CHAPTER 7

HEALTH OUTCOMES

INTRODUCTION

The drivers of health discussed to this point– Social & Economic Factors, Physical Environment, Health Behaviors, and Clinical Care – along with genetic predispositions of individuals and the policies and programs that lay the context for our society, culminate in the quality and length of the lives we lead. These are our health outcomes, which encompass the physical and mental health and well-being of North Carolinians.

Throughout this report, the disparities discussed within each of the health indicators point to the ways that different populations face inequitable opportunities to achieve the best possible health. Race, ethnicity, geography, sex, age, sexual orientation, veteran status, and poverty level are just some of the qualities that influence the drivers of our health and well-being. The HNC 2030 group chose two health outcome indicators that together provide a bellwether for the state of health of North Carolinians—infant mortality and life expectancy. These indicators highlight the disparate realities we see in health outcomes across the state. By looking at these two indicators, and their changes over time, the impact of efforts to improve health and well-being can be seen for the population as a whole and for subpopulations.

HEALTH INDICATORS:

20 INFANT MORTALITY RATE

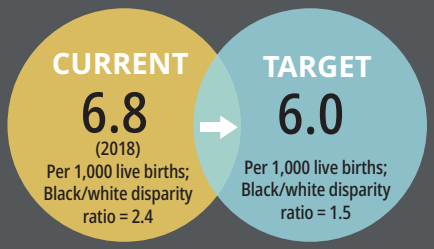
Decrease Infant Mortality

21 LIFE EXPECTANCY

Increase Life Expectancy

HEALTH INDICATOR 20: INFANT MORTALITY RATE

DESIRED RESULT: DECREASE INFANT MORTALITY



DEFINITION
Rate of infant deaths per 1,000 live births

DETAILS
Deaths are counted if they occur within the first year of life

NC INFANT MORTALITY (2018)
6.8 per 1,000 live births
Black/white disparity ratio = 2.4

2030 TARGET
6.0 per 1,000 live births
Black/white disparity ratio = 1.5

RANGE AMONG NC COUNTIES
0.0 – 22.2 per 1,000 live births

RANK AMONG STATES
Tied for 40th*

DATA SOURCE
NC State Center for Health Statistics, Vital Statistics

STATE PLANS WITH SIMILAR INDICATORS
Early Childhood Action Plan - indictor of infant mortality disparity

*Rank of 1st for state with lowest infant mortality rate

Rationale for Selection:

Infant mortality is a common proxy for overall community health and health disparities and the health of infants reflects the health of the next generation. North Carolina has a higher infant mortality rate than the country as a whole and, in particular, babies born to African American and American Indian women are more likely to die in the first year of life than babies born to white women.

Context

Infant mortality is not only an indicator of maternal and child health, it is often looked to as an indicator of the health of a community.[184] This is because many of the factors that influence rates of infant mortality reflect the health equity of a community. These include maternal health and educational status, prenatal care, and social and economic factors of the child's family.

The primary predictors of infant health are gestational age at birth and birth weight, and there are many contributing factors to these outcomes.[185] Higher rates of low birth weight and infant mortality are associated with:

- Smoking or heavy consumption of alcohol while pregnant[186,187]
- Maternal age - younger (under 20 years) and older mothers (40-54 years)[185]
- Maternal obesity[188,189]
- Maternal educational status of less than a high school degree[190]
- Unmarried parents[185]
- Intimate partner violence[155]
- Food insecurity[155]

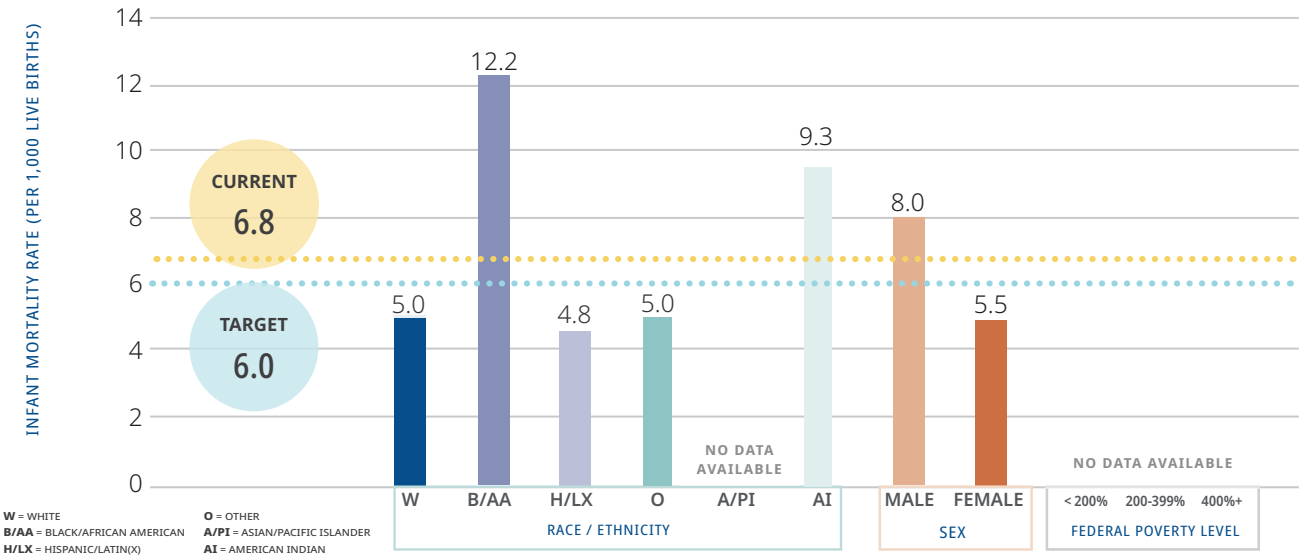
> "Even for African American women who attain a higher socioeconomic status, pregnancy-related outcomes are worse than those of white women at lower socioeconomic levels."

Disparities

The United States, and North Carolina specifically, have struggled to keep pace with the improvements in maternal and infant health that have occurred in other developed countries. One reason for this is the large disparity seen in infant mortality for babies born to African American and American Indian women, who are more likely to die in the first year of life than babies born to white women.[45] In particular, the disparity between babies born to African American women and those born to white women is persistently high across time. Women of color are more likely to live in communities that have fewer educational resources and employment opportunities due to historical segregation through housing and education policies. Women of color also face accumulated stress of discrimination regardless of socioeconomic status (i.e., "weathering," **see Page 31** in Introduction). These socioeconomic factors are linked to birth outcomes and infant mortality. In addition, research shows that even for African American women who attain a higher socioeconomic status, pregnancy-related outcomes are worse than those of white women at lower socioeconomic levels.[191] Inside the medical system, disparate treatment of mothers of color may also play a role in worse birth outcomes. Studies show that implicit bias in health care delivery may prevent women of color from receiving sufficient patient education in the prenatal period about risks to maternal and fetal health.[163]

FIGURE 34

Infant mortality rates across populations in North Carolina and distance to 2030 target



Disparities in infant mortality also exist for babies born to women in poverty and those who are uninsured. Women in poverty experience more challenging life circumstances, have lower educational attainment, are more likely to have limited access to adequate food, transportation, and housing, and are more likely to be uninsured than those not experiencing poverty. These populations are also more likely to have limited access to health care services. Even though Medicaid covers prenatal care and births for low-income uninsured women, birth outcomes and subsequent infant mortality are not fully addressed by the care they receive during pregnancy because of the many social and health factors these women face prior to becoming pregnant.[192] Furthermore, in NC, women who are undocumented immigrants are ineligible for Medicaid during pregnancy, severely restricting their access to care.

2030 Target and Potential for Change

The HNC 2030 group reviewed data across several years, populations, and states, and a forecasted value for North Carolina based on historical data to set a target for 2030. While the overall infant mortality rate has decreased over the past decade, the disparity ratio between whites and African Americans has grown (currently 2.4), meaning that the infant mortality rate has improved much faster for white babies. With this in mind, the group chose an overall infant mortality target of 6.0 per 1,000 live births for 2030, as well as a target to decrease the Black/white disparity ratio to 1.5. Meeting this target will be largely dependent upon drastically reducing the disparities we see in infant mortality rates for African Americans and American Indians.

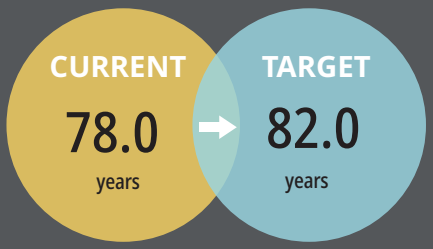
Levers for Change

(America's Health Rankings, Infant Mortality, 2018)

- Increase access to health insurance
- Improve male and female pre-conception routine medical check-ups and family planning counseling with a focus on intimate partner violence, substance use, immunizations, depression, body mass index, blood pressure, and diabetes
- Improve access to, and use of, prenatal care, Centering Pregnancy Programs, and evidence-based home visiting programs
- Reduce maternal obesity
- Reduce maternal tobacco use before, during, and after pregnancy (Ward, 2003)
- Take advantage of the Children's Health Insurance Program option to provide coverage for comprehensive prenatal care to undocumented immigrant women
- Follow the recommendations of the Perinatal Health Strategic Plan

HEALTH INDICATOR 21: LIFE EXPECTANCY

DESIRED RESULT: INCREASE LIFE EXPECTANCY



DEFINITION
Average number of years of life remaining for persons who have attained a given age

DETAILS
Life expectancy listed is for a person born in that year

NC LIFE EXPECTANCY (2016-18)
78.0 years

2030 TARGET
82.0 years

RANGE AMONG NC COUNTIES
73.1 – 82.1 years

RANK AMONG STATES
Not Available

DATA SOURCE
NC State Center for Health Statistics, Vital Statistics

STATE PLANS WITH SIMILAR INDICATORS
Not Applicable

Rationale for Selection:

Life expectancy is a proxy measure for the total health of a population. Disparities in life expectancy between populations point to areas where issues of health equity must be addressed.

Context

The ultimate measure of health that many people consider when thinking of population health is life expectancy. For most of human history, average life expectancy has steadily increased with improvements in health care, sanitary conditions, decreases in disease epidemics, and improved safety measures. Yet, in the past several years, the United States average life expectancy has been slowly creeping down, from 78.9 years in 2014 to 78.6 in 2017.[193] This is due to an increase in deaths from drug overdose and suicide.[194] The 2016-18 state average life expectancy was 78.0, with similar decreases as the national average (2014 life expectancy: 78.3). The top three causes of years of life lost in North Carolina are ischemic heart disease; trachea, bronchus, and lung cancers; and road injuries. Self-harm and drug use disorders rank sixth and seventh, respectively, in top causes, mirroring the national trends impacting overall life expectancy.

Disparities

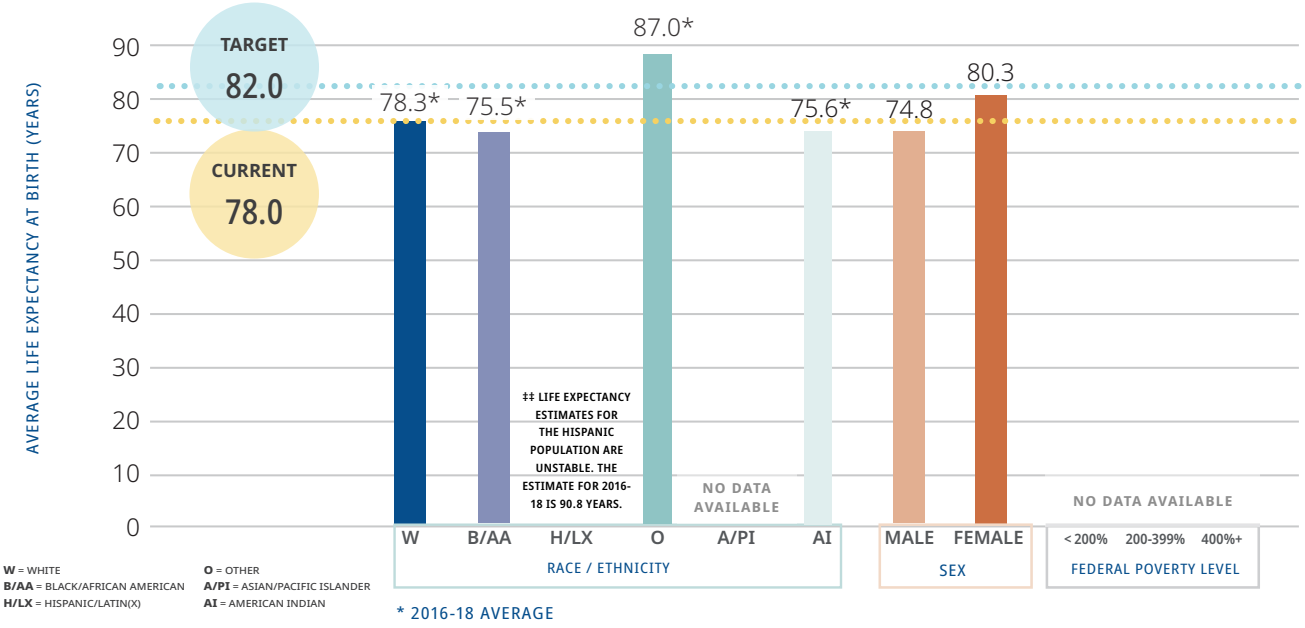
There are stark disparities in life expectancy across race, geography, and gender, as well as intersections of these characteristics that show wide gaps between groups. African Americans, American Indians, people in rural areas, and men typically have lower life expectancies than the average. Among African Americans (including those of Hispanic ethnicity), the average life expectancy for women (79.0 years) is slightly above the state average (78.0 years), although lower than the average for white women (including those of Hispanic ethnicity) (81.1 years).[195] For African American men (including those of Hispanic ethnicity) the average is much lower at 72.2 years compared to 76.5 years for white men (including those of Hispanic ethnicity).[195] The disparities for African Americans compared to whites are due in part to issues stemming from limited health care access,[196] lack of trust in medical professionals, social and economic factors like racism (e.g., weathering, **see Page 31** in Introduction) and unemployment,[196] and firearm deaths of younger African American men.[197] On the other hand, Hispanic populations see the higher life expectancies despite lower average socioeconomic status. This is largely due to lower rates of smoking, leading to lower cancer and cardiovascular disease mortality in adults, but also lower rates of suicide and accidental poisoning among young Hispanics compared to whites.[198]

Geographic disparities are also clear across North Carolina (**See Figure 36**). People born in Swain County have the lowest life expectancy (average for 2016-18) at 73.1 years, while those in Orange County have the highest at 82.1 years. Factoring race and geography together reveals the multiple levels of disparities. Life expectancy for the white population in Swain is 75.6 years and is 67.5 years for the American Indian population. In Orange County the life expectancy for the white population is 83.1 years compared to 75.2 years for the African American population in the same county.[199]

[DDD] The life expectancy averages listed here are averaged across three years, 2016 to 2018.
[EEE] Estimated life expectancy for the Hispanic population in North Carolina for 2016 to 2018 is 90.8 years. This estimate has been excluded from the HNC 2030 report data presentation because of concerns that it may be unreliable.
[FFF] North Carolina State Center for Health Statistics, 2016-2018 County Life Expectancy at Birth, North Carolina Counties. https://schs.dph.ncdhhs.gov/data/lifexpectancy/2016-2018/2018%20State%20and%202016-2018%20County%20Life%20Expectancies%20at%20birth.html

FIGURE 35

Life expectancy across populations in North Carolina and distance to 2030 target



2030 Target and Potential for Change

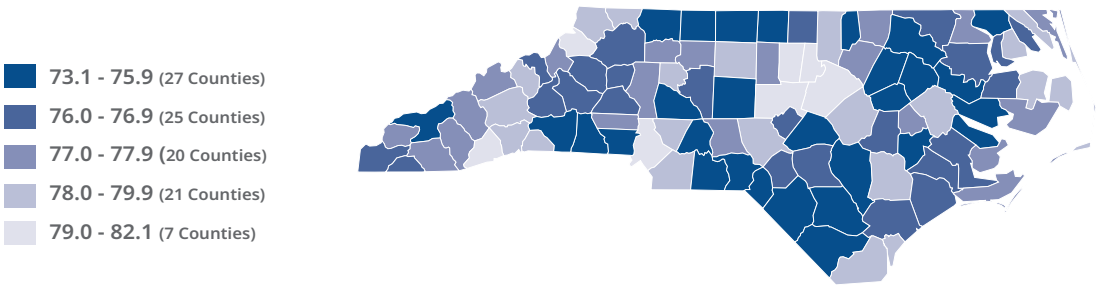
The HNC 2030 group reviewed data across several years, populations, and states, and a forecasted value for North Carolina based on historical data to set a target for 2030. With the best life expectancy (average for 2016-18) in North Carolina currently at 82.1 [FFF] years in Orange County the group chose to set an aggressive target of 82.0 years for the population overall for 2030. If improvements are made across the health indicators discussed in this report, overall life expectancy will likely see an increase. Increases toward this target will be seen as success, particularly as they will signal a change in the downward trend seen over the past several years.

Levers for Change

- See Levers for Change throughout this report

FIGURE 36

Average Life Expectancy for People in North Carolina Counties, 2016-2018



Source: North Carolina State Center for Health Statistics; https://schs.dph.ncdhhs.gov/data/lifexpectancy/2016-2018/2018%20State%20and%202016-2018%20County%20Life%20Expectancies%20at%20birth.html
Note: Life expectancy is the average number of additional years that someone at a given age would be expected to live if current mortality conditions remained constant throughout their lifetime.