

Sleep-Related Infant Deaths and Opportunities for Prevention

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Division of Family Health and Wellness



Disclosures

- I have no relevant financial disclosures.
- I will not be discussing any unapproved or off-label uses of therapeutic agents or products.

Well Actually, One Disclosure...

- Even my family doesn't get it right all the time....



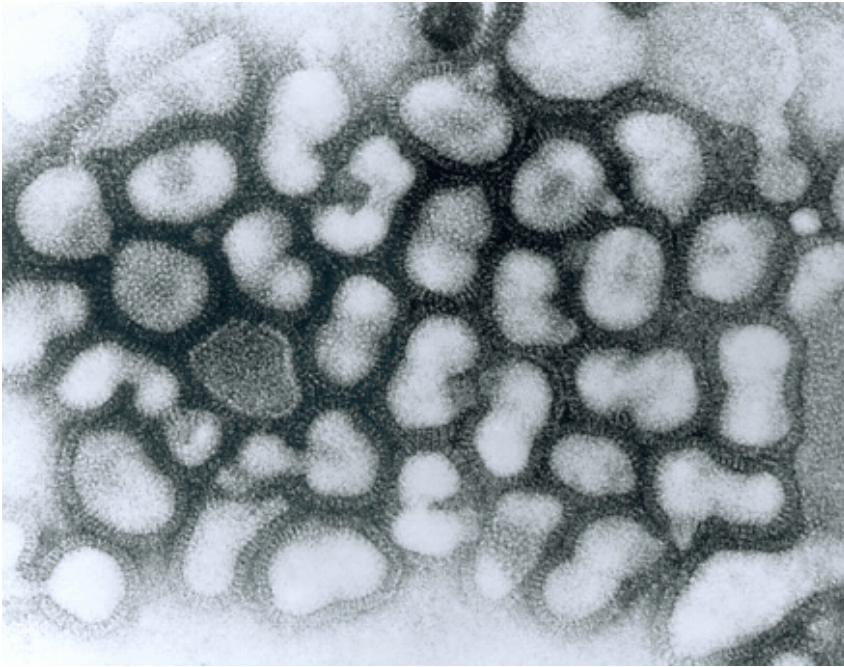
Michael Warren Uncle Mike is cool with this since they are both awake. Then its ABC (Alone, on his Back, and in a Crib) for Mr. Sawyer! Love you guys...see you in a couple of hours.

Objectives

- At the end of this presentation, the learner will be able to:
 - Identify the latest recommendations for infant safe sleep and understand the rationale for the recommendations.
 - Describe state-level public health efforts implemented in Tennessee to reduce sleep-related infant deaths

Before We Begin...

Putting Things in Perspective



- In 2009, 286 pediatric deaths **nationwide** (height of H1N1 epidemic)
- Standard recommendations for vaccination
- Drastic public health measures taken to reduce spread (i.e. school closings)

Before We Begin...

Putting Things in Perspective

- Influenza results in 100-200 deaths annually among children nationwide
- Given the energy that goes into preventing influenza-related deaths, what should we do for something that killed 101 infants in Alabama last year?

QUIZ: Which is the safest infant sleep environment?

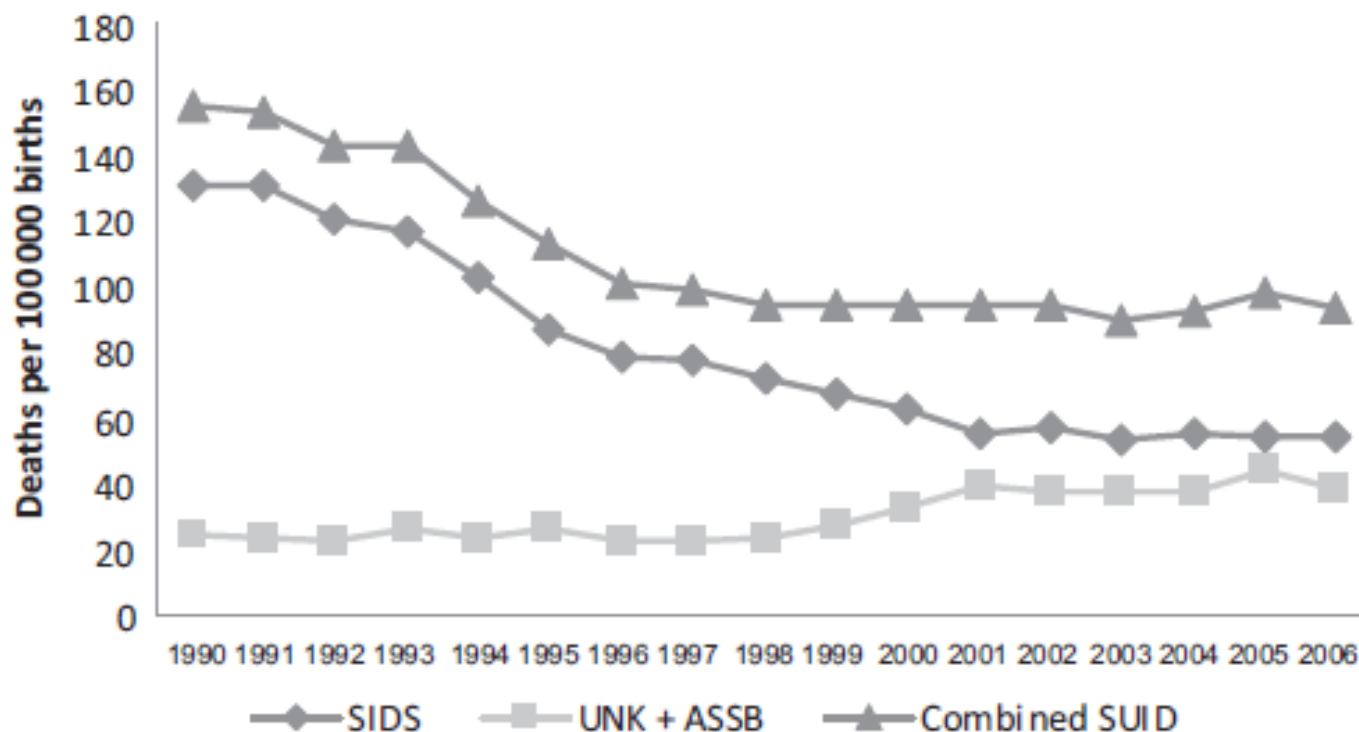


Current Recommendations for Infant Safe Sleep

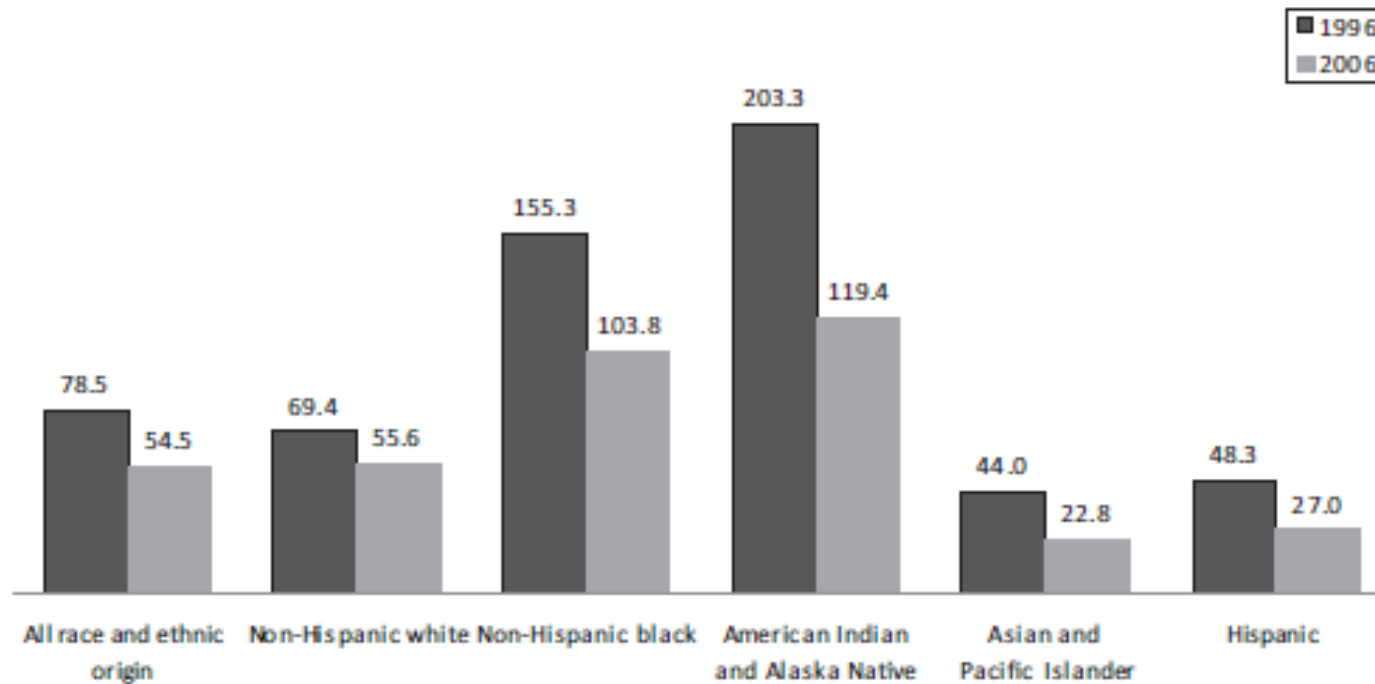
Important Definitions

- **SIDS:** Sudden Infant Death Syndrome (no explanation for infant death)
- **SUID:** Sudden, Unexpected Infant Death (any sudden infant death, whether explained or unexplained)
- **ASSB:** Accidental suffocation and strangulation in bed (other sleep-related death, not SIDS)

Trends in SIDS and other Sleep-Related Deaths (1990-2006)



Trends in SIDS and other Sleep-Related Deaths (1990-2006)



Infant Safe Sleep Recommendations

- In 2011, the American Academy of Pediatrics released updated guidelines for infant safe sleep¹
 - *Update to “Back to Sleep”*
- Specific recommendations included:
 - *Infants should sleep alone (no bed-sharing)*
 - *Infants should sleep on their back*
 - *Infants should sleep in a crib or bassinette*



POLICY STATEMENT

SIDS and Other Sleep-Related Infant Deaths: Expansion of Recommendations for a Safe Infant Sleeping Environment

abstract

FREE

Despite a major decrease in the incidence of sudden infant death syndrome (SIDS) since the American Academy of Pediatrics (AAP) released its recommendation in 1992 that infants be placed for sleep in a non-prone position, this decline has plateaued in recent years. Concurrently, other causes of sudden unexpected infant death that occur during sleep (sleep-related deaths), including suffocation, asphyxia, and entrapment, and ill-defined or unspecified causes of death have increased in incidence, particularly since the AAP published its last statement on SIDS in 2005. It has become increasingly important to address these other causes of sleep-related infant death. Many of the

TASK FORCE ON SUDDEN INFANT DEATH SYNDROME

KEY WORDS

SIDS, sudden infant death, infant mortality, sleep position, bed-sharing, tobacco, pacifier, immunization, bedding, sleep surface

ABBREVIATIONS

SIDS—sudden infant death syndrome

SUID—sudden unexpected infant death

AAP—American Academy of Pediatrics

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<http://pediatrics.aappublications.org/content/early/2011/10/12/peds.2011-2284>

tions from focusing only on SIDS to focusing on a safe sleep environment that can reduce the risk of all sleep-related infant deaths, including SIDS. The recommendations described in this policy statement include supine positioning, use of a firm sleep surface, breastfeeding, room-sharing without bed-sharing, routine immunizations, consider-

Always Remember the ABC's

- Babies should sleep:
 - **A**LONE
 - Not with adults, other children, or pets
 - Not with toys, stuffed animals, blankets
 - On their **B**ACK
 - Not on their side
 - Not on their stomach
 - In a **C**RIB or bassinette
 - Not in the parent's bed or a sibling's bed
 - Not in a couch or chair
 - Not in a car seat or carrier

Other Safe Sleep Recommendations

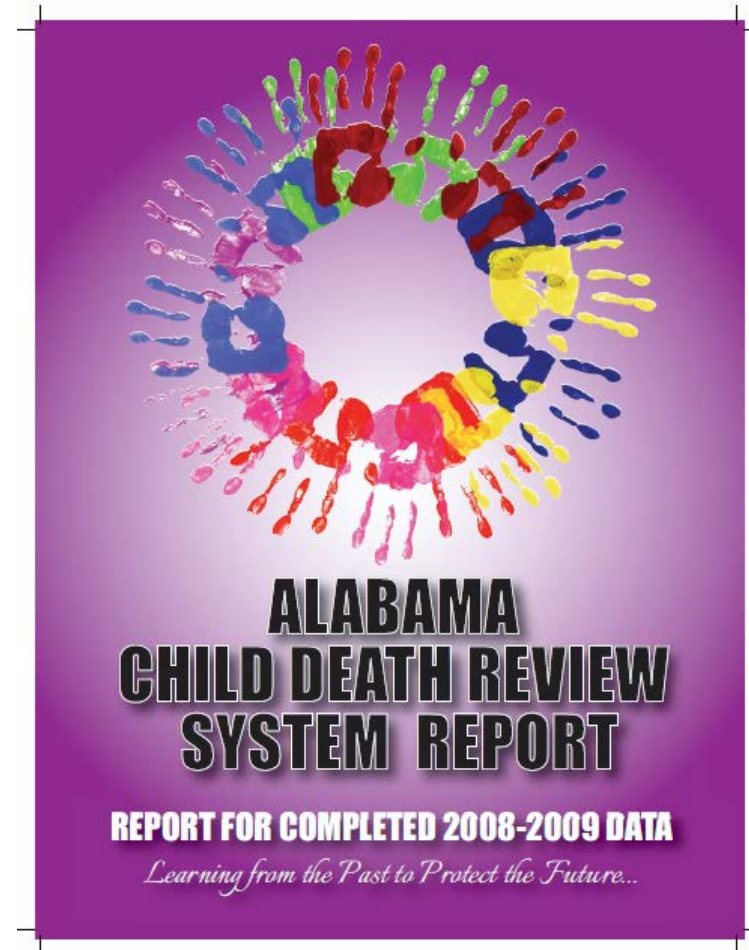
- Regular prenatal care for pregnant women
- Avoid smoke exposure during pregnancy and after birth
- Avoid alcohol and illicit drug use during pregnancy and after birth
- Breastfeed
- Avoid overheating
- Consider pacifier
- Immunize according to CDC/AAP schedule
- Avoid commercial “SIDS risk reduction” devices

Infant Safe Sleep Recommendations

- Higher risk of death associated with bed sharing
 - Overall odds of dying: **2.89 times greater**
 - Odds of dying if infant <3 months old: **10.37 times greater**
 - Odds of dying if mother smokes: **6.72 times greater**

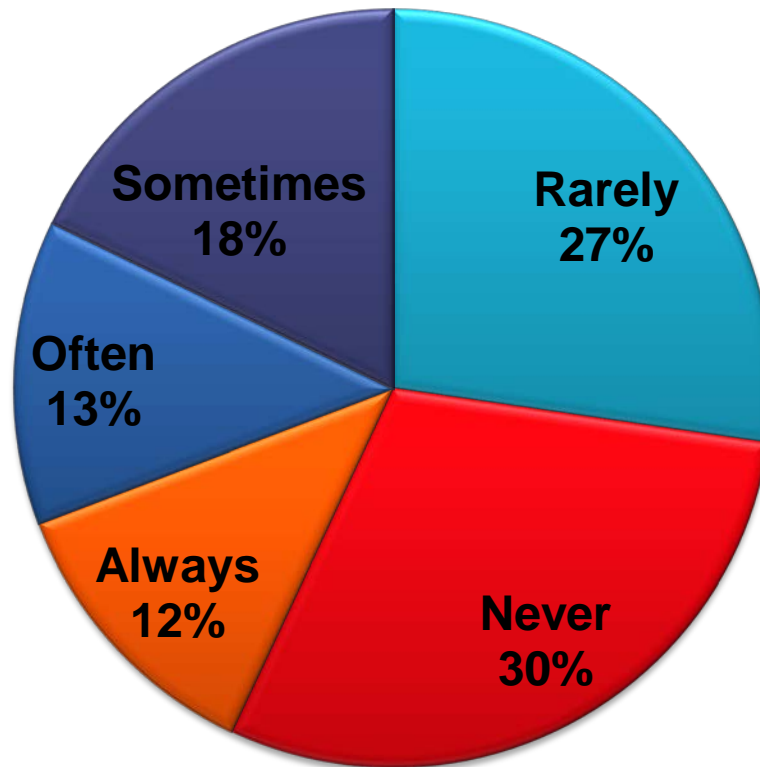
Bed-Sharing Practices in Alabama

- From 2009 Alabama Child Death Review:
- 23 suspected SIDS cases reviewed
 - 10 infants (43.5%) sleeping in adult beds
 - 5 infants (21.7 percent) were not sleeping alone
- 15 cases of suffocation-related deaths reviewed
 - Four cases (26.7 percent) reported to be sleep-related (e.g. bedding, overlay, wedged)
 - Six victims (40 percent) reported to be sleeping in an adult bed when the death occurred.
 - Two deaths (13.3 percent) occurred while a child was sleeping on a couch.



Bed-Sharing Practices in Tennessee

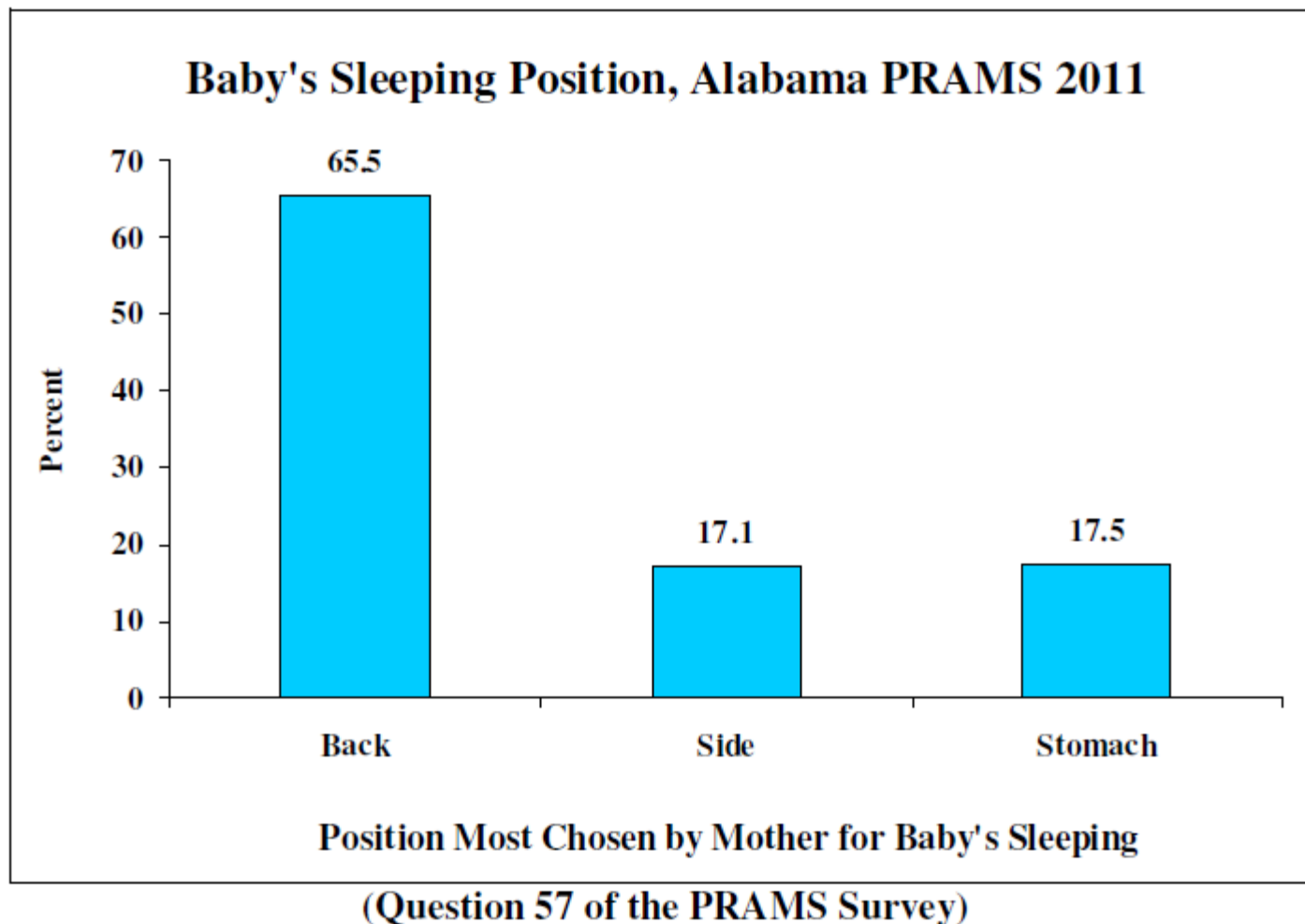
**How often does your baby sleep in the bed
with you or anyone else?**



Infant Safe Sleep Recommendations

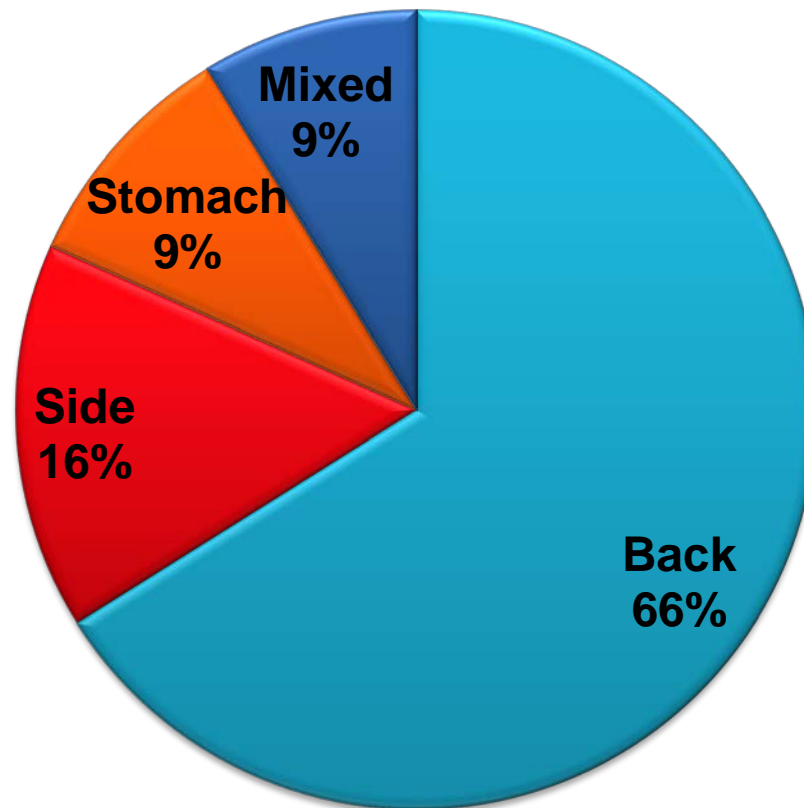
- Higher risk of death associated with sleeping on side or stomach
 - Odds of dying if sleeping on side:
2.0 times greater
 - Odds of dying if sleeping on stomach:
2.6 times greater

Sleep Positioning in Alabama



Sleep Positioning in Tennessee

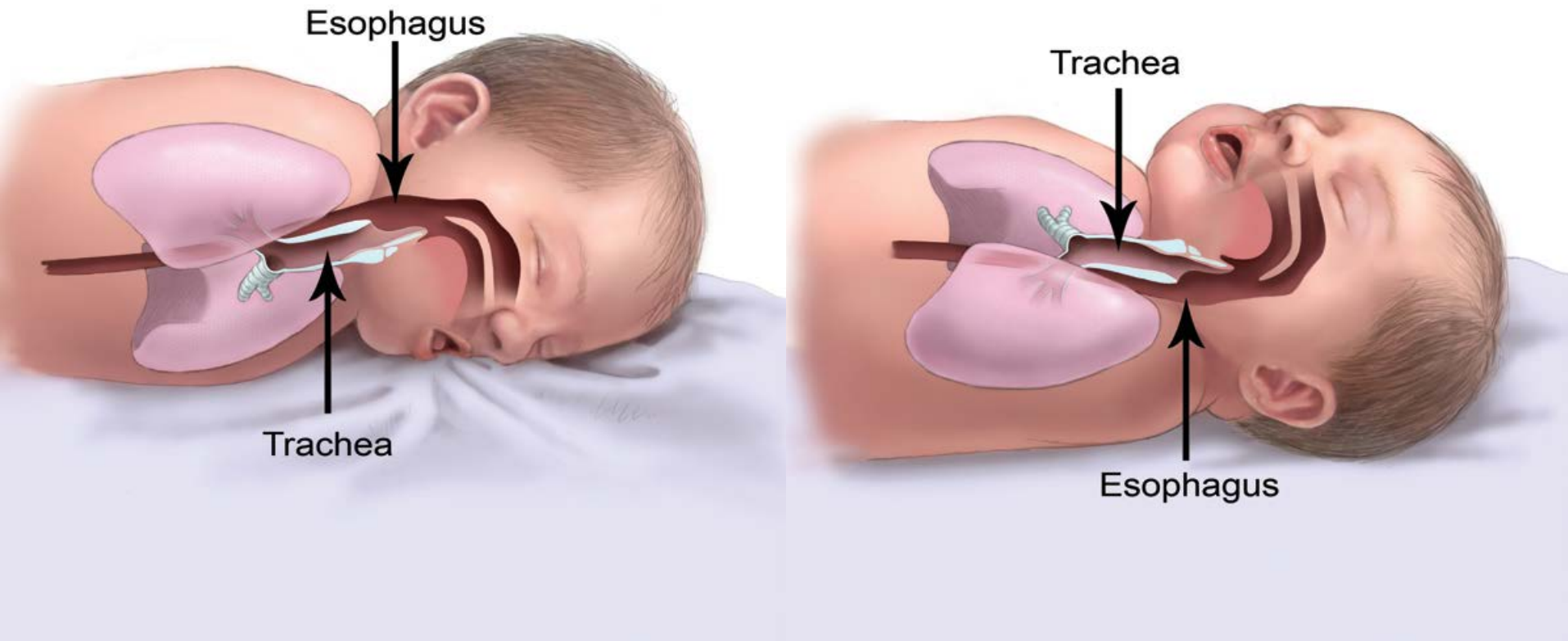
In which position do you most often lay your baby to sleep now?



What About Reflux?

- All babies reflux
 - *Babies have protective mechanisms to keep their airway safe*
 - *The back position is still the safest*
- Elevating the head of the bed is not recommended
 - *Does not help reflux*
 - *Baby may slide to foot of bed and compromise airway*
- Rare exceptions: example—compromised airway protective mechanisms (such as grade 3-4 laryngeal cleft before surgical repair)

Sleep Position and Choking Risk



What About Preterm Babies?

- Preterm infants are at increased risk of sleep-related deaths
- AAP recommends that preterm infants be placed on their back as soon as medically stable
 - *Well in advance of discharge home*
 - *By 32 weeks postmenstrual age*
- Make a point of educating families on the new position and why back sleeping is important

Myth Busters: Infant Sleep

- What is a good sleeper?
- When should my baby sleep through the night?
- But won't my baby sleep better if I:
 - put rice cereal in the bottle?
 - put them to sleep on their stomach?

“Normal” Sleep In the First Year of Life

First few weeks	<ul style="list-style-type: none">•Total sleep 16-20 hours/day•Sleep 1-4 hours, then awake for 1-2 hours
At 4 weeks	<ul style="list-style-type: none">•Sleep longer night periods•Longer wakefulness during early evening•Sleep consolidates at 4-6 wks
At 3-5 months	<ul style="list-style-type: none">•Settle into routine•Sleep longer stretches at night, 5-6 hours
By 9 months	<ul style="list-style-type: none">•Most babies sleep through the night•Two daytime naps

The “Lake Wobegon” Effect: “But the Parents I Know....”

Table 4 Predicted SIDS Infant death rates for normal women*

Group number	Risk factors present			Room sharing		Bed sharing		Ratio of rates	
	Feeding	smoking	Alcohol	Rate/1000	95% CI	Rate/1000	95% CI	Ratio	95% CI
Minimum risk	Br	No	No	0.08	0.05 to 0.14	0.23	0.11 to 0.49	2.7	1.4 to 5.3
1	Bot	No	No	0.13	0.08 to 0.21	0.34	0.16 to 0.73	2.7	1.4 to 5.3
2	Br	Partner	No	0.09	0.05 to 0.16	0.52	0.25 to 1.08	5.6	2.9 to 10.8
3	Br	Mother	No	0.13	0.08 to 0.23	1.27	0.54 to 3.00	9.7	4.4 to 21.7
4	Br	Both	No	0.24	0.15 to 0.41	1.88	0.94 to 3.73	7.7	4.3 to 13.8
5	Bot	Both	Yes	1.77	0.87 to 3.48	27.5	10.4 to 68.4	15.6	5.7 to 41.5

*Predicted SIDS mortality rates for a cohabiting, white mother age 26 to 30, having a second normal weight baby with birth weight between 2.5 and 3.5 kg and having no other risk factors, that is mother is not a drug user, has a partner and room shares.
Bot, bottle; Br, breast; SIDS, Sudden Infant Death Syndrome.

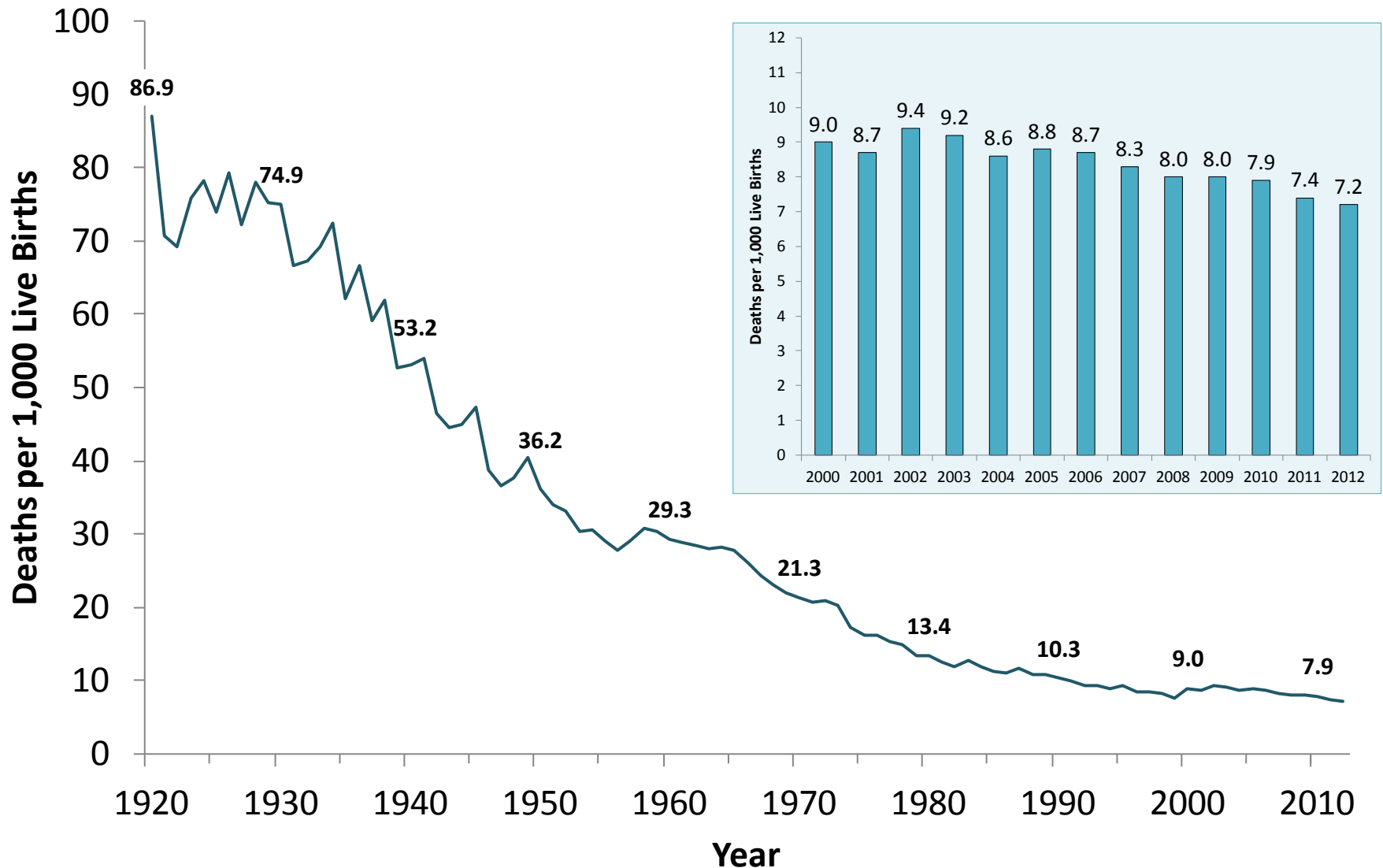
Tennessee Public Health Efforts to Prevent Sleep-Related Infant Deaths

Overview:

Tennessee's Safe Sleep Efforts

- **2012**
 - Analysis of various data sources
 - Development of statewide Safe Sleep campaign
- **2013**
 - Evaluation of broad public awareness campaign
 - Engagement of other key partners
- **2014**
 - Launch of Hospital Safe Sleep Project

Infant Mortality Rate Tennessee, 1920-2012



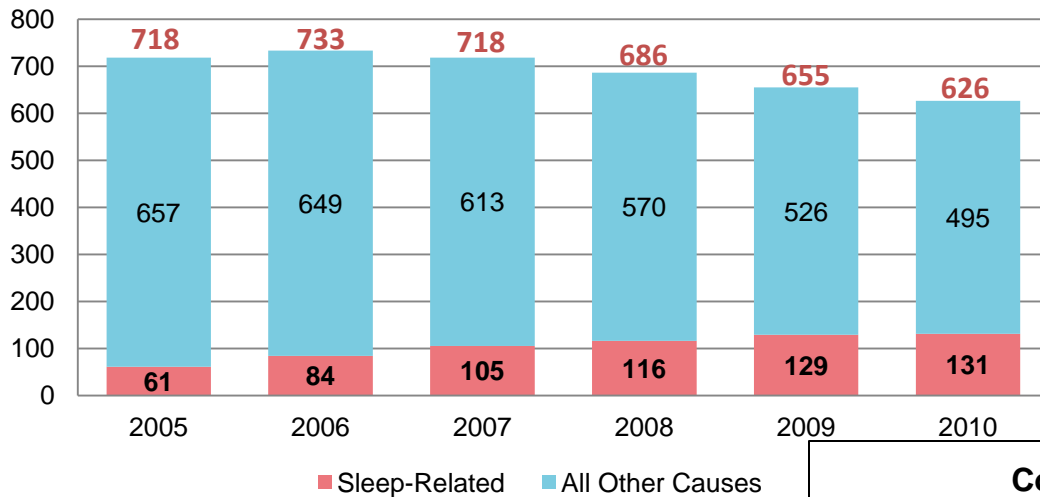
Data Sources: Tennessee Department of Health; Division of Policy, Planning and Assessment; Office of Health Statistics; Birth and Death Statistical Systems and Tennessee Vital Statistics Annual Bulletins. Starting in 1934, data are restricted to TN residents.



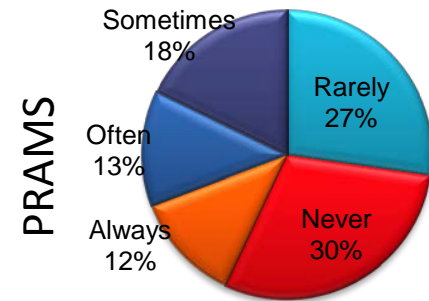
Multiple Data Sources Illuminate the Problem

Vital Statistics & Child Fatality

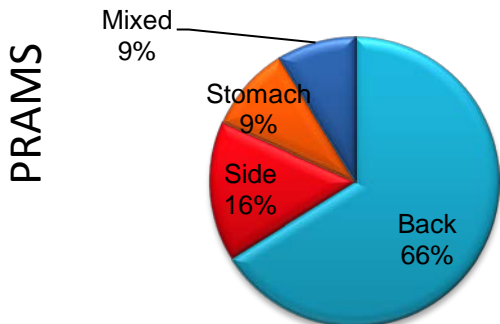
Tennessee Infant Deaths



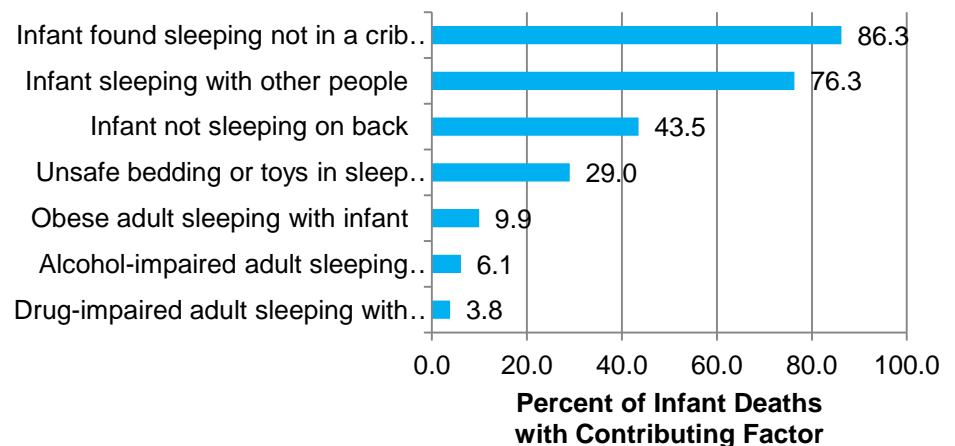
Bed Sharing



Current Sleep Position



Contributors to Sleep-Related Deaths

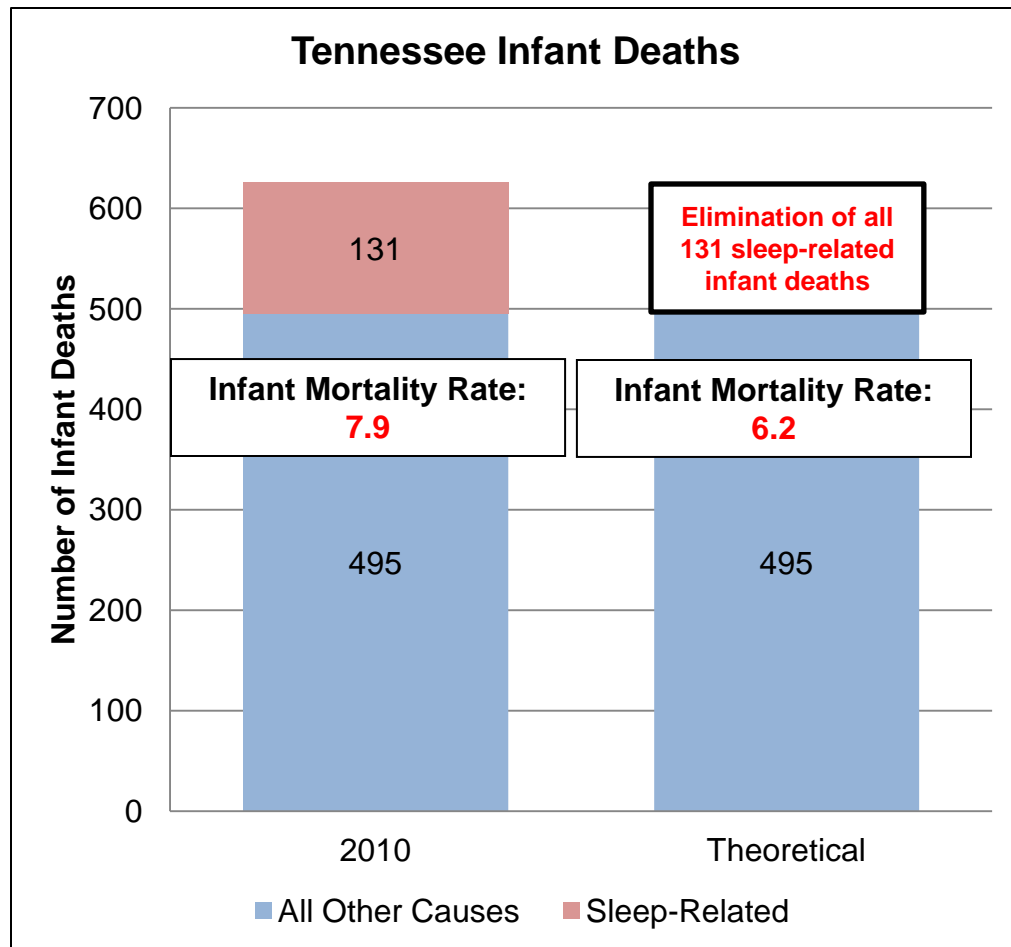


Child Fatality

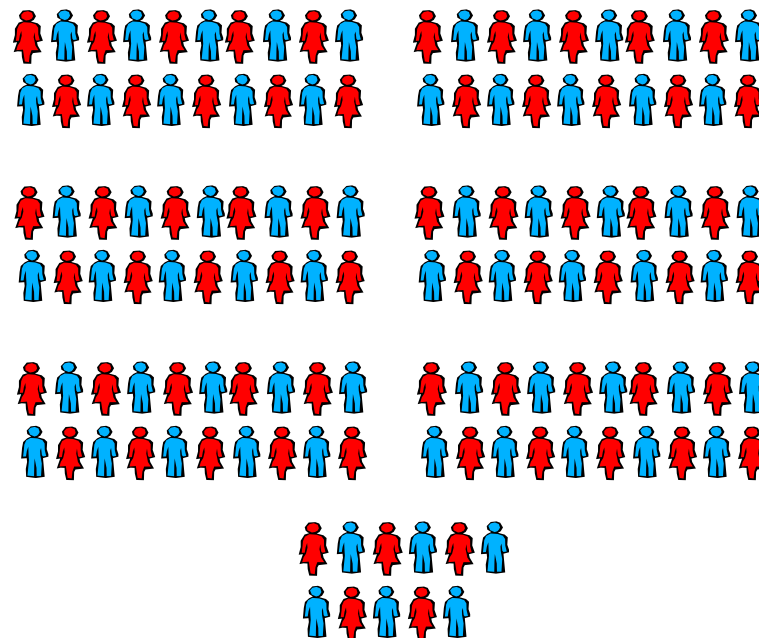
Why Focus on Safe Sleep?

*If we could eliminate
these preventable sleep-related deaths,
we would **move from the bottom five states**
in infant mortality
to the national average!*

Data Illuminates.... *but the Heart Motivates*



131 children =
equivalent of six
kindergarten classrooms



Broad Public Awareness Campaign



Website:
<http://safesleep.tn.gov>



Remember the ABC's of Safe Sleep:
Babies should sleep **A**lone,
on their **B**ack, and in a **C**rib
safesleep.tn.gov

Safe Sleep For Your Baby

Material Distribution

- Regional and local health departments
- Hospitals
- Pediatrician offices
- OB offices
- Daycares/child care centers
- Child welfare
- Safekids Coalitions
- March of Dimes

Evaluation of Awareness Campaign

- Parents (N=1,372)
 - **65% reported making changes** based on the campaign message
 - Over half that made changes removed pillows and fluffy bedding from the infants sleep area
- Grandparents (N=284)
 - **52.5% reported making changes**
 - Over 40% talked to their son or daughter and almost 1/3 removed fluffy blankets and bedding
- Child Care Providers (N=102)
 - **72.5% reported making a change**
 - Over half talked to a parent about safe sleep
 - About 1/3 reported removing pillows or fluffy bedding and 1/3 also reported changing a baby's sleep position

Key Partnership: WIC

- State-level initiative
- Idea from Division-wide meeting on Safe Sleep
- Printed on ~38,000 vouchers per month

If you have questions call your local Health Department or 1-800-342-5942 (1-800-DIAL WIC)

2	015	01	0000101043	WICINFANT, SAFESLEEPMSG	VKKV	TENNESSEE WIC PROGRAM	50000900
REG.	CO.	CL.	PARTICIPANT ID#	LAST NAME	FIRST NAME	MI	ISSUING CLK. ID#
VALID ONLY FOR THE PURCHASE OF WIC APPROVED FOODS:				Pay The Authorized TN WIC Vendor			
FOOD PACKAGE: 2DSTD				VOUCHER CODE: 5MBP			
05 CONTAINERS 12.7 OZ POWDERED: GERBER GOOD START GENTLE				VOID 64-1968 611			
REMEMBER THE ABC'S OF SAFE SLEEP BABIES SHOULD SLEEP (A)LONE, ON THEIR (B)ACK, AND IN A (C)RIB				Not valid unless legibly stamped with authorized vendor stamp and deposited within 30 days from last day valid. Payable through United Community Bank, Marietta, GA 30060			
				VALID ONLY DURING MARCH 2013			
				DATE TRANSACTED			
				PAY THIS AMOUNT \$			
Signature below must match signature on voucher folder.							
X							

Key Partnership: Welcome Baby

- Universal outreach program to all new parents
 - Funded with MIECHV funds
 - All packets contain safe sleep information
- Low risk receive packet by mail
- Medium risk receive phone call
- High risk receive a home visit with education and promotional items such as a onesie with a safe sleep message



Key Partnership: Hospitals

- Hospitals commit to:
 - Develop/implement safe sleep policy
 - Educate staff at least annually
 - Monitor compliance quarterly
- Partner hospitals will receive:
 - **Free** “**Sleep Baby, Safe and Snug**” board book *for each birth*
 - **Free** TDH “ABCs of Safe Sleep” materials
 - **Free** educational flipchart
 - **Free** Recognition on TDH website
 - Signed certificate from TDH Commissioner
 - Press release template



All 66
birthing
hospitals
participating!



Why Focus on Hospitals?

- Because the AAP says so!
 - *AAP recommends that health care professionals endorse risk-reduction strategies*
- Because we can impact the families of almost every baby born in Tennessee
 - *Nearly all (98.7%) of Tennessee births occur in hospitals¹*

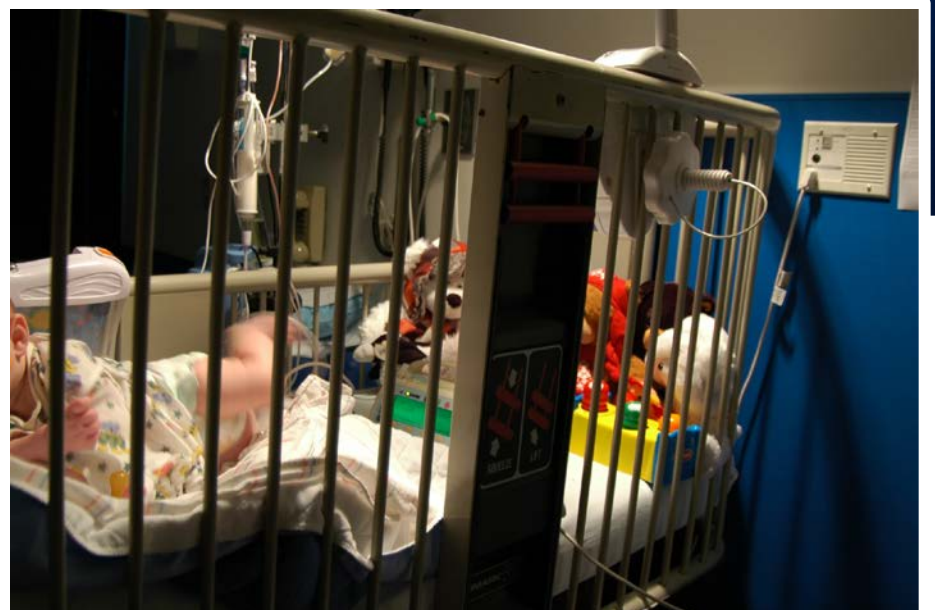
Why Focus on Hospitals?

- Health care providers may not always provide the most up-to-date information or model correct safe sleep practices
 - *2006 study: Only 52% of NICU nurses provided discharge instructions for exclusive back sleeping*
 - *2007 study: Only 74% of pediatricians and 62% of family physicians recommended exclusive back sleeping*
 - *2009 study: 72% of nurses knew back sleeping protective for SIDS; only 30% regularly placed infants on back*

Sources: Aris C, et al. NICU nurses knowledge and discharge teaching related to infant sleep position and risk of SIDS. *Advances in Neonatal Care*. 2006; 6(5): 281-294. Moon RY, et al. Physician Recommendations Regarding SIDS Risk Reduction: A National Survey of Pediatricians and Family Physicians. *Clinical Pediatrics*. 2007; 46: 791-800. Carrier CT. Back to Sleep: A Culture Change to Improve Practice. *Newborn and Infant Nursing Reviews*. 2009; 9: 163-168.



Real Examples from TN Hospitals



Why Focus on Hospitals?

- What parents see matters!
 - 1998 study: *Among parents who observed stomach sleeping in hospital, 93% intended to place infant on stomach at home¹*
 - 2001 study: *Parents who saw exclusive back sleeping in nursery more likely to put baby on back at home²*

Why Focus on Hospitals?

- Because hospital-based interventions can make a difference!
 - Large metropolitan level II nursery: NICU staff education and trigger tool and rapid-cycle change → *increased use of appropriate bedding and parent education*¹
 - Large TX NICU: Safe sleep algorithm, crib card, education for staff/parents, crib audit tool, and postdischarge telephone reminders → *increased supine positioning; improved parental compliance*
 - York, PA hospital: Educational DVD, face to face review with nurses, parental acknowledgement statement → *improved parental intent for supine positioning and use of crib/bassinette; improved understanding of AAP guidelines*

Sources: Carrier CT. Back to Sleep: A Culture Change to Improve Practice. Newborn and Infant Nursing Reviews. 2009; 9: 163-16.


Gelfer P et al. Integrating “Back to Sleep” Recommendations Into Neonatal ICU Practice. Pediatrics 2013;131:e1264–e1270.

Goodstein M. Creating a Hospital and Community Based Infant Safe Sleep Education and Awareness Program: The York Hospital Experience. Presentation on Cribs for Kids website. Available at: [http://cribsforkids.org/wp-](http://cribsforkids.org/wp-content/uploads/2012/09/DrGoodstein_ISSProgram_SSS.pdf)

[content/uploads/2012/09/DrGoodstein_ISSProgram_SSS.pdf](http://cribsforkids.org/wp-content/uploads/2012/09/DrGoodstein_ISSProgram_SSS.pdf)



Key Partnership: Local Communities

Every Baby Deserves a First Birthday! 


Learn about behaviors, lifestyle choices and conditions that impact birth outcomes and a healthy life. Find out what you can do to ensure babies in your community get to celebrate a first birthday!




Risks for increased infant mortality

- Low birthweight
- Preterm birth
- Lack of prenatal care
- Tobacco use -- mother or household
- Sleeping on stomach or side

To help baby sleep safely, remember A, B, C:

- ▷ **ALONE** (no bed sharing)
- ▷ **BACK** – Place on back to sleep
- ▷ **CRIB** – Sleeps in crib with firm mattress (not an infant carrier, adult bed, couch, or other soft surface)



Spread the word about the importance of a healthy pregnancy, correct sleep positioning, and a safe sleep environment!



Funding Sources

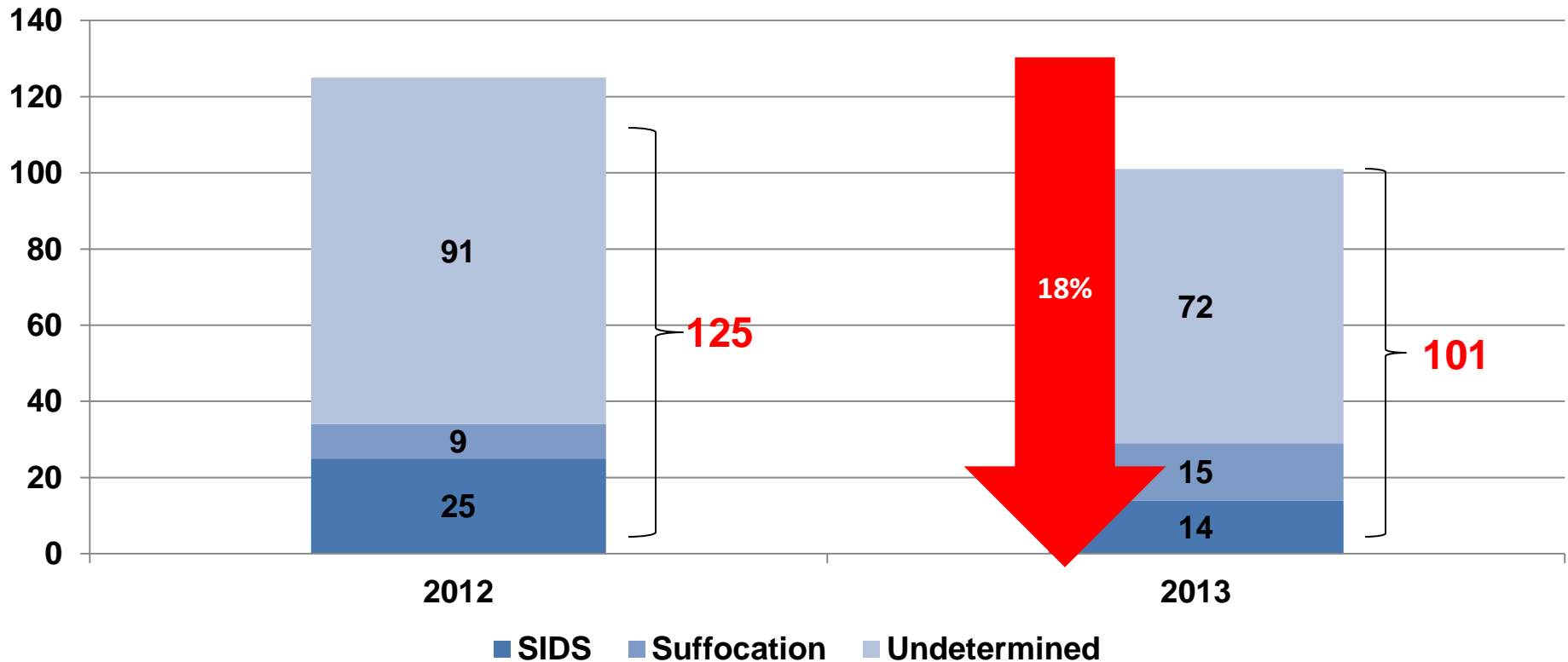
- HRSA
 - Maternal and Child Health Block Grant
 - Early Childhood Comprehensive Systems (ECCS)
- CDC
 - Core Violence and Injury Prevention Grant (sleep-related deaths are one of four priority areas)
- Other Sources
 - Fetal Infant Mortality Review (Medicaid administrative match)
 - Community foundations
 - Corporate partners

Key Lessons Learned

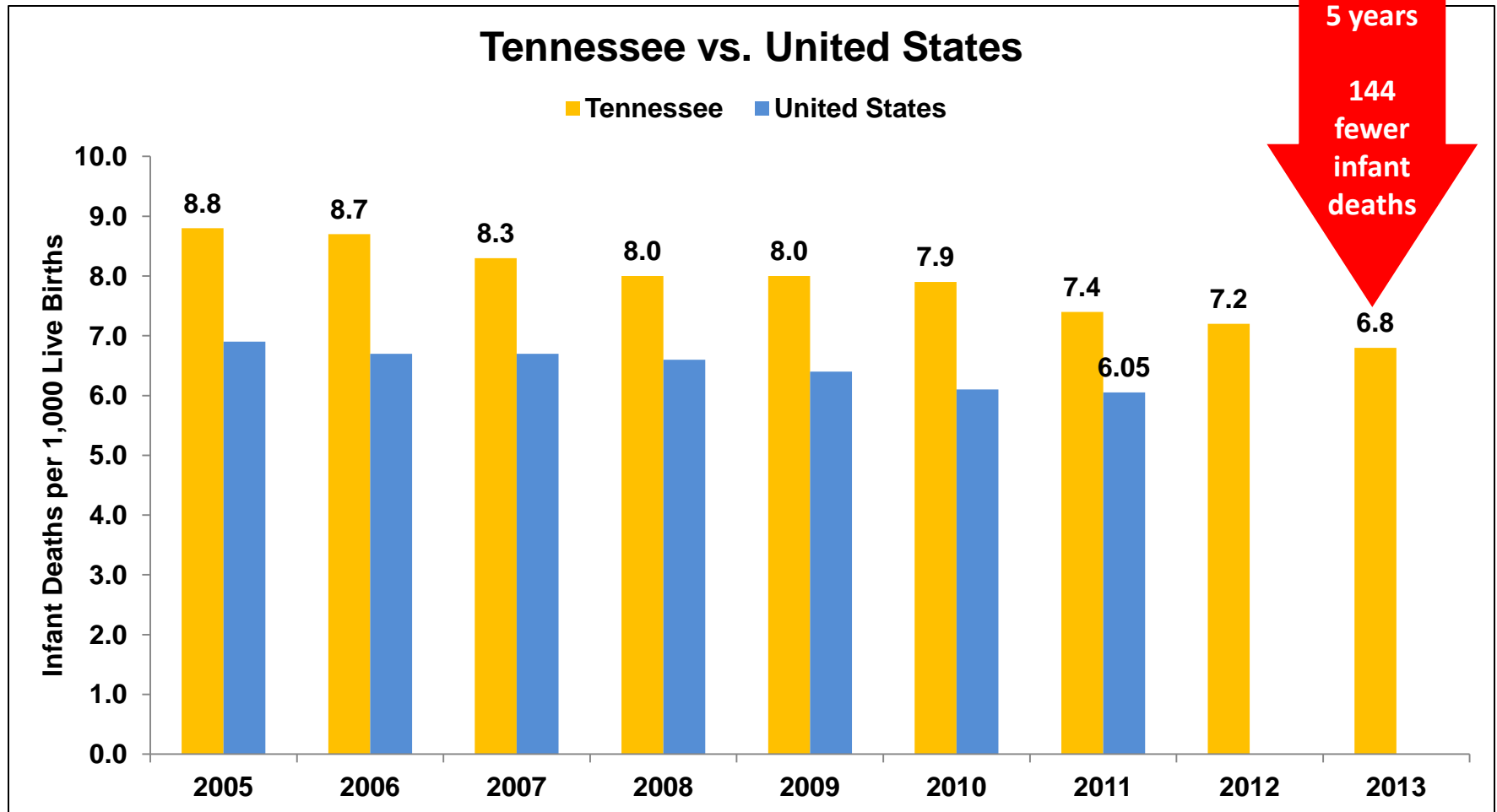
- Utilize data to identify risk factors and develop campaign focus – Sources include Child fatality, PRAMS, vital records
- Gather input on campaign materials early in process
- Capitalize on multiple funding sources
- Engage diverse set of community partners
- Keep campaign fresh

PRELIMINARY Data: SUID Reduction

Number of Sleep Related Infant Deaths, 2012-2013



Infant Mortality Trends 2005-2013



Resources to Help You Prevent Sleep-Related Infant Deaths

TDH Safe Sleep Campaign



Safe Sleep For Your Baby

Do Not Smoke

No Toys in Crib

No Bumper Pads or Pillows in Crib

Put Baby to Sleep in Crib

Use a Tight Fitting Sheet

Put Baby on Back to Sleep

Baby Should Sleep on a Firm Mattress

Do Not Overheat or Overdress

Remember the ABC's of Safe Sleep:
Babies should sleep **A**lone, on their **B**ack, and in a **C**rib.

Tennessee Department of Health
safesleep.tn.gov

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Safe Sleep For Your Baby

Did You Know?

Every year, many Tennessee babies die from sleep-related causes. Most of these deaths are preventable.

The following guidelines to prevent sleep-related deaths are recommended by the American Academy of Pediatrics:

- Always place babies on their backs to sleep at night and at nap time. Babies who sleep on their backs are less likely to die of Sudden Infant Death Syndrome (SIDS).
- Babies should always sleep in a crib. The safest place for a baby is in the same room as the parents but alone in a separate sleep area.
- Keep loose objects, soft toys, and bedding out of the baby's sleep area. Do not use pillows and blankets in a baby's sleeping area. A baby should sleep in a crib with only a tight fitting sheet.
- Avoid letting your baby overheat during the night. A baby should be dressed lightly for sleep. Set the room temperature in a range that is comfortable for a lightly clothed adult.
- Do not use crib bumpers. These do not reduce injuries and can cause suffocation.
- Avoid smoking. Both maternal smoking during pregnancy and secondhand smoke after birth should be avoided.
- Breastfeeding is recommended for at least the first six months of life. Breastfeeding is associated with a reduced risk of SIDS.

Remember the ABC's of Safe Sleep:
Babies should sleep **A**lone, on their **B**ack, and in a **C**rib.

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Safe Sleep For Your Baby

- ☐ Do Not Smoke
- ☐ No Toys in Crib
- ☐ Put Baby to Sleep in Crib
- ☐ Put Baby on Back to Sleep
- ☐ No Bumper Pads or Pillows in Crib
- ☐ Use a Tight Fitting Sheet
- ☐ Do Not Overheat or Overdress
- ☐ Baby Should Sleep on a Firm Mattress

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Website: <http://safesleep.tn.gov>




NICHD “Safe to Sleep” Campaign

- Expansion of original “Back to Sleep” campaign which started in 1994
- Since start of original campaign:
 - SIDS rate declined by almost 50%
 - Increase in percentage of babies put to sleep on back
- Incorporates latest AAP recommendations for infant safe sleep
- **Website:** <http://www.nichd.nih.gov/sids/>



NICHD “Safe to Sleep” Resources

Safe Sleep For Your Baby




SAFE TO SLEEP

Reduce the Risk of Sudden Infant Death Syndrome (SIDS) and Other Sleep-Related Causes of Infant Death

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health
Eunice Kennedy Shriver National Institute of Child Health and Human Development

Ponga a su bebé a dormir sin peligro



SEGURO AL DORMIR

Reduzca el riesgo del síndrome de muerte súbita del bebé y de otras causas de muerte relacionadas con el sueño

DEPARTAMENTO DE SALUD Y SERVICIOS
HUMANOS DE LOS ESTADOS UNIDOS
Ministerio Nacional de Salud
El Centro Nacional de Salud Infantil y Desarrollo
Humanos Eunice Kennedy Shriver (NICHD)

What does a safe sleep environment look like?

Reduce the Risk of Sudden Infant Death Syndrome (SIDS) and Other Sleep-Related Causes of Infant Death



Use a firm sleep surface, such as a mattress in a safety-approved* crib, covered by a fitted sheet.

Do not use pillows, blankets, sheepskins, or crib bumpers anywhere in your baby's sleep area.

Keep soft objects, toys, and loose bedding out of your baby's sleep area.

Do not smoke or let anyone smoke around your baby.

Make sure nothing covers the baby's head.

Always place your baby on his or her back to sleep, for naps and at night.

Dress your baby in light sleep clothing, such as a one-piece sleeper, and do not use a blanket.

Baby should not sleep in an adult bed, on a couch, or on a chair alone, with you, or with anyone else.

*For more information on crib safety guidelines, contact the Consumer Product Safety Commission at 1-800-638-2772 or <http://www.cpsc.gov>.

SAFE TO SLEEP

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health
Eunice Kennedy Shriver National Institute of Child Health and Human Development

First Candle



FOR MORE INFO CALL US AT 443-640-1049



[DONATE](#) [EXPECTING PARENTS](#) [NEW MOMS & DADS](#) [GRIEVING FAMILIES](#) [GET INVOLVED](#) [BLOG](#) [ABOUT](#)

HOW TO HELP



LEGACY PROGRAM AND EVENTS

For family and friends, the death of a baby is heartbreaking. Parents are often asked if donations can be sent and how donations make a difference. Other families start fundraising events that raise money for research and education. First Candle's Legacy Program can help you set up a fund or start an event today.

FIRST BIRTHDAY PARTIES

Pledge your baby's first birthday party to raise funds for First Candle to help other babies reach their first birthday.

BUY FROM OUR STORE

Hospitals, nurseries, and daycares can purchase First Candle safe sleep products for the babies they care for.

Cribs for Kids



Cribs for Kids®
Helping every baby sleep safer



DONATE

PARTNER LOCATOR

HOME

ABOUT US»

CONFERENCE»

EDUCATION»

EVENTS»

GRIEF»

HOSPITALS»

MEDIA»

PARTNERS»

Buy Online
At Our Store

Find Products for Your Needs.

LEARN MORE

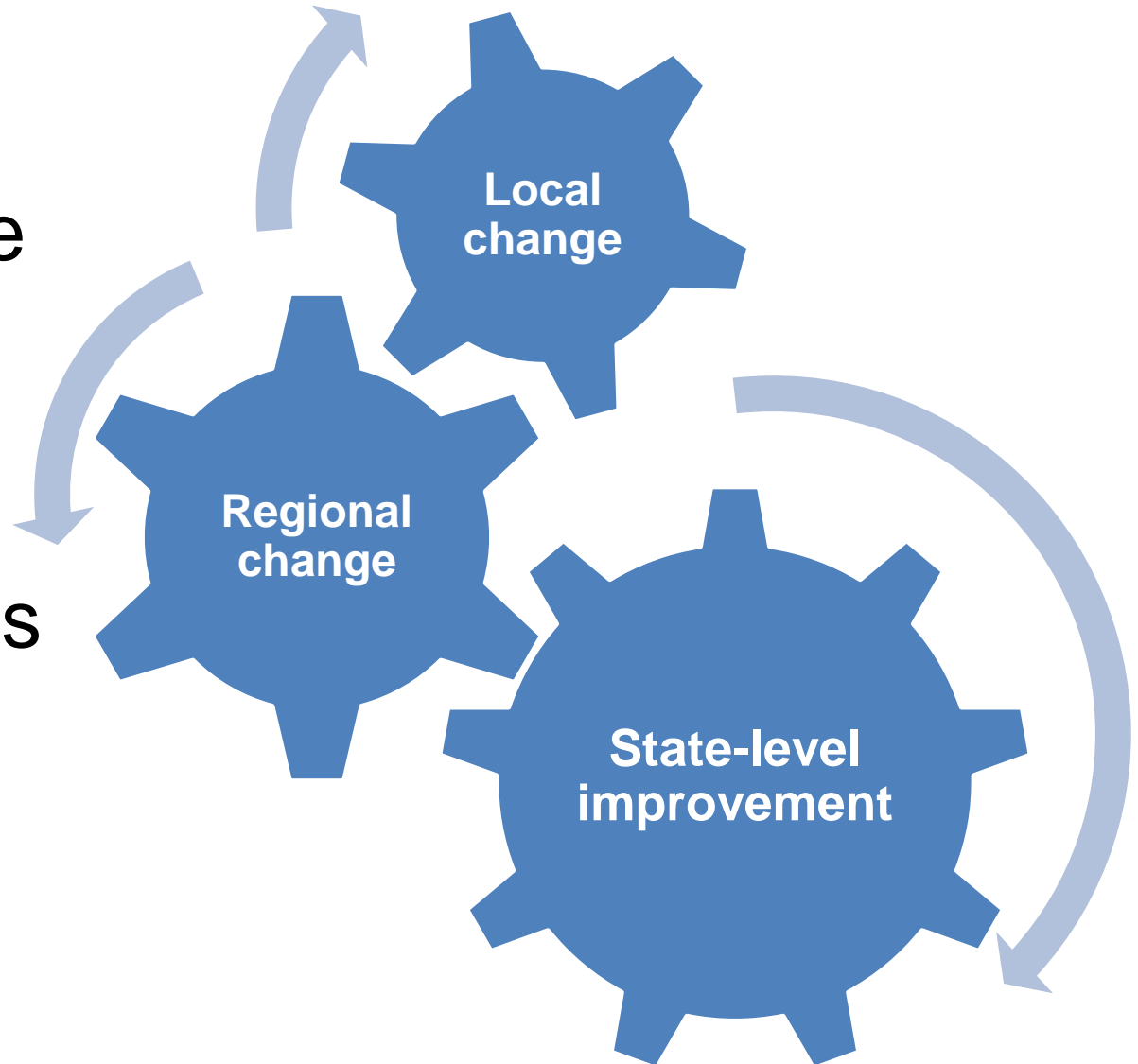


Charlie's Kids



You Play a Vital Role!

- **Your** work is vital in the efforts to maximize the health of Alabama's mothers and babies.



Contact Information

- Safe Sleep Program Lead:
 - Rachel Heitmann, MS
 - Director, Injury Prevention & Detection
 - Rachel.heitmann@tn.gov
- Title V
 - Michael Warren, MD MPH FAAP
 - Michael.d.warren@tn.gov

Questions?

