infant mortality rate for Canada was 4.9. If the 2010 data for Canada had been available, the U.S. ranking may have changed. Deaths at all gestational ages are included, but countries may vary in completeness of reporting events at younger gestational ages.

SOURCES: CDC/NCHS, Linked birth/infant death data set (U.S. data); and OECD 2014 (all other data). Data are available from: <http://www.oecd.org>.

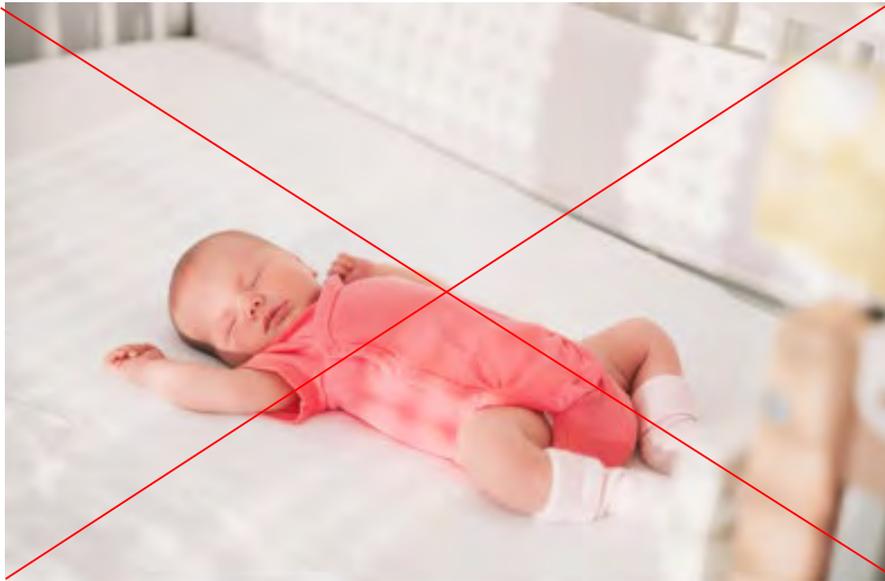
Leading causes of infant death in the United States, 2005 and 2011



SIDS is #3 and accidental suffocation is #5!

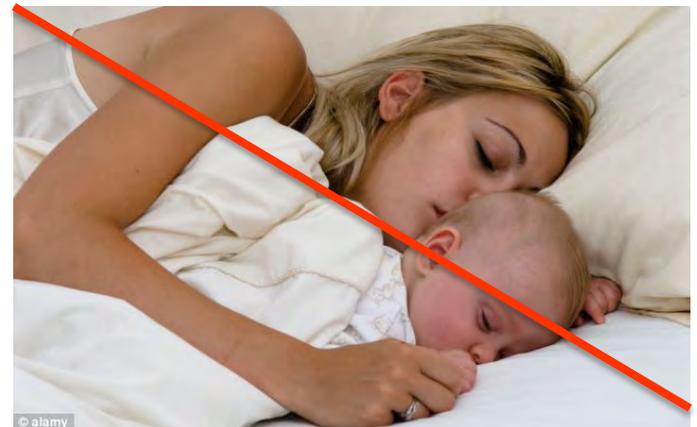
Infant Sleep Safety

- Requires a consistent and repetitive message in the community to prevent accidental deaths



Definitions

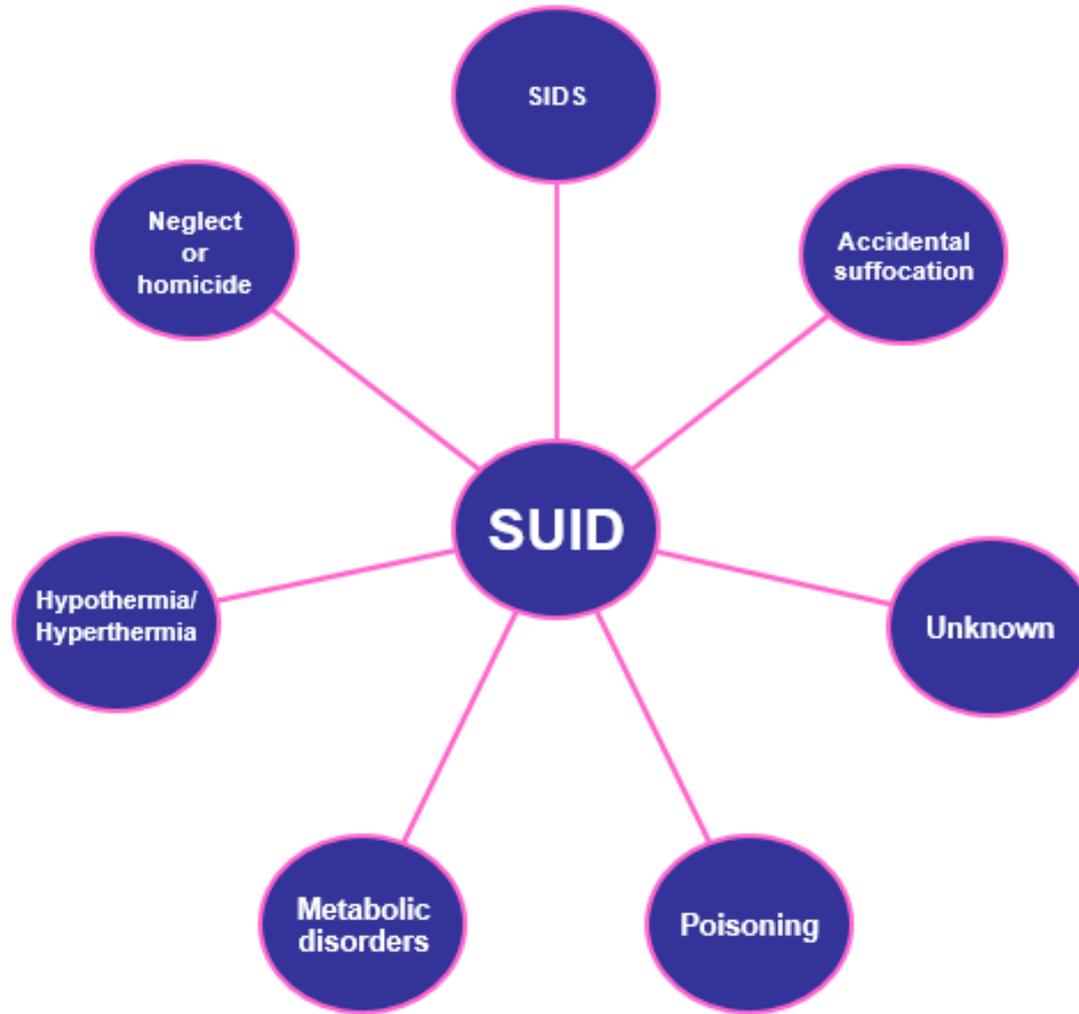
- **Co-sleeping**: a vague and confusing term to describe shared sleeping arrangements between infant and parents
- **Bed-sharing**: any individual sharing a sleeping surface with an infant (NOT RECOMMENDED)
- **Room-sharing**: parent and infant sleep proximate in the same room, on separate sleep surfaces for the first 6 months. (RECOMMENDED)
- **Supine Position**: lying with the face and torso face up; “back sleeping”
- **Prone Position**: lying face down; also known as “tummy sleeping”



What is SUID or SUDI?

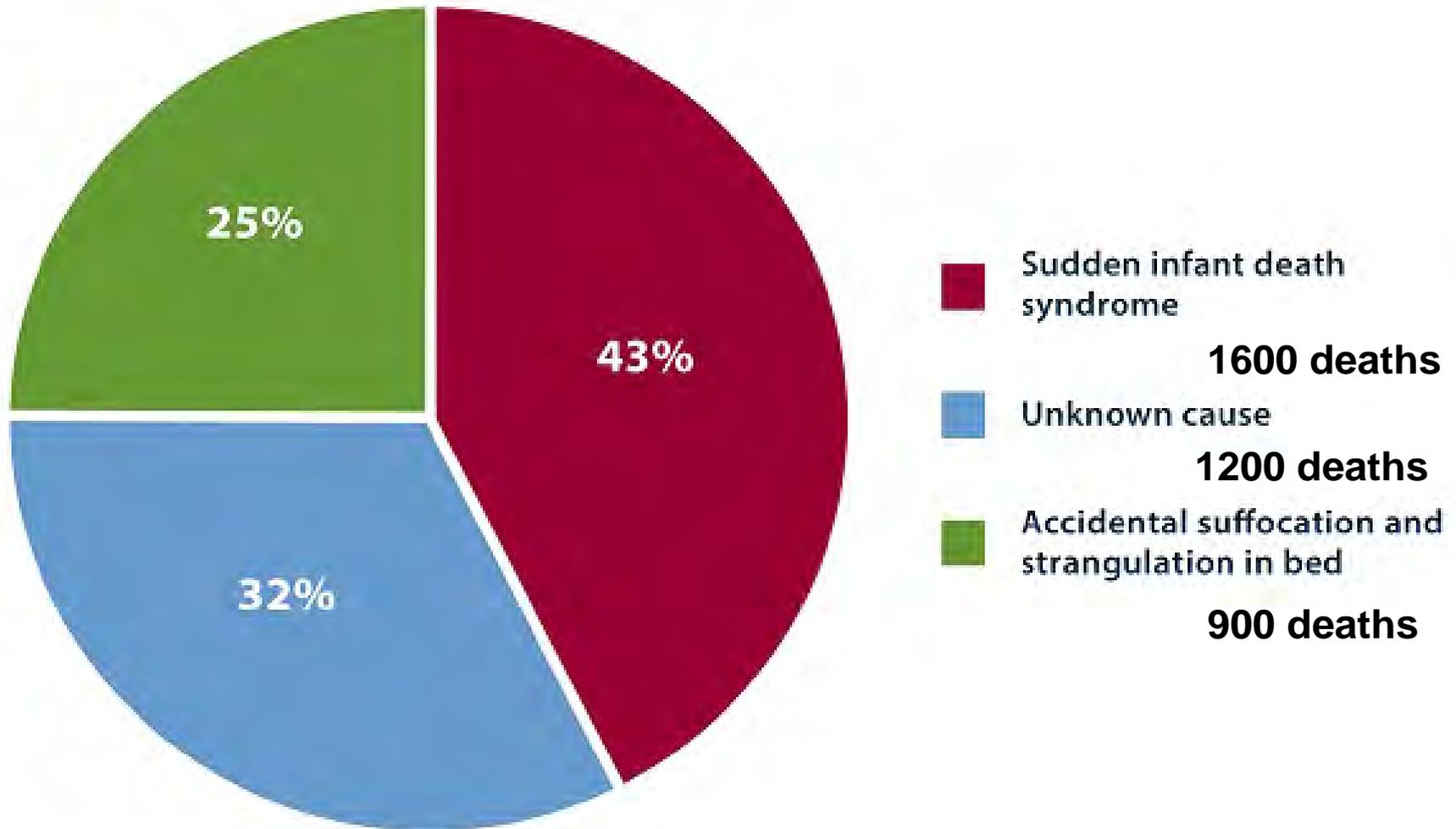
- **Sudden Unexpected Infant Death:** The death of an infant less than one year of age whose cause of death is not immediately obvious before investigation.
 - Occurs in a previously healthy infant
 - Can be explained or unexplained
 - Explained: trauma, drowning, suffocation
 - Unexplained: SIDS, undetermined
 - Most unobserved, during sleep/environment
 - Sleep-related deaths
- The big “umbrella” of all unexplained infant deaths

Some causes of deaths that occur suddenly and unexpectedly during infancy



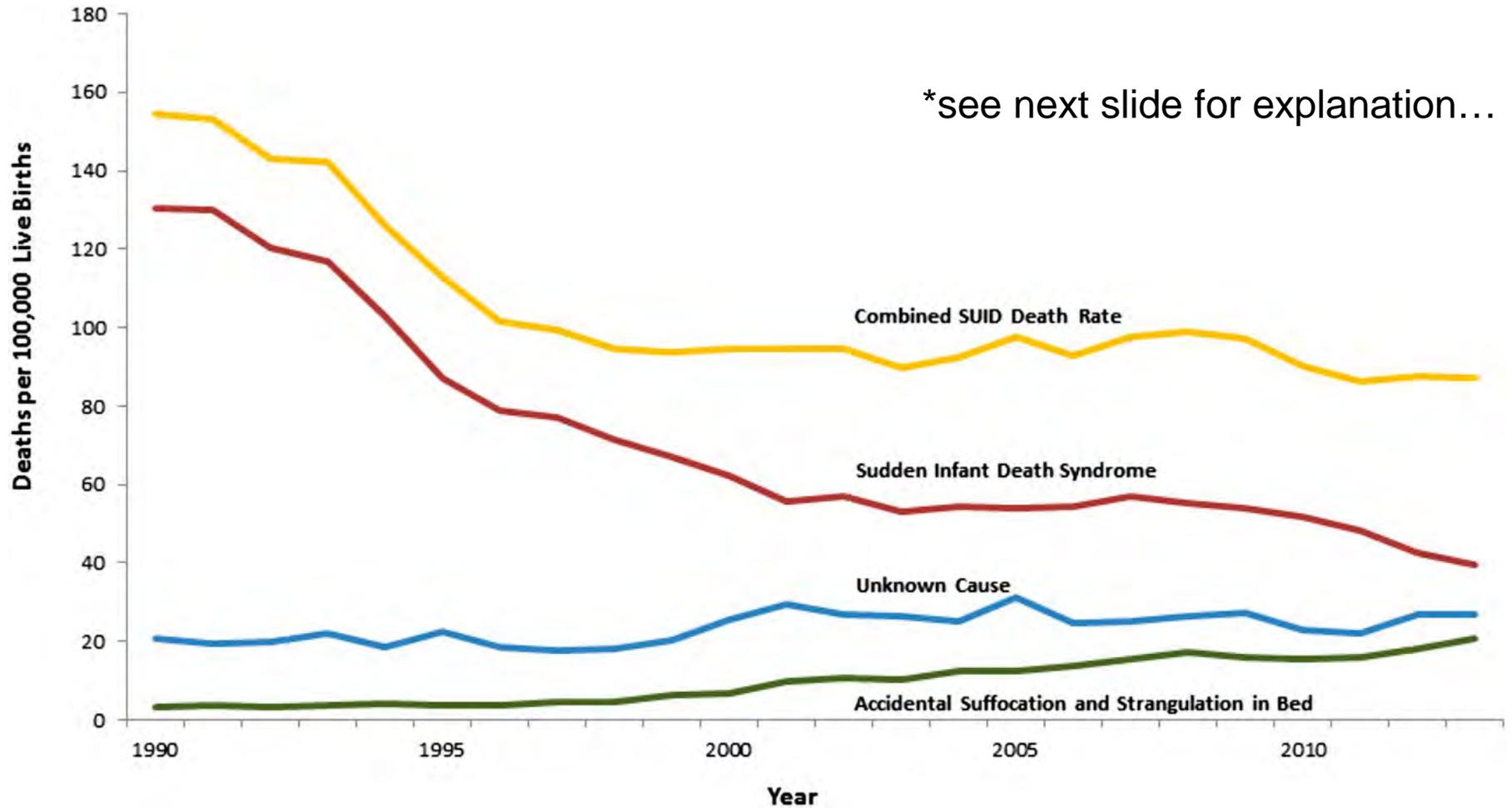
SIDS represents a subcategory of SUID

U.S. SUID by Cause: 2015



Total SUID Deaths = 3700

Trends in SUID by Cause 1990-2013*



Trends in SUID by cause, 1990–2013. Source: Centers for Disease Control and Prevention/National Center for Health Statistics, National Vital Statistics System, compressed mortality file. (Figure duplicated from <http://www.cdc.gov/sids/data.htm>.)

Trends in SUID by Cause 1990-2013

- SUID rates (yellow line) have not decreased since about 2000
- SIDS rates (brown line) continued to decrease
- Hmm... how can that be: lower SIDS rates with no change in SUID?

Answer: Increase in unknown (blue line) and accidental suffocation deaths (green line)

Trends in SUID by Cause 1990-2013

Why the change in rates of causes of SUID?

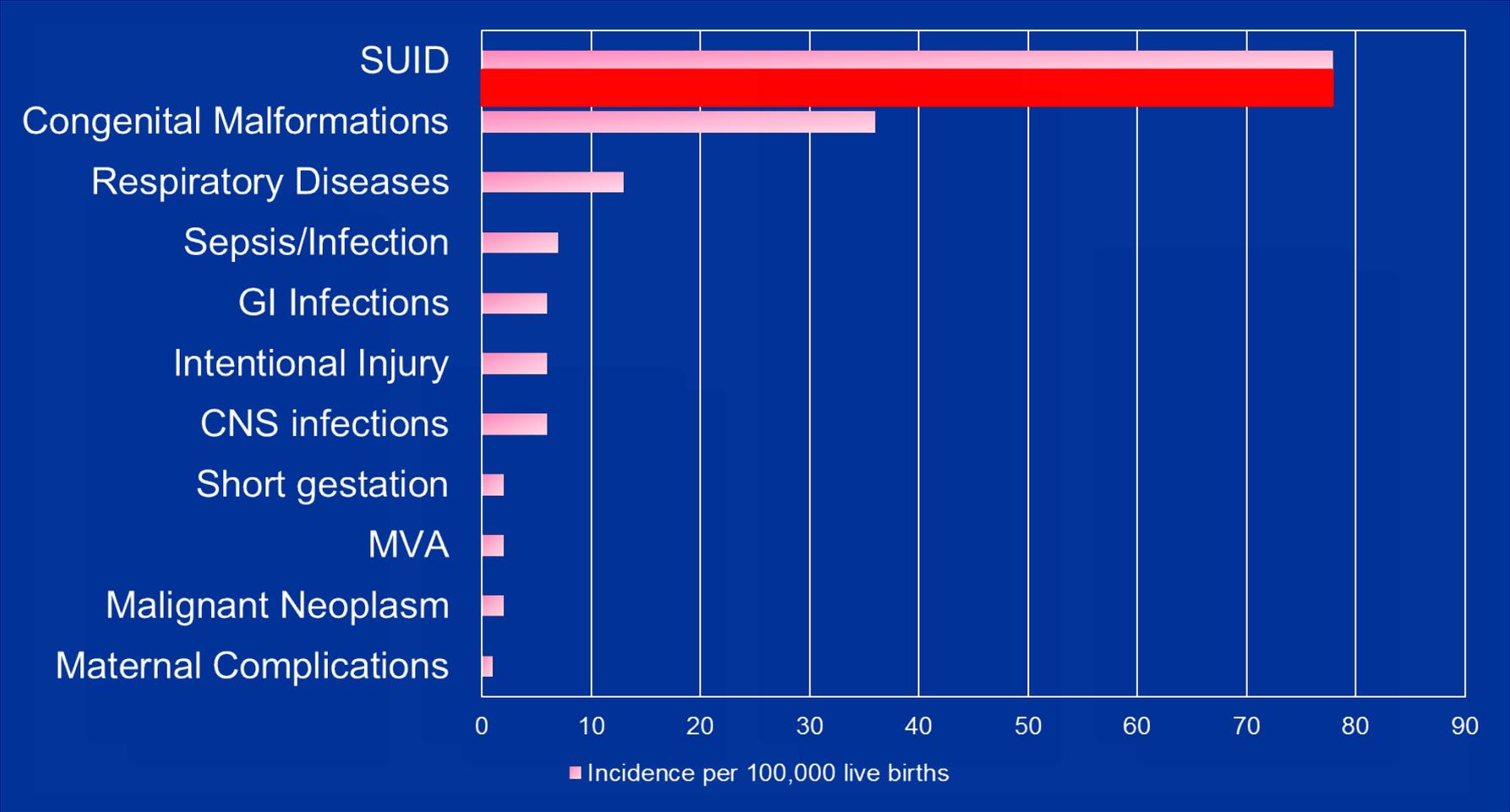
It may be a real change in the causes of
death

OR....

It may be a change in how medical
examiners and coroners are coding the
deaths

This is called Diagnostic Coding Shift!

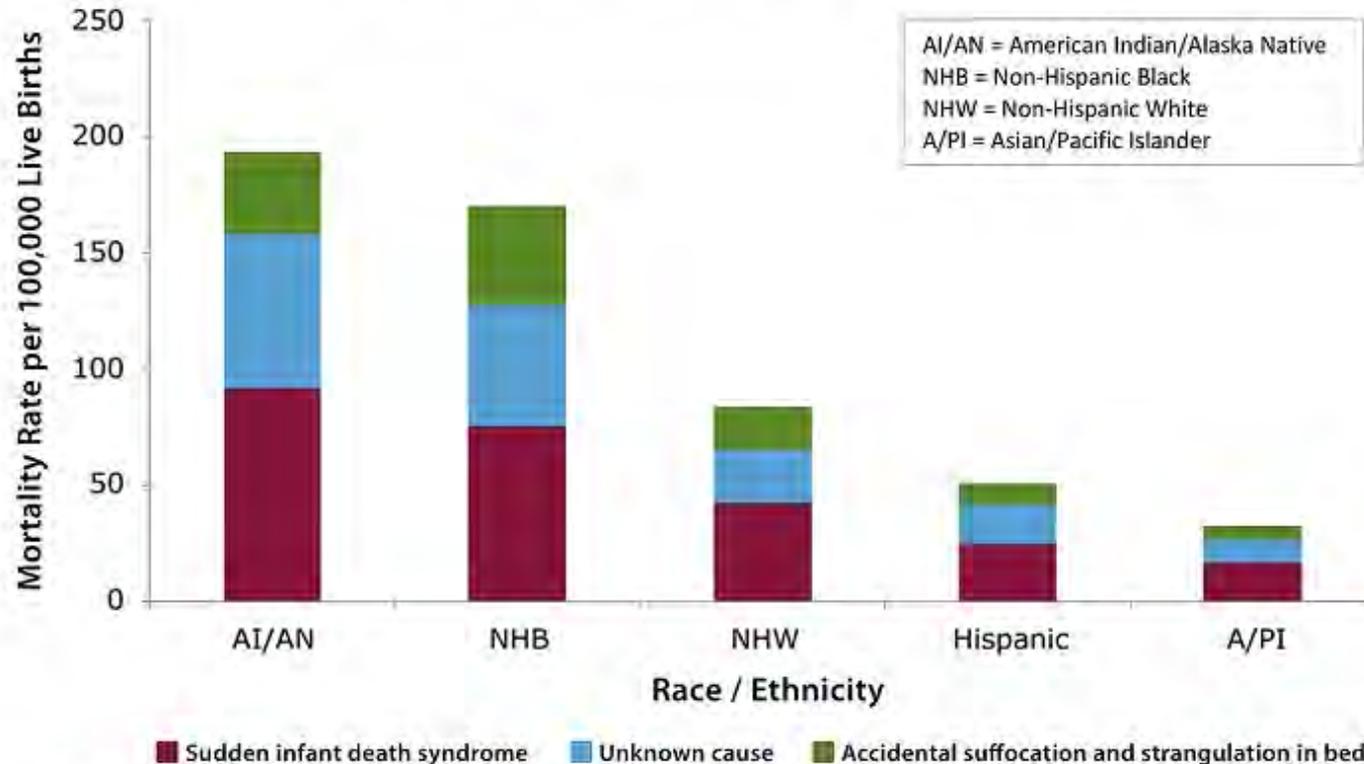
From 1 and 12 months of age, SUID is the leading cause of death in the US (2015)



United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Division of Vital Statistics (DVS). Linked Birth / Infant Death Records 2007-2015, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program, on CDC WONDER On-line Database. Accessed at <http://wonder.cdc.gov/lbd-current.html> on Dec 27, 2017

SUID Rates by Race/Ethnicity: 2011-2014

Sudden Unexpected Infant Death by Race/Ethnicity, 2011-2014



SOURCE: CDC/NCHS, National Vital Statistics System, Period Linked Birth/Infant Death Data.

Note that SUID occurs more commonly in Black and Native American populations.

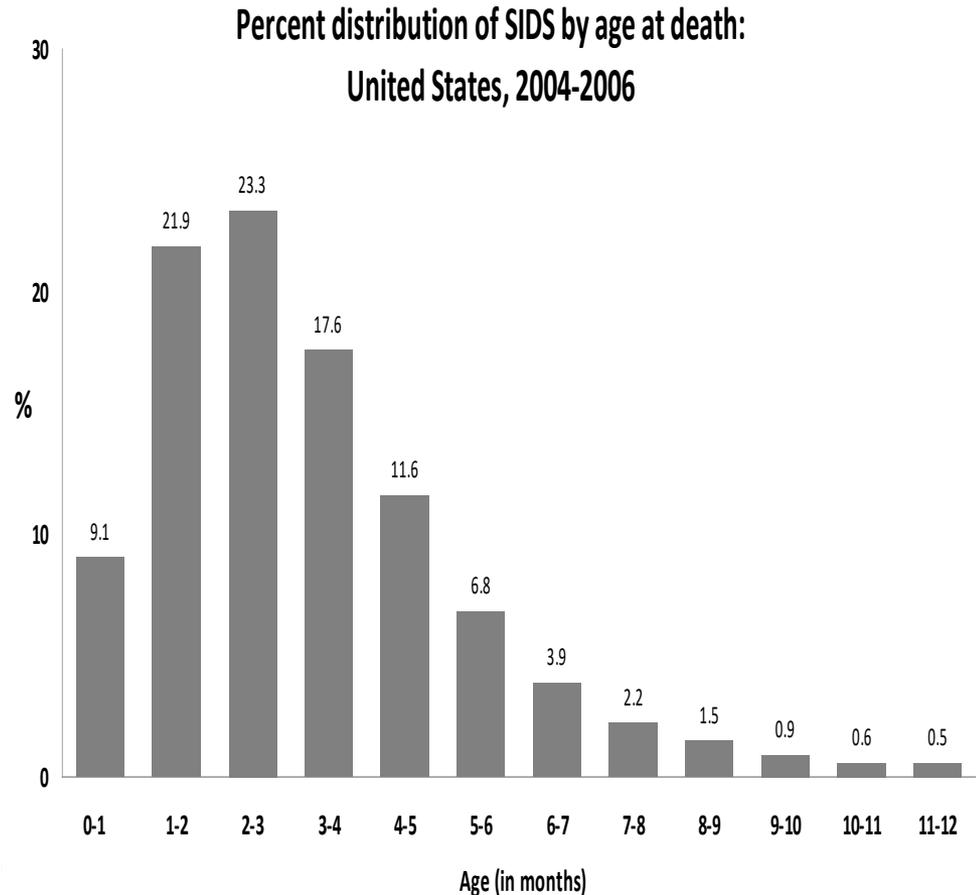
What is SIDS?

ICD-10 Definition: The sudden death of an infant under one year of age which remains unexplained after the performance of a complete post-mortem investigation including:

- Performance of a complete autopsy
- Examination of the death scene
- Review of the case history

SIDS Facts

- The leading cause of death in infants from one month to one year of age (post-neonatal infant mortality)
- A diagnosis of exclusion. The cause of death is assigned only after ruling out other causes
- Peak time of occurrence: 1-4 months
- 90% occur before 6 months of age
- Higher incidence in males (1.6 to 1)
- No longer see a higher frequency in colder months



SIDS Facts

- Higher incidence in preterm and low birth weight infants
- Associated with:
 - Young maternal age
 - Maternal smoking with pregnancy
 - Late or no prenatal care
- 2-3 times more common in African-American, American Indian, Alaska Native children
- Hispanic and Asian/Pacific Islanders infants have among the lowest SIDS rates.

SIDS and Cigarettes

- One-third of SIDS cases could be eliminated if mother's did not smoke during pregnancy!
- Second-hand smoke is a major risk factor
- Smoke exposure decreases infant arousal
- Smoke exposure is dose-dependent
- SIDS risk is especially high when bed-sharing with an adult smoker even when the adult does not smoke in bed.



Did you know?

- About 1 in 5 infant sleep-related deaths occur while an infant is in non parental care.
- Many of these deaths are related to the caregiver placing the baby to sleep on their tummy.
- This is called “unaccustomed tummy sleeping”. These babies are 18 times more likely to die.



Challenges to Infant Sleep Safety

- Cultural
- The concerns of aspiration or choking
- The infant's comfort
- Concern about a flattened skull
- Advice from others
- Inconsistency in the hospital with safe sleep practices
- Childcare Providers not educated on Infant Safe Sleep Practices

Understanding Cultural Issues



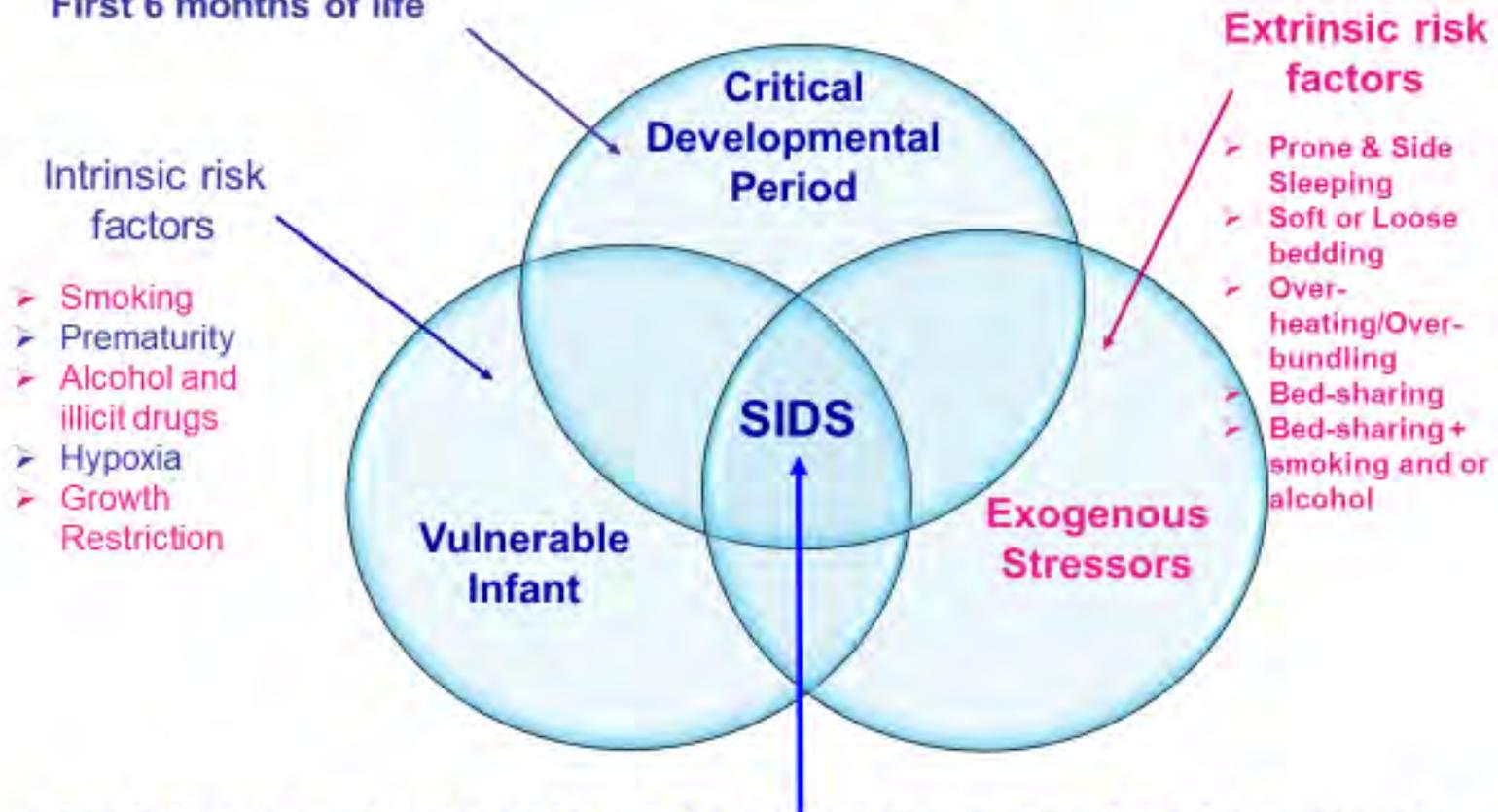
- Sleeping on soft bedding and bed sharing, two practices that increase the risk of sleep-related death are more common among minority populations.
- Infants born to African American families and to families living in some urban areas are more likely to be placed on their stomach, the position that poses the highest risk.
- Dressing an infant in multiple layers can lead to overheating , which is a leading risk factor in American Indian communities.

SIDS is NOT...

- Preventable...but the risk can be reduced!
- Caused by vomiting and/or choking
- Caused by immunizations
- Contagious
- The result of child abuse or neglect
- The cause of every unexpected infant death

Triple Risk Model to explain SIDS

First 6 months of life



The infant is most vulnerable to SIDS at the intersection of the 3 components

● **Modifiable Risk Factors**

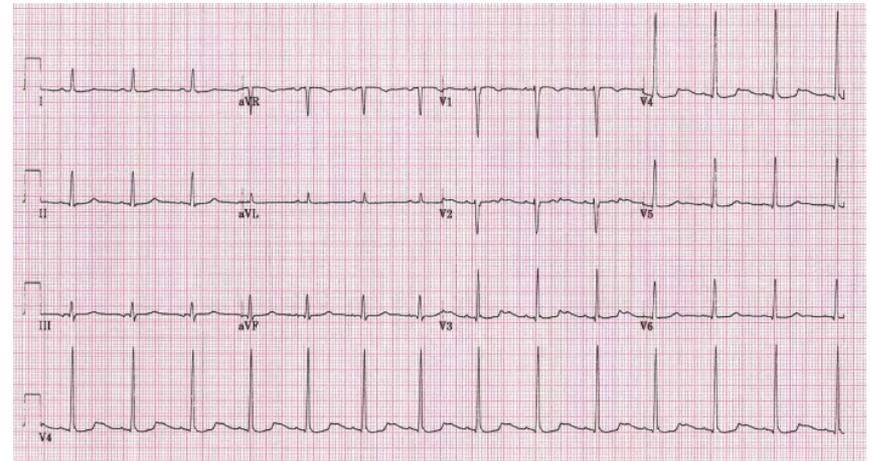
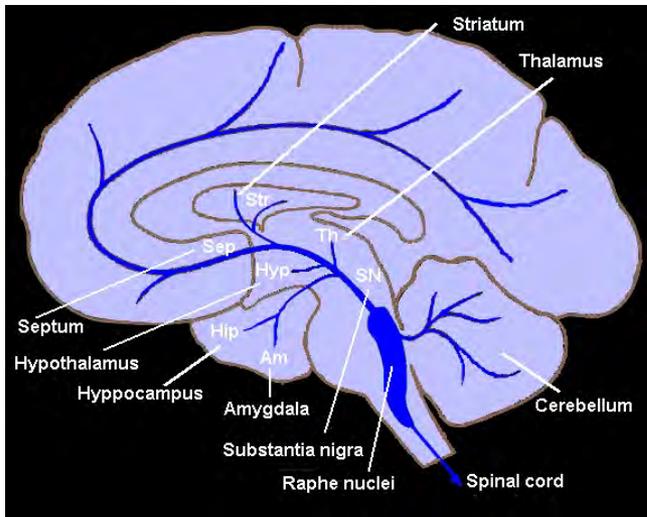
Adapted from Filiano and Kinney, 1994

According to the triple-risk model, **all three elements** must be present for a sudden infant death to occur

1. The baby's vulnerability is undetected.
2. The infant is in a critical developmental period that can temporarily destabilize his or her systems.
3. The infant is exposed to one or more outside stressors that he or she cannot overcome because of the first two factors.

Underlying Vulnerabilities

- Anatomic or genetic abnormalities:
 - Brainstem abnormalities
 - Cardiac arrhythmia

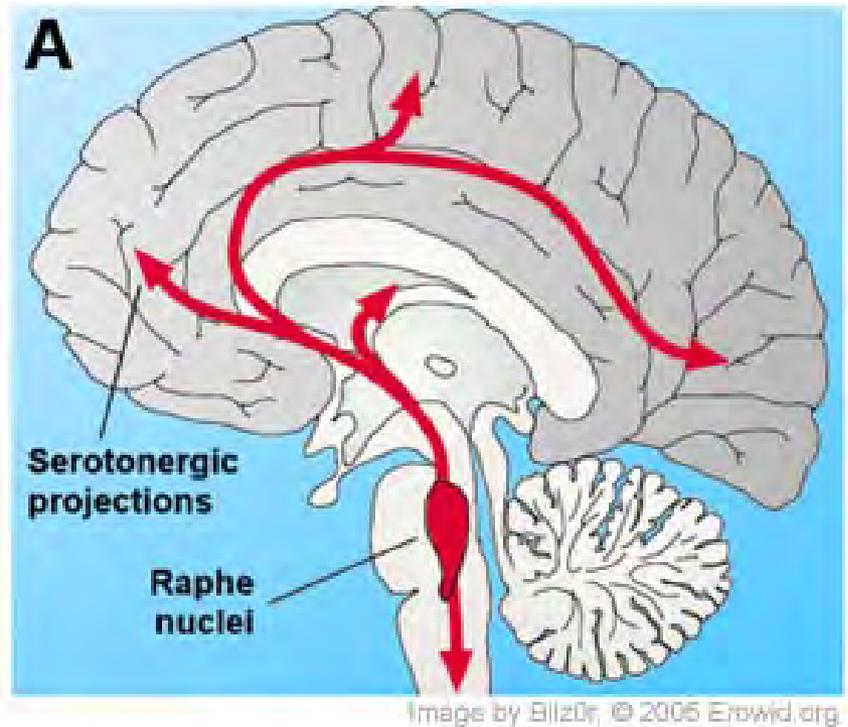


Cardiac Arrhythmia

- Long **QT** syndrome is a heart rhythm disorder that can cause serious irregular heart rhythms (arrhythmias).
- 5-10% of SIDS deaths are attributed to arrhythmia.
 - novel mutations in the cardiac sodium or potassium channel genes
 - SCN5A (sodium channel gene) β subunits
- Studies have not found it feasible to screen all newborns with ECGs

A Brainstem Abnormality?

- Serotonergic neurons in the medulla project to nuclei in the brainstem and spinal cord which help regulate vital autonomic functions:
 - Blood pressure
 - Temperature control
 - Respiratory control
 - Upper Airway Reflexes
 - Arousal from sleep



Fail to arouse from a threat in the sleep environment may be a critical element in SIDS!

Evidence for a Brainstem Abnormality in SIDS

- Kinney et al. identified altered serotonin receptor binding density in medullas in brains of infants dying of SIDS (J. Neuropathology & Exp Neurology. 2003)
- Hypothesis:
 - Medullary (brainstem) serotonin dysfunction results in a failure of autonomic and respiratory responses to hypoxia (low oxygen levels) or hypercapnia (high carbon dioxide levels)
 - Results in sudden death in a subset of SIDS cases
- Serotonin receptor binding density lower in SIDS cases compared to controls. (JAMA 2006)
- Serotonin levels 26% lower in SIDS cases compared to controls! (JAMA 2010)
- New data from Kinney show scarring in other areas beyond brainstem (dentate gyrus, hippocampus)

Critical Period of Development

- 90% of sleep-related death cases prior to 6 mos.
- Rapid brain growth
- Developmental changes in sleep state organization, arousal, cardiorespiratory control, and metabolism
- Individual differences in the normal physiologic maturation of the brain and brainstem
- Individual variations in development of muscle tone and head control

Modifiable Environmental Stressors



- Prone/Side Sleep Position
- Nicotine Exposure
- Soft/Loose Bedding
- Overheating
- Bed Sharing





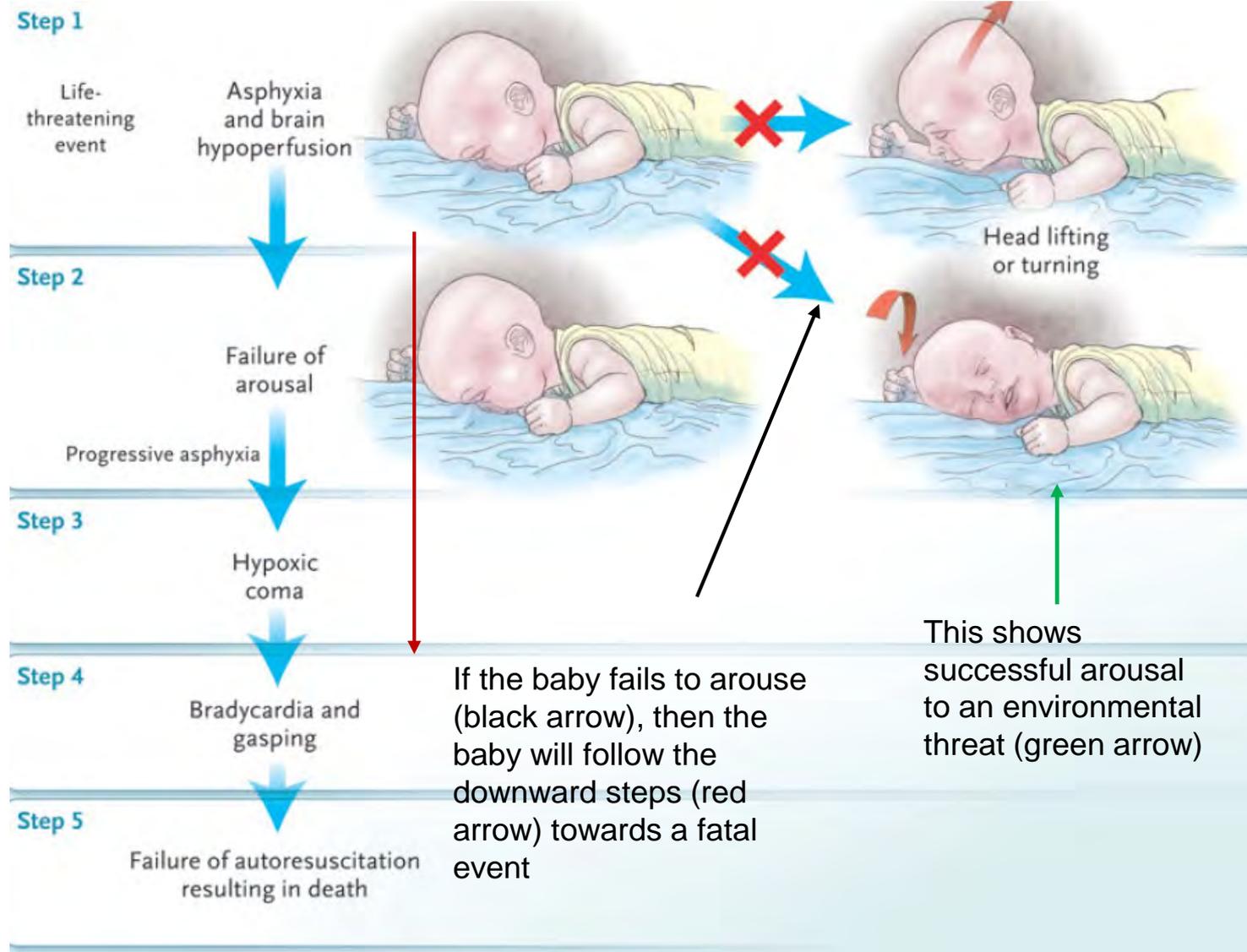
Risk Factors

Babies who sleep on their stomachs:

- have longer periods of deep sleep
- are less reactive to noise
- experience less movement
- have higher arousal threshold
- **experience sudden decreases in blood pressure and heart rate control**

An example of SIDS pathogenesis

One potential mechanism



Risk Reduction Outreach

- 1992-the AAP recommends that all healthy infants younger than 1 year age be placed to sleep on their backs or sides to reduce SIDS.
- 1994-"Back to Sleep" campaign launched.
- 1996-AAP recommends that infants be placed "wholly" on their backs, the position associated with the lowest SIDS risk.
- 2011- AAP expands recommendations to include other sleep-related deaths and recommends against bed sharing.
- 2012 – "Safe to Sleep" campaign launched

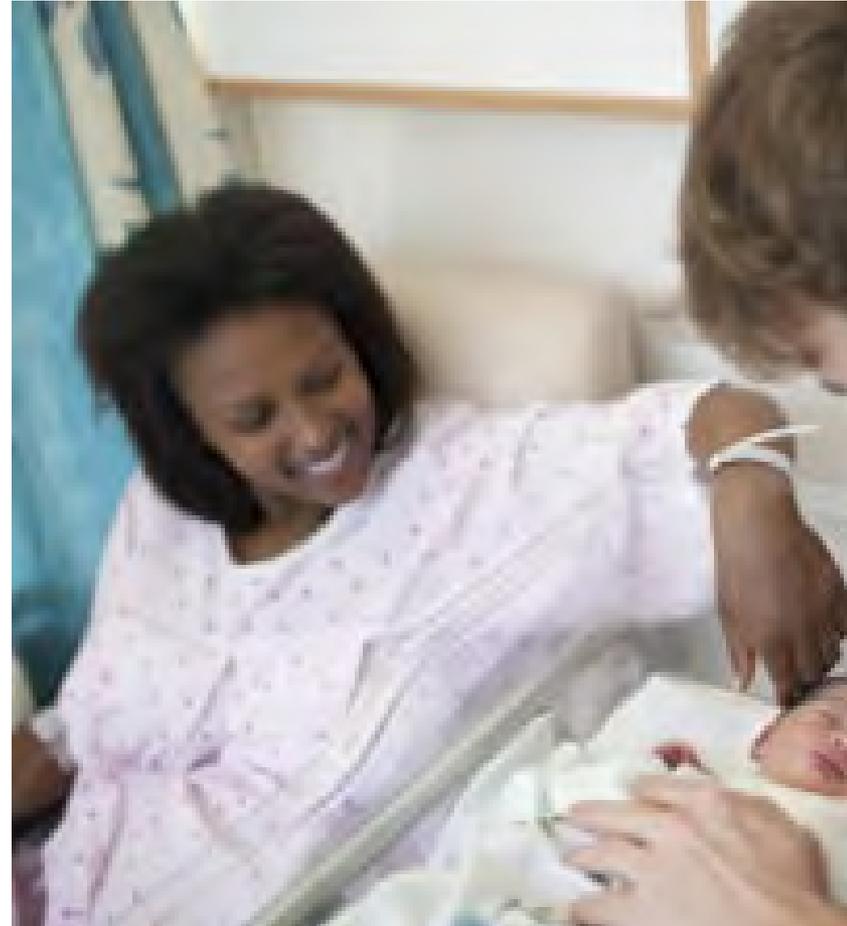


Environmental Similarities in SIDS and Suffocation

RISK FACTOR	SIDS	SUFFOCATION
Stomach Sleeping	yes	unknown
Soft Bedding	yes	yes
Adult or Other Bed, Couch	yes	yes
Over-bundling	yes	yes
Loose Bedding, Head Cover	yes	yes
Bed-sharing	yes	yes
Cigarette Smoke	yes	unknown

2016 AAP Recommendations: Infant Sleep Safety

- Recommendations are to reduce the risk of SIDS and sleep-related suffocation, asphyxia, and entrapment
- Recommendations should be used consistently until 1 year of age
 - Most epidemiological studies upon which these recommendations are based include infants up to 1 year of age



Strength of Recommendation

- Scale based on the Strength of Recommendation Taxonomy (SORT)
 - A: There is good quality patient-oriented evidence
 - B: There is inconsistent or limited quality patient-oriented evidence
 - C: The recommendation is based on consensus, disease-oriented evidence, usual practice, expert opinion, or case series for studies of diagnosis, treatment, prevention or screening.



The recommendations change as the evidence evolves

- Statistics and risk factors may change
 - New risks emerge (e.g.: side positioning)
 - Different levels of risk?
- Policies and procedures may change
 - Better death scene investigations
 - Diagnostic shift
- Unintended consequences
 - Plagiocephaly, development
 - New tummy time recommendations



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Level A Recommendations:

- Back to sleep for every sleep
- Use a firm sleep surface
- Keep soft objects and loose bedding out of the crib
- Room-sharing- infant on separate sleep surface
- Breastfeeding is recommended
- Consider offering a pacifier at nap time and bedtime
- Avoid smoke exposure during pregnancy and after birth
- Avoid alcohol and illicit drug use during pregnancy and after birth



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Level A Recommendations:

- Avoid overheating
- Pregnant women should receive regular prenatal care
Immunize babies as per AAP/CDC guidelines
- Do not use home cardiorespiratory monitors as a strategy for reducing the risk of SIDS
- Health care professionals, staff in newborn nurseries and NICUs, and child care providers should endorse the SIDS risk-reduction recommendations from birth
- Media and manufacturers should follow safe-sleep guidelines in their messaging and advertising

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Level B Recommendations:

- Avoid commercial devices that are inconsistent with safe sleep recommendations
- Supervised, awake tummy time is recommended to facilitate development and to minimize development of positional plagiocephaly (flattening of skull)

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Level C Recommendations:

- Continue research and surveillance on the risk factors, causes, and pathophysiological mechanisms of SIDS and other sleep-related infant deaths, with the ultimate goal of eliminating these deaths entirely
- There is no evidence to recommend swaddling as a strategy to reduce the risk of SIDS.

Correct Safe Sleep Environment



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ALWAYS place the baby on his/her back to sleep for every sleep- naps and at night.



Why Back to Sleep?

- Stomach sleeping carries between 1.7 and 12.9 times the risk of SIDS as back sleeping.
- Stomach sleeping may increase the risk of SIDS through a variety of mechanisms including: having the baby re-breathe his/her own expired breath leading to CO₂ build up and low O₂ levels, causing upper airway obstruction and interfering with heat dissipation, leading to overheating.
- Side sleeping is just as dangerous as stomach sleeping. The position is unstable and usually leads to stomach sleeping.
- Positioners are unsafe and should not be used to prop babies onto the side.

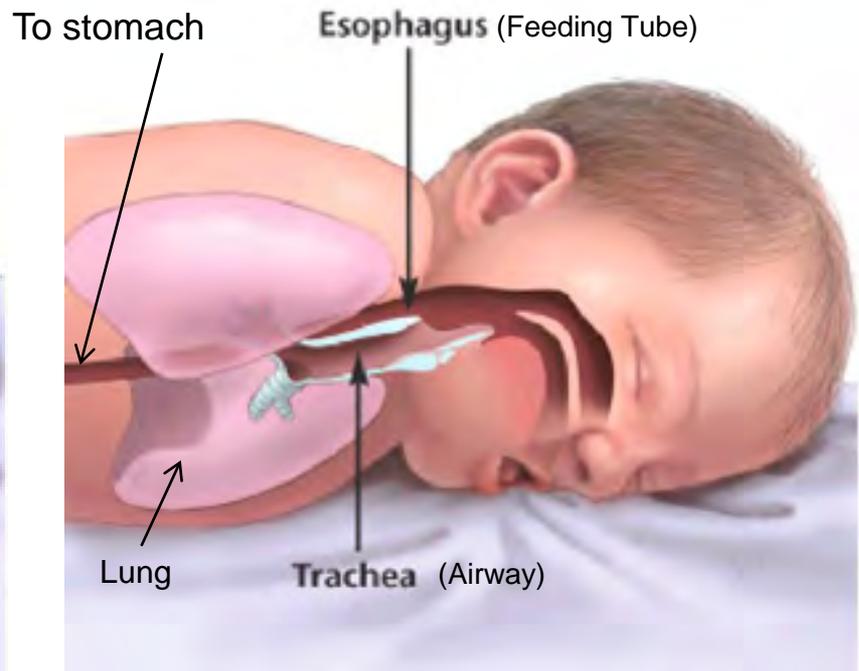
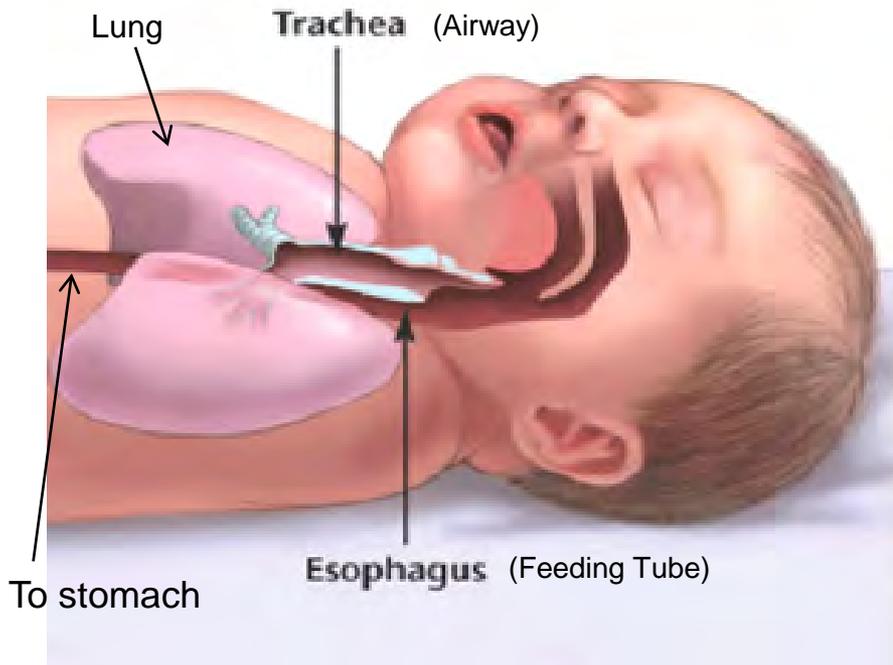
Benefits of Back Sleeping

- Less likely to develop ear infections, stuffy noses and fevers.
- There is no increase in aspiration or vomiting when babies are placed on their back to sleep.
- Back sleepers may be somewhat slower to learn to roll over, sit up, creep, crawl and pull to standing position than stomach sleepers but, there is no significant difference in the age when infants learn to walk.



The Truth About Supine Sleep and Aspiration: Ending the Fallacy

Orientation of the Trachea to the Esophagus

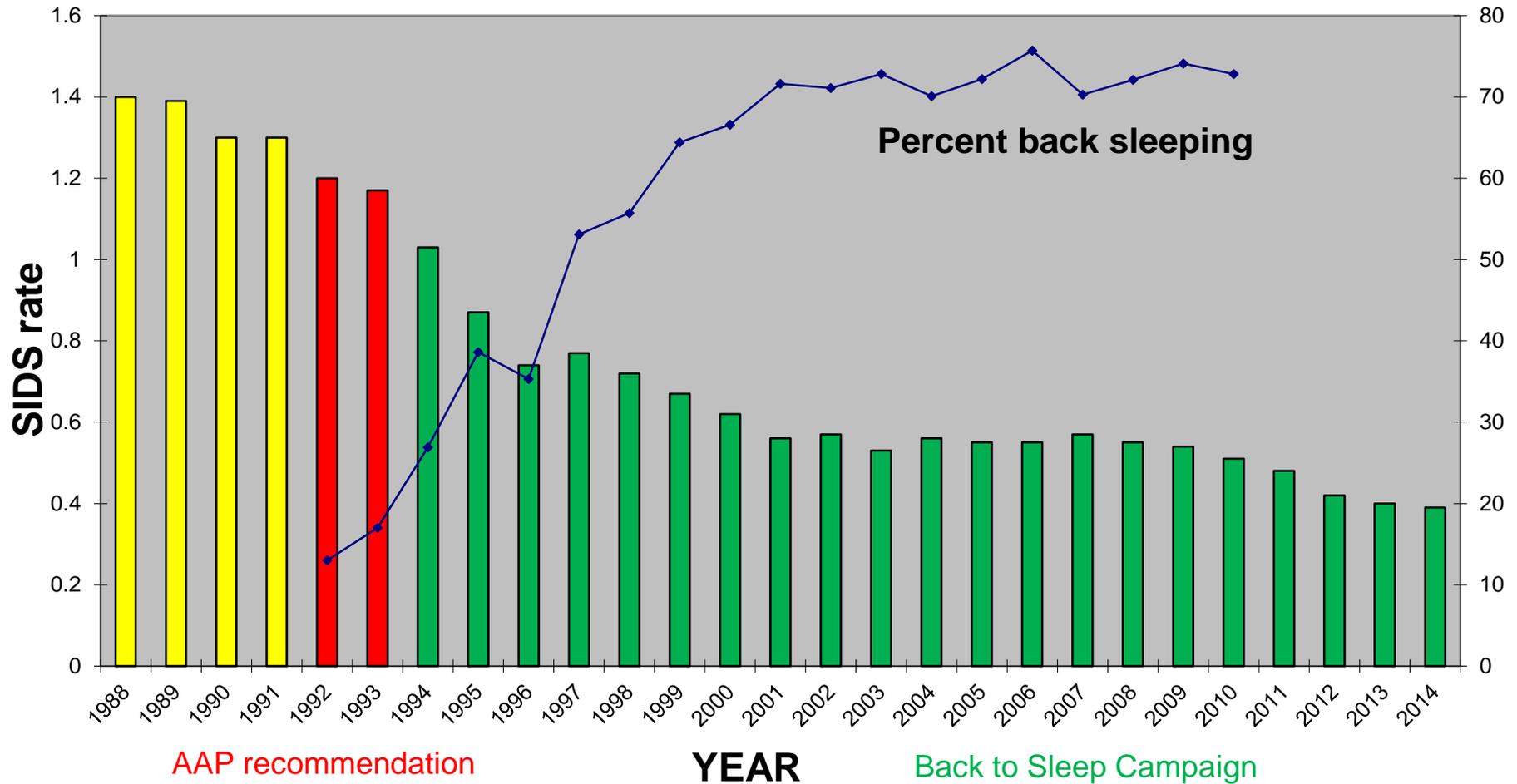


See next slide for explanation

The Truth About Supine Sleep and Aspiration

- When the baby is placed on the back, the esophagus is below the trachea. If the baby spits up, the content will come out of the baby's mouth. The remaining content will go back down the esophagus by the force of gravity. The content is swallowed and will not get into the lungs.
- On the other hand, when the baby is placed on the stomach, the trachea is below the esophagus. If the baby spits up, the content can go into the trachea resulting in aspiration.
- Remember: Coughing does not indicate choking. People cough to clear and protect their airway. It is a reflex, and healthy babies use it just like adults do!

SIDS Rate and Back Sleeping 1988-2014

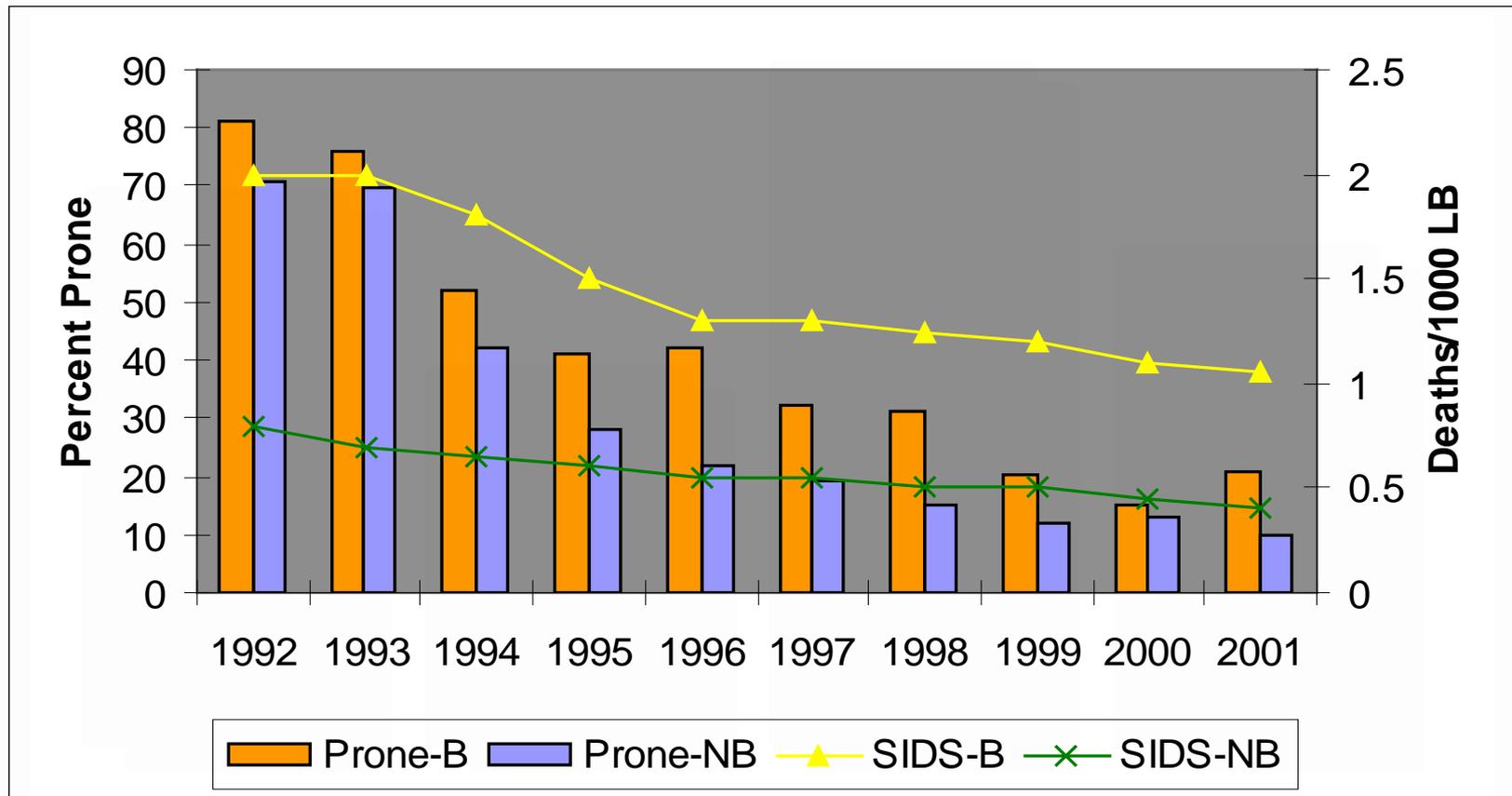


Does back to sleep save lives?

ABSOLUTELY!!!

- Before the 1992 AAP recommendation for non-prone sleep, there were 8,000 infant sleep deaths in the US every year.
- The previous slide shows the correlation between increased back sleeping (green line) and decreasing SIDS rates (bars)
- There are now about 3,500 infant sleep-related deaths each year... This is still far too many though!
- Because of the Back to Sleep Campaign, more than 80,000 children are alive today.
- **Remember, if you put your baby to sleep on the back, you cut the risk of death in half!**

Black vs Non-Black Prone Prevalence and SIDS Rates



Part of the racial disparity in SIDS deaths may be explained by the greater use of the prone sleep position in the Black population.

Factors Associated With Choice of Infant Sleep Position

- 3300 mothers from 32 hospitals
- 77% usually use supine position
- 49% exclusive use supine position!
- Most likely to use prone:
 - African-American mothers
 - Mothers with < high school education
 - Lack of perceived control
 - **Personal attitude/societal norms**

What about babies who spit up?

- There is a difference between gastroesophageal reflux (GER) and gastroesophageal reflux disease (GERD)!
- All babies have GER- they spit up, but they are happy and growing well.
- Babies with GERD are often fussy, not growing well or develop respiratory symptoms from aspiration



Sleep position and Reflux

- Infants with GE reflux should be kept supine
 - Unless the risk of death from complications of GE reflux is greater than the risk of SIDS
- Supine position does not increase the risk of choking and aspiration in infants with GE reflux
 - Protective airway mechanisms
- Do NOT elevate the head of the infant's crib
 - Ineffective in reducing GE reflux
 - Infant may slide to the foot of the crib - may compromise respiration.



Reflux with aspiration.
Contrast seen in trachea and
right lung.

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Place the baby on a firm sleep surface, such as a safety approved crib and mattress covered by a fitted sheet.



Approved surfaces include cribs, bassinets and play yards.
Do NOT use supplemental mattresses!

Safety-Approved Crib, Bassinet, Portable Crib or Play-yard ONLY!!

Supplemental mattresses are like toppers for adult beds. They are too soft for infants, but are sold for cribs when the child is over age one.



What about Bedside and In-Bed Sleepers?

Bedside Sleeper

- Attached to side of parental bed
 - CPSC safety standards available



In-Bed Sleeper

- Meant to be placed on parental bed
 - No CPSC safety standards available



Bedside and In-Bed Sleepers

- Although bedside sleepers may facilitate breastfeeding without bed sharing, there are almost no published studies examining association between sleepers and SIDS or unintentional injury or death
- No recommendation for or against these products



Sleep Enablers: The Wahakura



- Woven flax bassinet for infants up to 5-6 months of age
- New Zealand
- Native Maori population



Sleep Enablers: The Papi-pod

- Made from the bottom section of a plastic clothes containers
- Used in Christchurch, NZ following the February 2011 earthquake
- Have ventilated sides



Finnish Baby Box

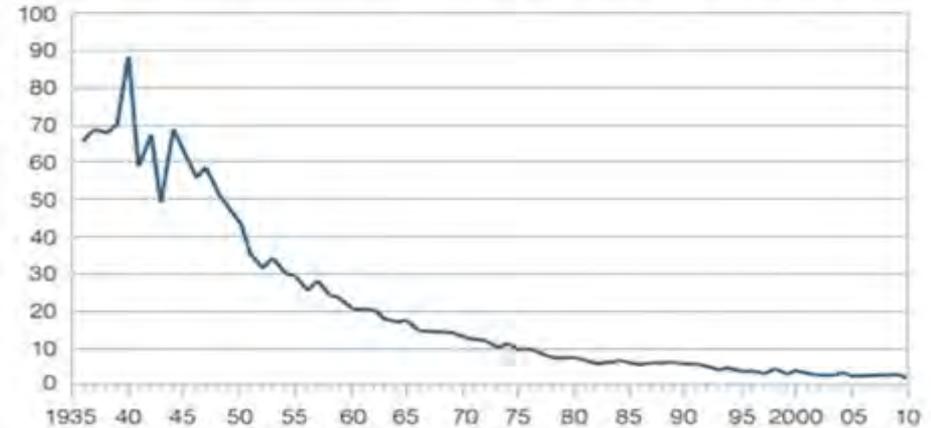
Developed in Finland in 1938 to encourage prenatal care, it is a cardboard box, which is filled with baby supplies and can double as a baby bed



Finnish Baby Box

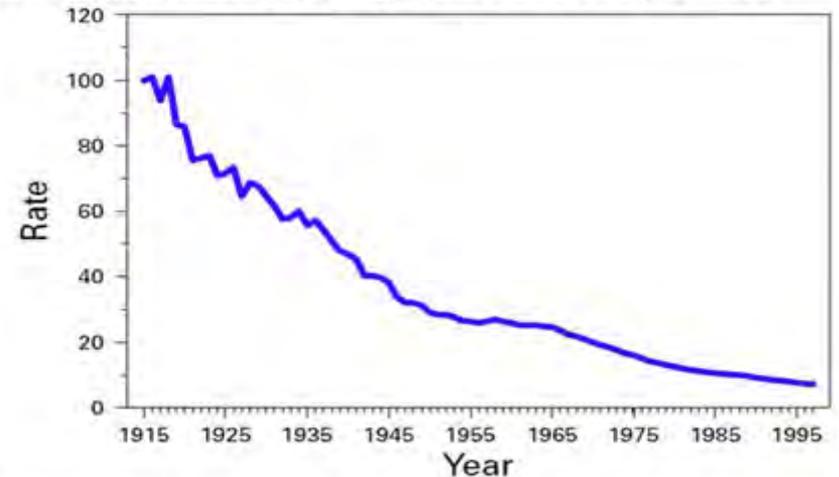
- These graphs show similar decreases in infant mortality rates in Finland vs US
- There are **NO STUDIES** to support the claim that the box reduces SIDS!

Infant mortality in Finland, 1936 to 2010 per 1,000 births



Source: Statistics Finland

FIGURE 1. Infant mortality rate,* by year — United States, 1915–1997



*Per 1000 live births.

Sleep Enablers

- Postperinatal mortality in New Zealand fell by 30% between 2009 and 2015, but why?
- Unknown whether this was due to:
 - use of the wahakura or pepi-pod
 - the specific advice that comes with the intervention
 - the heightened sense of awareness surrounding infant safety.

Sleep Enablers

- There is optimism in New Zealand about the potential use of the Wahakura and Pepi-pod
- There are concerns regarding the use of cardboard baby boxes for sleep:
 - scarcity of observational evidence that the box can be used safely (and no evidence that it reduces SIDS)
 - lack of safety standard regulations
 - promotion of the cardboard baby box could serve to undermine current safety messages.

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Keep soft objects, pillows, toys, loose bedding, wedges, positioners, and bumpers out of the baby's sleep area.



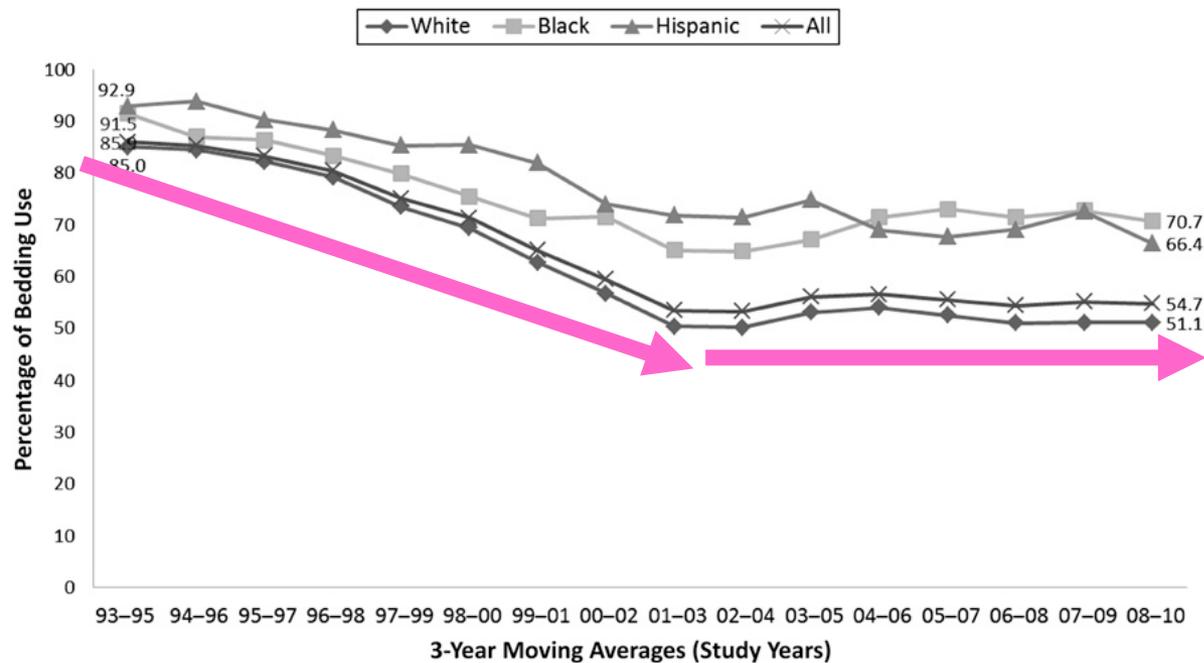
Unsafe Sleep Environment



Soft Sleeping Surfaces and Loose Bedding

- Soft bedding vs. firm bedding poses **five times** the risk.
- Infants who sleep on their stomachs on soft bedding are at **21 times greater risk** than those infants that slept on their back on firm bedding.
- The AAP recommends that babies sleep flat on their backs on a safety approved mattress, free of loose materials, including pillow like stuffed toys, fluffy blankets and bumper pads.

Unsafe Bedding: NISP Trends 1993-2102



- This graph shows rates of use of soft bedding over time
- Unsafe bedding decreases from 86% to 55%
- Rate of decline slows from 2001-10
- Predictors of higher rates unsafe bedding (adjusted OR > 1.5)
 - Young mothers, non-white race/ethnicity, < college education

Why Do Families Use Soft Bedding?

- Comfort/Warmth
 - Extrapolation of own feelings
 - Misinterpret firm with taut
 - Soft + taut \neq firm
- Safety: false sense of security
 - Blankets, pillows, rolls to prevent falls

Nesting babies with soft materials is especially dangerous!



Why do they keep selling bumper pads if they are not recommended?

- Original intent of bumper pads: Prevent injury/death due to head entrapment with strangulation
- Newer crib standards (slat spacing less than 2-3/8 inches) eliminate the need for bumper pads!
- Juvenile Product Manufacturing Association disagrees that bumper pads are unsafe and continue to sell them.



Bumper Pad Fatalities

- Thach study using CPSC data found 3 mechanisms for deaths related to Bumper Pads:
 - **Suffocation** against soft “pillow-like” bumpers
 - **Entrapment** between mattress or crib and firm bumper pads
 - **Strangulation** from bumper pad ties



A follow-up study by Scheers (2015) identified a total of 77 deaths related to bumper pads!

No Bumpers in the Crib!

- Although newer products like breathable bumpers may be less dangerous, there is no evidence that bumper pads or similar products that attach to crib slats or sides prevent injury in young infants
- Potential for suffocation, entrapment, and strangulation
- Bumper pads and similar products are not recommended.



Concerns about leg entrapment can be addressed by use of sleep sacks.

Soft Bedding for Older Infants

- Many parents recognize soft bedding is risk
- Increased complacency as baby gets older
- **Soft bedding is THE most important risk factor for infants 4-12 months old** (Colvin 2015)
- Infants roll into bedding and cannot extract themselves



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Infants should sleep in parents' room, close to parents' bed, but on a separate surface designed for infants (room-sharing).



Where Should Infants Sleep?

Sheers, Rutherford, and Kemp Pediatrics, Oct. 2003

- **Infants < 8 months, incidence of death in cribs:
.63 deaths/100,000 infants.**
- **Infants < 8 months, incidence of death in co-sleeping:
25.5 deaths per 100,000 infants.**
- **In this study, 40-fold increased risk from bed sharing!**

Risk for SIDS:

- Greatest if sharing a sleep surface.
- Intermediate if sleeping in another room.
- Least if infant sleeps in same room without bed-sharing

Bed Sharing with Siblings, Soft Bedding Increase the Risk

Chicago Infant Mortality Study, Pediatrics, May, 2003

- Sleeping on soft bedding: increased SIDS risk 5 X
- Sleeping on the stomach: increased SIDS risk 2.4 X
- SIDS victims were 5.4 times more likely to have shared a bed with other children.
- Sleeping on the stomach on soft bedding: increased risk of SIDS 21 times

How Long Should Parents Room Share?

- 2011: “all sleep recommendations are to be followed until 1 year of age”
- 2016: “roomsharing without bed-sharing... ideally for 1 year of age, but at least for the first 6 months”
- Recommendation hasn't changed!



Supporting Data

- 3 case-control studies comparing sleeping in a separate room vs. room sharing:
 - Tappin (Scotland): **AOR* 3.26** (95% CI 1.03-10.35)
 - protection is significant for smoker mothers
 - Blair (England): **AOR 10.49** (95% CI 4.26-25.81)
 - protection is significant for both smoker and nonsmoker mothers
 - New Zealand Cot Death study: **AOR 2.85** (95% CI 2.04-3.85)

* AOR = Adjusted Odds Ratio. Represents increased risk of sleeping in a separate room. In Tappin, risk of SIDS 3x higher if baby in separate room.

More Recent Data

- New Zealand SUDI study
 - 64% protection with roomsharing: **AOR 0.36**
(95% CI 0.19-0.71)
- Estimate of 50% risk reduction is very conservative
- None of the case-control studies stratify by age in months

Why is Room Sharing Protective?



- SIDS- failure to arouse
- More small awakenings during the night
 - Stirrings, movement; not fully awake
- Postulation: protective effect from small awakenings
- Room sharing facilitates breastfeeding

Parental Concern About Room Sharing (RS): Sleep Quality

- Results are mixed....
- Volkovich: room sharing vs. solitary sleep
 - RS mothers with more sleep disturbances
 - Infants with similar sleep quality
- Mao, Mindell: RS infants have more awakenings
- Montgomery-Downs, Doan: sleep quality in breastfeeding mothers is better or equal to formula feeding mothers
 - Exclusive breastfeeding = 30 min more sleep

Insight Study (Paul, 2017)

- Compared infant sleep duration and night behaviors in early vs late room separation.
- Early = infant sleeping in separate room by 4 months of age.
 - Early group had better sleep consolidation = longer periods of uninterrupted sleep
 - BUT longer, deeper sleep may be associated with SIDS risk, so is early consolidation good?
 - Late group had more bed sharing
 - Important to focus families on maintaining good sleep hygiene and safe sleep routines

Feeding the Baby at Night



- Acknowledgment that parents may fall asleep while feeding baby
 - Safer to feed on bed than on sofa, couch, or armchair if you might fall asleep
 - No pillows, sheets, blankets, or other items that could obstruct infant breathing or cause overheating should be in bed
 - Return infant back to separate sleep surface as soon as parent awakens
 - The more time asleep in adult bed, the greater the risk to the baby

Say NO to Couches, Sofas and Cushioned Armchairs!

- Never place baby for sleep on these surfaces
- Never sleep with a baby on these surfaces
- One of the MOST dangerous places for infant (OR 5.1-66.9)



High-Risk Bed Sharing Situations

- Age of < 4 months
- Preterm or LBW
- Smoked during pregnancy
- Bed sharer is current smoker (even if not smoking in bed)
- Bed sharer has used/is using meds or substances that could impair alertness or arousal
- Bed sharer is not parent (including other children)
- Soft surface (waterbed, couch, armchair)
- Soft bedding (pillows, quilts, comforters)



Bedsharing in Low-Risk Breastfed Infants

- Blair et al: AOR 1.6 (95% CI 0.96-2.7)
 - Note: confidence interval (CI) crosses 1, which is not statistically significant.
- Carpenter et al: AOR 5.1 (95% CI 2.3-11.4)
 - Note: confidence interval (CI) does not cross 1, which is statistically significant.
- Each study had unique weaknesses.
- How can we reconcile 2 studies with contradictory results???? (see next slide...)



Independent Review

Dr. Robert Platt



- Very small numbers of low-risk babies
 - 24 in Blair's study
 - 12 in Carpenter's study
- Does not believe that data support definitive differences in 2 studies
- Some evidence of increased risk in this group, but cannot say how large the increased risk is

Cannot conclude that bed sharing in this group is safe

Bed-Sharing



**There is enough weight in a human arm
to suffocate an infant!**

Bed-Sharing with Overlay



The nose or mouth can become obstructed or the weight of the adult can constrict the infant's chest!

Couch-Sleeping



From this position, babies can slip down between the cushion and the adult.

Couch-Sleeping



Just like on the bed, the airway can be blocked
or the chest crushed!

Bed-sharing and Infant Death

- **FACT:** Half of the infants in the U.S. who die from Sudden Unexpected Death do so while sleeping with their parents
 - U.S. experience with bed-sharing and infant death is very different from other cultures
 - Cultures where babies routinely sleep with their parents:
 - Use firm mats on the floor
 - Have separate mats for the infant
 - Do not use soft bedding

Remember....there is no control for fatigue!!

2016 SIDS Task Force Policy Statement

Breastfeeding is recommended.

Benefits of Breastfeeding:

- Decreased risk of infection
- Decreased risk allergies, asthma, eczema
- Decreased risk of SIDS!
- Decreased risk of obesity, inflammatory bowel disease, high cholesterol
- Decreased risk of type I Diabetes
- Decreased risk childhood cancer?



AAP Recommendation

Exclusive breastfeeding for about the first six months of a baby's life, followed by breastfeeding in combination with the introduction of complementary foods until at least 12 months of age, and continuation of breastfeeding for as long as mutually desired by mother and baby.



Duration of Breastfeeding and Risk of SIDS

- Individual level data from 8 case control studies
- 2267 SIDS cases and 6837 control

	Pooled Adjusted Model ANY Breastfeeding	Pooled Adjusted Model Exclusive Breastfeeding
Never	1.0	1.0
0-2 months	0.91 (0.68-1.22)	0.82 (0.59-1.14)
2-4 months	0.60 (0.44-0.82)	0.61 (0.42-0.87)
4-6 months	0.40 (0.26-0.63)	0.46 (0.29-0.74)
> 6 months	0.36 (0.22-0.61)	

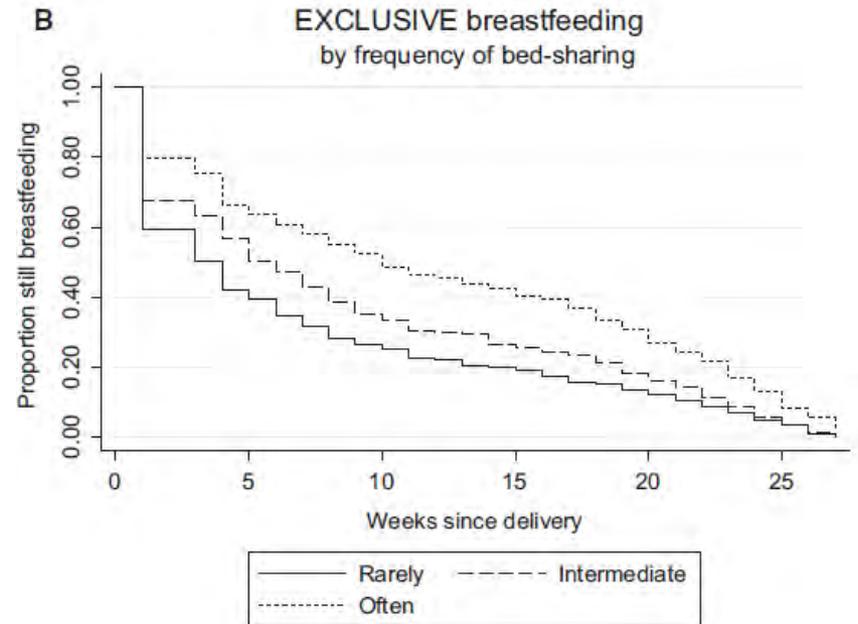
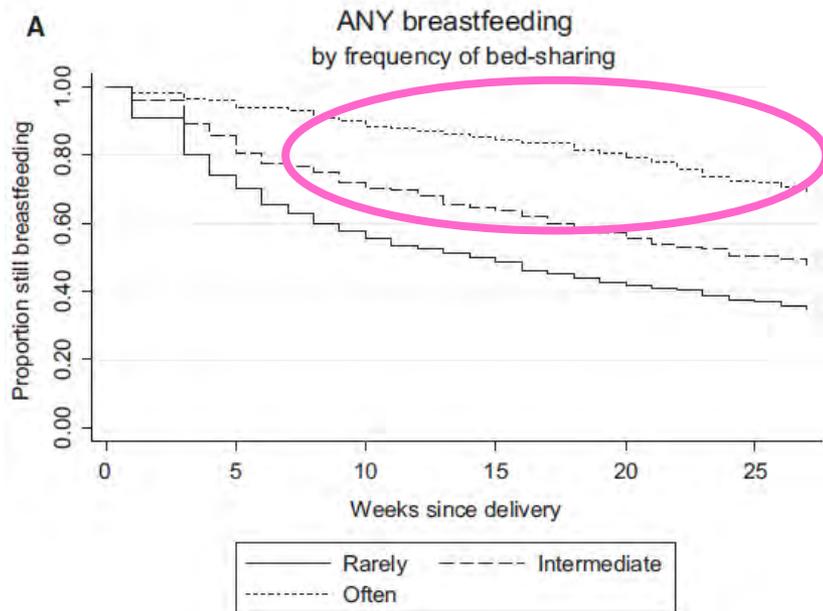
Note that any breastfeeding of > 2 months is protective AND risk of SIDS continues to decrease with LONGER duration of breast milk!



Breastfeeding: Protective Mechanisms Against SIDS

- Studies show a 50% risk reduction in SIDS when babies are breastfed.
- The benefit is increased as the baby receives more breast milk.
- Breastfed babies more easily aroused from sleep vs. formula fed babies.
- Breastfeeding decreases incidence of multiple infectious illnesses, esp. respiratory and GI...associated with increased vulnerability to SIDS.
- Breast milk contains maternal antibodies, micronutrients, cytokines which promote immune system benefits.

Does Bed-sharing Affect the Duration of Breastfeeding?



- Circled line shows higher rates of breastfeeding over time for mothers who bed share more frequently
- Breastmilk protects against SIDS, BUT bedsharing increases the risk... can we resolve the problem? Yes, see next slide....

Infant Sleep Location and Breastfeeding Practices in the US, 2011–2014

- Mothers who bed shared were more likely to report exclusive breastfeeding (**AOR 2.46, 1.76-3.45**) or partial breastfeeding (**AOR 1.75, 1.33-2.31**).
- **Receiving advice to room share or breastfeed increased adherence to recommendations in a dose response manner, and did not DECREASE BREASTFEEDING RATES!**
- **BOTTOM LINE: By providing education on breastfeeding and room sharing, mothers can have success with breastfeeding WITHOUT bedsharing!**



2016 SIDS Task Force Policy Statement

Think about using a clean dry pacifier when placing the baby down to sleep.

Pacifiers

- AAP recommendation: Consider offering pacifier at nap time and bedtime.
- **Studies consistently demonstrate a protective effect of pacifiers on SIDS**
- Mechanism unknown:
 - Dislodge within 15 to 60 minutes
 - Decreased arousal threshold



Pacifier Risks

- Dental malocclusion:
 - Non-nutritive sucking is normal in infants
 - AAPD and AAP conclude that it is unlikely to cause long-term problems if stopped by age 3
- Otitis media:
 - Risk 1.2 to 2 times increased....But incidence is low in first 6 months, when SIDS risk is highest
- Gastrointestinal infections more common?
- Increased oral colonization with Candida

Pacifiers and Breastfeeding

- Observational studies (weakest data): consistent relationship between pacifier use and decreased breastfeeding duration
- Well-designed trials:
 - 2 found no association among term infants
 - 1 found no association among preterm infants
 - 1 found slightly decreased breastfeeding duration at one month if pacifier introduced in first week of life, **but NO difference if pacifier introduced after one month!**



Recommendations: Pacifier Use

- Consider using a pacifier at bedtime and nap time during the first year of life
 - If breastfeeding, delay pacifier introduction until 3 to 4 weeks of age to assure firm establishment of breastfeeding
 - Use when baby is falling asleep
 - Do NOT reinsert after baby is asleep
 - Do NOT coat in any sweet solution
 - Clean pacifiers often and replace regularly



+



= **HEALTHY & SAFE**

According to Baby Friendly USA: Regarding Pacifiers

- Breastfeeding babies should not be given pacifiers by the staff of the facility, with the exception of:
 - Limited use to decrease pain during procedures when the baby cannot safely be held or breastfed (pacifiers used should be discarded after these procedures)
 - Babies who are being tube-fed in NICU
 - Other rare, specific medical reasons

What if a mother requests that her infant be given a pacifier? (As per BF USA)

- After counseling and education, the mother's choice should be respected.
- The nurse should be knowledgeable regarding the AAP's policy and support the policy statement that pacifiers should not be used with breastfeeding infants until breastfeeding is well-established, after about 3-4 weeks.

As per AAP, if a baby is not breast fed, there is no restriction on when to start pacifier use to protect against SIDS.



2016 SIDS Task Force Policy Statement

Do not allow smoking around the baby.
Heavy smokers should consider changing
their clothing before handling the infant.



Smoking and Smoke in the Infant's Environment

- Infants born to mothers who smoked during pregnancy are **three times** more likely to die of SIDS.
- Exposure to passive smoke in the household **doubles** a baby's risk.
- Exactly how smoking affects the infant is not clear, but smoking may negatively affect development of the nervous system.
 - **Infants who have been exposed to tobacco smoke in utero or postnatally have alterations in their arousal and autonomic activity resulting in blunted arousal responses.**

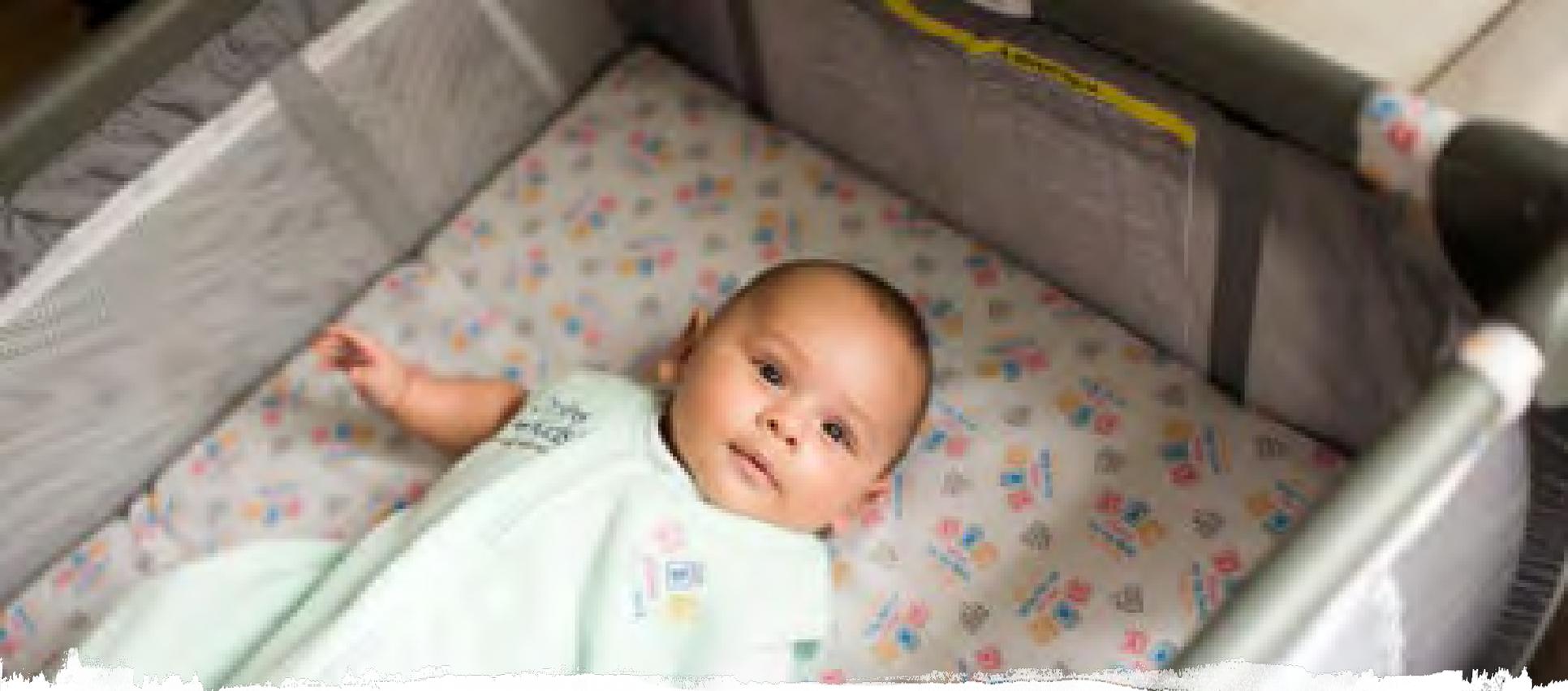
2016 SIDS Task Force Policy Statement

Avoid alcohol and illicit drug use
during pregnancy and after birth



Dangers of Alcohol and Drug Use

- There is an increased risk of SIDS with prenatal and postnatal exposure to alcohol or illicit drug use.
- Rat models have shown increased arousal latency to hypoxia (low oxygen) in rat pups exposed to prenatal alcohol.
- **Several studies have found a very strong association when alcohol consumption or illicit drug use occurs in combination with bed-sharing.**



2016 SIDS Task Force Policy Statement

Do not let the baby overheat during sleep. Try a onesie with wearable blanket instead of loose blankets. Keep room temperature comfortable for an adult.

Avoid Overheating

- Increased risk of SIDS
 - Studies show that an overheated baby is more likely to go into a deep sleep from which it is difficult to arouse.
 - Excessive clothing, head coverings, blankets and an increased room temperature can increase the SIDS risk.
 - The risk increases if the infant has an infection or cold.



SAFE

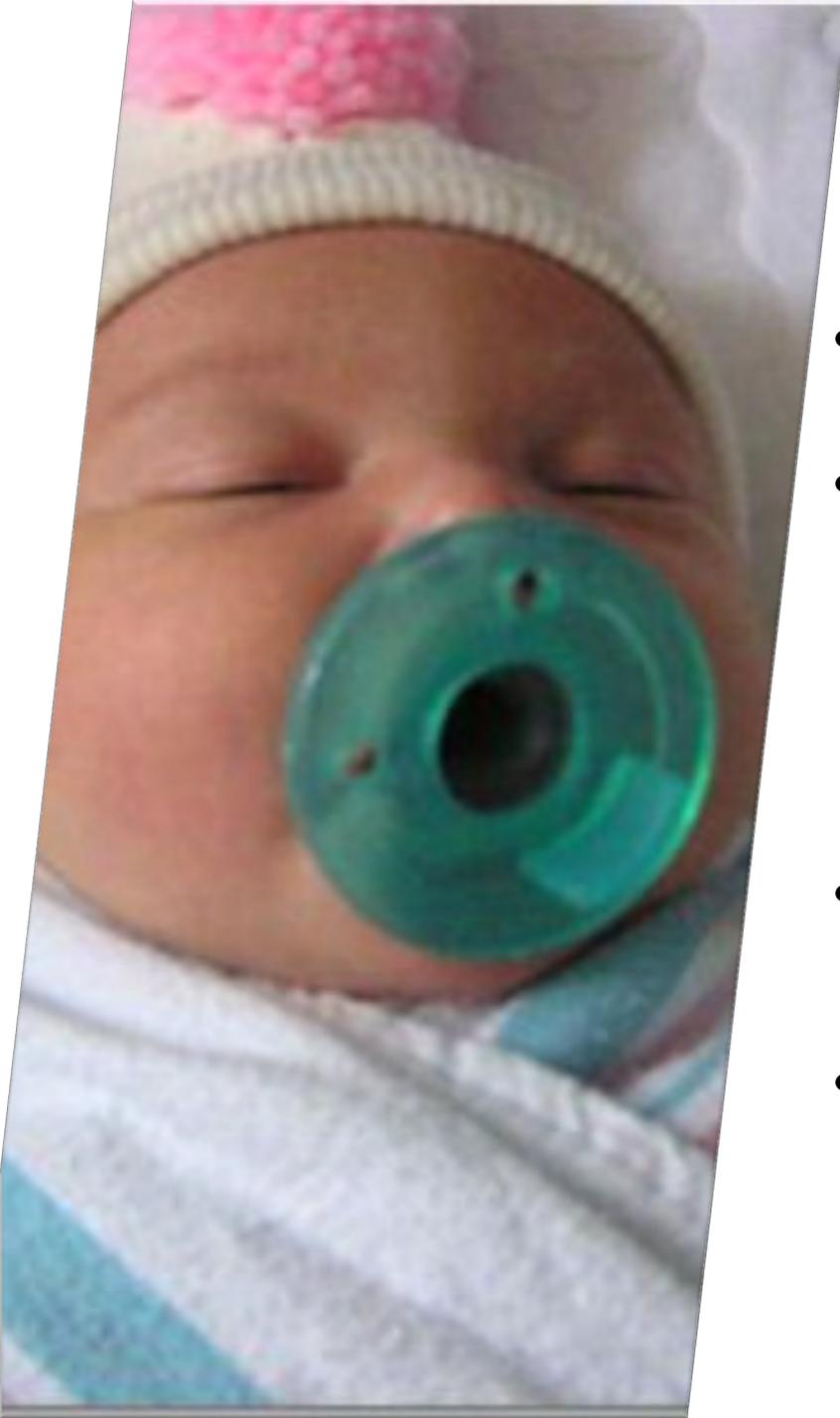


NOT SAFE

Avoid Overheating

- Definition of overheating varies.
- Cannot provide specific room temperature guidelines.
- Dress infants appropriately for the environment, with no greater than 1 layer more than an adult would wear to be comfortable.
- There is currently insufficient evidence to recommend use of a fan as a SIDS risk-reduction strategy.
- Try a wearable blanket instead of a loose blanket if extra warmth is necessary.





Avoid Overheating and Head Covering.

- **Over bundling and covering of the face and head should be avoided.**
- **If a hat is still needed for thermoregulation at discharge, educate the parents/caregivers to monitor infant's temperature and to attempt to discontinue using the hat after 2-3 days of stable temperatures at home.**
- **If the infant maintains a normal temperature without the hat, then it can be permanently discontinued.**
- **Generally, a hat should not be needed after a few days in home environment.**

To Swaddle or Not to Swaddle?

- Pros:

- Calms the infant; promotes sleep; decreases number of awakenings
- Encourages use of the supine position



- Cons:

- Increased respiratory rate and reduced functional residual lung capacity
- Exacerbates hip dysplasia if the hips are kept in extension and adduction
- “Loose” swaddling becomes loose bedding
- Overheating, especially if the head is covered or the infant has infection
- Effects on arousal to an external stimulus remain unclear (conflicting data). There may be minimal effects of routine swaddling on arousal.

Swaddling- Is it Safe?

- Study of reports to CPSC
 - Wearable blankets, swaddles: 10 deaths
 - 80% positional asphyxia, prone sleeping
 - 70% additional risk factors
 - Regular blankets, 12 deaths
 - 58% positional asphyxia, prone sleeping
 - 92% additional risk factors



Take Home Points: No denominator to determine how common the problem is. Majority of cases have other risk factors, so the problem may not be the swaddling!

Swaddling- More Questions...

– Metanalysis of 4 studies: a slight increase risk of SIDS with swaddling (Pooled OR = 1.38)

– **Risk (OR) varies greatly by position of infant:**

- Prone = 12.99
- Side = 3.16
- Supine = 1.93

• Increased risk with age

– 2x risk at > 6 months of age

• Limitations:

– Differences between studies (heterogeneity)

– Swaddling not well-defined

– Other risk factors may not have been accounted for



Swaddling

- There is insufficient evidence to recommend routine swaddling as a strategy to reduce the incidence of SIDS.
- Swaddling must be correctly applied to avoid the possible hazards
- Swaddling does not reduce the necessity to follow recommended safe sleep practices.
- **Swaddling should be discontinued when a baby starts to try to roll over!**



2016 SIDS Task Force Policy Statement

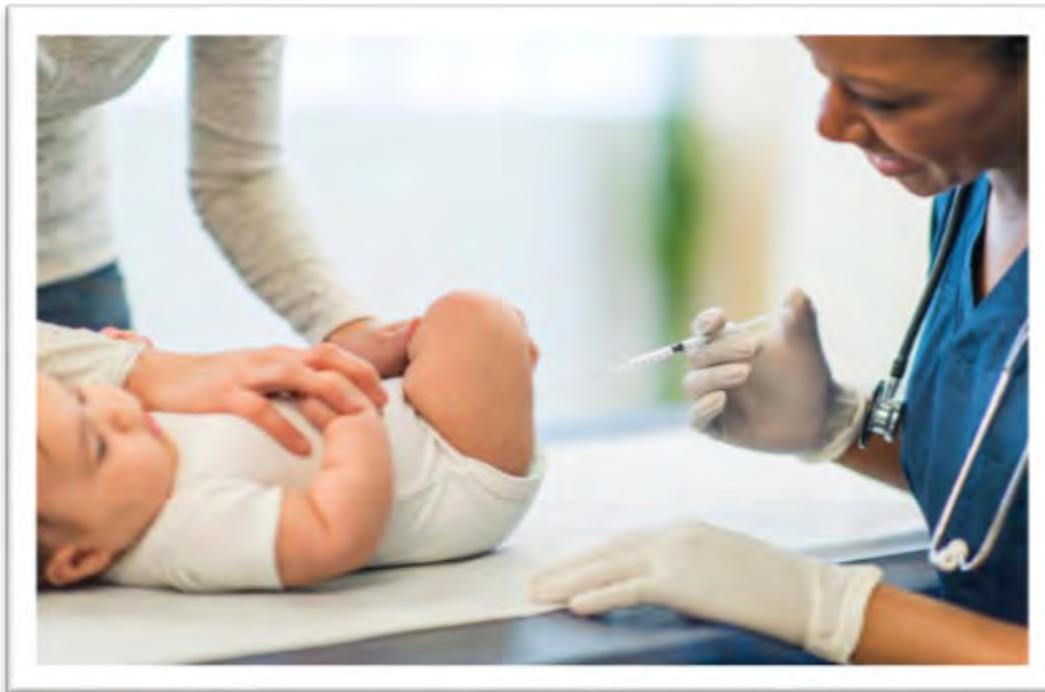
Get regular prenatal care



There is substantial epidemiologic evidence linking a lower risk of SIDS for infants whose mothers obtain regular prenatal care.

2016 SIDS Task Force Policy Statement

Immunize babies as per AAP/CDC guidelines



Is There a Relationship Between Vaccines and SIDS?

- Peak incidence of SIDS = time when infants are receiving numerous immunizations
- 1970's case reports of a cluster of deaths shortly after DPT immunization.
- In 2003, based on analysis of case-control studies, the National Academy of Medicine concluded: **“The evidence favors rejection of a causal relationship between exposure to multiple vaccinations and SIDS.”**

Immunization Recommendation

Infants should be immunized in accordance with AAP and CDC recommendations.

- No evidence of causal relationship between immunizations and SIDS
- The recent evidence suggests that immunization may have a protective effect against SIDS.



2016 SIDS Task Force Policy Statement

- Do not use home cardiorespiratory monitors as a strategy for reducing the risk.

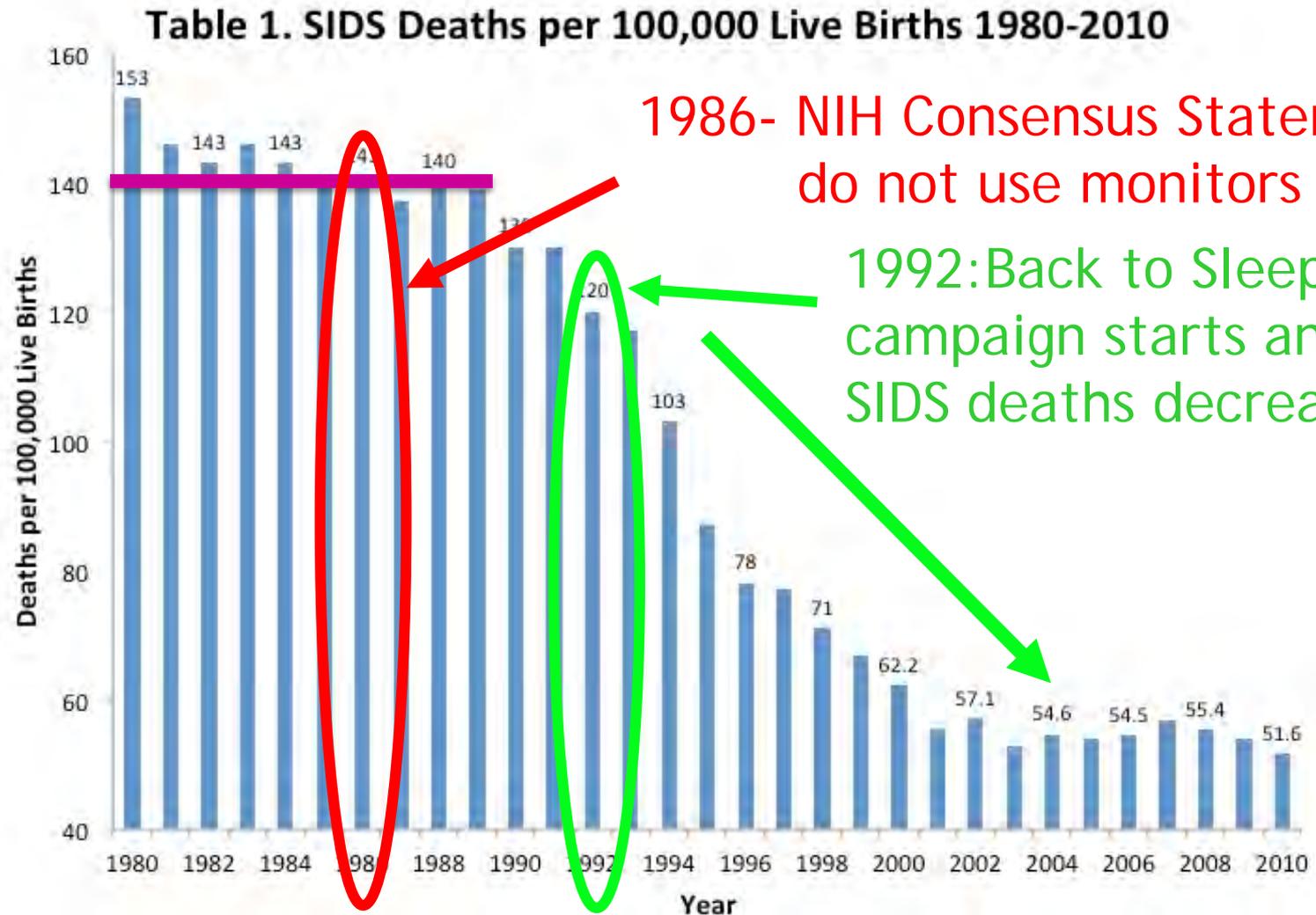


Home Apnea Monitors Do NOT Reduce SIDS Risk

- Monitors may be of value in selected infants (e.g., infants with apnea of prematurity)
- No evidence that routine in-hospital cardiorespiratory monitoring prior to discharge from the hospital can identify newborn infants at risk of SIDS



SIDS and Monitors: No Impact



Source: CDC Wonder and the National Center for Health Statistics

SIDS and Commercially Available Monitors

- Products like the Owlet® and Snuza® have become popular amongst parents
- Concern: may give parents false sense of security leading to less vigilance in following safe sleep guidelines
- May also result in increased resource use from false alarms.
- Still need to follow safe sleep recommendations!!!

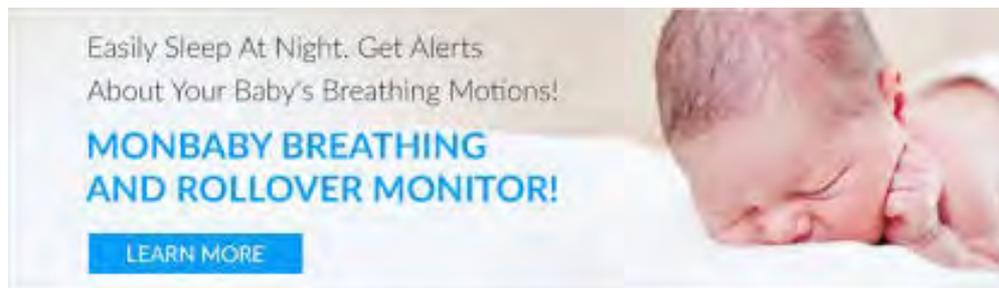
2016 SIDS Task Force Policy Statement

Avoid Commercial Devices Inconsistent with Safe Sleep Recommendations



Avoid Commercial Devices Inconsistent with Safe Sleep Recommendations

- Be wary of devices that claim to reduce risk
- No harm in using “special” mattresses as long as they meet safety standards
- Still have to continue to follow safe sleep recommendations



Easily Sleep At Night. Get Alerts
About Your Baby's Breathing Motions!

**MONBABY BREATHING
AND ROLLOVER MONITOR!**

[LEARN MORE](#)

The advertisement features a close-up photograph of a newborn baby sleeping peacefully on a white surface. The text is overlaid on the left side of the image, with a blue button for 'LEARN MORE' at the bottom.

2016 SIDS Task Force Policy Statement

- Supervised, awake tummy time is recommended to facilitate development and to minimize the development of positional plagiocephaly.





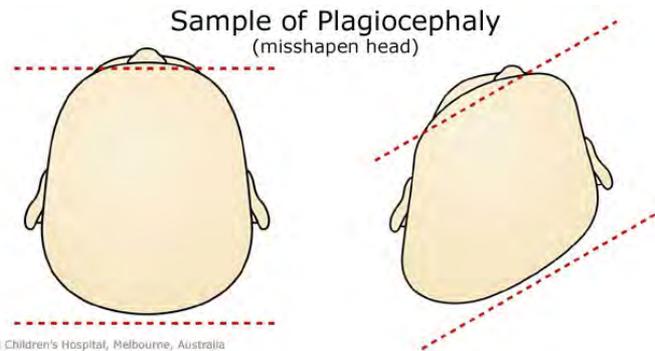
Tummy Time

- Ample tummy time is a necessary part of infant development
- Parents should place babies on their stomachs for a certain amount of time each day when they are supervised, to promote motor development.
- Tummy time strengthens shoulder and neck muscles that are used to acquire many infant motor milestones. Tummy time also helps prevent the development of flat spots.

What Happened to Your Head?

Plagiocephaly

- Plagiocephaly = Oblique Head
 - Increased in frequency since “Back to Sleep” from 1 in 300 to 1 in 60
 - Often associated with torticollis, a tilt or rotation of the head





Preventing Plagiocephaly

- Changing head position at sleep time
 - Change position from one side to the other each week
 - Periodically change orientation of the infant to outside activity (door of the room)
- Avoid excessive time in car seats and bouncers where pressure is applied to the occiput
- Encourage “tummy time” when awake and observed

2016 SIDS Task Force Policy Statement

Media and manufacturers should follow safe sleep guidelines in their messaging and advertising.

- Media messages affect consumer behavior
- Moon study: more than one-third of the pictures had infants in an inappropriate sleep position and two-thirds demonstrated an unsafe sleep environment
- Messages contrary to sleep recommendations creates misinformation and implication that messages are not important
- Media and manufacturers should follow safe sleep recommendations in their messaging and advertising



**SO SAFE & COMFORTABLE,
THEY WON'T WANT OUT**



Every RECARO Convertible Seat features
 (1) Original RECARO Side Impact Protection,
 (2) an adjustable headrest and (3) a 5-point harness.

With safety features like these, you might start to wonder why you'd ever take your child out of one.



SIDE IMPACT PROTECTION
Original RECARO SIP

For more information, call or visit us online
 1.800.8.RECARO www.recarokids.com don't get cute. get **RECARO**



Gerber Organic, 100% Cotton Onesies.

Walmart Save money. Live better. Where unbeatable prices on the best baby brands are born.

Stark Craft Ltd, convertible 4 in 1 crib.

Disney character super plush blankets.

Baby Baby, super plush My Placemat.

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**Babies are precious.
So is your trust.**

You take patient care very seriously. As your partner in infant nutrition, we take the quality of our formulas very seriously. And we want you to know that, just like you, we're committed to putting babies first.

Similac

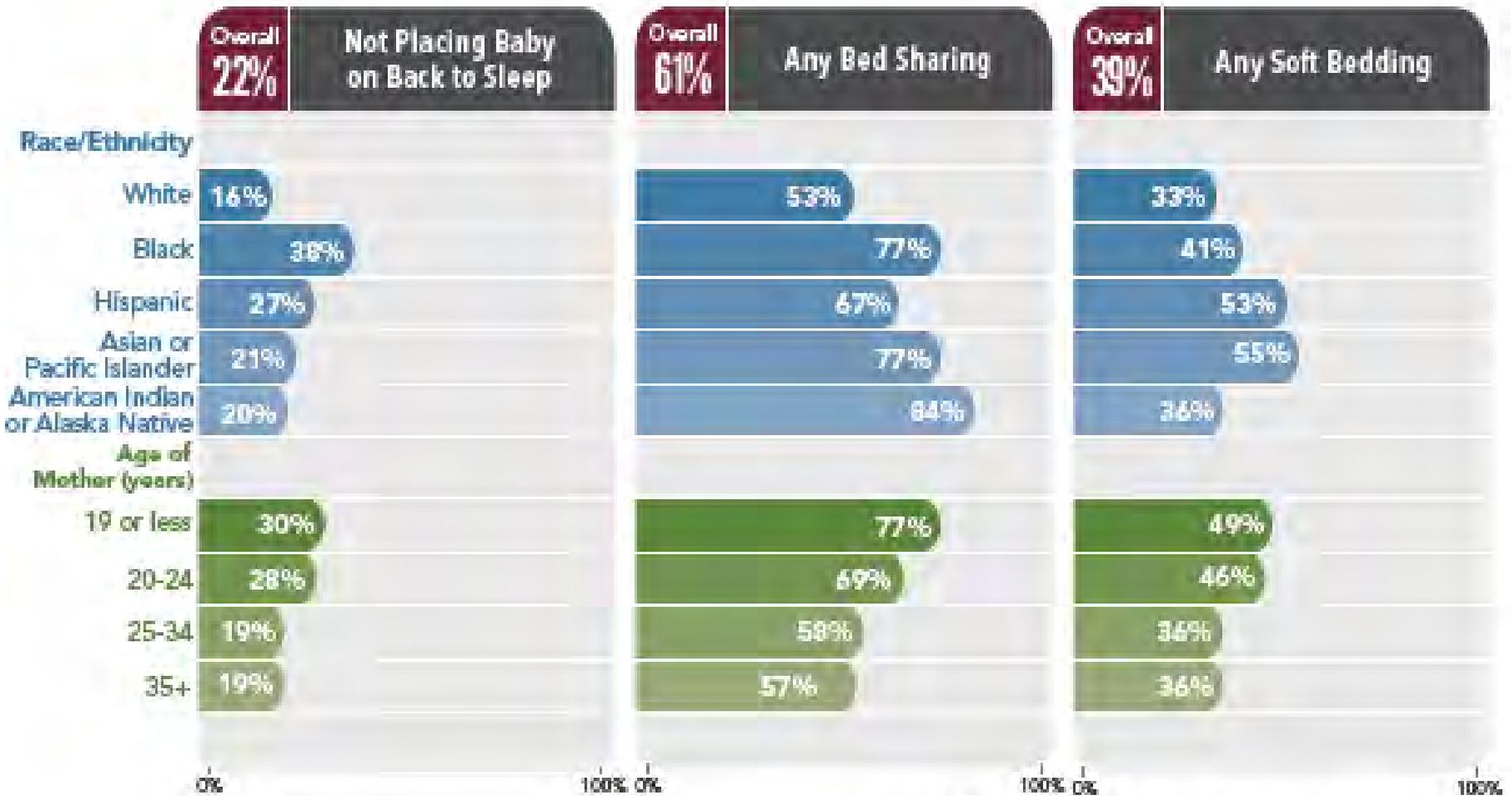


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Abbott
LABORATORIES

Unsafe Sleep in Advertising

UNSAFE SLEEP PRACTICES WITH BABIES ARE COMMON.



SOURCE: Pregnancy Risk Assessment Monitoring System (PRAMS), 2015.

“It Will Never Happen to Me...”

There are scores of bereaved parents who saw themselves as low risk; who didn't smoke, received early prenatal care, were middle class, Caucasian, and breastfed their infant and although they knew the recommendations for “Back to Sleep”, they ignored them....WHY????

“Because it will never happen to me!”

Overcoming Barriers to Change: What parents are saying...

- Prone positioning: fear of choking
- Baby sleeps “better” on stomach
- Soft things are safer for the baby
- SIDS is “God’s will”
- Why bother? Recommendations keep changing anyway
- Vigilance: sleep with baby for protection



Aspiration and Choking

A major reason that parents avoid the back sleep position is that they fear their infant will regurgitate and aspirate if the infant sleeps on his/her back.

FACT

Babies may actually clear secretions better when placed on their backs. This is because of the relation of the trachea to the esophagus in the back sleep position.

Comfort

Infant's seem to sleep more deeply and appear more comfortable while sleeping on their stomachs.

FACT

- The very absence of deep sleep is believed to help protect infant's against SIDS.
- While comfort is important, the infant's safety is more important!

Infant Sleep Safety

Requires a consistent and repetitive message in the community to prevent accidental deaths



2016 SIDS Task Force Policy Statement

Health care providers, staff in newborn nurseries and NICUs, and child care providers should endorse and model the SIDS risk-reduction recommendations from birth.



Safe Sleep: Nurse Modeling

- People trust nurses
- Whatever the nurse does must be correct and it will be imitated in the home
- Fact: supine positioning in the nursery can almost **DOUBLE** its use in the home!



Physician Advocacy

- Srivatsa 1997: HCP education to new families...34% reduction in prone sleeping
- Eron 2009: Study of Central NY state physicians...30% identified incorrect safest sleep position...30% do not discuss with families
- Colson 2009: Only 1/3 mothers advised by MD to use supine position ...but mothers given the message are 3 times more likely to position the baby properly



Promote Safe Sleep and Breastfeeding in the Hospital

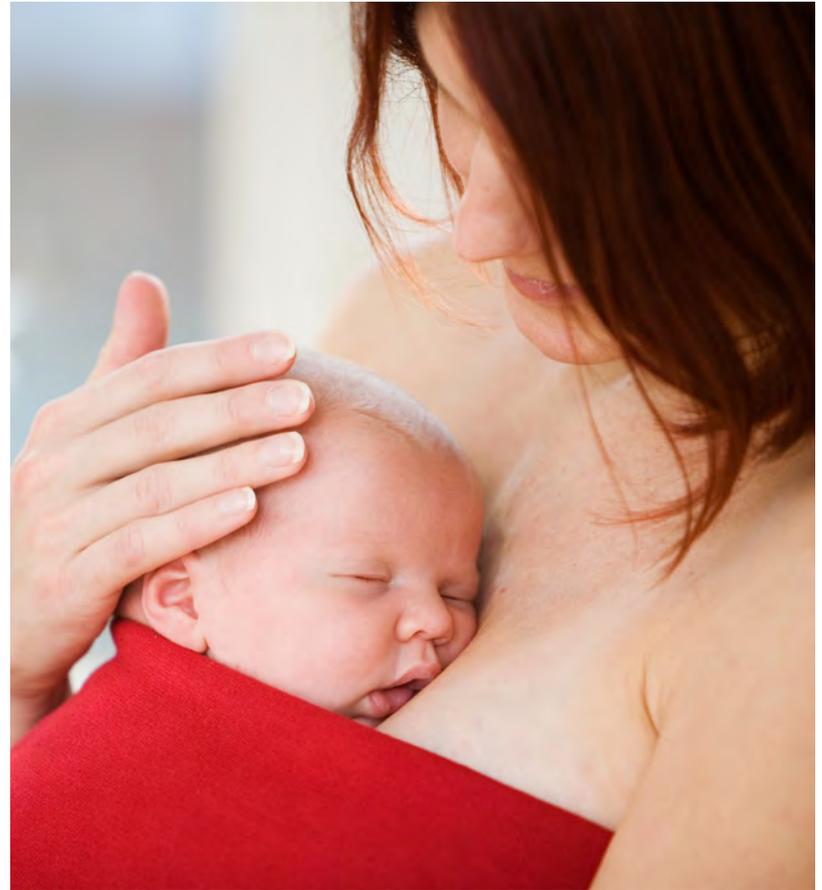
- Promote safe birth transition with uninterrupted Skin to Skin Care and direct observation of the first breastfeeding
- Direct observation of the mother and baby while in the delivery room
- Position the baby to maintain an unobstructed airway.
- Conduct frequent assessments:
 - high-risk situations (nighttime, early morning.)

Benefits of Skin-to-Skin Care (SSC)

- Regulation of infant temperature and prevention of hypothermia
- Neonatal blood glucose regulation and prevention of hypoglycemia
- Initiation and maintenance of exclusive breast feeding and enhanced milk production
- Maternal bonding

Recommended Skin-to-Skin Position

- Infant's head is on mother's chest- not abdomen or breast
- Unobstructed view of nose and mouth
- Mother able to see infant's face
- Blanket is over infant's shoulders- NOT covering face or head



The Danger of the Adult Hospital Bed



Infant Falls: Current Estimates

- Helsley: 9 falls over 2 years in 7 hospital Oregon system = 3.94/10,000 live births
- Monson: 14 falls in an 18 hospital Utah system = 1.6/10,000
 - 50% parent fell asleep holding baby
 - No deaths, 1 skull fracture
- Based on US birth rate 4 million/year
 - 600 to 1600 falls per yr.

Sudden Unexpected Postnatal Collapse (SUPC)

- An apparent life threatening event (ALTE) or a sudden, unexpected death of a healthy, term infant during the first week of life
- These infants do NOT have any identifiable risk factors:
 - Congenital anomalies
 - Prematurity
 - Perinatal asphyxia

Sudden Unexpected Postnatal Collapse

- A rare event. BUT...
 - carries a high risk for mortality
 - 66% of infants who die have no identified cause postmortem
 - Survivors at high risk for significant neurologic disability at 1 year

SUPC: Age Range of Occurrence (n = 398)

- Less than 2 hours of age: 36%
- 2 hours to 24 hours of age: 29%
- 24 to 72 hours of age: 24%
- 4 to 7 days of life: 9%

Factors Contributing to SUPPC

- First time mother
- Lack of knowledge about proper SSC care, newborn wellness
- Infant prone or other improper position with SSC or breastfeeding
- First breastfeeding attempt
- Mother in episiotomy position

Factors Contributing to SUPC

- SSC without adequate surveillance
- Time period of 21:00 to 09:00
- Parents left unattended by provider after delivery
- Distractions: cell phone
 - Average: 30 messages sent by mother within 2 hours after birth

What Causes SUPPC?

- Analogous to SIDS Triple Risk Hypothesis
 - Underlying genetic /developmental predisposition- intrinsic vulnerability; blunted arousal response
 - Vulnerable developmental period
 - Post-delivery stress, maternal narcotics, magnesium
 - Exogenous stressor
 - Prone position, mechanical obstruction of airway, face covering... leading to carbon dioxide retention

Cause of SUPPC?

- Airway occlusion when the infant's face is in contact with the mother's breast or abdomen
- Relief depends on the mother's responses and/or the infant's neck extension reflex initiated by airway occlusion.
- Recumbent breastfeeding may increase the risk of airway obstruction if the infant's attempt to withdraw is blocked by the mother's extremity.

Recommendations for Prevention of SUPPC

- Educate New Parents about:
 - Signs of newborn wellness (airway breathing, and color)
 - Maintain safe position for infant- no obstruction of airway
 - Avoid prone positions and other risk factors associated with SIDS
 - Avoid distractions (esp. cell phones) while breastfeeding or doing K-care.

Recommendations: Preventing SUPC

- Healthcare providers:
 - Insure adequate, unobtrusive supervision during SSC contact
 - Use supine position to avoid airway obstruction
 - Closely monitor infants and provide continuous supervision of mother's at risk:
 - Primiparous
 - Support person exhausted or not available
 - Maternal exposure to narcotics and other medications affecting alertness
 - Be extra vigilant during late night hours

Hospital Based Infant Safe Sleep Program

- Goal: Reduce the risk of injury or death to infants while sleeping
 - Provide accurate and consistent infant safe sleep information to hospital personnel
 - Medical, nursing, breastfeeding, child birth education, and nutritional staff
 - Enable hospitals to implement and model infant safe sleep practices throughout the facility
 - Provide direction to health care professionals so parents receive consistent, repetitive safe sleep education

Components of a Hospital Safe Sleep Program

- Have a policy consistent with AAP recommendations
- Safe sleep education for all staff interacting with pregnant women or infants
- Standardized safe sleep education for families before hospital discharge
- Consistent modeling of safe sleep in hospital, including all images and artwork
- Parental acknowledgement form of receipt and understanding of safe sleep information

Voluntary Acknowledgement Statement

By signing this statement I agree that I have received this information and understand that:

- my baby should sleep on the back; sleeping on the side or tummy is dangerous.
- sleeping with my baby increases the risk of my baby dying from suffocation or SIDS.
- An acknowledgement form only
- Focuses family on the importance of the information
- Not for legal purposes
- Protects the hospital from potential legal action in event of a later SUID event at home

Sleep Position in Newborn Nursery

- Infants in the newborn nursery and infants who are rooming in with their parents should be placed in the supine position as soon as they are ready to be placed in the bassinet.
 - No evidence that placing infants on the side during the first few hours of life promotes clearance of amniotic fluid and decreases the risk of aspiration.



Safe Sleep in the NICU

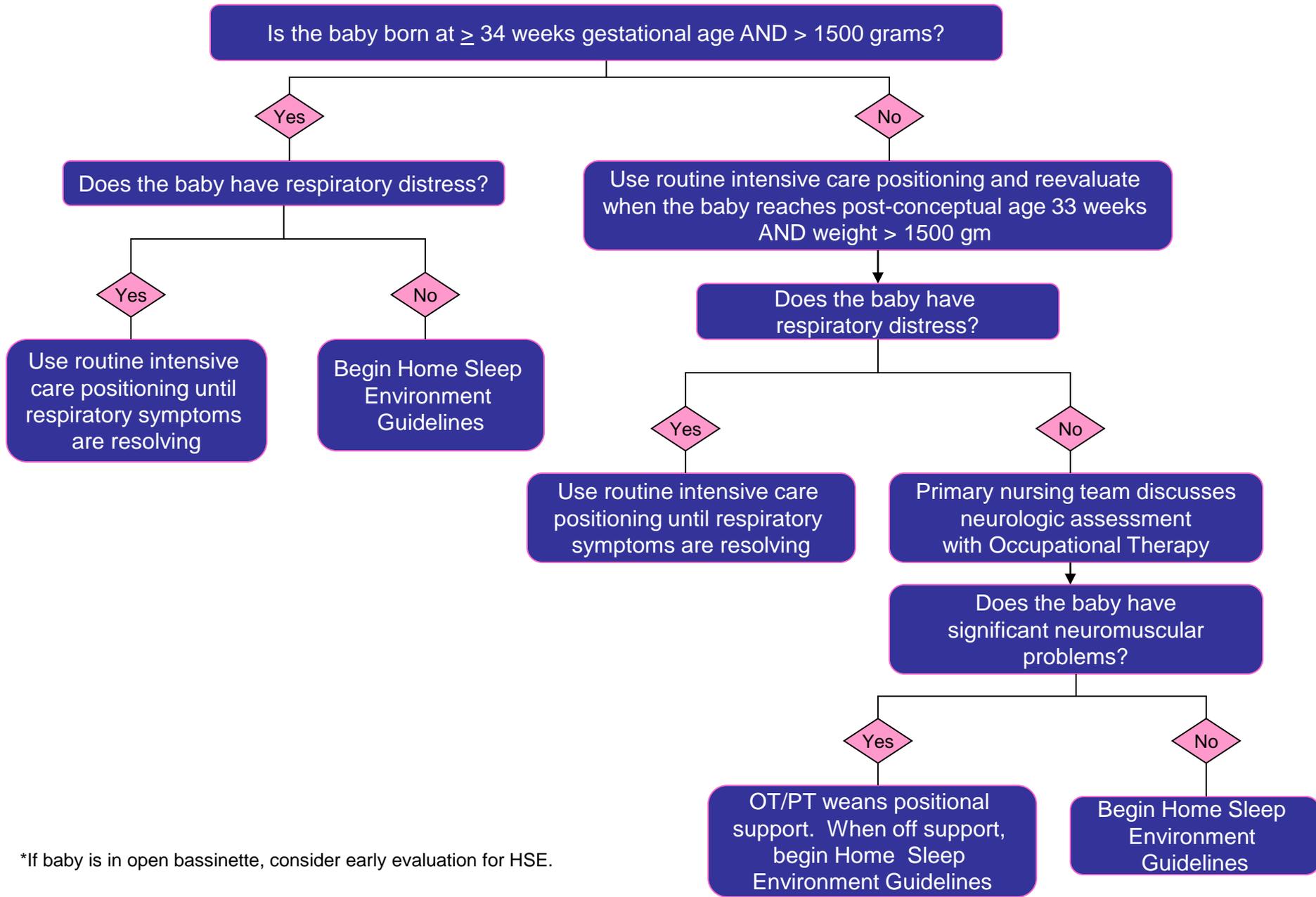
- Recommend safe sleep modeling by 32 weeks PMA.
- Kangaroo Care
- Problem: What parents see in the hospital, they will DO AT HOME!
- **Educate, Educate, Educate!!!**



Explain Medical Exceptions in the Hospital

- Certain medical conditions may necessitate putting a baby prone or side lying to sleep.
- Thermoregulation needs may also warrant extra bundling and/or hats when sleeping.
- **Any deviation from the AAP recommendations needs to be accompanied by an explanation to the parents!**
- Once a baby can roll over you do not need to awaken him/her to reposition but, always start sleep in the back position.

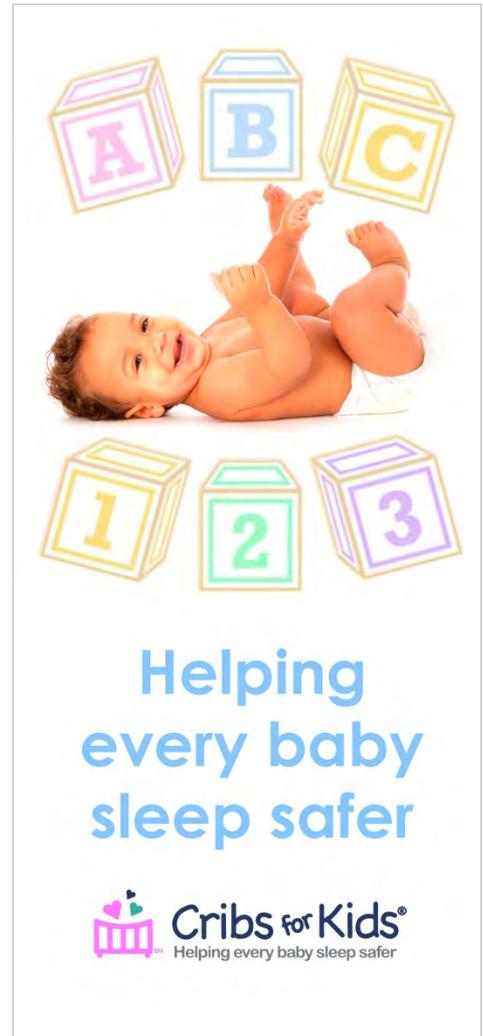
Assessment of NICU Patients for Home Sleep Environment (HSE)



*If baby is in open bassinette, consider early evaluation for HSE.

Parent Education

- Prior to discharge, all parents should be informed!
- Review the safe sleep pamphlet. Parents should also be taught what safe sleep is, risk factors, and how to prevent these deaths at home.
- Ask parents if they have a safe place for their baby to sleep. If not, help them get one! Contact social work to be referred for a Pack 'n Play®.
- Parents should view the DVD and sign the Educational Voluntary Commitment Contract (like Shaken Baby). This will become a part of the patient's permanent medical record.



What is Working?

EDUCATION

LEADS TO

INCREASED KNOWLEDGE

WHICH LEADS TO...

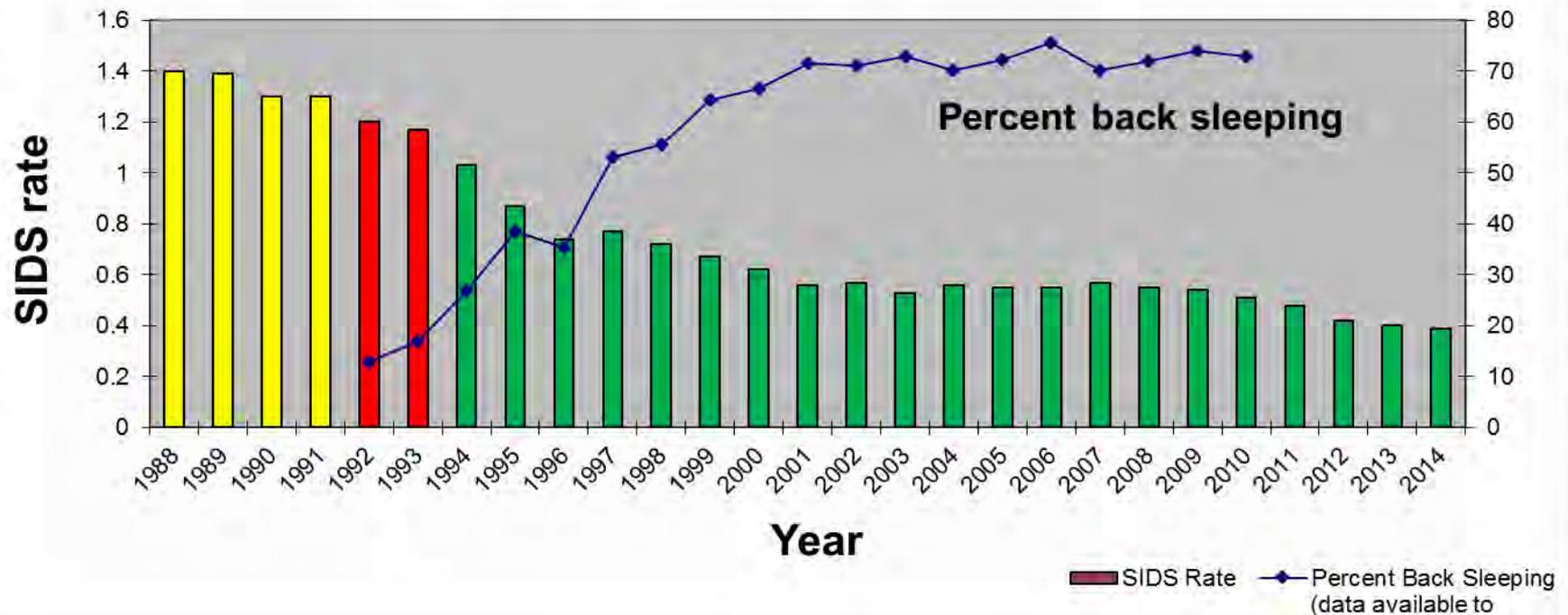
BEHAVIOR CHANGE

WHICH LEADS TO...

IMPROVED OUTCOMES (LESS SUICIDE)???

The Back to Sleep Campaign resulted in a 53% decrease in SIDS-related deaths over 10 years

SIDS Rate* (1998-2014) and Infant Sleep Position (1988-2010)



Mason: Clinical Peds, 7/13

- Bundled intervention:
 - Nursing education, policy, model behavior, safe sleep video, posters in rooms, declaration of safe sleep practice
- Safe sleep environment: ↑ from 25 to 58%
- Intention in home: 95% supine, none “co-sleeping”



McMullin: SIDS Prevention: A model program for NICUs

- Bundled intervention:
 - Nursing education, crib cards, written instructions reviewed with nurse, sleep sacks for modeling
- 98% babies supine in open crib
- 93% in sleep sacks
- 88% crib cards visible



Today'sBaby QI: Safe Sleep Teaching in the Hospital

- Nursing quality improvement intervention median = 160 days to implement
- After intervention, mothers reported:
 - receiving safe sleep information increased from 72% to 95% (increase of 24-57%)
 - 94% babies observed supine (plus 24%)
 - 88% infants in safe sleep environment
 - Increase of 33%
- Gains maintained up to 12 months

Social Media and Risk-Reduction Training Study (SMART)

- Cluster randomization: 4 groups
 - Safe sleep or breast feeding education
 - Nursing QI and Social Media (mobile health)
- N = 1600; 1263 responses (79%)
- Safe sleep NQI and Mhealth = best results in home follow-up:
 - Supine sleep 92.5%
 - Room sharing 85.9%
 - No soft bedding: 81.9%
 - Pacifier use: 76.2%

And finally...

Health care providers should have open, frank, nonjudgmental conversations with families about their sleep practices



Encouraging parents to take action!

According to the *Social Learning Theory* parents are more likely to recall and comply with instructions when the health care provider:

- Uses a positive tone.
- Provides adequate information.
- Allows the parent to ask most of the questions.

Motivational Interviewing

“a collaborative, goal-oriented style of communication with particular attention to the language of change”

- Strengthen personal motivation and commitment to a specific goal
- Explore one's reasons for change (barriers)
- Patient generates own solutions
 - More likely to feel realistic
 - Planting seeds of change

Things You Can Do in Your Practice...

- Give parents tools to cope with fussy babies
- Sleep-deprived parents may make poor judgments
- Make use of tools such as swaddling, side carrying, shushing, swinging, and sucking



Changes you may wish to make in your practice

- Discuss sleep safety instead of just SIDS
- Discuss concerns about aspiration and choking with parents of young infants
- Discourage use of bumper pads and other soft bedding
- Encourage room-sharing without bed-sharing



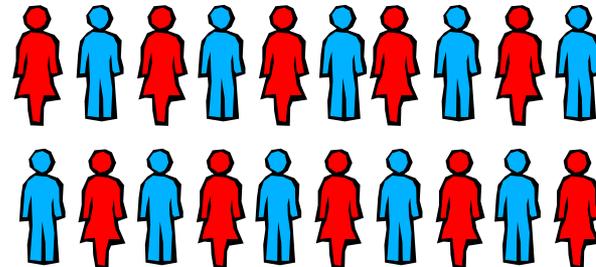
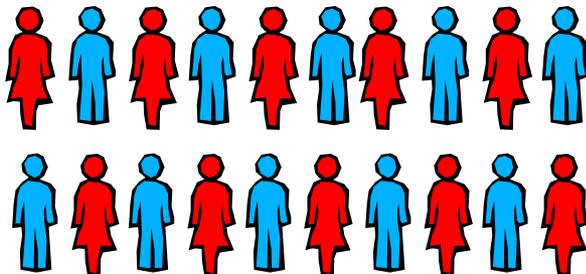
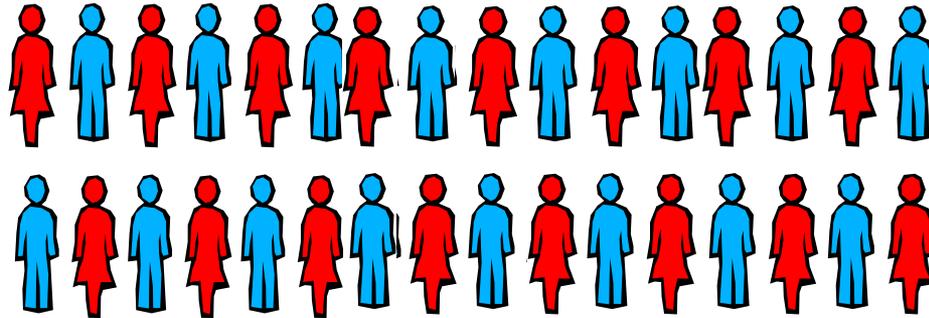
A Lifetime of Infant Sleep Safety

- A continuum starting in childhood
 - Secondary school, baby sitting classes
- Pre-pregnancy
- Pregnancy/prenatal education
 - Prior to baby shower...“wrong gifts”
- In hospital education and modeling
 - Include family, friends, baby sitters
- Re-enforcement in the doctor’s office
 - Especially between 1 to 4 months
- Grandparents: They hold great power!
- The General Public (Day Cares, Religious Leaders)



Impact of Eliminating Sleep-Related Deaths

Every week we lose 70 children which is equivalent to 4 kindergarten classrooms



Let's join together to ensure our infants make it to their first birthday in a safe sleeping environment!!



For More information on Infant Safe Sleep....

Visit our website at:

www.cribsforkids.org



References

“Portions of the following resources may have been consulted as part of the development of this PowerPoint. These resources are not authoritative.”

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