

**North Carolina Department of Health and Human Services
Division of Public Health**

Annual Report to the North Carolina Medical Society

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Background

General Statute 130A.33 requires the State Health Director to submit an annual report on public health at the general session of the annual meeting of the North Carolina Medical Society (NCMS) held conjointly with the Commission for Public Health meeting. This report serves this statutory requirement and is structured around North Carolina's state health improvement plan, **Healthy North Carolina 2020**.

Healthy North Carolina 2020: The State's Health Improvement Plan

According to the 2014 edition of *America's Health Rankings*, North Carolina ranked 37th in the nation.¹

The burden of premature morbidity and mortality reflected in our ranking highlights the need for improvements in population health. More than two-thirds of all deaths annually in North Carolina are attributed to chronic diseases and injuries.² The North Carolina State Center for Health Statistics has listed the top five causes of death in 2014 as cancer, heart disease, chronic lung disease, stroke and Alzheimer's disease.³

Based on the latest *America's Health Rankings* report, North Carolina's challenges include a high percentage of children in poverty, limited availability of dentists and a high prevalence of diabetes. Our state's low prevalence of binge drinking, low incidence of pertussis and high immunization rates among children are noted as strengths.⁴

The burden of diseases related to modifiable behaviors in our state has been high.

- The annual economic costs associated with unhealthy lifestyles are estimated at \$57.4 billion in North Carolina, with \$11.9 billion attributable to lack of physical activity, \$15.5 billion due to excess weight, \$3.1 billion associated with inadequate fruit and vegetable consumption and \$3.7 billion related to adult-onset (Type II) diabetes.⁵
- North Carolina's direct medical costs from smoking are estimated at \$3.81 billion each year, of which \$931 million are Medicaid costs.⁶

A practical approach to address North Carolina's health care challenges has been to attempt to prevent these problems from occurring in the first place. Investing in prevention has been determined to save lives, reduce disability, and, in some cases, reduce health care costs as stated in the *Prevention Action Plan for North Carolina*.⁷ This statewide focus on prevention has been reflected in work by North Carolina's public health leaders, who began in 2008 to develop a vision and roadmap for focusing and improving public health efforts. The *Prevention Action Plan for North Carolina (2009)* also recognized evidence-based strategies as an important mechanism to improve population health.

North Carolina used this prevention framework to establish our state's **Healthy North Carolina 2020 (Healthy NC 2020)** objectives, the most recent iteration of decennial health objectives our state has set beginning in 1990. The primary aim of this objective-setting process is to mobilize the state to achieve a common set of health objectives. Healthy People 2020 (www.healthypeople.gov) is a federal initiative with science-based, 10-year national objectives for improving the health of all Americans. **Healthy NC 2020** is a state health improvement plan with state specific, measurable objectives that were developed with the best available data and evidence. North Carolina's objectives are well aligned with federal objectives, though they were developed separately.

Healthy North Carolina 2020: A Better State of Health (2011) identified 40 objectives necessary to improve population health by 2020 and recommended the use of evidence-based strategies.⁸ **Healthy NC 2020** serves as our state's health improvement plan, which was designed to address and improve our state's most pressing health priorities. These objectives provided a common set of health indicators that organizations and individuals across the state can work to improve, knowing their efforts are designed to lead to a healthier population. Each **Healthy NC 2020** objective included a discrete quantifiable target that has enabled us to monitor progress toward achieving our goals. Appendix A provides a list of the 40 objectives, our state's baseline, targets and most current measures, as well as national measures for comparison (when available and applicable).

Steps Taken by State and Non-State Entities to Meet Healthy NC 2020 Goals

The mission of the North Carolina Department of Health and Human Services (DHHS) Division of Public Health (DPH) is to promote and contribute to the highest possible level of health for all North Carolinians. North Carolina's public health system is an integrated network of partnerships among DPH and the state's 85 local health departments, as well as other divisions in DHHS, other state agencies, universities and non-governmental entities. Programs and services touch all citizens' lives in all 100 counties. Improving the health of our citizens requires a coordinated approach with ownership by and accountability from governmental and non-governmental entities as well as individuals themselves.

Local health departments and their community health partners complete health assessments every three or four years and develop local community health improvement plans to address the health needs of their citizens. Review of the most current community health assessments and improvement plans for local health departments indicated a core of **Healthy NC 2020** objectives has been selected by most local health departments as their most pressing health problems.

All DPH's programs and services have supported improvements in health as measured by the 40 **Healthy NC 2020** objectives. The following is a representative though not exhaustive summary of programs and services addressing the **Healthy NC 2020** objectives most frequently selected by local communities as their most pressing health issues. Appendix B provides disaggregated data by county, when available, for selected **Healthy NC 2020** objectives.

Tobacco Use

Healthy NC 2020 Objectives

- ❖ *Decrease the percentage of adults who are current smokers*
- ❖ *Decrease the percentage of high school students reporting current use of any tobacco product*
- ❖ *Decrease the percentage of people exposed to secondhand smoke in the workplace in the past seven days*

Tobacco use remains the number one preventable cause of early death and disease (one in five deaths) in the United States.⁹ The 2014 Surgeon General's Report documents that for each death there are 30 more people who are sick or disabled because of tobacco use. Tobacco use is also a major concern among North Carolina's youth.

- North Carolina's high school smoking rate decreased from 27.3 percent in 2003 to 13.5 percent in 2014. However, progress has been confounded by the growing popularity of unconventional tobacco products such as electronic cigarettes and hookahs. And for the first time in a decade, overall tobacco use among high school students increased.
- The challenge for 2020 has been to regain the previous downward trend for all tobacco products. In 2013, the N.C. General Assembly passed a law to prohibit e-cigarette sales to minors. This law, as well as other laws, defines e-cigarettes as tobacco products. This success was achieved with input from physician leaders. In 2015, the North Carolina legislature also passed a bill to require child-resistant packaging for all e-liquid containers and labels for any e-liquid container that contains nicotine. This new law becomes effective Dec. 1, 2015.

The 2014 Surgeon General's Report also has provided continued strong evidence for the health risks associated with exposure to tobacco smoke, including new evidence that secondhand smoke is causative for stroke. Secondhand smoke causes premature death and disease in children and adults who do not smoke, and there is no risk-free level of exposure to secondhand smoke.

- Workers in North Carolina restaurants and bars have been protected by a state smoke-free law since 2010, and many government workers are protected from secondhand smoke under local action. Private worksites are not smoke-free by law.
- Those who work in blue collar jobs, those of lower income and African Americans have been more likely exposed to secondhand smoke. In fact, a CDC study found that nearly seven in 10 African American children were exposed to secondhand smoke in the home, particularly in multi-unit housing that is not smoke-free.¹⁰

The **DHHS' DPH's Tobacco Prevention and Control Branch** has worked with organizations and communities to build support for evidence-based policies and programs. Highlights include:

- ◆ **QuitlineNC** enrollments have continued to increase as tobacco users want to quit, and providers are increasingly referring to **QuitlineNC**, which now has recurring funding. The return on investment (ROI) for the State Health Plan's investment in **QuitlineNC** services for its members has been \$4 for every \$1 invested.
- ◆ Smoke-free and tobacco-free places have become increasingly the norm. Local smoke-free and tobacco-free places increase healthy environments and support healthy behaviors, including preventing young people from starting to use tobacco products and helping tobacco users who want to quit. Examples have included:

Seventy-five percent of North Carolina counties have a written smoke-free or tobacco-free regulation for government buildings, and 41 percent of municipalities have adopted written smoke-free or tobacco-free regulations for their buildings. Seventeen percent of counties and 11 percent of municipalities have adopted a 100 percent smoke-free or tobacco-free grounds regulations.

North Carolina's Affordable Housing properties have increasingly gone smoke-free in order to protect health and property and save money. The **N.C. Housing Finance Agency** has recently accepted the recommendations of the N.C. Alliance for Health, business owners and managers and has made North Carolina the second state in the nation to require smoke-free policies for properties receiving tax credit funding.

Mental Health and Substance Abuse Treatment state facilities have successfully implemented tobacco-free buildings and grounds policies and have provided tobacco cessation support to patients and staff. The **DHHS' Division of Medical Assistance**, the **Division of Mental Health/Developmental Disabilities/Substance Abuse Services** and the **Division of Public Health** have collaborated to make sure there is no wrong door for all tobacco users who want to quit, whether they are seen through medical or behavioral health clinics. These agencies have made tobacco cessation counseling along with FDA-approved medications for tobacco treatment more readily available for tobacco users.

- ◆ **DPH's Children and Youth Branch, Maternal, Infant and Early Childhood Home Visiting (MIECHV) Program** has made progress on the **Healthy NC 2020** objectives for tobacco use by implementing federally-funded, evidence-based home visiting (**Nurse-Family Partnership** and **Healthy Families America**) in 12 counties in North Carolina. They are Buncombe, Burke, Columbus, Durham, Edgecombe, Gaston, Halifax, Hertford, Mitchell, Northampton, Robeson and Yancey. Data for the most recent reporting period (FY2014) indicate that 26.7 percent of pregnant women reduced their use of tobacco during pregnancy.

What Medical Providers Can Do

- ◆ For tobacco users who want to quit, promote clinical referrals to **QuitlineNC** (1-800-QuitNow or 1-800-784-8669) through fax referral, secured email or an electronic health records system.
- ◆ Educate patients and the public about the known health risks for electronic cigarettes and secondhand aerosol.

Physical Activity and Nutrition Healthy NC 2020 Objectives

- ❖ *Increase the percentage of high school students who are neither overweight nor obese*
 - ❖ *Increase the percentage of adults getting the recommended amount of physical activity*
 - ◆ **The DHHS' Division of Public Health's Community and Clinical Connections for Prevention and Health Branch's (CCCPH)** programs have helped to make communities, worksites and schools healthier places to live, earn and learn. These services have encouraged changes to policies and environments to help community members eat smart, move more and achieve a healthy weight. Some examples of efforts undertaken in our state have included:
 - Creating walking trails in communities.
 - Increasing access to farmers' markets.
 - Creating supportive nutrition environments and quality physical education and physical activity in schools.
 - Creating workplace policies to encourage employees to be more active.
- DPH has undertaken these activities with many state and local public health partners including the **N.C. Departments of Environmental and Natural Resources, Transportation, Commerce, Cultural Resources, Agriculture and Public Instruction; N.C. Cooperative Extension Services; universities and nonprofit organizations.**
- ◆ To integrate the health needs of youth and adults with disabilities, the **N.C. Office on Disability and Health** in the **DPH's Children and Youth Branch** worked with communities, schools and state and local public health partners to increase the accessibility of farmers' markets, open space and other health promotion environments, and to increase participation of students with disabilities in walking and biking to school programs.

What Medical Providers Can Do

- ◆ At the practice level, provide point-of-decision prompts to encourage use of stairs, drinking water and eating healthy (see www.eatsmartmovemorenc.com/StairwellGuide/StairwellGuide.html).

Maternal and Infant Health Healthy NC 2020 Objectives

- ❖ *Reduce the infant mortality racial disparity between whites and African Americans*
- ❖ *Reduce the infant mortality rate (per 1,000 live births)*

Division of Public Health programs addressing infant mortality have included:

- ◆ **Community Focused Infant Mortality** has provided services for women and their infants with a specific focus on African American and Native American families. Services include outreach; case management; health education before, during and after pregnancy to improve the chances of a healthy birth and supportive services for women and their children after delivery. These programs have included **Baby Love Plus** and **Healthy Beginnings** and have been housed in **local health departments** and **community-based organizations** across the state. Additional partners include **UNC-Greensboro** and **UNC-Chapel Hill**.
- ◆ **Maternal Health Services** has provided a wide range of maternal health services to encourage low-income pregnant women to begin early prenatal care and follow recommended perinatal care guidelines before and after giving birth. State and local public health partners in this effort have included **DHHS' Division of Medical Assistance, East Carolina University, UNC-Chapel Hill, private universities** and **hospitals**.
- ◆ **Women's Health Public Education** has educated North Carolina residents through maternal and child public education/information campaigns. Campaigns have included information about preventing birth defects by encouraging women to consume folic acid before pregnancy, preventing teen pregnancy, preparing for a healthy pregnancy, prenatal care, infant care and appropriate parenting and family planning skills. State and local public health partners in this effort have included **DHHS' Division of Medical Assistance** and **non-profit health organizations**.
- ◆ The **North Carolina Child Fatality Task Force** has continued to work to promote a package of programs to promote healthy births and first years of life to reduce infant mortality. Efforts have included promotion of preconception health, use of a drug to prevent second (or other) subsequent preterm pregnancies, education in best safe sleep practices and improvements in hospital practice.

- ◆ **State Genetics and Newborn Metabolic Screening programs** have provided services to those infants who are at highest risk for certain birth defects and genetic conditions. This has included congenital heart disorders, cystic fibrosis, and metabolic and other genetic disorders that put infants at risk for physical, emotional, social and cognitive or developmental disabilities. Genetic and hearing screening, diagnosis and intervention improve the quality of life and decrease infant morbidity and mortality. State and local partners in this effort have included **public and private hospitals, medical centers, medical specialists, local health departments and private audiologists** across the state.

The N.C. General Assembly expanded the **DHHS' Newborn Metabolic Screening program** in Session Law 2013-45 to include screening for critical congenital heart defects (CCHD) utilizing pulse oximetry. As a result of this legislation, temporary public health rules requiring CCHD screening of every neonate (and associated required reporting of data) went into effect on July 25, 2014. Permanent rules became effective April 1, 2015. State and local public health partners in this effort have included **nonprofit agencies, hospitals and universities** across the state.

- ◆ **Evidence-based Home Visiting programs** have provided services to strengthen family parenting skills by developing common practice across providers working with children and families. These programs have helped develop a framework for a prevention partnership, establish an understanding of what constitutes viable family support activities and provide a framework to measure progress in addressing family needs and providing proven tools for building family strengths.
- ◆ **The DHHS' DPH's Children and Youth Branch** has implemented **Nurse-Family Partnership (NFP) home visiting** in 17 counties using a combination of federal funding and state appropriations. These counties are Buncombe, Columbus, Edgecombe, Gaston, Graham, Halifax, Haywood, Hertford, McDowell, Macon, Northampton, Polk, Robeson, Rockingham, Rutherford, Swain and Wake. The NFP model has required that pregnant moms enroll by the 28th week of pregnancy and has encouraged moms to get regular prenatal care that results in reduction of infant mortality and better birth outcomes.

What Medical Providers Can Do

- ◆ Provide recommendations for young patients and their parents about Sickle Cell Trait/Disease:
 - For infants with abnormal hemoglobin, refer to specialty providers for follow-up care and genetic counseling; promote coordination of primary and specialty care services for patients.
 - Encourage parents of children with sickle cell trait to complete family genetic studies and educate and inform parents about the risk for having other children with sickle cell disease and/or sickle cell trait.
 - For children and adolescents, inform them at puberty about the genetic implications of having sickle cell trait and the limited medical complications associated with being a carrier.
- ◆ Promote assessment, counseling and referral for preconception health issues such as life planning, reproductive health goals and healthy weight.
- ◆ **Provide 17P treatment** (Hydroxyprogesterone Caproate) to pregnant women who have had a prior preterm birth.
- ◆ Screen pregnant and postpartum women for domestic violence, alcohol and illicit drug use and refer for services as indicated.
- ◆ **Promote breastfeeding** through education and support.
- ◆ **Promote delivery at a minimum of 39 weeks** by eliminating early elective deliveries.
- ◆ Provide education on safe sleep practices including 1) back-to-sleep, 2) eliminating tobacco exposure, 3) eliminating bed sharing and 4) crib safety.
- ◆ Assess, counsel and refer pregnant and postpartum women for tobacco use using the **5 A's Method** (ask, advise, assess, assist and arrange).
- ◆ Refer high-risk patients to case management and home-based visiting programs.

Unintended Pregnancy

Healthy NC 2020 Objective

- ❖ *Decrease the percentage of pregnancies that are unintended*

Division of Public Health programs addressing unintended pregnancies have included:

- ◆ **Teen Pregnancy Prevention Initiatives** have sought to prevent teen pregnancies by providing educational and health care services to teenagers. They also have sought to help current teenage parents prevent another unintended pregnancy. Services have been provided by local health departments, community-based organizations, schools and local

departments of social services. Two federal grants are providing important additional funding for high-need, low-resourced communities to provide programs.

Other Teen Pregnancy Prevention Initiatives partners have been **DHHS' Division of Social Services, Adolescent Pregnancy Prevention Campaign of North Carolina (NC SHIFT, Inc.)** and **Appalachian State University**.

Depending on the needs of the student, school nurses may have helped manage a student's pregnancy as part of nursing case management or with physician orders. Nurses may have provided health education and health promotion through group teaching regarding care of the current pregnancy, anticipatory guidance of labor and delivery and infant and maternal care. With assistance from school nurses, the majority of students have managed their pregnancies well enough to remain enrolled in their normal school location. About 25 percent of students (at some time during either the prenatal or postpartum period, or both) have received home-bound instruction instead of school-located instruction.

- ◆ **DPH's Family Planning** program has provided family planning services and preventive care to low-income women and men by funding **clinics in local health departments** and by funding **other community-based providers**. The aim has been to decrease the number of unplanned pregnancies and decrease the health problems associated with unplanned pregnancies. The service has benefitted the general population with an emphasis on low-income North Carolinians. State and local public health partners in this effort have included **DHHS' Division of Medical Assistance, Division of Social Services** and **local social services offices**.
- ◆ **The Children and Youth Branch's Maternal, Infant and Early Childhood Home Visiting (MIECHV) Program** has provided family strengthening services in 12 counties in North Carolina through **Nurse-Family Partnership** and **Healthy Families America home visiting programs**. A targeted program outcome has been for women to reduce subsequent pregnancies within one year of a child's birth. The most recent report for FY13-14 has indicated that 90.4 percent of women did not become pregnant again within one year of the child's birth.

What Medical Providers Can Do

- ◆ For teen pregnancy prevention, ensure:
 - Teens are informed of all contraceptive and reproductive health services available at the specific health center; and a referral is provided for any contraceptive or reproductive health services that are not available at the specific health center.
 - Teens' contraceptive and reproductive health needs are assessed at every visit.
 - **Promotion of “Dual-protection”:** using a condom for Sexually Transmitted Infections and HIV prevention, and a highly effective birth control method for pregnancy prevention at the same time.
- ◆ For family planning services:
 - Provide counseling and education to family planning patients in order to assure that the best contraceptive method can be chosen by the patient for her particular circumstances. A moderately or highly effective method is the most desired method of choice in order to assure that an unintended pregnancy can be avoided.
 - **Ask each family planning patient “One Key Question”** regarding her pregnancy intentions: Does she want to become pregnant in the next year? Based on her answer, contraceptive options and other important health considerations can then be discussed.
- ◆ Learn about the availability of home visiting and parenting programs in patient's community and actively refer families to them.

Sexually Transmitted Disease

Healthy NC 2020 Objectives

- ❖ *Reduce the percentage of positive results among individuals aged 15 to 24 tested for chlamydia*
- ❖ *Reduce the rate of new HIV infection diagnoses (per 100,000 population)*

Sexually Transmitted Diseases Prevention activities have prevented the spread of sexually transmitted diseases through testing at the **State Laboratory of Public Health**, counseling and education and treatment. This has been achieved by:

- ◆ Supporting two **local health departments** (Guilford and Wake counties) to conduct gonorrhea and chlamydia testing and treatment among high risk populations.
- ◆ Successfully reducing the rates of new HIV diagnoses in the overall population from 17.13 in 2011 to 13.4 in 2014 (per 100,000 based on North Carolina calculated rates) by focusing on those most at risk and by building myriad efforts to assure that people are in care and on medication, thus eliminating the ability to transmit HIV.

- ◆ Promoting the “**Get Real Get Tested Get Treatment**” campaign conducting screenings for gonorrhea, chlamydia and HIV at college campuses across North Carolina.
- ◆ Providing **local health departments** free chlamydia laboratory testing for all women less than 25 years of age, all pregnant women and women with symptoms of chlamydia.
- ◆ Providing purchasing funds for all 85 **local health departments** in North Carolina to obtain medications used to treat sexually transmitted diseases.
- ◆ Further supporting gonorrhea screening and treatment efforts through **GISP (Gonococcal Isolate Surveillance Project)**, by testing for antibiotic resistant strains of gonorrhea. Guilford County is one of 26 federal sites collecting GISP data to assure successful treatment of this type of gonorrhea. North Carolina’s GISP site is located at **Guilford County’s health department locations** in High Point and Greensboro. A urethral sample is collected from the first 25 men per month who attend the clinics with a urethral gonococcal infection.

What Medical Providers Can Do

- ◆ Assure that all sexually active people receive testing for sexually transmitted diseases including HIV and syphilis test annually, and that those people who are not in a mutually monogamous relationship are tested more frequently (i.e., at three to six month intervals).
- ◆ Assure that all people born between 1945 and 1964, or that have a history of injecting drug use, have been tested for Hepatitis C virus (HCV). Assure that people who actively inject drugs are re-tested regularly, referred for substance abuse services and counseled about safe injection practices.
- ◆ Discuss sexual health and STD-risk behaviors with all patients; for young men who have sex with other men, assure HIV/STD/HCV testing every three to six months.
- ◆ Assure that all people who test positive for HIV or other STDs are linked to appropriate care and treatment to reduce associated morbidity, mortality and transmission to others.

Substance Abuse

Healthy NC 2020 Objectives

- ❖ *Reduce the percentage of high school students who had alcohol on one or more of the past 30 days*
- ❖ *Reduce the percentage of traffic crashes that are alcohol-related*
- ❖ *Reduce the percentage of individuals aged 12 years and older reporting any illicit drug use in the past 30 days*

Some programs addressing these **Healthy NC 2020** objectives have included:

- ◆ The **DPH's Forensic Tests for Alcohol Branch** has worked to reduce deaths, injuries and health care costs related to impaired driving in North Carolina. Services have included:
 - Delivering comprehensive alcohol and drug training for **law enforcement officers and court personnel** to improve their ability to detect, apprehend and prosecute impaired drivers.
 - Procuring funding for four **Breath Alcohol Testing (BAT) Mobile Units** (two additional and two replacements) and two full-time positions to staff additional BAT Mobile Units. BAT Mobile Units have been used at Driving While Impaired (DWI) checking stations to deter impaired driving and promote the belief that DWI enforcement is likely to occur anywhere in the state at any time. When the BAT Mobile staff increased this year from five to seven BAT coordinators, a regionalized program was implemented. Regionalization of the program has allowed for the hiring of BAT Coordinators who reside in the communities they serve, increasing support of the program within the community.
 - In addition to participating in checking stations, BAT Coordinators have provided educational programs for community groups and in schools, stressing the dangers of drinking and driving. The program has provided and maintained 369 evidential breath alcohol testing instruments statewide located at 203 breath testing sites and used in training law enforcement officers.

Additional state and local public health partners in these efforts have included the **N.C. Department of Public Safety/State Highway Patrol, N.C. Department of Transportation Division of Motor Vehicles/Governors Highway Safety Program** and **local law enforcement agencies** across the state.

- ◆ The **DPH's Injury and Violence Prevention Branch** has monitored injury and violence trends in the state, including events associated with underage alcohol use and prescription and drug overdose.
- ◆ To address these **Healthy NC 2020** objectives, the **N.C. Child Fatality Task Force** has:
 - Supported funding for safe drug disposal and for strengthening the controlled substance reporting system, both which help to prevent illicit drug use.
 - Supported the **911 Good Samaritan/Naloxone Access** legislation that provides limited immunity from prosecution for reporting drug and alcohol overdoses and for the use of rescue drugs for opioid overdoses.

A model standing order was developed to authorize the dispensing of Narcan (naloxone) by public health nurses at local health departments that adopt the standing order. The state **Emergency Medical Services (EMS)** Medical Director issued policy guidance for county EMS medical directors to authorize local EMS and law

enforcement agencies to use and administer naloxone. Over the past two years, 750 overdose reversals have been documented with the expanded availability of naloxone.

- ◆ The **N.C. Department of Transportation** has revised its five year state highway safety plan. The plan includes updated impaired driving goals. The **DPH's Injury and Violence Prevention Branch** has been an active participant in the development of the plan and its impaired driving goals.
- ◆ The **DPH's Children and Youth Branch** has funded 32 **School Health Centers** which have provided primary and preventive medical care for adolescents. Imbedded in this care has been adolescent risk assessments with follow-up counseling and/or referral to reduce the students' risk for health problems caused by underage drinking, smoking, inadequate physical activity, dietary habits and overweight, intentional/unintentional injuries and unsafe reproductive health behaviors.

What Medical Providers Can Do

- ◆ Continue in their vital role in assessing patients for alcohol usage and encouraging them to drink in moderation and to be safe when drinking.
- ◆ Help establish and promote safe opioid prescribing guidelines by attending existing training for providers who prescribe controlled substances.
- ◆ Encourage and promote **registration in and use of the N.C. Controlled Substance Reporting System (CSRS)**.
- ◆ Consider signing standing orders for local pharmacists seeking to dispense naloxone to those at risk or friends, family members and others.
- ◆ Promote policies in their practices that create a comprehensive overdose prescription model (e.g., universal CSRS use, knowledge of treatment options and Emergency Department policies).
- ◆ Since heroin deaths have tripled in the last several years and are now likely to reach over 200 deaths in 2014, **assess patients for overdose risk from all types of medications and drugs.**

Infectious Disease and Foodborne Illness

Healthy NC 2020 Objective

- ❖ *Increase the percentage of children aged 19-35 months who receive the recommended vaccines*
 - ◆ The goal of the **DHHS' Division of Public Health's N.C. Immunization Branch (NCIB)** has been to reduce and ultimately eliminate vaccine preventable diseases by

increasing and maintaining high immunization coverage levels. The NCIB has tracked trends in disease over time, monitored progress towards disease reduction and elimination goals, and served to educate healthcare providers and North Carolinians on appropriate and timely immunization.

The NCIB has collaborated with immunization partners in the public and private sectors to promote evidence-based approaches towards increasing immunization coverage levels.

The **N.C. Immunization Registry (NCIR)** has been a secure, web-based clinical tool for medical providers as well as an official certificate of immunization for all ages.

- By 2 years of age, over 20 percent of the children in the United States typically have seen more than one healthcare provider, resulting in scattered paper/electronic medical records.
- The NCIR has replaced handwritten charting and electronic health record documentation for many providers administering immunizations in the state. Immunization providers may access all recorded immunizations administered in North Carolina, regardless of where the immunizations were given.

In addition, the NCIR has been utilized for the assessment of immunization coverage levels and to assist in identifying vulnerable populations to prevent disease and in outbreak situations.

A continuous quality-improvement approach, known as AFIX (Assessment, Feedback, Incentive, eXchange), has been used to improve provider practices and raise immunization coverage rates. Improving immunization practices in provider settings has been one of the most effective methods of increasing immunization coverage. The role of the NCIB has been to oversee quality assurance of all immunization-related activities conducted by providers. Emphasis has been placed on populations at highest risk for under-immunization and disease.

- ◆ The NCIB has worked closely with the **N.C. Commission for Public Health** and **community stakeholders** to review North Carolina immunization requirements. As of July 1, 2015, pneumococcal conjugate vaccine is now a requirement under the immunization rules. Effective Oct. 1, 2013, and under House Bill 832, immunizing pharmacists may have administered vaccines recommended by the Centers for Disease Control and Prevention to persons at least 18 years of age pursuant to a specific prescription order. Under this bill, immunizing pharmacists may have administered pneumococcal polysaccharide or pneumococcal conjugate vaccines. An immunizing pharmacist may also have administered the influenza vaccine to persons at least 14 years of age. Immunizing pharmacists are required to access the **N.C. Immunization Registry (NCIR)** prior to administering the vaccine or immunization and record any vaccine or immunization administered to the patient in the registry within 72 hours after the administration.

What Medical Providers Can Do

- ◆ Establish and maintain a practice-wide commitment to communicating effectively about vaccines and maintaining high vaccination rates. This can be accomplished by:
 - Providing parents with vaccine educational materials;
 - Being available to answer parents' questions about vaccines;
 - Making sure that families who may opt for extra visits for vaccines make and keep their vaccine appointments and
 - Vaccinating children according to the current immunization schedule recommended by the Centers for Disease Control and Prevention (this schedule decreases missed opportunities).
- ◆ **If you provide immunizations, become a N.C. Immunization Registry user.**
- ◆ Since locating immunization records can be difficult and time consuming, give a copy of the immunization record to anyone receiving vaccines.

Chronic Disease

Healthy NC 2020 Objective

- ❖ *Reduce the cardiovascular disease mortality rate (per 100,000 population)*

Some programs addressing this **Healthy NC 2020** objective have been:

- ◆ The **DHHS' Division of Public Health's Community and Clinical Connections for Prevention and Health Branch (CCCPH)** has utilized a multipronged approach to address heart disease and stroke that encompasses policy, system and environmental changes. This approach has been guided by several programs including the legislatively appointed **Justus-Warren Heart Disease and Stroke Prevention Task Force (JWTF)** and the **Centers for Disease Control and Prevention's (CDC)** funded State Public Health Actions to Prevent and Control Diabetes, Heart Disease, Obesity and Associated Risk Factors and Promote School Health. The CCCPH has continued to partner with other stakeholders on shared cardiovascular goals and objectives.
- ◆ Many of the strategies have been reflected in the national **Millions Hearts[®]** campaign to prevent one million heart attacks and strokes nationwide by 2017.
 - **The focus has been on evidence-based practices to address the ABCS of cardiovascular prevention (A**spirin therapy when appropriate; **B**lood pressure control [including sodium reduction]; **C**holesterol control; and **S**moking cessation).

- This work has recognized the important role of community (including lifestyle modification) and clinic-based programs and the need to link these programs in addressing population health.
- One of the main areas of focus has been the prevention and management of hypertension, a leading risk factor for heart disease and stroke. **Alliant Quality** has coordinated and convened North Carolina stakeholders to improve cardiac health and reduce cardiac healthcare disparities among North Carolinians and to support the national **Million Hearts**[®] initiative to support **Goal 2 of the North Carolina Plan for Prevention and Management of Heart Disease and Stroke 2012-2017.**

What Medical Providers Can Do

- ◆ Adopt a standardized treatment approach for the ABCS; protocols and algorithms can help your team help patients.
- ◆ Use electronic health records to track patient and team progress regarding the ABCS of cardiovascular prevention as well as treatment of hypertension over time.
- ◆ Support self-monitoring of blood pressure.
- ◆ At the practice level, provide point-of-decision prompts to encourage use of stairs, drinking water and eating healthy (see www.eatsmartmovemorenc.com/StairwellGuide/StairwellGuide.html)

Chronic Disease

Healthy NC 2020 Objective

❖ Decrease the percentage of adults with diabetes

- ◆ The **Community and Clinical Connections for Prevention and Health Branch (CCCPH)** has facilitated diabetes prevention and management using a systematic approach that increases access to behavior management education and supports quality care for people who are at risk of and who have diabetes.
 - Diabetes self-management education has been a recognized strategy to improve quality of life, has reduced diabetes complications and has reduced costs associated with diabetes care. The **CCCPH Branch** and the **N.C. Public Health Foundation** support **local health departments** to offer North Carolinians with diabetes self-management education recognized by the American Diabetes Association and reimbursed by Medicare, Medicaid and private insurance.
 - While secondary prevention is important, primary diabetes prevention is vital to reducing the incidence of diabetes. The CCCPH Branch, along with a statewide group of stakeholders, has developed a diabetes prevention plan that includes activities to

- promote the awareness of pre-diabetes, to strategically locate diabetes prevention lifestyle programs, to facilitate referrals to such programs and to prepare for diabetes prevention program sustainability.
- Promotion of quality diabetes care, particularly for the uninsured and underinsured, has been another focus of the CCCPH Branch. In conjunction with partners, CCCPH has distributed nationally accepted clinical guidelines and has promoted team-based care and electronic health record use to meet meaningful use and quality standards. CCCPH will also develop trainings for providers about referral to evidenced-based, self-management programs. Providers will be able to access the www.diabetesfreenc.com website in March 2016 for information regarding onsite and online diabetes prevention program classes that will be offered statewide.
 - ◆ To increase access to diabetes screening opportunities, the **N.C. Office on Disability and Health** in the **DPH's Children and Youth Branch** has worked with child health nurses, pediatricians and dental professionals to increase the accessibility of health care facilities, including local health departments. Improvements made have included purchase of more accessible exam tables and scales, as well as other simple environmental changes to promote access to care.
 - ◆ The **School Nursing Program in the DPH's Children and Youth Branch** has monitored and reported compliance with The Care of Students with Diabetes Act, which was passed in 2009 as Senate Bill 738. All public schools, including charter schools, have been required to provide diabetes care training to school staff when they have students with diabetes enrolled. **School nurses** also have provided Individual Health Plans for students with diabetes to assure they receive appropriate diabetes management while in school and in collaboration with their medical home. For diabetic students who have received School Nurse Case Management (an evidence-informed model of school nursing case management), 89 percent have demonstrated improved ability to self-administer insulin, 74 percent have had improved HgA1C, 73 percent have shown improved grades and 78 percent had a decrease in school absences (2012-13 School Health Services Report).

What Medical Providers Can Do

- ◆ Increase referrals to the evidence-based **Diabetes Self-Management** programs and the **Diabetes Prevention Lifestyle** programs that are available across the state (contact DPH for a list of referral sites).
- ◆ Conduct an internal accessibility assessment of your office to ensure easy access to screening and treatment service for people with disabilities.
- ◆ Become active on your local **School Health Advisory Council** to advance school health services and healthy school environments.

Chronic Disease

Healthy NC 2020 Objective

❖ *Reduce the colorectal cancer mortality rate (per 100,000 population)*

- ◆ The DPH's **Cancer Prevention and Control Branch** and **American Cancer Society (ACS)**, in conjunction with the **Mecklenburg County Health Department**, joined forces in February 2015 to hold a forum to foster collaboration to lower the incidence and mortality of colorectal cancer (CRC) in North Carolina. The intention of the meeting was to create a statewide coalition committed to reducing CRC through coordinated leadership, strategic planning and advocacy. Forum participants were from various medical, community, academic and public health agencies representing geographic locations across the state. The forum focused on the strong need to address CRC as it is a leading cause of cancer deaths in North Carolina.
- ◆ CRC is one of six cancers that have been and will continue to be the focus of the new **North Carolina Comprehensive Cancer Control Plan 2014 through 2020**. The forum's consensus has been that, to prevent cancer, we must change behaviors around the risks of cancer through education and the adoption of healthy policies at home, work and in the community. The **N.C. DHHS** has led the effort by pledging to support the goal of having 80 percent of adults aged 50 and older screened for CRC by 2018.
 - As a result of this forum, a CRC roundtable and task groups have been established to address the incidence and mortality of CRC in North Carolina. The task groups include: provider education, public education and outreach, access to care and health policy. Health disparities have been incorporated into the work of each task group.
 - Leaders from Medicaid, BCBSNC, Community Care of North Carolina, Area Health Education Centers, ACS, UNC-CH, N.C. DPH, the State Health Plan, the N.C. Community Health Center Association (NCCHCA), the N.C. Society of Gastroenterologists, the N.C. Quality Improvement Organization, local health departments and many others are included.

What Medical Providers Can Do

- ◆ Help support this effort through collaborative efforts in the medical community to raise awareness, increase provider and public education, seek funding and in-kind services for colorectal cancer screenings, and follow-up treatment.

Other Key Health Issues

Oral Health

- ◆ The **DHHS' Division of Public Health's Oral Health Section (OHS)** will be adopting the N.C. Association of Local Health Director's regional structure, and all 10 regions will be served by the OHS's statewide program. Regional efforts will require stronger partnerships with not only local dental providers but also with medical providers and other community oral health stakeholders.
- ◆ Most OHS efforts have traditionally centered on children. Establishing new partnerships and effectively utilizing resources will allow the OHS to include more vulnerable population groups into its menu of services. This will include the frail elderly, those with intellectual and developmental disabilities and pregnant women. Several OHS programs have relied on partnerships with medical providers.
- ◆ Both the **Into the Mouths of Babes** and **Carolina Dental Home** programs have been medical-dental collaborations focused on finding dental homes for Medicaid-insured children. Recent changes in private dental insurance coverage in North Carolina have made this a particularly good time to focus on growth.
- ◆ A third program, **Into the Mouths of Moms**, will be a pilot patterned after our successful **Into the Mouths of Babes** program. An objective of this initiative will be to increase the number of medical providers offering oral screenings to pregnant women and referring those in need to dental providers for care. Many pregnant women with Medicaid are covered for dental services while they have been pregnant. This program will help those women to take advantage of that window of dental coverage.
- ◆ In addition, the OHS has initiated a dialogue with those whose focus is on providing services and ensuring optimal oral health care to patients with special health care needs. As a result of these ongoing discussions, the OHS hopes to develop and implement a new **Special Care in Dentistry** program which will center on providing services to those with intellectual and developmental disabilities and the frail elderly. As a first step, a dental needs assessment will be conducted on residents in a random sample of assisted living facilities in the fall of 2015.

What Medical Providers Can Do

- ◆ Be partners in referring patients-in-need to care.
- ◆ Continue encouraging your patients to make oral health a priority because it is intimately related to overall health.

Hepatitis C Virus

- ◆ Hepatitis C virus (HCV) has been a bloodborne virus most commonly transmitted through injection drug use. Although HCV infection can be acute and self-limiting, approximately 75 percent to 85 percent of infected individuals develop chronic disease. Acute HCV cases, but not chronic HCV cases, have been reportable by law in North Carolina.
- ◆ In 2014, 113 acute HCV cases were reported to the **Communicable Disease Branch (CDB)** of the **N.C. DHHS' Division of Public Health**. Based on Centers for Disease Control and Prevention (CDC) national prevalence projections and United States census data, the CDB has estimated that 110,000 people (range: 80,000–150,000 people) in North Carolina are living with chronic HCV infection. However, this might be an underestimation considering the nearly three-fold increase in the number of reported acute HCV infections in North Carolina from 2010 to 2014.
- ◆ Although effective treatments for HCV infection have been available, most individuals with HCV are unaware of their infection and have not received needed care and treatment. HCV testing and linkage to care are the first steps toward improving health outcomes for persons infected with HCV. Through collaborative efforts, the CDB and healthcare providers can address the challenge of HCV in North Carolina.
- ◆ The **DHHS** and the **DPH's Communicable Disease Branch** have been addressing HCV by:
 - Working to assure that screening and treatment for HCV are performed according to national standards.
 - Developing HCV treatment best-practice algorithms and referral networks across North Carolina.
 - Increasing health care provider understanding of current HCV testing and linkage to care recommendations through continuing medical education initiatives.
 - Increasing public knowledge of current HCV testing recommendations through public outreach campaigns.
 - Preparing a rule change and processes to include chronic HCV as a reportable condition in our state.
 - Addressing drug user health.

What Medical Providers Can Do

- ◆ Review CDC guidelines for HCV testing, diagnosis and management: www.cdc.gov/hepatitis/hcv/hcvfaq.htm.
- ◆ Provide one-time HCV testing for adults born during 1945–1965 without prior ascertainment of HCV risk.
- ◆ For HCV-infected patients, provide a brief alcohol screening and intervention, as clinically indicated, followed by referral to appropriate care and treatment services for HCV infection and related conditions.

Death Certification

- ◆ The N.C. Medical Examiner System has consisted of approximately 450 appointed medical examiners, slightly over half of them physicians, who may be contacted at any time to investigate sudden, unexpected apparently natural deaths or deaths due to violence or other external means.
- ◆ When the medical examiner has assumed jurisdiction of a case, multiple processes with associated costs to the county and state are initiated. When physicians decline to sign death certificates for their patients who they knew and had been caring and treating for ultimately fatal conditions, the medical examiner is contacted, many times after already declining a case.
 - **When the medical examiner has reviewed the circumstances of death, which usually has included information from law enforcement and EMS, and has determined that the death does not fall under his or her jurisdiction because the death is a non-suspicious natural attended death, the treating physician, by law, must certify the death.**
 - The funeral home has been responsible for assuring that the death certificate has been signed by three days and has been filed by five days from the date of death. **Delays in signing the death certificate negatively impact the families of the deceased, who may have required a certified death certificate for various financial processes.**
 - Many misconceptions about this responsibility have been addressed by the N.C. Medical Board in Forum articles from Fall 2013 (www.ncmedboard.org/resources-information/professional-resources/publications/forum-newsletter/article/physician-obligation-to-complete-death-certificates) and Spring 2014 (www.ncmedboard.org/resources-information/professional-resources/publications/forum-newsletter/forum-issue-ii-2014).

- ◆ New legislation, as part of the reform of the N.C. Medical Examiner System, has been ratified (House Bill 814) stating that each county must have at least two appointed medical examiners.
- ◆ Another major area of reform has been expected to require mandatory introductory/orientation training and continuing education for all current and newly appointed medical examiners. This training should alleviate concerns about the duties of a medical examiner.

What Medical Providers Can Do

- ◆ Consider serving as a medical examiner in your community.
- ◆ Certify deaths in a timely manner by signing the death certificate for patients who you know and have been caring and treating for ultimately fatal conditions.

Carbon Monoxide Exposure

- ◆ Carbon monoxide (CO) exposure and release in the workplace has been a growing problem in North Carolina.
 - From 2002 through 2014, a total of 48 occupational CO exposure incidents have occurred, resulting in 249 total injured workers reported over the 13-year period (mostly in the manufacturing industry sector, followed by the retail trade and accommodation/food services industry sectors).
 - **DPH's Occupational and Environmental Epidemiology Branch (OEEB)** has investigated five occupational CO exposures in the past year, resulting in 27 total employees requiring visits to the emergency department. Causes of these incidents included a workplace generator, a forklift, a welder and a heating and cooling system.
- ◆ **DPH's OEEB** collaborated with the **N.C. Department of Labor's Occupational Safety and Health Division**, the **N.C. Agromedicine Institute**, and the **American Society of Safety Engineers North Carolina Tar Heel Chapter** to design an educational outreach campaign to increase awareness about workplace injuries and deaths related to CO poisoning.
 - These campaigns have targeted the agricultural and manufacturing industry sectors.
 - OEEB has designed six electronic factsheets in English and three in Spanish, one audio Public Service Announcement (PSA) in English and Spanish, and one video PSA. All materials have been disseminated to key stakeholders (grower commodity groups, trade organizations, and state, local and federal agencies) and posted on the website. Audio PSAs have been distributed to radio stations, and a video PSA has been posted to YouTube.

What Medical Providers Can Do

- ◆ Promote health in all phases of a patient’s life, including the workplace.
- ◆ Incorporate a brief occupational and environmental history to assist in determining if the workplace is contributing to negative health outcomes.

Proposed or Planned Steps

North Carolina has prepared to take additional steps toward continuing to improve the health of our citizens.

- ◆ Most of the programs already highlighted in this report are ongoing and will be continued in efforts to meet the state’s **Healthy NC 2020** objectives.
- ◆ As part of its five-year strategic planning initiated in 2011, the **DHHS’ Division of Public Health** identified the need for a **Healthy NC 2020** implementation team to track and report the state’s progress in meeting these health improvement goals.
 - This team has consisted of representatives across multiple sections and branches of the Division of Public Health, as well as representation from DPH’s partner agencies such as **local health departments**; the **Center for Public Health Quality**; the **Center for Healthy North Carolina**; the **DHHS’ Office of Rural Health and Community Care** and the **DHHS’ Division of Mental Health, Developmental Disabilities and Substance Abuse Services**.
 - The **Healthy NC 2020** implementation team has been charged with making recommendations to the State Health Director on priority areas to focus **Healthy NC 2020** efforts statewide, including state and local efforts to increase the use of evidence-based strategies to address **Healthy NC 2020** objectives. This effort has been crucial since the state is now at the midpoint in this 10-year plan. The team has also made ongoing recommendations for changes in the **Healthy NC 2020** objectives as warranted based on changes in data availability.

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Appendix A: Healthy North Carolina 2020 Objectives Compared to North Carolina Goals* and the United States

*The State Goal is the Healthy North Carolina 2020 target as established in 2011.

	North Carolina Baseline	North Carolina Current	State Goal	United States
Tobacco Use				
Decrease the percentage of adults who are current smokers	21.8% (2011)	19.1% (2014)	13.0%	19.0% (2013)
Decrease the percentage of high school students reporting current use of any tobacco product	25.8% (2009)	22.5% (2011)	15.0%	23.4% (2011)
Decrease the percentage of people exposed to secondhand smoke in the workplace in the past seven days	9.2% (2011)	9.7% (2014)	0%	Not available
Physical Activity and Nutrition				
Increase the percentage of high school students who are neither overweight nor obese	72.0% (2009)	72.3% (2013)	79.2%	69.7% (2013)
Increase the percentage of adults getting meeting CDC Aerobic Recommendations	46.8% (2011)	48.1% (2013)	60.6%	51.0% (2009)
Increase the percentage of adults who consume fruit one or more times per day.	59.2% (2011)	57.1% (2013)	69.7%	60.8% (2013)
Increase the percentage of adults who consume vegetables one or more times per day.	78.1% (2011)	76.3% (2013)	84.7%	Not available
Injury and Violence				
Reduce the unintentional poisoning mortality rate (per 100,000 population)	11.0 (2008)	12.5 (2014)	9.9	12.2 (2013)
Reduce the unintentional falls mortality rate (per 100,000 population)	8.1 (2008)	10.0 (2014)	5.3	8.5 (2013)
Reduce the homicide rate (per 100,000 population)	7.5 (2008)	5.6 (2014)	6.7	5.2 (2013)
Maternal and Infant Health				
Reduce the infant mortality racial disparity between whites and African Americans	2.45 (2008)	2.39 (2014)	1.92	2.21 (2013)
Reduce the infant mortality rate (per 1,000 live births)	8.2 (2008)	7.1 (2014)	6.3	5.96 (2013)
Reduce the percentage of women who smoke during pregnancy	10.9% (2011)	9.8% (2014)	6.8%	Not available

	North Carolina Baseline	North Carolina Current	State Goal	United States
Sexually Transmitted Disease and Unintended Pregnancy				
Decrease the percentage of pregnancies that are unintended	39.8% (2007)	42.7% (2011)	30.9%	Not available
Reduce the percentage of positive results among individuals aged 15 to 24 tested for chlamydia	9.7% (2009)	10.8% (2014)	8.7%	Not available
Reduce the rate of new HIV infection diagnoses (per 100,000 population)	24.7 (2008)	16.0 (2013)	22.2	15.0 (2013)
Substance Abuse				
Reduce the percentage of high school students who had alcohol on one or more of the past 30 days	35.0% (2009)	32.2% (2013)	26.4%	34.9% (2013)
Reduce the percentage of traffic crashes that are alcohol-related	5.7% (2008)	4.8% (2014)	4.7%	Not available
Reduce the percentage of individuals aged 12 years and older reporting any illicit drug use in the past 30 days	7.8% (2007-08)	7.5% (2012-13)	6.6%	9.3% (2012-13)
Mental Health				
Reduce the suicide rate (per 100,000 population)	12.4 (2008)	13.0 (2014)	8.3	12.6 (2013)
Decrease the average number of poor mental health days among adults in the past 30 days	3.7 (2011)	3.6 (2014)	2.8	Not available
Reduce the rate of mental health-related visits to emergency departments (per 10,000 population)	92.0 (2008)	104.5 (2012)	82.8	Not available
Oral Health				
Increase the percentage of children aged 1–5 years enrolled in Medicaid who received any dental service during the previous 12 months	46.9% (2008)	58.0% (2013)	56.4%	42.5% (2013)
Decrease the average number of decayed, missing or filled teeth among kindergartners	1.5 (2008-09)	1.5 (2009-10)	1.1	Not available
Decrease the percentage of adults who have had permanent teeth removed due to tooth decay or gum disease	48.3% (2012)	49.1% (2014)	38.4%	43.4% (2014)
Environmental Health				
Increase the percentage of air monitor sites meeting the current ozone standard of 0.075 ppm	62.5% (2007-09)	95.6% (2011-13)	100.0%	Not available
Increase the percentage of the population being served by community water systems (CWS) with no maximum contaminant level violations (among persons on CWS)	92.2% (2009)	97.9% (2013)	95.0%	2.0% (2013)
Reduce the mortality rate from work-related injuries (per 100,000 equivalent full-time workers)	3.9 (2008)	2.5 (2013)	3.5	3.3 (2013)

	North Carolina Baseline	North Carolina Current	State Goal	United States
Infectious Disease and Foodborne Illness				
Increase the percentage of children aged 19–35 months who receive the recommended vaccines	77.3% (2007)	76.6% (2013)	91.3%	74.0% (2013)
Reduce the pneumonia and influenza mortality rate (per 100,000 population)	19.5 (2008)	17.1 (2014)	13.5	15.9 (2013)
Decrease the average number of critical violations per restaurant/food stand	6.1 (2009)	6.5 (2011)	5.5	Not available
Social Determinants of Health				
Decrease the percentage of individuals living in poverty	16.9% (2009)	18.6% (2013)	12.5%	14.5% (2013)
Increase the four-year high school graduation rate	71.8% (2008-09)	85.4% (2014–15)	94.6%	81.0% (2012-13)
Decrease the percentage of people spending more than 30 percent of their income on rental housing	41.8% (2008)	46.3% (2014)	36.1%	47.9% (2014)
Chronic Disease				
Reduce the cardiovascular disease mortality rate (per 100,000 population)	256.6 (2008)	216.5 (2014)	161.5	227.1 (2011)
Decrease the percentage of adults with diabetes	10.9% (2011)	10.8% (2014)	8.6%	10.0% (2014)
Reduce the colorectal cancer mortality rate (per 100,000 population)	15.7 (2008)	14.2 (2014)	10.1	15.1 (2011)
Cross-cutting				
Increase average life expectancy (years)	77.5 (2008)	78.3 (2014)	79.5	78.8 (2013)
Increase the percentage of adults reporting good, very good or excellent health	80.4% (2011)	81.0% (2014)	90.1%	83.3% (2013)
Reduce the percentage of non-elderly uninsured individuals (aged less than 65 years)	20.4% (2009)	15.2% (2014)	8.0%	13.5% (2014)
Increase the percentage of adults who are neither overweight nor obese ¹	34.9% (2011)	34.4% (2014)	38.1%	35.2% (2014)

Appendix B: Additional County/Regional Data for Selected Healthy North Carolina 2020 Objectives

Note: All data tables in Appendix B are the most recent available as of October 14, 2015.

**Percentage of North Carolina Adults Who Are Current Smokers by Region for
the North Carolina Association of Local Health Directors and
the Area Health Education Centers—BRFSS Survey Results, 2014**

	Percent	C.I. (95%)*
North Carolina	19.1	17.9-20.3
North Carolina Association of Local Health Directors		
Region 1 and 2	23.0	19.6-26.8
Region 3	16.8	13.6-20.6
Region 4	19.3	16.8-22.0
Region 5	16.4	13.7-19.4
Region 6	24.3	20.1-29.0
Region 7	17.2	14.5-20.4
Region 8	19.2	15.9-23.0
Region 9 and 10	19.0	15.6-23.0
Area Health Education Centers		
Mountain AHEC	22.8	18.9-27.3
Northwest	19.6	16.9-22.7
Charlotte	18.3	15.7-21.3
Greensboro	17.7	14.6-21.1
Southern Regional	22.2	18.4-26.5
Southeast	17.3	13.4-22.0
Wake	16.5	13.8-19.5
Area L and Eastern	20.4	17.5-23.6

Current smoking prevalence represents the percent of survey respondents who report that they currently smoke "every day" or "most days" and have smoked at least 100 cigarettes in their lifetime.

* C.I. (95%) = Confidence Interval (at 95% probability level).

North Carolina Association of Local Health Directors

Region 1: Cherokee, Clay, Graham, Haywood, Jackson, Macon, Swain, Transylvania

Region 2: Buncombe, Burke, Caldwell, Cleveland, Henderson, Madison, Rutherford-Polk-McDowell, Yancey-Mitchell-Avery

Region 3: Davidson, Davie, Forsyth, Stokes, Surry, Watauga-Ashe-Alleghany, Wilkes, Yadkin

Region 4: Alexander, Cabarrus, Catawba, Gaston, Iredell, Lincoln Mecklenburg, Rowan, Stanly, Union

Region 5: Alamance, Caswell, Chatham, Durham, Guilford, Orange, Person, Randolph, Rockingham

Region 6: Anson, Cumberland, Harnett, Hoke, Lee, Montgomery, Moore, Richmond, Scotland

Region 7: Edgecombe, Franklin, Granville-Vance, Halifax, Johnston, Nash, Wake, Warren, Wilson

Region 8: Bladen, Brunswick, Columbus, Duplin, New Hanover, Onslow, Pender, Robeson, Sampson

Region 9: Bertie, Currituck, Dare, Hertford-Gates, Hyde, Martin-Tyrell-Washington, Northampton, Pasquotank-Perquimans-Camden-Chowan

Region 10: Beaufort, Carteret, Craven, Greene, Jones, Lenoir, Pamlico, Pitt, Wayne

Area Health Education Centers

Mountain: Buncombe, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania, Yancey

Northwest: Alexander, Alleghany, Ashe, Avery, Burke, Caldwell, Catawba, Davidson, Davie, Forsyth, Iredell, Rowan, Stokes, Surry, Watauga, Wilkes, Yadkin

Charlotte: Anson, Cabarrus, Cleveland, Gaston, Lincoln, Mecklenburg, Stanly, Union

Greensboro: Alamance, Caswell, Chatham, Guilford, Montgomery, Orange, Randolph, Rockingham

Southern Regional: Bladen, Cumberland, Harnett, Hoke, Moore, Richmond, Robeson, Sampson, Scotland

Southeast: Brunswick, Columbus, Duplin, Pender, New Hanover

Wake: Durham, Franklin, Granville, Johnston, Lee, Person, Vance, Wake, Warren

Area L: Edgecombe, Halifax, Nash, Northampton, Wilson

Eastern: Beaufort, Bertie, Camden, Carteret, Chowan, Craven, Currituck, Dare, Gates, Greene, Hertford, Hyde, Jones, Lenoir, Martin, Onslow, Pamlico, Pasquotank, Perquimans, Pitt, Tyrrell, Washington, Wayne

Data Source: Behavioral Risk Factor Surveillance System, State Center for Health Statistics.

Percentage of North Carolina Women Smoking During Pregnancy, 2014

<u>County</u>	<u>Percentage</u>	<u>County</u>	<u>Percentage</u>
State Total	9.8	Johnston	9.0
Alamance	12.0	Jones	13.3
Alexander	19.1	Lee	14.9
Alleghany	30.3	Lenoir	17.6
Anson	16.9	Lincoln	13.5
Ashe	19.7	McDowell	23.0
Avery	16.7	Macon	21.6
Beaufort	17.0	Madison	9.2
Bertie	12.8	Martin	18.5
Bladen	16.0	Mecklenburg	3.5
Brunswick	16.6	Mitchell	26.8
Buncombe	4.2	Montgomery	16.4
Burke	19.9	Moore	10.9
Cabarrus	9.3	Nash	11.3
Caldwell	23.3	New Hanover	8.8
Camden	11.2	Northampton	15.8
Carteret	17.6	Onslow	6.9
Caswell	20.5	Orange	4.2
Catawba	15.8	Pamlico	13.2
Chatham	6.4	Pasquotank	11.0
Cherokee	25.2	Pender	13.1
Chowan	17.7	Perquimans	16.1
Clay	30.8	Person	14.5
Cleveland	21.7	Pitt	10.2
Columbus	17.3	Polk	14.7
Craven	10.9	Randolph	14.7
Cumberland	9.5	Richmond	23.8
Currituck	15.0	Robeson	18.6
Dare	10.8	Rockingham	15.0
Davidson	17.9	Rowan	17.1
Davie	12.7	Rutherford	21.6
Duplin	10.1	Sampson	11.7
Durham	4.9	Scotland	21.8
Edgecombe	15.0	Stanly	13.8
Forsyth	5.1	Stokes	14.2
Franklin	12.2	Surry	21.4
Gaston	20.0	Swain	29.0
Gates	11.5	Transylvania	15.6
Graham	34.4	Tyrrell	9.8
Granville	11.8	Union	6.8
Greene	15.3	Vance	17.1
Guilford	6.3	Wake	2.8
Halifax	14.0	Warren	16.2
Harnett	11.4	Washington	12.1
Haywood	18.5	Watauga	9.7
Henderson	9.8	Wayne	9.7
Hertford	11.7	Wilkes	19.7
Hoke	9.3	Wilson	10.7
Hyde	5.4	Yadkin	16.4
Iredell	12.3	Yancey	18.5
Jackson	17.3		

Data Source: Vital Statistics, State Center for Health Statistics.

**Percentage of North Carolina Adults Who Are Overweight or Obese*
by Region for the North Carolina Association of Local Health Directors and
the Area Health Education Centers—BRFSS Survey Results, 2014**

	Percent	C.I. (95%)**
North Carolina	65.6	64.1-67.0
North Carolina Association of Local Health Directors		
Region 1 and 2	66.6	62.6-70.3
Region 3	67.8	63.2-72.1
Region 4	62.1	58.8-65.2
Region 5	62.0	58.1-65.7
Region 6	71.6	66.7-76.0
Region 7	66.1	62.2-69.8
Region 8	67.8	63.6-71.8
Region 9 and 10	67.6	63.0-71.9
Area Health Education Centers		
Mountain AHEC	64.1	59.4-68.6
Northwest	67.4	64.0-70.7
Charlotte	61.5	57.9-65.0
Greensboro	65.2	60.8-69.3
Southern Regional	70.2	65.6-74.5
Southeast	65.6	60.4-70.5
Wake	62.6	58.8-66.3
Area L and Eastern	70.2	66.5-73.6

*Body mass index is computed as weight in kilograms divided by height in meters squared :(kg/m2). Underweight=BMI less than 18.5, Recommended Range=BMI 18.5 to 24.9, Overweight=BMI 25.0 to 29.9 and Obese=BMI 30 or greater.

** C.I. (95%) = Confidence Interval (at 95% probability level).

North Carolina Association of Local Health Directors

Region 1: Cherokee, Clay, Graham, Haywood, Jackson, Macon, Swain, Transylvania

Region 2: Buncombe, Burke, Caldwell, Cleveland, Henderson, Madison, Rutherford-Polk-McDowell, Yancey-Mitchell-Avery

Region 3: Davidson, Davie, Forsyth, Stokes, Surry, Watauga-Ashe-Alleghany, Wilkes, Yadkin

Region 4: Alexander, Cabarrus, Catawba, Gaston, Iredell, Lincoln Mecklenburg, Rowan, Stanly, Union

Region 5: Alamance, Caswell, Chatham, Durham, Guilford, Orange, Person, Randolph, Rockingham

Region 6: Anson, Cumberland, Harnett, Hoke, Lee, Montgomery, Moore, Richmond, Scotland

Region 7: Edgecombe, Franklin, Granville-Vance, Halifax, Johnston, Nash, Wake, Warren, Wilson

Region 8: Bladen, Brunswick, Columbus, Duplin, New Hanover, Onslow, Pender, Robeson, Sampson

Region 9: Bertie, Currituck, Dare, Hertford-Gates, Hyde, Martin-Tyrell-Washington, Northampton, Pasquotank-Perquimans-Camden-Chowan

Region 10: Beaufort, Carteret, Craven, Greene, Jones, Lenoir, Pamlico, Pitt, Wayne

Area Health Education Centers

Mountain: Buncombe, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania, Yancey

Northwest: Alexander, Alleghany, Ashe, Avery, Burke, Caldwell, Catawba, Davidson, Davie, Forsyth, Iredell, Rowan, Stokes, Surry, Watauga, Wilkes, Yadkin

Charlotte: Anson, Cabarrus, Cleveland, Gaston, Lincoln, Mecklenburg, Stanly, Union

Greensboro: Alamance, Caswell, Chatham, Guilford, Montgomery, Orange, Randolph, Rockingham

Southern Regional: Bladen, Cumberland, Harnett, Hoke, Moore, Richmond, Robeson, Sampson, Scotland

Southeast: Brunswick, Columbus, Duplin, Pender, New Hanover

Wake: Durham, Franklin, Granville, Johnston, Lee, Person, Vance, Wake, Warren

Area L: Edgecombe, Halifax, Nash, Northampton, Wilson

Eastern: Beaufort, Bertie, Camden, Carteret, Chowan, Craven, Currituck, Dare, Gates, Greene, Hertford, Hyde, Jones, Lenoir, Martin, Onslow, Pamlico, Pasquotank, Perquimans, Pitt, Tyrrell, Washington, Wayne

Data Source: Behavioral Risk Factor Surveillance System, State Center for Health Statistics.

Percentage of North Carolina Adults Reporting Good, Very Good or Excellent Health by Region for the North Carolina Association of Local Health Directors and the Area Health Education Centers—BRFSS Survey Results, 2014

	Percent	C.I. (95%)**
North Carolina	81.0	80.0-92.1
North Carolina Association of Local Health Directors		
Region 1 and 2	75.9	72.4-79.0
Region 3	78.5	74.8-81.8
Region 4	83.3	81.0-85.4
Region 5	82.3	79.5-84.9
Region 6	77.5	72.9-81.6
Region 7	83.7	80.9-86.1
Region 8	78.7	75.2-81.7
Region 9 and 10	82.8	79.3-85.9
Area Health Education Centers		
Mountain AHEC	78.5	74.6-82.0
Northwest	78.5	75.8-81.1
Charlotte	82.7	80.2-85.0
Greensboro	81.4	78.2-84.3
Southern Regional	77.1	72.9-80.9
Southeast	77.7	73.4-81.6
Wake	84.9	82.2-87.2
Area L and Eastern	81.6	78.8-84.2

* C.I. (95%) = Confidence Interval (at 95% probability level).

North Carolina Association of Local Health Directors

Region 1: Cherokee, Clay, Graham, Haywood, Jackson, Macon, Swain, Transylvania

Region 2: Buncombe, Burke, Caldwell, Cleveland, Henderson, Madison, Rutherford-Polk-McDowell, Yancey-Mitchell-Avery

Region 3: Davidson, Davie, Forsyth, Stokes, Surry, Watauga-Ashe-Alleghany, Wilkes, Yadkin

Region 4: Alexander, Cabarrus, Catawba, Gaston, Iredell, Lincoln Mecklenburg, Rowan, Stanly, Union

Region 5: Alamance, Caswell, Chatham, Durham, Guilford, Orange, Person, Randolph, Rockingham

Region 6: Anson, Cumberland, Harnett, Hoke, Lee, Montgomery, Moore, Richmond, Scotland

Region 7: Edgecombe, Franklin, Granville-Vance, Halifax, Johnston, Nash, Wake, Warren, Wilson

Region 8: Bladen, Brunswick, Columbus, Duplin, New Hanover, Onslow, Pender, Robeson, Sampson

Region 9: Bertie, Currituck, Dare, Hertford-Gates, Hyde, Martin-Tyrell-Washington, Northampton, Pasquotank-Perquimans-Camden-Chowan

Region 10: Beaufort, Carteret, Craven, Greene, Jones, Lenoir, Pamlico, Pitt, Wayne

Area Health Education Centers

Mountain: Buncombe, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania, Yancey

Northwest: Alexander, Alleghany, Ashe, Avery, Burke, Caldwell, Catawba, Davidson, Davie, Forsyth, Iredell, Rowan, Stokes, Surry, Watauga, Wilkes, Yadkin

Charlotte: Anson, Cabarrus, Cleveland, Gaston, Lincoln, Mecklenburg, Stanly, Union

Greensboro: Alamance, Caswell, Chatham, Guilford, Montgomery, Orange, Randolph, Rockingham

Southern Regional: Bladen, Cumberland, Harnett, Hoke, Moore, Richmond, Robeson, Sampson, Scotland

Southeast: Brunswick, Columbus, Duplin, Pender, New Hanover

Wake: Durham, Franklin, Granville, Johnston, Lee, Person, Vance, Wake, Warren

Area L: Edgecombe, Halifax, Nash, Northampton, Wilson

Eastern: Beaufort, Bertie, Camden, Carteret, Chowan, Craven, Currituck, Dare, Gates, Greene, Hertford, Hyde, Jones, Lenoir, Martin, Onslow, Pamlico, Pasquotank, Perquimans, Pitt, Tyrrell, Washington, Wayne

Data Source: Behavioral Risk Factor Surveillance System, State Center for Health Statistics.

**North Carolina Infant Mortality Rate (per 1,000 Live Births)
by County of Residence, 2010–2014**

Residence	Infant Deaths	Infant Mortality Rate	Residence	Infant Deaths	Infant Mortality Rate
State Total	4,295	7.1	Johnston	69	6.2
Alamance	75	8.5	Jones	7	13.8
Alexander	8	4.5	Lee	36	8.8
Alleghany	1	2.2	Lenoir	31	9.2
Anson	12	9.2	Lincoln	22	5.7
Ashe	7	5.7	McDowell	12	5.2
Avery	9	12.4	Macon	11	6.7
Beaufort	26	10.5	Madison	9	9.7
Bertie	10	10.8	Martin	6	5.0
Bladen	16	8.8	Mecklenburg	409	5.9
Brunswick	34	6.5	Mitchell	2	2.9
Buncombe	86	6.6	Montgomery	22	13.5
Burke	29	6.7	Moore	23	4.7
Cabarrus	54	4.7	Nash	42	7.6
Caldwell	42	10.4	New Hanover	44	3.9
Camden	3	6.6	Northampton	11	11.7
Carteret	25	8.1	Onslow	143	6.6
Caswell	9	8.6	Orange	28	4.5
Catawba	53	6.0	Pamlico	7	15.2
Chatham	26	8.3	Pasquotank	15	6.0
Cherokee	11	10.0	Pender	22	7.3
Chowan	6	7.9	Perquimans	7	10.6
Clay	2	4.9	Person	15	7.2
Cleveland	49	9.0	Pitt	115	10.8
Columbus	35	10.9	Polk	3	4.3
Craven	56	7.0	Randolph	47	5.8
Cumberland	242	8.4	Richmond	24	8.7
Currituck	10	8.3	Robeson	115	12.0
Dare	10	5.5	Rockingham	45	9.6
Davidson	53	6.1	Rowan	61	7.9
Davie	11	5.8	Rutherford	24	7.0
Duplin	28	7.3	Sampson	38	8.9
Durham	147	6.8	Scotland	27	11.7
Edgecombe	27	8.2	Stanly	20	6.1
Forsyth	195	8.5	Stokes	17	8.4
Franklin	22	6.6	Surry	24	6.2
Gaston	97	7.7	Swain	10	10.2
Gates	2	3.7	Transylvania	10	7.4
Graham	2	4.3	Tyrrell	4	18.8
Granville	20	7.1	Union	65	5.5
Greene	7	6.2	Vance	28	9.7
Guilford	252	8.3	Wake	370	5.9
Halifax	32	10.9	Warren	10	10.7
Harnett	77	8.4	Washington	6	9.2
Haywood	12	4.4	Watauga	5	2.8
Henderson	27	5.1	Wayne	64	7.5
Hertford	18	15.1	Wilkes	31	9.2
Hoke	23	4.9	Wilson	40	8.3
Hyde	4	15.6	Yadkin	15	7.7
Iredell	64	7.3	Yancey	6	7.0
Jackson	12	6.1			

Note: Rates based on less than 10 deaths are unreliable and should be interpreted with caution.

Data Source: Vital Statistics, State Center for Health Statistics.

North Carolina Infant Mortality Racial Disparity between Whites and African Americans by County of Residence, 2010–2014

Residence	White, Non-Hispanic		African American, Non-Hispanic		Disparity Ratio
	Infant Deaths	Infant Mortality Rate	Infant Deaths	Infant Mortality Rate	
State	1,811	5.4	1,858	12.9	2.39
Alamance	38	7.7	28	15.1	1.96
Alexander	6	3.9	1	14.1	3.62
Alleghany	1	2.7	0	0.0	0.00
Anson	4	7.9	8	10.9	1.38
Ashe	6	5.4	0	0.0	0.00
Avery	9	14.0	0	0.0	0.00
Beaufort	12	9.2	14	17.8	1.93
Bertie	0	0.0	10	15.5	*
Bladen	7	8.3	7	10.7	1.29
Brunswick	27	6.8	6	9.2	1.35
Buncombe	62	6.1	17	15.9	2.61
Burke	22	6.7	2	10.0	1.49
Cabarrus	33	4.6	13	6.6	1.43
Caldwell	34	9.9	3	14.3	1.44
Camden	3	8.0	0	0.0	0.00
Carteret	20	7.8	2	10.7	1.37
Caswell	2	3.0	6	20.3	6.77
Catawba	29	4.9	16	17.6	3.59
Chatham	15	8.4	4	11.1	1.32
Cherokee	8	8.2	0	0.0	0.00
Chowan	2	5.3	3	9.1	1.72
Clay	2	5.5	0	0.0	0.00
Cleveland	23	6.3	25	17.7	2.81
Columbus	9	5.4	19	17.4	3.22
Craven	40	7.8	13	8.0	1.03
Cumberland	84	6.1	132	13.2	2.16
Currituck	7	6.7	0	0.0	0.00
Dare	6	4.2	0	0.0	0.00
Davidson	33	5.1	14	16.7	3.27
Davie	9	5.9	2	18.5	3.14
Duplin	12	8.1	12	14.0	1.73
Durham	32	4.0	96	13.2	3.30
Edgecombe	6	6.8	21	9.7	1.43
Forsyth	67	6.3	94	14.2	2.25
Franklin	13	6.6	8	8.8	1.33
Gaston	50	5.7	44	18.5	3.25
Gates	1	2.7	1	6.6	2.44
Graham	2	5.1	0	0.0	0.00
Granville	10	6.4	6	7.0	1.09
Greene	2	4.4	5	13.3	3.02
Guilford	68	5.5	152	12.6	2.29
Halifax	6	6.7	26	14.5	2.16
Harnett	37	6.6	33	17.8	2.70
Haywood	10	4.0	1	26.3	6.58
Henderson	21	5.2	1	4.8	0.92
Hertford	5	15.0	13	16.3	1.09
Hoke	8	3.4	8	7.0	2.06
Hyde	3	17.0	1	21.7	1.28
Iredell	26	4.2	31	24.1	5.74
Jackson	10	7.1	0	0.0	0.00
Johnston	37	5.3	18	10.5	1.98
Jones	0	0.0	6	42	*
Lee	12	6.2	16	19.3	3.11

North Carolina Infant Mortality Racial Disparity between Whites and African Americans by County of Residence, 2010–2014

Residence	White, Non-Hispanic		African American, Non-Hispanic		Disparity Ratio
	Infant Deaths	Infant Mortality Rate	Infant Deaths	Infant Mortality Rate	
Lenoir	10	7.5	20	13.0	1.73
Lincoln	14	4.4	7	32.9	7.48
McDowell	10	5.1	0	0.0	0.00
Macon	11	8.3	0	0.0	0.00
Madison	9	10.2	0	0.0	0.00
Martin	0	0.0	6	10.6	*
Mecklenburg	102	3.5	220	9.9	2.83
Mitchell	2	3.4	0	0.0	0.00
Montgomery	6	7.7	9	27.5	3.57
Moore	11	3.2	7	8.7	2.72
Nash	7	3.1	32	12.9	4.16
New Hanover	22	2.9	19	9.0	3.10
Northampton	1	3.6	10	16.5	4.58
Onslow	79	5.1	37	13.6	2.67
Orange	12	3.3	11	12.4	3.76
Pamlico	5	14.6	2	25.0	1.71
Pasquotank	5	3.7	10	10.6	2.86
Pender	6	2.8	13	28.1	10.00
Perquimans	3	6.3	3	19.5	3.10
Person	3	2.3	12	19.7	8.57
Pitt	33	6.6	74	16.9	2.56
Polk	2	3.5	0	0.0	0.00
Randolph	33	5.7	5	9.6	1.68
Richmond	8	5.7	14	15.0	2.63
Robeson	20	10.9	33	15.1	1.39
Rockingham	23	7.1	21	23.2	3.27
Rowan	38	7.4	18	13.0	1.76
Rutherford	16	5.8	4	10.1	1.74
Sampson	14	8.6	14	13.7	1.59
Scotland	10	12.8	14	13.3	1.04
Stanly	8	3.2	11	24.1	7.53
Stokes	16	8.5	1	14.1	1.66
Surry	21	7.1	1	7.5	1.06
Swain	4	7.8	0	0.0	0.00
Transylvania	9	7.7	1	18.9	2.45
Tyrrell	3	26.5	0	0.0	0.00
Union	21	2.7	27	15.7	5.81
Vance	4	4.7	21	12.8	2.72
Wake	138	4.1	167	11.8	2.88
Warren	2	7.0	8	14.6	2.09
Washington	2	9.0	4	10.8	1.20
Watauga	3	1.9	1	31.3	16.5
Wayne	23	5.8	37	13.4	2.31
Wilkes	24	8.6	2	14.2	1.65
Wilson	10	5.6	23	11.0	1.96
Yadkin	11	7.4	1	15.9	2.15
Yancey	6	8.2	0	0.0	0.00

*Disparity exists, however ratio cannot be calculated because there were zero infant deaths to non-Hispanic whites.

Note: Rates based on less than 10 deaths are unreliable and should be interpreted with caution.

Data Source: Vital Statistics, State Center for Health Statistics.

**North Carolina Pneumonia and Influenza Mortality Rate
(per 100,000 Population) by County of Residence, 2010–2014**

Residence	Age-Adjusted* Death Rate	Residence	Age-Adjusted* Death Rate
State Total	17.6	Johnston	16.4
Alamance	15.1	Jones	**
Alexander	21.0	Lee	16.8
Alleghany	**	Lenoir	17.2
Anson	19.0	Lincoln	18.7
Ashe	21.5	McDowell	20.8
Avery	37.3	Macon	14.1
Beaufort	11.9	Madison	23.2
Bertie	**	Martin	12.3
Bladen	16.4	Mecklenburg	14.0
Brunswick	13.4	Mitchell	20.2
Buncombe	15.4	Montgomery	23.3
Burke	21.7	Moore	12.5
Cabarrus	22.7	Nash	23.4
Caldwell	25.3	New Hanover	11.2
Camden	**	Northampton	12.8
Carteret	14.1	Onslow	13.4
Caswell	17.8	Orange	13.7
Catawba	22.1	Pamlico	**
Chatham	11.2	Pasquotank	18.8
Cherokee	14.3	Pender	15.7
Chowan	**	Perquimans	**
Clay	**	Person	22.3
Cleveland	28.0	Pitt	10.6
Columbus	21.0	Polk	17.1
Craven	17.8	Randolph	20.4
Cumberland	19.6	Richmond	12.0
Currituck	97.2	Robeson	14.6
Dare	59.8	Rockingham	31.0
Davidson	20.6	Rowan	31.4
Davie	20.9	Rutherford	16.6
Duplin	17.0	Sampson	14.2
Durham	14.4	Scotland	12.1
Edgecombe	19.7	Stanly	18.8
Forsyth	18.8	Stokes	21.0
Franklin	20.5	Surry	20.0
Gaston	27.9	Swain	25.0
Gates	**	Transylvania	11.4
Graham	**	Tyrrell	**
Granville	14.3	Union	16.7
Greene	**	Vance	28.2
Guilford	15.5	Wake	10.6
Halifax	18.8	Warren	20.0
Harnett	14.6	Washington	**
Haywood	18.5	Watauga	13.4
Henderson	16.5	Wayne	13.3
Hertford	13.4	Wilkes	30.9
Hoke	17.9	Wilson	21.1
Hyde	**	Yadkin	25.2
Iredell	20.1	Yancey	17.5
Jackson	18.4		

*An age-adjusted death rate is a death rate that controls for the effects of differences in population age distributions.

**Death rates with a small number (<50) of deaths in the numerator should be interpreted with caution.

Data Source: Vital Statistics, State Center for Health Statistics.

North Carolina Traffic Crashes That Are Alcohol-Related By County of Crash, 2014

County	Percentage	County	Percentage
State Total	4.8	Johnston	6.2
Alamance	5.2	Jones	5.3
Alexander	4.4	Lee	4.2
Alleghany	8.3	Lenoir	6.4
Anson	5.5	Lincoln	4.9
Ashe	5.4	McDowell	4.2
Avery	5.4	Macon	5.5
Beaufort	4.9	Madison	6.1
Bertie	4.5	Martin	6.8
Bladen	4.3	Mecklenburg	4.0
Brunswick	5.5	Mitchell	4.0
Buncombe	5.0	Montgomery	7.0
Burke	4.2	Moore	4.2
Cabarrus	4.0	Nash	6.4
Caldwell	5.4	New Hanover	4.5
Camden	4.8	Northampton	7.9
Carteret	4.8	Onslow	6.4
Caswell	7.0	Orange	6.1
Catawba	4.3	Pamlico	4.9
Chatham	5.6	Pasquotank	4.8
Cherokee	7.2	Pender	7.0
Chowan	4.2	Perquimans	5.2
Clay	5.7	Person	5.7
Cleveland	4.6	Pitt	4.0
Columbus	5.0	Polk	2.4
Craven	4.4	Randolph	5.0
Cumberland	4.0	Richmond	5.3
Currituck	9.6	Robeson	6.6
Dare	4.5	Rockingham	6.1
Davidson	4.5	Rowan	4.8
Davie	4.2	Rutherford	5.2
Duplin	7.6	Sampson	4.8
Durham	3.4	Scotland	5.1
Edgecombe	6.8	Stanly	4.5
Forsyth	4.5	Stokes	5.0
Franklin	7.8	Surry	6.3
Gaston	4.8	Swain	7.3
Gates	3.8	Transylvania	6.2
Graham	1.6	Tyrrell	3.3
Granville	4.2	Union	4.4
Greene	4.2	Vance	5.1
Guilford	5.1	Wake	4.1
Halifax	5.3	Warren	6.6
Harnett	5.5	Washington	4.7
Haywood	5.2	Watauga	5.1
Henderson	5.4	Wayne	7.2
Hertford	5.4	Wilkes	4.1
Hoke	4.7	Wilson	5.3
Hyde	4.6	Yadkin	6.3
Iredell	4.4	Yancey	7.0
Jackson	7.4		

Data Source: Highway Safety Research Center, University of North Carolina at Chapel Hill.

**North Carolina Cardiovascular Disease Mortality Rate
(per 100,000 Population) by County of Residence, 2010–2014**

Residence	Age-Adjusted* Death Rate	Residence	Age-Adjusted* Death Rate
State Total	224.4	Johnston	259.8
Alamance	225.2	Jones	299.1
Alexander	208.9	Lee	243.2
Alleghany	202.9	Lenoir	290.7
Anson	309.8	Lincoln	259.0
Ashe	216.2	McDowell	247.3
Avery	210.6	Macon	217.3
Beaufort	264.7	Madison	248.6
Bertie	268.9	Martin	334.1
Bladen	296.8	Mecklenburg	183.5
Brunswick	215.1	Mitchell	255.6
Buncombe	198.2	Montgomery	200.4
Burke	257.4	Moore	174.5
Cabarrus	219.2	Nash	259.5
Caldwell	262.6	New Hanover	216.7
Camden	233.9	Northampton	231.7
Carteret	229.9	Onslow	213.9
Caswell	231.4	Orange	163.2
Catawba	238.9	Pamlico	220.7
Chatham	165.6	Pasquotank	280.7
Cherokee	249.7	Pender	210.4
Chowan	243.5	Perquimans	246.1
Clay	196.9	Person	255.5
Cleveland	283.5	Pitt	236.0
Columbus	335.6	Polk	175.9
Craven	226.9	Randolph	236.7
Cumberland	256.9	Richmond	327.4
Currituck	239.4	Robeson	273.4
Dare	215.5	Rockingham	257.0
Davidson	252.7	Rowan	257.6
Davie	191.2	Rutherford	293.5
Duplin	232.4	Sampson	252.0
Durham	185.3	Scotland	279.4
Edgecombe	307.7	Stanly	287.7
Forsyth	201.5	Stokes	246.2
Franklin	218.6	Surry	235.1
Gaston	259.1	Swain	297.1
Gates	229.0	Transylvania	187.9
Graham	257.5	Tyrrell	258.7
Granville	198.1	Union	220.8
Greene	256.1	Vance	257.5
Guilford	200.3	Wake	183.6
Halifax	281.5	Warren	228.0
Harnett	255.8	Washington	314.3
Haywood	239.0	Watauga	183.6
Henderson	189.2	Wayne	242.0
Hertford	249.3	Wilkes	211.3
Hoke	253.1	Wilson	243.2
Hyde	234.5	Yadkin	262.8
Iredell	245.6	Yancey	226.2
Jackson	203.8		

*An age-adjusted death rate is a death rate that controls for the effects of differences in population age distributions.

Data Source: Vital Statistics, State Center for Health Statistics.

**Percentage of North Carolina Adults with Diabetes by Region for the
North Carolina Association of Local Health Directors and
the Area Health Education Centers—BRFSS Survey Results, 2014**

	Percent	C.I. (95%)*
North Carolina	10.8	10.1-11.6
North Carolina Association of Local Health Directors		
Region 1 and 2	10.9	8.9-13.4
Region 3	13.3	10.7-16.3
Region 4	10.8	9.2-12.6
Region 5	9.9	8.2-12.0
Region 6	11.9	9.1-15.5
Region 7	9.3	7.5-11.5
Region 8	12.3	10.1-14.8
Region 9 and 10	10.1	8.1-12.7
Area Health Education Centers		
Mountain AHEC	8.9	7.0-11.3
Northwest	13.5	11.5-15.8
Charlotte	10.5	8.7-12.6
Greensboro	11.3	9.2-13.9
Southern Regional	13.1	10.4-16.4
Southeast	12.8	10.1-16.1
Wake	7.5	6.0- 9.4
Area L and Eastern	10.6	8.8-12.7

Current diabetes prevalence represents the percentage of survey respondents who report “yes” to the survey question: “Has a doctor, nurse, or other health professional EVER told you that you had diabetes?”

* C.I. (95%) = Confidence Interval (at 95% probability level).

North Carolina Association of Local Health Directors

Region 1: Cherokee, Clay, Graham, Haywood, Jackson, Macon, Swain, Transylvania

Region 2: Buncombe, Burke, Caldwell, Cleveland, Henderson, Madison, Rutherford-Polk-McDowell, Yancey-Mitchell-Avery

Region 3: Davidson, Davie, Forsyth, Stokes, Surry, Watauga-Ashe-Alleghany, Wilkes, Yadkin

Region 4: Alexander, Cabarrus, Catawba, Gaston, Iredell, Lincoln Mecklenburg, Rowan, Stanly, Union

Region 5: Alamance, Caswell, Chatham, Durham, Guilford, Orange, Person, Randolph, Rockingham

Region 6: Anson, Cumberland, Harnett, Hoke, Lee, Montgomery, Moore, Richmond, Scotland

Region 7: Edgecombe, Franklin, Granville-Vance, Halifax, Johnston, Nash, Wake, Warren, Wilson

Region 8: Bladen, Brunswick, Columbus, Duplin, New Hanover, Onslow, Pender, Robeson, Sampson

Region 9: Bertie, Currituck, Dare, Hertford-Gates, Hyde, Martin-Tyrell-Washington, Northampton, Pasquotank-Perquimans-Camden-Chowan

Region 10: Beaufort, Carteret, Craven, Greene, Jones, Lenoir, Pamlico, Pitt, Wayne

Area Health Education Centers

Mountain: Buncombe, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, Macon, Madison, McDowell, Mitchell, Polk, Rutherford, Swain, Transylvania, Yancey

Northwest: Alexander, Alleghany, Ashe, Avery, Burke, Caldwell, Catawba, Davidson, Davie, Forsyth, Iredell, Rowan, Stokes, Surry, Watauga, Wilkes, Yadkin

Charlotte: Anson, Cabarrus, Cleveland, Gaston, Lincoln, Mecklenburg, Stanly, Union

Greensboro: Alamance, Caswell, Chatham, Guilford, Montgomery, Orange, Randolph, Rockingham

Southern Regional: Bladen, Cumberland, Harnett, Hoke, Moore, Richmond, Robeson, Sampson, Scotland

Southeast: Brunswick, Columbus, Duplin, Pender, New Hanover

Wake: Durham, Franklin, Granville, Johnston, Lee, Person, Vance, Wake, Warren

Area L: Edgecombe, Halifax, Nash, Northampton, Wilson

Eastern: Beaufort, Bertie, Camden, Carteret, Chowan, Craven, Currituck, Dare, Gates, Greene, Hertford, Hyde, Jones, Lenoir, Martin, Onslow, Pamlico, Pasquotank, Perquimans, Pitt, Tyrrell, Washington, Wayne

North Carolina Life Expectancies at Birth by County of Residence, 2012–2014

Residence	Life Expectancy at Birth	Residence	Life Expectancy at Birth
State Total	78.3	Johnston	78.2
Alamance	77.3	Jones	77.3
Alexander	78.4	Lee	77.7
Alleghany	79.8	Lenoir	75.2
Anson	75.1	Lincoln	77.8
Ashe	77.5	McDowell	76.6
Avery	79.5	Macon	78.3
Beaufort	76.1	Madison	77.9
Bertie	76.6	Martin	75.6
Bladen	75.3	Mecklenburg	80.4
Brunswick	78.4	Mitchell	77.4
Buncombe	79.1	Montgomery	77.6
Burke	76.4	Moore	80
Cabarrus	78.4	Nash	76.7
Caldwell	75.8	New Hanover	79.7
Camden	80.3	Northampton	76.2
Carteret	78.7	Onslow	78.3
Caswell	76.5	Orange	82
Catawba	76.8	Pamlico	77.5
Chatham	82	Pasquotank	77.5
Cherokee	76.5	Pender	78.4
Chowan	78.7	Perquimans	78.6
Clay	78.2	Person	76.9
Cleveland	74.7	Pitt	78.2
Columbus	73.6	Polk	79.7
Craven	77.9	Randolph	76.9
Cumberland	76.3	Richmond	74.8
Currituck	77.2	Robeson	73.9
Dare	79.6	Rockingham	75.8
Davidson	76.5	Rowan	75.4
Davie	79	Rutherford	75.8
Duplin	78.4	Sampson	76.4
Durham	79.9	Scotland	74.8
Edgecombe	75.2	Stanly	76.9
Forsyth	78.3	Stokes	78
Franklin	77.7	Surry	77.1
Gaston	75.6	Swain	73.6
Gates	79.4	Transylvania	80.6
Graham	75.1	Tyrrell	79.4
Granville	78	Union	79.5
Greene	78.2	Vance	74.9
Guilford	79	Wake	81.5
Halifax	74.6	Warren	78.1
Harnett	76.6	Washington	78.7
Haywood	78.1	Watauga	82.2
Henderson	79.5	Wayne	77.3
Hertford	76.3	Wilkes	76.4
Hoke	77.5	Wilson	77.1
Hyde	80	Yadkin	76.8
Iredell	77.4	Yancey	77.8
Jackson	79.2		

Life expectancy is the average number of additional years that an infant born between 2012–2014 would be expected to live if current mortality conditions remained constant throughout his or her lifetime.

Data Source: Vital Statistics, State Center for Health Statistics.

