

Why do so many babies die in Indiana?

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DAMIAN RICO, THE TIMES

Healthier Moms and Babies case manager Jackie Martinez spends time with her client's 6-week-old baby, Azariah Dominguez, during a December home visit in Fort Wayne, Indiana.

State fares poorly in many health measures

Consider these facts:

- Indiana finished 39th out of 50 in the United Health Foundation's 2016 America's Health Rankings. The state ranked near the bottom in many areas that are risk factors for infant mortality: air pollution (47th), smoking (39th), diabetes (37th), obesity (36th), childhood poverty (32nd) and low birth weight (25th).
- Indiana ranked 43rd for women's health and 33rd in infant health. Less than a third of children younger than age 5 live in a protective home environment. The state also had the eighth-highest rates of female obesity and physical inactivity, and ranked in the bottom 10 for women's community and environment, clinical care, health behaviors and policy.
- Indiana ranked 49th in public health funding, spending \$41 per capita in state and federal dollars. The U.S. average is \$94, while the top state — Alaska — spends \$261.

"We're so far behind in public health in general," said Gabriel Filippelli, director of the Center for Urban Health at Indiana University-Purdue University Indianapolis.

"It's no surprise we had zero schools of public health until four years ago. Our public health professionals were not well trained in public health."

In 2013, the Indiana State Department of Health declared that reducing infant deaths would be its top priority. The Indiana Legislature has since allocated more than \$17 million to fight infant mortality. That money has gone toward grants to nonprofits, the development of a mobile app for pregnant women and a marketing campaign that focused on safe sleep practices and the importance of prenatal care. Despite these efforts, Indiana's infant death rate per 1,000 live births actually rose to 7.3 in 2015 from 7.1 in 2013.

The health department contends that the rate is down from 7.7 in 2011, and its work has helped reduce the African-American infant death rate, the percentage of women who smoke during pregnancy and the number of preterm births, said spokeswoman Jennifer O'Malley. She also noted that there are now fewer elective deliveries and more babies with low birth weights being born in the proper facilities.

Babies die for any number of complex reasons. Many were delivered prematurely or low weight. Poverty, stress, nutrition, pollution and access to health care can all be contributing factors.

"It's such a hard nut to crack," said Dr. Debra Litzelman, a professor and researcher with the IU School of Medicine. "In Indiana, we rank poorly in so many areas: smoking, obesity, mental health, alcoholism, substance abuse, access to care. Each one of those is a cumulative risk for infant mortality.

"But many of the programs only focus on one thing. If you only focus on smoking, and a woman has nothing to eat, that's not going to change her health. If you only focus on safe sleep and not domestic violence and mental health, you're not going to make an impact."

The state of Indiana released a report in 2014 that examined the predictors of infant mortality. It found that the baby of a mother on Medicaid who is between the age of 15 and 20 and goes to fewer than 10 prenatal visits is at the highest risk for death. While these babies account for only 1.6 percent of the births in Indiana, they make up nearly half of the deaths.

The fact that so many of these mothers are on government-sponsored insurance shows the degree to which this is an economic issue that affects us all: A premature or low-weight birth costs \$54,149, or 12 times more than an uncomplicated delivery, according to the March of Dimes.





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Two-year-old Noah Stone-Hall and his 1-year-old sister, Skyla, wait for their parents to finish a December parenting workshop in Washington, Indiana.

'You can't blame the women'

"You don't want to point a finger at women. You can't blame the women," said Jack Turman, a maternal and child health expert at Indiana State University.

"People living in poverty account for a very high percentage of people who are suffering from infant mortality. You have the issue of poverty. People living in poverty don't have access to good food. If they do, they don't know how to prepare it. People in poverty have a high risk of living with chronic stress — which changes the immune system, hormones, the cardiovascular system, the reproductive system, leading to poor birth outcomes."

Dr. Sue Ellen Braunlin, co-president of the Indiana Religious Coalition for Reproductive Justice, said she was disappointed that Indiana's first infant mortality summit in 2013 focused so much on women's behaviors rather than the social determinants of health.

"It was very one-sided, and blaming and shaming women for eating too much and for not sleeping right and being in violent situations," she said.

"A lot of these women have no choice. They live in food deserts and have no money for fresh vegetables. They can't always go on bed rest when doctors tell them to."

Braunlin believes the state's policies on social issues contribute to infant deaths. Indiana's tight restrictions on abortion access make it more likely that low-income women will have unwanted pregnancies and deliver babies they're unable to care for, she said. And she asserted that Indiana's abstinence-only sex education contributes to the state's high teen birth rate; teens are the age group most likely to lose a baby.

The focus on women also lets men off the hook.

"We do know that when fathers are involved as supportive partners, the infant mortality rate does decrease," said Waldo Johnson, a professor at the Center for the Study of Race, Politics and Culture at the University of Chicago.

"A father can be there to listen, to soothe the mother when she is anxious, to encourage her to go to prenatal visits, to make sure she's eating more fruits and vegetables and less processed food."

Race a factor

A Times analysis of state mortality statistics shows that a mother's location and race greatly affect her risk of losing a baby.

"Your ZIP code matters more than your genetic code," said Dr. Anthony Iton, senior vice president of the California Endowment. "Where you live predicts how long you will live."

If you're an African-American born in the 46312 ZIP code — East Chicago, an economically depressed Rust Belt city in Indiana's northwest corner — you have a 1 in 36 chance of dying before your first birthday.

By comparison, if you're a white person born in a ZIP code in Hamilton County — a wealthy, suburban enclave north of Indianapolis — your odds improve to 1 in 286.

African-Americans in Indiana have almost 2.5 times the infant death rate of whites. "We've shown that lifelong minority status seems to be a risk factor," said Dr. James Collins, a professor of pediatrics at Northwestern University.

"When black women come from Africa or the Caribbean, their birth outcomes are similar to the white population. But when the girls grow up in the U.S., by the next generation, their birth outcomes are similar to those of the general African-American population." He said that may be explained by the stress caused by racial discrimination.

Black Indiana residents have a poverty rate that is 2.5 times as high as the white population, according to the American Community Survey.

Risk factors for infant mortality in Indiana often differ by race. White mothers smoke and use alcohol at higher percentages than black mothers, while African-American women are more likely to use drugs during pregnancy and have an infant suffocate during sleep, and are less likely to get prenatal care and breastfeed, according to data from the Indiana State Department of Health.

Pollution, smoking raise risks

Numerous academic studies have found that pollution can lead to birth complications, and several studies have found Indiana to be among the most polluted states in the country:

- Three of the top 25 metro areas in the U.S. for particle pollution are in Indiana, according to the American Lung Association.
- Indiana has the fourth-worst air quality of any state, Wallet Hub found.
- The state has among the worst rates in the nation for pollution caused by these sources: first for industry, third for rail, sixth for electricity generation and sixth for roads, according to a 2013 Massachusetts Institute of Technology study.
- Indiana has the second-highest percentage of premature births caused by air pollution in the country, a 2016 study in *Environmental Health Perspectives* found. Those 532 annual preterm births, 5.4 percent of the total number, cost an estimated \$25.6 million in medical care and \$146 million in lost economic productivity over a lifetime.

"Little babies and kids have really small airways that are prone to collapse or close with inflammation," said Dr. Stephen Jay, a professor of medicine and public health at IUPUI. "Kids breathe in fast; they breathe in a disproportionate share of particles compared to adults."

He noted that disadvantaged children also are more likely to live near heavy industry, making pollution a compounding factor.

"The developing child during pregnancy is at its most vulnerable to harmful exposures," said Dr. Indra Frank, environmental health director for the Hoosier Environmental Council.

"The same exposures to an adult might have no impact on their health. To a developing child, whose cells are growing and dividing and developing along their course, their organs are susceptible to changes in chemistry."

In Indiana, about a fifth of pregnant women smoke, the fifth-worst rate in the nation, according to the United Health Foundation, and more than 30 percent of kids live in households with a smoker.

Smoking during pregnancy is a risk factor for low-birth weights and can harm a babies' lungs, heart and sleep arousal, potentially causing sudden infant death syndrome.

A 2016 study in *Pediatrics* found that a dollar cigarette-tax increase leads to a 0.2 reduction in a state's infant mortality rate. If that theory holds true, Indiana could save the lives of 17 infants for every dollar it raised its cigarette tax. Indiana has the 19th-lowest such tax in the nation, at 99 cents a pack, according to the Tax Foundation (New York ranks first at \$4.35 per pack). A proposed tax hike last year in the Indiana General Assembly went nowhere.

Many deaths due to unsafe sleep

In 2015, the third-leading cause of infant deaths in Indiana was accidental suffocation and strangulation in bed. Many of these deaths used to be classified as sudden infant death syndrome, but coroners are increasingly coding them as suffocation, due to the sleeping conditions the bodies were found in.

Public health experts say a surefire way to lower infant deaths is to make sure all babies sleep alone, on their backs, in a crib — known as the "ABCs" of safe sleep.

"It really is a culture change," said Dr. Nancy Swigonski, an IU professor of pediatrics and public health.

"People look at this naked, bare, hard surface and think, I want something cuddly, I want color. People think that's showing their baby love. I think we really need to help people understand that love is making your baby safe."

Right here in Indiana, a professor at the University of Notre Dame has come to a different conclusion.

James McKenna, an anthropologist who runs the Mother-Baby Behavioral Sleep Laboratory, says telling parents their babies have to sleep alone in cribs pushes co-sleeping underground, rather than teaching how to do it safely.

He also says advocating for both increased breastfeeding and the "ABCs" of sleep is counterintuitive, as babies who breastfeed will inevitably fall asleep on their mothers' chests.

"Parents are being deprived of the very fundamental insight of how to minimize risk in a bed-sharing environment," he said.

Overall health matters

Infant death is a complex issue but, at the same time, easy to understand: A low rate of dying babies equals a healthy population overall, and vice versa.

"Improving the health of women in the state of Indiana will help addressing the infant mortality rate," said Dr. Laura Haneline, head of neonatal and perinatal medicine at Riley Hospital for Children at IU Health in Indianapolis. "If you come into pregnancy healthy ... it increases your chances of having a healthy pregnancy."

"Infant mortality is one of the most challenging public health issues to take on," said Walthall, the state's former deputy health commissioner. "But if we can get this right, we can get everything else right."

GRAPHS AND CHARTS WITH DATA CAN BE FOUND AT THE FOLLOWING WEBSITE:

<http://www.nwitimes.com/news/special-section/infant-mortality/introduction/>

This series was produced as a project for the University of Southern California Center for Health Journalism's National Fellowship.

