IMPROVING THE WELL-BEING OF ALABAMA'S CHILDREN

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Introduction

For more than 60 years, the Annie E. Casey Foundation has worked across America to improve the lives of children at risk of poor educational, economic, social and health outcomes. The Kids Count Data Center, a project of the Foundation, works with VOICES for Alabama's Children and organizations in the other 49 states to measure hundreds of indicators. Each year, the Annie E. Casey Foundation publishes the Kids Count Data Book to identify national trends in four domains: Economic Well-Being, Education, Health, and Family and Community. Each domain is broken into 4 indicators, which are discussed in more detail below.

VOICES for Alabama's Children annually publishes the Alabama Kids Count Data Book, measuring the key indicators impacting Alabama's children, and identifying trends at the state and county level. Our team was tasked with using the Kids Count data to develop recommended areas of focus to achieve the greatest gain for Alabama's children. The Kids Count Data Books provided us with an amazing source to determine where Alabama stands in child well-being compared to the other states. Alabama ranked 42nd overall in the well-being of children according to the 2018 Kids Count Data Book. Alabama's overall ranking over the past six years ranked between 42nd and 46th in the nation. Alabama's ranking over the past six years can be seen in Figure 1.

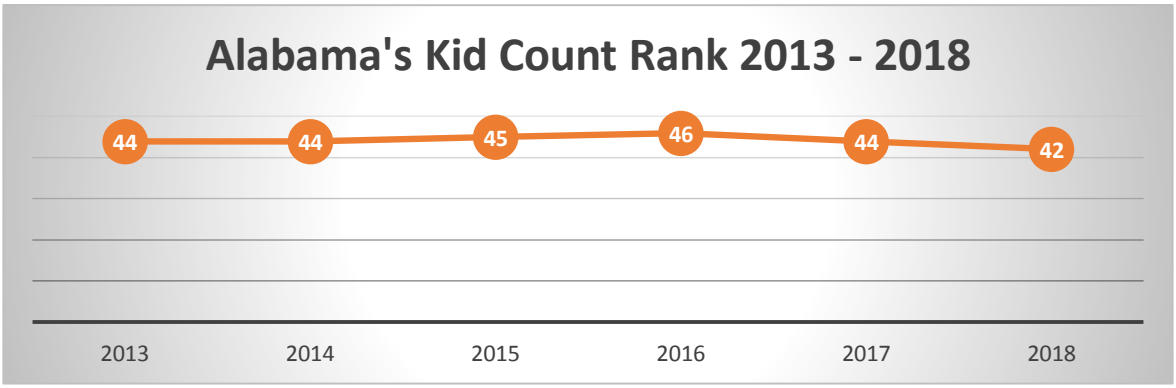


Figure 1

Alabama's Child Well-Being Ranking

According to the 2018 Kids Count Data Book, Alabama ranked 38th in economic well-being, 42nd in education, 37th in health, and 43rd in family and community. The health domain is the only domain that saw any change in ranking from the 2017 Kids Count Data Book. In 2018 the health domain improved by five spots from its 2017 ranking of 42nd. Alabama's domain rankings for 2018 can be seen in Figure 2.

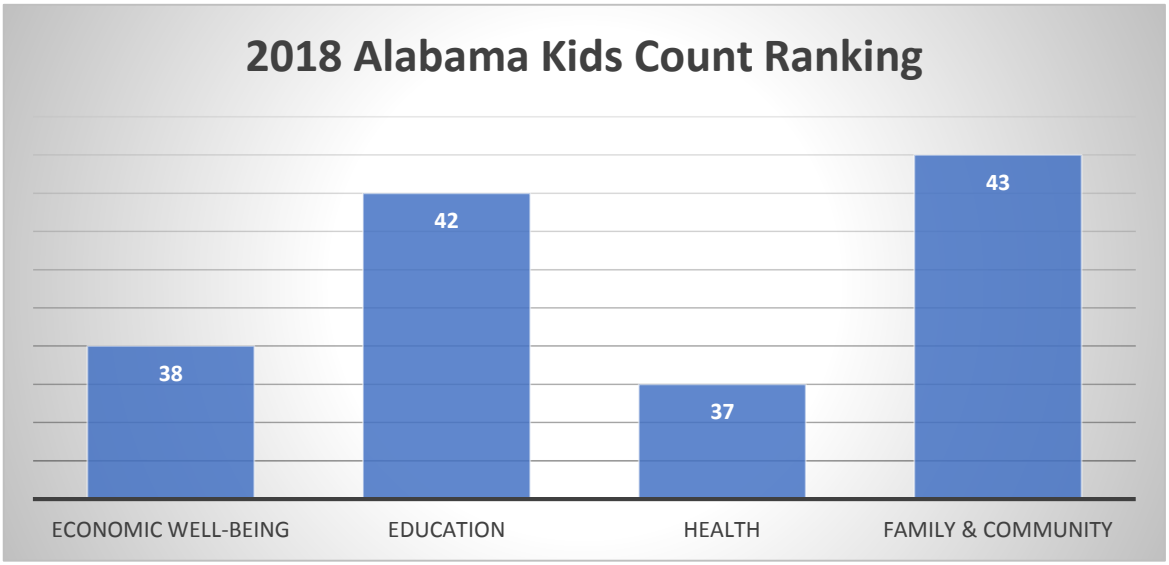


Figure 2

Economic Well-Being

The economic well-being domain measures the following indicators: children in poverty, children whose parents lack secure employment, children living in households with high housing cost burden, and teens not in school and not working. Alabama was better than the national average when it came to children living in households with a high housing cost burden. Alabama had higher than average numbers of children in poverty, children whose parents lack secure employment, and teens not in school and not working.

Education

The education domain measures the following indicators: young children not in school, fourth graders not proficient in math, eighth graders not proficient in math, and high school students not graduating on time. Alabama outperformed the national average in only one indicator, which was high school students not graduating on time. The state of Alabama had 13% of its high school students not graduating on time versus the national average of 16%. In all other indicators for the education domain, Alabama performed below the national average.

Health

The health domain measures the following indicators: low-birthweight babies, children without health insurance, child and teen deaths, and teens who abuse alcohol or drugs. Alabama saw slight improvements in three of the indicators from 2017 to 2018. Low birthweight-babies improved from 10.4% to 10.3%, children without health insurance improved from 3% to 2%, and teens who abuse alcohol dropped from 5% to 4%. Alabama outperformed the national average for children without health insurance and teens who abuse alcohol. Alabama performed below the national average in low birthweight-babies and child and teen deaths.

Family and Community

The family and community domain measures the following indicators: children in single families, children in families where the household head lacks a high school diploma, children living in high poverty areas, and teen births. Alabama improved in children in single-parent families, children in families where the household head lacks a high school diploma, and teen births. Alabama was unchanged in children living in high-poverty areas. Alabama outperformed the national average in children in families where the household head lacks a high school diploma.

Kids Count Six-Year Trend

The Kids Count Data Books from the years 2013 to 2018 were researched to find the six-year trend on the well-being of Alabama's children. Of the four domains, the health domain is the only domain with a lower 2018 ranking than 2013 ranking. The health domain is two spots below its 2013 rank of 35. The 2018 economic well-being ranking is two spots higher than it was in 2013. The education domain also improved by two spots during this time. The family and community ranking improved by one spot between 2013 and 2018. The six-year trend can be seen in Figure 3.

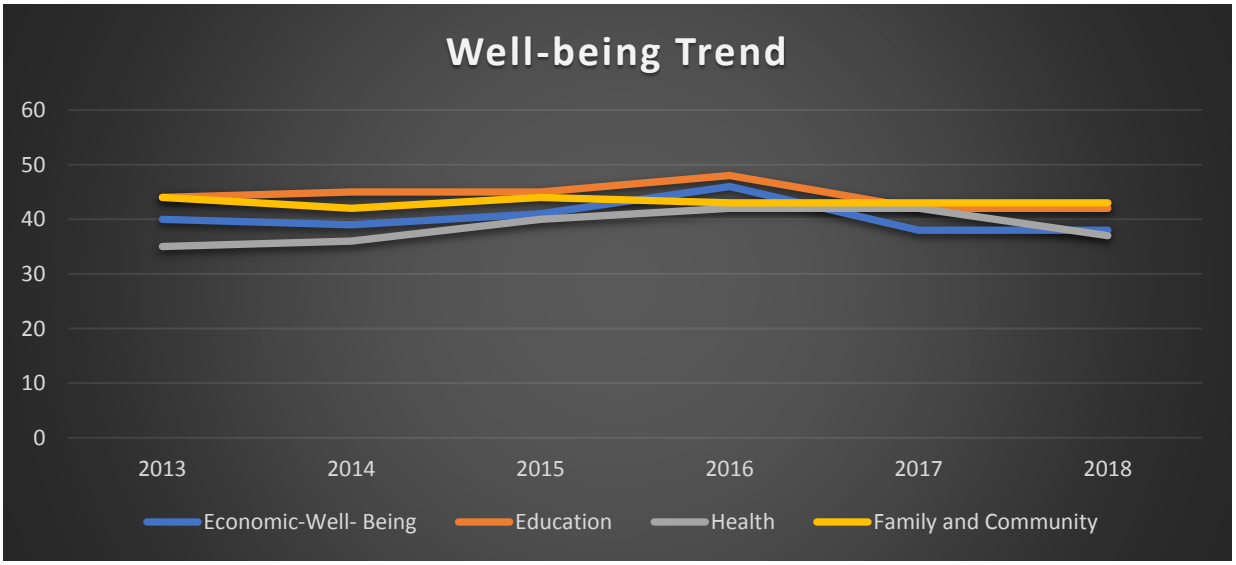


Figure 3

It was important to determine the cause of the health domain's decrease in national ranking. Indicators of the health domain were further examined by researching the data from the Kids Count Data Center. We initially researched the most recent six years of data for the health domain. The six most recent years of data covered 2011 through 2016. This data was used for Kids Count Books 2013 through 2018.

There were drastic differences between how Alabama ranked in the nation for these health indicators. The six-year trend showed that teens who abuse alcohol or drugs and children

without health insurance ranked very high compared to the other states. These two indicators ranked 1st and 2nd respectively for 2018 according to the Kids Count Data Center. Low birth-weight babies and child and teen deaths ranked much worse. In 2018, low birth-weight babies ranked 48th while child and teen deaths ranked 45th. The five-year trend shows that Alabama's ranking for low birth-weight babies has consistently ranked 48th in the nation while child and teen deaths has varied between 42nd and 46th during this six-year period. This six-year trend can be seen in Figure 4 below.

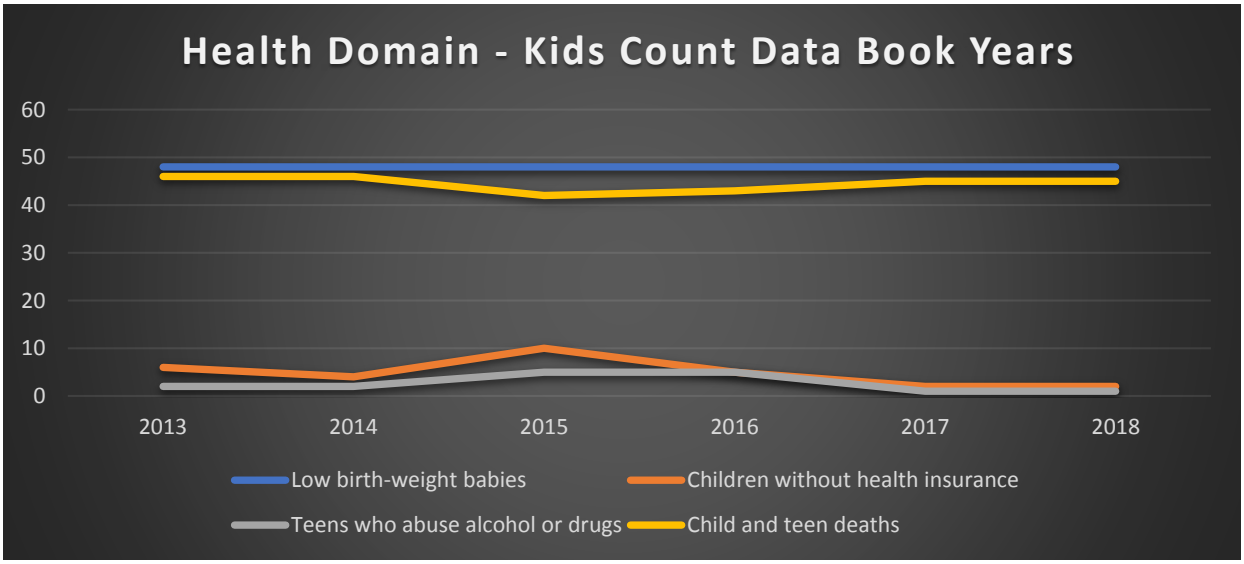


Figure 4

We expanded our research of the Kids Count Data Center for low birth-weight babies back to 2006. Research showed that over the ten-year period in Alabama, low birth-weight babies represented between 9.9% and 10.2% of all live births. During that same period-of-time, the national average was between 8% and 8.2%. Alabama's highest year was 2008 with a rate of 10.6. The highest national rate during this period was 8.2, which occurred during multiple years. Figure 5 shows the low birth-weight rates for Alabama and the United States from 2007 to 2016.

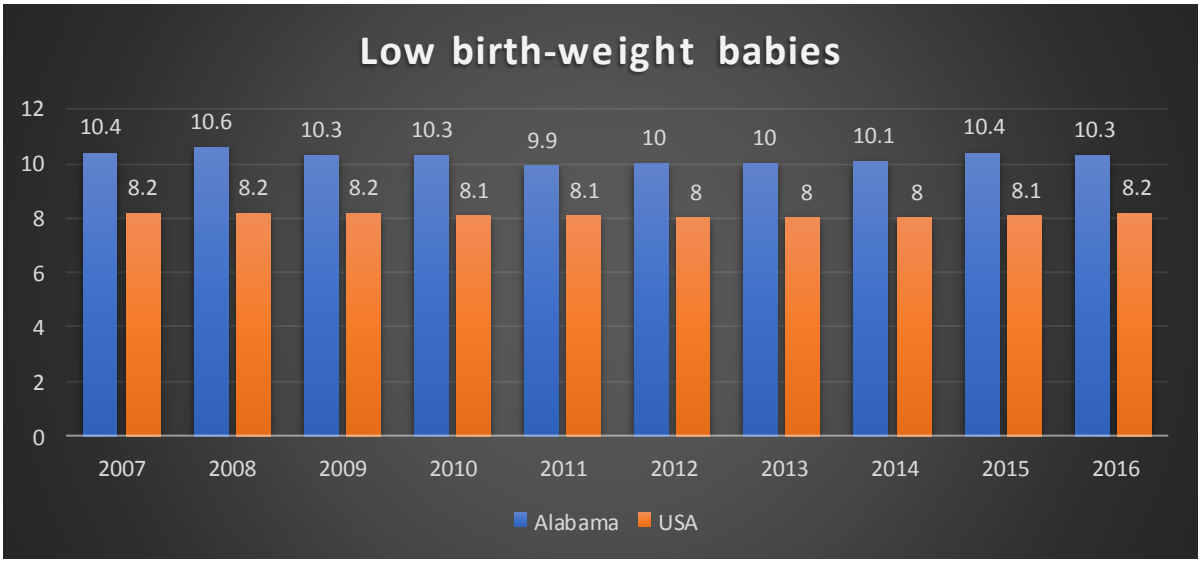


Figure 5

Area of Focus

Further research was conducted on low-birth weight babies. Kids Count Data Book defines low birth-weight as infants that are less than 5.5 pounds at birth. According to Kids Count, these babies have a high probability of experiencing development problems and short-and long-term disabilities. They are also at a greater risk of dying within the first year. With the high low birth-weight rate in Alabama, our team discussed the possibility of Alabama having high numbers of deaths among children less than a year old. We soon found that according to Kids Count Data Center, in 2016, Alabama's infant mortality rate earned it a national ranking of 50th. Although infant mortality was not listed in the Kids Count Data Book as an indicator, the rate does affect the well-being national ranking.

According to the Alabama Department of Public Health (ADPH), 537 infants died in Alabama during2016 before reaching a year old. There were 59,090 live births in 2016. This resulted in an infant mortality rate of 9.1 per 1,000 live births. This is the highest infant mortality rate since 2008 when the rate was 9.5. After lengthy discussions, our team chose to

concentrate on reducing Alabama's infant mortality rate as the main area of focus in increasing the well-being of Alabama's children due to Alabama's consistent low ranking.

Since 2005, Alabama has ranked no better than 47th in the nation when it comes to infant mortality. Alabama's infant mortality rate has reached as high as 9.9 in 2006. The lowest infant mortality rate during this time-period was 8.2, which occurred in 2011. Infant mortality rates for each year from 2000 to 2016 are shown in Figure 6.

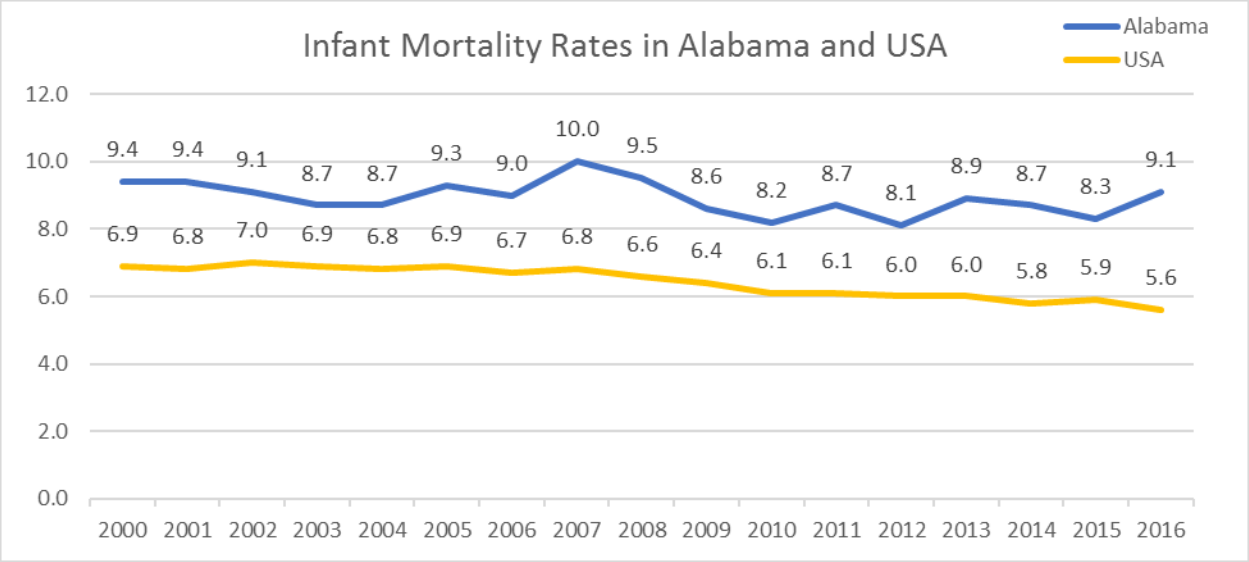


Figure 6

We also wanted to compare the infant mortality rate for Alabama and the United States with other countries. We researched global infant mortality rates listed by The World Bank. To put these rates into perspective, we needed a way to categorize each country. For this purpose, we looked at how countries were classified by the United Nations. The United Nations classifies countries based on the development of their economies. The classifications include developed economies, economies in transition, developing economies, and least developed countries. Within the developed economies classification are countries classified as major developed economies, which includes the United States and six other countries. When it comes to infant mortality rates, the United States has the highest infant mortality rate of these seven countries. Alabama's infant mortality rate was

more than twice as high as all the countries classified as major developed economies except the United States.

We also compared the infant mortality rates of the United States to those countries listed as economies in transition. The infant mortality rate of the United States was higher than three of the countries classified as economies in transition. The countries with lower infant mortality rates than the United States were Belarus, Bosnia, and Serbia. Alabama's infant mortality rate was higher than five countries classified as economies in transition. The two additional countries with rates lower than Alabama were Ukraine and the Russian Federation. In addition, Alabama had a higher infant mortality rate than Sri Lanka and Bahrain, which are described as developing economies. How Alabama's infant mortality rate per 1,000 live births compared to major developed economies is shown in Figure 7, and how Alabama compared to economies in transition is shown in Figure 8.

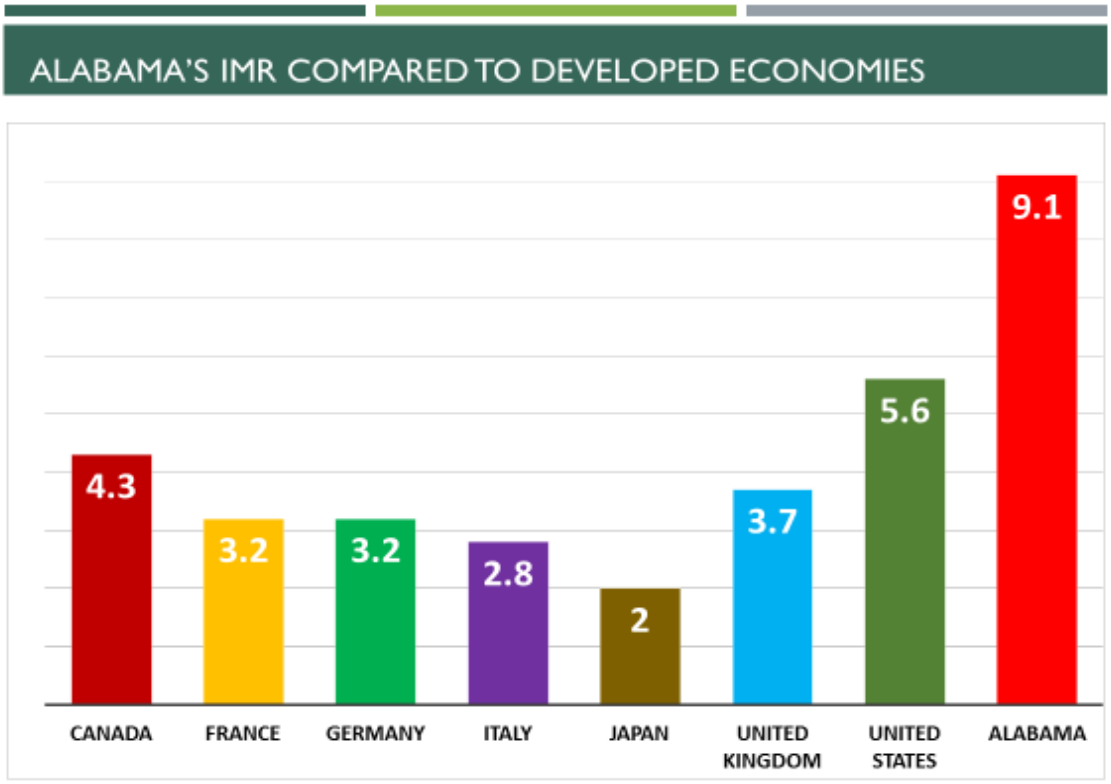


Figure 7

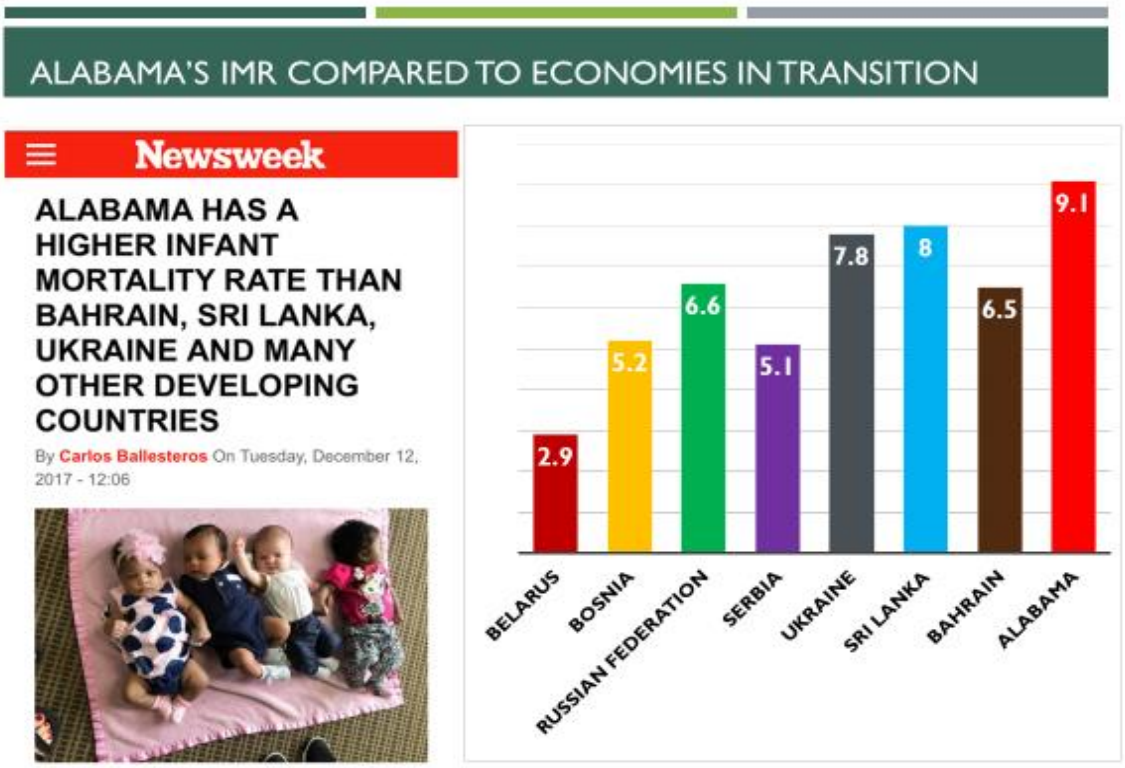


Figure 8

Leading Causes of Infant Mortality

Kids Count defines infant mortality as deaths occurring to infants under one year of age per 1,000 live births. According to ADPH, most often there is no single factor that causes the death of an infant, and it is usually the result of numerous contributing factors. The Alabama Perinatal Health Act Annual Progress Report for FY 2017, lists congenital anomalies, also known as birth defects, as the leading cause of infant mortality in 2016. Prematurity is listed as the second leading contributing factor in infant death. Sudden Infant Death Syndrome (SIDS) was the third leading cause of infant mortality and was responsible for 130 of the 537 infant deaths in 2016.

The ADPH Center for Health Statistics listed the three leading causes of infant mortality from 2006 to 2015. Congenital malformations, deformations and chromosomal abnormalities was listed as the top cause. Disorders related to short gestation and low birth weight, not elsewhere classified was listed as number two. The third leading cause was SIDS. According to ADPH, these three causes accounted for 40%-45% of all infant deaths from 2006 to 2015. Other areas that contribute to infant mortality include preconception health, smoking, substance abuse, short birth intervals, and access to health insurance.

Congenital anomalies

The World Health Organization defines congenital anomalies as structural or functional anomalies (for example, metabolic disorders) that occur during intrauterine life and can be identified prenatally, at birth, or sometimes may only be detected later in infancy, such as hearing defects. According to Boston Children's Hospital, the causes of congenital anomalies can be broken into two categories. The first category is genetic or inherited causes. These causes include chromosomal defects, single gene defects, dominant inheritance, and recessive inheritance. The second category is environmental causes. Environmental causes include a drug, alcohol, or a disease the mother has that can increase the chance for the baby to be born with a birth defect. In addition, there can also be a multifactorial birth defect that is caused by a combination of genes and environmental exposures.

Prematurity

Prematurity is a term for the broad category of neonates born at less than 37 week's gestation. According to ADPH, preterm births accounted for 12% of total births in 2016. However, 64.8% of infant deaths in 2016 were associated with preterm births. According to ADPH, 15% of preterm births in 2016 were to mothers who had previous preterm deliveries. There were 7,074 pre-term births in 2016.

Often, the specific cause of a premature birth isn't clear. The Mayo Clinic lists 12 known risk factors of a premature delivery. These risk factors are as follows: having a previous premature birth, pregnancy with twins, triplets or other multiples, an interval of less than six months between pregnancies, conceiving through in vitro fertilization, problems with the uterus, cervix or placenta, smoking cigarettes or using illicit drugs, some infections, particularly of the amniotic fluid and lower genital tract, some chronic conditions, such as high blood pressure and diabetes, being underweight or overweight before pregnancy, stressful life events, such as the death of a loved one or domestic violence, multiple miscarriages or abortions, and physical injury or trauma.

Sudden infant death syndrome (SIDS)

The Mayo Clinic defines sudden infant death syndrome (SIDS) as the sudden and unexplained death, usually during sleep, of a seemingly healthy baby less than one year old. SIDS is sometimes known as crib death because the infants often die in their cribs. The Mayo Clinic lists four categories of factors for SIDS. These factors are as follows: physical factors, sleep environmental factors, risk factors, and maternal risk factors.

Physical factors associated with SIDS are brain defects, low birth weight, and respiratory infections. Sleep environmental factors associated with SIDS are sleeping on the stomach or side, sleeping on a soft surface, sharing a bed, and overheating. Risk factors associated with SIDS are sex/gender, age, race, family history, secondhand smoke, and being premature. The maternal risk factors associated with SIDS include mothers younger than 20, mothers who smoke cigarettes, mothers who use drugs or alcohol, and mothers who have inadequate prenatal care.

Access to healthcare

In 2015, 85.1% of pregnant women with private insurance received adequate prenatal care, compared to 67.6% of those insured by Medicaid, and 58.8% of those who were self-pay according to Alabama Center for Health Statistics, 2016. According to the United Health Foundation in 2016, 22% of women between the ages of 18-44 were uninsured. Research conducted by Chintan B. Bhatt, MBBSS, MPH, and Consuelo M. Beck-Sague, MD, on infant mortality and Medicaid found the mean infant mortality rate in non-Medicaid expansion states rose slightly from 6.4 to 6.5 from 2014 to 2016, whereas in Medicaid expansion states, it declined from 5.9 to 5.6 per 1000 live births. The study also found more significant declines among African Americans. African American infants in Medicaid expansion states saw declines of 14.5% from 11.7 in 2010 to 10.0 in 2014, compared to African Americans in non-Medicaid expansion states who saw declines of 6.6% from 12.2 in 2010 to 11.4 in 2015.

SOBRA Medicaid is a health care coverage program for children under 19 years of age and pregnant women. Women who are eligible for SOBRA Medicaid while pregnant lose insurance 60 days after the delivery.

When it comes to access to healthcare, insurance is not the only factor. Having hospitals close by is also very important. There are 38 counties in the state of Alabama that have no delivery hospitals. The map in Figure 9 below shows the number of delivery hospitals located in each county in 1980 in comparison to the number in 2014. Counties with no delivery hospitals are shown in red. The lack of delivery hospitals in some counties leads to many Alabama citizens in border counties to give birth in bordering states.

Figure 9

Demographics of Infant Mortality

Hidden within Alabama's Infant Mortality Rate are stark demographic differences. These demographic differences include race and economic factors. These same demographic differences can be seen in nationwide infant mortality statistics. According to Kids Count Data Center, African Americans in Alabama had an infant mortality rate of 15.3 in 2015. The infant mortality rate of white infants was 6.4 in 2015. Large differences could also be seen nationally with African Americans having an infant mortality rate of 11.4, whites having a rate of 4.8, and Hispanics having a rate of 5.2. It's clear that African American babies have a much higher risk of dying before reaching a year old than babies of other races.

There are also socio-economic differences in infant mortality rates. According to Alabama Perinatal Health Act Annual Progress Report for FY 2015 Plan for FY 2016, in 2014, infants of

mothers with no insurance coverage and who did not qualify for Medicaid had the highest infant mortality rate at 13.0 infant deaths per 1,000 live births. Medicaid financed deliveries accounted for 319 of the 517 infant deaths, and mothers who had deliveries financed by private insurance accounted for 158 of the 517 infant deaths in 2014. This means 40 of the 517 infant deaths were financed by self-pay. Medicaid deliveries represented 52% of the births in Alabama for 2014. During 2015 the Medicaid infant mortality rate was 9.8 according to ADPH.

Healthcare Costs

According to the Alabama Medicaid Agency, the state spent $419 million in Fiscal Year 2016 for children younger than 1 year old. Of that $419 million, $247 million was for infants in the neonatal intensive care unit (NICU). The average first year cost per infant in NICU in Fiscal Year 2016 was $51,658. Non NICU infants had an average first year cost of $2,680. In Fiscal Year 2016, 16% of Medicaid deliveries required NICU. These costs are shown in Figure 10. The healthcare costs of NICU infants are very expensive compared to their non NICU counterpart. The average NICU stay was 19 days, and the average cost per day was $2,069. The average healthcare cost of a Non NICU is $2,680. This means the average cost of inpatient stay for a NICU infant for a day is almost as much as the yearly average healthcare cost of a non NICU infant.

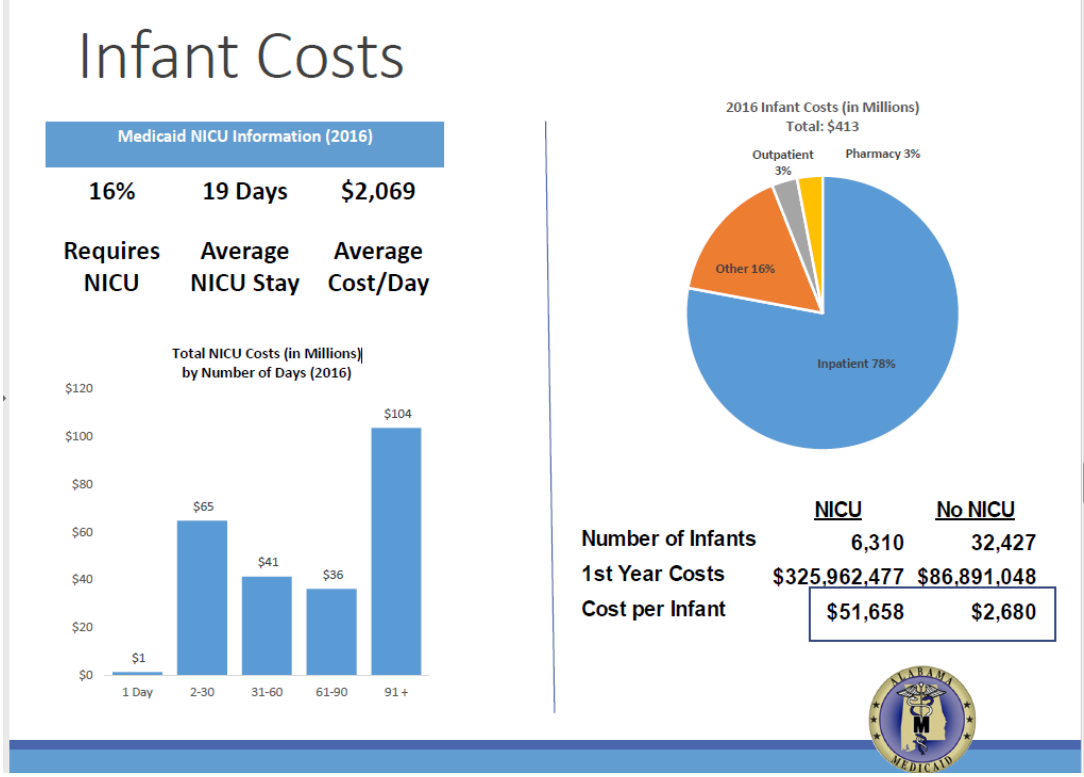


Figure 10

We also researched the inpatient cost of mothers. According to the Alabama Medicaid Agency, high risk pregnancies account for approximately 30% of White pregnancies, 38% of Hispanic pregnancies, and 42% of African American pregnancies. The average cost associated with these high-risk pregnancies are $5,942, $5,272, and $6,651 respectively. Normal risk pregnancies for these demographics were lower. Normal risk White pregnancies averaged $4,405, Hispanics had an average cost of $4,463, and African American's had an average cost of $4,764.

Current Programs

The Fetal and Infant Mortality Review Program (FIMR) was established to identify critical community strengths and weaknesses as well as unique health and social issues associated with poor outcomes of pregnancy. The program is a community-based statewide initiative

designed to enhance the health and well-being of women, infants, and families through the review of unidentified individual cases of fetal (stillbirth) and infant deaths and voluntary maternal interviews. The process begins with a fetal or infant death. Information about the fetal or infant death is gathered.

The Alabama Medicaid Agency Plan First program began October 11, 2000. The program extends Medicaid eligibility for family planning services to women ages 19 through 55 losing Medicaid 60 days after delivery with incomes up to 141% of the federal poverty level. The program covers long acting birth control in the inpatient hospital setting immediately after delivery or up to the time of the impatient discharge for postpartum women, or in an outpatient setting immediately after discharge from the impatient hospital. This is done to help with spacing, unplanned pregnancies, and improve birth outcomes.

In March of 2017 a new program launched from a partnership between Baby Box Co. and the Alabama Rural Development Office to bring cardboard boxes that double as sleeping spaces to all parents across Alabama in an effort to reduce the state's infant mortality rate. Parents can go online, watch educational videos and take a quiz to qualify for a sleeping box. Each box contains a mattress and fitted sheets and can hold a baby up to six months old. The boxes also contain onesies, diapers, wipes and breastfeeding supplies.

17P is a progesterone medicine that can help prevent preterm birth in some pregnant women who have already had a preterm birth. Progesterone is a hormone that a woman's body makes naturally during pregnancy. Extra progesterone for some women can help prevent another preterm birth. The 17P shot is given every week, starting in the second trimester. The 17P will be given until at least 37 weeks of pregnancy. According to the Mississippi State Department of Health, nothing lowers the risk of repeat preterm birth as well as the 17P. The 17P lowers a woman's risk of repeat preterm birth by 33%.

Recommendations

Creation of a Taskforce or Council

On August 8, 2017, Governor Kay Ivey signed Executive Order 708, creating the Alabama Opioid Overdose and Addiction Council. The executive order made changes to the previous Alabama Council on Opioid Misuse and Addiction, which was created by former governor Robert Bentley. The council was tasked with fighting opioid addiction in Alabama. On December 31, 2017, the council released its report which presents a four-pronged action plan to address prevention of opioid misuse, intervention within the law enforcement and justice systems, treatment of those with opioid use disorders, and community response that engages the people of Alabama in finding solutions at a local level.

Like the opioid crisis, there is no one simple solution that can put an end to Alabama's high infant mortality rate. Therefore, we feel we should use the same approach as was recently used to battle opioids in this state. We recommend the creation of the Alabama Infant Mortality Rate Reduction Council. This council should be tasked with finding ways to reduce the high rate of infant mortality in Alabama. To do so, the council should consist of the Alabama Medicaid Agency, Alabama Department of Public Health, private insurers, obstetricians and gynecologists, University of Alabama Birmingham, University of South Alabama, rural hospitals, Certified Nurse Midwives, and even community and business leaders.

The council should address issues including expansion of the FIMR program, Medicaid eligibility, expansion of the baby box program, birthing centers in rural areas, availability of 17P shot, and scholarships for obstetricians and gynecologists practicing in rural areas.

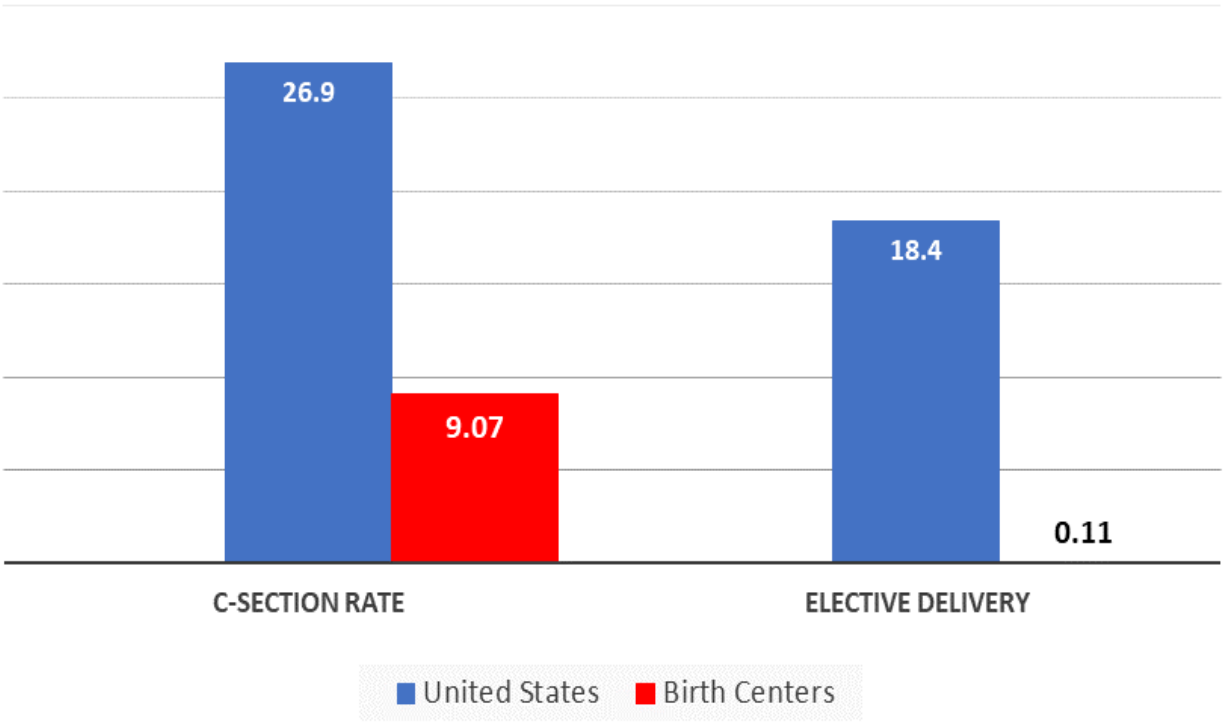
Birth Centers

According to an article published in the New York Times, childbirth is more expensive in the United States than in any other developed country. Unfortunately, we don't have much to show for the money as the United States has one of the highest rates of both infant and maternal death. That means the United States is simultaneously the most expensive and one of the riskiest places to give birth.

According to statistics from the Center of Disease Control and Prevention (CDC), the rate of birth by cesarean section in the United States was 31.9% in 2016, much higher than the World Health Organization's recommended 15%, with no decrease in maternal or neonatal morbidity or mortality. The cesarean rate in Alabama in 2016 was higher than the national rate at 34.4%, meaning more than 1/3 of births in Alabama were performed by cesarean section. Giving birth by cesarean section can limit birth choices in future pregnancies, as more and more obstetricians refuse to perform vaginal births after a cesarean section (VBACs). Roughly 90% of women that give birth by cesarean section will end up having more babies by cesarean section, and the risks increase with each surgery.

According to a report by the Association of American Medical Colleges (AAMC), the United States is facing a shortage of physicians in specialty fields like obstetrics and gynecology. Meanwhile, according to the Bureau of Labor Statistics, employment of nurse midwives increased by more than 20% between 2014 and 2016. A recent study entitled "Mapping integration of midwives across the United States: Impact on access, equity, and outcomes" found that a greater integration of midwives was significantly associated with higher rates of spontaneous vaginal birth, VBAC, and breastfeeding, as well as lower rates of obstetric interventions, preterm births, low birth-weight infants, and neonatal death. Alabama had the lowest score for integration of midwives, other than North Carolina, but recent passage of legislation legalizing the practice of Certified Nurse Midwives in Alabama could potentially have a positive impact on access to care.

According to analysis commissioned by the New York Times from Truven Health Analytics, charges for delivery have tripled since 1996. When considering the risks from medical interventions, rising health care costs and physician shortages, it seems irresponsible to pay for hospital inpatient care for women who neither need it nor want it. One option for low-risk pregnancies is hospital-affiliated, freestanding birth centers. Midwife-led, freestanding birth centers produced better outcomes than hospitals on all quality measures for Medicaid beneficiaries.

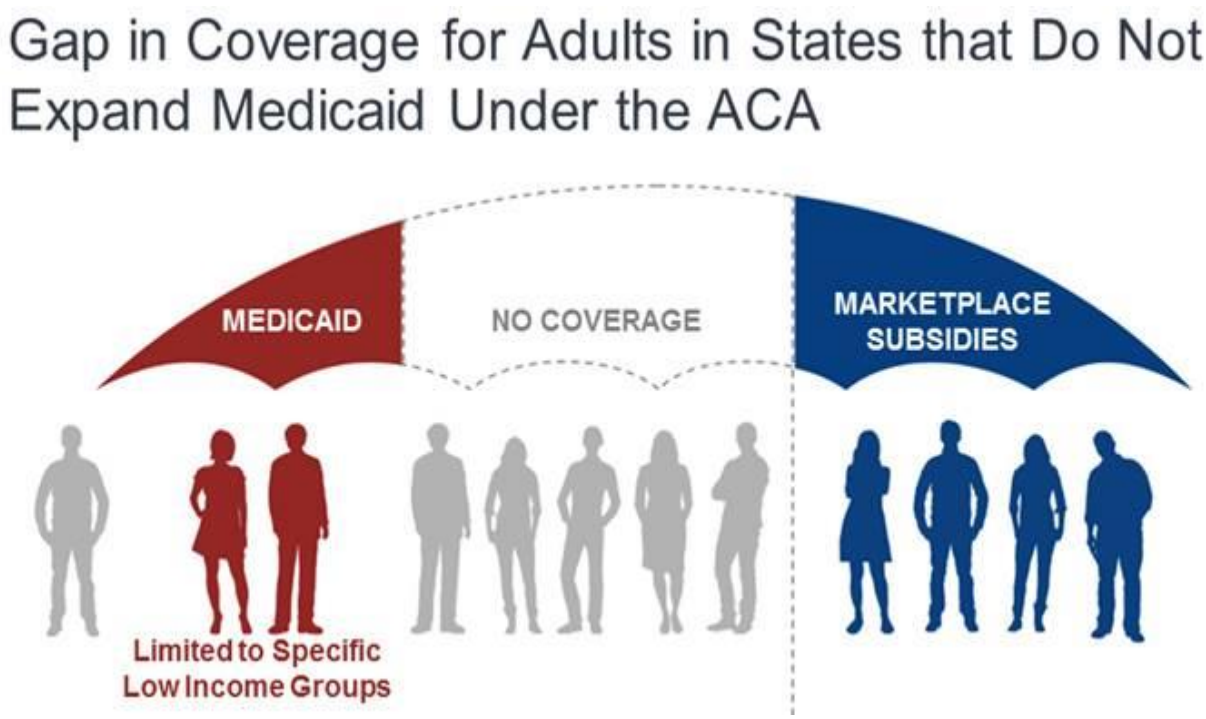


These birth centers could be placed in rural parts of the state that have limited access to care. The Affordable Care Act includes several provisions supporting midwives and birth centers. By licensing freestanding birth centers in Alabama, Medicaid and private insurance plans could realize cost savings from reducing the rate of cesarean sections, pre-term births, and the cost of normal deliveries.

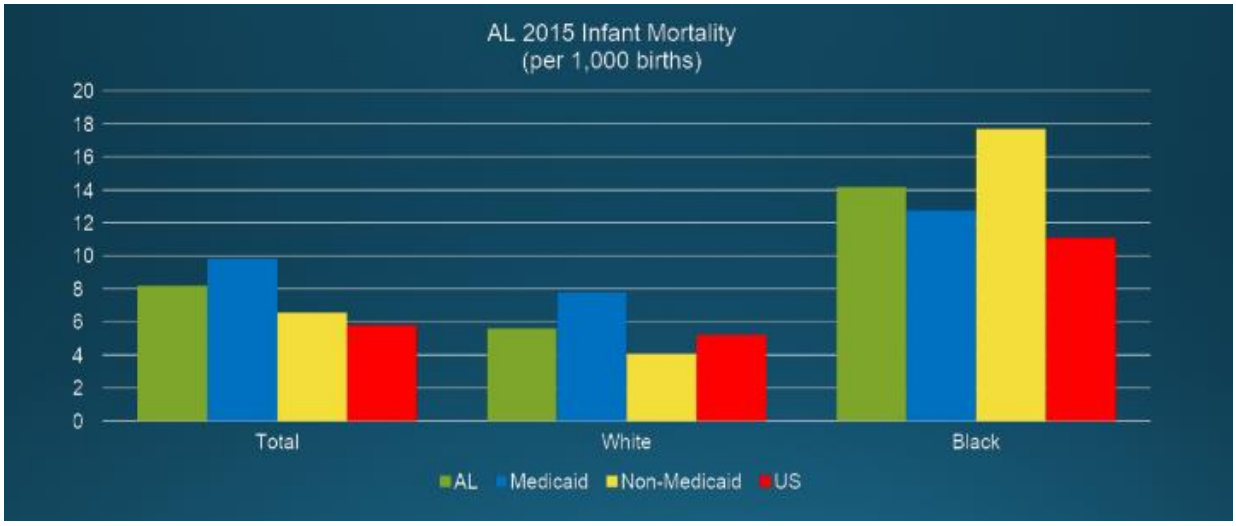
Minimizing the Coverage Gap

Uninsured women are more likely to experience placental abruption, hypertension, pre-eclampsia, and are more likely to deliver low birthweight babies than insured women. According to the Kaiser Family Foundation, there are roughly 75,000 adults in Alabama that fall into the coverage gap, 57% of which are women.

The American Journal of Public Health recently published a study that explored the effect of expanding Medicaid on the infant mortality rate. The study found that the mean infant mortality rate in non-expansion states rose from 6.4 to 6.5 from 2014 to 2016. However, in states that expanded Medicaid, the mean decreased from 5.9 to 5.6 per 1,000 live births. When observed by race, African American infants saw the most improvement, from 12.2 in 2010 to 10.7 in 2015 - a 12.2% decline. The infant mortality rate decline in African American infants born in Medicaid expansion states was more than twice the decline in African American infants born in non-expansion states.



As shown in the data below, the mortality rate is lower for non-Medicaid white infants than for white infants covered by Medicaid. However, the mortality rate for black infants declines significantly on Medicaid.



Alabama should consider extending Medicaid coverage to all uninsured women that fall in the coverage gap, to ensure access to prenatal care. Nineteen million women, aged 18-64 are uninsured and face adverse health outcomes. These uninsured women receive fewer prenatal care services than insured women, and in addition face adverse maternal outcomes. Improved maternal and fetal outcomes occur when a woman has access to high-risk pregnancy care, counseling and other services. Therefore, the extension of Medicaid coverage will prevent pregnancy complications that may have long-term emotional and economic effects on families. It will also drive down future unintended costs that will be placed on society for the care of children born to uninsured women who had pregnancy complications.

Conclusion

Infant mortality is an important indicator of the overall health of a population. Five hundred and thirty-seven infant deaths in Alabama indicates that the state has room to make significant improvements in the health of its citizens. Admittedly, there is no simple solution for improving Alabama's high infant mortality rate. However, with all stakeholders working collaboratively to address this critical issue, Alabama can make significant headway in giving our children the healthy start they deserve.

References

Alabama Department of Public Health.
www.alabamapublichealth.gov

The Annie E. Casey Foundation.
www.aecf.org

Boston Children's Hospital.
www.childrenshospital.org

The Mayo Clinic: Premature Birth.
https://www.mayoclinic.org/diseases-conditions/premature-birth/symptoms-causes/syc-20376730

The Mayo Clinic: Sudden Infant Death Syndrome (SIDS).
https://www.mayoclinic.org/diseases-conditions/sudden-infant-death-syndrome/symptoms-causes/syc-20352800

Mississippi State Department of Health: 17P and Preterm Births.
https://msdh.ms.gov/msdhsite/_static/41,0,376,621.html

The World Bank Group: Mortality rate, infant (per 1,000 live births).
https://data.worldbank.org/indicator/SP.DYN.IMRT.IN

The United Nations: Country Classification.
http://www.un.org/en/development/desa/policy/wesp/wesp_current/2014wesp_country_classification.pdf

ADPH: Alabama Perinatal Program. http://www.alabamapublichealth.gov/perinatal/fimr.html

Chintan B. Bhatt, MBBSS, MPH, and Consuelo M. Beck-Sague, MD: Medicaid Expansion and Infant Mortality in the United States.
https://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.2017.304218

WHNT 19 News: Alabama Initiates Statewide Baby Box Program.
https://whnt.com/2017/03/27/alabama-initiates-statewide-baby-box-program/

Supporting Access to Freestanding Birth Centers.
https://cdn.ymaws.com/www.birthcenters.org/resource/resmgr/Strong_Start/Strong_Start_Resources_Files/Impact_Statement_-_Supportin.pdf

The New York Times: American Way of Birth, Costliest in the World.
https://www.nytimes.com/2013/07/01/health/american-way-of-birth-costliest-in-the-world.html

Centers for Disease Control: National Vital Statistics Reports.
https://www.cdc.gov/nchs/data/nvsr/nvsr67/nvsr67_01.pdf
https://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_01.pdf

The American College of Obstetricians and Gynecologists: Safe Prevention of the Primary Care Cesarean Delivery.
https://www.acog.org/Clinical-Guidance-and-Publications/Obstetric-Care-Consensus-Series/Safe-Prevention-of-the-Primary-Cesarean-Delivery

Centers for Disease Control: Cesarean Delivery Rate by State.
https://www.cdc.gov/nchs/pressroom/sosmap/cesarean_births/cesareans.htm

National Center for Biotechnology Information: Maternal Morbidity Associated with Multiple Repeat Cesarean Deliveries.
https://www.ncbi.nlm.nih.gov/pubmed/16738145

Mapping Integration of Midwives Across the United States: Impact on Access, Equity and Outcomes.
http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0192523

Bureau of Labor Statistics.
https://www.bls.gov/oes/2014/may/oes291161.htm
https://www.bls.gov/oes/current/oes291161.htm#nat

Henry J. Kaiser Family Foundation – The Coverage Gap: Uninsured Poor Adults in States that Do Not Expand Medicaid.
https://www.kff.org/medicaid/issue-brief/the-coverage-gap-uninsured-poor-adults-in-states-that-do-not-expand-medicaid/

The American College of Obstetricians and Gynecologists: Committee on Health Care for Underserved Women.
https://www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Health-Care-for-Underserved-Women/Benefits-to-Women-of-Medicaid-Expansion-Affordable-Care-Act

CBS News: New Report Predicts “Troubling” Shortage of Doctors in the U.S.
https://www.cbsnews.com/news/doctor-shortage-us-impact-on-health/

Association of American Medical Colleges: The Complexities of Physician Supply and Demand: Projections from 2015 to 2030.
https://aamc-black.global.ssl.fastly.net/production/media/filer_public/a5/c3/a5c3d565-14ec-48fb-974b-99fafaeecb00/aamc_projections_update_2017.pdf