



# **IACTE Conference**

**September 23, 2017**



Indiana State  
Department of Health

# Infant Mortality Defined

The death of a baby before his/her first birthday

The Infant Mortality Rate (IMR) is an estimate of the number of infant deaths for every 1,000 live births

Large disparities in infant mortality in Indiana and the United States exist, especially among race and ethnicity

**Infant Mortality is the  
#1 indicator of health  
status in the world**





Annual United States births:  
3.98 million  
23,000 babies die before age 1

Annual Indiana births:  
83,000  
600 babies die before age 1

# Infant Mortality in Indiana

- **613 Hoosier babies died before their 1<sup>st</sup> birthday**
  - More than 50 babies EVERY month
  - Nearly 12 babies EVERY week
- **More than 3,000 infant lives lost in the last 5 years**
  - Nearly 42 school buses at maximum capacity



# Indiana's Infant Mortality

Indiana is consistently *worse* than the U.S. and the national goal

- IN = 7.3 deaths per 1,000 live births
- U.S. = 5.9 deaths per 1,000 live births
- Healthy People 2020 Goal = 6.0 deaths per 1,000 live births

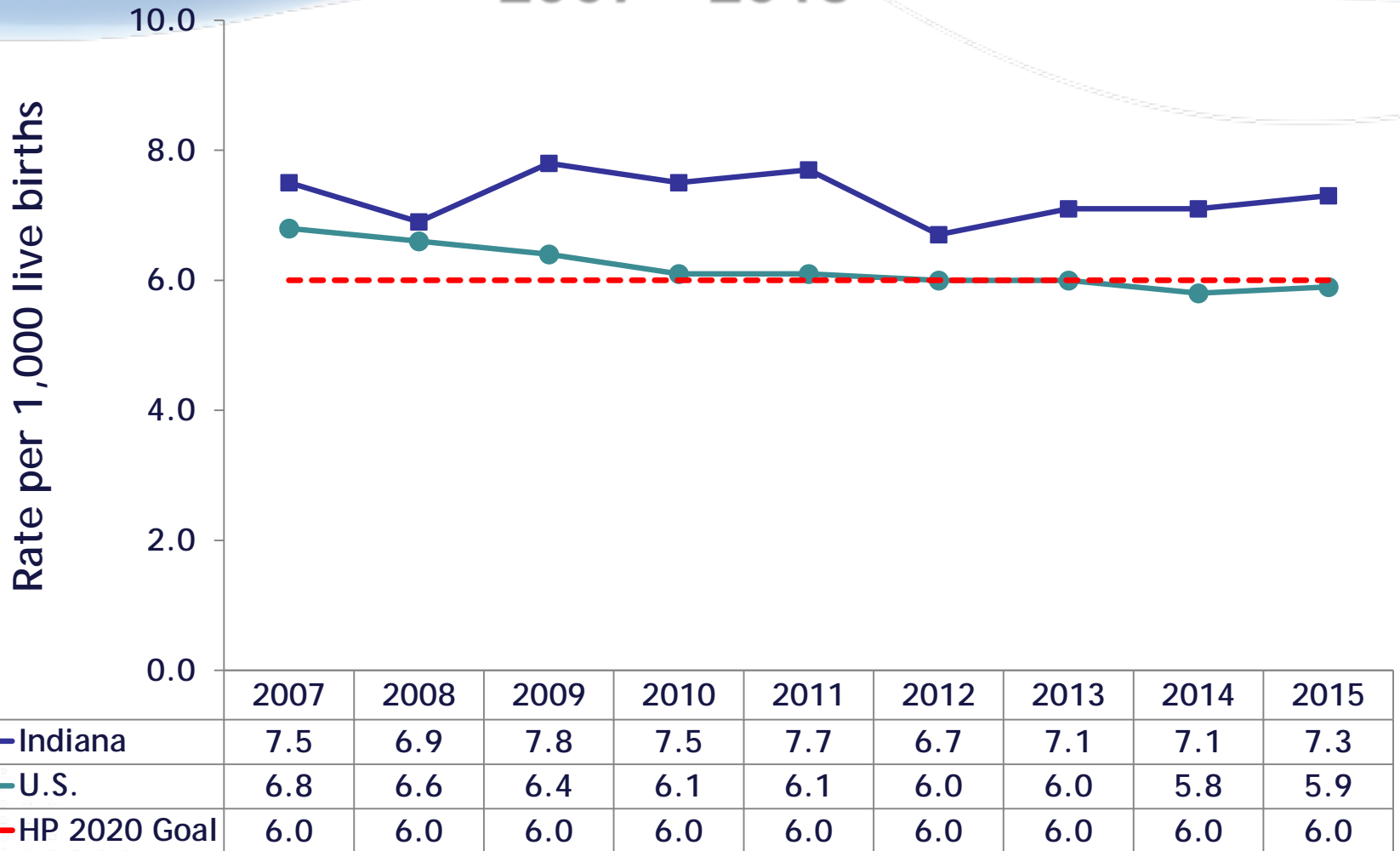
Black infants die **2.1 times** more often than White infants in Indiana.

Indiana's rate of SUIDs deaths is typically *worse* than the national rate.

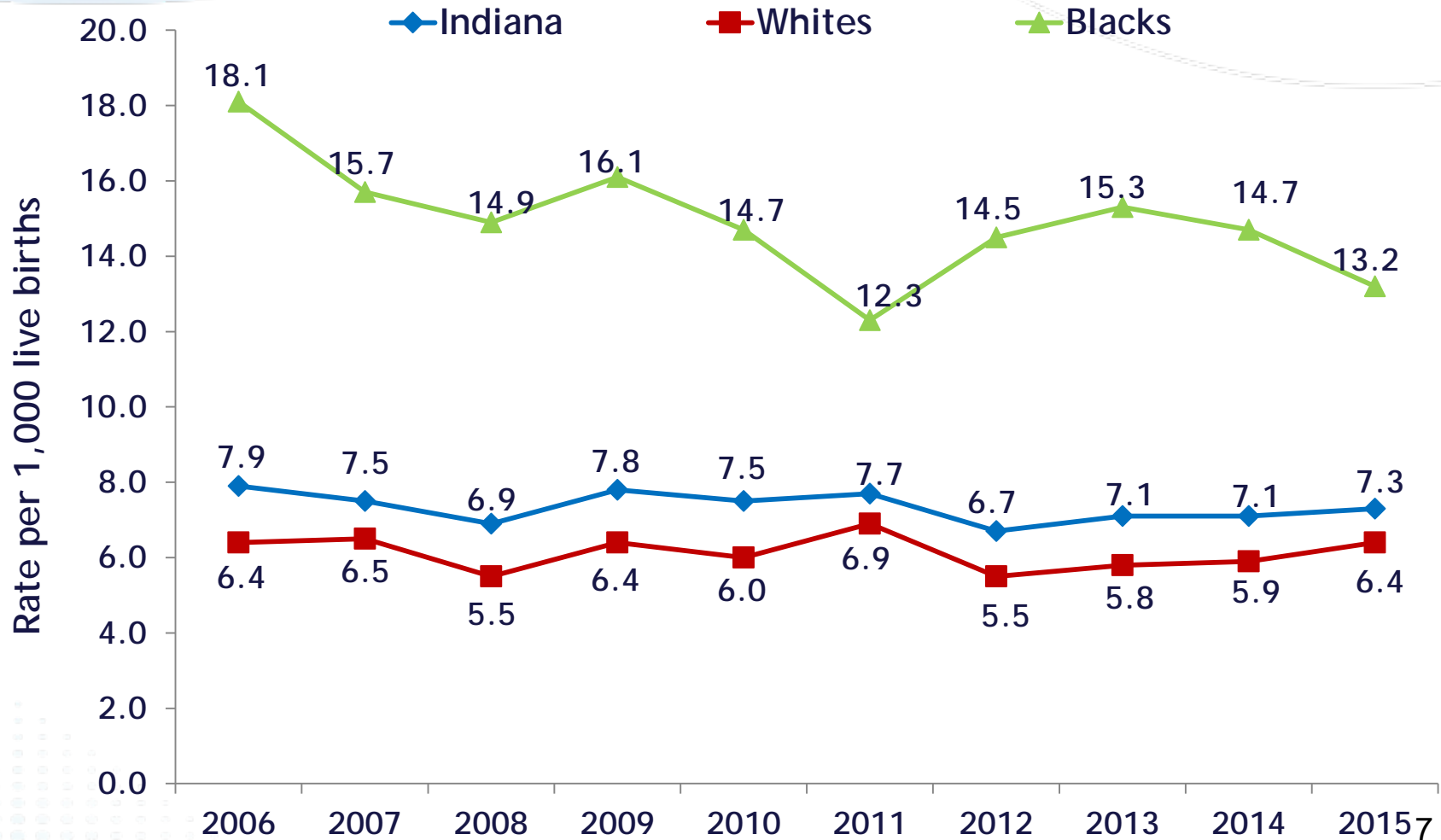


# Infant Mortality Rates

## Indiana, U.S. and Healthy People 2020 Goal 2007 - 2015



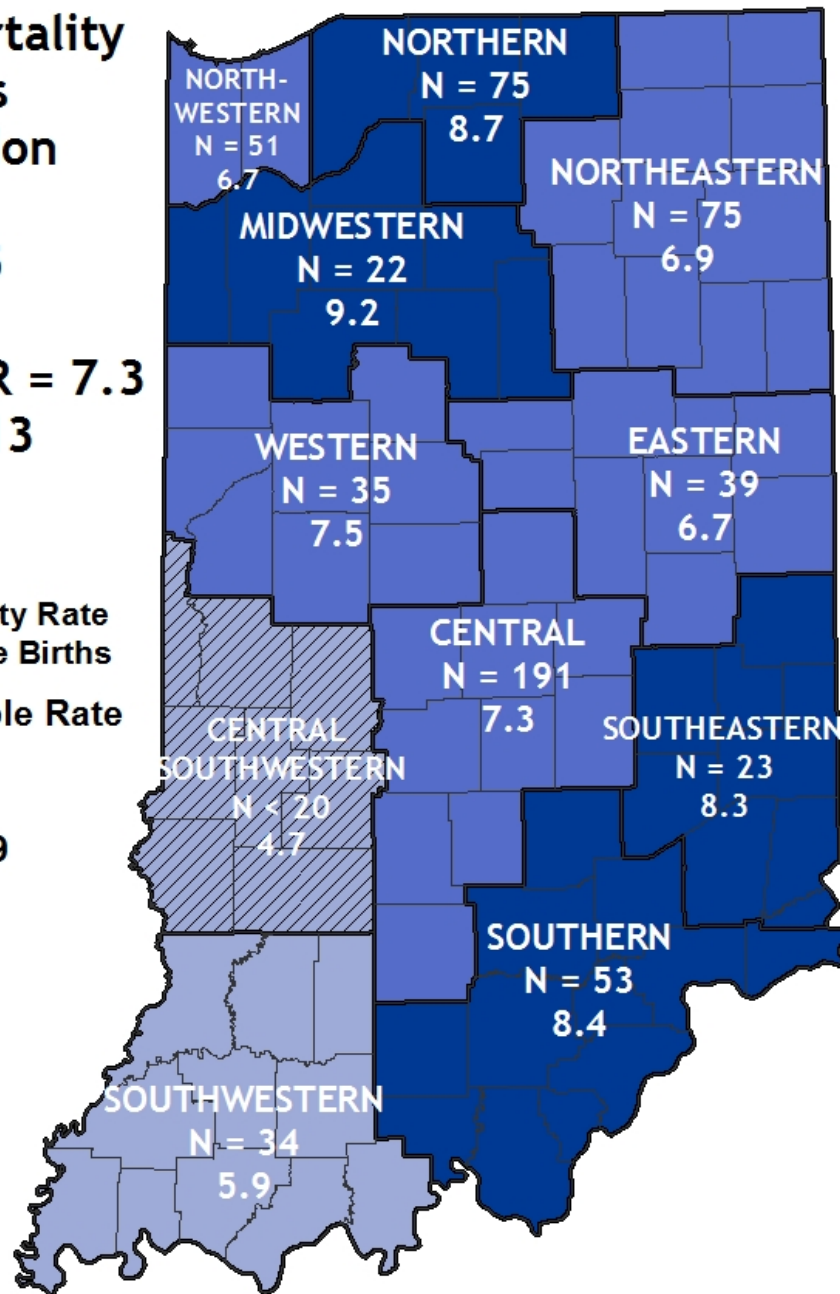
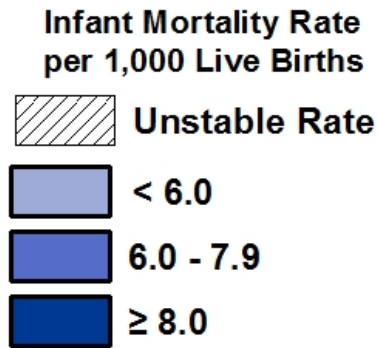
# Infant Mortality Rates by Race Indiana 2006 - 2015



# Infant Mortality Rates by Region

2015

Indiana IMR = 7.3  
N = 613



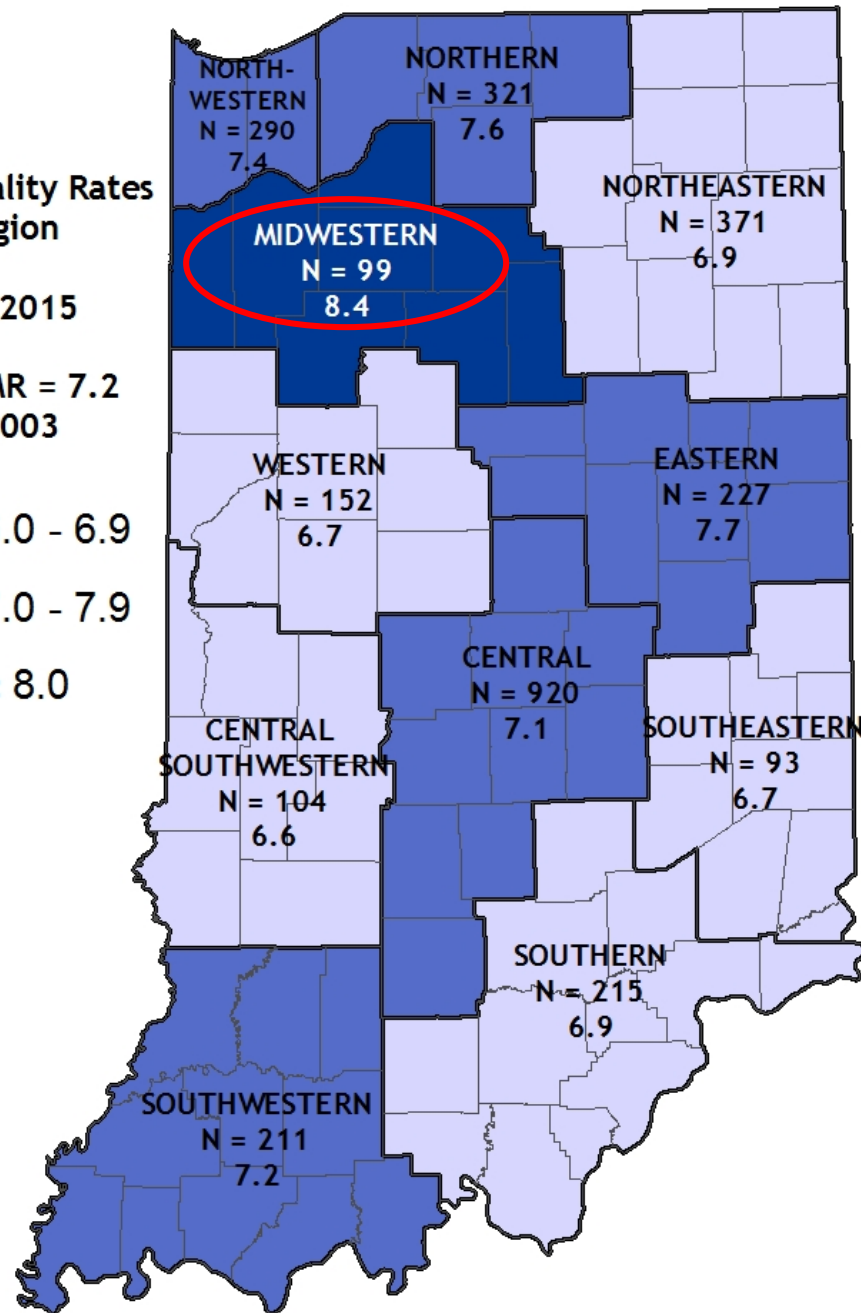
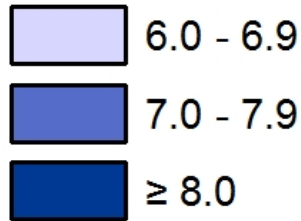




### Infant Mortality Rates by Region

2011 - 2015

Indiana IMR = 7.2  
N = 3,003



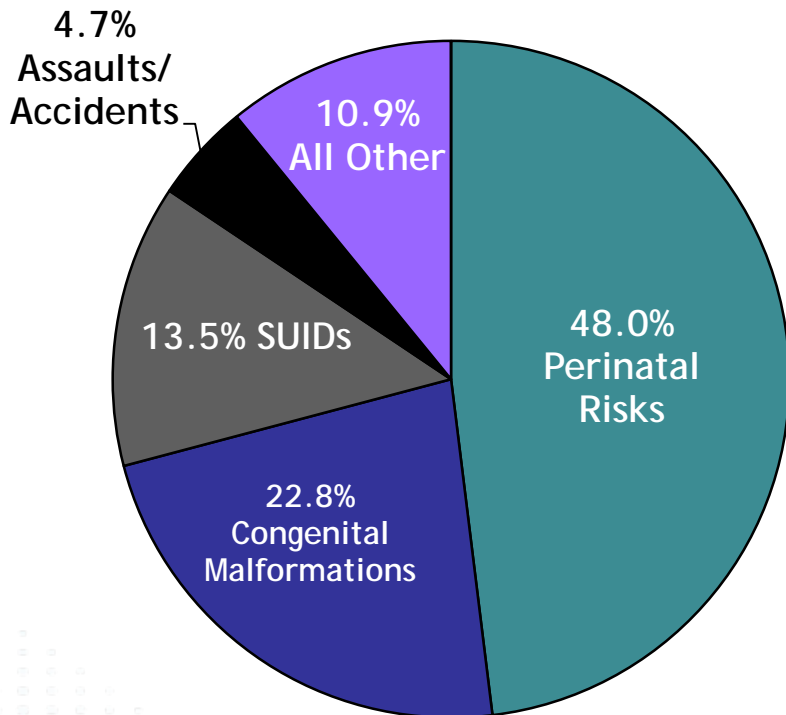


# Infant Mortality Cause of Death Category ICD-10 Codes

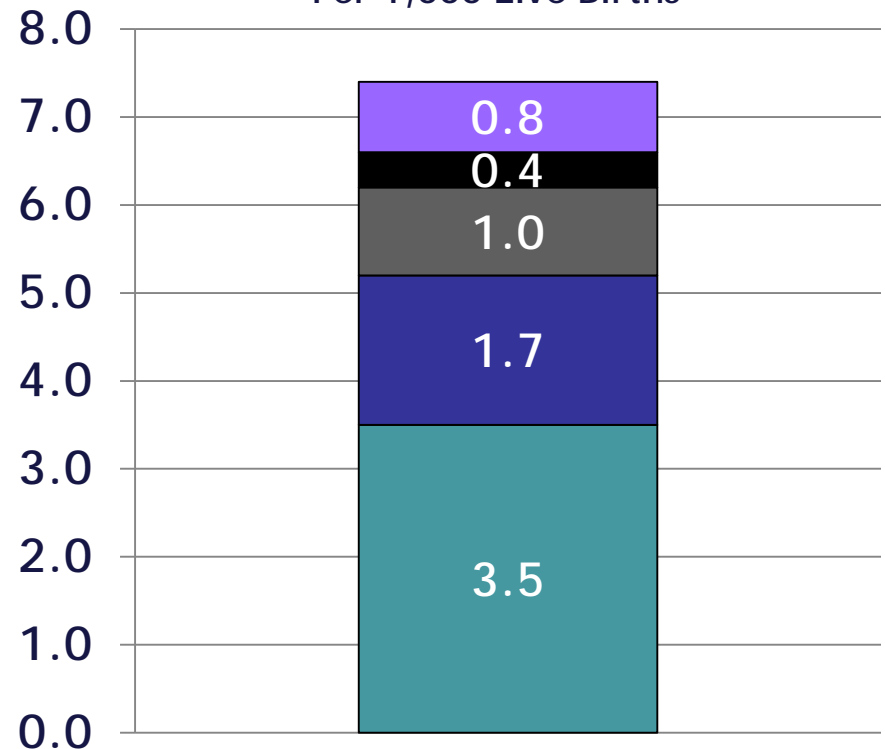
Cause of Death Category	Description	ICD-10 Code
Perinatal Risk	Certain conditions originating in the perinatal period (low birthweight, preterm, premature rupture of membranes, bacterial sepsis of newborn, etc.)	P00-P96
Congenital Abnormalities and Malformations	Physical defects present at birth that result from genetics, through exposure of the fetus to mal-forming agents, or are of unknown origin.	Q00-Q99
Sudden Unexpected Infant Deaths (SUIDs)	Sleep-related infant deaths and unexpected deaths of no known cause after investigation. Includes Sudden Infant Death Syndrome (SIDS) and accidental suffocation and strangulation in bed. (Centers for Disease Control and Prevention recommendation)	R95, R99, W75
Assaults and Other Accidents	Deaths related to homicide, neglect, and preventable accidents not included in SUIDs category (inhalation, ingestion, falls, motor vehicle accidents, etc.)	V01-W74, W76-W99, X00-59, X85-Y09, Y20, Y86
All Other Causes	Residual causes of deaths	Residual

# Infant Mortality Distribution by Cause Indiana 2015

**% Distribution of Infant Deaths**  
**N = 613**



**Cause Specific Mortality Rates\***  
Per 1,000 Live Births



\*Note: Cause specific mortality rates may not exactly equal the overall infant mortality rate due to rounding.  
Source: Indiana State Department of Health, Division of Maternal & Child Health [January 24, 2017] Indiana Original Source: Indiana State Department of Health, Epidemiology Resource Center, Data Analysis Team

# Sudden Unexpected Infant Deaths (SUIDs) Accidental Suffocation / Strangulation in Bed (ASSB, W75)

- Mechanisms that lead to accidental suffocation include:
  - *Suffocation by soft bedding*
    - Pillow covers an infant's nose and mouth
  - *Overlay*
    - A person rolls on top of or against the infant while sleeping
  - *Wedging or entrapment*
    - An infant is wedged between two objects such as a mattress and wall
  - *Strangulation*
    - An infant's head and neck become caught between crib railings



# Demographics of Mothers in Indiana

- Average age = 27.5 years (Range: 11 - 51)
- Education
  - 43.7% of mothers have a high school diploma or less
  - 20.9% of mothers have some college education, but no degree
  - 35.3% of mothers have a college degree (Associate's, Bachelor's, Master's, Ph.D.)
- Income = 43% of births were to women with Medicaid
- Marital status
  - 56% of mothers were married
- Average month prenatal care began = 3 (range: no care - 9<sup>th</sup> month)
- Average number of prenatal visits = 12 (range: 0 - 49)
- 37.6% of all births were to first-time mothers
- 10% of all births were to foreign-born mothers
  - As high as nearly 25%

# Factors Contributing to Infant Mortality in Indiana

- **Obesity (ISDH #3 Priority)**
  - If woman is obese = 25% chance of delivering premature infant
  - If woman is morbidly obese = 33% chance of delivering premature infant
  - Indiana is *15<sup>th</sup> most obese state in U.S.*
- **Smoking (ISDH #4 Priority)**
  - 14.3% of mothers smoke during pregnancy (*TWICE the U.S. average*)
  - 24.7% of mothers on Medicaid smoke
- **Limited Prenatal Care**
  - Only *69.3%* of mothers receive prenatal care during the 1<sup>st</sup> trimester
- **Unsafe Sleep Practices**
  - *13.5%* of infant deaths in 2015 can be attributed to *SUIDs*



# Smoking Risks

- Preterm labor
- Ectopic pregnancy
- Vaginal bleeding
- Placental abruption and previa
- Oxygen deprivation in baby
- Birth defects
- Low birthweight (< 5 lbs., 8 oz.)
- Sudden Unexplained Infant Death (SUIDS)
- Middle ear problems
- Lower respiratory problems



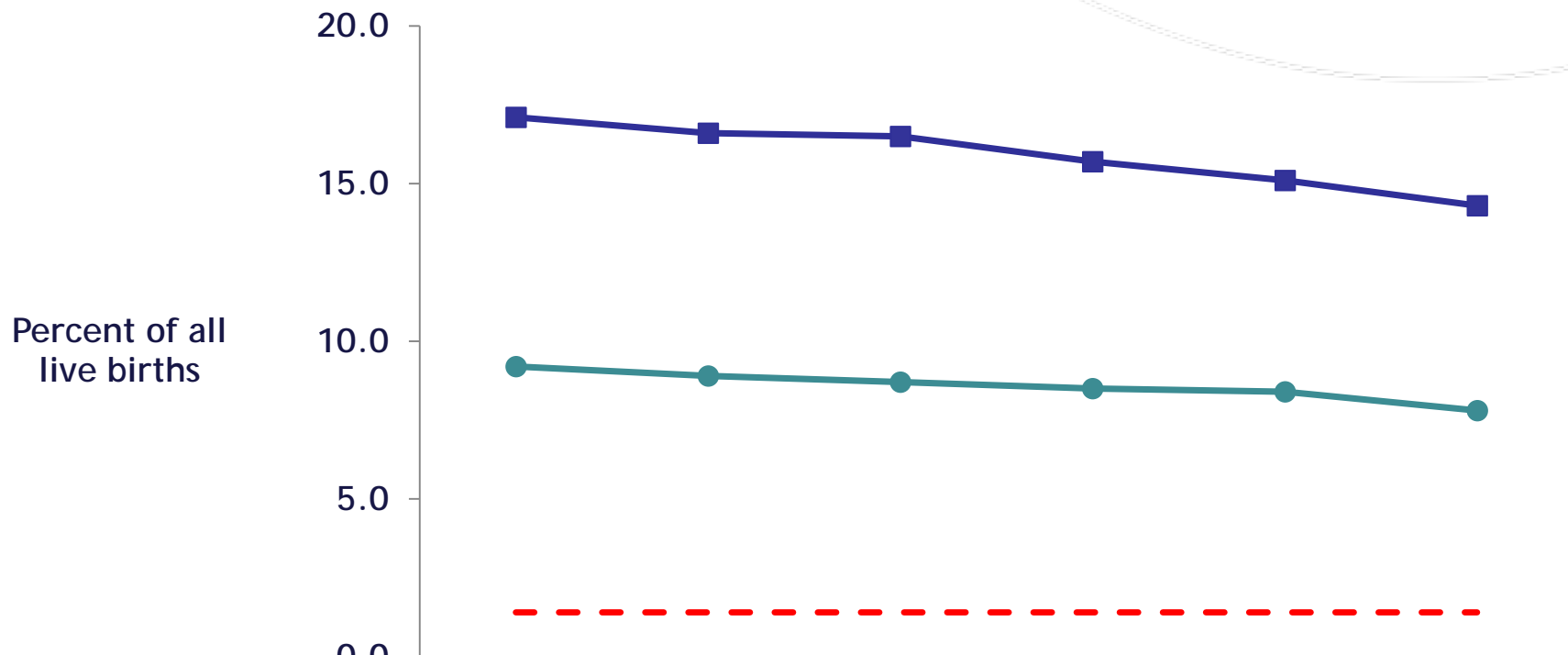


# Risks of Substance Abuse

- Birth defects
- Problems with central nervous system
- Low birth weight
- Preterm delivery (< 37 weeks)
- Slow growth and development
- Fetal Alcohol Syndrome (FAS)
- Learning disabilities
- Heart problems



# % Women Smoking During Pregnancy Indiana, U.S. and Healthy People 2020 Goal 2010 - 2015



	2010	2011	2012	2013	2014	2015
● United States	9.2	8.9	8.7	8.5	8.4	7.8
■ Indiana	17.1	16.6	16.5	15.7	15.1	14.3
- - Healthy People 2020 Goal	1.4	1.4	1.4	1.4	1.4	1.4

Source: Indiana State Department of Health, Division of Maternal & Child Health [January 24, 2017]  
 United States Original: Centers for Disease Control and Prevention National Center for Health Statistics  
 Indiana Original Source: Indiana State Department of Health, PHPC, ERC, Data Analysis Team

# Smoking and Pregnancy

## Effects on Mothers:

- Increases
  - Heart Disease
  - Stroke
  - Cancer
  - Absenteeism from work and school
- Reduces
  - Breastmilk supply
  - Energy and stamina to participate in daily activities
- Economic impact to family is significant and stresses resources

# Smoking and Pregnancy

## Effects on Babies:

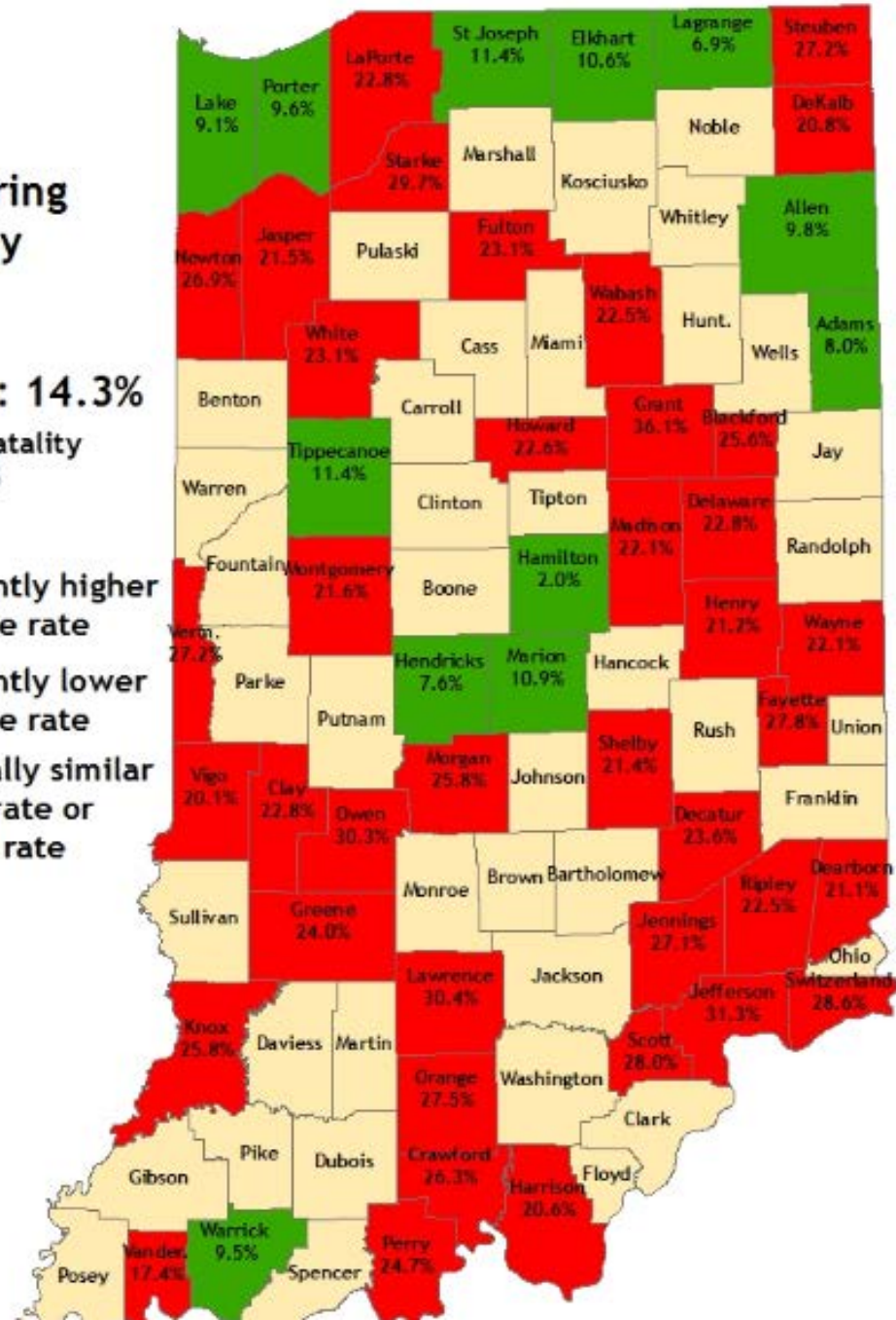
- Increases
  - Premature birth
  - Low birthweight
  - Stillbirth
  - Risks of Sudden Infant Death Syndrome (SIDS)
  - Birth defects
- Reduces
  - Blood flow and oxygen to baby
- Risk of future health and behavioral problems

# Smoking During Pregnancy 2015

Indiana Overall: 14.3%

Source: Indiana Natality Report 2015

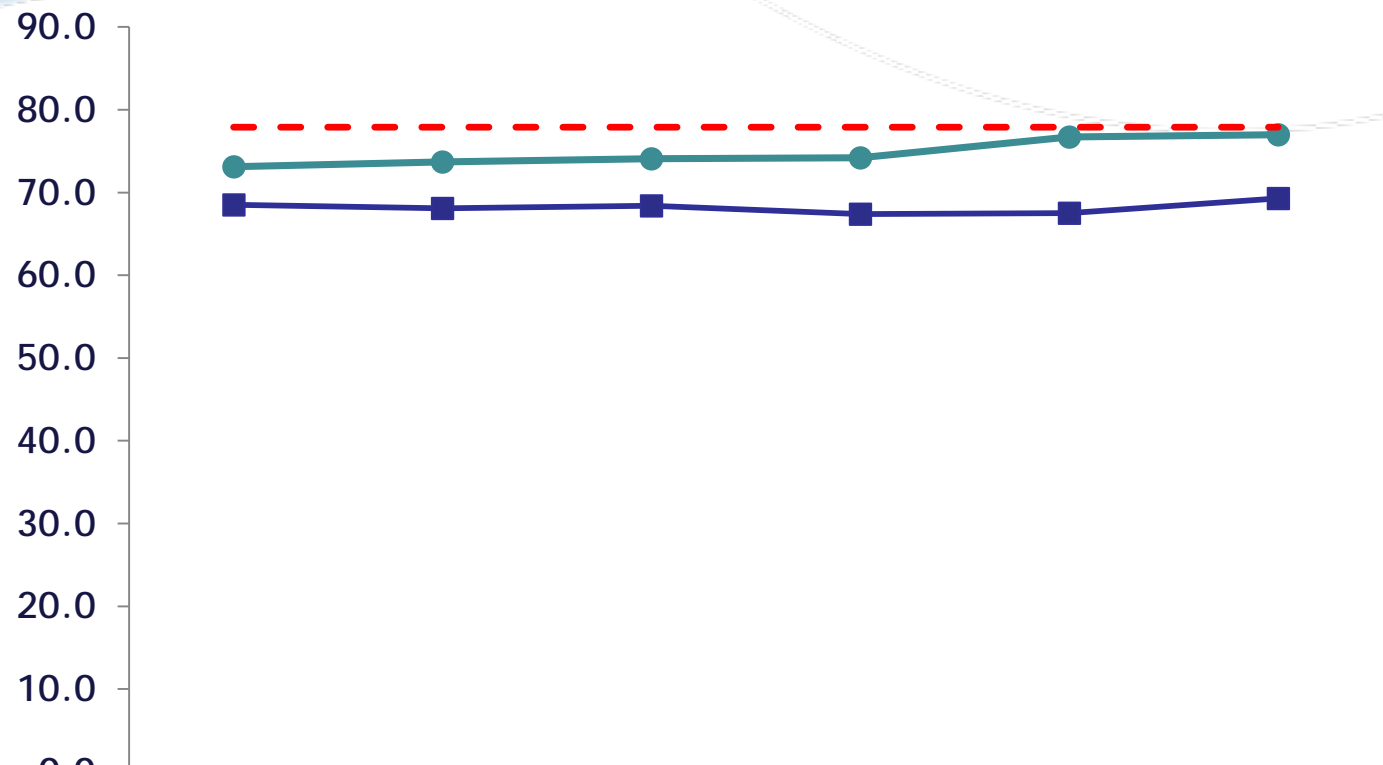
- Significantly higher than state rate
- Significantly lower than state rate
- Statistically similar to state rate or unstable rate



(Source: Indiana State Department of Health, Division of Maternal & Child Health [January 24, 2017] Indiana Original Source: Indiana State Department of Health, Epidemiology Resource Center, Data Analysis Team



# % Women Receiving Prenatal Care 1<sup>st</sup> Trimester Indiana, U.S. and Healthy People 2020 Goal 2010 - 2015

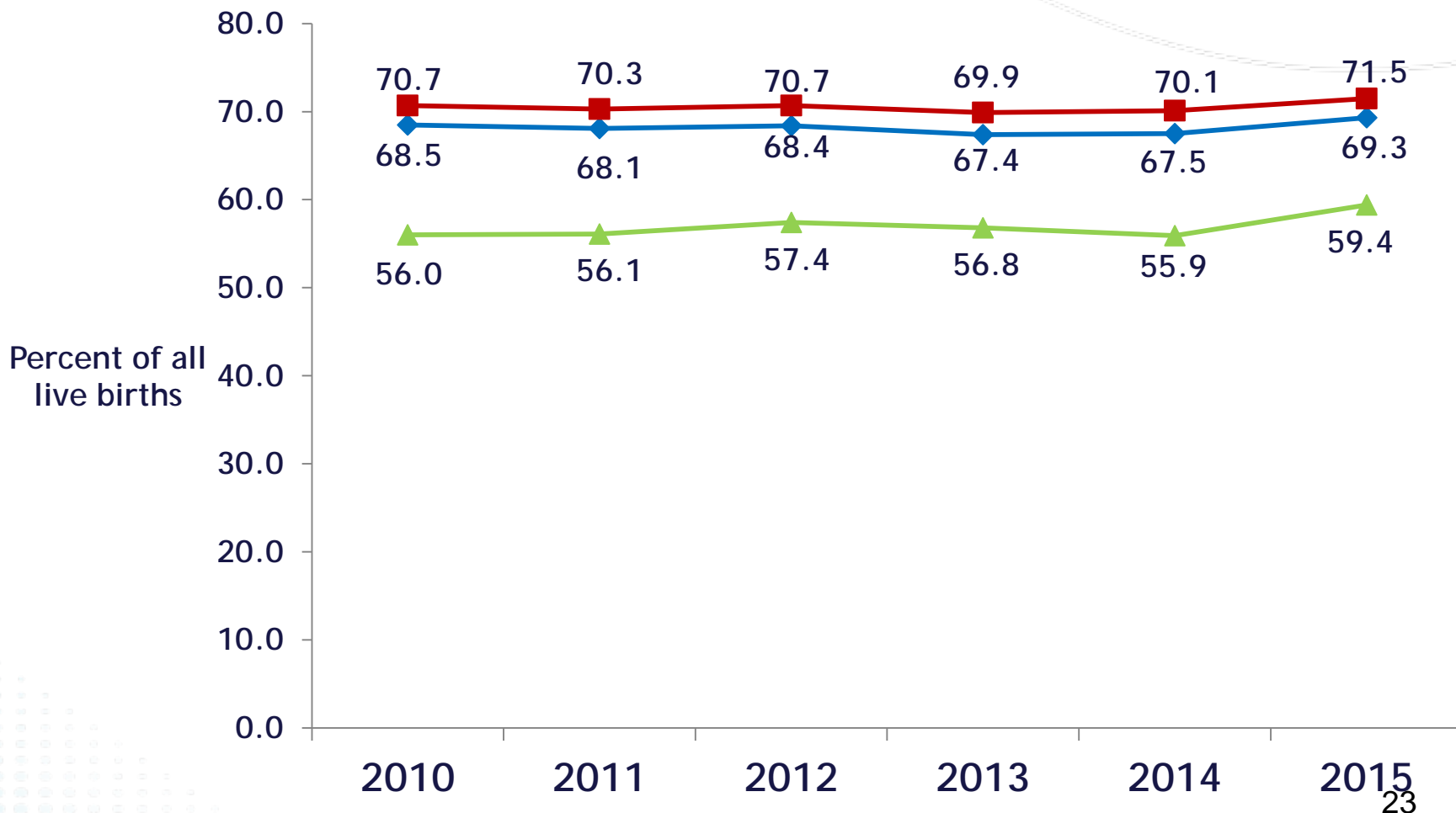


	2010	2011	2012	2013	2014	2015
● United States	73.1	73.7	74.1	74.2	76.7	77.0
■ Indiana	68.5	68.1	68.4	67.4	67.5	69.3
- - Healthy People 2020 Goal	77.9	77.9	77.9	77.9	77.9	77.9

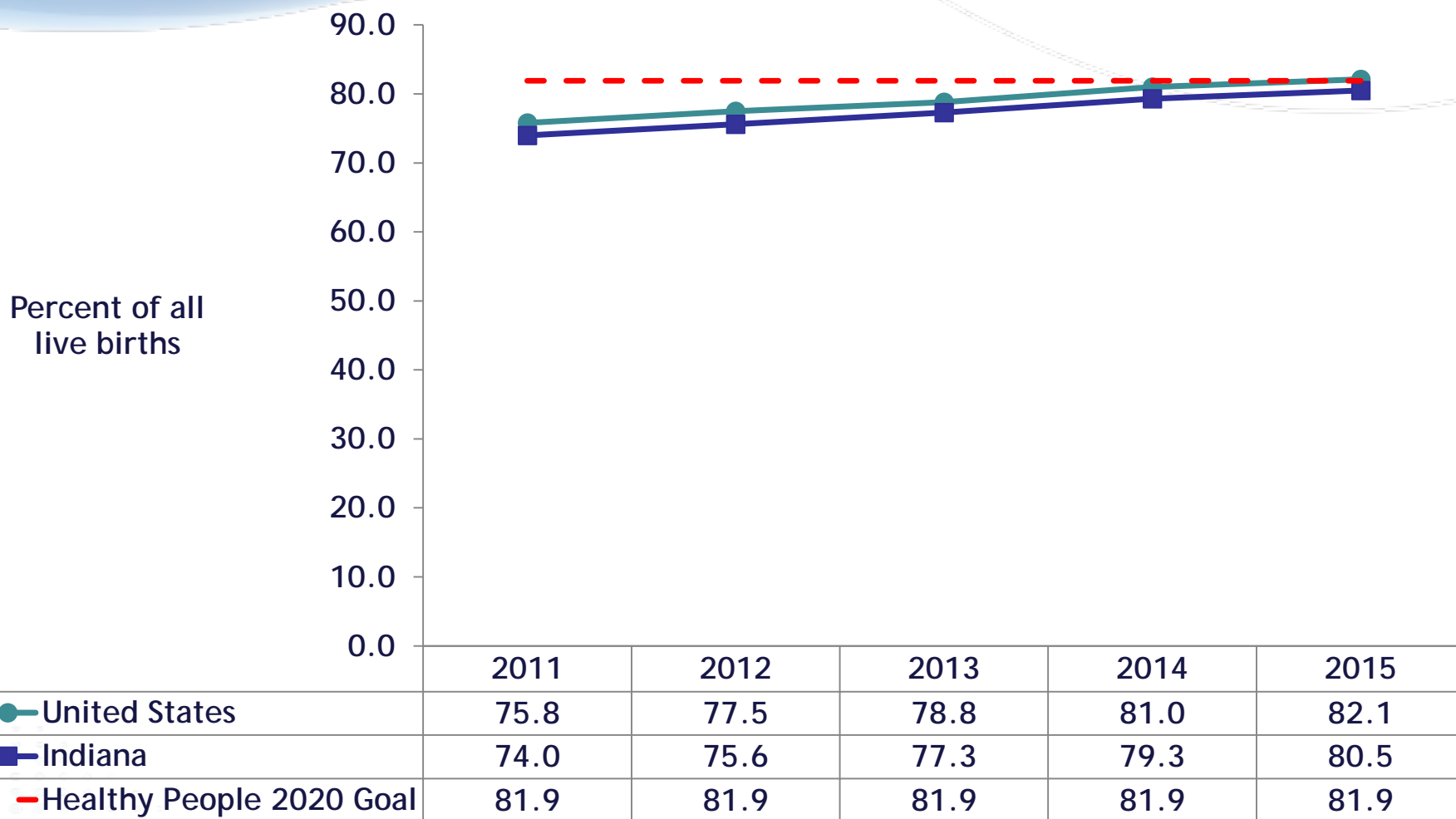
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# % Women Receiving Prenatal Care 1<sup>st</sup> Trimester Indiana, by Race 2010 - 2015

◆ Indiana ■ Whites ▲ Blacks



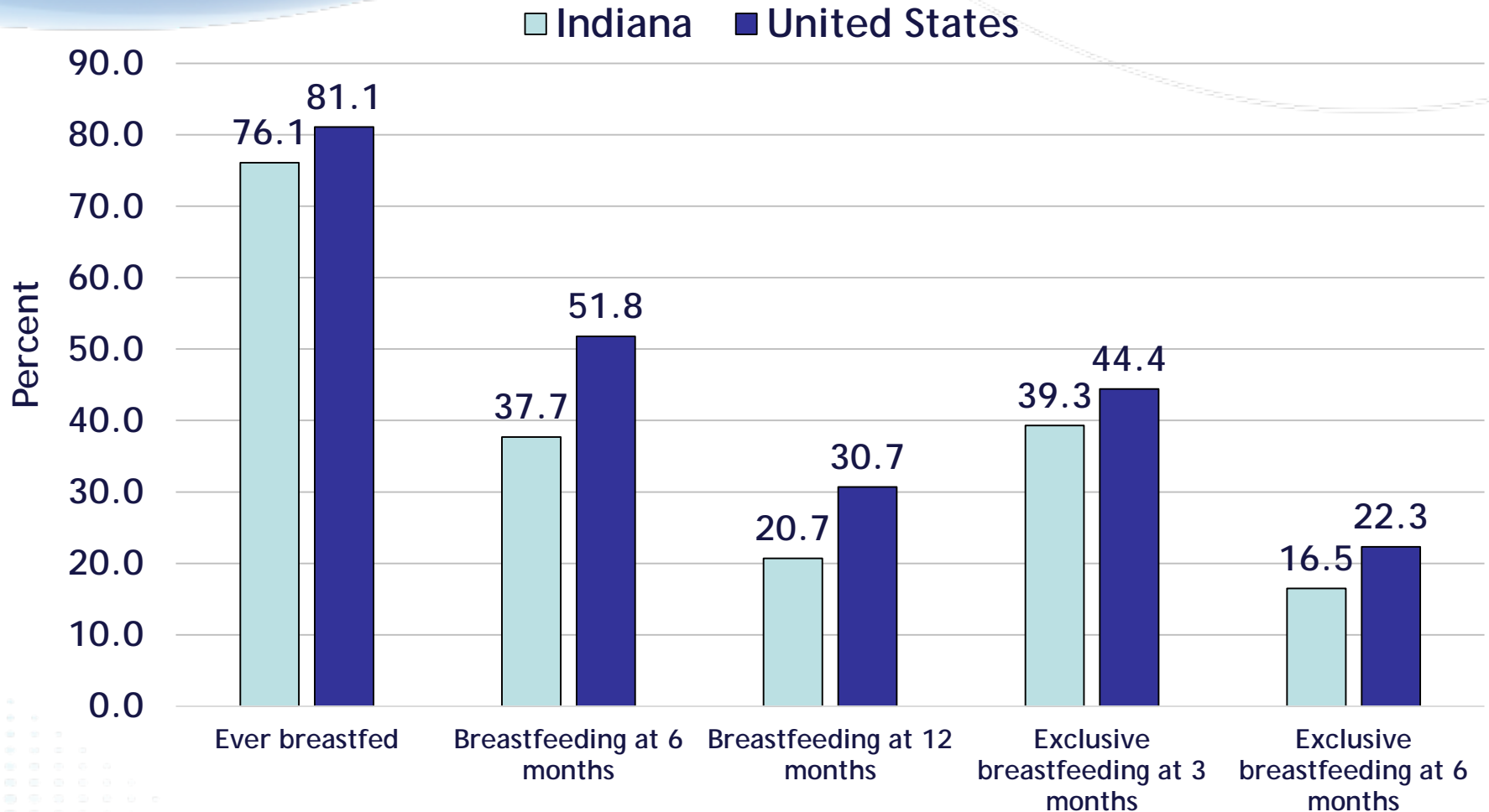
# % Women Breastfeeding at Hospital Discharge Indiana, U.S. and Healthy People 2020 Goal 2011 - 2015



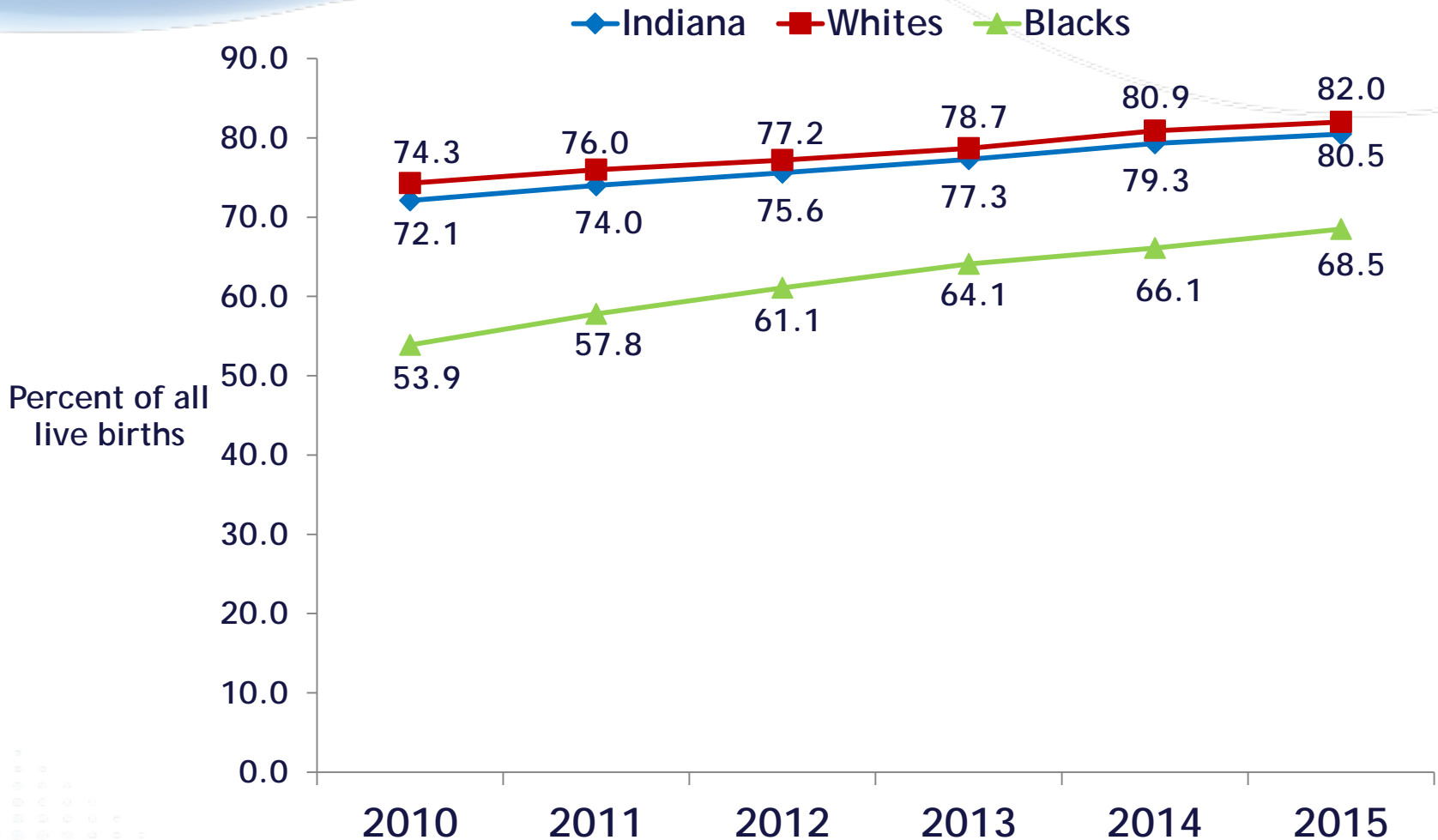


# Breastfeeding Exclusivity and Duration Indiana and United States

\*based on 2013 births



# % Women Breastfeeding at Hospital Discharge Indiana, by Race 2010 - 2015



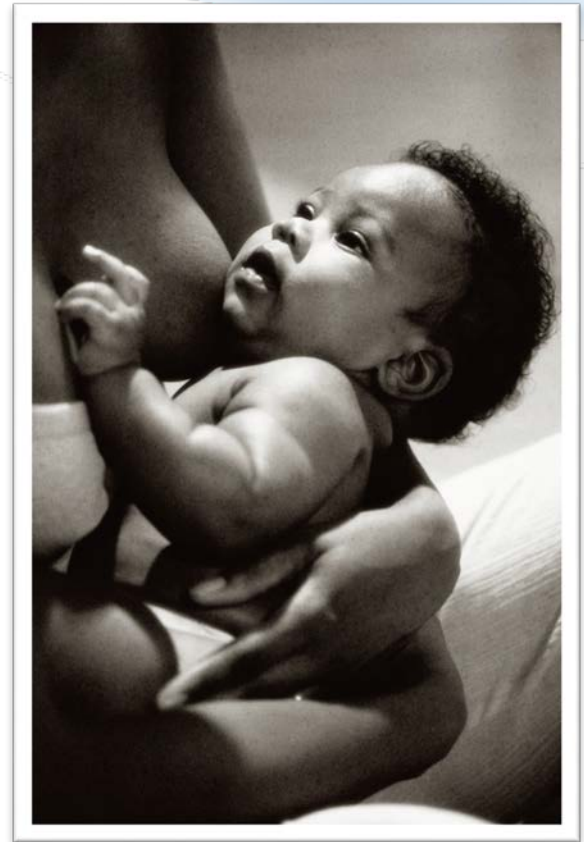
# Breastfeeding

- 80.4% of all Hispanic mothers breastfeed for first 6 months
- 74.3% of all white mothers breastfeed for first 6 months
- 54.4% of all Black mothers breastfeed for first 6 months

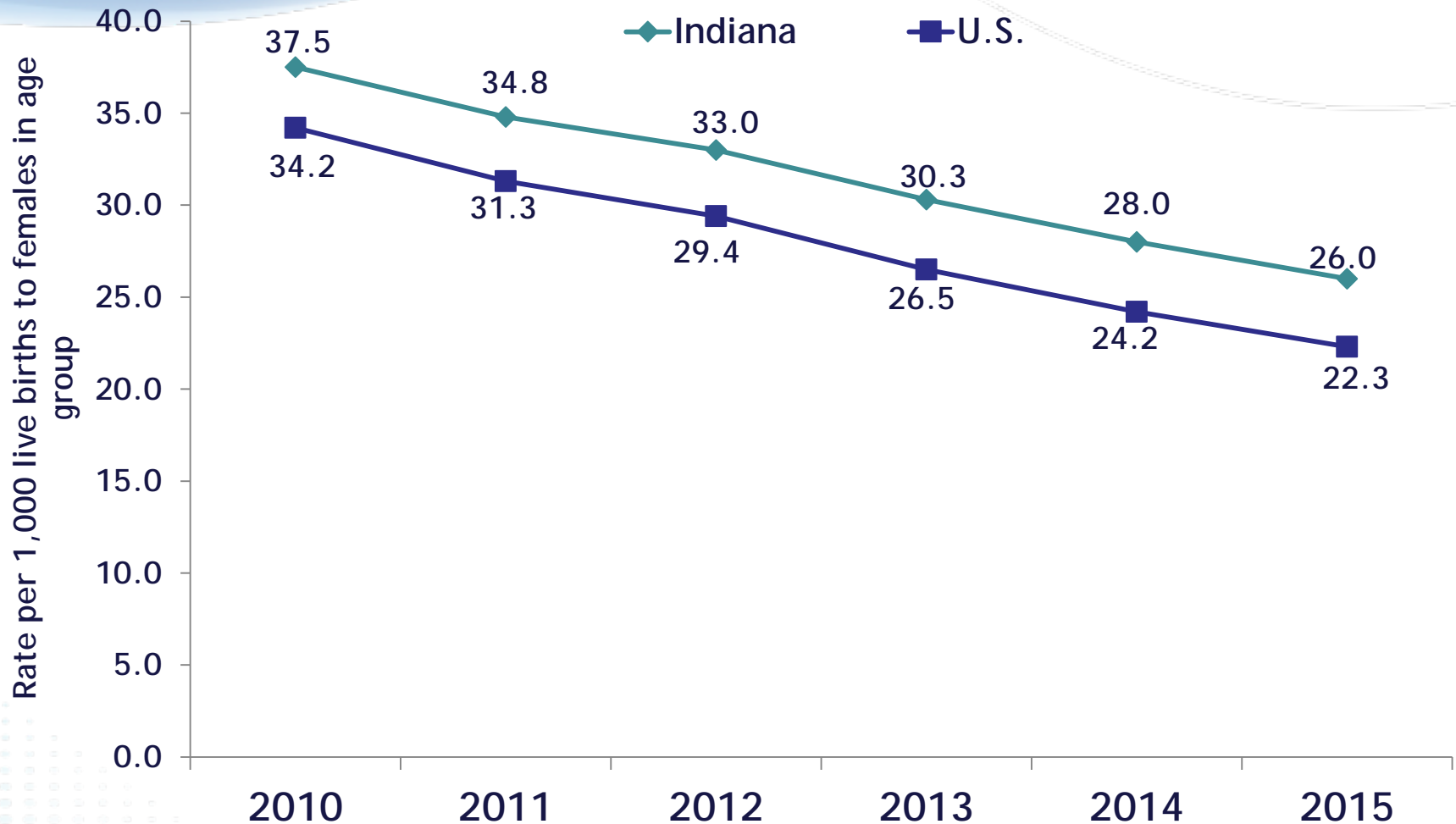
If 90% of US families complied with medical recommendations to breastfeed exclusively for 6 months, the United States would save

- \$13 billion per year,
- Prevent an excess 911 deaths.

Decrease in Infant deaths would save \$10.5 billion and 741 deaths at 80% compliance.



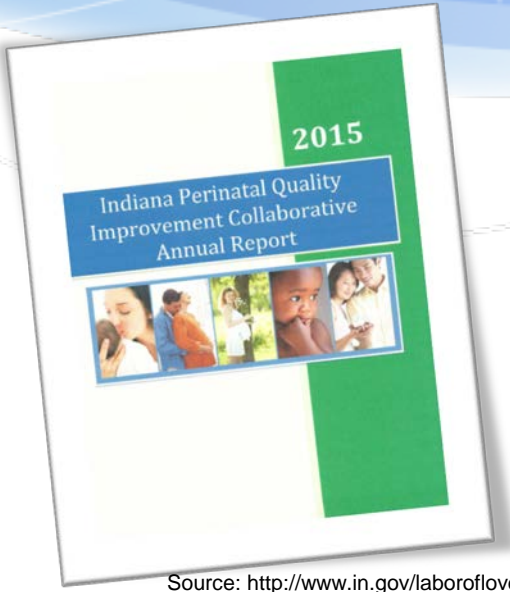
# Age-Specific Birth Rates for Teen Mothers Indiana and U.S., Ages 15-19 2010 - 2015



# Summary

- *613 infants* in Indiana died before their first birthday
- Nearly 14% of infant deaths can be attributed to *SUIDs*
- Much *higher percentage* of women *smoking* during pregnancy when compared to the nation
- *Lower* percentages of women *receiving early prenatal care* and *breastfeeding* when compared to the U.S.
- Low birthweight, very low birthweight and preterm births are highest in *urban* counties
- Women smoking during pregnancy, not getting early prenatal care and not breastfeeding are most prevalent in *rural* counties
- *Large disparities* in all indicators make prevention efforts complex

# ISDH Programs and Initiatives To Help Reduce Infant Mortality Rates



Source: <http://www.in.gov/laboroflove/664.htm>

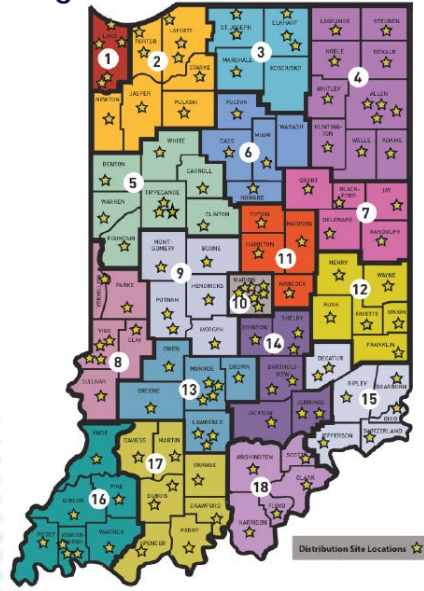


Healthy Babies. Born on Time.

Indiana's Early Start Program

Safe Sleep Program

INDIANA PRAMS  
Pregnancy Risk Assessment  
Monitoring System



*the key to a healthy baby and a happy mom*



Neonatal Abstinence Syndrome (NAS) Survey



# Pregnancy Mobile Application

- As part of the statewide efforts to reduce Indiana infant mortality rates, ISDH has contracted with Indianapolis-based technology solutions company eimage to create and implement a pregnancy mobile application.
- The application will provide valuable health resources to parents, caregivers and to women of child bearing age that are pregnant or planning to be pregnant.
- The main goal is to improve the health of mothers and their children.
- Anticipated launch in September 2017.



AT&T 9:41 AM 100%

Planning **Expecting** Parenting

98 DAYS TO GO  
2nd TRIMESTER

**28** WEEKS

ASK LIV

Your baby is the size of an avocado.

**CRITICAL STEPS**

Get Prenatal Vitamins

Write A Birth Plan

Exercise and Stretch

Educate Yourself

Track Your Weight Gain

**10 Ways to Prepare for Pregnancy**

Healthy Women · March 3, 2017

Follow these steps to prepare your body and mind to conceive and carry your baby to a healthy delivery.



**5 Signs of Labor**

Parenting.com · March 3, 2017

With all your body has gone through in recent weeks, how will you know when the baby is ready to arrive? Watch for these signs that you are going into labor.

**Healthy Start for Baby and Me**

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This downloadable 101-page book, from Ontario's Maternal, Newborn and Early Child Development Resource Centre, provides a great overview on many topics relating to mother/baby health.


**Zika Virus Notice**

Learn how to protect yourself and your pregnancy from Zika.

AT&T 9:41 AM 100%

Resources Near Me

ASK LIV



**Hospital**

**Clinic**

**Sleep Center**

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Planning **Expecting** Parenting

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Health

Nutrition

Resources

Settings

Journal


Hospital Shopping Bag

Add More

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# Contact

Linda Heacox, *Infant Mortality Education Liaison*

317-233-1269 e:[lheacox@isdh.in.gov](mailto:lheacox@isdh.in.gov)

## Division of Maternal and Child Health

Indiana State Department of Health

2<sup>nd</sup> Floor, 2 North Meridian Street

Indianapolis, IN 46204

@INLaborofLove

[www.in.gov/isdh](http://www.in.gov/isdh)



*Each pair of baby booties represents  
an Indiana child who died before  
reaching age one.*



Labor of Love  
Helping Indiana Reduce Infant Death




Each pair of baby booties represents an Indiana child who died before reaching age one. Labor of Love is a nonprofit organization that provides financial assistance to families who have lost a child to SIDS or other infant deaths. For more information, visit [www.laboroflove.org](http://www.laboroflove.org).

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