

Healthy NC 2020: Technical Notes

CROSS-CUTTING

1. Average Life Expectancy

Life expectancy (LE) represents the average number of additional years that someone at a given age would be expected to live if he/she were to experience throughout life the age-specific risk of death observed in a specified reference period. LEs are commonly presented in either Complete Life Tables (for individual years of age) or in abridged life tables (for selected age intervals). The LEs reported in HNC2020 only present the estimates for “< 1 year” (at birth) from abridged life tables. These LE estimates are calculated using NCHS Bridged population data for North Carolina¹ and state mortality data. Our life expectancy algorithm is modeled after Chiang et al.² More detailed life expectancy estimates for other age groups and by race can be found on the State Center for Health Statistics website: www.schs.state.nc.us/SCHS/data/lifexpectancy.

1. National Center for Health Statistics. Postcensal estimates of the resident population of the United States for July 1, 2000-July 1, 2009, by year, county, age, bridged race, Hispanic origin and sex (Vintage 2009). Prepared under a collaborative arrangement with the U.S. Census Bureau; released June 20, 2010. Available from: www.cdc.gov/nchs/nvss/bridged_race.htm.

2. Chiang CL (1984) Life Table and Mortality Analysis, Malabar (FL), Robert E. Krieger Publishing Co.

2. Percentage of Adults Reporting Good, Very Good, or Excellent Health

This measure is based on data from the North Carolina Behavioral Risk Factor Surveillance System (N.C. BRFSS), a random-digit dial telephone survey. BRFSS data are representative of the total non-institutionalized North Carolina population over 18 years of age living in households with a telephone. Figures reported from N.C. BRFSS estimate the percentage of the North Carolina population who report different health behaviors, risks or characteristics.

The Good/Very Good/Excellent Health measure is based on survey responses to the question: “In general, would you say that your health is excellent, very good, good, fair, or poor?” The value reported in HNC2020 represents the percentage of adult respondents who rated their health as good, very good or excellent. Since the estimates are based on a sample and not the entire population, the percentage of adults in the survey reporting good/very good/excellent health may differ from the “true” prevalence of that characteristic in the North Carolina population simply by chance. We report confidence intervals which take this error into account and present a range in which the “true value” is likely to fall. For more information on how to interpret confidence intervals, please see: www.schs.state.nc.us/SCHS/champ/technical.html.

BRFSS currently oversamples 23 counties in the state; therefore, estimates are only available for the following counties: Alamance, Buncombe, Cabarrus, Catawba, Cumberland, Davidson, Durham, Forsyth, Gaston, Guilford, Iredell, Johnston, Mecklenburg, New Hanover, Onslow, Orange, Pitt, Randolph, Robeson, Rowan, Union, Wake and Wayne. For counties that are not part of the oversample, we supply the following regional estimates for Area Health Education Centers (AHEC): Mountain, Northwest, Charlotte, Greensboro, Southern Regional, Coastal, Wake, Area L and Eastern. More information on AHEC regions can be found here: www.med.unc.edu/ahec.

3. Percentage of Non-Elderly Uninsured Individuals (Aged Less Than 65 Years)

This measure is based on estimates derived from the Current Population Survey's Annual Social and Economic Supplement (CPS ASEC). The CPS ASEC is a national survey conducted jointly by the United States Bureau of Labor Statistics and the Census Bureau. It provides state-level estimates of insurance coverage for individuals. In Sept. 2011, the Census Bureau released revised estimates for 2000-2010 CPS ASEC in order to improve the consistency of estimates for the insured and uninsured. For more details on the revision, see www.census.gov/hhes/www/hlthins/data/revhlth/index.html.

The North Carolina Institute of Medicine (N.C. IOM) and the Cecil G. Sheps Center for Health Services Research adjust the CPS estimates using additional factors to produce uninsured estimates for all North Carolina counties. However, the N.C. IOM county-level estimates are not strictly comparable to the state-level estimates derived from the CPS ASEC. Additional information on N.C. IOM's uninsured estimates can be found on their website: www.nciom.org/nc-health-data/uninsured-snapshots.

4. Percentage of Adults Who Are neither Overweight nor Obese

This measure is based on data from the North Carolina Behavioral Risk Factor Surveillance System (N.C. BRFSS), a random-digit dial telephone survey. BRFSS data are representative of the total non-institutionalized North Carolina population over 18 years of age living in households with a telephone. Figures reported from N.C. BRFSS estimate the percentage of the North Carolina population who report different health behaviors, risks or characteristics.

Overweight and obese estimates are based on self-reported height and weight, which are used to generate Body Mass Index (BMI) calculations. BMI is computed as weight in kilograms divided by height in meters squared (kg/m^2). BMI is an intermediate variable used in defining overweight and obesity. Underweight indicates BMI is less than 18.5, recommended range indicates BMI is 18.5 to 24.9, overweight indicates BMI is 25.0 to 29.9 and obese indicates BMI is greater than 30.0. The value reported in HNC2020 represents the percentage of adult respondents whose BMI fell into the "overweight" or "obese" category (BMI's greater than or equal to 25.0). Since the estimates are based on a sample and not the entire population, the percentage of adults in the survey who are overweight or obese may differ from the "true" prevalence of that characteristic in the North Carolina population simply by chance. We report confidence intervals which take this error into

account and present a range in which the “true value” is likely to fall. For more information on how to interpret confidence intervals, please see: www.schs.state.nc.us/SCHS/champ/technical.html.

BRFSS currently oversamples 23 counties in the state; therefore, estimates are only available for the following counties: Alamance, Buncombe, Cabarrus, Catawba, Cumberland, Davidson, Durham, Forsyth, Gaston, Guilford, Iredell, Johnston, Mecklenburg, New Hanover, Onslow, Orange, Pitt, Randolph, Robeson, Rowan, Union, Wake and Wayne. For counties that are not part of the oversample, we supply the following regional estimates for Area Health Education Centers (AHEC): Mountain, Northwest, Charlotte, Greensboro, Southern Regional, Coastal, Wake, Area L and Eastern. More information on AHEC regions can be found here: www.med.unc.edu/ahec.

Although they are not comparable to North Carolina estimates, the Centers for Disease Control and Prevention provides more detailed county-level estimates for obesity which can be found on the National Diabetes Surveillance System website : apps.nccd.cdc.gov/DDT_STRS2/CountyPrevalenceData.aspx?mode=DBT.

CHRONIC DISEASE

1. Cardiovascular Disease Mortality Rate per 100,000 Population

These mortality rates are derived from information collected from North Carolina resident death certificates. Cardiovascular disease deaths include all resident deaths where cardiovascular disease was coded as the underlying (primary) cause of death. Deaths were coded under the 10th revision of the International Classification of Diseases (ICD). The following ICD codes were used: I00-I02; I05-I15, I20-I28, I30-I51 and I60-I78. Population denominators are derived from bridged population estimates created by the National Center for Health Statistics and the U.S. Census Bureau. Age-adjusted death rates were calculated using the direct method and the projected United States 2000 population as the standard. Age-adjusted cardiovascular disease death rates are presented per 100,000 population.

Due to a small number of deaths each year due to cardiovascular diseases for some counties, in order to ensure more reliable rates, county-level rates are only presented for five year periods. For more information on the impact of rates based on small numbers, please see: www.schs.state.nc.us/SCHS/pdf/primer12_2.pdf.

2. Percentage of Adults with Diabetes

This measure is based on data from the North Carolina Behavioral Risk Factor Surveillance System (N.C. BRFSS), a random-digit dial telephone survey. BRFSS data are representative of the total non-institutionalized North Carolina population over 18 years of age living in households with a telephone. Figures reported from N.C. BRFSS estimate the percentage of

the North Carolina population who report different health behaviors, risks or characteristics.

Diabetes prevalence estimates are based on survey responses to the question: “Have you ever been told by a doctor that you have diabetes?” The value reported in HNC2020 represents the percentage of adult respondents who responded “yes” to the question. Data exclude women with pregnancy-related diabetes. Since the estimates are based on a sample and not the entire population, the percentage of adults with diabetes may differ from the “true” prevalence of that characteristic in the North Carolina population simply by chance. We report confidence intervals which take this error into account and present a range in which the “true value” is likely to fall. For more information on how to interpret confidence intervals, please see: www.schs.state.nc.us/SCHS/champ/technical.html.

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Although they are not comparable to North Carolina estimates, the Centers for Disease Control and Prevention provides more detailed county-level estimates for diabetes which can be found on the National Diabetes Surveillance System website : apps.nccd.cdc.gov/DDT_STRS2/CountyPrevalenceData.aspx?mode=DBT.

3. Colorectal Mortality Rate per 100,000 Population

These mortality rates are derived from information collected from North Carolina resident death certificates. Colorectal cancer deaths include all resident deaths where colorectal cancer was coded as the underlying (primary) cause of death. Deaths were coded under the 10th revision of the International Classification of Diseases (ICD). The following ICD codes were used: C18-C20 and C26.0. Population denominators are derived from bridged population estimates created by the National Center for Health Statistics and the U.S. Census Bureau. Age-adjusted death rates were calculated using the direct method and the projected United States 2000 population as the standard. Age-adjusted colorectal cancer death rates are presented per 100,000 population.

Due to a small number of deaths each year for colorectal cancer by county, in order to ensure more reliable rates, county-level rates are only presented for five-year periods. For more information on the impact of rates based on small numbers, please see: www.schs.state.nc.us/SCHS/pdf/primer12_2.pdf.

Additional information on colon and rectum cancer can be found in North Carolina's Central Registry reports at:
[www.schs.state.nc.us/SCHS/pdf/Colon Rectum Cancer 2011.pdf](http://www.schs.state.nc.us/SCHS/pdf/Colon%20Rectum%20Cancer%202011.pdf).

ENVIRONMENTAL HEALTH

1. Percentage of Air Monitor Sites Meeting the Current Ozone Standard of 0.075 ppm

This indicator is derived from data collected by the North Carolina Division of Air Quality (DAQ). The DAQ, along with three local program agencies and one tribal agency, collects air samples for the state's "Ambient Air Criteria Pollutant Monitoring Program" from 40 sites across the state, representing over 30 counties. The air monitors continuously measure the amount of ozone present in the air during the ozone season, which runs from April through October. Hourly averages are computed, which are then summarized into eight-hour averages when at least 75 percent of the hourly data are available. If a day has at least 18 (75%) of the possible 24 eight-hour averages, the maximum value is identified as a valid daily maximum. In addition, if less than 75 percent of the eight-hour averages are complete and the daily maximum value is greater than the standard, it will be included as a valid daily maximum. The fourth highest daily maximum eight-hour average is averaged across three years and expressed to three decimal places.

County level data are only available for the counties that have air monitors. These counties currently include: Alexander, Avery, Buncombe, Caldwell, Caswell, Chatham, Cumberland, Davie, Durham, Edgecombe, Forsyth, Franklin, Graham, Granville, Guilford, Haywood, Jackson, Johnston, Lenoir, Lincoln, Martin, Mecklenburg, New Hanover, Person, Pitt, Rockingham, Rowan, Swain, Union, Wake and Yancey. For more information on North Carolina air quality monitoring, please see www.ncair.org/monitor.

2. Percentage of the Population Being Served by Community Water Systems (CWS) with no Maximum Contaminant Level (MCL) Violations

This indicator is derived from information collected by the Department of Environment and Natural Resources' Division of Water Resources, Public Water Supply Section, which is charged with analyzing data on community water systems (CWS). A community water system is defined as a public water system that supplies water to the same population year-round. The denominator for this measure represents the number of citizens served by community water systems. The numerator for this measure represents the number of citizens served by community water systems that had no Maximum Contaminant Level (MCL) violations Under the Safe Drinking Water Act (SDWA), the EPA sets national limits on contaminant levels in drinking water to ensure that the water is safe for human consumption. These limits are known as Maximum Contaminant Levels (MCLs). North Carolina has 2,138 community water systems, 1,524 (71%) of which serve less than 500 individuals. Data are available for all North Carolina counties for this measure from 2010 forward.

For more information on SDWIS, see www.epa.gov/enviro/facts/sdwis/index.html.

3. Mortality Rate from Work-related Injuries per 100,000 Workers

Rates for this measure come from the U.S. Department of Labor, Bureau of Labor Statistics. Data are only reported at the state level, due to a small number of events by county. The numerator for this measure is the number of fatal injuries in the state. The denominator for this measure is the total imputed hours worked by all employees in the state during the calendar year. This ratio is then multiplied by 200,000,000, which is the base for 100,000 equivalent full-time workers (working 40 hours per week, 50 weeks per year). For details on how the denominator is imputed, see www.bls.gov/opub/hom/homch9.htm#fatal_injury.

Workers under the age of 16 years, volunteer workers and members of the resident military are not included in rate calculations to maintain consistency with the Current Population Survey employment estimates.

More information on Bureau of Labor Statistics data can be found here: www.bls.gov/iif/oshstate.htm#NC.

INFECTIOUS DISEASE AND FOODBORNE ILLNESS

1. Percentage of Children Aged 19-35 Months who Receive the Recommended Vaccines

This measure is derived from data collected by the National Immunization Survey (NIS). The NIS is conducted annually by the Centers for Disease Control and Prevention to monitor childhood immunization coverage. Households with children 19-35 months of age are surveyed via telephone. For participants who have consented, the vaccination providers are also contacted. Using these two sources, estimates of the rate of being up-to-date with the Advisory Committee on Immunization Practices recommended number of doses of vaccines are produced for the nation, the 50 states, the District of Columbia and selected large urban areas. In 2007, the recommended series used was 4:3:1:3:3:1 [4 diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP), 3 poliovirus vaccine (polio), 1 measles, mumps and rubella vaccine (MMR), 3 Haemophilus influenzae type b vaccine (Hib), 3 hepatitis B vaccine (Hep B), 1 Varicella]. In 2007, a shortage of the Hib-containing vaccine impacted the timeliness of vaccine administration in North Carolina, which continued through 2009. As this is a national survey, county-level estimates are not available for this measure. Additional information on the NIS can be found here: www.cdc.gov/nchs/nis/about_nis.htm.

Be aware that state-level confidence intervals can be wide for this measure. For more information on how to interpret confidence intervals, please see: www.schs.state.nc.us/SCHS/champ/technical.html.

2. Pneumonia and Influenza Mortality Rate per 100,000 Population

These mortality rates are derived from information collected from North Carolina resident death certificates. Pneumonia and influenza deaths include all resident deaths where pneumonia or influenza was coded as the underlying (primary) cause of death. Deaths were coded under the 10th revision of the International Classification of Diseases (ICD). The following ICD codes were used: J09 - J18. Population denominators are derived from bridged population estimates created by the National Center for Health Statistics and the U.S. Census Bureau. Age-adjusted death rates were calculated using the direct method and the projected United States 2000 population as the standard. Age-adjusted pneumonia/influenza death rates are presented per 100,000 population.

Due to a small number of deaths each year for pneumonia/influenza by county, in order to ensure more reliable rates, county-level rates are only presented for a five-year period. For more information on the impact of rates based on small numbers, please see: www.schs.state.nc.us/SCHS/pdf/primer12_2.pdf.

Additional information on influenza in North Carolina can be found at the North Carolina's Communicable Disease Branch website: www.epi.state.nc.us/epi/gcdc/flu.html.

3. Average Number of Critical Violations per Restaurant/Food Stand

This measure was derived from information collected from the North Carolina Environmental Health. Information is collected via the Food Service Establishment Inspection Form. The denominator for this indicator is the total number of restaurants and food stands eligible for inspection during the calendar year. The numerator for this measure represents the number of critical violation issued to restaurants and food stands during the same period. "Critical Violation Risk Factors" are those contributing factors that increase the chance of developing foodborne illness and are categorized into Employee Health, Good Hygienic Practices, Preventing Contamination by Hands, Approved Source, Protection from Contamination and Potentially Hazardous Food. Rules Governing the Sanitation of Food Service Establishments are available at: www.deh.enr.state.nc.us/ehs/images/rules/t15a-18a.26.pdf.

INJURY AND VIOLENCE

1. Unintentional Poisoning Mortality Rate per 100,000 Population

These mortality rates are derived from information collected on North Carolina resident death certificates. Poisonings include all resident deaths where an unintentional poisoning was coded as the underlying (primary) cause of death. Deaths were coded under the 10th revision of the International Classification of Diseases (ICD). The following ICD codes were used: X40-X49. Population denominators are derived from bridged population estimates created by the National Center for Health Statistics and the U.S. Census Bureau. Age-adjusted death rates were calculated using the direct method and the projected United

States 2000 population as the standard. Age-adjusted unintentional poisoning death rates are presented per 100,000 population.

Due to a small number of unintentional poisoning deaths each year by county, in order to ensure more reliable rates, county-level rates are only presented for a five year period. For more information on the impact of rates based on small numbers, please see: www.schs.state.nc.us/SCHS/pdf/primer12_2.pdf.

2. Unintentional Falls Mortality Rate per 100,000 Population

These mortality rates are derived from information collected on North Carolina resident death certificates. Falls include all resident deaths where an unintentional fall was coded as the underlying (primary) cause of death. Deaths were coded under the 10th revision of the International Classification of Diseases (ICD). The following ICD codes were used: W00-W19. Population denominators are derived from bridged population estimates created by the National Center for Health Statistics and the U.S. Census Bureau. Age-adjusted death rates were calculated using the direct method and the projected United States 2000 population as the standard. Age-adjusted unintentional fall death rates are presented per 100,000 population.

Due to a small number of unintentional fall deaths each year by county, in order to ensure more reliable rates, county-level rates are only presented for a five-year period. For more information on the impact of rates based on small numbers, please see: www.schs.state.nc.us/SCHS/pdf/primer12_2.pdf.

3. Homicide Rate per 100,000 Population

These mortality rates are derived from information collected on North Carolina resident death certificates. Homicides include all resident deaths where a homicide was coded as the underlying (primary) cause of death. Deaths were coded under the 10th revision of the International Classification of Diseases (ICD). The following ICD codes were used: X85-Y09 and Y87.1. Population denominators are derived from bridged population estimates created by the National Center for Health Statistics and the U.S. Census Bureau. Age-adjusted death rates were calculated using the direct method and the projected United States 2000 population as the standard. Age-adjusted homicide rates are presented per 100,000 population.

Due to a small number of homicides each year by county, in order to ensure more reliable rates, county-level homicide rates are only presented for a five-year period. For more information on the impact of rates based on small numbers, please see: www.schs.state.nc.us/SCHS/pdf/primer12_2.pdf.

MATERNAL AND INFANT HEALTH

1. Infant Mortality Racial Disparity between Whites and African Americans

These mortality rates are derived from information collected from North Carolina resident death certificates. Infant deaths represent all resident deaths of a live born infant under one year of age at the time of death. Denominators for infant mortality rates are derived from North Carolina resident live birth certificate data. The rate is calculated as the total number of newborns dying under one year of age divided by the total number of live births, multiplied by 1,000. The disparity is calculated as the infant mortality rate for African American babies divided by the rate for white babies.

Due to a small number of infant deaths each year by race and county, in order to ensure more reliable rates, county-level infant mortality disparity rates are only presented for five year periods. Rates for counties with fewer than 20 deaths for either race over the five-year period should be interpreted with caution. For more information on the impact of rates based on small numbers, please see: www.schs.state.nc.us/SCHS/pdf/primer12_2.pdf.

2. Infant Mortality Rate per 1,000 Live Births

These mortality rates are derived from information collected from North Carolina resident death certificates. The numerator for this measure represents all resident deaths of a live-born infant less than one year of age at the time of death. Denominators for infant mortality rates are derived from North Carolina resident live birth certificate data. The rate is calculated as the total number of newborns dying under one year of age divided by the total number of live births, multiplied by 1,000.

Due to a small number of infant deaths each year by county, in order to ensure more reliable rates, county-level infant mortality rates are only presented for five year periods. Rates for counties with fewer than 20 deaths over the five-year period should be interpreted with caution. For more information on the impact of rates based on small numbers, please see: www.schs.state.nc.us/SCHS/pdf/primer12_2.pdf.

3. Percentage of Women who Smoke During Pregnancy

These percentages are derived from information collected from North Carolina resident birth certificates. The numerator represents the number of women who reported smoking during the prenatal period, and the denominator is the total number of live births. Smoking data on North Carolina birth certificates moderately underestimate the true prevalence of smoking among pregnant women, but the data may reasonably be used to examine differences among demographic subgroups and trends over time. For more details, see the section "Validity of Self-Reported Smoking Data from the North Carolina Birth Certificate" on pages 2-3 of SCHS Study No. 101: www.schs.state.nc.us/SCHS/pdf/SCHS101.pdf.

MENTAL HEALTH

1. Suicide Mortality Rate per 100,000 Population

These mortality rates are derived from information collected from North Carolina resident death certificates. Suicides include all resident deaths where suicide was coded as the underlying (primary) cause of death. Deaths were coded under the 10th revision of the International Classification of Diseases (ICD). The following ICD codes were used: X60-X84 and Y87.0. Population denominators are derived from bridged population estimates created by the National Center for Health Statistics and the U.S. Census Bureau. Age-adjusted death rates were calculated using the direct method and the projected United States 2000 population as the standard. Age-adjusted suicide death rates are presented per 100,000 population.

Due to a small number of suicides each year by county, in order to ensure more reliable rates, county-level rates are only presented for a five-year period. For more information on the impact of rates based on small numbers, please see: www.schs.state.nc.us/SCHS/pdf/primer12_2.pdf.

2. Average Number of Poor Mental Health Days Among Adults in the Past 30 Days

This measure is based on data from the North Carolina Behavioral Risk Factor Surveillance System (N.C. BRFSS), a random-digit dial telephone survey. BRFSS data are representative of the total non-institutionalized North Carolina population over 18 years of age living in households with a telephone. Figures reported from N.C. BRFSS estimate the percentage of the North Carolina population who report different health behaviors, risks or characteristics.

Poor mental health days are based on self-reported survey responses to the question: “Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?” The values reported in HNC2020 represent the average number of days per month that respondents indicated that their mental health was not good. Since the estimates are based on a sample and not the entire population, the average number of days with poor mental health may differ from the “true” prevalence of that characteristic in the North Carolina population simply by chance. We report confidence intervals which take this error into account and present a range in which the “true value” is likely to fall. For more information on how to interpret confidence intervals, please see: www.schs.state.nc.us/SCHS/champ/technical.html.

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Health Education Centers (AHEC): Mountain, Northwest, Charlotte, Greensboro, Southern Regional, Coastal, Wake, Area L and Eastern. More information on AHEC regions can be found here: www.med.unc.edu/ahec.

3. Rate of Mental Health-related Visits to Emergency Departments (per 10,000 Population)

This measure is based on emergency department (ED) visit data collected by the North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT). NC DETECT collects ED data from emergency departments across North Carolina. An estimated 99.5 percent of possible ED records were received in 2008. Data are not included from psychiatric, prison, military, veterans and other specialty hospitals. Visits were coded under the ninth revision of the International Classification of Diseases, Clinical Modification (ICD-9-CM), and the primary diagnosis was used for record selection. The following mental health-related ICD-9-CM codes were used: 290-290.99, 293-302.99 excluding 299-299.8, 306-314.99, 799.9, E950-E959.0, V62.84 and V79.0.

For more information on NC DETECT, see www.ncdetect.org/index.html.

ORAL HEALTH

1. Percentage of Medicaid Children Aged 1-5 Who Received Dental Service

This measure is based on Medicaid data originating from the North Carolina Division of Medical Assistance (N.C. DMA). Medicaid is a health insurance program for low-income individuals and families who cannot afford health care costs. Medicaid serves low-income parents, children, seniors and people with disabilities. One of the medical services that North Carolina Medicaid covers is dental services.

For this objective, the denominator represents all North Carolina resident children ages 1-5 who were eligible three or more continuous months during the federal fiscal year (Oct. 1 – Sept. 30). The numerator represents children ages 1-5 that received any dental services during the same federal fiscal year. Percentage of children who received services is calculated as a percentage of all children with three or more months of continuous eligibility by county and state.

More information on North Carolina's Medicaid program can be found here: www.ncdhhs.gov/dma/whoweare.htm.

2. Average Number of Decayed, Missing or Filled Teeth among Kindergartners

This indicator is derived from School Oral Health Assessment conducted by the Oral Health Section of the Division of Public Health. As part of the School Oral Health Assessment for school children in kindergarten and fifth grade, public health dental hygienists use a standardized method to measure specific oral conditions like tooth decay. Data from these

standardized screenings are used to monitor the status of oral health in North Carolina children. This indicator represents the average number of decayed, missing or filled teeth identified during kindergarten oral health screening assessments. No data were collected for Wake County in the 2008-2009 assessment. Additional North Carolina oral health assessment data can be found here:

www.ncdhhs.gov/dph/oralhealth/stats/MeasuringOralHealth.htm.

3. Percentage of Adults Who Have Had Permanent Teeth Removed Due to Tooth Decay/Gum Disease

This measure is based on data from the North Carolina Behavioral Risk Factor Surveillance System (N.C. BRFSS), a random-digit dial telephone survey. BRFSS data are representative of the total non-institutionalized North Carolina population over 18 years of age living in households with a telephone. Figures reported from N.C. BRFSS estimate the percentage of the North Carolina population who report different health behaviors, risks or characteristics.

Tooth loss estimates are based on survey responses to the question: “How many of your permanent teeth have been removed because of tooth decay or gum disease? Do not include teeth lost for other reasons, such as injury or orthodontics.” This question is only asked every other year in the N.C. BRFSS; therefore it will not be reported on an annual basis in the HNC2020 reports. The value reported in HNC2020 represents the percentage of adult respondents who reported the loss of one or more teeth in response to that question. Since the estimates are based on a sample and not the entire population, the percentage of adults in the survey reporting tooth loss may differ from the “true” prevalence of that characteristic in the North Carolina population simply by chance. We report confidence intervals which take this error into account and present a range in which the “true value” is likely to fall. For more information on how to interpret confidence intervals, please see: www.schs.state.nc.us/SCHS/champ/technical.html.

BRFSS currently oversamples 23 counties in the state; therefore, estimates are only available for the following counties: Alamance, Buncombe, Cabarrus, Catawba, Cumberland, Davidson, Durham, Forsyth, Gaston, Guilford, Iredell, Johnston, Mecklenburg, New Hanover, Onslow, Orange, Pitt, Randolph, Robeson, Rowan, Union, Wake and Wayne. For counties that are not part of the oversample, we supply the following regional estimates for Area Health Education Centers (AHEC): Mountain, Northwest, Charlotte, Greensboro, Southern Regional, Coastal, Wake, Area L and Eastern. More information on AHEC regions can be found here: www.med.unc.edu/ahec.

PHYSICAL ACTIVITY AND NUTRITION

1. Percentage of High School Students Who Are Neither Overweight Nor Obese

This measure is based on data from the North Carolina Youth Risk Behavior Survey (N.C. YRBS). The N.C. YRBS is conducted by North Carolina Department of Public Instruction

(NCDPI), Division of Accountability Services, in conjunction with the North Carolina Department of Health and Human Services (NCDHHS). N.C. YRBS data are used to monitor progress toward achieving national health objectives for youth.

Estimates for non-overweight and non-obese students are based on self-reported height and weight, which are used to generate Body Mass Index (BMI) calculations. High school students' responses to two questions regarding their height and weight are used: 1) "How tall are you without your shoes on?" 2) "How much do you weigh without your shoes on?" BMI is computed as weight in kilograms divided by height in meters squared (kg/m^2). BMI is an intermediate variable used in defining overweight and obesity. Underweight indicates BMI is less than 18.5, Recommended Range indicates BMI is 18.5 to 24.9, Overweight indicates BMI is 25.0 to 29.9 and Obese indicates BMI is greater than 30.0. The value reported in HNC2020 represents the percentage of high school respondents whose BMI fell into the "normal" or "underweight" categories (BMI's less than 25.0).

The YRBS survey is only administered every other year; therefore, results are not available on an annual basis. The sample size of the N.C. YRBS is small (fewer than 4,000 surveys are collected each year throughout the state); therefore, estimates are only available for the state and three regions (Western, Central and Eastern). No county- or school-level estimates are available for this measure. Since these estimates are based on a sample and not the entire population, the percentage of high school students who are neither overweight nor obese may differ from the "true" prevalence of that characteristic in the North Carolina population simply by chance. Confidence intervals take this error into account and present a range in which the "true value" is likely to fall. For more information on how to interpret confidence intervals, please see: www.schs.state.nc.us/SCHS/champ/technical.html.

Additional information on the N.C. YRBS can be found on the Department of Public Instruction website: www.nchealthyschools.org/data/yrbs.

2. Percentage of Adults Getting Recommended Amount of Physical Activity

This measure is based on data from the North Carolina Behavioral Risk Factor Surveillance System (N.C. BRFSS), a random-digit dial telephone survey. BRFSS data are representative of the total non-institutionalized North Carolina population over 18 years of age living in households with a telephone. Figures reported from N.C. BRFSS estimate the percentage of the North Carolina population who report different health behaviors, risks or characteristics.

Physical activity information is based on self-reported survey responses to a series of questions about physical activity at home, at work and during leisure time. Adults are counted as meeting the recommendation if they indicate that they engage in moderate physical activity for 30 or more minutes per day, five or more days per week or vigorous physical activity for 20 or more minutes per day, three or more days per week. Since the estimates are based on a sample and not the entire population, the percentage of adults meeting physical activity recommendations may differ from the "true" prevalence of that

characteristic in the North Carolina population simply by chance. We report confidence intervals which take this error into account and present a range in which the “true value” is likely to fall. For more information on how to interpret confidence intervals, please see: www.schs.state.nc.us/SCHS/champ/technical.html.

Information on physical activity is only collected in the BRFSS every other year; therefore, annual estimates are not available for this indicator. BRFSS currently oversamples 23 counties in the state; therefore, estimates are only available for the following counties: Alamance, Buncombe, Cabarrus, Catawba, Cumberland, Davidson, Durham, Forsyth, Gaston, Guilford, Iredell, Johnston, Mecklenburg, New Hanover, Onslow, Orange, Pitt, Randolph, Robeson, Rowan, Union, Wake and Wayne. For counties that are not part of the oversample, we supply the following regional estimates for Area Health Education Centers (AHEC): Mountain, Northwest, Charlotte, Greensboro, Southern Regional, Coastal, Wake, Area L and Eastern. More information on AHEC regions can be found here: www.med.unc.edu/ahec.

Although they are not comparable to North Carolina estimates, the Centers for Disease Control and Prevention provides more detailed county-level estimates for physical activity which can be found on the National Diabetes Surveillance System website : http://apps.nccd.cdc.gov/DDT_STRS2/CountyPrevalenceData.aspx?mode=DBT.

3. Percentage of Adults Consuming Five or More Servings of Fruits and Vegetables per Day

This measure is based on data from the North Carolina Behavioral Risk Factor Surveillance System (N.C. BRFSS), a random-digit dial telephone survey. BRFSS data are representative of the total non-institutionalized North Carolina population over 18 years of age living in households with a telephone. Figures reported from N.C. BRFSS estimate the percentage of the North Carolina population who report different health behaviors, risks or characteristics.

Nutrition information is based on self-reported survey responses to a series of questions about fruit and vegetable consumption. Adults reporting that they eat five or more servings of fruit and vegetables per day are included in this percentage. Since the estimates are based on a sample and not the entire population, the percentage of adults consuming five or more servings of fruit and vegetables may differ from the “true” prevalence of that characteristic in the North Carolina population simply by chance. We report confidence intervals which take this error into account and present a range in which the “true value” is likely to fall. For more information on how to interpret confidence intervals, please see: www.schs.state.nc.us/SCHS/champ/technical.html.

Information on fruit and vegetable consumption are only collected in the BRFSS every other year; therefore, annual estimates are not available for this indicator. BRFSS currently oversamples 23 counties in the state; therefore, estimates are only available for the following counties: Alamance, Buncombe, Cabarrus, Catawba, Cumberland, Davidson, Durham, Forsyth, Gaston, Guilford, Iredell, Johnston, Mecklenburg, New Hanover, Onslow,

Orange, Pitt, Randolph, Robeson, Rowan, Union, Wake and Wayne. For counties that are not part of the oversample, we supply the following regional estimates for Area Health Education Centers (AHEC): Mountain, Northwest, Charlotte, Greensboro, Southern Regional, Coastal, Wake, Area L and Eastern. More information on AHEC regions can be found here: www.med.unc.edu/ahec.

SOCIAL DETERMINANTS OF HEALTH

1. Percentage of Individuals Living in Poverty

The Current Population Survey's Annual Social and Economic Supplement (CPS ASEC) is a national survey conducted by jointly by the United States Bureau of Labor Statistics and the Census Bureau. It provides state-level estimates of insurance coverage for individuals. The Census Bureau also produces Small Area Income and Poverty Estimates (SAIPE), which are model-based estimates based on the American Community Survey (ACS), administrative records and population estimates. As the estimation method differs for the state-level and county-level estimates, caution should be used when making comparisons. In addition, SAIPE model-based estimates are correlated due the model, so caution should be used when comparing counties. For more detail on these cautions, see www.census.gov/did/www/saipe/methods/cautions.html.

These kinds of model-based estimates of poverty at the county-level may differ from the “true” prevalence of poverty in the population. Ninety percent confidence intervals are provided that take this error into account and present a range in which the “true value” is likely to fall. For more information on how to interpret confidence intervals, please see: www.schs.state.nc.us/SCHS/champ/technical.html.

2. Four-year High School Graduation Rate

The North Carolina Department of Public Instruction collects graduation data from all regular and charter public schools. The four-year cohort high school graduation rate reflects the percentage of ninth graders (cohort) who graduated from high school four years later. The data include students who transferred into the LEA minus students who transferred out of the LEA. The graduates do not include students who leave public high school for a community college, GED or adult high school, as well as students with disabilities who complete the 12th grade but do not qualify for a standard diploma.

For additional information on North Carolina graduation data, please see: www.dpi.state.nc.us/graduate/statistics.

3. Percentage of People Spending More than 30% of Their Income on Rental Housing

This indicator is derived from American Community Survey (ACS) data collected by the United States Census Bureau. The ACS is conducted on an annual basis and now replaces the “long form” portion of the Census. Approximately three million households in every

county in the United States are selected to participate in the survey each year. Data are collected primarily by mail, with Census Bureau telephone and personal visit follow-up.

In addition to a variety of other questions, the ACS includes questions on rent, utilities and household income. The numerator for this measure is the number of renter-occupied units spending 30 percent or more of household income on rent and utilities. The denominator for this measure is the total number of renter-occupied housing units. ACS releases one-year estimates for areas with populations of at least 65,000, three-year estimates for areas with populations of at least 20,000 and five-year estimates for all areas. As some counties in North Carolina have a population less than 20,000, five-year estimates are provided in order to ensure that all counties have estimates for this indicator. Be aware that confidence intervals can be wide for this measure. For more information on how to interpret confidence intervals, please see: www.schs.state.nc.us/SCHS/champ/technical.html.

For more information on the ACS, as well as data for areas with larger populations, see www.census.gov/acs/www.

SEXUALLY TRANSMITTED DISEASE AND UNINTENDED PREGNANCY

1. Percentage of Pregnancies that are Unintended

This measure is based on data from the North Carolina Pregnancy Risk Assessment Monitoring System (N.C. PRAMS). N.C. PRAMS is an annual Center for Disease Control and Prevention (CDC) survey that collects data on maternal attitudes and experiences prior to, during and immediately after pregnancy for a sample of North Carolina women who have recently given birth. The PRAMS survey combines two modes of data collection; a survey conducted by mailed questionnaire with multiple follow-up attempts and a survey by telephone.

Unintended pregnancy percentages are based on mother's self-reported responses to the question: "Thinking back to just before you got pregnant with your new baby, how did you feel about becoming pregnant?" Mothers who reported that they "wanted to be pregnant later" or that they "didn't want to be pregnant then or at any time in the future" were considered to have had unintended pregnancies.

North Carolina PRAMS samples fewer than 2,000 mothers each year, therefore, single-year estimates of unintended pregnancies are only available at the state level. Three-year aggregate estimates for the six "Perinatal Care Regions" in the state are available on the N.C. PRAMS website: www.schs.state.nc.us/SCHS/prams/results.html.

2. Percentage of Positive Results among Individuals Aged 15 to 24 Tested for Chlamydia

This indicator is based on sexually transmitted disease data reported to the State Laboratory of Public Health (SLPH). The SLPH provides testing for the Infertility Prevention Project (IPP), which includes testing for chlamydia. The five largest counties in North Carolina (Durham, Forsyth, Guilford, Mecklenburg and Wake) are not included here because they are not funded by the IPP and do not send their screening tests to the SLPH. Therefore, the state percentage excludes these five counties, which may result in a value that does not represent the actual statewide percentage. The Chlamydia screening criteria in the clinics which submit their screening tests to SLPH is to screen all sexually active women aged 24 and under, regardless of risk profile.

The numerator for this measure is the number of positive SLPH test results for chlamydia among individuals aged 15 to 24 years old, and the denominator is the total number of SLPH tests for chlamydia for individuals aged 15 to 24 years old.

3. Rate of New HIV Infection Diagnoses per 100,000 Population

The HNC 2020 baseline measure is the estimated rate per 100,000 population from the Centers for Disease Control and Prevention's 2008 HIV surveillance report. The CDC estimate includes a statistical adjustment to account for reporting delays, but not for incomplete reporting.

County level data is available from N.C. DPH's Epidemiology Section, which does not include any statistical adjustment for reporting delays. Therefore, the state rate is not comparable between the two sources. The Epidemiology Section periodically updates their rates to include additional reported cases; see www.epi.state.nc.us/epi/hiv/stats.html for the most comprehensive data. Both sources count cases by the initial date of HIV diagnosis.

Due to a small number of HIV diagnoses by county, in order to ensure more reliable rates, county-level rates are only presented for three-year periods. For more information on the impact of rates based on small numbers, please see: www.schs.state.nc.us/SCHS/pdf/primer12_2.pdf.

SUBSTANCE ABUSE

1. Percentage of High School Students Consuming Alcohol

This measure is based on data from the North Carolina Youth Risk Behavior Survey (N.C. YRBS). The N.C. YRBS is conducted by the North Carolina Department of Public Instruction (NCDPI), Division of Accountability Services, in conjunction with the North Carolina Department of Health and Human Services (NCDHHS). N.C. YRBS data are used to monitor progress toward achieving national health objectives for youth.

High school alcohol use percentages are based on students' self-reported survey responses to the question: "How many times in the past 30 days have you had at least one drink of alcohol?" The values reported in HNC2020 represent the percentage of students that indicated that they had one or more alcoholic beverages in the past 30 days.

The YRBS survey is only administered every other year; therefore, results are not available on an annual basis. The sample size of the N.C. YRBS is small (fewer than 4,000 surveys are collected each year throughout the state); therefore, estimates are only available for the state and three regions (Western, Central and Eastern). No county-or school-level estimates are available for this measure.

Additional information on the N.C. YRBS can be found on the Department of Public Instruction website: www.nchealthyschools.org/data/yrbs.

2. Percentage of Traffic Crashes That Are Alcohol-related

This indicator is based on data from the Highway Safety Research Center at University of North Carolina at Chapel Hill. The Center is funded by the North Carolina Governor's Highway Safety Program to provide statistics on alcohol-related motor vehicle crashes, injuries and fatalities. The numerator for this measure represents all fatal and non-fatal motor vehicle crashes that were determined to be alcohol-related. The denominator for this measure includes all crashes (fatal or non-fatal). The Highway Safety Research Center obtains statistical information for this measure from the North Carolina Administrative Office of the Courts (AOC) and the North Carolina Division of Motor Vehicles (DMV).

The "North Carolina Alcohol Facts" web site provides additional state and county level data. For more information, see www.hsrc.unc.edu/ncaf.

3. Percentage of Individuals Aged 12 Years and Older Reporting Any Illicit Drug Use in the Past 30 Days

This measure is based on data from the National Survey on Drug Use and Health (NSDUH). Sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA), NSDUH is an ongoing survey of the civilian, non-institutionalized population of the United States aged 12 years or older. NSDUH is the primary source of information on the prevalence, patterns, and consequences of drug and alcohol use and abuse and for selected mental health measures in the general U.S. civilian non institutionalized population, aged 12 and older. NSDUH data are collected via face-to-face interviews with respondents. Each interview incorporates procedures to enhance the privacy and confidentiality of reported data.

Estimates for this measure are based on respondents aged 12 and over who indicated that they had used illicit drugs in the 30 days before the NSDUH interview. NSDUH defines illicit drugs as marijuana, hashish, cocaine (including crack), heroin, hallucinogens, inhalants or prescription-type psychotherapeutics used for non-medical purposes.

SAMHSA generated state estimates based on a survey-weighted hierarchical Bayes estimation approach, and 95 percent confidence intervals were generated by Markov Chain Monte Carlo techniques. Due to small sample sizes, NSDUH data are only available at the state level for North Carolina.

TOBACCO USE

1. Percentage of Adults Who Are Current Smokers

This measure is based on data from the North Carolina Behavioral Risk Factor Surveillance System (N.C. BRFSS), a random-digit dial telephone survey. BRFSS data are representative of the total non-institutionalized North Carolina population over 18 years of age living in households with a telephone. Figures reported from N.C. BRFSS estimate the percentage of the North Carolina population who report different health behaviors, risks or characteristics.

Tobacco use estimates are based on self-reported responses to two tobacco use questions: 1) "Have you smoked at least 100 cigarettes in your entire life?" 2) "Do you now smoke cigarettes every day, some days, or not at all?" Current smoking prevalence represents the percentage of survey respondents who report that they currently smoke "every day" or "most days" and have smoked at least 100 cigarettes in their lifetime. Since the estimates are based on a sample and not the entire population, the percentage of adults who are current smokers may differ from the "true" prevalence of that characteristic in the North Carolina population simply by chance. We report confidence intervals which take this error into account and present a range in which the "true value" is likely to fall. For more information on how to interpret confidence intervals, please see:

www.schs.state.nc.us/SCHS/champ/technical.html.

BRFSS currently oversamples 23 counties in the state; therefore, estimates are only available for the following counties: Alamance, Buncombe, Cabarrus, Catawba, Cumberland, Davidson, Durham, Forsyth, Gaston, Guilford, Iredell, Johnston, Mecklenburg, New Hanover, Onslow, Orange, Pitt, Randolph, Robeson, Rowan, Union, Wake and Wayne. For counties that are not part of the oversample, we supply the following regional estimates for Area Health Education Centers (AHEC): Mountain, Northwest, Charlotte, Greensboro, Southern Regional, Coastal, Wake, Area L and Eastern. More information on AHEC regions can be found here: www.med.unc.edu/ahec.

2. Percentage of High School Students Who Currently Use Tobacco Product(s)

This measure is based on data from the North Carolina Youth Tobacco Survey (N.C. YTS). The N.C. YTS is a comprehensive statewide representative sample of middle and high school students (grades 6-12). The YTS is conducted every other year using a core set of Centers for Disease Control and Prevention (CDC) tobacco-related questions. In addition, states can add questions related to local tobacco program factors.

Estimates for tobacco use are based on self-reported use of tobacco products. According to the YTS, tobacco products include cigarettes, cigars, smokeless tobacco, pipes, bidis and kreteks. Current use is defined as using any tobacco product on at least one day during the 30 days before the survey.

The YTS survey is only administered every other year; therefore, results are not available on an annual basis. The sample size of the N.C. YTS is relatively small (fewer than 8,000 surveys are collected each year throughout the state); therefore, estimates are only available for the state and three regions (Western, Central and Eastern). No county or school level estimates are available for this measure. Since these estimates are based on a sample and not the entire population, the percentage of high school students who are current smokers may differ from the “true” prevalence of that characteristic in the North Carolina population simply by chance. Confidence intervals are reported which take this error into account and present a range in which the “true value” is likely to fall. For more information on how to interpret confidence intervals, please see: www.schs.state.nc.us/SCHS/champ/technical.html.

Additional information on the N.C. YTS can be found on the North Carolina Tobacco Prevention and Control Branch website: www.tobaccopreventionandcontrol.ncdhhs.gov/data/yts/index.htm.

3. Percentage of Adults Who Are Exposed to Secondhand Smoke in the Workplace

This measure is based on data from the North Carolina Behavioral Risk Factor Surveillance System (N.C. BRFSS), a random-digit dial telephone survey. BRFSS data are representative of the total non-institutionalized North Carolina population over 18 years of age living in households with a telephone. Figures reported from N.C. BRFSS estimate the percentage of the North Carolina population who report different health behaviors, risks or characteristics.

Workplace secondhand smoke exposure estimates are based on self-reported responses to the question: “On how many of the past seven days, did anyone smoke in your indoor workplace while you were there?” This question is only asked of respondents who are employed for wages or self-employed and those who report working indoors most of the time. Workplace secondhand smoke exposure represents the percentage of survey respondents who report that they were exposed to secondhand smoke on one or more days in the seven days before the survey. Since the estimates are based on a sample and not the entire population, the percentage of adults who are exposed to secondhand smoke in their indoor workplace may differ from the “true” prevalence of that characteristic in the North Carolina population simply by chance. We report confidence intervals which take this error into account and present a range in which the “true value” is likely to fall. For more information on how to interpret confidence intervals, please see: www.schs.state.nc.us/SCHS/champ/technical.html.

BRFSS currently oversamples 23 counties in the state; therefore, estimates are only available for the following counties: Alamance, Buncombe, Cabarrus, Catawba, Cumberland,

Davidson, Durham, Forsyth, Gaston, Guilford, Iredell, Johnston, Mecklenburg, New Hanover, Onslow, Orange, Pitt, Randolph, Robeson, Rowan, Union, Wake and Wayne. For counties that are not part of the oversample, we supply the following regional estimates for Area Health Education Centers (AHEC): Mountain, Northwest, Charlotte, Greensboro, Southern Regional, Coastal, Wake, Area L and Eastern. More information on AHEC regions can be found here: www.med.unc.edu/ahec.