

# SAFE SLEEP SUMMIT

May 3, 2010

Wheaton Franciscan – St. Joseph Hospital  
Klieger Auditorium



# SIDS & Sleep-related Deaths: Current Statistics, Challenges & Possibilities

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Safe Sleep Summit  
Milwaukee, WI  
May 3, 2010

# Session Objectives

- Discuss local and national infant mortality, SIDS and SUDI statistics.
- Review the current thinking on pathophysiology and causal pathway of SIDS
- Outline the AAP recommendations for safe sleep to reduce the risk of SIDS and sleep-related SUDI
- Discuss prevalence of risk factors for SIDS and sleep-related SUDI locally and nationally
- Explore challenges and potential solutions to disseminating and defending the message

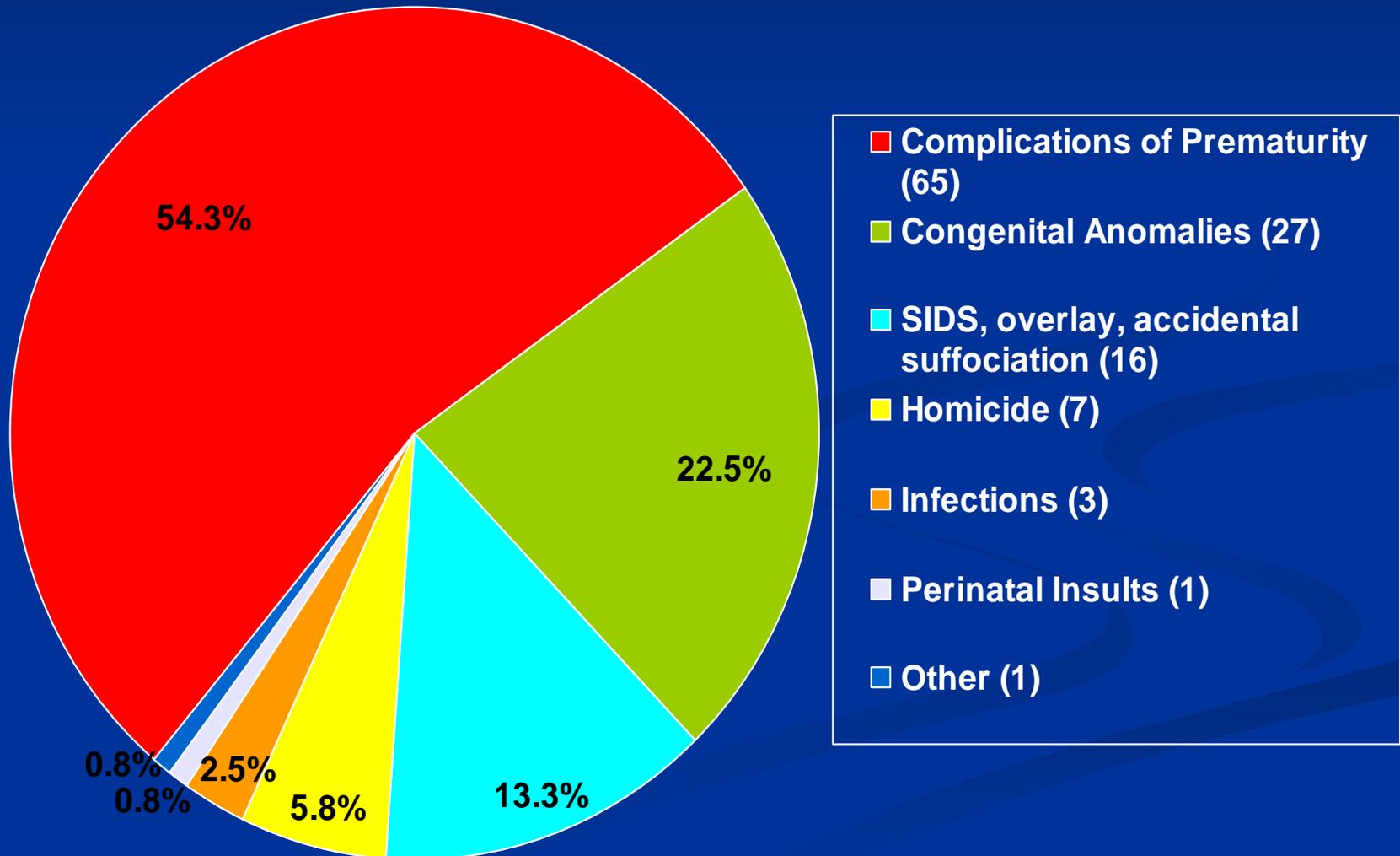
# Infant Mortality in Milwaukee, Wisconsin & U.S. (2008)

- Infant mortality rate = number of infant deaths under 1 year of age/number of live births
- Healthy People 2010 goal = 4.5
- **Milwaukee infant mortality rate: 10.7**
  - Black infants: 13.9
  - White infants: 4.8
  - Hispanic infants: 10.5
- Wisconsin: 7.0
- U.S.: 6.4

# Causes of Infant Death (2008)

## Milwaukee (N=120)

City of Milwaukee Health Department Data



# Definitions

- Sudden and unexpected death in infancy (SUDI): ( $\sim 4,600$  /year)
  - Describes all sudden, unexpected deaths regardless of cause
- Sudden infant death syndrome (SIDS):
  - Cases of SUDI that remained unexplained after a complete autopsy and review of the circumstances of death and clinical history (2,230 in 2500,  $\sim 50\%$ )

## Definitions (Continued)

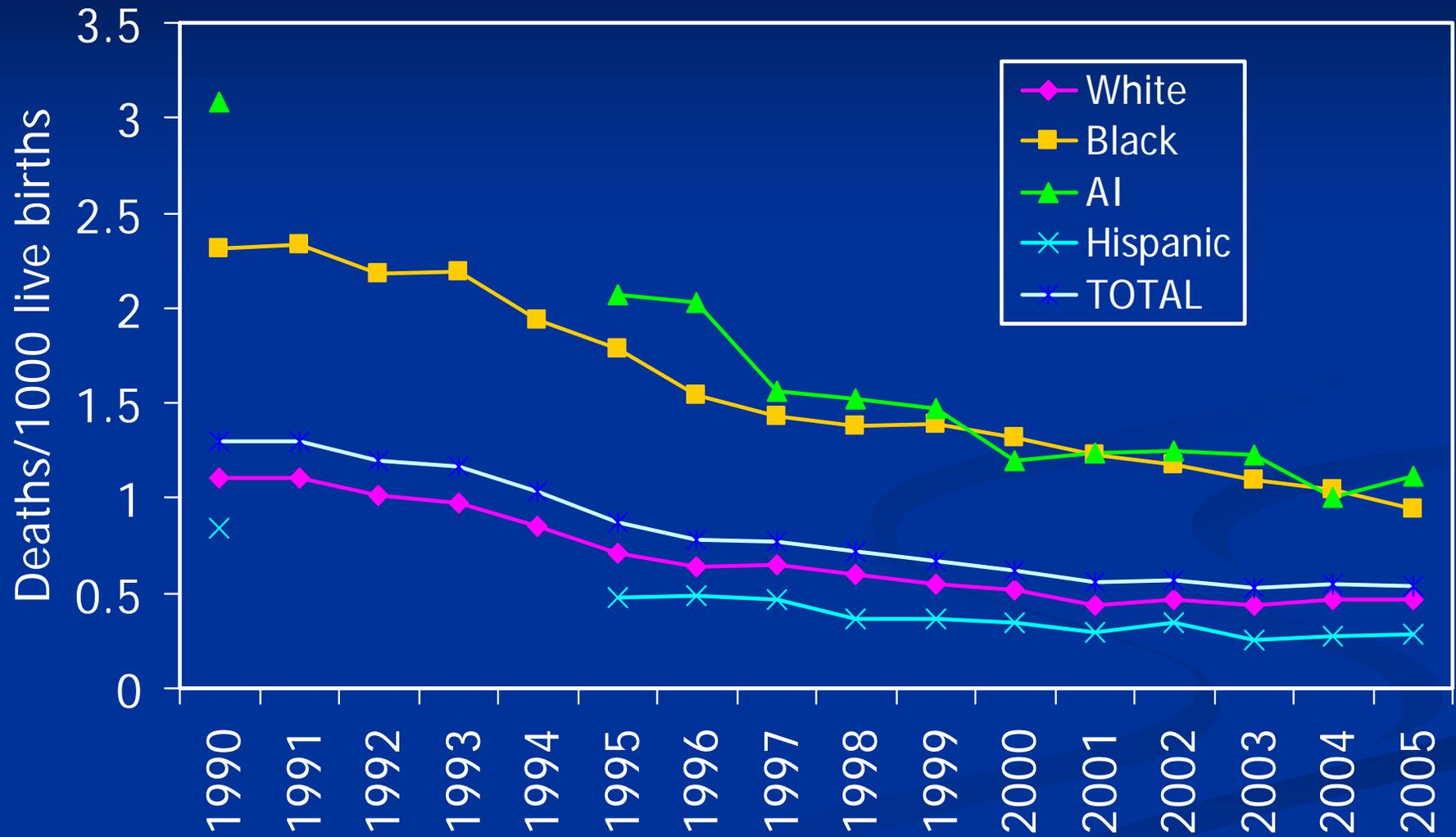
- Other SUDI:

- Infection, infanticide/intentional suffocation (<5%), inherited disorders of fatty acid metabolism (1%), genetic cardiac channelopathies (5-10%)
- Suffocation in bed, other suffocation, and “indeterminate” cause are now accounting for a growing proportion of SUID

# SIDS Rates in Milwaukee, Wisconsin & US (2008)

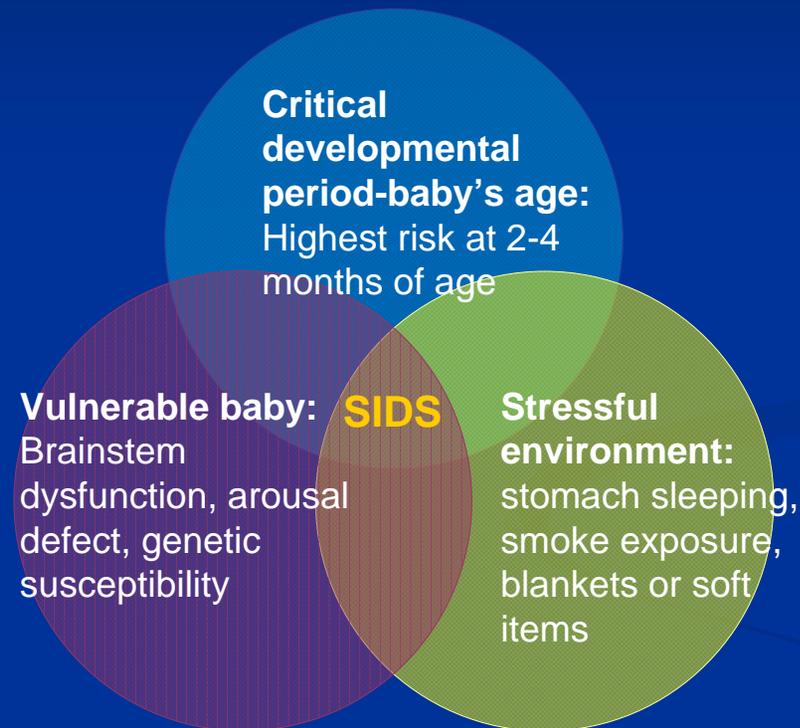
- Milwaukee: 1.42
- Wisconsin: 0.96
- U.S. (2006): 0.55

# U.S. SIDS Rates, 1990-2005



Source: National Center for Health Statistics, CDC

# Triple Risk Model for SIDS



Filiano JJ and Kinney HC, Biol Neonate, 65:194-197, 1994

# Rebreathing Theory

- Infants in certain sleep environments are more likely to trap exhaled  $\text{CO}_2$  around the face
  - Lie prone and near-face-down/face-down
  - Soft bedding
  - Tobacco smoke exposure
- Infants rebreathe exhaled  $\text{CO}_2$ :  $\text{CO}_2 \uparrow$  &  $\text{O}_2 \downarrow$
- Infants die if they cannot arouse/respond appropriately (vulnerable baby)

# Established Risk Factors

- Late or no prenatal care
- Young maternal age
- Prematurity and/or low birth weight
- Male sex
- African American
- Native American
- Maternal smoking or drug use during pregnancy
- Prone/side sleep position
- Soft sleep surface/pillow use
- Bed sharing
- Environmental tobacco smoke
- Overheating
- Head or face covered

# Established Protective Factors

- Pacifier use when placed for sleep
- Room sharing without bed sharing
- Breast feeding (some studies)



# 2005 AAP SIDS Task Force Recommendations

- Back to sleep for every sleep
- Use a firm sleep surface – a firm mattress is recommended
- Avoid development of positional plagiocephaly by encouraging “tummy time” and limiting time in bouncers, carseats and carriers



**Your baby needs Tummy Time!**  
Place babies on their stomachs when they are awake and someone is watching. Tummy time helps your baby's head and neck muscles get stronger and helps to prevent flat spots on the head.

## Recommendations (Continued)

- Soft materials (pillows, quilts, comforters, or sheepskins) should not be placed under a sleeping infant.
- Keep soft objects and loose bedding out of the sleep area/crib
- Avoid overheating –keep room temperature comfortable and avoid overdressing infant



## Recommendations (Continued)

- Get recommended prenatal care
- Do not smoke during pregnancy
- Do not smoke around the baby
- Consider offering a pacifier at nap time and bedtime throughout the first year of life
- For breastfed infants, delay pacifier introduction until 1 month of age to ensure that breastfeeding is firmly established.



## Recommendations (Continued)

- A separate but proximate sleeping environment is recommended:
  - The risk of SIDS has been shown to be reduced when the infant sleeps in the same room as the mother.
  - A crib, bassinet, or cradle that conforms to the safety standards is recommended. The crib or bassinet should be placed in the parents' bedroom, close to their bed, to allow for more convenient breastfeeding and contact.
  - Bed sharing, as practiced in the United States and other Western countries, is more hazardous than the infant sleeping on a separate sleep surface and is therefore not recommended.

# Recommendations (Continued)

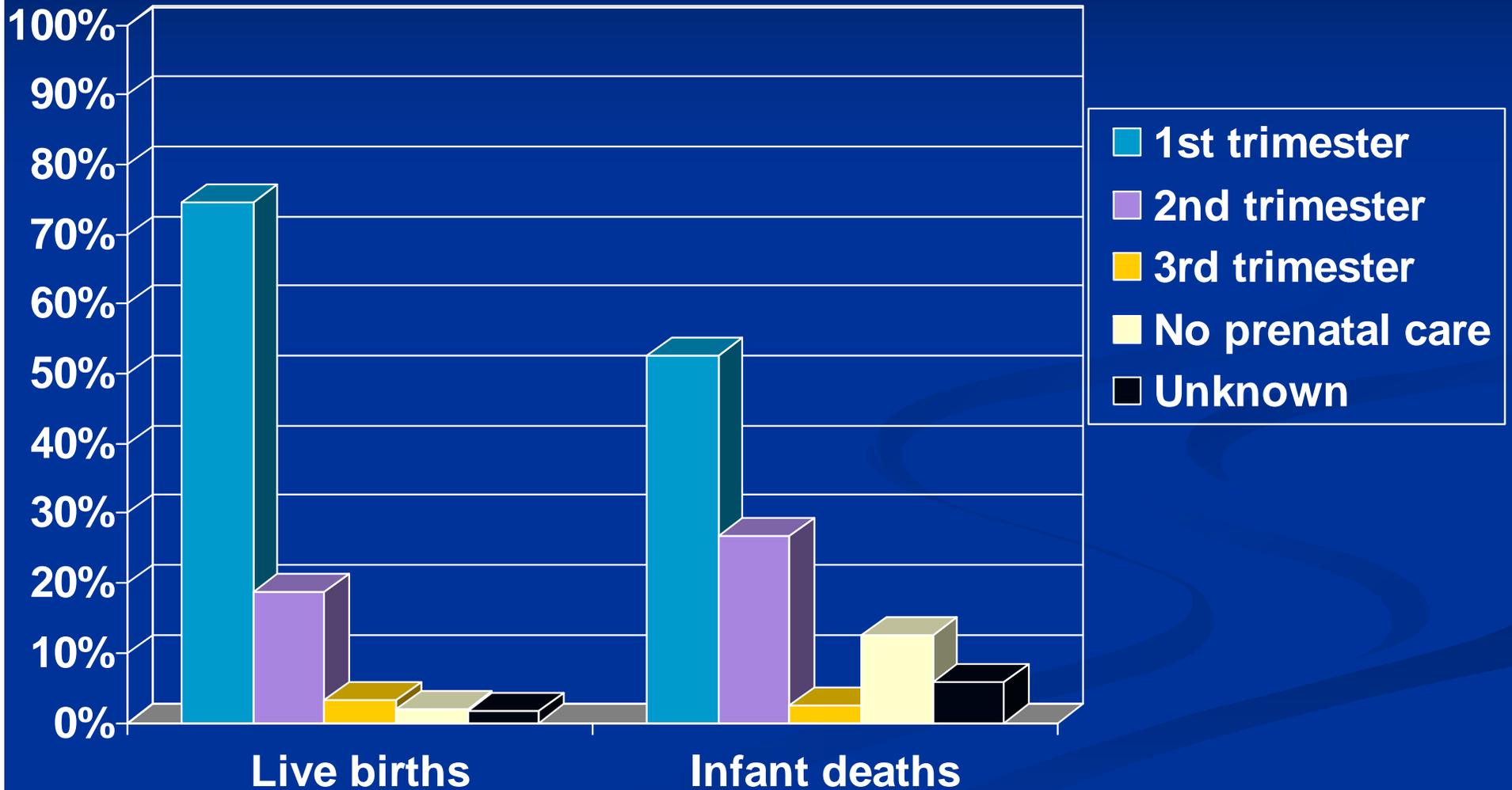
- Infants may be brought into bed for nursing or comforting but should be returned to their own crib or bassinet when the parent is ready to return to sleep.
- The infant should not be brought into bed when the parent is excessively tired or using medications or substances that could impair his or her alertness.
- Infants should not bed share with other children.
- No one should sleep with an infant on a couch or armchair.



# Trimester of 1<sup>st</sup> Prenatal Visit

## Live Births Compared to Infant Deaths (2008)

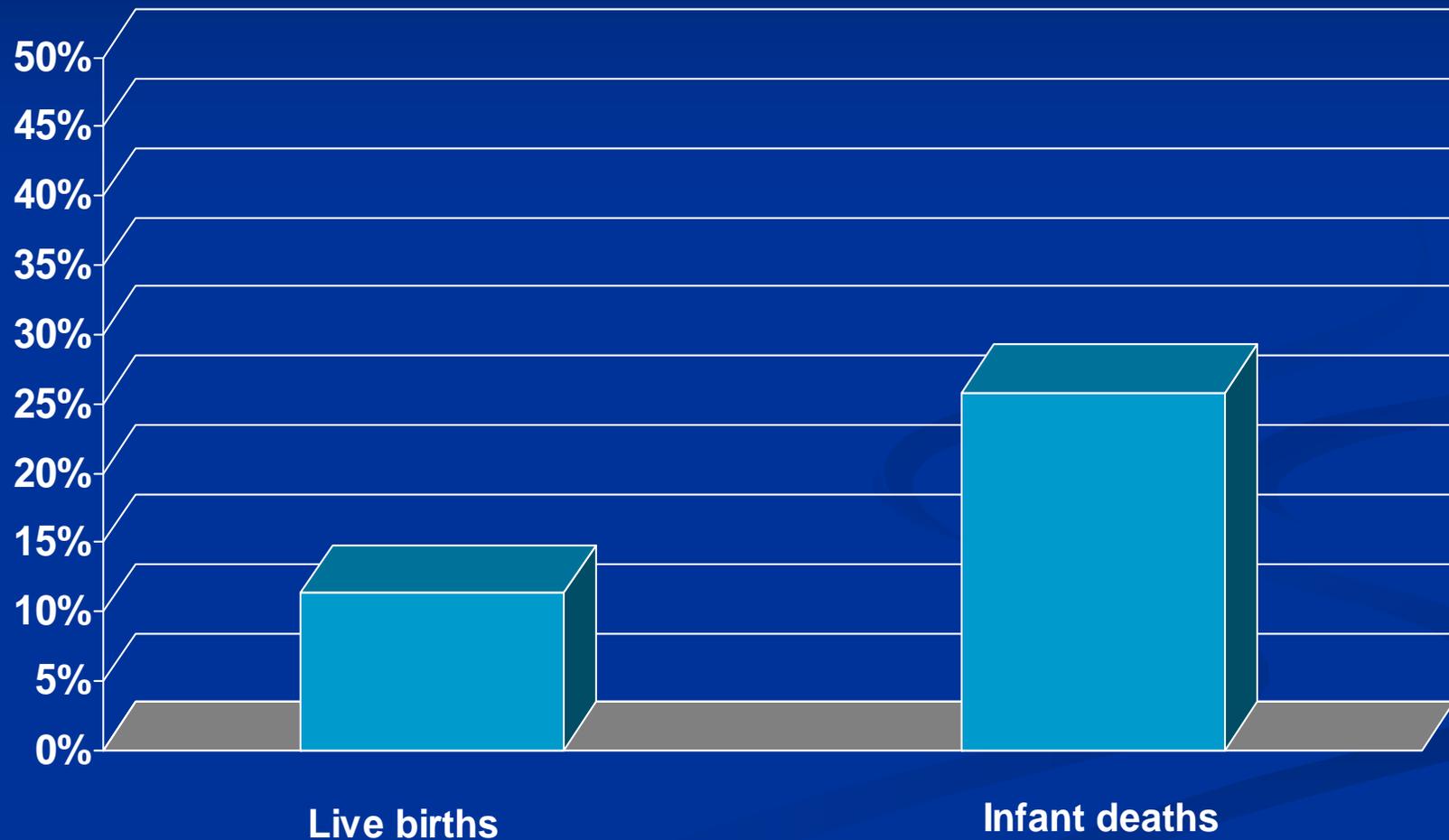
City of Milwaukee Health Department Data



# Maternal Smoking

## Live Births Compared to Infant Deaths (2008)

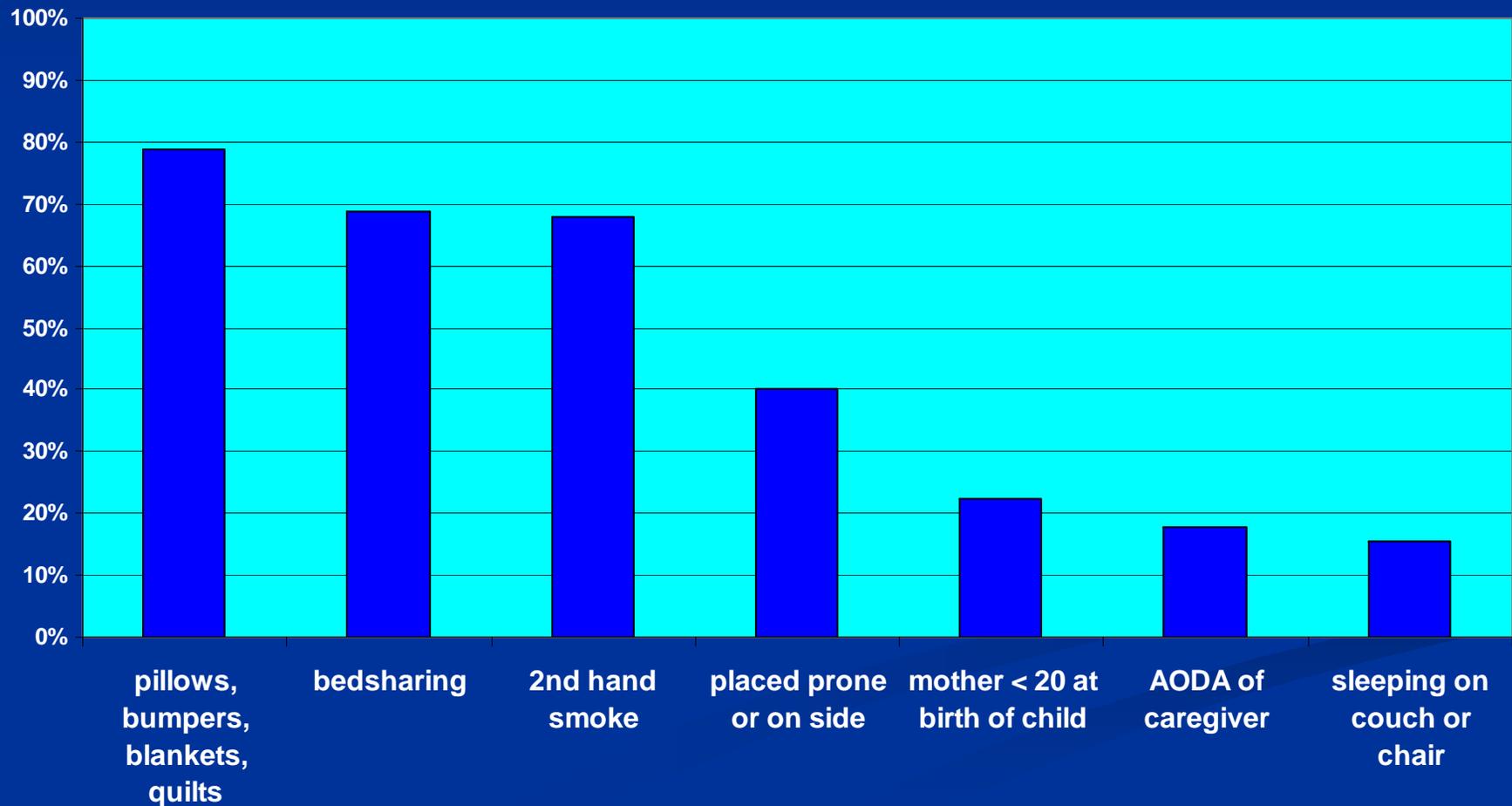
City of Milwaukee Health Department Data



# Risk Factors and FIMR Infant Deaths

City of Milwaukee Health Department Data (2005-2008)

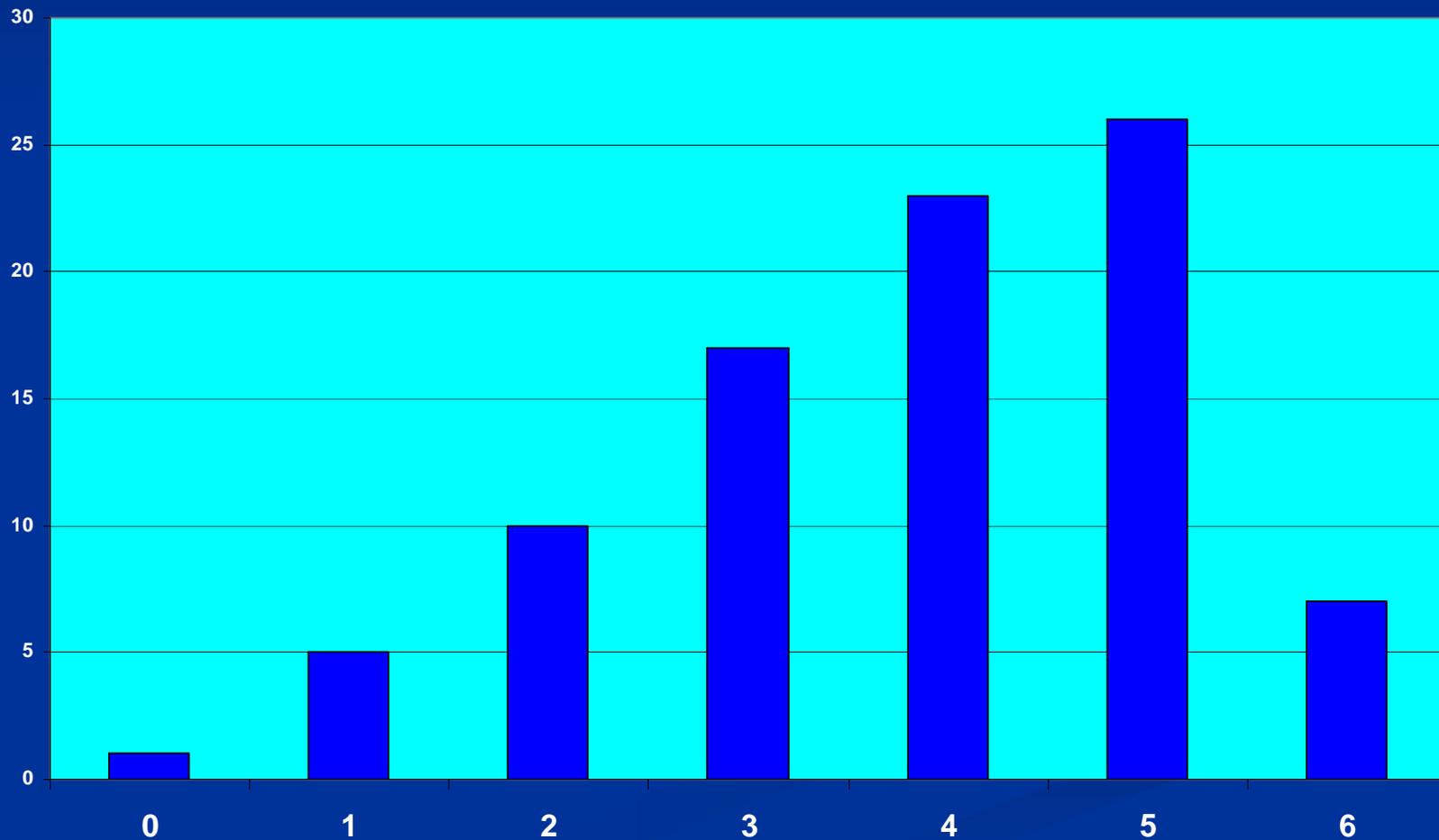
COD=SIDS, overlay, accidental suffocation  
N=90



# Number of Risk Factors and FIMR Infant Deaths

City of Milwaukee Health Department Data (2005-2008)

Number of Infant Deaths by Number of Risk Factors Present  
2005-2008 Infant Deaths where COD=SIDS, overlay, accidental suffocation  
N=90



**Wisconsin Pregnancy Risk Assessment  
Monitoring System (PRAMS):  
Usual Infant Sleep Position  
(2007-2008)**

<b>Race/Ethnicity</b>	<b>Back</b>	<b>Side</b>	<b>Stomach</b>
<b>White, non-Hispanic</b>	79%	7%	10%
<b>Black, non-Hispanic</b>	61%	11%	13%
<b>Hispanic/Latina</b>	79%	7%	4%
<b>Other, non-Hispanic</b>	75%	13%	3%

**Wisconsin PRAMS:  
Bed Sharing Frequency  
(With Mother or Someone Else, 2007-2008)**

<i>Race/Ethnicity</i>	<i>Always</i>	<i>Often, sometimes, rarely</i>	<i>Never</i>
<i>White, non-Hispanic</i>	4%	53%	41%
<i>Black, non-Hispanic</i>	23%	51%	21%
<i>Hispanic/Latina</i>	21%	51%	24%
<i>Other, non-Hispanic</i>	19%	58%	18%

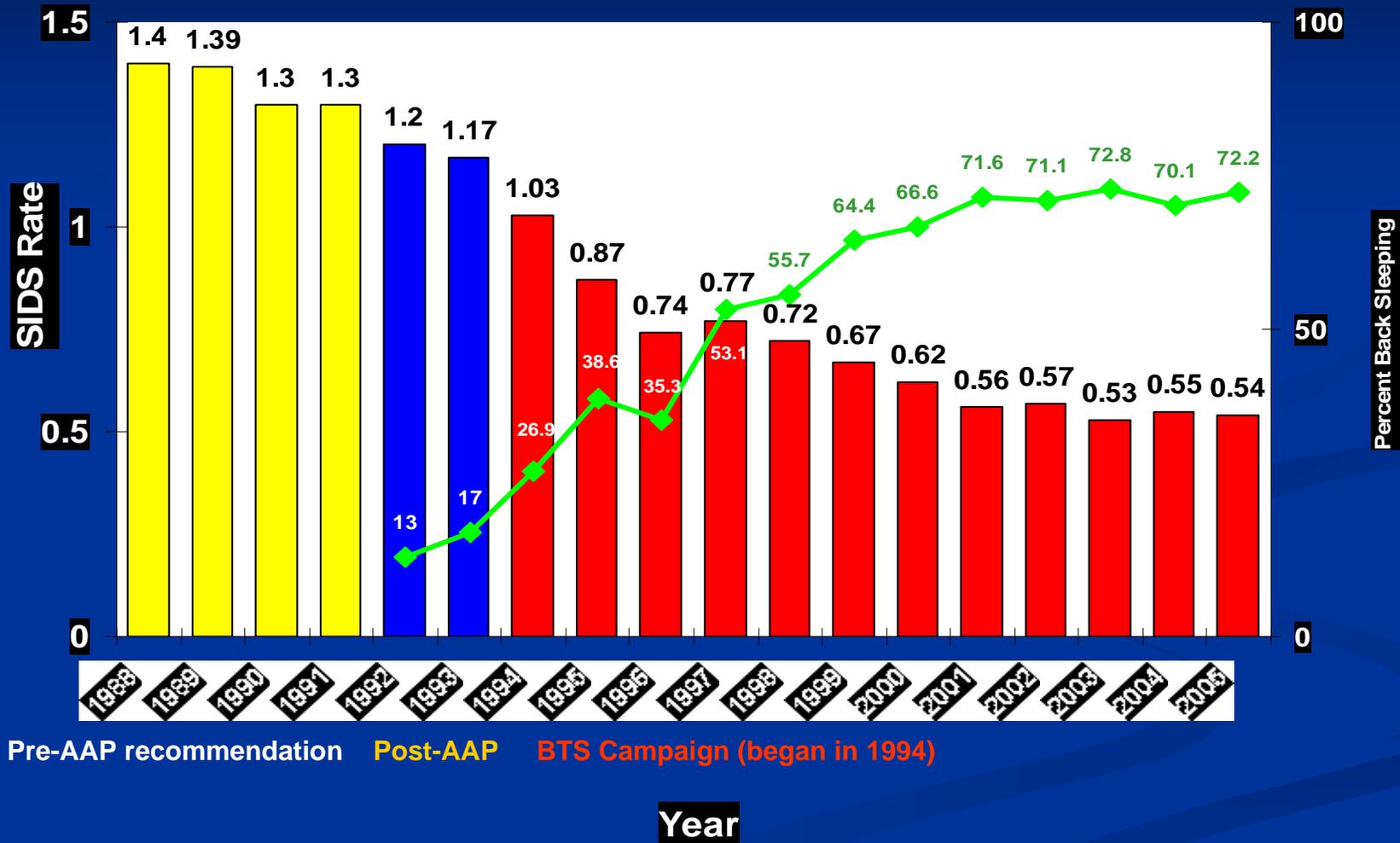
## Quote from a Mother to a FIMR Interviewer

“Why didn’t anyone tell me? This was my first baby and no one told me anything about the risks of sleeping with my baby or using soft things around her. Why don’t we hear how babies are dying. I would give ANYTHING to have my daughter back. All parents need this information-make sure to tell them.”

# Current Issues

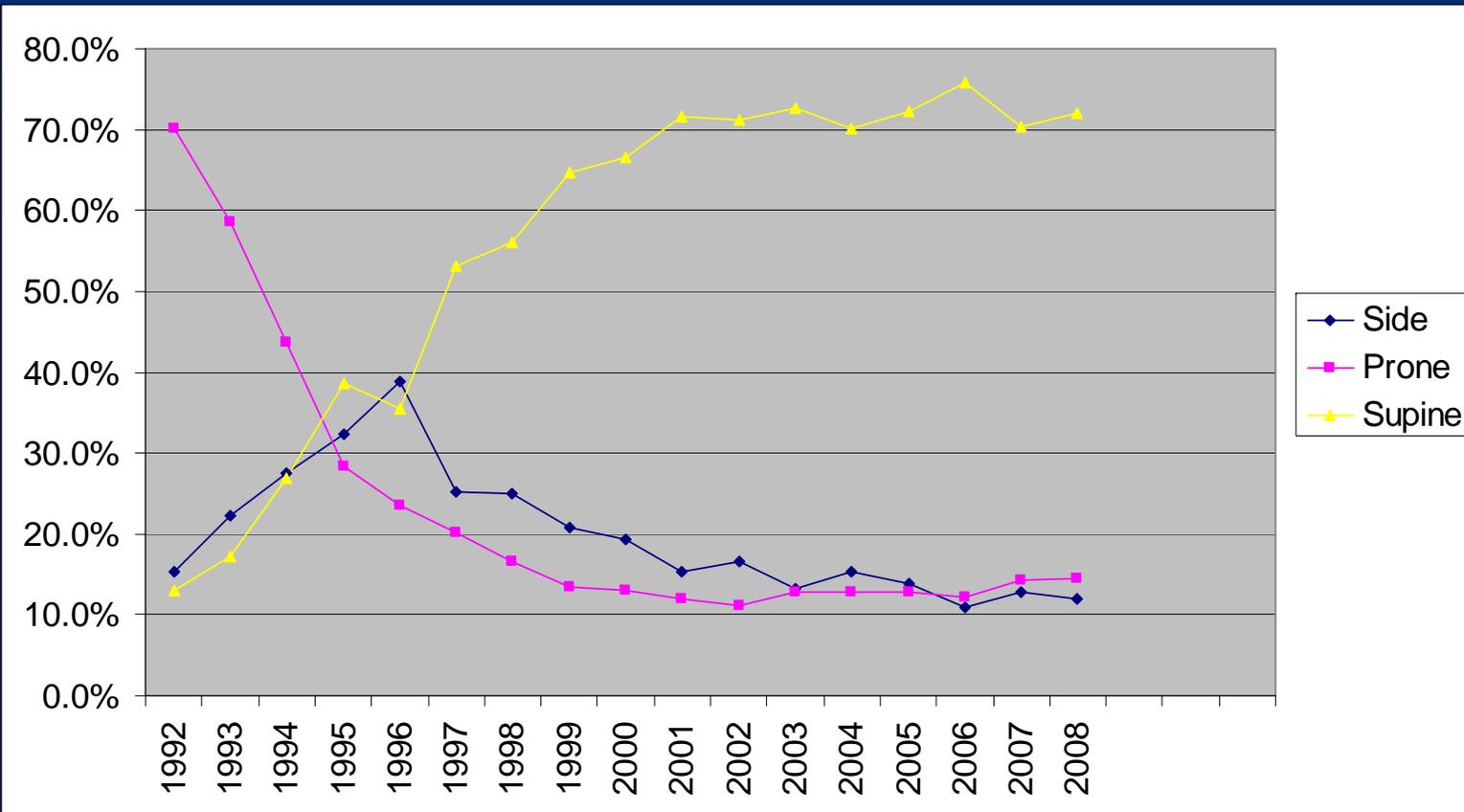
1. Increasing prone sleeping rates

## SIDS Rate and Sleep Position, 1988-2005 (Deaths per 1,000 Live Births)



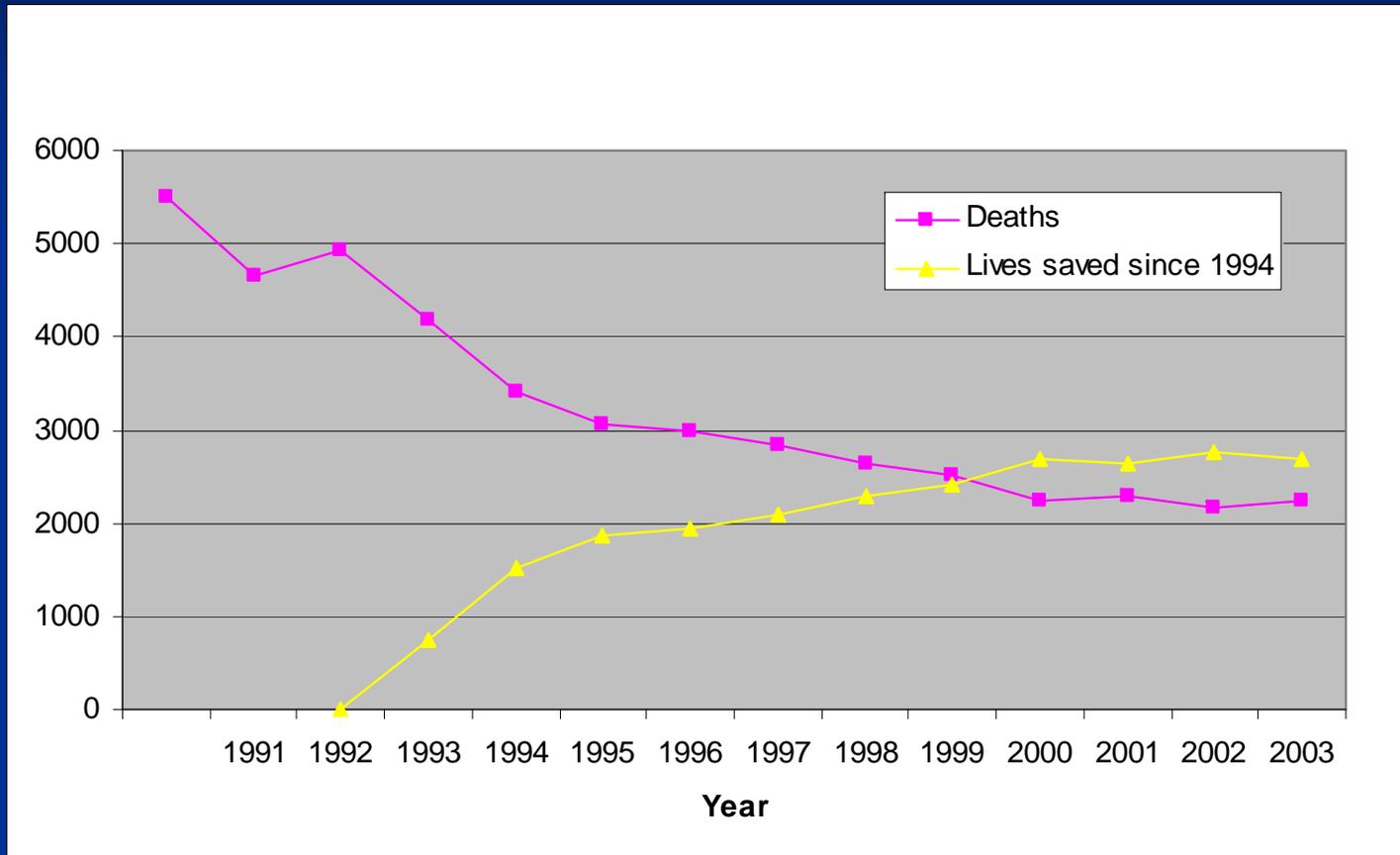
Sleep Position Source: NICHD Household Survey  
 SIDS Rate Source: National Center for Health Statistics, CDC

# Sleep Position Prevalence



NISP data, 2008

# Lives Saved



Total lives saved since 1994: 23,665

Total lives saved since 1999: 15,476

# The New York Times

## A Quiet Revolt Against the Rules on SIDS

By BRIAN BRAIKER

Published: October 18, 2005

In homes across the country, parents like Mrs. Stanciu are mounting a minor mutiny against the medical establishment. For more than a decade, doctors have advocated putting babies to bed on their backs as a precaution against sudden infant death syndrome, or SIDS.

Increasingly, however, some new parents are finding that the benefits of having babies sleep soundly - more likely when they sleep on their stomachs - outweigh the comparatively tiny risk of SIDS.

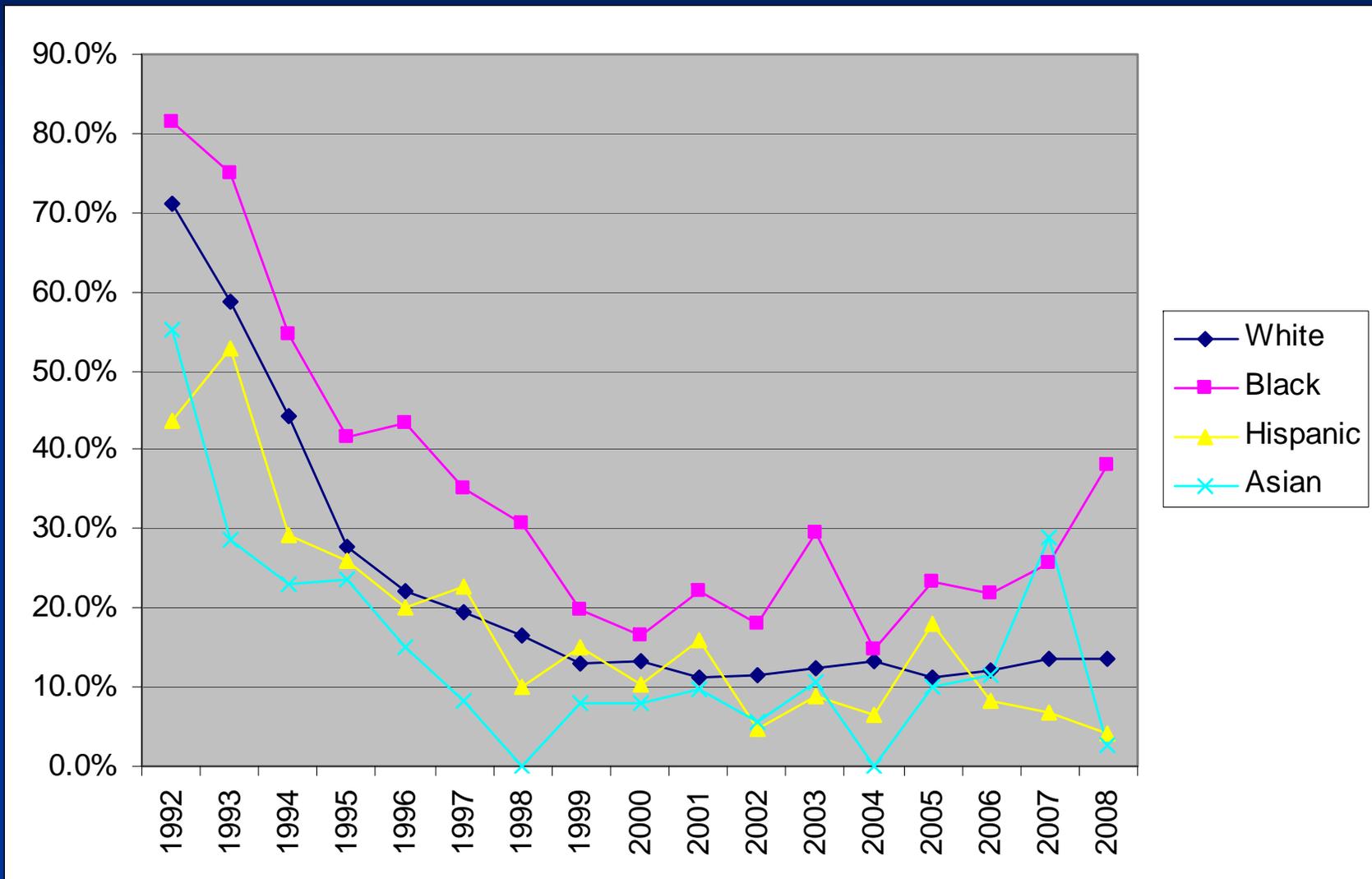
# Why do People Choose to Place their Babies Prone?

- **They think that it's safer**
  - Concerns about vomiting or aspiration while supine
  - Baby doesn't hit or hurt him/herself (startle reflex)
  - Prevent flat head, bald spot
- **They think that the baby is more comfortable**
  - Sleeps longer, doesn't easily awake

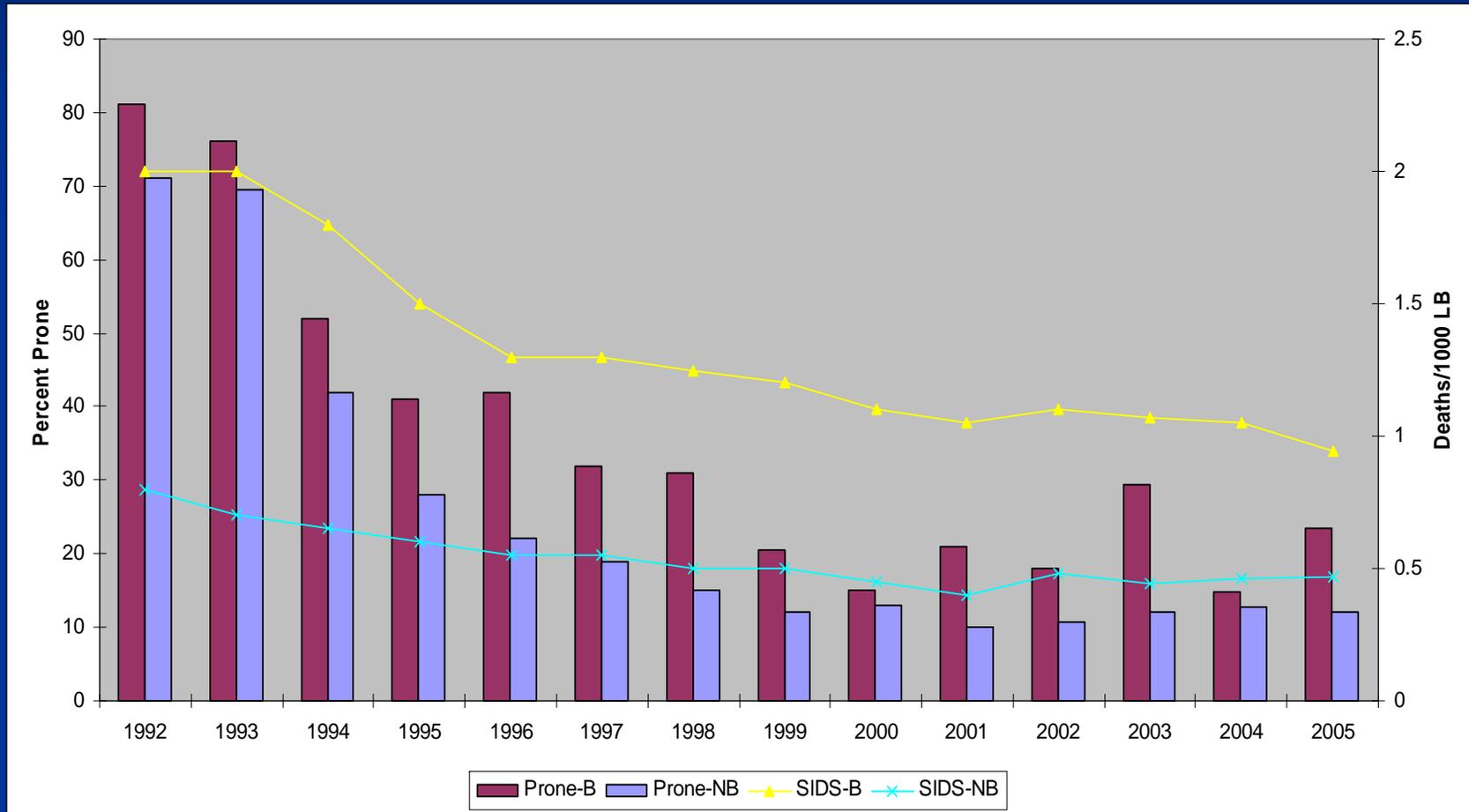
# Current Issues

1. Increasing prone sleeping rates
2. **Racial/ethnic disparities**

# Prone Prevalence by Race/Ethnicity



# Prone Prevalence Rates among White and Black Infants and SIDS Rates



Sources: National Center for Health Statistics, National Infant Sleep Position study

# Beliefs and Perceptions about SIDS Among African-American Mothers (Moon et al, 2009)

- 13 focus groups with African American women in Washington, DC, July 2006-December 2008 (83 mothers)
- Wide range of education and socioeconomic status

# Understanding of SIDS

Lack of  
plausibility

SIDS is  
Random

Vigilance is the key  
to SIDS prevention

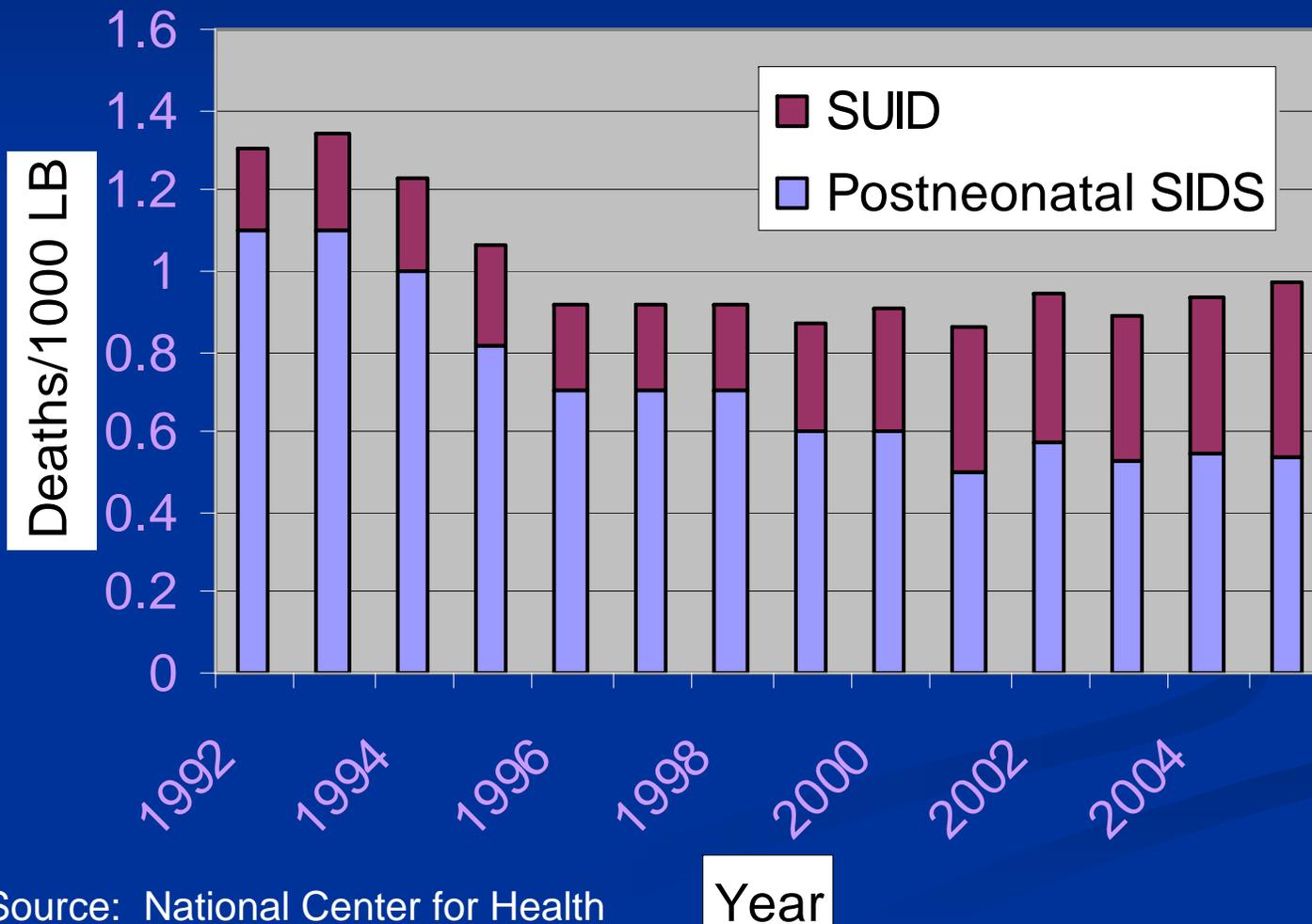
NO REASON TO  
FOLLOW SIDS RISK  
REDUCTION  
RECOMMENDATIONS

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graph TD; A[Lack of plausibility] --> D[NO REASON TO FOLLOW SIDS RISK REDUCTION RECOMMENDATIONS]; B[SIDS is Random] --> D; C[Vigilance is the key to SIDS prevention] --> D;
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# Current Issues

1. Racial/ethnic disparities
2. Increasing prone sleeping rates
3. **Increasing rates of other sleep-related deaths**
  - Accidental suffocation
  - Entrapment
  - Undetermined
  - Most (80->90%) of these occur in unsafe sleep environments
    - Bedding
    - Bed sharing with others

# Rates of SIDS and SUDI



Source: National Center for Health Statistics, CDC, 2009

# The New York Times

## Shhh...My Child Is Sleeping (in My Bed, Um, With Me)

By TARA PARKER-POPE

Published: October 23, 2007

“Ask parents if they sleep with their kids, and most will say no. But there is evidence that the prevalence of bed sharing is far greater than reported. Many parents are "closet co-sleepers," fearful of disapproval if anyone finds out, notes James J. McKenna, professor of anthropology and director of the Mother-Baby Behavioral Sleep Laboratory at the University of Notre Dame.”

# Bed Sharing Has Become More Popular

- Renewed popularity of breastfeeding
- Bed sharing all night long has more than doubled in past 10 years from 6% to 13% (Willinger M, 2003, National Infant Sleep Position Survey)
- More recent study: 1/3 bed share in first 3 months, 27% at 12 months. (Hauck F, 2009, Infant Feeding Practices Study II)
- Higher numbers in low SES, certain ethnic groups (African Americans, Latinos) - more than 50% may be bed sharing all night long

# Why Parents Bed Share

- Space for /availability of crib
- Convenience
  - Feeding
  - Checking on baby
- Comfort
  - Parent sleeps better
  - Baby sleeps better
  - Bonding
- Safety
  - Vigilance – can be alert for problems
  - Belief that “crib death” occurs only in cribs

# Problems with Bed Sharing

- Overheating
- Soft bedding, pillows, comforters
- No safety standards for adult mattresses
- Risk of entrapment



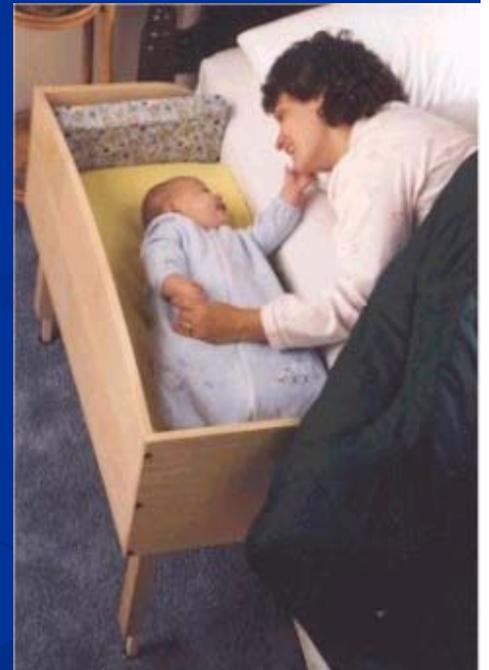
Not a safe sleeping arrangement!

# Infant-Parent Room Sharing and SIDS Risk

- Room sharing with parents without bed sharing is associated with a lower risk of SIDS than sleeping alone in a separate room or in same room with bed sharing

# Other Recommendations Regarding Bed Sharing

- UK Department of Health: safest place for infants up to 8 months to sleep in a crib in parents' room. (2004)
- Canadian Paediatric Society: infants should sleep in cribs for the first year of life, under all circumstances. Parents should be aware that room-sharing is protective against SIDS and is a safer alternative to bed sharing. Hospitals should not allow mothers to sleep in the same bed with their newborns. (2004)
- Others disagree—believe the evidence is inconclusive, especially for nonsmoking and breastfeeding mothers



# Next Steps for AAP Task Force on SIDS

- New/updated topics that may be included in the next revision of the guidelines
  - Breastfeeding
  - Bumper pads
  - Swaddling
  - Immunizations
  - Bed sharing
  - Alternate sleep surfaces
  - Diagnostic shift/changing statistics
  - Pathophysiology, genetics
  - Fans
- Stay tuned!



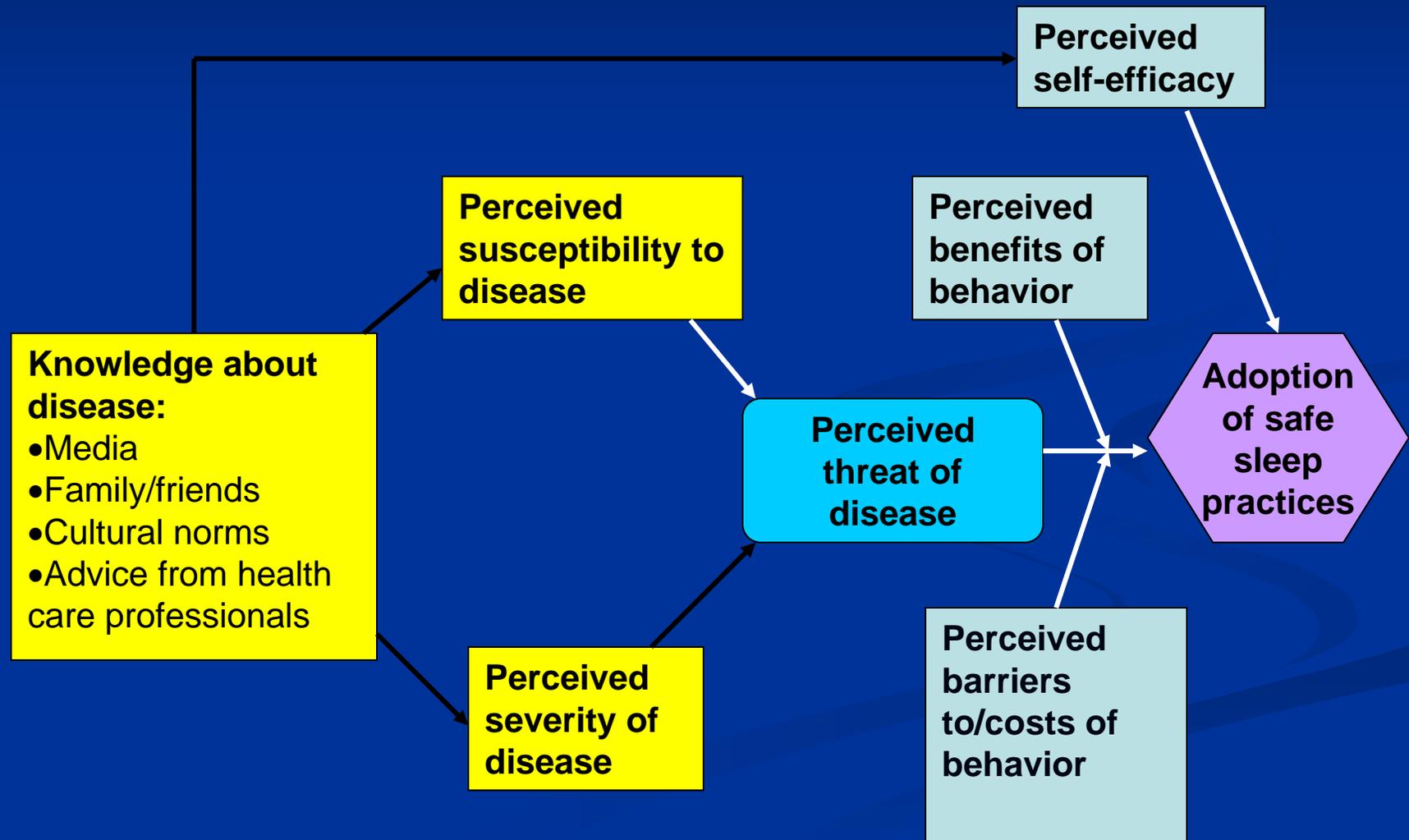
# Summary

- We have accomplished a lot with regard to decreasing rates of SIDS
- When messaging stops, many people perceive SIDS as not an important problem
  - Only an issue when it's in the news or always hearing about it
    - “this must still be a problem”
- Racial/ethnic disparities continue to be a major concern
- Other sleep-related deaths are on the rise

# Implications

- Expand message from “Back to Sleep” to safe sleep environment
- Reinforce message wherever and whenever we can
- Message needs to be consistent
  - Health care providers, media, advertisers
- Message needs to make sense to parents

# Health Belief Model



# Implications

- **Message needs to address parental desire to keep baby safe and keep baby comfortable**
  - Back to Sleep needs to address concerns about infant comfort (length of sleep) and vomiting/ aspiration
  - Efforts to encourage room sharing without bed sharing must address parent safety concerns
- **Message needs to emphasize parent self-efficacy**
  - Recommendations need to stress the “preventability” of infant death

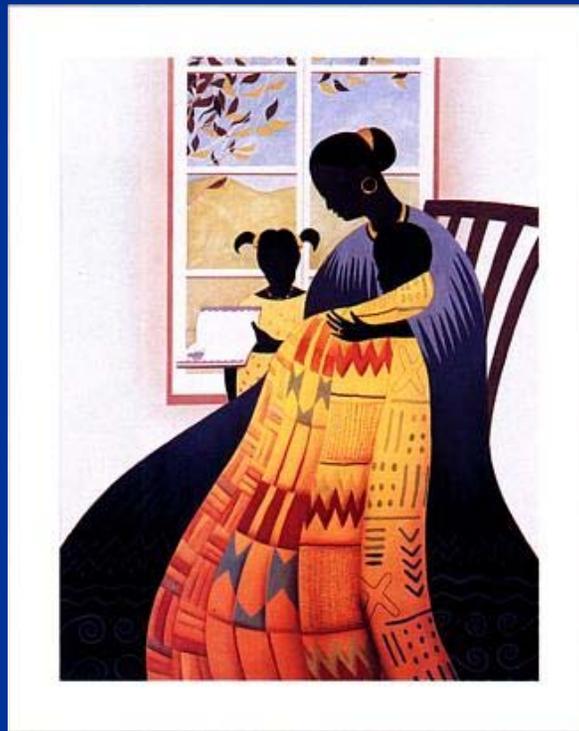
# Cultural Implications

- Should the message change in order to accommodate cultural “norms”?
- Fear that “all or nothing” message will lead to mistrust/rejection of any of the messages.
- Response:
  - Changing the message for some potentially results in deaths that may have been prevented
  - Cultural norms change, infant care practices change, as does the environment in which people live (eg, maternal smoking, soft bedding)
  - Ultimately, individuals decide but health professionals should continue to promote safe sleeping and advise parents of the potential risks
  - We need to find ways to adapt the message across different cultures in a positive way

# Acknowledgments

- Anna Benton, Director of Family and Community Health Services, for the invitation to speak and all of her assistance in making it happen
- Karen Michalski, FIMR Administrator and Vital Statistics Manager, for the Milwaukee data slides
- Rachel Moon, MD for NY Times and other slides

Thank you!



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