Introduction

Chapter 1

Approximately one in five North Carolinians, almost 2.2 million people, live in a rural county (non-metropolitan statistical area).[1] North Carolina's rural communities face many challenges, but they are also quite resilient. There is a strong sense of place and an understanding of community assets. People who live in rural areas tend to know the needs of their community.[2] They know which strategies to improve health and well-being will work and which ones probably will not, but are also open to learning from others. While rural communities are often under-resourced, there is an innate sense of commitment to the community and to each other. Because of this, rural communities are often able to accomplish a great deal with limited resources.[3]

North Carolina's rural communities face many challenges, but they are also quite resilient.

North Carolinians living in rural areas are less likely to have access to health services, are more likely to engage in risky health behaviors, and have a higher mortality rate than North Carolinians living in non-rural areas.[4] Smoking and obesity are more prevalent in rural counties in North Carolina. Rural North Carolinians are more likely to die due to heart disease, diabetes, lung disease, unintentional injuries, and suicide.[5] Rural North Carolinians are also more likely to forgo seeing a doctor due to cost and are less likely to visit a dentist. There are also rural-urban disparities in infrastructure and the capacity to address health needs. The health disparities between urban and rural residents are due to a number of factors including differences in demographic and socioeconomic factors, historic patterns of racial and class discrimination, health behaviors, and access to and availability of health care services.

Why Focus on Rural Areas of North Carolina?

Residents of rural areas are disproportionately older, lower income, unemployed, and have lower levels of education. In 2010, the rural population surpassed 2.2 million (about 22% of the state's population).[6] More than 15% of rural residents are older (age 65 or older), compared to 11% of urban residents, and there is greater outmigration of youth from rural areas to urban areas.[7]

Among North Carolinians 25 and older, 17.3% of rural residents did not complete high school (compared to 17.0% of urban residents), and only 17.0% received a college degree, compared to 29.9% of urban residents.[6] In 2012, the unemployment rate in rural counties was 11.0%, as compared to 9.1% in urban areas.[6] Additionally, rural residents are poorer than are urban residents. More than one in five rural residents (20.8%; 95% CI: 20.7-20.9)[a] lived below the poverty level, compared to 16.8% of urban residents (95% CI: 16.8-16.8) in 2011.[b] Rural residents also have lower household incomes. The median household income in 2010 was $38,433 for rural areas and $47,622 for urban areas.[1]

a The notation 95% CI indicates a 95% confidence interval. This means that there is a 95% certainty that the true rate is between the upper and lower estimates. If the estimates are not overlapping, this is an indication of statistical significance. In some cases, original data was not easily available and analysis was not completed. In such cases, we cannot make assertions regarding the significance of differences reported herein.

b Eleanor Howell, MS, State Center for Health Statistics, North Carolina Department of Health and Human Services, email communication, April 17, 2014

Rural North Carolinians suffer from worse health outcomes and higher rates of chronic conditions than urban residents. In 2012, 77.8% (95% CI: 76.2-79.4) of rural North Carolina residents reported being in "good, very good, or excellent health" vs. 82.0% (95% CI: 80.9-83.0) of urban residents. There is nearly a two year difference between average life expectancy of rural vs. urban North Carolinians: 76.9 years (95% CI: 76.7-77.1) rural vs. 78.7 years (95% CI 78.6-78.7) urban (2012).[b]

Disparities also persist in chronic disease rates. From 2008-2012, nearly all of the counties with the highest cancer death rates were rural counties.[8] The mortality rate for cardiovascular disease among rural residents was 255.6 (95% CI: 250.1-261.1) in 2011, while it was 228.0 for urban residents (95% CI: 224.3-231.7).[9] In 2012, the percentage of adults with diagnosed diabetes was 12.5% in rural counties (95% CI: 11.3-13.7); the rate was 9.5% in urban counties (95% CI: 8.7-10.3).[9] Rural and urban rates of overweight and obese are similar: 68.7% of rural North Carolina residents are overweight or obese (95% CI: 66.7-70.7), and 67.1% of urban residents are overweight or obese (95% CI: 65.6-68.5).[b]

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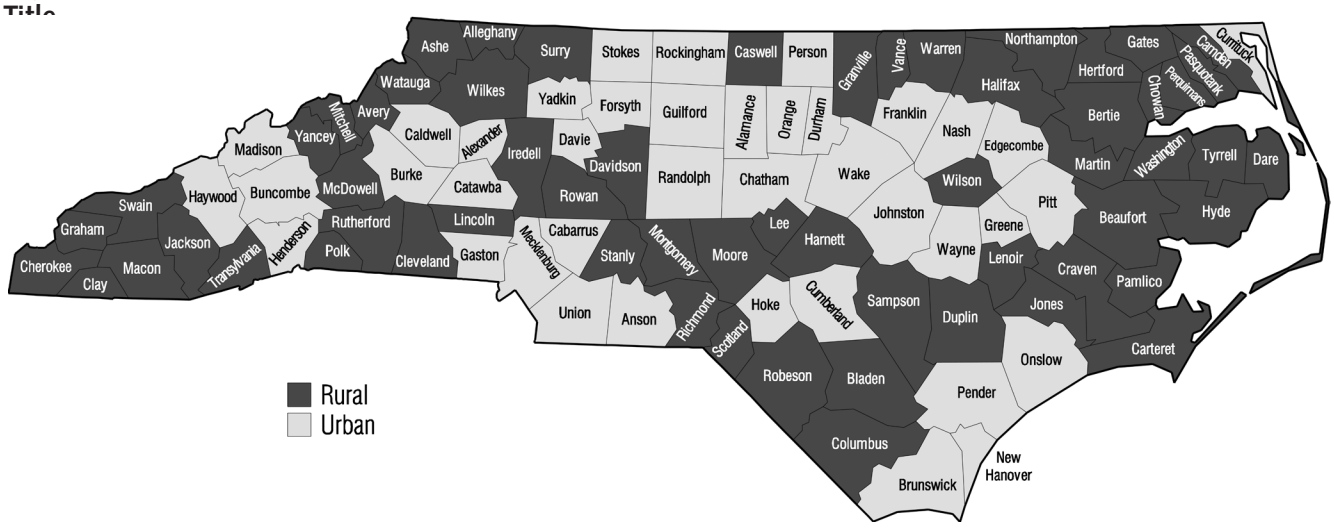
In addition to poorer health outcomes and behaviors, residents of rural North Carolina also experience lower access to care. Nonelderly rural residents are about equally likely to be uninsured than are those living in urban areas (20.8% compared to 19.5% respectively),[10] but in some rural counties, more than one out of every four nonelderly persons is uninsured.[11]In North Carolina there are 66 counties, or parts thereof, that are considered primary care shortage areas, which means that there are too few primary care physicians to meet population needs. There are 22 counties (or parts thereof) that are behavioral health shortage areas, and 69 counties (or parts thereof) that are dental shortage areas. Most of these counties are rural.[12] Health care resources are of crucial importance in rural areas because of the ways in which the health care industry serves as an anchor for many of these communities and is related to economic wellbeing.

Rural Defined

To define "rural," the NCIOM Task Force on Rural Health used the definition from the White House Office of Management and Budget (OMB). OMB issues three designations: metropolitan, micropolitan, and neither, based on the commuting patterns of area residents. Metropolitan areas have a population greater than 50,000; micropolitan areas have an urban core of between 10,000 and 50,000; and all counties not part of a metropolitan statistical area (MSA) are considered rural.[12] When the Task Force began, the 2009 definition was the most current. By this definition, North Carolina has 60 rural counties (see Figure 1.1).

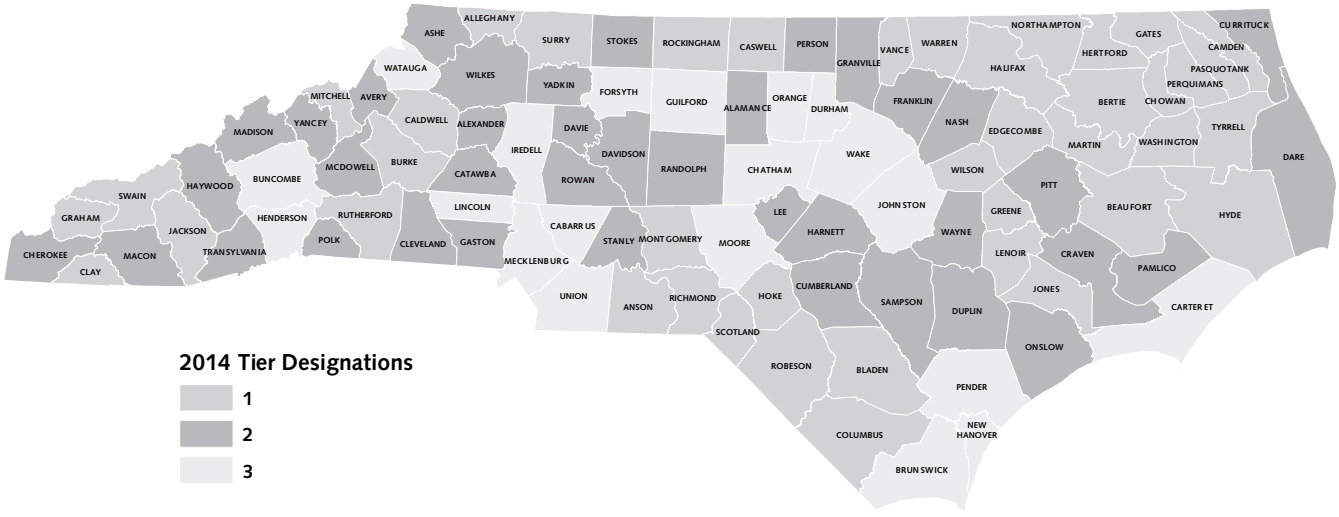
Due to the close alignment between economic strength of an area and that area's population health, the Task Force also used the ranking system from the North Carolina Department of Commerce when prioritizing areas of focus.

Figure 1.1
Title



The North Carolina Department of Commerce assigns each county a tier based on measures of economic strength: the 40 most distressed counties are designated as Tier 1 (40 counties), the middle counties are designated as Tier 2 (40 counties), and the least distressed as Tier 3 (20 counties).[13] (See Figure 1.2.) In 2014, of the 60 rural counties in North Carolina, 33 are Tier 1 counties, and 22 are Tier 2 counties.

Figure 1.2
North Carolina County Tier Designations, 2014



Source: North Carolina Department of Commerce. 2014 North Carolina county tier designations. North Carolina Department of Commerce website. http://www.nccommerce.com/research-publications/incentive-reports/county-tier-designations. Accessed July 23, 2014.

Task Force Charge

The North Carolina Institute of Medicine (NCIOM), in partnership with the Office of Rural Health and Community Care (ORHCC) within the North Carolina Department of Health and Human Services (NC DHHS), and the Kate B. Reynolds Charitable Trust (the Trust), convened a Task Force on Rural Health. ORHCC has a mission to empower communities to develop innovative strategies to improve access, quality, and cost effectiveness of care, with a special focus on rural and underserved communities. The Task Force was funded by the Trust, which has a long history of leading and supporting rural health efforts and innovations. The Trust's mission is to improve the quality of life and quality of health for the financially needy of North Carolina.

The overall goal was to develop a North Carolina Rural Health Action Plan that included workable strategies to improve rural health outcomes that were actionable over the next three to five years.

The Task Force on Rural Health was chaired by Chris Collins, MSW, director, Office of Rural Health and Community Care;[c] Paul Cunningham, MD, FACS, dean and senior associate vice chancellor for medical affairs, Brody School of Medicine, East Carolina University; and Donna Tipton-Rogers, EdD, president, Tri-County Community College. In addition to the co-chairs, the Task Force had 46 members including representatives of state and local policymakers, funders, health care professionals, community agencies, nonprofit agencies, and other interested individuals. Half of the Task Force members lived or worked in rural communities, while the other half were from statewide organizations with a mission to serve rural communities. A Steering Committee of 9 individuals guided the work of the Task Force over the course of 15 months. For a complete list of Task Force and Steering Committee members please see pages 9-11 of this report.

The overall goal of the Task Force on Rural Health was to develop a North Carolina Rural Health Action Plan that included workable strategies to improve rural health outcomes that were actionable over the next three to five years. The Action Plan would provide policymakers, funders, and stakeholder organizations with a common vision and set of action steps to improve rural health.

Specifically, the Task Force on Rural Health was charged to:

- Examine the health of rural North Carolinians, as well as disparities in health access and outcomes for North Carolina's rural and urban residents. As part of this work, the Task Force considered the factors that contribute to these disparities including demographic and socioeconomic factors, differences in health behaviors, and variations in access to and quality of health care around the state.
- Identify potential strategies that are critical to improve rural health outcomes and actionable over the next three to five years.

c Robin Cummings, MD, FACC, FACS, former director, Office of Rural Health and Community Care, director, Division of Medical Assistance, deputy secretary, North Carolina Department of Health and Human Services, served as co-chair of the Task Force on Rural Health during his tenure as the director of the Office of Rural Health and Community Care. When he was promoted to deputy secretary for health services, Chris Collins assumed his role as co-chair.

- Gather input from eight rural communities across North Carolina to discuss local health needs, priorities, and potential strategies to address those needs, and to seek feedback on the strategies and priorities identified by the Task Force.
- Consider the feedback from local community forums and make adjustments to priority strategies as necessary.

Task Force Process

The Task Force met 10 times between March 2013 and May 2014. From March 2013 through July 2013, the Task Force members examined data that focused on major health disparities facing rural communities, using the Healthy North Carolina 2020 data and objectives, which were issued in 2011. Healthy North Carolina 2020 is a series of 40 health objectives and targeted measures in 13 focus areas, with the primary goal to improve the health of North Carolina residents by the year 2020.[9] Data showed that rural areas had worse health outcomes or related factors for 16 of the 28 measures for which rural/urban data were available (see Appendix C).

The Task Force explored the relationships between community and environmental characteristics, individual health behaviors, and access to and availability of health services.

The Task Force recognized that various factors interact with and influence health, including a person's genes, their health behaviors, and the community and environment in which they live, work, and play.[14] This model—called the Socioecological Model of Health—generally guided the Task Force's work. With this model in mind, the Task Force explored the relationships between modifiable determinants of health including community and environmental characteristics, individual health behaviors, and access to and availability of health services (see Figure 1.3).

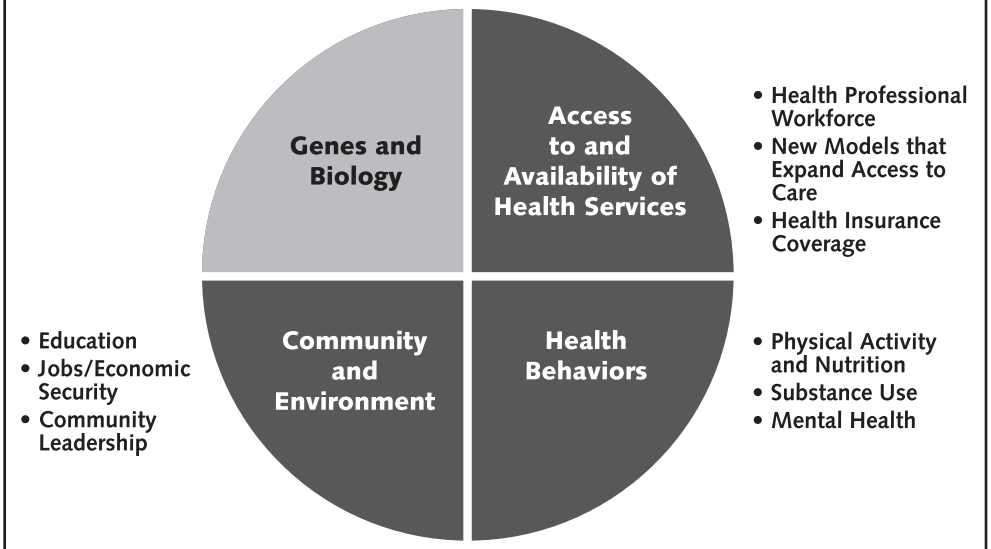
The Task Force examined these issues broadly and then narrowed down its focus into nine initial areas (three within each of the three levels of the Socioecological Model of Health):

- *Community and environment factors:* jobs and economic security; educational outcomes; community leadership.
- *Health behaviors:* healthy eating and active living; mental health and emotional well-being; substance abuse (including tobacco use).
- *Access to and availability of health services:* health insurance coverage and access to the health care safety net; recruitment, retention and distribution of health professionals; new models of care.

Rural Community Meetings

The Task Force identified potential strategies that could positively improve health for these nine initial priority areas. These are described in more detail in Appendix A. This became the basis for a draft rural health plan. Between August 28, 2013 and October 11, 2013, the Task Force hosted eight rural community meetings to obtain feedback on the draft plan. The location of the community

Figure 1.3
Title



Source:

In total, 259 people attended one of the eight community meetings.

meetings was chosen to represent the variety of rural communities in the state from the mountains to the coast. The Steering Committee selected the host counties for community meetings to represent a variety of Tier 1 and Tier 2 counties with a wide geographic distribution. Additionally, three communities were chosen that had an existing relationship to the Trust through their Healthy Places initiative. The Task Force also invited participants from surrounding counties that might not necessarily be designated as rural, but had similar socioeconomic and health challenges to the surrounding rural areas.

Communities were presented with the draft plan, along with county health data for each of the nine priority areas. Participants from 43 counties were invited to attend the meetings. In total, 259 people attended one of the eight community meetings (the county listed in bold is where the forum was held):

August 28: Caswell, **Rockingham**, Stokes

August 29: Haywood, **Jackson**, Macon, Swain, Transylvania

September 12: **Bladen**, Columbus, Pender, Robeson, Sampson

September 19: Alexander, Alleghany, Ashe, Caldwell, Iredell, Surry, Watauga, **Wilkes**, Yadkin

September 27: Davidson, **Montgomery**, Moore, Richmond, Stanly

October 4: Avery, **McDowell**, Mitchell, Rutherford, Yancey

October 10: **Beaufort**, Craven, Hyde, Martin, Pamlico, Washington

October 11: Bertie, Edgecombe, **Halifax**, Northampton, Warren

Approximately 50% of the 259 participants represented health care organizations, about 25% represented educational organizations, 10% represented human service organizations, and 15% were from other organizations or were simply interested individuals (including representatives from regional industries or economic development organizations, city or county officials, the faith community, or other nonprofit organizations).

Participants were asked to review the draft rural health plan and provide feedback on the actions the community was already taking to address each strategy, any barriers which prevented action on those areas, and what the state could do to help them achieve greater success within their communities. Participants were also asked whether there were other strategies that the Task Force should consider. Participants were asked to help with priority setting by identifying those strategies that had the greatest likelihood of making a positive impact on the health of rural communities over the next three to five years.

The Task Force identified six priority strategies.

Final Priority Strategies

NCIOM staff synthesized the feedback from each of the rural community meetings and presented the findings to the NCIOM Rural Health Task Force. (Summaries from each of the individual meetings can be found at: http://www.nciom.org/task-forces-and-projects/?task-force-on-rural-health.) Based on the feedback from the rural community meetings, the Task Force identified six priority strategies. These priority strategies are the basis of the final Rural Health Action Plan, and are as follows:

Community and Environment

1. **Invest in small businesses and entrepreneurship to grow local and regional industries (e.g. farm to table agriculture, fishing, tourism, and solar energy).**

2. **Increase support for quality child care and education (ages 0-8) and parenting supports to improve school readiness.**

Health Behaviors

3. **Work within the formal and informal education system to support healthy eating and active living.**

4. **Use primary care and public health settings to screen for and, when appropriate, provide treatment for mental health and substance use disorder problems. This could include enhanced training for primary care providers, co-location of behavioral health specialists, integrated care, telepsychiatry consults, or other models that expand access to behavioral health services within a primary care setting.**

Access to and Availability of Health Services

5. **Educate the public about the new health insurance options available under the Patient Protection and Affordable Care Act, the Medicaid expansion state option, and existing safety net resources.**

6. **Expand efforts to recruit health professionals to rural and underserved areas.**

Common sense dictates that, when available, we should invest in strategies with a proven track record of success. These are generally referred to as "evidence-based" strategies. Evidence-based strategies are those that achieved positive health outcomes after being subject to rigorous evaluations.[15] The "gold standard" in a clinical setting is a randomized double blind study, where neither the participants nor the researchers know whether a person is receiving the intervention or a placebo. Outside of clinical trials, however, it is difficult to achieve this same level of evidence. Thus, in health services research, the gold standards are programs, policies, or clinical interventions that have been subject to multiple studies, in different settings, with different populations, and all have yielded positive health impacts. The studies indicate that these interventions have a positive impact on health outcomes (effectiveness), reach the intended audiences, and are feasible, sustainable, and transferable. These are generally referred to as "evidence-based" strategies.[16]

We should invest in strategies with a proven track record of success.

Unfortunately, evidence-based strategies have not been identified to address every health related problem. In addition, some evidence-based strategies are impracticable to implement; they may be too expensive or have other implementation barriers. When evidence-based strategies are not available or when they are not appropriate for other reasons, it is appropriate to explore other "evidence-informed" or promising practices. The Centers for Disease Control and Prevention Best Practices Workgroup has developed four levels of evidence-informed programs, policies, and practices to guide health care interventions (see Table 1.1).

Table 1.1
Evidence-Based Strategies Continuum[16]

Best, Proven, or Evidence-Based Strategies: These programs, policies, or practices are supported by intervention evaluation or studies with rigorous systematic review that have evidence of effectiveness, reach, feasibility, sustainability, and transferability.
Leading: These programs, policies, or practices are supported by intervention evaluations or studies with peer review of practices that have evidence of effectiveness, reach, feasibility, sustainability, and transferability.
Promising: These programs, policies, or practices are supported by intervention evaluations without peer review of practice, or publication, that have evidence of effectiveness, reach, feasibility, sustainability, and transferability.
Emerging: These programs, policies, or practices are supported by field-based summaries or evaluation in progress that have plausible evidence of effectiveness, reach, feasibility, sustainability, and transferability.

Source: Adopted from the Centers for Disease Control and Prevention Best Practices Workgroup[16]

The Task Force identified evidence-based or evidence-informed programs, policies, clinical interventions, and practices for each of the six priority strategies.

NCIOM Task Force Report

The *Rural Health Action Plan* contains 9 chapters, with this chapter being an introduction to the work of the Task Force. Chapter 2 provides a more detailed summary of some of the major factors influencing rural health. Chapters 3-8 focus on the Task Force's priority recommendations. Chapter 9 summarizes the findings and recommendations of the Task Force and includes a chart of all the priority strategies of the Task Force. The report also contains three appendices: Appendix A includes a list of all the potential strategies that the Task Force considered to improve rural health. Appendix B includes data on Healthy North Carolina 2020 health indicators for rural and urban areas. Appendix C includes other health and demographic data for all 100 North Carolina counties. The data that are included in the appendix cover a wide range of health-related areas, including all of the priority areas included in this report. Additionally, the summaries of each of the eight rural community meetings are available online at: http://www.nciom.org/task-forces-and-projects/?task-force-on-rural-health.

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