

SIDS and Other Sleep-Related Infant Deaths

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Goals

- Define SIDS and SUID.
- Understand risk factors for SIDS (sudden infant death syndrome) and SUID (sudden unexpected infant deaths).
- Discuss prevention and risk reduction strategies for SIDS and SUID.
- Discuss a triple-risk model for sudden infant death syndrome (SIDS) including a vulnerable infant (underlying brain abnormalities and genetic factors), environmental factors, and developmental timing.

Goals, Part Two

- Everyone learns one new thing
- Keep an open mind, but teach only facts
- Everyone mentions safe sleep more than they do now
- Create a culture of safety and education
- As a group, let's save one baby!

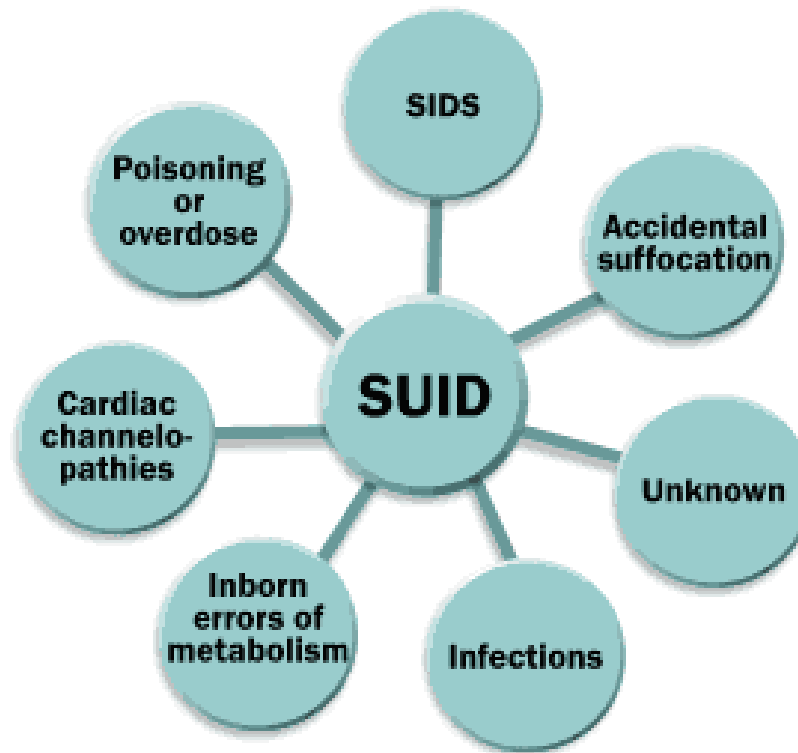
Definitions

- Sudden Unexpected Infant Death
 - SUID
- Sudden Infant Death Syndrome
 - SIDS

Sudden Unexpected Infant Death

- Unexplained SUID
 - SIDS (under one year, unexplained after thorough investigation)
- Explained SUID
 - Specific cause found
 - *Fatal child abuse*
 - *Underlying condition (metabolic disease)*
 - *Accidental (suffocation, entrapment)*

Sudden Unexpected Infant Death



SIDS /s:

- The major cause of death in infants from 1 month to 1 year of age, with most deaths occurring between 2 and 4 months
- Sudden and silent - the infant was seemingly healthy
- Currently, unpredictable and unpreventable

SIDS /s:

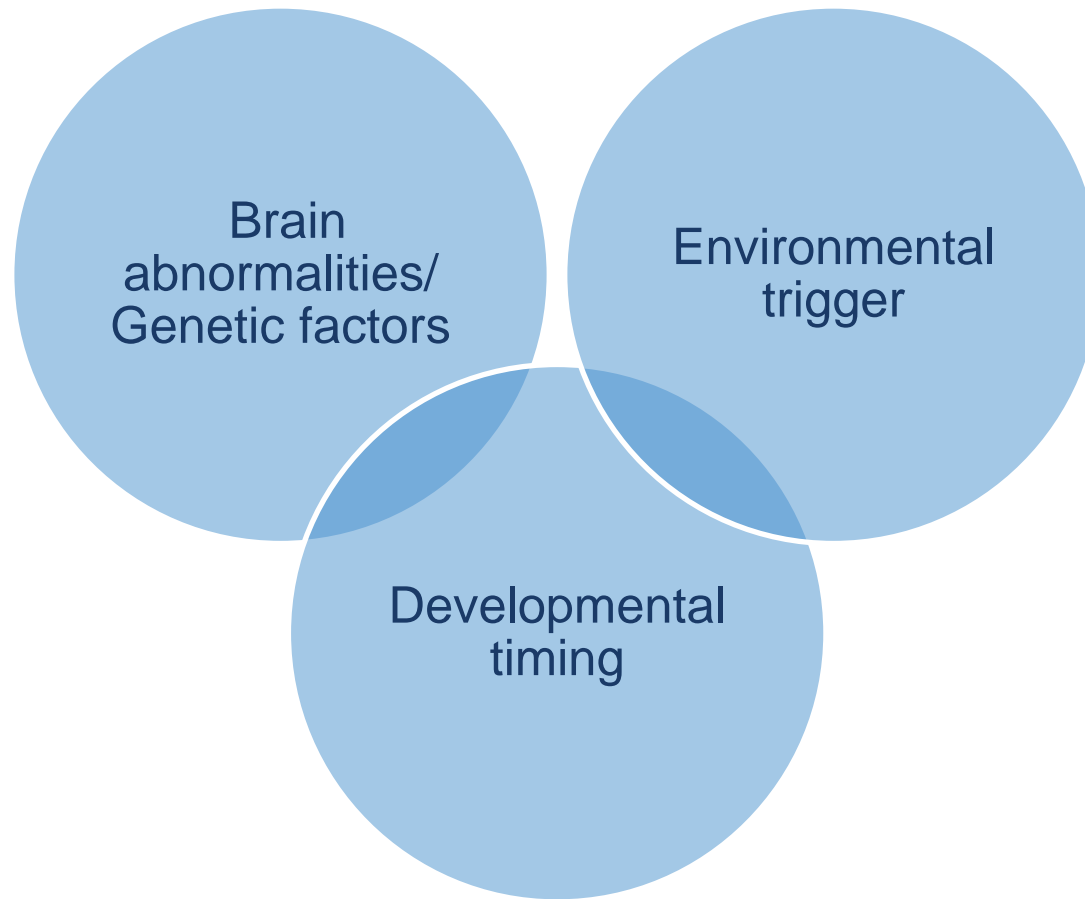
- Determined only after an autopsy, an examination of the death scene, and a review of the clinical history
- Designated as a diagnosis of exclusion
- A recognized medical disorder listed in the International Classification of Diseases
- An infant death that leaves unanswered questions, causing intense grief for parents and families.

SIDS *Is Not:*

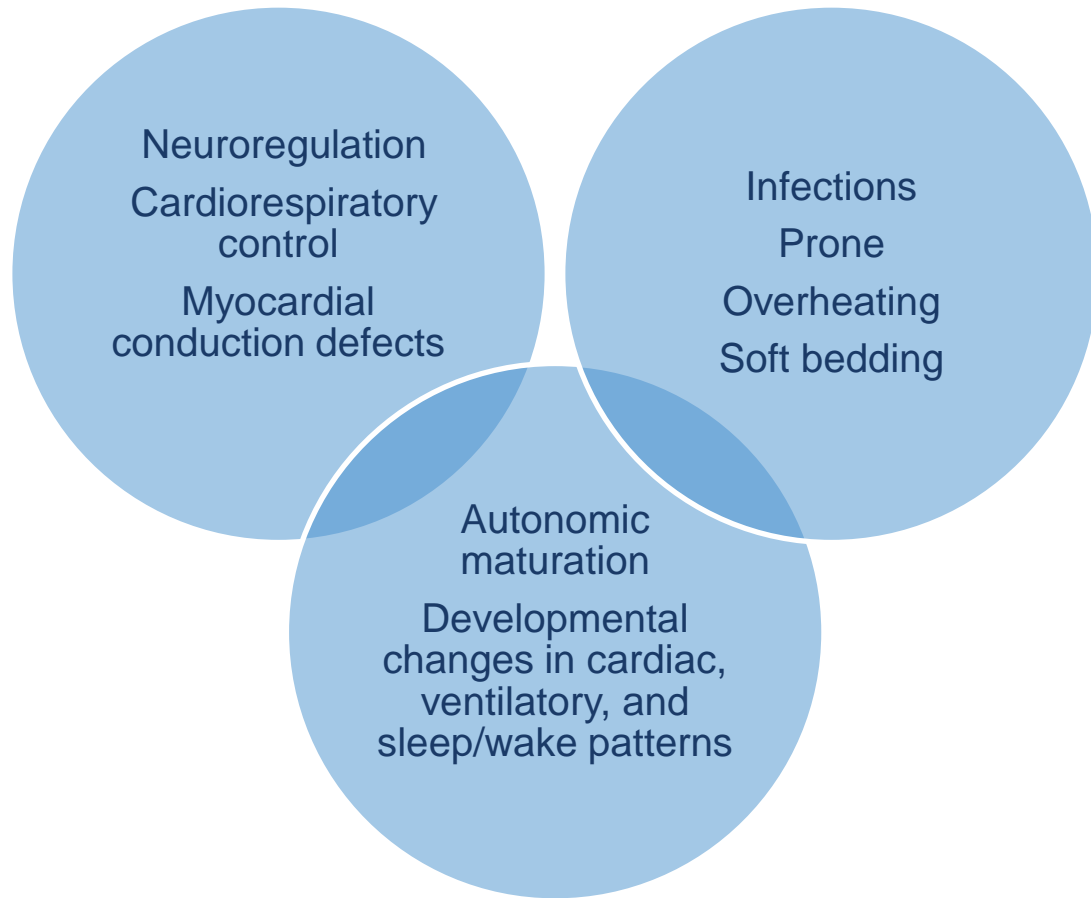
- Caused by vomiting and choking, or minor illnesses such as colds or infections
- Caused by immunizations
- Contagious
- Child abuse
- The cause of every unexpected infant death

National SIDS Resource Center (What is SIDS?)

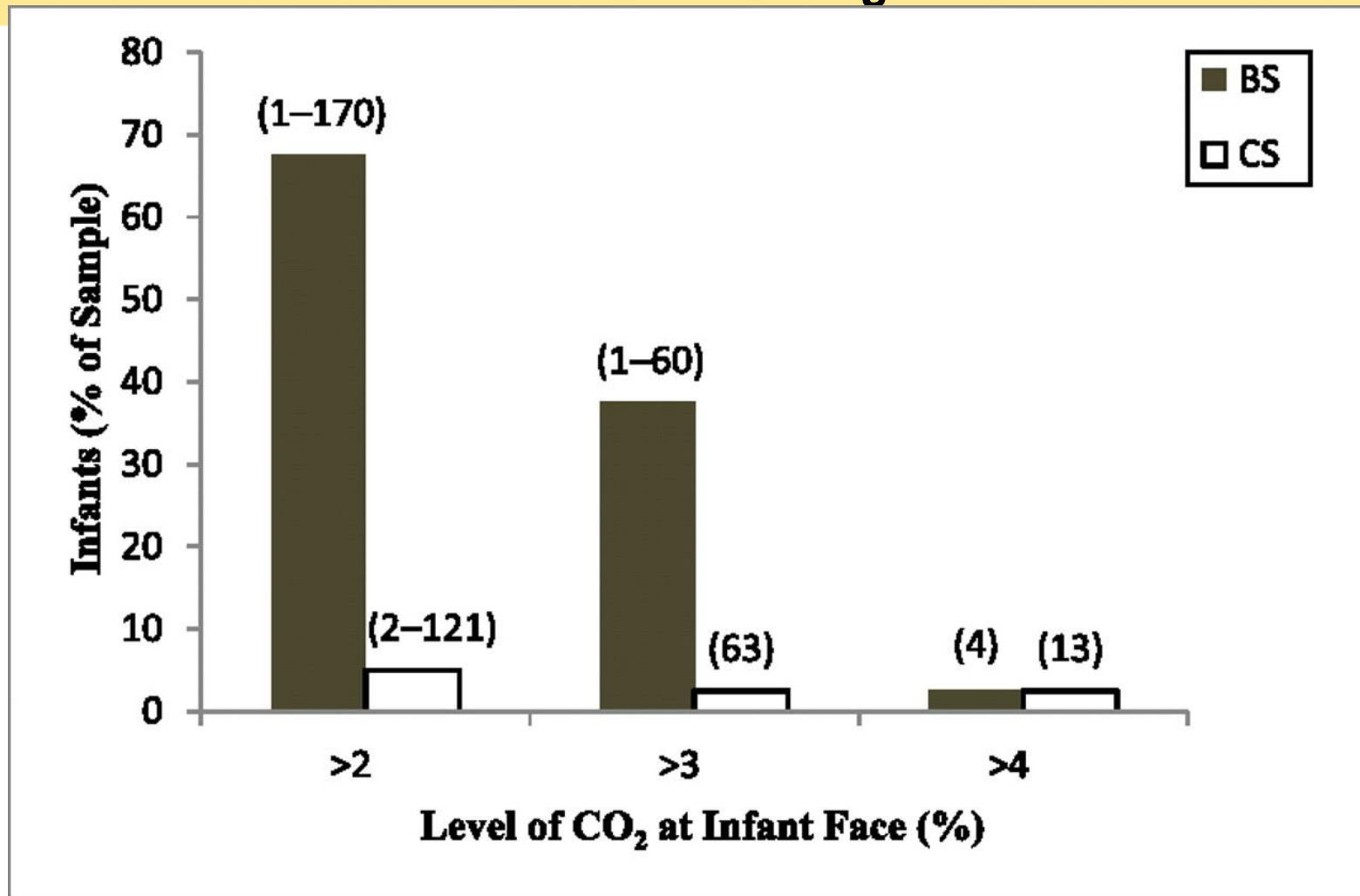
What causes SIDS?



What causes SIDS?

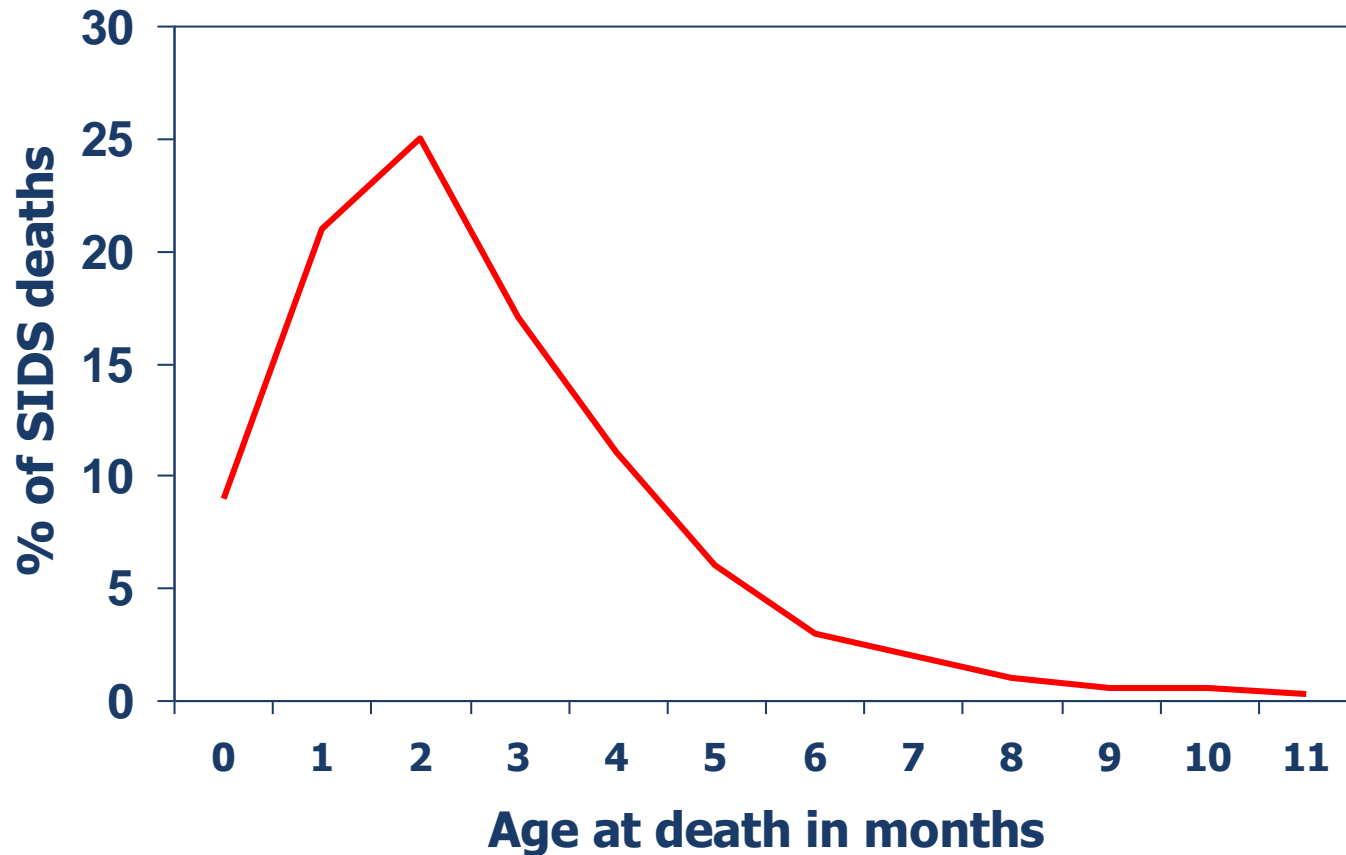


Percentage of infants exposed to varying levels of CO₂ while bed-sharing



Baddock S A et al. Pediatrics 2012;130:237-244

SIDS Deaths, by Age



The changing concept of sudden infant death syndrome: diagnostic coding shifts, controversies regarding the sleeping environment, and new variables to consider in reducing risk. *Pediatrics*. 2005;116:1245–1255

SIDS Risk factors: General

- Low birth weight
- Racial/ethnic differences (increased risk in nonwhite races)
- Gender - male greater than female
- Climate - twofold increased risk in cold versus warm months

SIDS Risk factors: Maternal and antenatal factors ^{1,2,3}

- Smoking, illicit drugs
- Young, unmarried, no high school degree
- Late or no prenatal care
- Poor gestational weight gain
- Pregnancy complications (placenta previa, abruption, premature rupture of membranes)
- Anemia
- Urinary tract infection, sexually transmitted disease
- Short interpregnancy interval
- Drug abuse in mother – 5 x increase risk

SIDS Risk factors: Neonatal factors ^{1,2,3}

- Prematurity
- Small for gestational age
- Apnea of prematurity - **not** a risk

SIDS Risk factors: Post neonatal factors ^{1,2,3,4}

- Prone sleep position – **3 to 9 x increased risk**
- Sleep environment - soft sleep surfaces, loose bedding accessories
- Bed-sharing – **2 x risk** in smokers, **1.4 x risk** non-smokers
- Breast feeding - **reduces** risk
- Recent upper respiratory infection - **not** a risk
- Immunizations - **not** a risk
- Room sharing - **reduces** risk

Modifiable risk factors

- Data from population-based retrospective review of 244 New Jersey SIDS cases (1996-2000).
- Modifiable risk factors:
 - maternal and paternal smoking,
 - nonsupine sleep or prone status at discovery,
 - bed-sharing,
 - scene risks (sofas, pillows, blankets, other children, etc.)
- Nonmodifiable risk factors:
 - upper respiratory infection
 - <37 weeks' gestational age risks.

Concurrent risks in sudden infant death syndrome. Ostfeld et al. Pediatrics. 2010;125(3):447.

Modifiable risk factors

- Nonsupine sleep placement: 70% of cases
- Paternal smoking: 50%
- Maternal smoking: 43%
- Smoking by 1 or both parents: 60%
- URI: 44%
- Scene risk: 32%
- Prematurity: 27%
- Bed sharing: 39%

Concurrent risks in sudden infant death syndrome. Ostfeld et al. Pediatrics. 2010;125(3):447.

Modifiable risk factors

- **At least 1 risk was found in 96% of the cases**

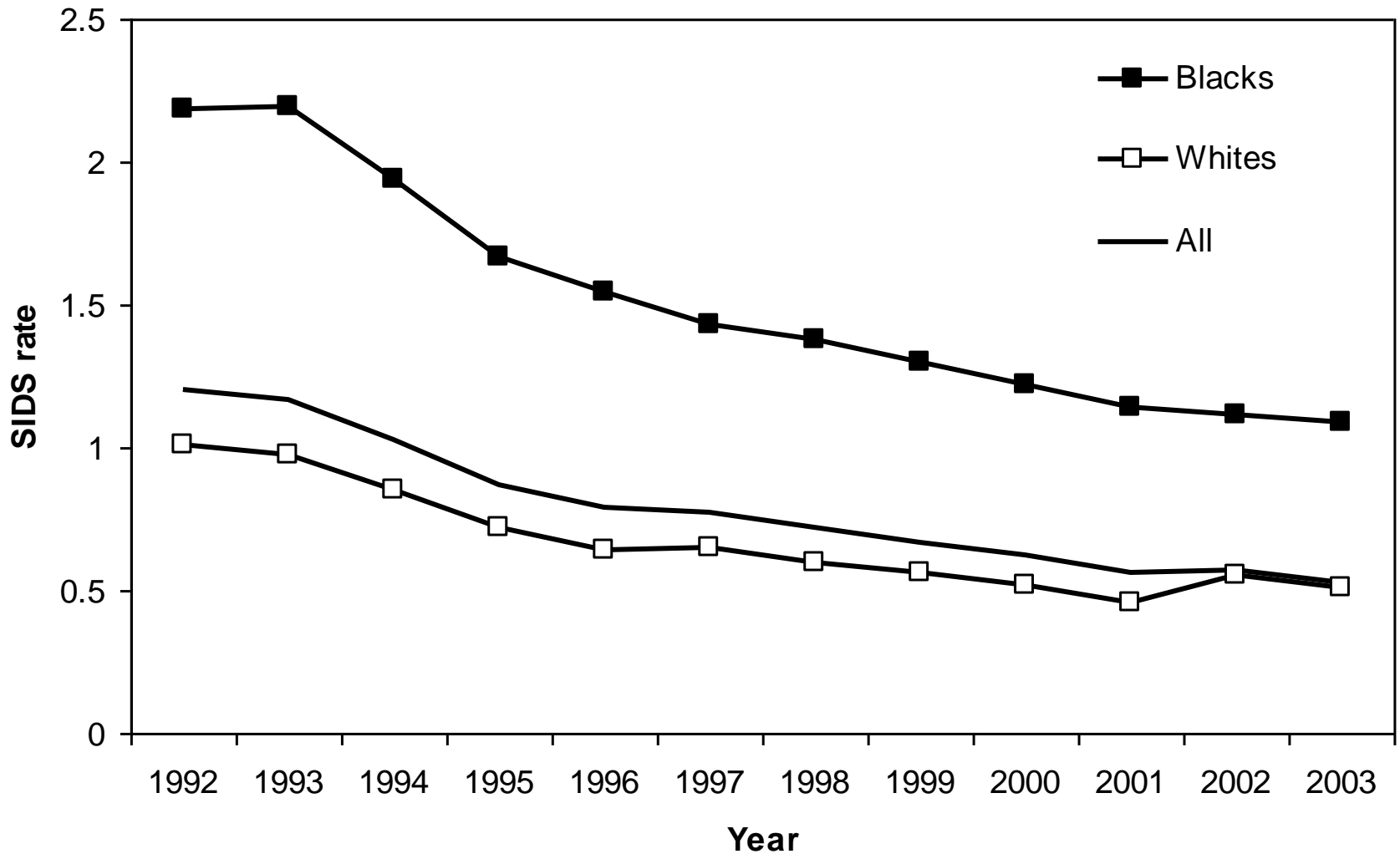
Concurrent risks in sudden infant death syndrome. Ostfeld et al. Pediatrics. 2010;125(3):447.

Modifiable risk factors

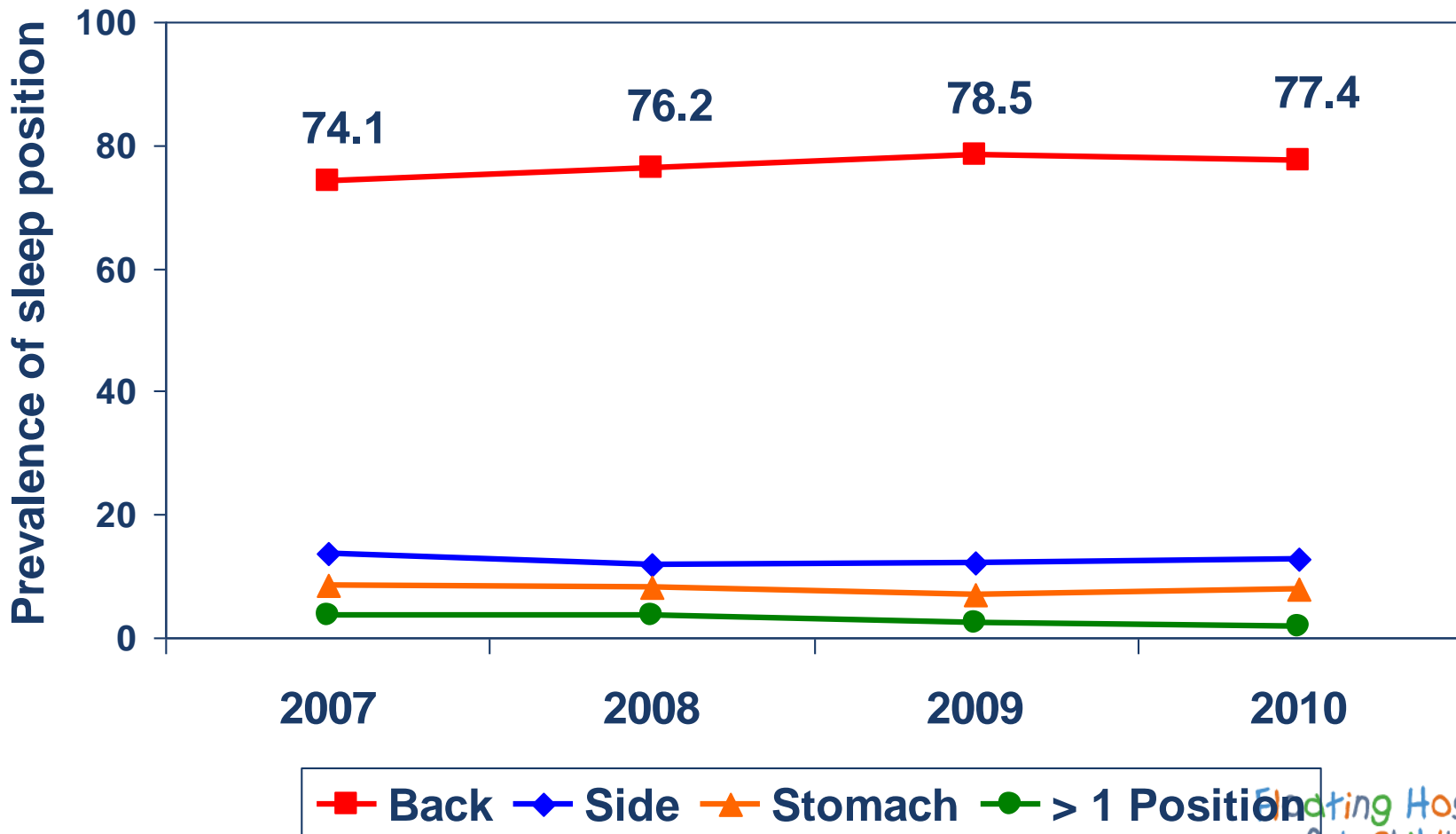
- 78% had 2 to 7 risks
- 9 of 244 risk-free cases (3.7%), but 7 lacked some data
- When nonmodifiable risks were excluded, 5.3% of the cases met this definition.

Concurrent risks in sudden infant death syndrome. Ostfeld et al. Pediatrics. 2010;125(3):447.

SIDS rate per 1000 live births

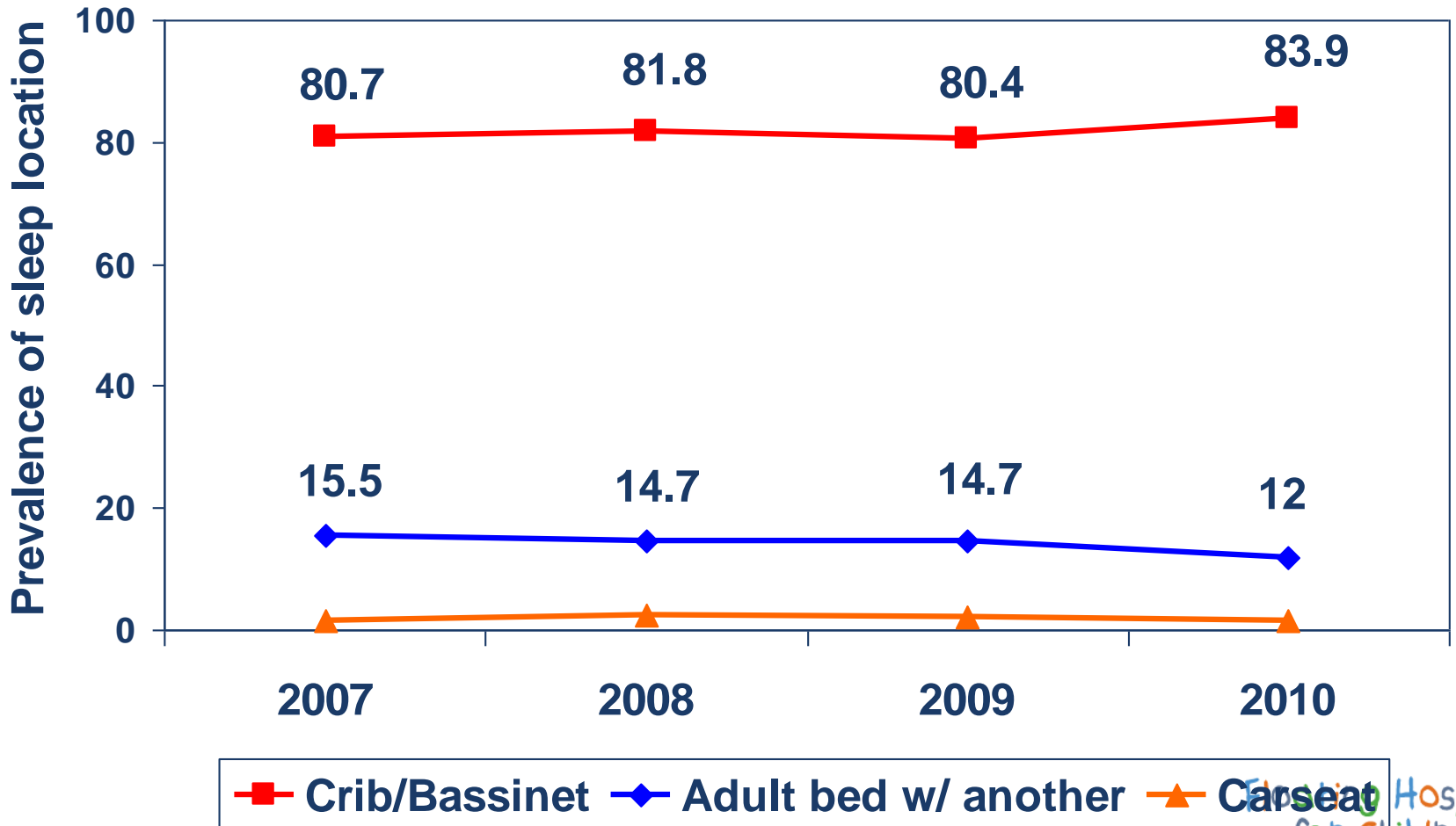


Trends in Sleep Position, PRAMS, MA 2007-2010



Source: MA Pregnancy Risk Assessment Monitoring System

Trends in Sleep Location, PRAMS, MA 2007-2010



Source: MA Pregnancy Risk Assessment Monitoring System

Infant airways



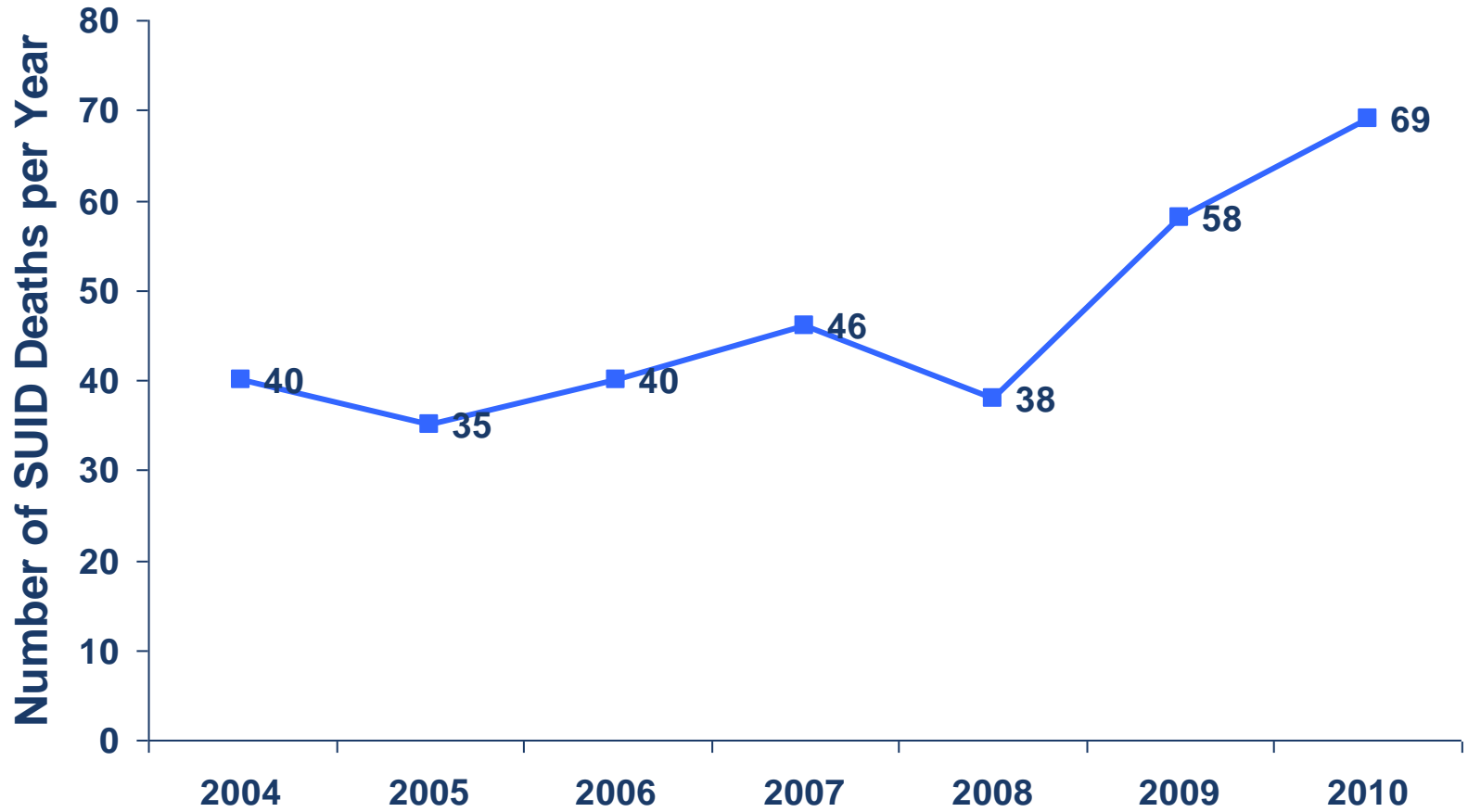
Before



After



Trend in MA SUID Deaths, 2004-2010



Source: Registry of Vital Records and Statistics, MA Department of Public Health

Includes ²⁶deaths with underlying cause of death coded as SIDS, Unexplained/Undetermined, Accidental Suffocation in Bed or Unspecified Threat to Breathing.

MA SUID Deaths 2010

- **69 Sudden unexpected infant deaths**
 - 1 Congenital syndrome
 - 2 Sudden cardiac arrest
 - 2 Asphyxia/suffocation
 - 8 Injury (fall, drowning, other)
 - 8 Medical illness
 - 8 Undetermined
 - 2 Pending

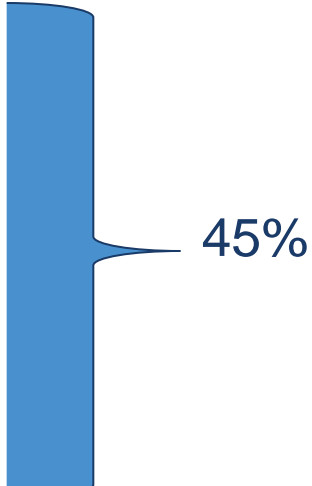
 - **13 SIDS/SUID/SUDC**

 - **25 SUID in setting of unsafe sleep position/environment**

Source: MA SIDS Center

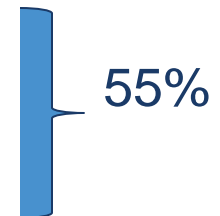
MA SUID Deaths 2010

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- 1 Congenital syndrome
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 - 8 Undetermined
 - 2 Pending
- 
- 45%

– **13 SIDS/SUID/SUDC**  **19%**

– **25 SUID/unsafe sleep position**  **36%**



55%

Source: MA SIDS Center

MA SUID Deaths 2010

- **69 Sudden unexpected infant deaths**

- 1 Congenital syndrome
- 2 Sudden cardiac arrest
- 2 Asphyxia/suffocation
- 8 Injury (fall, drowning, other)
- 8 Medical illness
- 8 Undetermined
- 2 Pending

– **13 SIDS/SUID/SUDC**  **0.17/1000**

– **25 SUID/unsafe sleep position**  **0.33/1000**

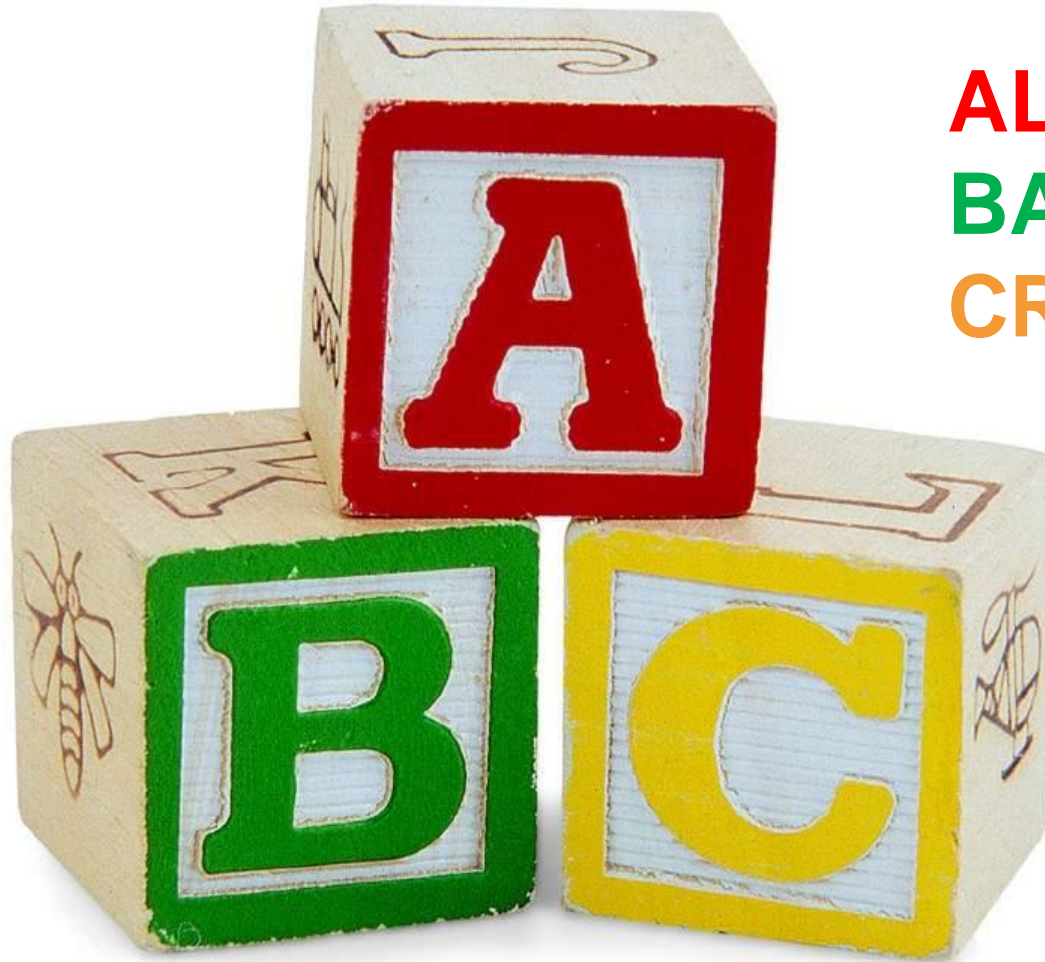
 **0.5/1000**

Source: MA SIDS Center

Milestones of the Back-to-Sleep Campaign

- **1992** – AAP issues statement that all healthy full term infants should be placed in *non-prone positions* to reduce the risk of SIDS.
- **1994** – The “Back to Sleep” Campaign launched
- **1998** – The back sleeping campaign reduces SIDS deaths by 30 - 50 %.
- **2000** -- AAP statement - supine position poses lowest risk; side position less than prone
- **2005** – The AAP issues revised policy – supine only
- **2011** – The AAP updates its policy – importance of breastfeeding; no bed sharing

Educational efforts



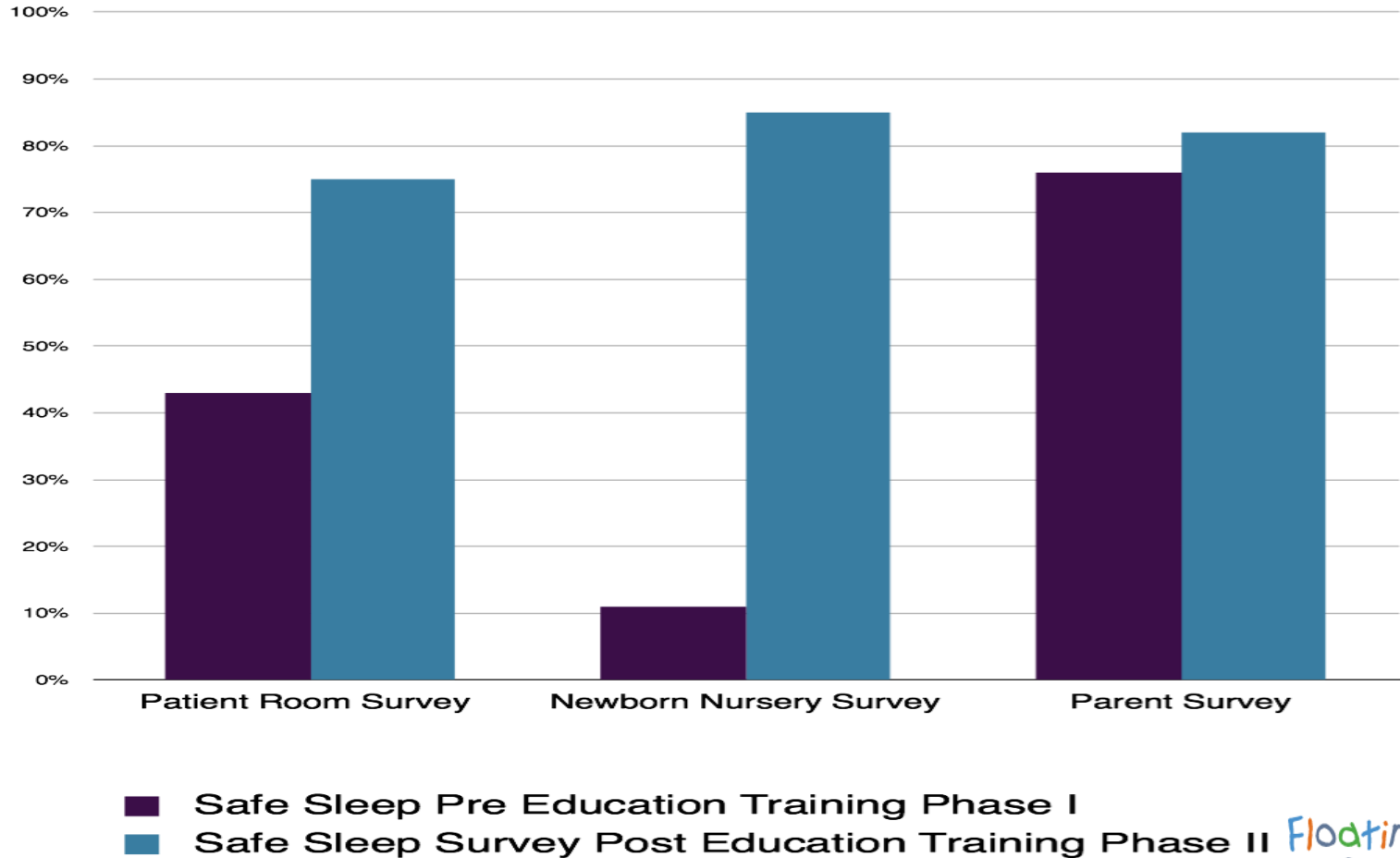
ALONE
BACK
CRIB

Halo sleep sack and program



1. Nurse education
2. Modeling behavior

Hospital education



Summary

- SIDS is unexplained death under one year, unexplained after thorough investigation.
- There are multiple risk factors for SIDS (sudden infant death syndrome) and SUID (sudden unexpected infant deaths).
- There are multiple prevention and risk reduction strategies for SIDS and SUID.
- Tell your patients and friends!
- *“If I can save one baby from dying from writing this post, than I have done something for my son. Thank you for reading, and cherish your little ones.”*
www.babycenter.org

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