



2010 Wake County Community Assessment



Opportunities
& Challenges



December 1, 2010

Wake County Citizens,

Wake County is consistently ranked as one of the top places in the United States, and we like to boast that it is a great place to live, work, play and raise a family.

As our County continues to evolve and grow we must make sure that we take the necessary steps to ensure that the needs of all our citizens are being monitored and evaluated. We realize that when it comes to public health, the community itself is the patient and the health of the community must be assessed by focusing on key areas such as behavioral and social health, economic health, environmental health, lifelong learning, physical health and safety. Every four years, Wake County conducts a comprehensive community examination through a state-developed process known as the Community Health Assessment (CHA). This document is the result of a collaborative effort that involved a community steering committee, Wake County Human Services and input from a broad group of Wake County citizens. While this report provides a snapshot of the community's overall health, it also meets requirements for state accreditation of local health departments and the state consolidated contract with local health departments.

The data in these pages results from community surveys and focus groups attended by Wake County residents, and data gathered from dozens of sources, including the State Center for Health Statistics, Centers for Disease Control and Prevention, and Wake County databases. The County will use the findings from the CHA to develop a collaborative community Action Plan that will address identified priority issues.

Through the Action Plan we will work together as a community to develop a plan for a healthier, safer community, while having a better idea of where we need to focus our resources over the next four years.

This report is another example of government partnering with citizens as we prepare and plan for a better tomorrow. We hope you find this document informative, as we continue to find the best ways to invest in our most precious commodity – our people.

Sincerely



Lindy Marshall Brown

Lindy Brown



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Co-Chairs of the Wake County Community Assessment Steering Committee

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Introduction

A community assessment is a process that helps to identify factors affecting our county, determine resources needed to address these factors and develop a plan of action for community needs. The 2010 assessment process included 1,349 citizen surveys, 34 focus groups, eight workgroups and three community meetings which will culminate in a strategic planning process to generate a four-year action plan for the County. Over the past year and a half, a Steering Committee – comprised of more than 50 members representing faith-based organizations, hospitals, local governments, schools, media, non-profit organizations and businesses – worked to direct the activities of the assessment process and provide input on issues of interest. The committee was chaired by Lindy Brown (former Wake County Commissioner) and Doug Vinsel (President, Duke Raleigh Hospital).

A core team of Wake County staff and community partners was formed to ensure the assessment was completed, provide staff for the collection of data and engage community partners. Work groups comprised of experts from the community gathered and reviewed data and produced chapters for the Community Assessment report covering six areas:

1. Behavioral and Social Health
2. Economic Health
3. Environmental Health
4. Lifelong Learning
5. Physical Health
6. Safety

Information used by the work groups came from secondary data, community surveys and community focus groups. From August 2009 – February 2010, the North Carolina Institute for Public Health, in collaboration with Wake County staff, completed 1,349 random surveys across the County. Additionally, 34 focus groups, including five focus groups in Spanish, were completed from April – July 2010, reaching 292 residents. Secondary data was collected, reviewed and interpreted from dozens of sources, including the 2000 Census and subsequent American Community Survey Reports, the Centers for Disease Control and Prevention, the State Center for Health Statistics, the North Carolina Behavioral Risk Factor Surveillance Survey and Wake County Databases (2010 Census data was not available at the time of this report).

The Community Assessment presented by the six workgroups builds the foundation for:

- the creation of the “Wake County Community Assessment Action Plan,” initiated by hundreds of community partners during three Community Prioritizing Meetings, held on November 4, 9 and 15, 2010 and one Business Community meeting, held November 23, 2010;
- ongoing discussions for planning and the development of strategies to be implemented by and for community stakeholders – in collaboration or on their own – including businesses, governments, hospitals, nonprofits, educational institutions and faith-based organizations;

- providing benchmark information for measuring our community's success and progress in seizing opportunities and meeting our challenges.

The many hours volunteered by the Steering Committee, workgroups and Core Team, as well as the input provided by thousands of Wake County residents, have assured that this Assessment presents an accurate picture of issues needing attention and provides a solid basis for the Action Plan for our community for the next four years.

Data Collection Methodology

Wake County is a very diverse county, with a unique mix of urban, suburban and rural areas. Because the needs of the county vary across areas, Wake County Human Services implemented an eight service zone model to better serve the specific needs of those throughout the County. To establish the service zones, the Wake County map was divided into eight zones: East and East Central; South and South Central; North and North Central; and West and West Central. The outer zones are framed around the County Regional Service Centers. The inner, or central zones divides the city of Raleigh into North, South, East and West.

With the County's substantial population of approximately 900,000 and large geographic size, each of the eight zones were treated as individual survey areas to provide a more specific representation of the perceived and actual needs within those zones. To collect survey data, Wake County contracted with the North Carolina Institute of Public Health and the University of North Carolina's School of Public Health, who were responsible for survey collection, data analysis and report writing.

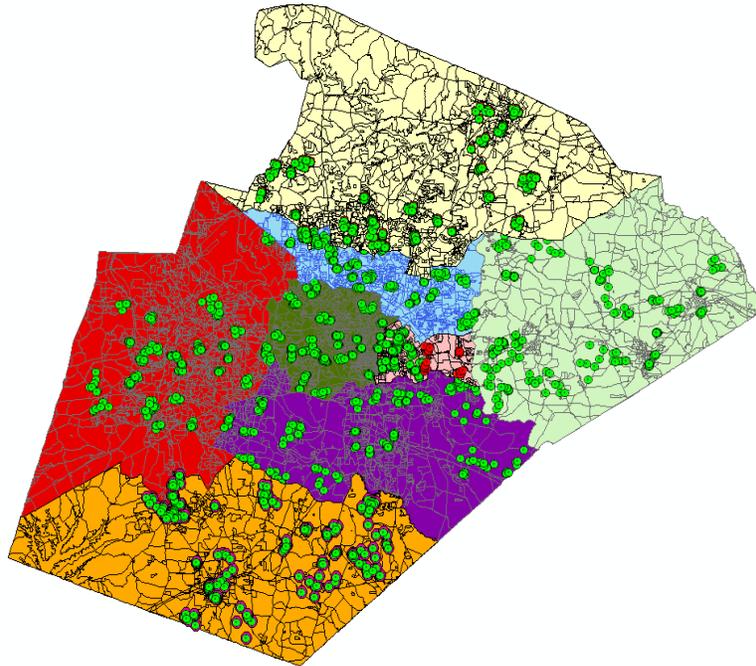
Survey Collection

To achieve a representative sample of Wake County's residents, a commonly used "30 x 7" two-stage cluster sampling method, originally developed by the World Health Organization, was used for each of the eight zones (*Henderson and Sundaresan, 1982 and Malilay et al., 1996*). This sampling procedure aims to estimate survey question data within +/- 10 percentage points with a minimum number of surveys. This methodology has also been applied to rapid needs assessment and other community health assessments in North Carolina (*North Carolina Institute of Public Health, 2010*).

For each zone, ArcGIS (geographic information system software) randomly identified 30 census blocks (Wake County has 10,259 census blocks¹). The selection of 30 census blocks was the primary sampling unit. Within those 30 census blocks seven points were randomly selected (the secondary sampling unit), totaling 210 points per zone. In all 1,680 (30 x 7 x 8) were identified within Wake County as the ideal sample size. Maps 1 and 2 below include the 1,680 randomly selected data points as well as the geography of the eight zones (*North Carolina Institute of Public Health, 2010*).

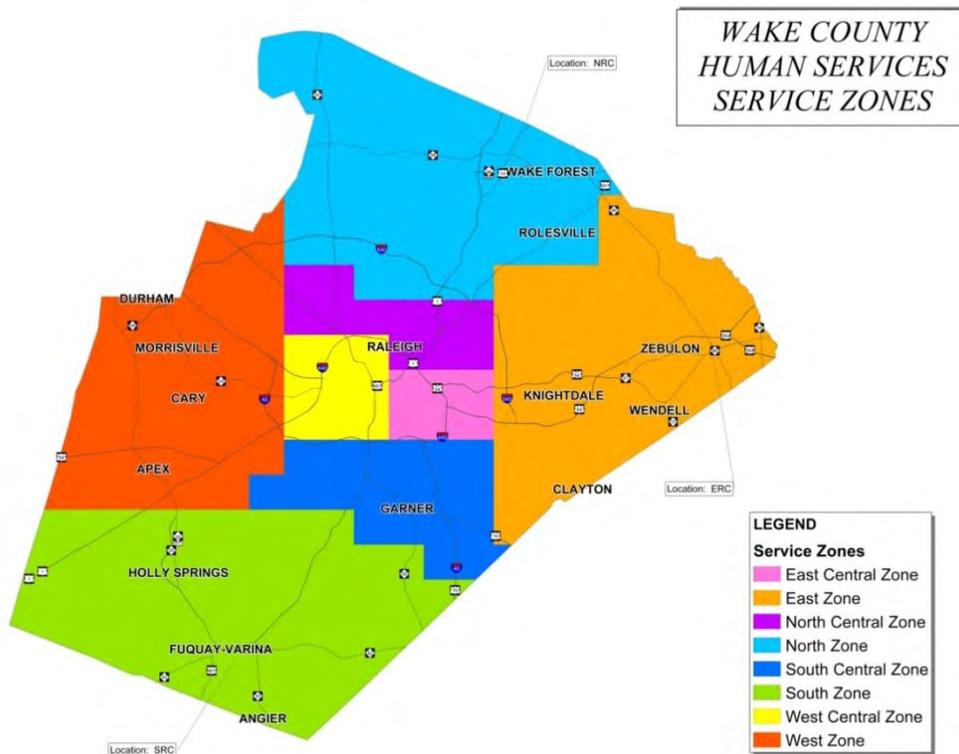
¹ Census blocks each contain approximately 1,000 – 2,500 households.

Map 1:



1,680 points

Map 2:



Volunteers were recruited from the community and universities to conduct the interviews. To achieve accurate data collection and minimize interviewer bias, all interviewers were trained on standard interviewing techniques. Teams of two interviewers were assigned a specific geographic area and selected location points and then navigated to these locations. In person interviews were conducted at the residence nearest the location point. Survey information was collected on handheld Global Positioning System (GPS) devices and on paper surveys for back-up. The survey consisted of 50 questions and took approximately 20 minutes (see Appendix A). Surveys were conducted in both English and Spanish. Survey participants were asked to provide demographic information about themselves as well as their opinions on a number of quality-of-life statements, lists of environmental issues, community issues, risky behaviors and health issues. Participants were also asked about their personal health, health behaviors and emergency preparedness. No identifying information or names was collected during the interview.

After data collection was completed, the data on the GPS devices was uploaded to a central database and analyzed. Demographic summary statistics are represented in the following tables. Data collection began on September 11, 2009 and was completed March 31, 2010 (*North Carolina Institute of Public Health, 2010*).

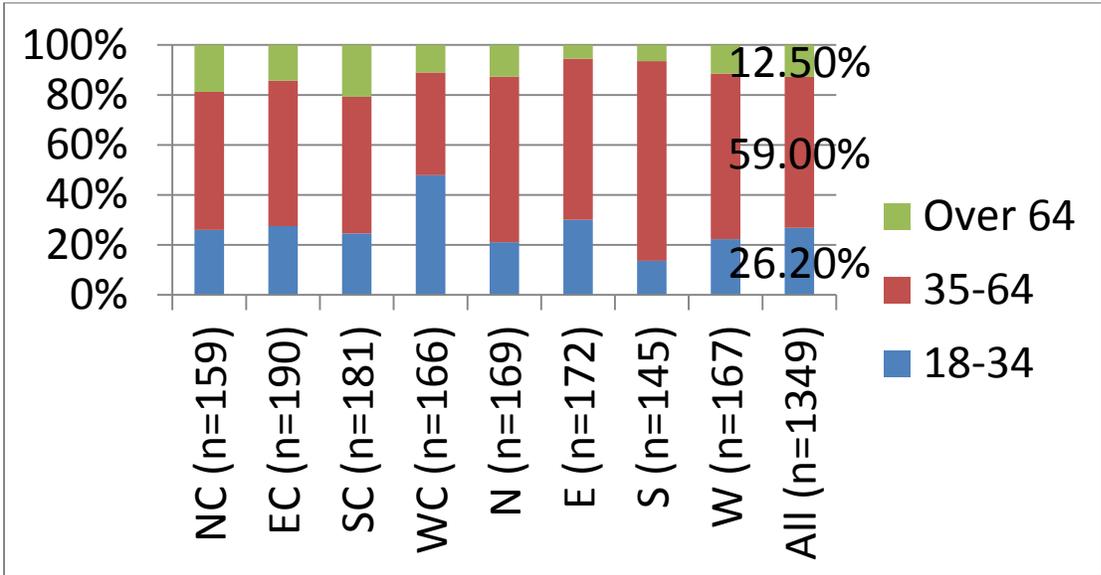
Table 1: Surveys Collection by Zone

Zone	Surveys Collected
North Central (NC)	159
East Central (EC)	190
South Central (SC)	181
West Central (WC)	166
North (N)	169
East (E)	172
South (S)	145
West (W)	167
All	1349

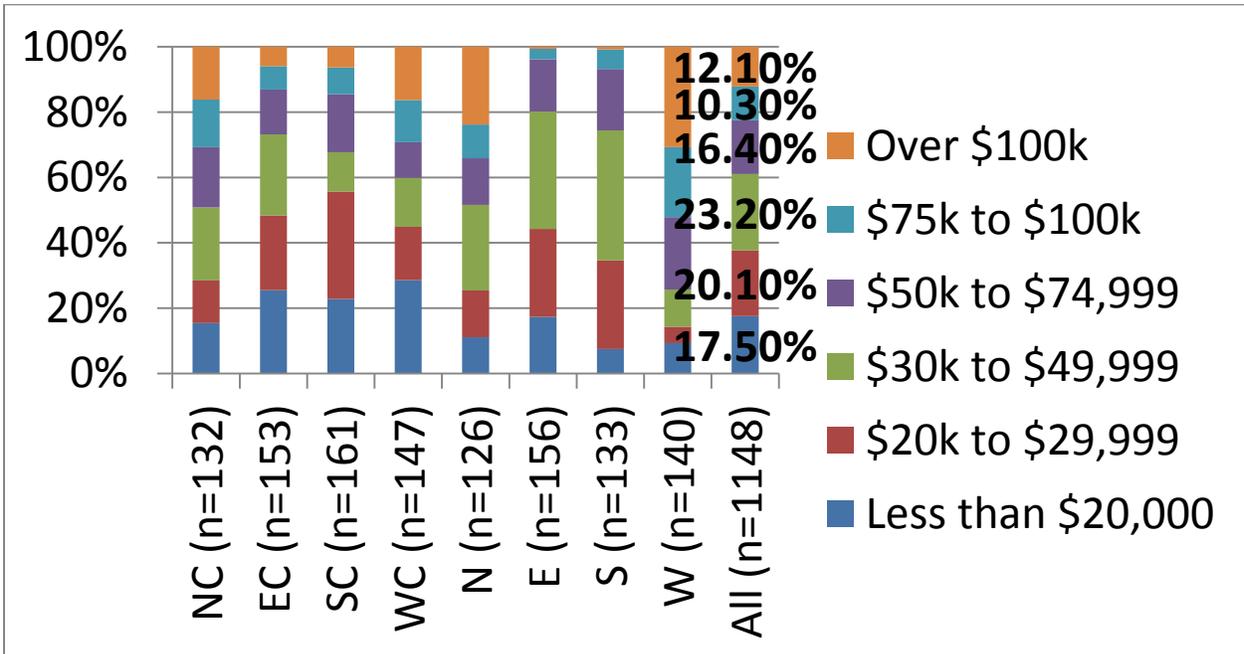
Survey Participants

Survey participants were asked to provide demographic information about themselves by selecting responses from the following categories: age, gender, race and ethnicity, language, marital status, education level, and household income, and employment status. This demographic information was collected in order to assess how well the survey participants represented the general population of Wake County. Because not every respondent answered every question, the total number of responses varied by each question. Selected demographic information is included below.

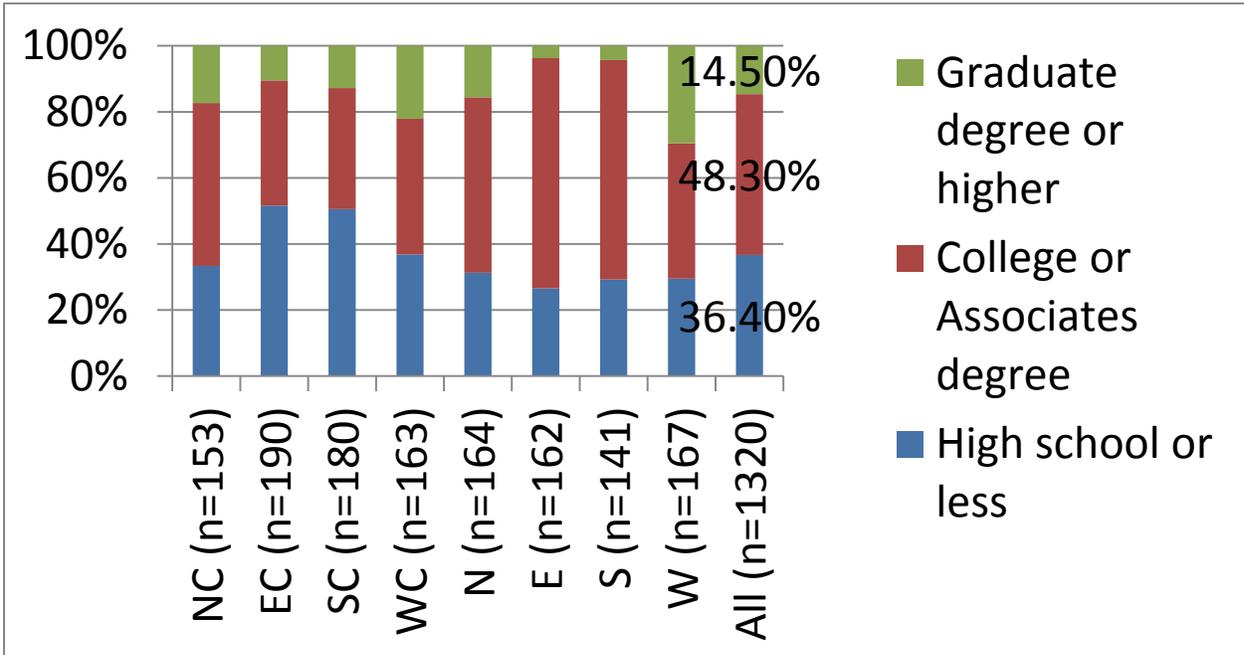
Graph 1: Age of Survey Respondents by Zone



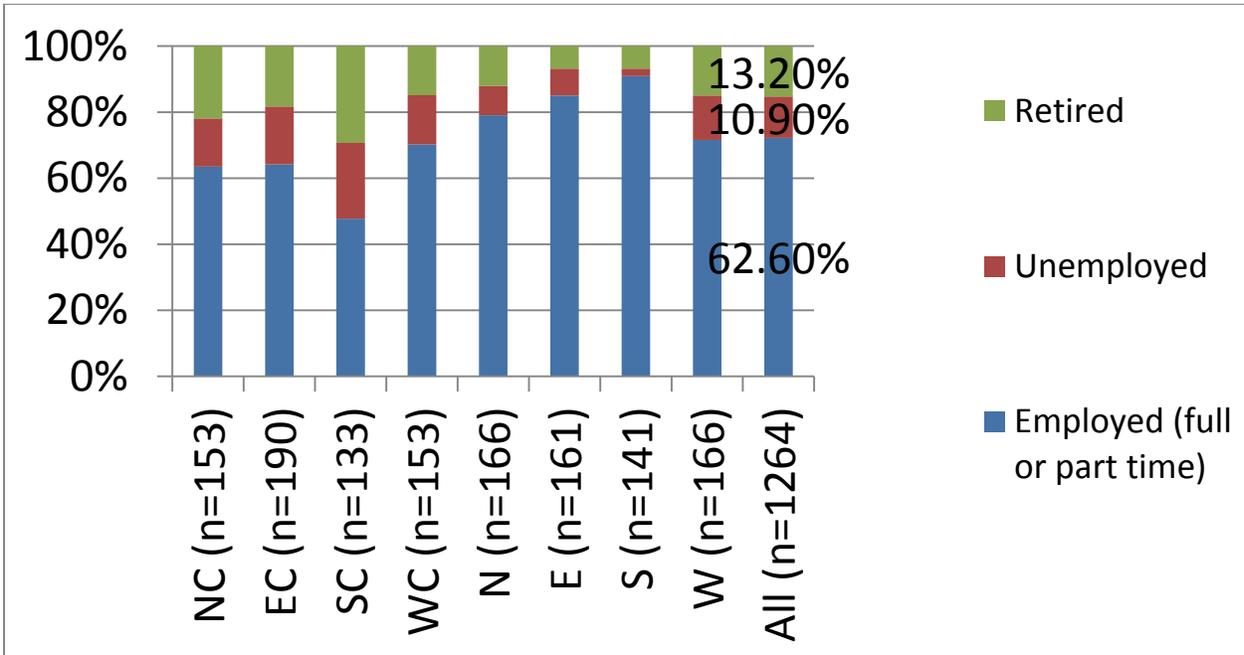
Graph 2: Household Income of Survey Respondents by Zone



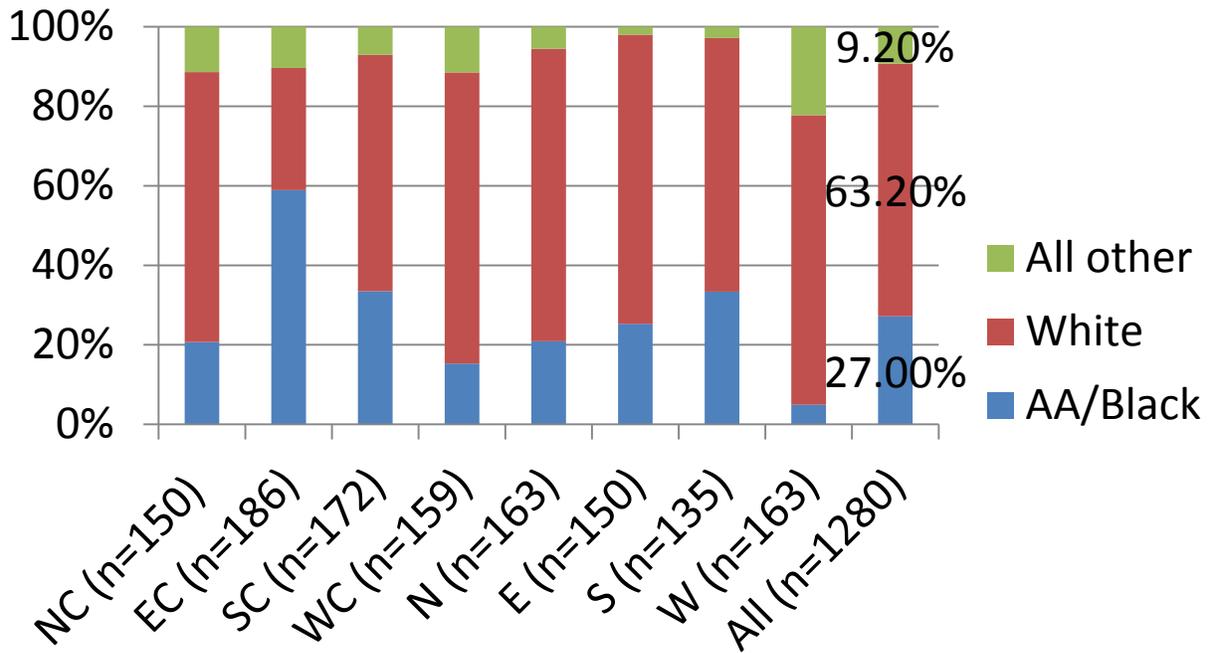
Graph 3: Education of Survey Respondents by Zone



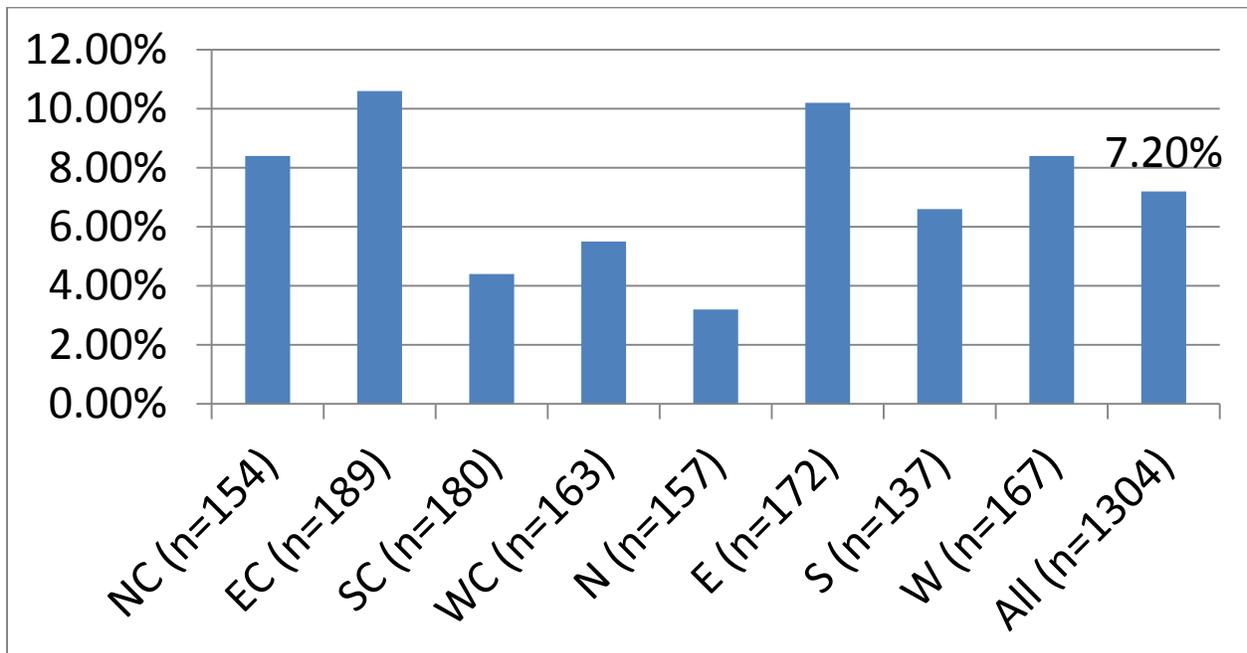
Graph 4: Employment Status of Survey Respondents by Zone



Graph 5: Race of Survey Respondents by Zone



Graph 6: Are you Hispanic/Latino?



Selected survey results are included in each chapter. For a full report of survey results, see Appendix A.

Focus Group Methodology

From April to July 2010, Wake County staff and community partners conducted 34 focus groups with 292 participants (which included five sessions exclusively with the Spanish-speaking community). Focus groups, a method to gather community perceptions on issues affecting the community, were conducted in order to gain a better understanding of the data collected from the community surveys and of the contrasting secondary data research. As with the Wake County community survey, focus groups were implemented using the eight Wake County Human Services zone model. Four focus groups arranged by age (13 to 17; 18 to 24; 25 to 64 and 65+ years) were planned for each of the eight zones.

Focus group questions were developed based on the survey results. One of the guiding principles used during the development of the questions was to address the disconnect that many would observe from the survey results and the secondary data. This process was not intended for participants to resolve the issues, but rather assist others in understanding them better. Information gathered from the focus groups, respective to zones, will allow municipalities to intentionally plan for the issues directly affecting their zone(s) and/or region.

The survey collected data on four specific areas:

- Environmental Issues
- Community Issues
- Risky Behaviors
- Health Issues

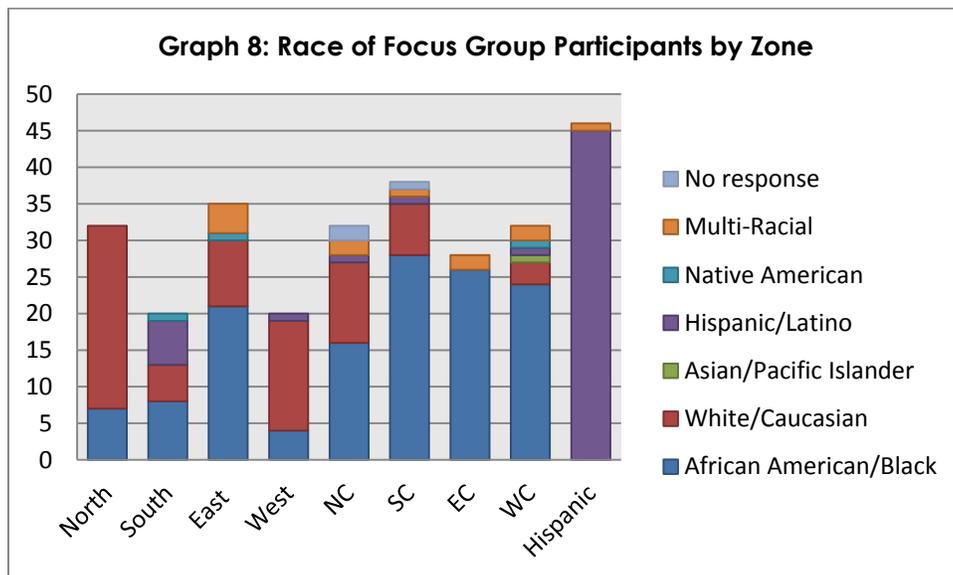
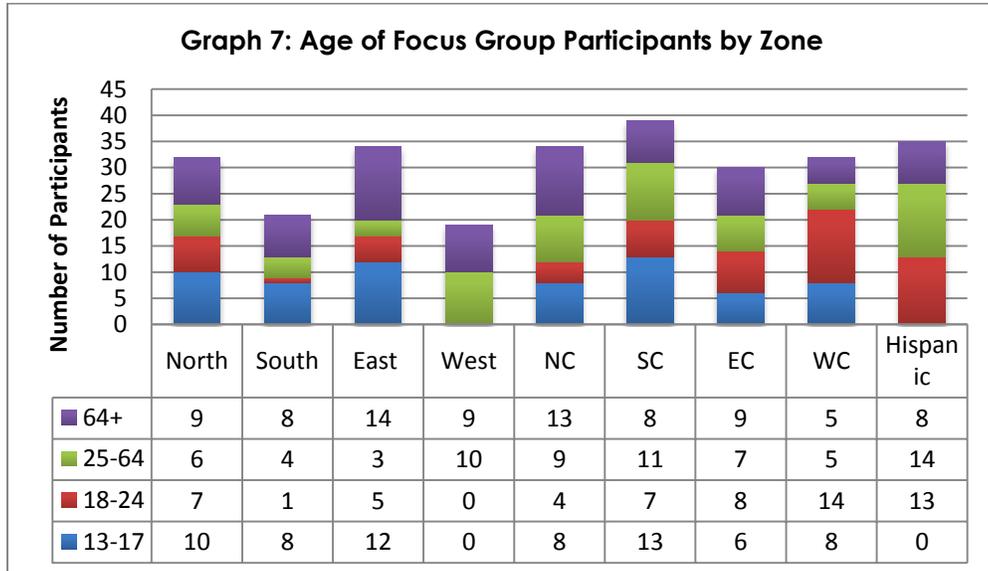
The survey asked respondents (per zone) to identify their five most important issues in each of the four areas. In order to further understand the information gleaned from the surveys, focus group participants were asked to elaborate on the top two issues identified from each of the focus areas.

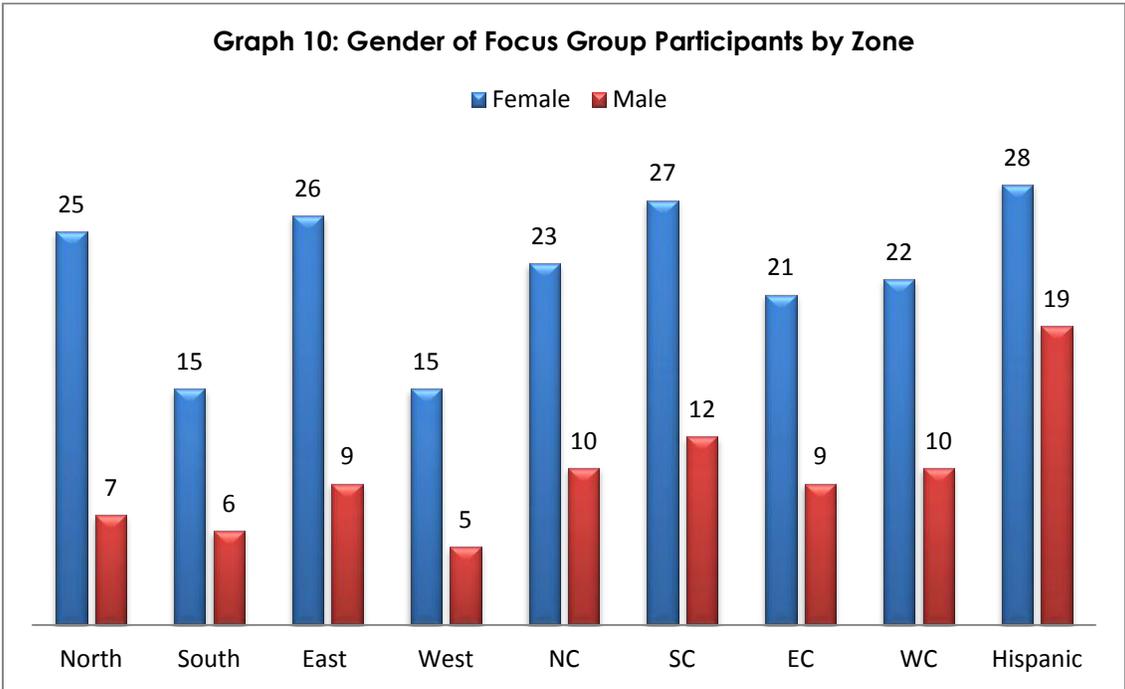
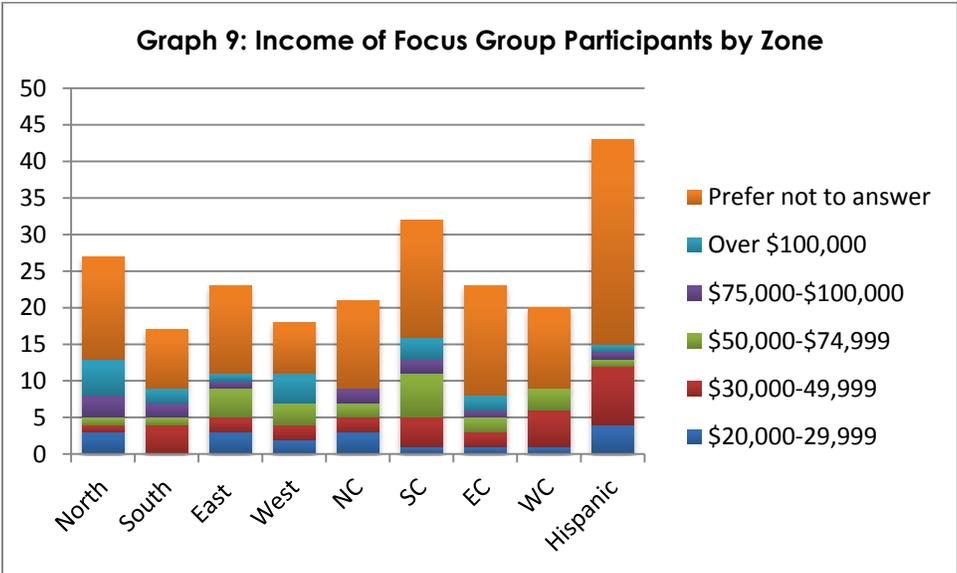
A sample of the questions and the analyzed data can be found in Appendix B. *Atlas.ti* software was used to analyze focus group data. Common themes as well as outstanding issues in specific zones are highlighted in the focus group report.

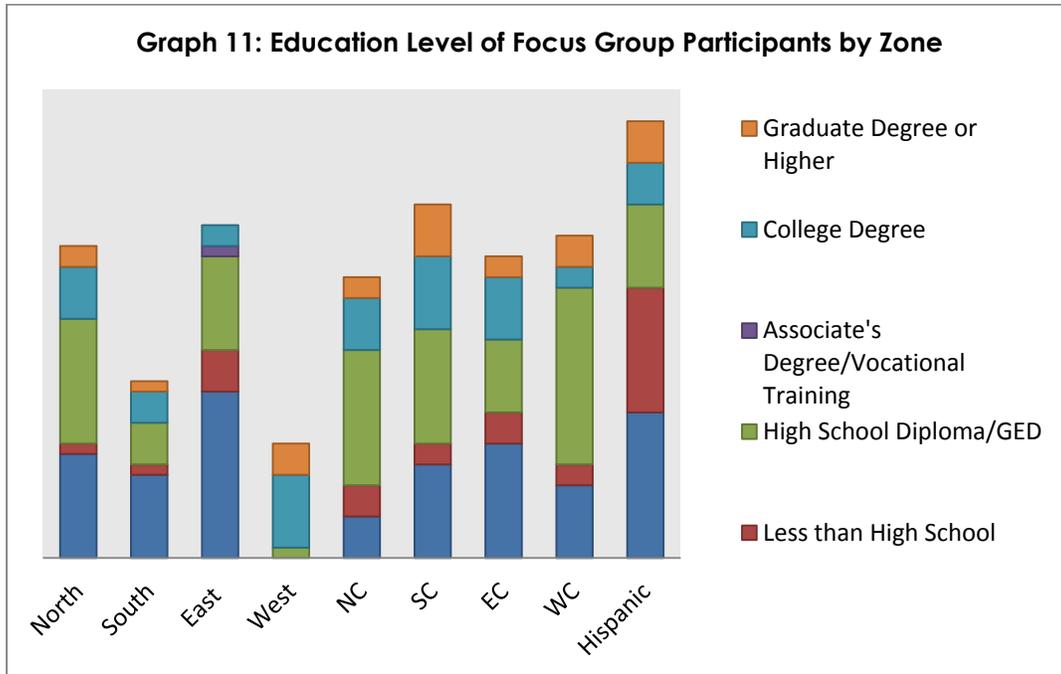
The limitations for gathering qualitative data should be noted. A conscious effort was made to align the demographics of the focus group participants with Wake County's demographics; however recruitment attempts fell short of that. While the demographics of focus group participants do not align with County demographics, they do proportionately represent Human Services' clientele.

Focus Group Demographics

Selected demographics of focus group participants by zone are included below. A full report of focus group results can be found in Appendix B.







How this Document is Organized

Chapter one of this document begins with an overview of Wake County demographics, including specific demographics for each of the 12 municipalities of the County. The chapter also includes the history of Wake County, the County geography and implications of the data for the community.

The document follows with six “issue” chapters which provide data on multiple topics related to the issue. The six issue chapters include:

1. Behavioral and Social Health
2. Economic Health
3. Environmental Health
4. Lifelong Learning
5. Physical Health
6. Safety

Each chapter is organized according to the life cycle (from birth to death) where appropriate, and each section follows the following template:

1. Community Perceptions
2. Statistics and Trends
3. Resources and Strengths
4. Disparities, Gaps and Unmet Needs
5. Implications and Emerging Issues

The document concludes with a description of the Community Prioritizing process, the priorities selected for the County and each zone, and a discussion on next steps.

Introduction

Wake County consists of 12 municipalities and includes Raleigh, the county seat and state capital. A unique mix of urban and rural small towns distinguishes Wake County from other counties and provides something for every lifestyle. According to the 2010 U.S. Census data Wake County has a population of 900,993 residents, ranging from over 400,000 in the City of Raleigh to over 3,000 in the Town of Rolesville. Wake County's population grew 3rd fastest among the nation's 100 most populous counties during the period July 2000 - July 2009. Five of the county's 12 municipalities were among the state's nine fastest growing cities and towns in 2009. Wake County's public school system's 2009-2010 enrollment of 140,000 students ranked 18th nationally and was the largest in the state. The number of students enrolled in colleges located in Wake County exceeded 78,000 in 2009.

Wake County is consistently ranked as one of the best places in the U. S. to live, work and raise a family. Over the past four years the area has been recognized as:

#1 Healthiest County in N.C. (Wake County, N.C.) University of Wisconsin Population Health Institute, January 2010

#1 Quality of Life (Raleigh, N.C.) Portfolio.com/bizjournals, May 2010

#3 Best City for Small Businesses (Raleigh, N.C.) American City Business Journal, July 2010

#5 Strongest Job Market (Raleigh-Cary, N.C.) Manpower, July 2010

#3 Most Innovative City (Raleigh, N.C.) Forbes, May 2010

#8 Best Place to Live (Raleigh, N.C.) RelocateAmerica.com, April 2010

#3 Best Place for Business and Careers (Raleigh, N.C.) Forbes.com, April 2010

#3 Market for Young Adults (Raleigh, N.C.) Portfolio.com/bizjournals, March 2010

#4 Best Place to Retire and Row (Raleigh, N.C.) The Rower's Almanac, March 2010

#1 Healthiest Housing Market (Raleigh-Cary, N.C.) Hanley Wood Market Intelligence, February 2010

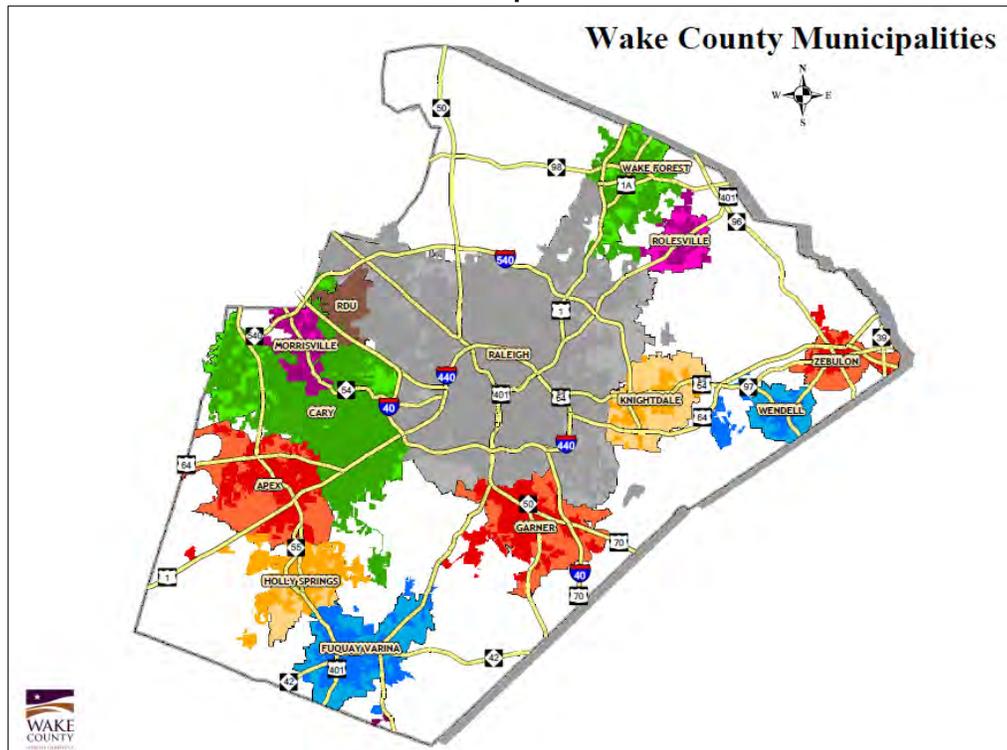
#1 America's Smartest Cities (Raleigh-Durham, N.C.) The Daily Beast, October 2009

#1 Best Place to Live in the U.S. (Raleigh, N.C.) msnbc.com, June 2008

#2 Best City for Bargain House-Hunters (Raleigh, N.C.) Forbes.com, February 2008

5-Star Public Education Metro (Raleigh-Cary, N.C.) Expansion Management, December 2007

Map 1



History

In 1771, the North Carolina General Assembly created Wake County from Johnston, Cumberland, and Orange counties. The leaders of the state decided to locate the capital of North Carolina in Raleigh in 1792. Raleigh, though the seat of the state and county government, remained a small southern town until the 1920s, and the surrounding countryside remained primarily rural until after World War II. From early settlement in the 1730s to around the time of the Civil War, Wake County shared a way of life with most of North Carolina, with its scattered modest-sized farms and sparsely populated communities. Rural localities, each usually containing a church, school, store, gristmill, and (by the early 20th century) cotton gin, were the hubs of human activity. Farming families raised and produced most, if not all of their food and apparel, and few ventured far from home to market their surpluses. Following the era of initial settlement, population growth in the County was slow, particularly in the 1820s and 1830s when many residents moved out of the County to developing areas of the state and nation where fresh land was plentiful and cheap, and opportunities were better for commercial farming. Beginning in the 1840s, railroad construction stemmed out-migration somewhat by providing some commercial farmers with links to important regional and northern markets. However, although market-oriented agriculture was gaining a foothold, subsistence farming still dominated Wake County rural life.

The six decades between the Civil War and World War I were years of tremendous change in Wake County and throughout North Carolina. Economic pressures, population growth, and increased contact with people outside the state began transforming traditional ways of living. The Civil War and Reconstruction altered both white and black labor systems and generated

changes in the South's social and economic structures. An economic system based on tenant labor and the commercial production of cotton and tobacco evolved, which brought prosperity to some farmers but led many into poverty. Wake County's rural landscape became decidedly different during these years, as larger farms were divided and subdivided into smaller farms. The cultivation of tobacco required specialized curing and storage barns, the numbers of which grew exponentially as many farmers turned from cotton to tobacco in the early 20th century. Commercial and industrial expansion spread throughout the county as more and more railroads were constructed to connect Wake to important market centers, and towns were established to serve local commercial needs.

During the years immediately after the Civil War, there were very few large-scale construction projects in rural Wake County, as the County's citizens struggled to recover from the conflict and its resulting economic problems. By the mid-1880s, however, a period of relative prosperity dawned. Subsistence and diversified farming gave way on many farms to mono-crop commercial agriculture. Population and the number of farms increased dramatically and railroads created new towns. At the same time, the size of farms decreased and the number of families who worked as tenants on the farms of others rose steadily. Tremendous numbers of buildings in the county's rural areas and small towns were built from the 1880s to the 1910s, reflecting the architectural transformation that was a part of these enormous changes.

The landscape is densely populated with small farmsteads dating from these years, most with simple, conservative houses and farm buildings. The small towns that grew up during the late 19th and early 20th centuries are, for the most part, artifacts of the development that railroads fostered and that cotton and tobacco markets nurtured.

An agricultural depression during the early 1920s ended the brief period of rural prosperity after World War I. And as Wake County farmers and townspeople encountered The Great Depression of the 1930s, traditional ways of life began to change more rapidly. Automobiles and better roads encouraged mobility. Federal government limits on cotton and tobacco production levels, as well as the mechanization of farming and the increased use of pesticides, reduced the amount of acreage under cultivation and the number of laborers in the fields. By the time of World War II, a county that was once predominantly rural and agricultural was becoming increasingly urban and oriented toward commercial and industrial interests.

Though increasingly urbanized, the Wake County of today still bears some resemblance to its past appearance. Many areas near the edges of the County remain rural, and family and neighborhood networks are still vital to the social fabric of rural communities. A surprisingly large number of traditional farmhouses, farm buildings and small community churches, schools, and stores still dot the landscape, although they are rapidly being replaced or surrounded by subdivisions and shopping centers. Despite all of the growth in recent years, interest in Wake County's rural and small-town heritage thrives, fostered by local historical societies and other public and private groups who promote community pride among old and new residents alike. (Lally, 1994) The faith community in Wake County has become a powerful force, addressing health and social issues in the community.

Geography

Wake County covers approximately 860 square miles of land and water (about 834 square miles in land area). Twelve core municipalities - from **A**pex to **Z**ebulon - are located primarily in Wake County "proper." Three other municipalities - Angier, Clayton and Durham - have annexed into Wake County from neighboring counties. They are not featured in this report. Their community health assessments should be addressed by their "parent" counties - Harnett, Johnston and Durham respectively.

Demographic Characteristics

Below are general descriptions of the reported demographic data:

- Population is the number of residents living in a city, town, county, state or country.
- Land area is the size in square miles in areas designated as land.
- Population density is the average number of residents per square mile of land area. These figures are derived by dividing the total number of residents by the number of square miles of land area in the specified geographic area.
- Median Age is the age where exactly half the population is older and half the population is younger.
- Race reflects which race category the Census respondent identified. Due to space constraints, in these profiles percentages are reported for those races that comprise at least 4 percent of the total county population.
- Ethnicity reflects whether the Census respondent identified him/herself as Hispanic or not of Hispanic origin.
- Average Household Size is the total population living in households divided by the total number of households.
- Median Household Income is the income where exactly half the households earn more and half the households earn less.

WAKE COUNTY BY THE NUMBERS: 2000 – 2009

During the 1990s, Wake County grew at an average rate of 4.8 percent annually.

Since 2000:

- Wake County's landscape continues to evolve into a more urban form.
- Wake County's population continues to diversify with new residents migrating from other counties, states and countries.
- Wake County has added, on average, 80 residents every day (persons who are born here or move here).
- Wake County's marketplace continues to change to meet the demands and service needs of a growing, diversifying population.

The U.S. Census Bureau's Wake County July 1, 2009 population estimate of 897,214 represents:

- An increase of 263,697 residents since July 1, 2000: 80 newcomers per day
- An average annual growth rate of 4.6 percent since July 1, 2000
- An increase of 29,146 residents since July 1, 2008 - 70 newcomers per day
- An increase of 3.4 percent from July 1, 2008 – ranked second among the nation's 100 most populous counties

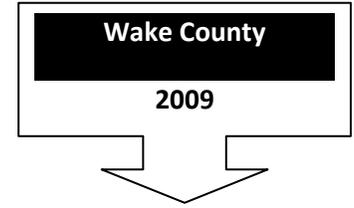
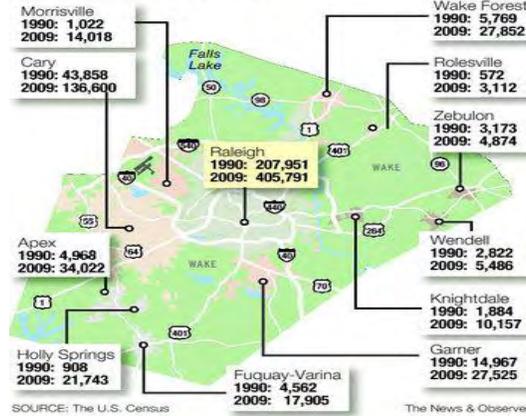
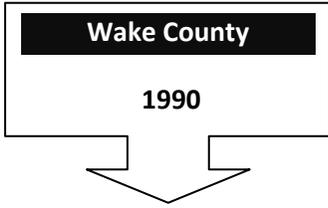
The Census Bureau also released its July 2009 municipal population estimates in June 2010. The Town of Cary's population annual growth rate (5.7 percent) ranked second nationally among cities with at least 100,000 residents. Five of the 10 fastest growing municipalities in North Carolina are located in Wake County:

- #1 Knightdale – 24.5 percent**
- #3 Rolesville – 10.4 percent
- #6 Fuquay-Varina – 5.8 percent
- #7 Cary – 5.7 percent
- #9 Holly Springs – 4.6 percent

The U.S. Census Bureau estimated approximately 270,000 residents had settled in Wake County between April 1, 2000 (Census Day) and July 1, 2009. The most recent Census Bureau data estimated the combined 2009 population of the 2nd – 7th largest towns in Wake County (Cary, Apex, Wake Forest, Garner, Holly Springs and Fuquay-Varina) as 265,648. Between the 1990 and 2000 census counts, Wake County's population increased by 201,535 residents. Wake County exceeded last decade's total increase within seven years.

Population changes

Small-town population explosions have contributed to Wake County's rapid growth. Examples below are from 1990 census data and 2009 projections. Numbers do not include unincorporated areas.

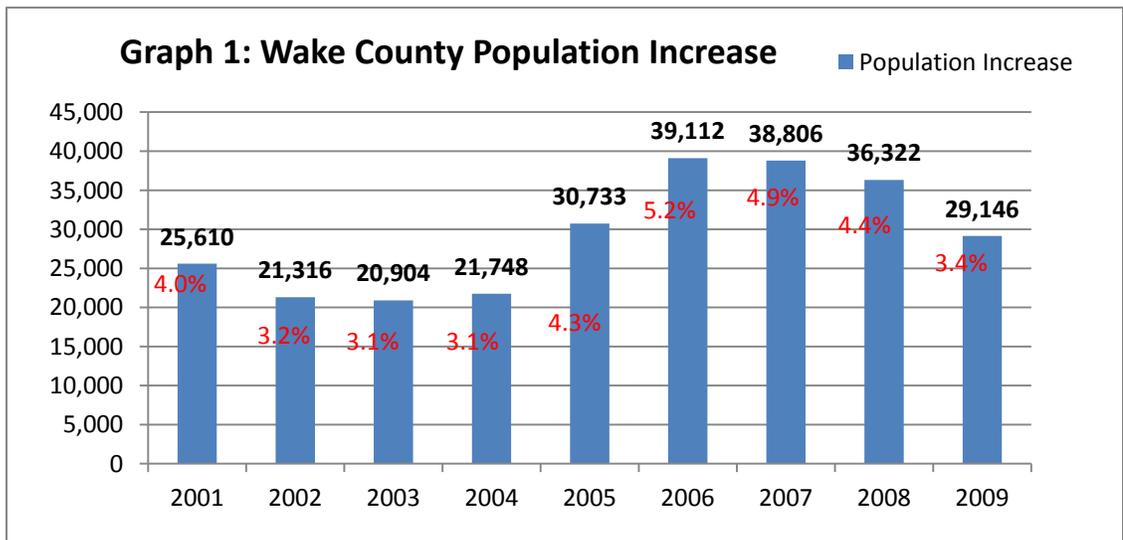


Urbanization Trends: Population Growth & Diversity

Population Growth

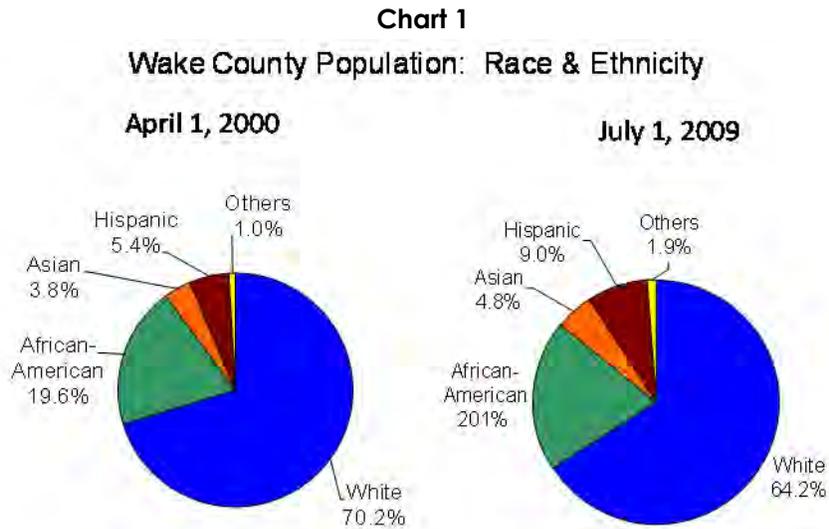
During the 1990s, Wake County grew at an average rate of 4.8 percent annually. During the first five years of the millennium, Wake County's growth slowed slightly to about 4.0 percent annually. During this time, Wake County experienced an increase of the number of residents' births and housing permits, public school student population growth, and a more diverse population.

However the County experienced unprecedented growth in the second half of the decade. From July 2006 – July 2009, Wake County's annual population growth rate ranked first or second nationally among the 100 most populous counties. The rate ranged from 5.2 to 3.4 percent.



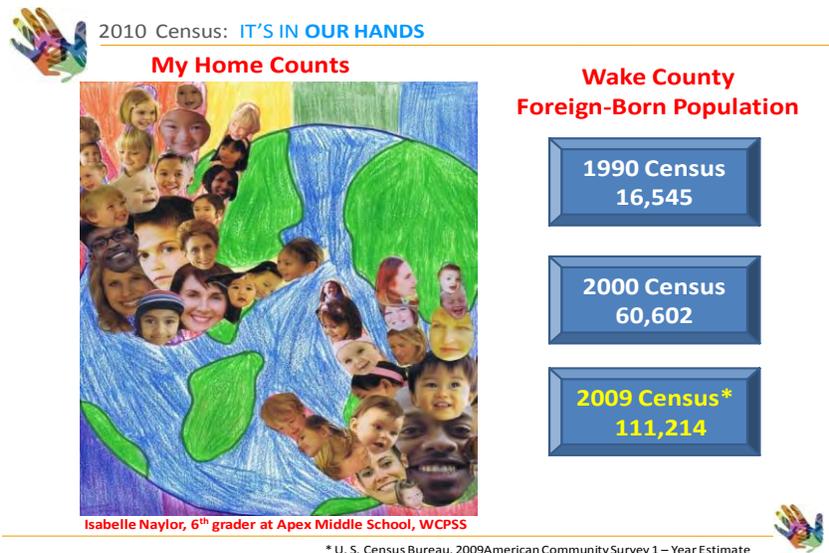
DIVERSITY

Although White, non-Hispanic residents comprise the largest racial group in Wake County, they declined as a percentage of total population between 2000 and 2009 (from 70 percent to 64 percent). Between 2000 and 2009 growth of the Hispanic/Latino population was the most substantial.



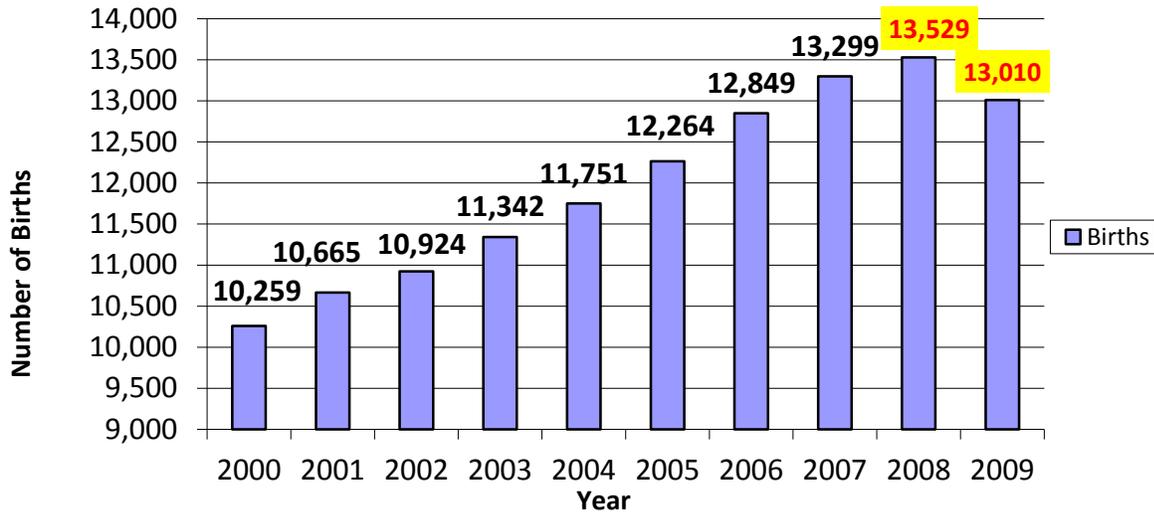
Source: US Census Bureau 2000 & 2009

The number of foreign-born residents is another measure of a diversified population. The U.S. Census Bureau reported the number of County residents born outside of the U.S. exceeded 111,000 in July 2009.



The growing number of births to non-white mothers also reflects the growing diversity of the County's population. All ethnic/racial groups experienced an increase in resident births. However the largest increase has been in Hispanic births (until 2009).

Graph 2: Wake County Live Resident Births 2000-2009



Source: N.C. Center for Health Statistics

The number of births to women who lived in Wake County declined in 2009 by 519. It was the first reduction in total resident births in Wake County since 1990-2009. According to the N.C. Center for Health Statistics, Hispanic women gave birth to 400 less babies in 2009 than 2008.

**Table 1: WAKE COUNTY BIRTHS: 2000 – 2009
BY RACE & ETHNICITY**

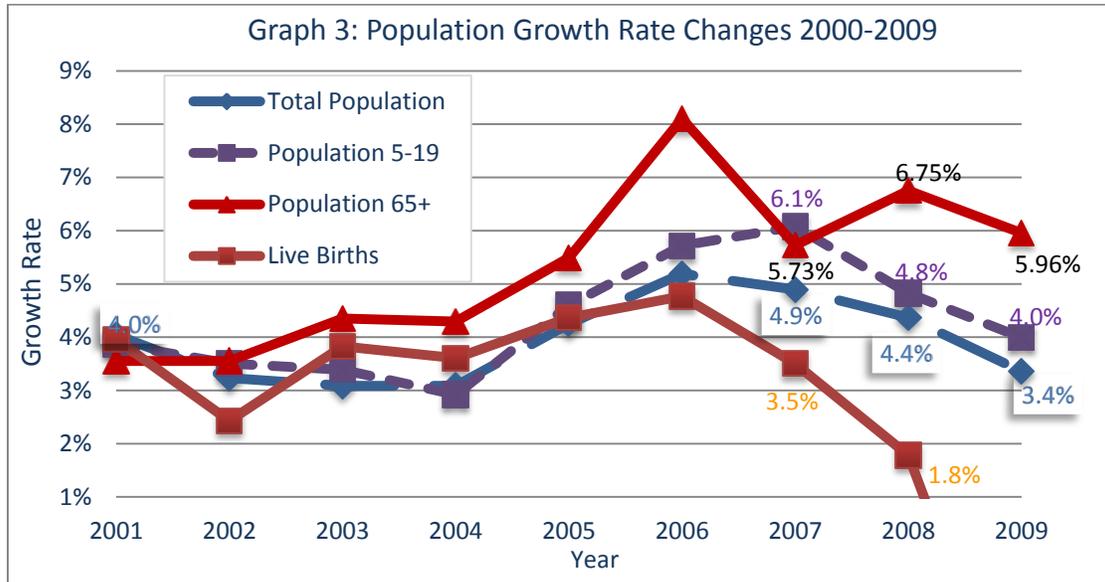
Race/Ethnicity	2000	2005	2008	2009
White	6,378	6,743	6,987	7,022
African-American	2,211	2,556	2,913	2,789
Asian	411	654	875	868
Other	113	95	93	81
Hispanic Origin	1,146	2,216	2,661	2,250
Total	10,259	12,264	13,529	13,010

2010 – 2014 Wake County Population Projections

So who and how many people will populate Wake County in 2010?

How different or alike will they be from those who moved or were born here during the previous decade?

How will these new residents impact County services and programs in 2010?



Source: N.C. State Demographer's Office and N.C. Center for Health Statistics

NATIVITY AND LANGUAGE: Twelve percent of the people living in Wake County in 2009 were foreign born. Eighty-eight percent was native, including 44 percent who were born in North Carolina. Among people at least five years old living in Wake County in 2009, 16 percent spoke a language other than English at home. Of those speaking a language other than English at home, 49 percent spoke Spanish and 51 percent spoke some other language; 39 percent reported that they did not speak English "very well."

EDUCATION: In 2009, 91 percent of people 25 years and over had at least graduated from high school and 48 percent had a bachelor's degree or higher. Nine percent were dropouts; they were not enrolled in school and had not graduated from high school.

DISABILITY: In Wake County, among people at least five years old in 2009, seven percent reported a disability. The likelihood of having a disability varied by age - from three percent of people 5 to 15 years old, to six percent of people 16 to 64 years old, and to 33 percent of those 65 and older. (*American Community Survey, 2009*)

FAITH: From African Methodist Episcopal to Zen Buddhism, Wake County offers a wide range of worship and meditative opportunities. According to information compiled by the Inter-Faith Alliance of Wake County, over 800 faith-based churches or faith groups exist in the county.

In 2001 forecasts indicated that Wake County's annual population growth rate would steadily decline to 3.0 percent in 2009. Between July 2008 and July 2009, Wake County's growth "slowed" to 3.4 percent annually. That rate pales in comparison to the 4.3 percent and 4.9 percent growth rates of the two preceding years.

The Census Bureau will begin releasing its county-level 2010 Census data in 2011. The State Demographer's Office projects county-level population annually. The State Demographer forecasts Wake County's population surpassing Mecklenburg County's in 2010 and exceeding 1 million residents in 2013.

Graph 4

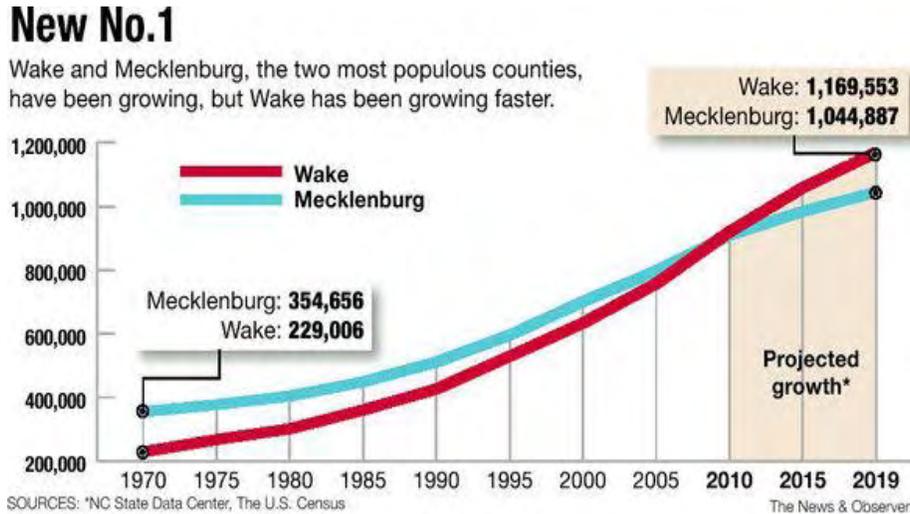


Table 2: Wake County Population Projections

Year	N.C. State Demographer Population Projection	Projected Annual Growth Rate
2010	919,938	3.1 %
2011	947,459	3.0 %
2012	974,978	2.9 %
2013	1,002,495	2.8 %
2014	1,030,015	2.7 %

Impacts and Implications

These demographic components and others noted previously in this report – urban growth and population diversity – influence program delivery and design decisions for Wake County departments. They affect housing type, development code provisions, and land use strategies for planning sustainable, functional and desirable residential, working, educational and recreational activity centers. Issues pertaining to transporting people, goods and services and environmental resources conservation and protection, public safety and public health also arise when resolving impacts associated with increased densities and more intense development.

Faith

Faith-based organizations in Wake play a critical role in areas such as health promotion and disease prevention programs (i.e. cardiovascular health, diabetes, substance abuse, HIV/AIDS, STDs, health screenings, health fairs, and environmental and policy changes regarding nutrition and physical activity), counseling/mental health, housing, unemployment and many other social issues. Although religion cannot guarantee good health, it does seem to provide good habits, social support and interaction, and it helps reduce stress. Churches and faith groups are forging many successful initiatives to encourage lifestyles changes. The faith community provides continuous support to families in need and plays a critical role in health promotion, care and social issues.

The faith community in Wake County provides a great deal of assistance and services to the community, such as: food banks, soup kitchens, clothing and linen closets, financial assistance, counseling, mentoring, camps and after school programs to children and youth, exercise classes and walking groups. Faith organizations also provide health care, housing/shelter for the homeless and seniors, substance abuse prevention counseling and resources related to faith and meditation.

Community Profiles

This chapter contains profiles on population, household and economic trends for Wake County and each of its 12 core municipalities. For comparative analysis among the 12 towns of varied population size, the U.S. Census Bureau's five year (2005-2009) American Community Survey (ACS) socio-economic data was used to develop each jurisdiction's profile. ACS estimates are also published annually for single year and three year average releases for geographies with minimum population of 65,000 and 20,000 residents respectively. Several of the smaller towns in Wake County do not meet the 20,000 population threshold, thus the reason for using the five year average estimates.

Each profile concludes with a chart reflecting population change during the decade. Another Census Bureau program (the Population Estimates Program) was the source data for the charts. This program annually updates total resident population estimates for the nation and each state, county and municipality between decennial censuses. At the time of this reporting, July 1, 2009 population estimates were available for each Wake County municipality.



Image: Wake County Website. September 2010. www.wakegov.com 336 Fayetteville Street Raleigh NC 27602 (919) 856-6160

About Wake County

Geography Land Area
 Wake County 834.5 square miles
 2009 Density 1,075 people per square mile

Population (See Bar Chart - Right Column)

Wake County 897,214 (est. July 2009)

2005-2009 Census Data from the American Community Survey – U.S. Census Bureau
Selected Race/Ethnic Origin (percent of population)

White – 65.2
 African-American – 20.0
 Asian – 4.6
 Hispanic Origin – 8.3
 Foreign Born Population – 11.8
 Language Other Than English Spoken at Home – 14.8

Age Distribution (percent of population)

Under 5 years 7.9
 Under 20 years 29.1
 65 and over 8.0
 Median Age 33.8

Female 50.5
 Male 49.5

Educational Attainment

Percentage of Persons 25 years and over with:
 High School Diploma or higher 91.2
 Bachelor's Degree or higher 47.5

Persons Living Below Poverty Level – 9.4 percent

Total Households – 310,280
 Average household size – 2.60
 Average family size – 3.21

2008 Median Household Income

United States - \$51,425
 North Carolina - \$45,069
Wake County - \$64,008

Wake County 2008 Household Income and Benefits	Percent
Less than \$10,000	5
\$10,000 to \$14,999	4
\$15,000 to \$24,999	8
\$25,000 to \$34,999	9
\$35,000 to \$49,999	13
\$50,000 to \$74,999	18
\$75,000 to \$99,999	14
\$100,000 to \$149,999	17
\$150,000 to \$199,999	6
\$200,000 or more	6

Wake County Population Estimates July 2000-2009

(U. S. Census Bureau, 2009 Population Estimates)

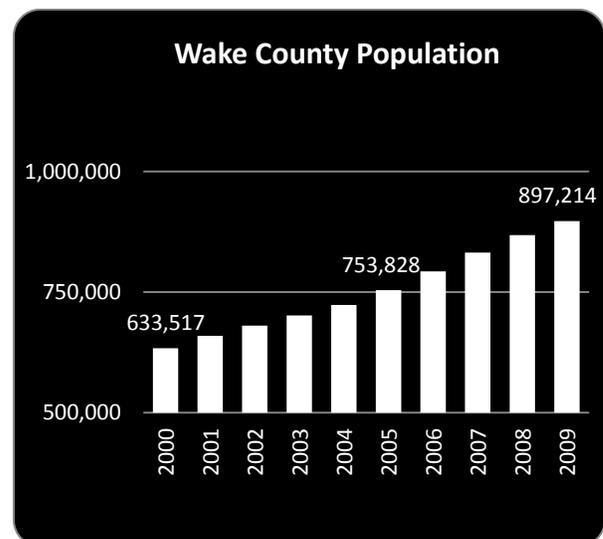




Image: Town of Apex Website. September 2010. www.apexnc.org 73 Hunter Street Apex NC 27502 (919) 249-3400

About Apex

If you are not familiar with Apex, we are a vibrant, progressive, family-oriented community in western Wake County. You will quickly see that Apex retains its small-town character in a region that is experiencing rapid growth. In 2007, Apex was named the 14th Best Place to Live in the USA by *Money Magazine*. In 2009, *Forbes.com* presented Apex as the #3 Best Place to Move in America. Apex has an unlimited potential as we enter a new and dramatic era in our development. It's no wonder we're called the Peak of Good Living! - *Excerpt from Mayor's Message*

Geography	Land Area
Town of Apex	10.5 square miles (2000)
Town of Apex	15.8 square miles (2009)
2009 Density	2,154 people per square mile
Wake County	834.5 square miles

Population (See Bar Chart in Right Column)

Town of Apex	34,031 (est. July 2009)
Wake County	897,214 (est. July 2009)

2005-2009 Census Data from the American Community Survey – U.S. Census Bureau
Selected Race/Ethnic Origin (percent of population)
 White –75.3
 African-American – 7.6
 Asian – 6.8
 Hispanic Origin – 6.7
 Foreign Born Population – 12.5
 Language Other Than English Spoken at Home – 13.7

Age Distribution (percent of population)

Under 5 years	9.4
Under 20 years	35.5
65 and over	4.2
Median Age	33.0
Female	50.6
Male	49.4

Educational Attainment

Percentage of Persons 25 years and over with:	
High School Diploma or higher	95.6
Bachelor's Degree or higher	54.9

Persons Living Below Poverty Level – 2.9 percent

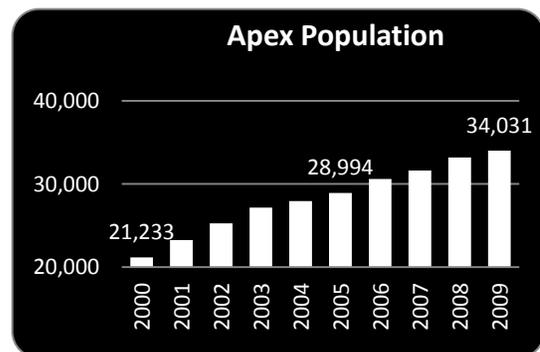
Total Households – 10,660
Average household size – 2.97
Average family size – 3.44

2008 Median Household Income

United States - \$51,425
North Carolina - \$45,069
Wake County - \$64,008
Town of Apex - \$82,522

Apex 2008 Household Income and Benefits	Percent
Less than \$10,000	2
\$10,000 to \$14,999	2
\$15,000 to \$24,999	5
\$25,000 to \$34,999	5
\$35,000 to \$49,999	10
\$50,000 to \$74,999	21
\$75,000 to \$99,999	19
\$100,000 to \$149,999	24
\$150,000 to \$199,999	7
\$200,000 or more	4

Town of Apex Population Estimates July 2000-2009 U.S. Census Bureau, 2009 Population Estimates)



TOWN of CARY

NORTH CAROLINA

At the Town of Cary we focus every day on enriching the lives of our citizens by creating an exceptional environment and providing exemplary services that enable our community to thrive and prosper



Image: Town of Cary Website. September 2010. www.townofcary.org 316 N. Academy Street Cary NC 27513 (919) 469-4000

About Cary

Our sense of security - Cary continually ranks as one of the top 20 safest large cities nationally and the safest in the Southeast.

Vibrancy - Cary is home to world class businesses and national retail stores.

Diversity - School-age children comprise nearly a quarter of Cary's population. Yet people of retirement age are the fastest-growing group in Cary. Fourteen percent of townspeople were born in another country, and the Asian population - Cary's largest minority - tripled during the 1990s - *Excerpts from "About Cary" webpage.*

Geography

Land Area

Town of Cary	42.1 square miles (2000)
Town of Cary	54.0 square miles (2009)
2009 Density	2,530 people per square mile
Wake County	834.5 square miles

Population (See Bar Chart in Right Column)

Town of Cary	136,637 (est. July 2009)
Wake County	897,214 (est. July 2009)

2005-2009 Census Data from the American Community Survey – U.S. Census Bureau

Selected Race/Ethnic Origin (percent of population)

White – 73.8
African-American – 6.5
Asian – 10.2
Hispanic Origin – 7.4
Foreign Born Population – 16.3
Language Other Than English Spoken at Home – 19.4

Age Distribution (percent of population)

Under 5 years	7.5
Under 20 years	30.6
65 and over	8.0
Median Age	35.9
Female	51.1
Male	48.9

Educational Attainment

Percentage of Persons 25 years and over with:	
High School Diploma or higher	95.0
Bachelor's Degree or higher	62.3

Persons Living Below Poverty Level – 3.9 percent

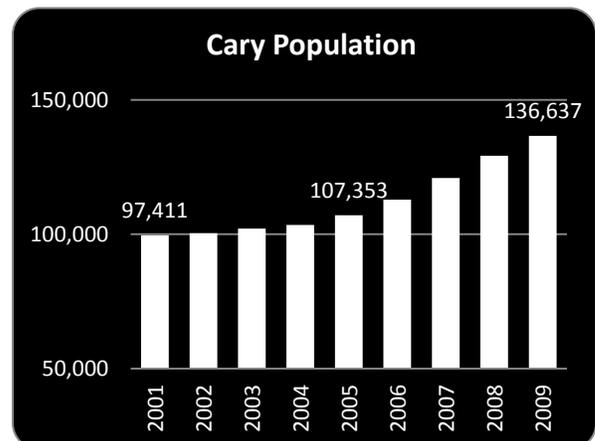
Total Households – 44,337
Average household size – 2.73
Average family size – 3.27

2008 Median Household Income

United States - \$51,425
North Carolina - \$45,069
Wake County - \$64,008
Town of Cary - \$87,751

Cary 2008 Household Income and Benefits	Percent
Less than \$10,000	2
\$10,000 to \$14,999	2
\$15,000 to \$24,999	5
\$25,000 to \$34,999	8
\$35,000 to \$49,999	10
\$50,000 to \$74,999	16
\$75,000 to \$99,999	14
\$100,000 to \$149,999	22
\$150,000 to \$199,999	10
\$200,000 or more	11

Town of Cary Population Estimates July 2000-2009 (U. S. Census Bureau, 2009 Population estimates)



The Town of **Fuquay-Varina** North Carolina

About Fuquay-Varina

Fuquay-Varina just celebrated our 100 year anniversary. In 2009, we celebrated our history all year long, but the truth is that we celebrate our history everyday here in Fuquay-Varina...Our town has an incredibly rich history...Over the past five years, our Town Board of Commissioners has made extensive efforts in preserving our two historical downtowns through two streetscape projects...In Fuquay-Varina, we also celebrate our present. Our local economy is strong and diverse. Over the past 10 years, our town population has been one of the fastest growing in North Carolina, more than doubling in size...Homes are affordably priced; we have several large employers and have welcomed a host of national retailers...Fuquay-Varina has something for everyone - *Excerpts from Mayor's Message.*

Geography	Land Area
Town of Fuquay-Varina	6.8 square miles (2000)
Town of Fuquay-Varina	12.2 square miles (2009)
2009 Density	1,468 people per square mile
Wake County	834.5 square miles

Population (See Bar Chart - Right Column)

Town of Fuquay-Varina	17,910 (est. July 2009)
Wake County	897,214 (est. July 2009)

2005-2009 Census Data from the American

Community Survey – U.S. Census Bureau

Selected Race/Ethnic Origin (percent of population)

White – 67.1
African-American – 21.2
Asian – 1.7
Hispanic Origin – 7.0
Foreign Born Population – 6.8
Language Other Than English Spoken at Home – 9.1

Age Distribution (percent of population)

Under 5 years	11.5
Under 20 years	29.8
65 and over	11.2
Median Age	34.2
Female	50.0
Male	50.0

Educational Attainment

Percentage of Persons 25 years and over with:	
High School Diploma or higher	90.5
Bachelor's Degree or higher	30.2

Persons Living Below Poverty Level – 8.6 percent

<i>Total Households – 5,641</i>
<i>Average household size – 2.71</i>
<i>Average family size – 3.11</i>

2008 Median Household Income

United States -	\$51,425
North Carolina -	\$45,069
Wake County -	\$64,008
Town of Fuquay-Varina -	\$58,822

Fuquay-Varina 2000 Household Income and Benefits	Percent
Less than \$10,000	7
\$10,000 to \$14,999	4
\$15,000 to \$24,999	10
\$25,000 to \$34,999	9
\$35,000 to \$49,999	12
\$50,000 to \$74,999	26
\$75,000 to \$99,999	14
\$100,000 to \$149,999	12
\$150,000 to \$199,999	5
\$200,000 or more	1

Town of Fuquay-Varina Population Estimates

July 2000-2009 Source: U. S. Census Bureau, 2009 Population Estimates

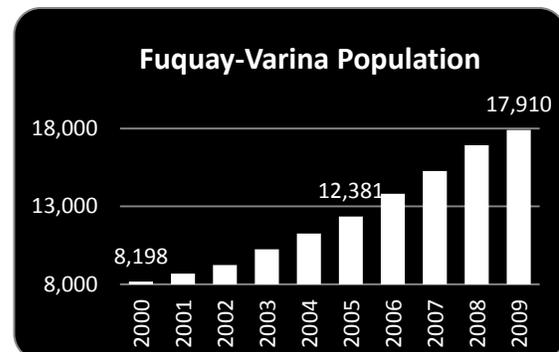




Image: Town Garner Website. September 2010. www.ci.garner.nc.us 900 7th Avenue Garner NC 27529 (919) 774-4418

About Garner

Nestled in the exciting, high-tech Research Triangle heart of North Carolina’s eastern Piedmont, Garner is a unique and inviting combination of the best of the old and the most innovative of the new... A truly fascinating harmony is found in our community of over 26, 000 people... Because Garner has a small-town heritage, it’s the kind of place where neighbors meet at their mailboxes to talk over local issues... Since development has been steady but not explosive over the last decade, Garner has had time to plan for essential facilities and services to accommodate the growth that’s now coming its way... *Excerpts from Newcomer’s Guide to Garner*

Geography	Land Area
Town of Garner	12.8 square miles (2000)
Town of Garner	15.0 square miles (2009)
2009 Density	1,836 people per square mile
Wake County	834.5 square miles

Population	(See Bar Chart in Right Column)
Town of Garner	27,533 (est. July 2009)
Wake County	897,214 (est. July 2009)

2005-2009 Census Data from the American Community Survey – U.S. Census Bureau
Selected Race/Ethnic Origin (percent of population)
 White – 58.1
 African-American – 32.2
 Asian – 1.2
 Hispanic Origin – 7.1
 Foreign Born Population – 5.6
 Language Other Than English Spoken at Home – 8.9

Age Distribution (percent of population)

Under 5 years	8.4
Under 20 years	26.0
65 and over	11.0
Median Age	34.2
Female	50.6
Male	49.4

Educational Attainment

Percentage of Persons 25 years and over with:	
High School Diploma or higher	89.3
Bachelor’s Degree or higher	32.6

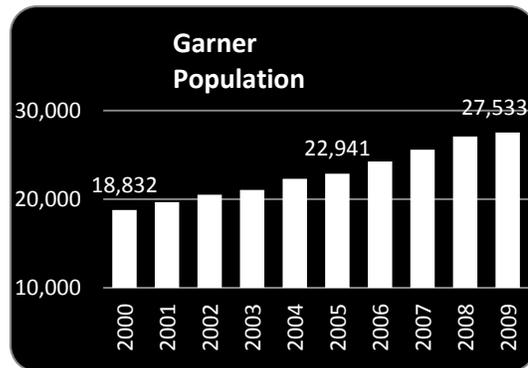
Persons Living Below Poverty Level – 3.9 percent

Total Households – 9,999
 Average household size – 2.54
 Average family size – 3.14

2008 Median Household Income
 United States - \$51,425
 North Carolina - \$45,069
 Wake County - \$64,008
Town of Garner - \$57,730

Garner 2008 Household Income and Benefits	Percent
Less than \$10,000	3
\$10,000 to \$14,999	3
\$15,000 to \$24,999	9
\$25,000 to \$34,999	11
\$35,000 to \$49,999	17
\$50,000 to \$74,999	20
\$75,000 to \$99,999	16
\$100,000 to \$149,999	15
\$150,000 to \$199,999	5
\$200,000 or more	1

Town of Garner Population Estimates July 2000-2009
 Source: U. S. Census Bureau, 2009 Population Estimates



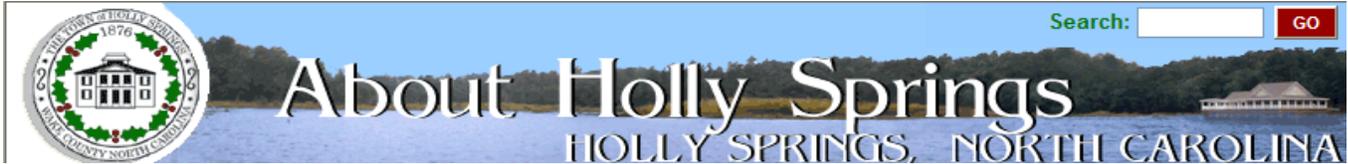


Image: Town of Holly Springs Website. September 2010. www.hollyspringsnc.us 128 S. Main Street Holly Springs NC 27540 (919) 552-6221

Persons Living Below Poverty Level – 5.1 percent

About Holly Springs

On behalf of the approximately 22,000 citizens of Holly Springs, I welcome you to one of the faster growing towns in North Carolina. Why, you ask? We have been named one of the safest towns to live in North Carolina among towns over 10,000... One of our goals has been to increase commercial development to balance our tax base... In 1990, our population numbered just under 1,000. Despite the rapid growth since, we still want to retain the best of small town life. We're addressing infrastructure needs such as water, sewer, and schools. Roads remain a real challenge. Education, public safety, and quality of life remain the most important strategic goals for Holly Springs...*Excerpts Mayor's Message*

Total Households – 6,273

Average household size – 3.03

Average family size – 3.42

2005 - 2009 Median Household Income

United States - \$51,425

North Carolina - \$45,069

Wake County - \$64,008

Town of Holly Springs - \$83,284

Geography

Land Area

Town of Holly Springs 7.5 square miles (2000)
 Town of Holly Springs 14.8 square miles (2009)
 2009 Density

1,470

people per square mile

Wake County 834.5 square miles

Population (See Bar Chart - Right Column)

Town of Holly Springs 21,749 (est. July 2009)
 Wake County 897,214 (est. July 2009)

Holly Springs 2008 Household Income and Benefits	Percent
Less than \$10,000	2
\$10,000 to \$14,999	1
\$15,000 to \$24,999	5
\$25,000 to \$34,999	6
\$35,000 to \$49,999	12
\$50,000 to \$74,999	19
\$75,000 to \$99,999	20
\$100,000 to \$149,999	22
\$150,000 to \$199,999	9
\$200,000 or more	4

2005-2009 Census Data from the American Community Survey – U.S. Census Bureau

Selected Race/Ethnic Origin (percent of population)

- White – 81.2
- African-American – 10.1
- Asian – 1.7
- Hispanic Origin – 4.0
- Foreign Born Population – 6.2
- Language Other Than English Spoken at Home – 7.6

Town of Holly Springs Population Estimates July 2000-2009 Source: U. S. Census Bureau, 2009 Population Estimates

Age Distribution (percent of population)

Under 5 years 12.1
 Under 20 years 36.3
 65 and over 5.9
 Median Age 33.1
 Female 51.0
 Male 49.0

Educational Attainment

Percentage of Persons 25 years and over with:
 High School Diploma or higher 94.9
 Bachelor's Degree or higher 52.1

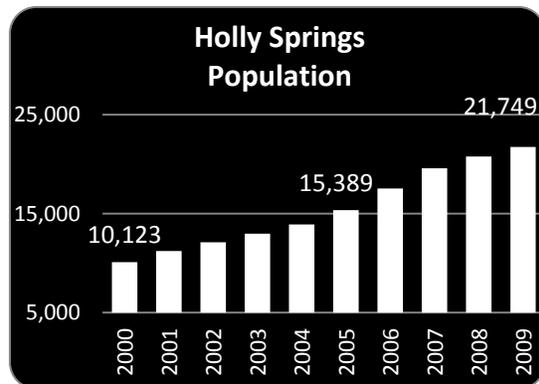




Image: Town of Knightdale Website. September 2010. www.knightdalenc.gov 950 Steeple Square Court Knightdale NC 27545 (919) 217-2220

About Knightdale

Based on the July 2009 Census population estimates, Knightdale topped the list as the fastest growing municipality in North Carolina from July 2008 to July 2009. The town’s population increased by almost 25 percent.

Vision Statement: Promote wellness through healthy and active neighborhoods and businesses.

Mission Statement: Serve the Citizens of Knightdale by providing leadership to promote quality living, balanced growth and economic opportunity. **Focus Areas:** Safe, Transparent, Active, Green, Engaged (STAGE). All Town Departments will adopt plans and goals that are established to promote the Council’s vision.

Excerpt from Knightdale website

Educational Attainment

Percentage of Persons 25 years and over with:

High School Diploma or higher 90.6

Bachelor’s Degree or higher 39.9

Persons Living Below Poverty Level – 6.3 percent

Total Households – 2,517

Average household size – 3.12

Average family size – 3.62

2005-2009 Median Household Income

United States - \$51,425

North Carolina - \$45,069

Wake County - \$64,008

Town of Knightdale - \$68,308 (2000 Census)

Geography

Land Area

Town of Knightdale	2.7 square miles (2000)
Town of Knightdale	6.3 square miles (2009)
2009 Density	1,613 people per square mile
Wake County	834.5 square miles

Population (See Bar Chart - Right Column)

Town of Knightdale	10,160 (est. July 2009)
Wake County	897,214 (est. July 2009)

2005 - 2009 Census Data from the American Community Survey – U.S. Census Bureau

Selected Race/Ethnic Origin (percent of population)

- White – 49.6
- African-American – 25.6
- Asian – 1.3
- Hispanic Origin – 17.2
- Foreign Born Population – 12.8
- Language Other Than English Spoken at Home – 20.5

Age Distribution (percent of population)

Under 5 years	11.6
Under 20 years	38.1
65 and over	5.3
Median Age	30.2
Female	54.9
Male	45.1

Knightdale 2000 Household Income and Benefits	Percent
Less than \$10,000	2
\$10,000 to \$14,999	2
\$15,000 to \$24,999	6
\$25,000 to \$34,999	10
\$35,000 to \$49,999	16
\$50,000 to \$74,999	24
\$75,000 to \$99,999	19
\$100,000 to \$149,999	16
\$150,000 to \$199,999	4
\$200,000 or more	1

Town of Knightdale Population Estimates

July 2000-2009 Source: U. S. Census Bureau, 2009 Population Estimates

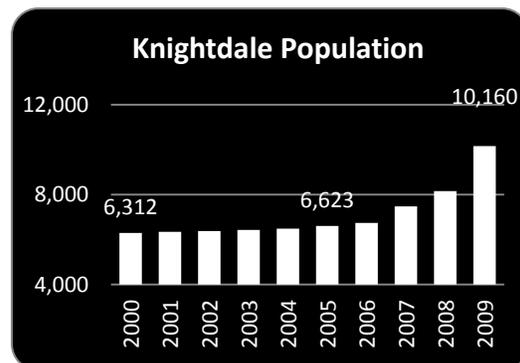




Image: Town of Morrisville Website. September 2010. www.townofmorrisville.org 100 Town Hall Drive Morrisville NC 27560 (919) 463-6200

About Morrisville

Morrisville is located in Wake County, in central North Carolina equal distance from Raleigh and Durham. We have a population of about 15,000, easy access to I-40, I-540, US-1 and are adjacent to Raleigh-Durham International Airport and Research Triangle Park, putting us in a prime location for doing business... People move to Morrisville for many reasons - our excellent schools, proximity to Research Triangle Park, and the Raleigh-Durham area to name a few. People stay in Morrisville because of the superb quality of life we offer.

Our businesses are thriving, our neighborhoods are safe, our winters are mild and our summers are warm.

Geography

Town of Morrisville	6.8 square miles (2000)
Town of Morrisville	7.8 square miles (2009)
2009 Density	1,797 people per square mile
Wake County	834.5 square miles

Land Area

Population (See Bar Chart - Right Column)

Town of Morrisville	14,018 (est. July 2009)
Wake County	897,214 (est. July 2009)

2005-2009 Census Data from the American Community Survey – U.S. Census Bureau

Selected Race/Ethnic Origin (percent of population)

- White – 56.2
- African-American – 9.5
- Asian – 27.7
- Hispanic Origin – 3.2
- Foreign Born Population – 27.1
- Language Other Than English Spoken at Home – 33.9

Age Distribution (percent of population)

Under 5 years	8.7
Under 20 years	29.0
65 and over	3.1
Median Age	32.6

Educational Attainment

Percentage of Persons 25 years and over with:

High School Diploma or higher	97.3
Bachelor’s Degree or higher	66.8

Persons Living Below Poverty Level - 2.8 percent

Total Households – 5,606
 Average household size – 2.34
 Average family size – 3.20

2005-2009 Median Household Income

United States - \$51,425
 North Carolina - \$45,069
 Wake County - \$64,008
Town of Morrisville - \$70,772

Morrisville 2000 Household Income and Benefits	Percent
Less than \$10,000	1
\$10,000 to \$14,999	1
\$15,000 to \$24,999	8
\$25,000 to \$34,999	9
\$35,000 to \$49,999	15
\$50,000 to \$74,999	19
\$75,000 to \$99,999	17
\$100,000 to \$149,999	16
\$150,000 to \$199,999	8
\$200,000 or more	6

Town of Morrisville Population Estimates July 2000-2009

Source: U. S. Census Bureau, 2009 Population Estimates

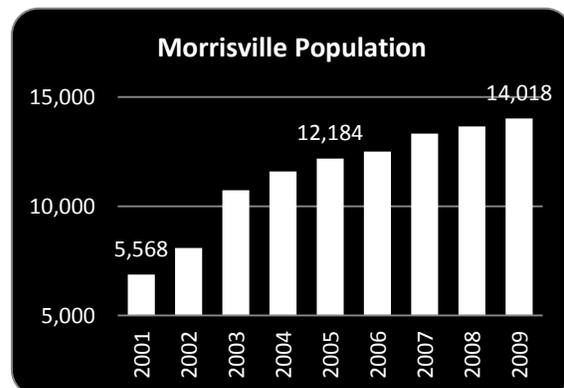




Image: City of Raleigh Website. September 2010. www.raleighnc.gov 222 West Hargett Street Raleigh NC 27601 (919) 996-3000

About Raleigh

- We are a 21st Century City of Innovation focusing on environmental, cultural and economic sustainability.
- We welcome growth and diversity through policies and programs that will protect, preserve and enhance Raleigh’s existing neighborhoods, natural amenities, rich history, and cultural and human resources for future generations.
- We work with our universities, colleges, citizens and regional partners to promote emerging technologies, create new job opportunities and cultivate local businesses and entrepreneurs.
Excerpts from City of Raleigh’s Mission Statement

Educational Attainment

Percentage of Persons 25 years and over with:
 High School Diploma or higher 90.2
 Bachelor’s Degree or higher 47.5

Persons Living Below Poverty Level - 13.9 percent

Total Households – 149,395
 Average household size – 2.40
 Average family size – 3.11

2005-2009 Median Household Income

United States - \$51,425
 North Carolina - \$45,069
 Wake County - \$64,008
City of Raleigh - \$53,370

Geography

Land Area

City of Raleigh 114.6 square miles (2000)
 City of Raleigh 142.4 square miles (2009)
 2009 Density 2,848 people per square mile
 Wake County 834.5 square miles

Population

(See Bar Chart in Right Column)

City of Raleigh 405,612 (est. July 2009)
 Wake County 897,214 (est. July 2009)

2005-2009 Census Data from the American

Community Survey – U.S. Census Bureau

Selected Race/Ethnic Origin (percent of population)

White - 56.5
 African-American - 28.0
 Asian – 4.1
 Hispanic Origin - 9.6
 Foreign Born Population – 13.5
 Language Other Than English Spoken at Home – 16.4

Age Distribution (percent of population)

Under 5 years 7.6
 Under 20 years 26.9
 65 and over 7.9
 Median Age 31.9
 Female 50.3
 Male 49.7

Raleigh 2008 Household Income and Benefits	Percent
Less than \$10,000	6
\$10,000 to \$14,999	5
\$15,000 to \$24,999	10
\$25,000 to \$34,999	11
\$35,000 to \$49,999	16
\$50,000 to \$74,999	17
\$75,000 to \$99,999	12
\$100,000 to \$149,999	14
\$150,000 to \$199,999	5
\$200,000 or more	4

City of Raleigh Population Estimates July 2000-2009

Source: U. S. Census Bureau, 2009 Population Estimates

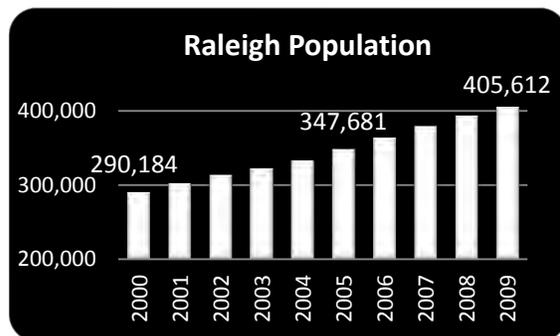




Image: Town of Rolesville Website. September 2010. www.ci.rolesville.nc.us 502 Southtown Circle Rolesville NC 27571 (919) 556-3506

About Rolesville

Welcome to Rolesville, the smallest but one of the fastest growing towns in Wake County, which is one of the fastest growing counties in the USA. With Raleigh growing from the south of Rolesville and Wake Forest growing to the west of Rolesville, we still strive to be a community oriented town. New comers will immediately find, even though small, we offer all the amenities of a larger town. A large multi-use park adjoins one of the elementary schools, a new centrally located Main Street Park [for passive recreation and relaxation], two large elementary schools, and the County’s number one EMS, Fire Department and Town’s own large Police Department. You will find that Rolesville is not just a Town but a great Community with friendship and cooperative fellowship that spans outside the Town limits. *Excerpt from Mayor’s Message*

Geography

	Land Area
Town of Rolesville	1.6 square miles (2000)
Town of Rolesville	4.1 square miles (2009)
2009 Density	759 people per square mile
Wake County	834.5 square miles

Population (See Bar Chart - Right Column)

Town of Rolesville	3,113 (est. July 2009)
Wake County	897,214 (est. July 2009)

2005-2009 Census Data from the American Community Survey – U.S. Census Bureau

Selected Race/Ethnic Origin (percent of population)
 White – 71.8
 African-American – 11.2
 Asian – 1.8
 Hispanic Origin – 12.2
 Foreign Born Population – 9.2
 Language Other Than English Spoken at Home – 12.7

Age Distribution (percent of population)

Under 5 years	14.3
Under 20 years	32.6
65 and over	9.9
Median Age	33.1
Female	50.5
Male	49.5

Educational Attainment

Percentage of Persons 25 years and over with:
 High School Diploma or higher 86.1
 Bachelor’s Degree or higher 26.9

Persons Living Below Poverty Level – 14.9 percent

Total Households – 731

Average household size – 3.11
 Average family size – 3.28

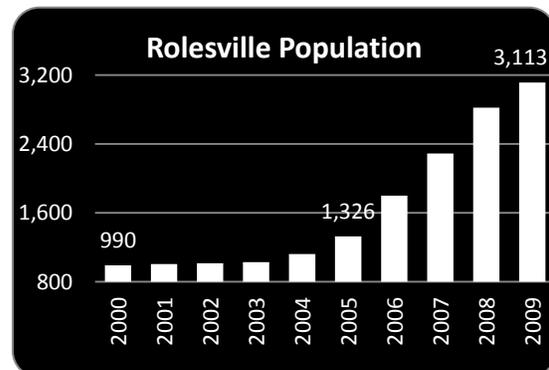
2005-2009 Median Household Income

United States - \$51,425
 North Carolina - \$45,069
 Wake County - \$64,008
Town of Rolesville - \$66,635

Rolesville 2005-2009 Household Income and Benefits	Percent
Less than \$10,000	8
\$10,000 to \$14,999	0
\$15,000 to \$24,999	8
\$25,000 to \$34,999	8
\$35,000 to \$49,999	16
\$50,000 to \$74,999	15
\$75,000 to \$99,999	18
\$100,000 to \$149,999	22
\$150,000 to \$199,999	5
\$200,000 or more	0

Town of Rolesville Population Estimates

July 2000-2009 Source: U. S. Census Bureau, 2009 Population Estimates



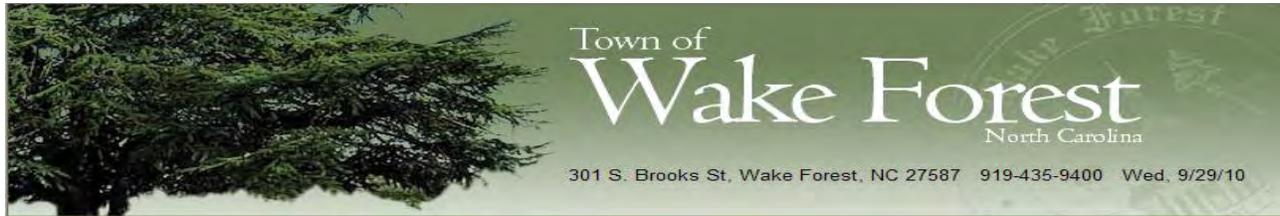


Image: Town of Wake Forest Website. September 2010

About Wake Forest

The Town of Wake Forest is committed to continue building a community populated by diverse groups whose common bond is a love of our town... Important elements of this vision are:

- Commercial services provided by locally owned and operated businesses...
- A comprehensive system of parks, greenways, facilities and open spaces coupled with cultural and recreational programs that promote health and welfare in a friendly, walkable community...
- To cooperate with and support community organizations that unite our residents...
Excerpt from Town's Vision Statement

Geography

	Land Area
Town of Wake Forest	7.8 square miles (2000)
Town of Wake Forest	14.9 square miles (2009)
2009 Density	1,873 people per square mile
Wake County	834.5 square miles

Population (See Bar Chart - Right Column)

Town of Wake Forest	27,915 (est. July 2009)
Wake County	897,214 (est. July 2009)

2005-2009 Census Data from the American Community Survey – U.S. Census Bureau
Selected Race/Ethnic Origin (percent of population)

- White – 80.2
- African-American – 11.2
- Asian – 2.2
- Hispanic Origin – 4.3
- Foreign Born Population – 5.7
- Language Other Than English Spoken at Home – 9.7

Age Distribution (percent of population)

Under 5 years	11.3
Under 20 years	34.2
65 and over	7.6
Median Age	32.9
Female	52.8
Male	47.2

Educational Attainment

Percentage of Persons 25 years and over with:

High School Diploma or higher	95.1
Bachelor's Degree or higher	53.1

Persons Living Below Poverty Level – 6.8 percent

Total Households – 8,459
Average household size – 2.84
Average family size – 3.35

2005-2009 Median Household Income

United States - \$51,425
North Carolina - \$45,069
Wake County - \$64,008
Town of Wake Forest - \$68,701

Wake Forest 2008 Household Income and Benefits	Percent
Less than \$10,000	4
\$10,000 to \$14,999	3
\$15,000 to \$24,999	6
\$25,000 to \$34,999	9
\$35,000 to \$49,999	14
\$50,000 to \$74,999	18
\$75,000 to \$99,999	14
\$100,000 to \$149,999	19
\$150,000 to \$199,999	8
\$200,000 or more	5

Town of Wake Forest Population Estimates July 2000-2009

Source: U. S. Census Bureau, 2009 Population Estimates

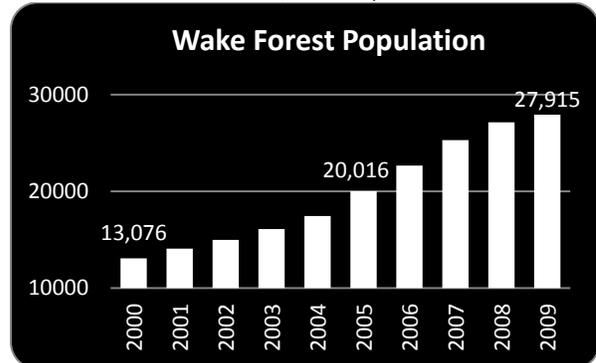




Image: Town of Wendell Website. September 2010. www.townofwendell.com 15 East 4th Street Wendell NC 27591 (919) 365-4450

About Wendell

Wendell is starting to experience increased growth and expansion due to the town’s close proximity to the City of Raleigh and Research Triangle Park via Highway US64. There are a wide range of housing opportunities within town, making Wendell the ideal location for families relocating to the region especially those seeking a more laid-back pace of life than found in and around downtown Raleigh. As Wendell continues to grow, the town’s elected officials and administration are committed to maintaining a high level of service with a focus on protecting the community’s small town feel. Within Wendell one can find a wide range of amenities, services, activities, and programs. Whether you enjoy taking an evening stroll, participating in youth and adult recreational leagues, or picking up fresh produce at the local farmer’s market...*Excerpts from Community Profile*

Educational Attainment

Percentage of Persons 25 years and over with:
 High School Diploma or higher 81.8
 Bachelor’s Degree or higher 21.8
Persons Living Below Poverty Level – 18.3 percent

Total Households – 2,028
Average household size – 2.54
Average family size – 3.22

2005-2009 Median Household Income

United States - \$51,425
 North Carolina - \$45,069
 Wake County - \$64,008
Town of Wendell - \$38,571

Geography

Town of Wendell
 Town of Wendell
 2009 Density
 Wake County

Land Area

2.0 square miles (2000)
 6.1 square miles (2009)
 900 people per square mile
 834.5 square miles

Population

(See Bar Chart - Right Column)

Town of Wendell 5,488 (est. July 2009)
 Wake County 897,214 (est. July 2009)

2005-2009 Census Data from the American Community Survey – U.S. Census Bureau

Selected Race/Ethnic Origin (percent of population)
 White – 59.7
 African-American – 26.9
 Asian – 0
 Hispanic Origin – 12.3
 Foreign Born Population – 5.3
 Language Other Than English Spoken at Home – 10.6

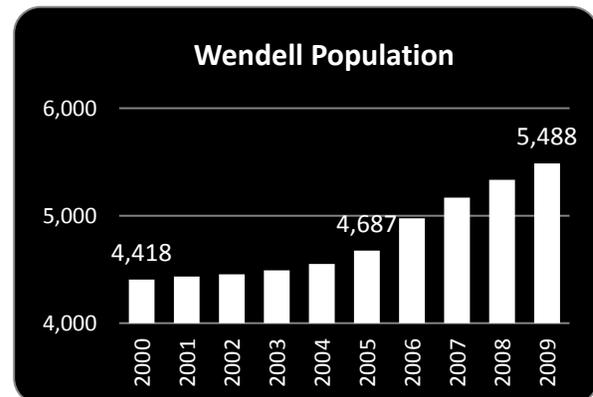
Age Distribution (percent of population)

Under 5 years 7.6
 Under 20 years 32.6
 65 and over 12.1
 Median Age 35.0

Female 53.0
 Male 47.0

Wendell 2000 Household Income and Benefits	Percent
Less than \$10,000	9
\$10,000 to \$14,999	11
\$15,000 to \$24,999	16
\$25,000 to \$34,999	11
\$35,000 to \$49,999	16
\$50,000 to \$74,999	16
\$75,000 to \$99,999	9
\$100,000 to \$149,999	9
\$150,000 to \$199,999	3
\$200,000 or more	0

Town of Wendell Population Estimates July 2000-2009 Source: U. S. Census Bureau, 2009 Population Estimates



Zebulon

North Carolina
"The Town of *Friendly People*"

Image: Town of Zebulon website. June 2010. 100 North Arendell Avenue Zebulon NC 27597 (919) 269-2611

About Zebulon

Zebulon is the easternmost municipality in Wake County and is located further away from the county's center in Raleigh than any other community. Zebulon's small town, friendly atmosphere is at the core of its community identity. An historic downtown area, affordable neighborhoods, and social diversity are key community characteristics. Zebulon is also known as the site of Five Counties Stadium, a regional attraction that is the home of the Carolina Mudcats Double A baseball team...*Excerpt from Wake County Growth Management Strategy Report*

Geography

	Land Area
Town of Zebulon	3.2 square miles (2000)
Town of Zebulon	4.4 square miles (2009)
2009 Density	1,108 people per square mile
Wake County	834.5 square miles

Population (See Bar Chart - Right Column)

Town of Zebulon	4,875 (est. July 2009)
Wake County	897,214 (est. July 2009)

2005-2009 Census Data from the American Community Survey – U.S. Census Bureau

Selected Race/Ethnic Origin (percent of population)

White – 52.9
African-American – 34.6
Asian – 1.9
Hispanic Origin – 8.7
Foreign Born Population – 9.5
Language Other Than English Spoken at Home – 12.7

Age Distribution (percent of population)

Under 5 years	6.5
Under 20 years	21.6
65 and over	19.2
Median Age	44.1

Female	47.4
Male	52.6

Educational Attainment

Percentage of Persons 25 years and over with:	
High School Diploma or higher	72.7
Bachelor's Degree or higher	10.8

Persons Living Below Poverty Level – 23.0 percent

Total Households – 1,736
Average household size – 2.55
Average family size – 3.15

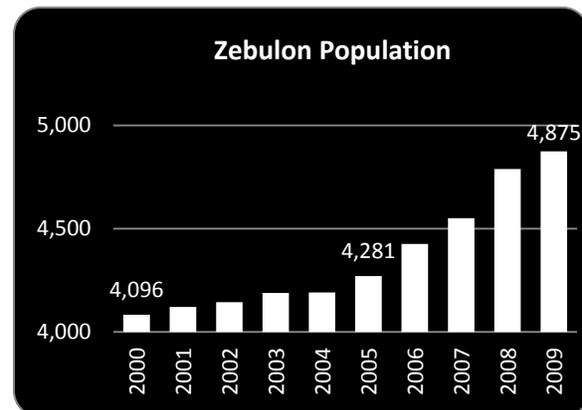
2005-2009 Median Household Income

United States - \$51,425
North Carolina - \$45,069
Wake County - \$64,008
Town of Zebulon - \$47,885

Zebulon 2000 Household Income and Benefits	Percent
Less than \$10,000	8
\$10,000 to \$14,999	12
\$15,000 to \$24,999	11
\$25,000 to \$34,999	12
\$35,000 to \$49,999	9
\$50,000 to \$74,999	27
\$75,000 to \$99,999	11
\$100,000 to \$149,999	4
\$150,000 to \$199,999	4
\$200,000 or more	2

Town of Zebulon Population Estimates July 2000-2009

Source: U. S. Census Bureau, 2009 Population Estimates



Behavioral and Social Health

Introduction

This Chapter on Behavioral Health of the residents of Wake County addresses a range of issues that affect individuals across the life span: mental health, substance abuse, developmental disabilities and child welfare issues. The community ranked the following five issues as their leading concerns:

- 1) Obesity
- 2) Mental Health
- 3) Injuries
- 4) Diabetes
- 5) Teen Pregnancy

Aside from the fact the mental health is itself identified as the second most important issue, it is important to note that positive mental and behavioral health are protective factors for the four other major community concerns.

Wake County has many resources to address mental health and behavioral concerns of our citizens. This chapter identifies substantial gaps and opportunities to make an important difference in the health of Wake County residents.

Children Birth to Five

Introduction

Children under the age of 5 years represent one of the most vulnerable groups within our community. Young children are particularly susceptible to trauma and upheaval in their lives because they rely upon others for basic survival and do not yet have the capabilities to protect themselves from danger and abusive behaviors (*Smyke, Wajda-Johnston & Zeana, 2004*). However, despite their vulnerability, young children who develop strong social-emotional skills have protective factors that make them resilient to the effects of trauma.

Community Perceptions

In the 2010 Community Assessment Survey, respondents prioritized mental health as the second most important health issue facing our community. Approximately 35 percent of respondents were parents of young children, birth to age 4 years. Over 59 percent of those responding reported that Wake County is a good place to raise children. However, only 46 percent said that there is enough support and help for individuals and families during times of stress and need.

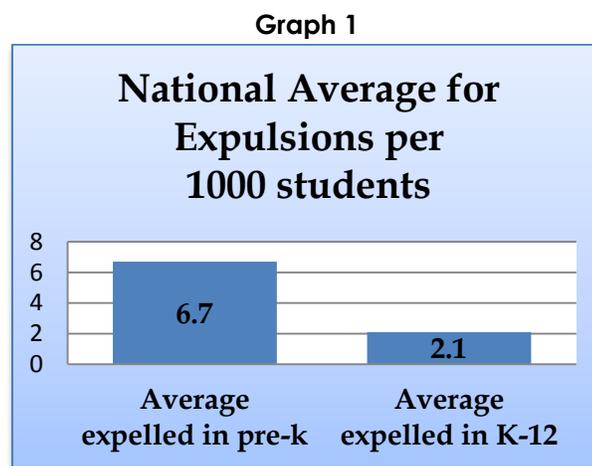
Current research in the field of young child mental health contributes to our understanding of community perceptions. According to the source cited below, parents have an excellent understanding of early childhood development (e.g. importance of reading to a child, impact of

a language-rich environments, and significance of imaginative play on development).

However, across age, gender and socio-economic background, parents consistently underestimate infants' emotional sensitivity (ability to sense sadness or anger in caregivers) and overestimate toddlers' capacities for self-regulation (control emotions, take turns, control) own behaviors. (Newton & Thompson, 2010).

Statistics and Trends

Nationally, Pre-K students are expelled from child care greater than 3 times the rate for students K-12.



In North Carolina, the rate of expulsions was 13.04 per 1,000 students, making N.C. one of the top 10 states in expulsion rates for pre-K students. (Study included 40 states with publically-funded prekindergarten programs.)

Significant statistics and trends include:

- Expulsion rates are lowest in pre-K programs in public schools and Head Start programs, and highest in faith-affiliated centers and for-profit child care centers.
- Four year olds are 50 percent more likely to be expelled than 3 year olds.
- Boys are 4.5 times more likely to be expelled than girls.
- African American children are 2 times as likely as Latino and Caucasian children to be expelled.
- The likelihood of expulsion decreases significantly with access to classroom-based behavioral consultation.

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- Lowest rates of expulsion are reported by teachers who had ongoing, regular (at least monthly) relationships with behavioral consultants (*Gilliam, 2005*).

Local data – In FY 2005-06 Wake County SmartStart conducted a study of expulsion rates of children whose families received child care subsidy. Case managers offered a voluntary survey to families requesting payments to different child care centers. There were 419 respondents. Of these, 44 (10.5 percent) indicated that the facility had asked the child to leave (*Wake County SmartStart, 2006*).

Resources and Strengths

Although Wake County need is high, the community does support the social-emotional and mental health needs of young children and their families through a wide array of resources. Many of these resources are facilitated or supported through the work of the Young Child Mental Health Collaborative (YCMHC). The YCMHC exists to increase the capacity of Wake County's mental health services for young children (birth to 5-years-old) through:

- Identification of gaps and barriers in the mental health service delivery system for young children
- Community awareness of mental health issues in young children and
- Mobilization of resources for children in need

Founded in 2001 with a grant from Triangle United Way, the YCMHC consists of 26 professionals from both public agencies and the private sector. These individuals volunteer their time and expertise to further the YCMHC's mission. Their depth of knowledge in the area of child mental health, extensive community networking, and history of advocacy for children's issues uniquely positions them to work collaboratively and effectively. The YCMHC has a strong history of catalyzing projects by leveraging community resources and, since its inception, has secured over \$1.4 million (in addition to in-kind contributions) to address community needs for young children. The YCMHC identifies gaps in the service delivery system/community need, and then cultivates community partnerships and projects to fill them.

Resources available to young children and their families include many public and private, for-profit and non-profit service agencies. Wake County Human Services drives the service delivery system, but additional funding is provided by nonprofit organizations such as the John Rex Endowment and Wake County SmartStart. Government agencies, such as Children's Developmental Services Agency, Project Enlightenment and Preschool Special Education Services (both part of Wake County Public School System), support children with identified mental health diagnoses. An array of nonprofit providers also support children's social-emotional development and address mental health needs. These include Lucy Daniels Center, Learning Together, and Child Care Services Association. These agencies provide services in natural environments where children live, learn and grow including homes, community centers, child care centers and family child care homes. In addition, support comes from private providers who have knowledge and experience with mental health needs of young children.

Strengths of the current system also include high-quality child care, training opportunities, home visiting programs including Parents As Teachers, Child Health Outreach Workers, and the Nurse-Family

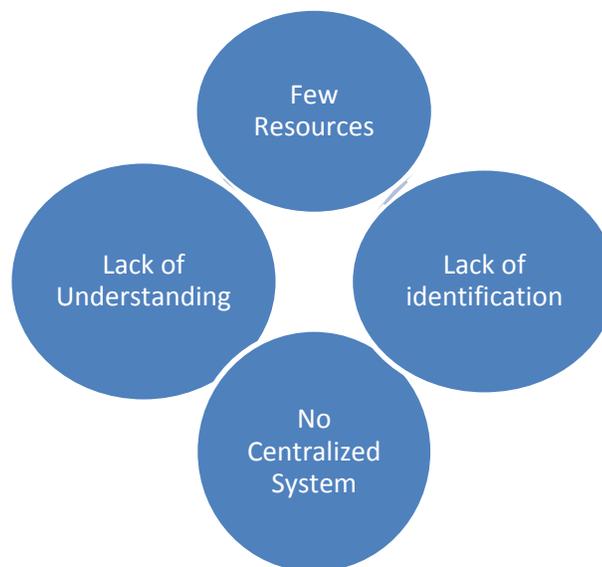


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Partnership. Recently, training in the area of social-emotional development has focused upon evidence-based models such as Conscious Discipline, Devereux Early Childhood Initiative, and the young child mental health training series.

Disparities, Gaps, and Unmet Needs

- Under diagnosis of disorders in young children due to lack of diagnostic criteria for young children and due to misconceptions about typical social-emotional development
- Lack of Board-certified mental health professionals with experience in mental health diagnosis and treatment options for young children
- Lack of a centralized system of identification and triage to address the social-emotional and mental health needs of young children
- Too few resources to help families understand social-emotional development
- Too few resources for classroom consultation to child care centers to help teachers understand how these issues impact children's development



Implications and Emerging Issues

- Services are provided most efficiently and effectively when parents and community leaders understand how young children's social-emotional development unfolds and what they can do to support this area of development.
- Policy initiatives that promote supportive relationships and rich learning opportunities for young children create a strong foundation for higher school achievement, greater productivity in the workplace, and solid citizenship in the community.
- When parents, informal community programs, and professionally staffed early childhood services pay attention to young children's emotional and social needs, as well as to their mastery of literacy and cognitive skills, they have maximum impact on the development of sturdy brain architecture and preparation for success in school.
- When basic health and early childhood programs monitor the development of all children, problems that require attention can be identified in a timely fashion and intervention can be provided.
- The basic principles of neuroscience and the technology of human skill formation indicate that later remediation for highly vulnerable children will produce less favorable outcomes and cost more than appropriate intervention at a younger age.
- The essence of quality in early childhood services is embodied in the expertise and skills of the staff and in their capacity to build positive relationships with young children. The striking shortage of well-trained personnel in the field today indicates that substantial investments in training, recruiting, compensating, and retaining a high quality workforce must be a top priority (*National Scientific Council Center on the Developing Child, 2007*).

Ricky's Story: Ricky, a 4-year-old boy living with his mother, Susan, in Wake County, was referred to a local provider by his child care teacher. The teacher was frustrated by his lack of progress and shared concerns with his mother about his behavior. He frequently didn't obey his mother or any other adults, was having daily tantrums, and even more seriously, would open the door and run outside by himself. Susan confirmed that these were her concerns and shared the family history with a therapist. Susan was essentially raising Ricky by herself with very little support from Ricky's father. She presented as depressed and withdrawn, and upon sharing more family history, it became apparent why. She had received no formal education and worked in agriculture and domestic work since age 8. Her days now consisted of trying to engage and care for Ricky, and often feeling frustrated. "I have to try to understand Ricky," she said, "no one else does."

After the evaluation, the therapist recommended family play therapy. The therapist took several sessions to "teach" Susan how to play with Ricky in a non-directive manner to begin to work on their relationship. Once his mother began to notice differences in Ricky's response to her, she no longer had difficulty engaging with him during play.

The next task was to translate some of the work done in sessions into their everyday lives. Over time, Susan and the therapist began to notice a different Ricky emerging. Ricky no longer hid awkwardly or made animal noises, instead greeting the therapist appropriately. Susan also utilized parent sessions to face some of her difficult past and to prevent it from damaging her relationship with her son.

Ricky returned to his classroom several months later. When the therapist visited the classroom, his teacher told the therapist that Ricky was one of the best-behaved and most improved children in her class, and that she had no concerns about his behavior.

School Age/ Adolescent Behavioral Health

Community Perceptions

The North Carolina Institute of Public Health has released information from Wake County's 2010 Community Assessment. The information was collected through surveys and focus groups. Of the adults who provided information, 40 percent had children under the age of 18 years old.

Overall, the community believes Wake County is a good place to raise children. Eighty-four percent of the responders either "Agreed" or "Strongly Agreed" that Wake County is a good place to raise children.

The community ranked the Top 5 "Important Community Issues" as:

- 1) Unemployment
- 2) Homelessness
- 3) Affordable Housing
- 4) High School Drop Outs
- 5) Inadequate Transportation

The drop-out rate in Wake County dropped to 3.47 percent for the 2008-2009 school year, the lowest rate since 2003. The N.C. average drop-out rate is 4.27 percent.

The community ranked the Top 5 "Health Issues" as:

- 1) Obesity
- 2) Mental Health
- 3) Injuries
- 4) Diabetes
- 5) Teen Pregnancy

Wake County Human Services states that the teen pregnancy rate has held steady for the past five years. The rate is 63 pregnancies per 1,000 girls. However, exposures to sexually transmitted diseases (STDs) remain high.

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The community was asked “if a family member or friend needed mental health or substance counseling where would you refer them?” Their answers were:

- 16 percent - Don't Know
- 16 percent - Medical Doctor
- 13.9 percent - Private Therapist
- 12.9 percent - Wake County Crisis and Emergency Services
- 10.8 percent - Support Groups (AA, Al-Anon)
- 4.4 percent - Local Management Entity (LME)

The LME is the publically-funded manager of services in Wake County, so clearly more marketing and promotion is needed to inform the public of how and where to find mental health providers and services.

Twenty percent of responders had uninsured children at some point during this past year, which can also limit access to behavioral health care.

When asked about “Risky Behaviors,” the responders listed these top 5 concerns:

- 1) Drug Use and Abuse
- 2) Gang Activity
- 3) Reckless and Drunken Driving
- 4) Alcohol Abuse
- 5) Lack of Exercise

However, when asked specifically about children's risky behaviors, their answers changed. Seventy-five percent do not think their children engage in risky behaviors. Out of the 25 percent who have concerns, their top 5 were:

- 8.3 - percent Internet Safety
- 5.7 - percent Other
- 2.9 - percent Sexual Activity
- 2.4 - percent Alcohol Use
- 2.4 - percent Eating Disorders

Implications and Emerging Issues

Most youth are positively engaged in their communities, and, despite the inevitable questionable choices of adolescence, make the transition to adulthood successfully. But youth require the guidance and mentoring of responsible adults to make good choices and to successfully remedy bad ones. Fostering positive youth development, especially for adolescents with extra needs, requires a system that can identify potential problems early and address them effectively. Youth who have behavioral health issues need extra support.

Children who have been abused or neglected are more likely to develop behavioral health needs. When not identified and addressed effectively, they get drawn into the juvenile justice system. There is a much higher incidence of behavioral health issues among juvenile offenders than the general adolescent public (*Youth Delinquency Prevention Report Card, 2009*).



Youth who are homeless have high rates of substance use and mental health problems, and frequently engage in risky behaviors. This increases the youth's vulnerability to long-term negative outcomes such as addiction and homelessness as an adult. Nationally, at least 52,000 youth are homeless on their own, and service providers count more than 1 million youth who have run away from home or been "thrown away" by parents, guardians, or institutions. Many of these children come from impoverished homes (approx 40 percent) and the majority have been suspended or expelled from school. Between 30-40 percent of homeless youth reported alcohol problems and 40-50 percent drug problems. Homeless youth report using drugs and alcohol to self-medicate for depression. Many shelters and residential programs require youth to be sober before entering. Assault, illness, and suicide claim the lives of about 5,000 runaway and homeless young people every year. Promising programs begin by helping the youth feel safe. Post Traumatic Stress Disorder is common among these individuals, both as a result of their childhood experiences and their life on the streets (Moore, Toro, Dworsku and Fowler, 2008).

Adolescent depression is on the rise. Recent surveys indicate that as many as one in five teens suffer from clinical depression. Teens may experiment with drugs, alcohol, and sex to avoid feelings of depression. Teens may also express their depression through hostile, aggressive and risk-taking behaviors. Adolescence is always an unsettling time, with the many physical, emotional, psychological and social changes that accompany this stage of life (Mental Health Association of North Carolina, 2010). The U.S. Department of Health and Human Services, National Center for Health Statistics, 2008, found that 5 percent of our youth are on prescription medications for mental health needs.

Far too many adolescents in N.C. live in poverty, do not graduate from high school, do not have health insurance and do not get consistent, high quality health care. Compounding these factors is that many adolescents have not been provided the support and information necessary to make healthy, safe, responsible decisions about their behaviors. This has to change.

Child Developmental Disabilities

Community Perceptions

Although a broad array of services and service providers are available in Wake County, the level of public funding is not consistent with demand. In the current State Medicaid Plan, there are essentially no services specific to the developmental disability (DD) population approved. There is, however, a Title XIX Waiver (CAP-MR/DD) that provides significant funding to 856 children and adults with DD. There are far fewer children eligible for Medicaid in Wake County than in less economically advantaged parts of the state. Most third party payers do not cover rehabilitative services, creating a large number of children with DD who do not have essential services.

Statistics and Trends

Table 1: Ratings of Quality of Care Concerns by Respondents

Service	Percent Rating Quality as 'Poor, Very Poor or Variable'
Case Management	39%
In-home support services (e.g., Developmental Therapy)	37%
Facility-based respite	23%
Developmental Daycare	20%
In-home respite	19%
Leisure/recreational	19%
Institutional care	13%

Developmental Disabilities Customer Satisfaction Survey, 2009

Resources and Strengths

- In 2008, Mental Health Trust Funds were used for start up of a specialized Intensive In-Home team serving young children (ages 4-13) with mental health and developmental disorders.
- In collaboration with Wake County Public School System, a Day Treatment program for young children with co-occurring MH/DD, especially those with Autism, has been established.
- Wake County was awarded 142 new CAP MR/DD slots (for children and adults) FY09/10.
- Murdoch Developmental Center established a new Emergency Crisis Respite Program to divert children from emergency rooms and psychiatric hospitals.
- In 2009, Community Alternatives was awarded funds to relocate its respite home to create a safer environment for children. Funds were provided for age appropriate toys and playground equipment.
- There is expanded number of psychologists contracted for children's crisis services.
- There are expanded inclusion opportunities with the City of Raleigh - Parks & Recreation, Special Populations programs.
- There is expanded support to childcare centers to serve children with special needs in after-school care.
- Regular training was provided to Wake County's DD provider network.
- The LME receives \$2.3 million of state funding for non-Medicaid children in Wake County for a variety of state defined services.

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Unmet Needs

The NC Division of MHDDAS' 3rd quarter report for FY09-10 indicates that 5,893 Children (ages 3-17) with a developmental disability are living in Wake County and in need of service. The LME currently serves 829 children, which is 14 percent of the population in need. The state target to be served is 19 percent.

Table 2: Child DD Services Wait List

SERVICE	# OF CHILDREN (3-18)
Non-Medicaid Case Management	166
Periodic Services*	40
CAP MR/DD Funding	636

*Wait list data for periodic services began in fall '09. Prior to this time, the LME was able to fund all requests. Cuts to state funding and two years with no new CAP slots led to the wait list.

The following areas were the most frequently cited services/issues that are under capacity or unavailable in our current Child DD service continuum:

- Respite options for families
- Lack of funding for necessary equipment
- High change over in staff, particularly case managers
- Nursing facilities for children with DD and multiple medical issues.
- Residential services for children
- Afterschool care
- In-home support
- Expertise in specific diagnosis or age groups (i.e. 3-5 year old children, autism, dually diagnosed children)

The following table lists services in order of their rated supply capacity need, based on the percentage of respondents who rated each as having either critically low capacity, needing more capacity, or having no capacity.

Table 3: Ratings of Provider Network Capacity for Child and Adult DD Services

Service	Percent Rating Capacity as 'Critically Low, None or More Capacity Needed'
Facility-based respite	93%
In-home respite	86%
In-home support services (e.g., Developmental Therapy)	84%
Leisure/recreational	80%
Developmental Daycare	77%
Institutional care	60%
Case Management	53%



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Gaps and needs with respect to provider cultural and linguistic competency were assessed through a survey of providers. Providers were also asked about actions taken by their agency in the past year. These results are summarized in the following table:

Table 4: Cultural and Linguistic Competency

Actions taken	Response Count (Response percent)
Recruitment of bilingual staff	27 (75%)
Translation of written materials	26 (72%)
Use of translation/interpreting	24 (67%)
Cultural competence training	23 (64%)
Organizational assessment of cultural competence	17 (47%)
Consumer and community engagement regarding cultural competency initiatives	14 (39%)
Evaluation of disproportionality and disparities in service delivery	12 (33%)
Use of technology (e.g., TTY, video relay)	11 (31%)
Use of cultural assessment tools in clinical practice	8 (22%)

Implications and Emerging Issues

- There has been an “explosion” of children diagnosed with autism, many of whom also have co-occurring mental health diagnoses. These children struggle with extremely challenging clinical and safety issues requiring programmatic and treatment structures that are not readily found in community settings. It takes both professional expertise in autism and mental health, and paraprofessionals who have training in implementing behavior management strategies. There has been a significant increase in the number of state Mental Retardation Center admission requests and subsequent, as well as reliance on psychiatric hospitals and law enforcement.
- Wake County Public School System has increased the number of children being placed on home hospital status due to unmanageable behavior. This group of children is spending less time in the classroom and more time at home, thus impacting family's emotional and financial ability to care for their children.
- The capacity for services for the Latino population continues to be a concern.
- Family systems are strained from economic impacts and are leading to caregiver under or unemployment, mental health/substance abuse issues, family disintegration and child/adult abuse/neglect.
- Maladaptive behaviors left unaddressed for long periods of time are far more intractable, and eventually require far more restrictive and costly interventions. There is a lack of qualified and licensed professionals available to address these clinical needs who accept Medicaid.

- Downturn of economy – more people meet financial eligibility. Two years ago Wake County could serve most everyone who met the financial eligibility. Currently this is not feasible due to more people meeting financial eligibility and cuts in funding.
- State allocated funds, including CAP-MR/DD, have not kept pace with population growth. Most children in Wake County with disabilities live in families that do not meet Medicaid income eligibility. For those who do, Medicaid only pays for case management. Waiting lists for all services continue to grow as the population of Wake County increases. Nearly 30 new eligible individuals request services and are enrolled or added to waiting lists each month.

Child Welfare

Community Perceptions

The Wake Community Health Assessment does not directly address the community perceptions related to child welfare. Anecdotal reports in the news media, usually in response to high profile child maltreatment cases, reflect some of the community perceptions of child welfare. The News and Observer has published several news series in the past five years focusing on child maltreatment and systematic issues. The general tenor of these is to imply that child welfare/social services are not sufficiently responsive, and intervention should have occurred earlier. This differs from past perceptions that social services were too intrusive and quick to remove children from their homes. From a national perspective, studies have found that maltreated preschoolers are characterized by parents as being more negative than non-maltreated preschoolers (*Wiggins, Fenichel, & Mann, 2003*).

Statistics and Trends

Nationally, after remaining fairly unchanged from 2000 to 2006, the rate of substantiated child maltreatment fell in 2007 and 2008 to a level not seen since before 1990.

- Between 1990 and 1996, the number of children for whom child abuse or neglect was either substantiated or indicated rose from 860,577 to 1,011,973 - representing a rate of 14.7 per 1,000 children under age 18 in 1996.
- Between 1996 and 1999, the trend reversed as the number of maltreated children dropped to 829,000 - a rate of 11.8 per 1,000.
- The number of maltreated children increased slightly between 1999 and 2001, and the rate stayed fairly constant through 2006 (*Child Trends Data Bank, 2008*).

Maltreatment types - Among maltreated children, the change in proportion of different types of maltreatment from 1990 to 2008 are as follows:

- Reported as neglected increased from 49 to 71 percent
- Reported as sexually abused declined from 17 to 9 percent
- Reported as physically abused declined from 27 to 16 percent

Less frequent types of maltreatment, including those classed as "unknown," accounted for the balance (*Child Trends Data Bank, 2008*).

Wake County Maltreatment Trends (since 2001)

Reports from the community of suspected child abuse and neglect, along with Child Protective Services (CPS) findings, confirmed child maltreatment has risen dramatically, but the number of children in foster care has remained essentially unchanged. This is due in part to the success of CPS In-Home Services, which has also increased dramatically.

Wake County Child Welfare has not seen an increase in demand related to the recession. The number of new CPS reports (based on month to month comparisons with the previous fiscal year) decreased from August 2008 through January 2009. That decrease ended in the second half of FY 2009, and month-to-month comparisons of CPS reports in FY 2010 are up (*Ludwig, 2010*).

Common social-emotional disturbances seen in maltreated children younger than the age of three:

- Poor emotional comprehension (*Edwards, Shipman, & Brown, 2005; Pears & Fisher, 2005; Pollak, et al., 2000*)
- Heightened arousal to negative emotions (*Cicchetti, & Curtis, 2005; Pollak, Cicchetti, Klorman, & Brumaghim, 1997*)
- Increased expression of negative emotion (*Bennett, Sullivan, & Lewis, 2005; Egeland, Sroufe, & Erickson, 1983*)
- Increased evidence of insecure attachment relationships (*Barnett, Ganiban, & Cicchetti, 1999; Carlson, 1998; Cicchetti & Barnett, 1991*)
- Poor peer relations and social competence (*Darwish, et al., 2001; Howe & Parke, 2001*)
- Avoidant, anxious, and atypical attachment relationships (*Carlson, 1998; Cicchetti & Barnett, 1991*)
- Higher rates of disorganized (insecure) attachments (61-86 percent), than their nonmaltreated peers (27-36 percent), (*Barnett et al., 1999; Cicchetti & Barnett, 1991*)

Diagnosable mental health difficulties in very young children

- About 14 to 37 percent of maltreated children demonstrate problems such as aggressive behavior and oppositional behavior (*Bennett et al., 2005; Black et al., 2002; English et al., 2005; Fontanella, Harrington, & Zuravin, 2000; Heflinger, Simpkins, & Combs-Orme, 2000; Toth et al., 2000; U.S. DHHS Child Maltreatment, 2005*).
- Approximately 11 percent of maltreated children demonstrate problems such as depression, anxiety, and somatic complaints (*Black et al., 2002; Culp, et al., 2001; Fantuzzo, et al., 1998; Heflinger et al., 2000*).

- Maltreated children exhibit the following specific disorders:
 - Reactive Attachment Disorder — approximately 7 percent (*Reams, 1999; Zeanah et al., 2004*)
 - Post Traumatic Stress Disorder (*Reams, 1999*) or the PTSD symptom of hypervigilance - approximately 7 percent (*Frankel, Boetsch, & Harmon, 2000; Pollak, et al., 2000; Pollak et al., 2005*)
 - Adjustment Disorders - 40 percent (*Reams, 1999*)
 - Regulatory Disorders - 22 percent (*Reams, 1999*)

Mental Health problems throughout childhood

- Research has estimated that 10 percent to 61 percent of maltreated children have mental health problems (*Leslie et al., 2005; Reams, 1999*).
- Maltreated boys display higher rates of aggression than maltreated girls, whereas maltreated girls displayed higher rates of internalizing problems (e.g., depression, anxiety, somatic, etc.) than maltreated boys (*Black et al., 2002; Fontanella et al., 2000; Heflinger et al., 2000; Litrownik, Newton, & Landsverk, 2005*).
- Maltreatment that includes witnessing or experiencing painful events has been related to PTSD (*Reams, 1999*), hypervigilance (*Frankel et al., 2000; Pollak, Vardi, Bechner, & Curtin, 2000; Pollak et al., 2005*), and clinical levels of dissociation (*Macfie, Cicchetti, & Toth, 2001a, 2001b*).
- Maltreatment occurring during the first few years of life may have enduring adverse influences on adult psychological health.
- Research has linked maltreatment in early childhood to adolescent and adult antisocial behaviors. In particular, recent studies indicate that physical abuse and neglect are positively related to aggression, arrests for violent crimes, and major and minor theft (*Caspi et al., 2002; Jaffee et al., 2005; McCord, 1983; Moe, King, & Bailly, 2004; Widom, 1989; Widom, Weiler, & Cottler, 1999*).
- In a lab-based study, (*Koenig et al. 2004*) found that physically abused children engaged in more stealing than non-maltreated children whereas neglected children displayed more cheating and less adherence to rules during a game situation. Seventy-nine percent of children who had been maltreated in infancy and preschool exhibited clinically problematic externalizing behavior during adolescence, with 50 percent of these children meeting criteria for conduct disorder (*Keiley, et al., 2001*).
- A child's resulting inability to trust and use parents for regulatory assistance was one consequence of maltreatment that led to antisocial behavior (*Keiley, et al., 2001*).
- Early maltreatment is related to increased problems of internalizing in middle childhood and adolescence (*Appleyard, et al., 2005; Dubowitz et al. 2005; Keiley et al., 2001; Manly, Kim, Rogosch, & Cicchetti, 2001*).

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- Early childhood risk (e.g., maltreatment before the age of 64 months, low SES, life stress, interpersonal violence, and family disruption) predict internalizing problems at age 160 (Appleyard and colleagues 2005).
- The relationship between early childhood risk and internalizing problems at age 16 continued to be significant after the effects of middle childhood risks were removed, signifying that early childhood maltreatment and related risks directly affect adolescent functioning (*Appleyard and colleagues 2005*).

In brief, early maltreatment is directly related to psychological dysfunction and antisocial behavior later in life (*Wiggins, Fenichel, & Mann, 2003*).

Resources and Strengths

- Wake County Child Welfare has partnered with the Annie E. Casey Foundation over the past several years to develop strategies (such as Team Decision Making) that are believed to contribute to the success of the CPS In-Home Services as described above.
- Wake County has been designated as one of the counties to represent North Carolina in the next onsite federal Child and Family Services Review (CFSR). In preparation, the State has been conducting frequent CFSR reviews in Wake County, monitoring specific performance expectations to assess the quality of Child Welfare services. The CFSR reviews measure seven client outcomes including Well-Being Outcome WB3: Children receive adequate services to meet their physical and mental health needs (*Ludwig, 2010*).
- Child Welfare was reorganized in May 2008 to provide core series through blended teams assigned to geographic zones. This has facilitated the use of “blended specialty teams,” which are better able to address the needs of children and families in their communities.
- The Child Health and Development Program (CHDP) of Wake County Human Services, supported with funding from the John Rex Endowment, provides holistic assessments of health, mental health and developmental needs of children entering foster care, and accesses medical histories and recommends plans of care for all children entering foster care. The CHDP helps secure referrals for further behavioral/developmental assessment and/or treatment based on the child’s individual needs.
- Starting in 2014, the Affordable Care Act makes mandatory the current state option to extend Medicaid coverage up to age 26 to foster children who have aged out of the foster care system.

Disparities, Gaps and Unmet Needs

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Young children are more likely than older children to be victims of child maltreatment. In 2008, children age 3 and younger had a child maltreatment rate of 14.7 per 1,000 compared with 5.5 per 1,000 for children ages 16 to 17 (*Child Trends Data Bank, 2008*).

- Studies have shown that instability in the home environment when a child is young can lead to increased child behavioral problems (*RTI & US DHHS Incarceration and Family*).
- Although maltreatment occurs in families at all economic levels, abuse, and especially neglect, is more common in poor and extremely poor families than in families with higher incomes (*Child Trends Data Bank, 2008*).
- Black, American Indian or Alaskan Native, and Pacific Islander children have higher rates of reported child maltreatment than do other children. In 2008, Black children had a reported maltreatment rate of 16.6 per 1,000 children; American Indian and Alaskan Native children had a reported maltreatment rate of 13.9; and Pacific Islander children had a rate of 11.6, compared with 8.6 for white children, 9.8 for Hispanic children, and 2.4 for Asian children (*Child Trends Data Bank, 2008*).

Implications and Emerging Issues

- Child maltreatment is influenced by a number of factors, including poor knowledge of child development, substance abuse, other forms of domestic violence and mental illness.
- In Wake County, disproportionality of African American families involved in CPS continued to exist in FY 08-09, although the past two fiscal years saw a slight decrease in CPS involvement (*Ludwig, 2008*).
- The CFSR has contributed to the continuous quality improvement of child welfare and direct monitoring of child/family outcomes.
- The effects of abuse/neglect and instability in the home environment on young children are focusing attention on earlier intervention with families, and timely permanence planning for children in foster care.
- There is a great need for continuous quality improvement of multi-disciplinary assessment and treatment teams/programs for children in child welfare/foster care.
- There is a great need for evidence-based child maltreatment prevention services such as the Nurse Family Partnership or Positive Parenting Programs (Triple P).
- Increased services for children transitioning out of foster care will be needed.

Child and Adolescent Behavioral Health (Mental Health/Substance Abuse Services)

Introduction

Most youth are positively engaged in their communities, and despite the questionable choices made in adolescence, make the transition to adulthood successfully. Fostering positive youth development, especially for children and adolescents with extra needs, requires a system that can identify potential problems early and address them effectively. Youth who have behavioral health issues need extra support. Wake County needs healthy, well-educated young people for their future roles in our community. Children are 26 percent of our population in Wake County but 100 percent of our future.

For a child or adolescent, mental health problems can impact daily life including school work, relationships and physical health. Mental Health problems interfere with the way they think, feel and act, which in turn can lead to school failure, family conflicts, alcohol and other drug abuse, violence or suicide. These problems can be very costly to families, communities, and the health care system. When children or adolescents are unable to function at home, school or in the community for an extended period of time, or if the severity is high or life threatening, they are said to have a serious emotional disturbance (*Satcher, 2000*).

Substance use or abuse can complicate the emotional or behavioral problems of young people. Although a small percentage of young people actually become “addicted,” the majority go through a period of experimentation or regular use. Whatever the pattern of use, there is a problem when it begins to interfere with how an adolescent functions at home, school or in the community. Clearly there is a serious problem when someone begins engaging in negative and/or self-destructive behavior because of his or her substance use. Substance use among adolescents is seen on a continuum from experimental use to severe use, which can lead to dependency. The impact of severe substance use on the individual is much the same as that for mental illness but with the addition of greater physical health problems.

Community Perceptions

The North Carolina Institute of Public Health has released information from Wake County's 2010 Community Assessment. The information was collected through surveys and focus groups. Of the adults who provided information, 40 percent had children under the age of 18 years old. The community's overall assessment of Wake County is that it is a good place to raise children. Eighty-four percent of the responders either “Agreed” or “Strongly Agreed” that Wake County is a good place to raise children.

According to the 2010 Wake County Community Health Assessment:

- Mental Health issues were ranked #2 in the community's Top 5 Health Issues (39.7 percent of responses)
- Drug use or abuse was ranked as the #1 most important risky behaviors (51.6 percent)

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Other top ranked risky behaviors include:

- Reckless/drunk driving (44.7 percent)
- Alcohol Abuse (40.9 percent)
- Violent Behavior (33.4 percent)
- Gang Activity (50.1 percent)

When children/adolescents have mental health problems, they are more vulnerable to getting involved in dangerous or risky behaviors.

Seventy-five percent of community responders do not think their children engage in risky behaviors.

Out of the 25 percent who have concerns, their Top 5 were:

- 8.3 - percent Internet Safety
- 5.7 - percent Other
- 2.9 - percent Sexual Activity
- 2.4 - percent Alcohol Use
- 2.4 - percent Eating Disorders

Statistics and Trends

National and State data:

- About 20 percent of children and adolescents are estimated to have mental disorders with at least mild functional impairment
- About 5-9 percent are estimated to have more severe functional limitations, known as “serious emotional disturbance.” (*Satcher, 1999*)

Adolescent Depression:

- Is on the rise
- One in five teens suffer from clinical depression (*N.C. Mental Health Association, February 2010*)
- Teens may experiment with drugs, alcohol, and sex to avoid feelings of depression
- Teens may also express their depression through hostile, aggressive and risk-taking behaviors
- Five percent of our youth are on prescription medications for mental health needs (*U.S. Department of Health and Human Services, 2008*)

Common Childhood Mental Health diagnoses include:

- Attention Deficit Hyperactivity Disorder
- Anxiety
- Depression
- Oppositional Defiant Disorders
- Conduct Disorders
- Learning Disabilities

Locally, there are several trends that suggest a projected increase in demand for MH/DD/SA services. These trends also suggest the need for improved training and specialization for providers of Child and Adolescent mental health and substance abuse services.



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Data on children and adolescents who received mental health and/or substance abuse services through the public mental health system (Medicaid and state funded) include the following:

- 31 percent of Child/Adolescent MH consumers have had suicidal thoughts
- 88 percent of Child/Adolescent MH consumers have hit or physically hurt another person
- 22 percent of Child/Adolescent MH consumers are involved with Juvenile Justice
- 54 percent of Child/Adolescent MH consumers have been suspended or expelled from school
- 10 percent of Child/Adolescent MH consumers report having carried a handgun or other weapon
- 80 percent of Adolescent MH consumers have Medicaid

(North Carolina Treatment Outcomes and Program Performance System Initial Interview Data, 2008)

Table 5: Child Mental Health

NCTOPPS Data (Child MH: N=652) (Adolescent MH: N=909)	Wake LME Diagnostic Data
Child MH: 36% ADHD 27% Oppositional Defiant Disorder 24% Adjustment Disorder 21% Disruptive Behavior Adolescent MH: 33% Oppositional Defiant Disorder 25% ADHD 16% Disruptive Behavior 14% Major Depression 13% Conduct Disorder 6% Post Traumatic Stress Disorder	Child & Adolescent MH: 31% Conduct Disorder 21% Adjustment Disorder 19% Attention Deficit Disorder 9% Major Depressive Disorder 8% Anxiety Disorder

N.C. TOPPS Initial Interview Data, 7/1/07 – 6/30/08

Wake LME Diagnosis Index Report, 7/1/07 – 6/30/08

Table 6: Adolescent Substance Abuse

NCTOPPS DATA1 (N<100)	Wake LME Diagnostic Data2
100 % Co-occurring MH/SA 70% Any Drug Abuse 25% Alcohol Abuse 40% Disruptive Behavior 35% Conduct Disorder 25% Oppositional Defiant Disorder	51% Cannabis Dependency/Abuse 41% Alcohol Abuse 3% Cocaine Dependence/Abuse 2% Polysubstance Abuse 1% Amphetamine Dependence/Abuse 1% Hallucinogen Dependence/Abuse 1% Inhalant Abuse

N.C. TOPPS Initial Interview Data, 7/1/07 – 6/30/08



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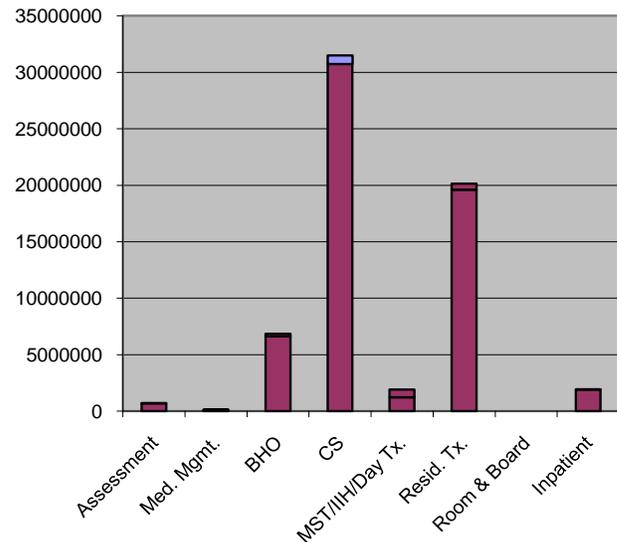
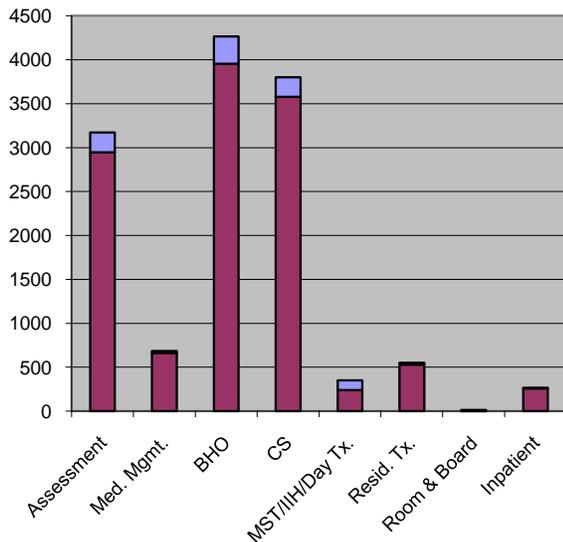
Table 7 shows the prevalence of specific disorders compared with the most frequent disorders diagnosed among Wake County children and adolescents in publically funded mental health and substance abuse services.

Table 7: Wake LME Diagnosis Index Report, which includes diagnoses of all MH/DD/SA consumers who are open to Wake LME.

Disorder	National Estimated Prevalence	Most Frequent Diagnoses among Wake County youth in MH services
Anxiety disorders	13%	8 % Anxiety disorders
Mood disorders	6.2%	9% Major Depressive disorders
Disruptive (behavior) disorders	10.3%	31% Conduct disorder 21% Adjustment Disorder (w/conduct) 19% Attention Deficit Disorder
Any disorder	20.9%	

Graphs 2 and 3 provide separate illustrations of the number of Medicaid and state funded child MH/SA consumers served during fiscal year 08-09, as well as a breakdown of expenditures by service and fund type.

Graphs 2 and 3: CMH/SA Consumers Served FY 09



Wake County Public School System (WCPSS) data illustrates the continued high number of youth experiencing school problems, which is a significant risk factor for developing mental health problems.

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The following chart includes the total number of short - and long - term school suspensions from 2005-2009:

Table 8: WCPSS Short and Long-Term School Suspensions, 2005-2009

2005-2006	2006-2007	2007-2008	2008-2009
20,383	21,389	22,651	21,713

The Wake County Public School System also reports an increase of autistic youth with severe behavior problems. When dually diagnosed (MH/DD) students, along with other students with special needs, cannot be managed in the school setting they are placed on “home hospital,” meaning the students remain at home with no social contact, minimal academic instruction, and no way to intervene and address the behavior problems. There has been an increase in the number of special needs youth placed on home hospital due to unmanageable behavior.

- FY 07-08 - 67 dually diagnosed youth placed on home hospital status
- FY 08-09 - over 100 dually diagnosed youth placed on home hospital status

Another alarming trend is an increase in juvenile delinquency, gang involvement, and violent crime among youth in Wake County. There is a much higher incidence of behavioral health issues among juvenile offenders (*Duncan and Kum, 2009*).

WCPSS reports the following offenses on school campus for a three-year trend (2006-2008):

- 33 percent increase in gang activity per the WCPSS definition of “incident”
- 66 percent increase in offenses in Middle Schools

(*Wake County Public School System Incident Data, 2009*)

According to juvenile crime statistics from the Department of Juvenile Justice and Delinquency Prevention (DJJDP), the rate of violent crimes compared to total crimes has increased by 3 percent from 2006-2008 (Department of Juvenile Justice and Delinquency Prevention Crime Data, 2009).

Wake County youth involved with the Juvenile Justice System are assessed for current risks and needs. The following data for youth involved with Juvenile Court illustrates further demand for MH/SA services.

For Wake County youth who are court involved:

- 84 percent of offenders have moderate to serious school behavior problems such as unexcused absences, and short- or long-term suspensions
- 79 percent of court involved youth have mental health and/or substance abuse needs
- 74 percent of court involved youth come from homes with an assessment of marginal or inadequate family supervision skills
- 39 percent of court involved youth have at least one family member with a criminal history, who is on court supervision, or who is gang involved

(*DJJDP Risk and Needs Assessment data, 7/1/07 – 6/30/08*)

- 40 percent of youth assessed by the Juvenile Court Evaluation and Referral Team are dually diagnosed with mental health and substance abuse problems

(*Juvenile Court Evaluation and Referral Team data, 7/1/07 – 6/30/08*)



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Resources and Strengths

Wake County's public mental health and substance abuse (MH/SA) treatment system utilizes the System of Care approach in the development and delivery of the Child MH/SA service array. System of Care is based on a set of values and principles for local services and supports in communities. Those principles and values set a high standard for how services and supports are developed and delivered. System of Care is a research-based framework that helps communities and states put the philosophy into action by building structures and resources that make System of Care work for children and their families. Wake County's Child MH/SA System of Care is based on the strengths and needs of the families in our communities.

The service array for publically funded Child MH/SA services is quite extensive. The following chart illustrates the types and number of services currently provided by our child MH/SA community partners.

Table 9: Number of Providers per Service Type Located in Wake County:

Type of Service	Medicaid Endorsed	Non-Medicaid (state funds)
Basic Outpatient Therapy	300+ indiv. & agencies	11 agencies
Community Support – Child	32	7
Intensive In-Home	44	6
Multisystemic Therapy	3	3
Day Treatment	8	3
Crisis Respite	0	0
Level II Therapeutic Foster Care	16 agencies	
Level II .1300 Residential Treatment (Group Homes)	3 group homes	1 group home
Level III .1700 Residential Treatment (Group Homes)	69 beds	14 group homes
Level IV .1800 licensed agencies	0	0
Psychiatric Residential Treatment (PRTF)	0	0
Local Inpatient – Acute	Holly Hill Hospital	Holly Hill Hospital

Disparities, Gaps and Unmet Needs

Although the child MH/SA service array is extensive, there are trends, disparities, and growing needs that produce challenges, barriers and gaps for the system. The constant changes in the public mental health system have developed a fragmented array of services in a very large county with numerous “generic” service providers. Developing a seamless system of care for children and adolescents with complex emotional, behavioral, and substance abuse problems continues to be a challenge. Wake County has a significantly higher rate of behavior disorders than emotional disorders for children and

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adolescents receiving mental health and/or substance abuse services, as compared to national data. There is a need for improved comprehensive clinical assessments.

Wake County has seen an increase in youth who:

- Need a higher level of care that includes 24/7 awake supervision due to high risk behaviors and/or flight risk
- No longer meet criteria for inpatient services and are awaiting a higher level of care usually PRTF
- Show a pattern of increasing risk taking and volatility in the home, school or community
- Have become increasingly difficult to engage and require an intensive setting such as a PRTF

The following needs have been identified to appropriately serve these youth:

- Family-based residential placements within in 8 hours drive for families
- Facility- based crisis services for youth
- Psychiatric Residential Treatment Facility (PRTF) located in Wake County

Another significant gap is services for the Hispanic population. There has been a significant increase in the request for mental health and substance abuse services for Latino youth and families. There is a critical need for Spanish speaking therapists and other service providers.

Implications and Emerging Issues

Gang Activity & Violence in Wake County:

- Emerging gang activity is threatening vulnerable teens
- Youth involved with juvenile court and/or gang activity overwhelmingly report having observed significant violent acts including shootings and murder
- This population is increasingly difficult to engage in treatment
- Many of these youth have also experienced abuse/neglect and are in County custody

See Safety Chapter for more information on Gang Activity and Violence.

The Uninsured:

There is a projected increase in uninsured and homeless individuals in Wake County due to growth and the current economic crisis.

- In Wake County in 2009, it is estimated that 20 percent (19.6 percent) of adults did not have health insurance (*U.S. Census Bureau, 2009 American Community Survey*)
- Census estimates indicated that 6.7 percent of Wake County children did not have health insurance in 2009 (*U.S. Census Bureau, 2009 American Community Survey*)
- An increase in the uninsured population challenges the Wake County LME to expand publically funded services with limited funds



- Homeless youth are vulnerable to long-term negative outcomes such as addiction and homelessness as an adult
- Assault, illness, and suicide claim the lives of about 5,000 runaway and homeless young people every year nationally (Moore, Toro, Dworsku and Fowler, 2008)

Public Awareness of Behavioral Health Services:

- Sixteen percent of community responders did not know where to go to for help
- There is a need for the Wake County LME to increase marketing strategies to educate the public about available crisis and ongoing services

Adult Mental Health

Introduction

Mental illnesses are diagnosable conditions that impair thinking, feeling, behavior, and also interfere with a person's ability to be productive. A mental illness is a disorder of the brain and can have many causes – from genetics to other biological, environmental and social/cultural factors.

Like most other diseases, mental illnesses are not the fault of the person having these conditions. The sometimes unusual behaviors associated with some illnesses are symptoms of the disease, not the cause.

What's most important to understand is that mental illnesses are treatable through medication and therapies, that afford all individuals suffering from mental illness the opportunity to lead satisfying, productive lives (BringChange2Mind.org, last accessed: June 2010).

Community Perceptions

According to the 2010 Wake County Community Health Assessment, when asked to identify the top five health concerns, mental health issues were ranked as either first or second in seven of the eight survey zones.

When asked "Is there enough support and help for individuals and families during times of stress and need in Wake County?" of the 1,349 respondents:

- 14.9 - percent disagreed
- 4.6 - percent strongly disagreed
- 33.9 - percent did not know

Of the 1,349 individuals surveyed, 16 percent reported they would not know who to contact or call if a friend or family member needed counseling for a mental health problem.

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Statistics and Trends

According to the National Institute of Mental Health, it is estimated that 26.2 percent of adults age 18 and older - more than one in four - suffer from a diagnosable mental health disorder in a given year. This figure translates to 57.7 million adults, based on 2004 U.S. Census estimates.

More specifically:

- Major depressive disorder affects approximately 14.8 million American adults, or about 6 percent of the U.S. population age 18 and older in a given year, and is the leading cause of disability in the U.S. for ages 15-44.
- Bipolar disorder affects approximately 5.7 million American adults, or about 2.6 percent of the U.S. population age 18 and older in a given year.
- Schizophrenia affects approximately 2.4 million American adults, or about 1.1 percent of the population age 18 and older, in a given year.
- Suicide was the fourth leading cause of death for adults aged 25-44 in N.C. in 2009 (*North Carolina State Center for Health Statistics, 2010*).

In light of the above general prevalence statistics, and given Wake County's population of more than 900,000 people, it can be estimated that over 36,000 adults (regardless of income) are in need of treatment for a mental health disorder in Wake County.

During the period of October 1 through December 31, 2009, over 9,000 adults received some type of mental health treatment with public funds.

Although a much smaller sample (N=1172), the following data were obtained from adults during their initial mental health treatment visit during FY 07-08 and provide a snapshot of clients served with public funds:

- 38 - percent male
- 62 - percent female
- 47 - percent Caucasian
- 43 - percent African American
- 6 - percent Hispanic

Additionally, these same 1,172 adults also reported the following:

- 38 - percent reported having children under the age of 18
- 50 - percent reported having changed residences one or more times during the past year
- 62 - percent reported being in the labor force, meaning they were currently employed, or unemployed but looking for work
- Of the above 62 - percent, 56 percent reported being unemployed and looking for work



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Resources and Strengths

Mental health reform in North Carolina and Wake County has been more fully realized since the last Wake County Community Assessment was conducted in 2006. Wake County Human Services (WCHS) divested the majority of mental health services previously provided and the number of private providers in the community increased.

The Wake County Local Management Entity (LME) is responsible for developing and managing a network of mental health, developmental disabilities and substance abuse services that enable clients to live, work and participate in their communities to the greatest extent possible. Wake County LME contracts with over 135 agencies for the implementation and provision of these services, including Holly Hill Hospital.

Specific service priorities for the adult mental health population include the following:

- Assertive Community Treatment (ACT), including integrated dual disorders treatment
- Psychosocial rehabilitation programs
- Community support teams
- Residential treatment
- Mobile crisis services
- Assertive engagement
- Timely aftercare following psychiatric hospital discharge

In 2009, Wake County LME received funding to establish a Mobile Crisis Management team for Wake and Johnston counties. This service is available 24/7 and provides services to individuals in crisis, with the goal of diversion from psychiatric hospitalizations when possible.

Wake County also committed funds for the building and implementation of two new facilities, *Wakebrook Campus*. *Wakebrook* will provide a 16-bed facility-based crisis program, walk-in crisis services, inpatient addiction services, medical detoxification, psychiatric services and transition services. A Request for Proposals to operate these facilities, or any portion of them, is slated for fall of 2010. Table 10, which is derived from 2009 data, indicates the various types of services available and the number of agencies providing these services in Wake County for individuals in need of publicly funded services (Medicaid and other state funds)

Table 10: Wake County Behavioral Health Services

TYPE OF SERVICE	NUMBER OF PROVIDERS
Behavioral Health Outpatient*	300+ (individuals & agencies)
Assertive Community Treatment	2 agencies/3 programs
Community Support Team*	22 agencies
Mobile Crisis Management*	1 agency
Psychosocial Rehabilitation	4 agencies/5 programs
Local Inpatient	Holly Hill Hospital & Dorothea Dix Hospital

(Wake County LME)

*indicates these services are also provided to adults with addiction



Disparities, Gaps and Unmet Needs

Gaps in Wake County's service continuum for adults with mental illness were identified through multiple approaches and sources of information. Four primary sources of input and their identified gaps are highlighted in table 11 below:

Table 11: Gaps in Wake County's Service Continuum

FORUM SURVEY N=31	CONSUMER SURVEY N=50
Housing with Supports	Transportation
Supported Employment	Employment
Family Psycho-Education	Housing and Supported Housing
Peer Supports	Affordable Medication
Support Groups	Staff availability, coverage, and crisis response
Local Inpatient	
World Café Results N=40	Community Needs Survey N=111
Education and Employment Supports	Housing with Supports
Improved Transition Planning	Facility-based crisis Mobile Crisis Response
Housing and Supported Housing	Employment Services
Transportation	Local Inpatient
Social/Recreational Activities	Support Groups
Facility Safety, Security	Psychiatry
Medication	Family Psychosocial
	Transportation

Individuals who experience homelessness have a higher incidence of mental health issues than those in the general population. According to Wake County's 2009 Point in Time count, on any given night, approximately 1,100 people were homeless.

According to the Substance Abuse and Mental Health Service Administration's (SAMHSA) Center for Mental Health Services:

- 39 percent of adults experiencing homelessness report some form of mental health problem, and 20 to 25 percent meet criteria for serious mental illnesses
- 46 percent report chronic health conditions such as high blood pressure, diabetes, or cancer

People who are homeless also share other common characteristics:

- 23 – percent are veterans (compared to 13 percent of the general population)
- 25 – percent were physically or sexually abused as children
- 27 – percent were in foster care or institutions as children
- 21 – percent were homeless as children
- 54 – percent were incarcerated at some point in their lives

Implications and Emerging Issues

The burden of mental illness on health and productivity in the U.S. and throughout the world has generally been greatly underestimated. Data developed by the “Global Burden of Disease Study,” conducted by the World Health Organization, the World Bank, and Harvard University, reveal that mental illness, including suicide, accounts for over 15 percent of the burden of disease in established countries such as the U.S. This is more than the disease burden caused by all cancers.

The costs of mental illness are exceedingly high:

- The direct costs of mental health services in the U.S. in 1996 totaled \$69 billion (direct costs correspond to spending for treatment and rehabilitation nationwide) this figure represents 7.3 percent of total health spending
- The indirect costs (lost productivity at the workplace, school, and home due to premature death or disability) of mental illness were estimated in 1990 at \$78.6 billion (Rice & Miller, 1996).
- More than 80 percent of these indirect costs stemmed from disability rather than death because mortality from mental disorders is relatively low.

At the present time, our nation and state continue to experience significant economic crisis affecting the behavioral health service system. Consequently, historical trends in growth, service demand and funding are unreliable predictors of future service needs.

Other sources of uncertainty in projecting future needs include:

- The impact of the economic crisis on mental illness
- Loss of insurance due to unemployment
- Employee benefit reductions
- Reduced charitable donations
- Loss of community resources and natural supports due to reduced state and federal funding

Wake County has seen an increase in the number of adults presenting with mental health issues since February 2009, and a subsequent upward trend in demand for community-based mental health services.

State funding for FY 09-10 was decreased, and given the increased need, Wake County LME has been forced to prioritize subsets of the adult mental health population, as there is not adequate funding to meet service demand. Priority populations include:

- Individuals with high utilization of inpatient care, crisis services or legal services
- Individuals with severe and persistent mental illness and co-occurring mental illness and addiction
- Individuals with emergent or urgent mental health needs
- Individuals with a mental illness who are experiencing homelessness
- Individuals who have a mental illness and are deaf or hard of hearing

Inadequate funding for community-based services and increased demand have the unintended consequence of increasing inpatient psychiatric admissions, hospital emergency department utilization and crisis services utilization. In addition, according to a Wake County National Alliance on Mental Illness (NAMI) report, "Involuntary Commitments" (*N.C. Sheriff's Office, 2009*), "the place of last resort, our jails, are becoming the treatment program for many patients."

It is clear that efforts must be focused in several different areas:

- Develop more evidence-based services to better assure more positive outcomes
- Identify and improve collaborative efforts with non-traditional partners to better meet clients' needs
- Identify additional funds to meet current and future demands for care

David Satcher, former Surgeon General, stated, "The bottom line here is that we have to recognize that just as things go wrong with the heart and the lungs and the liver and the kidneys, things go wrong with the brain. They always have, they always will. So the big challenge for us is how are we gonna respond? And it's really time for us to respond in a much more sophisticated manner than we have in the past."

Adult Substance Abuse

Introduction

Dependence on alcohol and other drugs is a chronic illness that is both complex and costly. The fact that addiction is a disease recognized by the medical community has not ended negative attitudes toward those with substance use disorders.

Nicotine is an addictive drug. It causes changes in the brain that make people want to use it more and more. In addition, addictive drugs cause unpleasant withdrawal symptoms. The good feelings that result when an addictive drug is present - and the bad feelings when it's absent - make breaking any addiction very difficult. Nicotine addiction has historically been one of the hardest addictions to break (*American Heart Association, 2010.*)

It can be argued that alcoholism is genetic or inherited. It can also be argued that those who abuse drugs, while initially choosing to use, are predisposed to a compulsion to continue using. Addiction

and dependence are not character flaws; research shows physiological effects that produce lasting changes in both brain chemistry and neurological functioning.

Treatment and recovery are, by most accounts, a matter of “one day at a time,” and different approaches work for different people. Treatment can be highly successful, and those in recovery are fully capable of leading productive lives. Those still struggling with addiction are often not treated with the same consideration as those with any other chronic illness. Individuals with addiction have similar rates of adherence to treatment and relapse incidences as do people with asthma or hypertension.

Community Perceptions

According to the 2010 Wake County Community Health Assessment, in a ranking of the 16 “Most Important Risky Behavior Issues,” the following were ranked first, third and fourth, respectively:

- Drug Use or Abuse – 51.6 percent
- Reckless/Drunk Driving – 44.7 percent
- Alcohol Abuse – 40.9 percent

In addition, of the 1,349 individuals surveyed in Wake County, 16 percent reported they would not know whom to contact or call if a friend or family member needed help with an alcohol or other drug problem.

The 2010 Wake County Community Health Assessment survey asked respondents, “Do you smoke cigarettes or use chewing tobacco?” Four of the eight zones (West Central, South Central, East and South) were at or slightly above the state average of 22 percent who smoke cigarettes or use chewing tobacco.

Statistics and Trends

- It is estimated that 22 million people in the U.S. have a substance abuse or dependence problem.
- Data from the Office of Applied Studies (SAMHSA, February 2008) indicates that in 2004-2005 in North Carolina, 550,000 people reported alcohol abuse or dependence, and an additional 250,000 people over the age of 12 reported illicit drug dependence.
- Prevalence rates range from one out of 10 to one out of 13. Given the population of Wake County, it can be estimated that over 75,000 people in this county alone have a substance use disorder.

Tobacco use kills more people than alcohol, AIDS, car crashes, illegal drugs, murders, and suicides combined and thousands more die from other tobacco-related causes such as fires caused by smoking and smokeless tobacco use (*Campaign for Tobacco-Free Kids, 2010*).

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- Nearly one in four N.C. adults (23 percent or 1.5 million) is a smoker, while the national adult smoking rates have fallen below 20 percent for the first time. (North Carolina Prevention Partners, 2009) (Graph 4).
- In Wake County 12 percent are smokers (*Behavioral Risk Factor Surveillance System, 2008*).
- In the past year, N.C.'s adult smoking rates have gotten significantly worse, moving from 16th to 9th among U.S. states with the highest percentage of adult smokers (*N.C. Prevention Partners, 2009*).

According to the 2010 Wake County Community Health Assessment, of 1,349 people asked "How many times in the past year have you had four to five drinks in one day?," the following was reported:

- 3.1 – percent had four to five drinks in one day 49 to 60 days out of a year
- 4.7 – percent had four to five drinks in one day more than 60 days out of a year

According to data published by the North Carolina Division of Mental Health, Developmental Disabilities and Substance Abuse Services (DMHDDSAS), 2,963 Wake County adults received treatment services for a substance use disorder in 2009 with public funds. Individuals who receive treatment via public funds are required to complete a questionnaire periodically throughout the course of their treatment. The following data were derived from interviews with consumers between July 1, 2007 and June 30, 2008 during their first treatment episode:

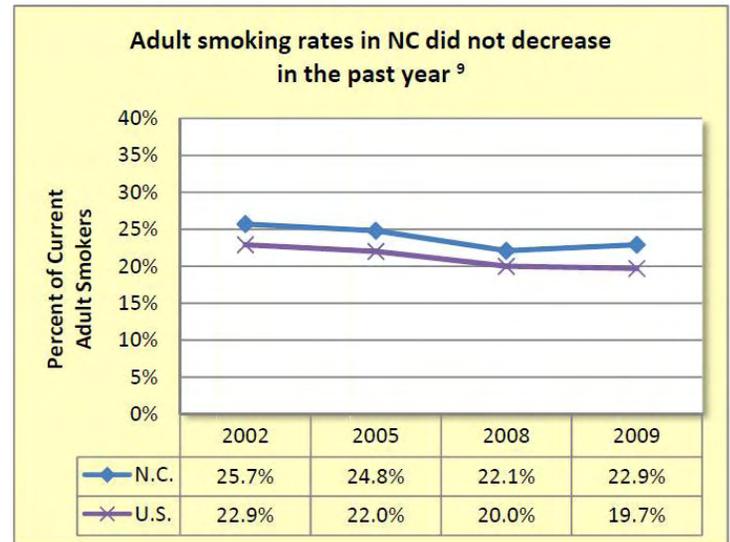
- 48 – percent reported having children under age 18
- 52 – percent reported having changed residences one or more times in the past year
- 51 – percent reported being unemployed and looking for work
- 78 – percent reported smoking cigarettes in the month prior to their assessment

Resources and Strengths

Over the past several years, the number of agencies contracted to provide addiction services to adults has increased. There exists a fairly wide array of services in Wake County, with levels of care that include the following:

- Medically supervised detoxification
- Short-term inpatient treatment

Graph 4



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- Intensive outpatient treatment
- Basic outpatient services and medication management
- Peer support services
- Community-based (in home) services and housing options

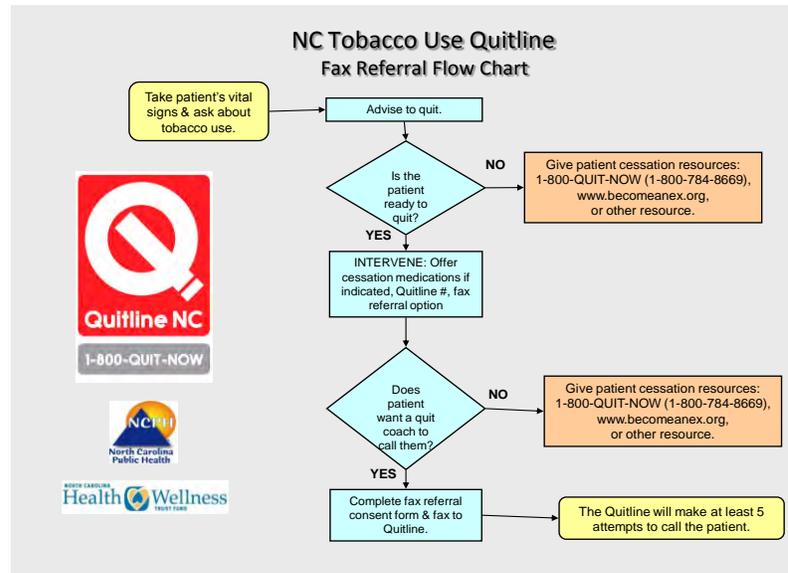
In fiscal year 2009-2010, the Wake County LME received \$2,757,007 in state and federal funds to subsidize and provide treatment services for adults with addiction.

Wake County has committed funds to the building and implementation of two facilities slated to be fully operational in 2011 which includes the following:

- 16-bed inpatient treatment facility for individuals with addiction
- 16-bed non-hospital medical detoxification facility
- 16-bed crisis facility (for individuals with mental illness, addiction and/or developmental disability)

The North Carolina Quitline is a free resource that helps healthcare providers with their patients who use tobacco products. The Quitline provides cessation services over the phone by:

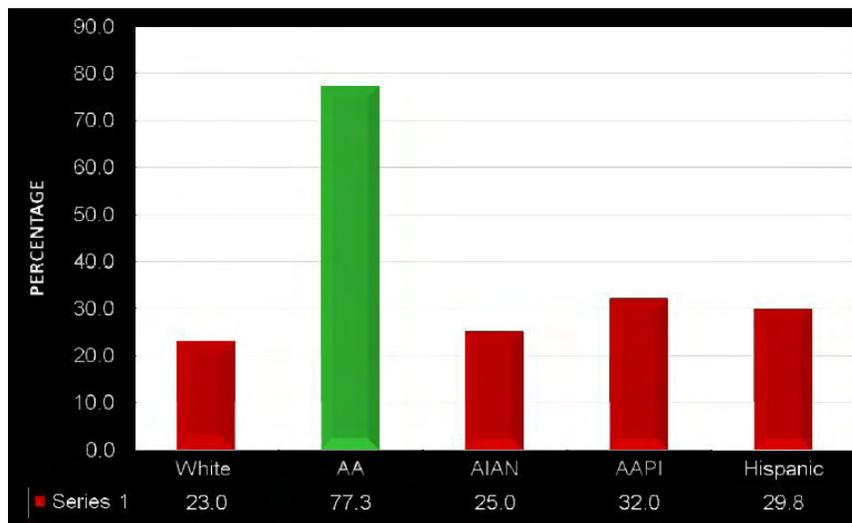
- Assisting and advising patients on the importance of quitting
- Working with patients to set a quit date



Disparities, Gaps and Unmet Needs

More than 21 percent of African American (AA) adults are current smokers, which is slightly higher than the national rate of smoking (19.7 percent). More than 75 percent of AA smokers smoke menthol cigarettes, as compared to 23 percent of Caucasian smokers (Graph 5).

Graph 5: Percentage of Menthol Smokers



Menthol cigarettes cause severe addiction because it numbs the throat and makes the smoker inhale deeper. Menthol cigarettes account for 25 percent of the cigarette market (*National African American Tobacco Prevention Network, 2010*).

There is a lack of information on the numbers of people with co-occurring mental illness and addiction, but research has shown the disorders are very common. Data also indicate that the incidence of co-occurring disorders is higher in some subsets of the population than in the general population. For example, anecdotal evidence suggests that over 75 percent of individuals with high recidivism rates for incarceration and psychiatric hospitalizations are diagnosed with a substance use disorder and a severe mental illness. According to reports published in the *Journal of the American Medical Association (JAMA)*:

- Approximately 50 percent of individuals with severe mental disorders are affected by substance abuse
- 37 percent of alcohol abusers and 53 percent of drug abusers also have at least one serious mental illness
- Of all people diagnosed as mentally ill, 29 percent abuse either alcohol or drugs.

The Wake County Local Management Entity (LME) is responsible for developing and managing a network of mental health, developmental disabilities and substance abuse services for children and adults through an annual allocation of federal, state and county funds. Each year, Wake County LME conducts a *Community Need and Provider Capacity Assessment* which includes identification of strengths, gaps and trends related to public sector care. The following information is derived from the most recent analysis, dated March 31, 2009. The following table highlights the areas of highest identified priority according to local providers of mental health and addiction treatment services.

Table 12: Wake County LME Community Needs Survey

Housing w/supports	Support groups
Facility-based crisis	Psychiatry
Mobile Crisis Response	Family psycho-education
Employment services	Transportation
Short-term local inpatient (MH)	(N=111)

Other surveys and data collected by Wake County LME indicate that the following population subsets were most frequently reported as being underserved:

- Individuals with co-occurring mental illness and addiction
- Individuals with co-occurring mental illness and developmental disability
- Individuals with addiction
- Individuals experiencing homelessness
- Spanish-speaking consumers

Quarterly needs assessment reviews and updates since March 2009 indicate the following additional needs for adults with a substance use disorder and mental illness:

- Accessible outpatient services
- Housing services and supports
- Bilingual/bicultural capacity
- Crisis continuum services

Implications and Emerging Issues

At the present time, our nation and state are experiencing a significant economic crisis, with uncertain duration, course and impact on numerous factors affecting the MH/DD/SA service system. Consequently, historical trends in growth, service demand and funding are unreliable predictors of future service needs. While recent data suggest that Wake County's growth continues to be high relative to most other counties in N.C. and the nation, the demographic characteristics of new residents may not match those of previous years. For example, Wake County's economic downturn, while significant, may be less severe than other areas. This could cause the County to attract unemployed individuals who believe their job prospects may be more promising in an urban area with high rankings for quality of life and business opportunities.

Other sources of uncertainty in projecting future need include:

- The impact of the economic crisis on mental illness and substance abuse
- Loss of insurance due to unemployment and employee benefit reductions
- Loss of community resources and natural supports due to financial difficulties
- Reduced charitable donations
- Budget reductions

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It is important to note that the Wake County LME Access Center has seen an increase in the number of adults requesting assistance for mental health and substance use issues for many months, and a subsequent upward trend in demand for community-based services.

Wake County in many respects is fortunate to enjoy a myriad of services for adults with substance use disorders, although the demand currently outweighs the capacity of the system. The challenge is two-fold: to develop more evidence-based and enhanced services to adequately address the needs of the adult substance use population and to also better collaborate with non-traditional partners to meet all of the consumers' needs.

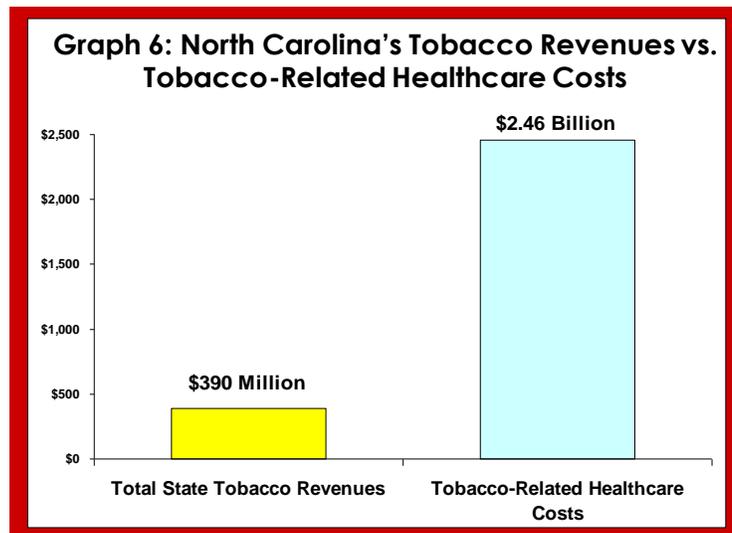
In 2007, the North Carolina General Assembly directed the North Carolina Institute of Medicine's Substance Abuse Task Force to study the substance abuse services delivery system and present a final report to the legislature in 2009. Over the course of 14 months, the Task Force determined recommendations for developing a recovery-oriented system of care, stating that *"Reducing substance use, abuse and dependence requires a comprehensive system of care that starts with prevention, offers early intervention services before people become dependent, provides various levels of treatment services to meet the needs of people with more severe substance abuse problems, and offers continual recovery supports to help people in recovery remain sober."* The Task Force identified 32 recommendations, many of which lay the foundation for creating a more comprehensive and coordinated system of care that not only includes all levels of treatment, but seamlessly incorporates prevention strategies, early intervention and supportive services.

In a recent study conducted by the RAND Corporation, it was noted that:

- Every additional dollar invested in addiction treatment saves taxpayers \$7.48 in societal costs
- Left untreated, addiction costs every man, woman and child in the United States \$1,000 per year
- With this kind of return, it is imperative to prioritize the identification and allocation of funds specifically for the development of additional treatment resources

Concerns regarding the high costs of healthcare continue to increase:

- Use of tobacco is the single preventable leading cause of death in NC and the nation
- In N.C, health care costs directly caused by smoking are \$2.26 billion per year



Additionally, in his report issued in April 2010, the director of the Centers for Disease Control and Prevention reported “there is no doubt that we know how to win the fight against tobacco use” and noted that:

- Eliminating smoking in indoor spaces fully protects nonsmokers from exposure to secondhand smoke.
- Separating smokers from nonsmokers, cleaning the air, and ventilating buildings cannot eliminate exposure to secondhand smoke (Campaign for Tobacco-Free Kids, 2010).
- In N.C., on January 2, 2010, a statewide ban on smoking in restaurants and bars went into effect, eliminating secondhand smoke in those venues

The North Carolina Prevention Partners recommendations for tobacco use prevention are as follows:

- Create a tobacco-free policy
- Support tobacco free workplace laws
- Increase cigarette taxes to at least the national average

Adult Developmental Disabilities

Community Perceptions

Although Developmental Disability (DD) Services has a broad array of services and service providers, the level of state funding is insufficient to meet the demand by Wake County residents. In the current State Medicaid Plan, there are essentially no services specific to the DD population approved.

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There is, however, a Title XIX Waiver (Community Alternatives Program for Persons with Mental Retardation/Developmental Disabilities [CAP-MR/DD]) that provides significant funding to 856 children and adults with DD. Additionally, due to the economic status of Wake County residents, there are far fewer children eligible for Medicaid than in other parts of the State.

Statistics and Trends

Ratings of Quality of Care are listed in the following table in the order by which respondents expressed concerns about quality of care.

Table 13: Ratings of Quality of Care

Service	Percent Rating Quality as "Poor, Very Poor or Variable"
Case Management	39%
In-home support services (e.g., Developmental Therapy)	37%
Facility-based respite	23%
Developmental Daycare	20%
In-home respite	19%
Leisure/recreational	19%
Institutional care	13%

(Developmental Disabilities Consumer Satisfaction Survey, 2009)

Resources and Strengths

- Expanded inclusion opportunities with the City of Raleigh - Parks & Recreation, Special Populations program to support adults with DD in accessing all Parks and Recreation programs.
- Received, screened and allocated 142 new CAP slots to children and adults with DD.
- In 2009, Community Alternatives was awarded funds to relocate their respite home to create a safer environment for consumers.
- Provided regular training to Wake County DD provider agencies.
- Participated in a statewide implementation of crisis and diversion services for adults with co-occurring Developmental Disabilities and Mental Illness (START).

Disparities, Gaps and Unmet Needs

The N.C. Division of MHDDAS' 3rd quarter report for FY09-10 indicates that 5,430 adults (ages 18 and above) with a Developmental Disability and living in Wake County need services. The LME currently serves 1,369 adults, which is 25 percent of the population in need. The target to be served is 33 percent.



Table 14: Adult DD Services Wait List

SERVICE	# OF Adults
Non-Medicaid Case Management	122
Periodic Services*	16
CAP MR/DD Funding	270
Residential Services	112
Vocational Services	273

(Wake County LME Developmental Disability Waiting List, March 2010)

*Wait list data for periodic services began in Fall '09. Prior to this time, the LME was able to fund all requests. Cuts to state funding, population increases, and no new CAP slots for the prior two years resulted in the need to add adults to the wait list.

In spite of a viable network of established provider agencies in Wake County, the job market of qualified staff is limited and public funds to support service provision have not kept pace with demand. Therefore people often are waiting a long time for the supports they and their families need.

The following areas were the most frequently cited services/issues that are under capacity or unavailable in our current Adult DD service continuum:

Respite options for families

- Lack of funding for necessary equipment
- Sufficient and meaningful (non-work oriented) Day Activity programs to serve lower functioning individuals
- Adult Day Care options for aging DD population, designed for seniors with cognitive limitations
- Residential facilities for people with mild/moderate traumatic brain injury (TBI)
- Residential homes to serve DD/TBI consumers that have a history of physically acting out
- Retirement services; options in the types of daily activities need to be greater; many people are working part-time by choice and need, with limited options during the rest of the week
- High change over in staff, particularly case managers
- All Geriatric Services
- Nursing facilities for adults with DD and multiple medical issues
- Semi-independent living opportunities are extremely limited and those providers are often challenged w/ how to provide ongoing, long-term support when funding only supports short-term assistance
- Expertise in specific diagnoses or age groups (i.e. adults with autism, dually diagnosed (MI/ID), etc.

Table 15: Ratings of Provider Network Capacity for Child and Adult DD Services

Table 15 lists services in order of their rated supply capacity need, based on the percentage of respondents who rated each as having either critically low capacity, needing more capacity or having no capacity.

Service	Percent Rating Capacity as “Critically Low, None or More Capacity Needed”
Facility-based respite	93%
In-home respite	86%
In-home support services (e.g., Developmental Therapy)	84%
Leisure/recreational	80%
Developmental Daycare	77%
Institutional care	60%
Case Management	53%

(Developmental Disabilities Consumer Satisfaction Survey, 2009)

Gaps and needs with respect to provider cultural and linguistic competency were assessed through a survey of providers.

Providers were also asked about actions taken by their agency in the past year. These results are summarized in the following table:

Table 16: Cultural and Linguistic Competency

Actions taken	Response Count (Response percent)
Recruitment of bilingual staff	27 (75%)
Translation of written materials	26 (72%)
Use of translation/interpreting	24 (67%)
Cultural competence training	23 (64%)
Organizational assessment of cultural competence	17 (47%)
Consumer and community engagement regarding cultural competency initiatives	14 (39%)
Evaluation of disproportionality and disparities in service delivery	12 (33%)
Use of technology (e.g., TTY, video relay)	11 (31%)
Use of cultural assessment tools in clinical practice	8 (22%)

(Developmental Disabilities Consumer Satisfaction Survey, 2009)

Implications and Emerging Issues

- DD Services and supports are often long-term and even lifelong, meaning once enrolled, people typically do not move out of services.
- Family systems are strained, leading to caregiver under or unemployment, mental health/substance abuse issues, family disintegration, child/adult abuse/neglect, aging caregivers, etc.
- There has been an “explosion” of adults with diagnoses of autism, many of whom also have co-occurring mental health diagnoses. They often present extremely challenging clinical and safety requirements not readily found in community settings. It takes a professional with expertise in autism and mental health, and paraprofessionals who have been specifically trained in implementing behavior management strategies to serve these clients in these settings. Training for staff to serve this population is lacking.
- There has been a significant increase in the number of state Mental Retardation Center admission requests, subsequent admissions and reliance on psychiatric hospitals and law enforcement.
- Historically there have been few available resources for services to survivors of Traumatic Brain Injury. As medical science and care improves, the survival rates of people who sustain significant injuries increases, many of whom will need long-term, costly services that currently do not exist.
- Loss of previously achieved skill levels when adequate adult services are not available upon completion of secondary schooling and people “graduate” to nothing.
- Maladaptive behaviors left unaddressed for long periods of time are far more intractable and eventually require far more restrictive and costly interventions. The lack of qualified and licensed professionals available to address these clinical needs, who also accept Medicaid reimbursement, is critical as well.
- As more individuals have become involved in supported employment and thus more included/integrated in their communities, they find retirement options exceedingly limited. These individuals will want to continue to be as independent as possible and included in their communities. If new opportunities are not developed to support inclusion for seniors with DD, we may be faced with these people reverting to non-integrated settings.
- As the DD population ages, so do its caregivers. As parents of disabled adult children age, their ability to adequately care for and meet the needs of that child may diminish.
- People with Developmental Disabilities are at significantly greater risk for developing early onset dementia and Alzheimer’s than the general population, creating a demand for more intense supervision and medical care.

Senior Adults

Community Perceptions

In the 2010 Community Assessment Survey respondents listed mental health as either the first or second most important health issue. Across the County, 12.5 percent of respondents were 65 or older. Over 70 percent of those responding felt that Wake County is a good place to grow old. However, only 46 percent said that there was enough support and help available during times of stress or need.

Statistics and Trends

One in four older adults, or 41,000 individuals age 55 and older in Wake County, has a significant mental disorder. Among the most common mental health problems in older persons are depression, anxiety disorders, Alzheimer's disease/dementia and substance abuse.

Depression

- Is not a normal part of aging
- Affects approximately 15 out of 100 adults over age 65 or approximately 11,000 individuals in Wake County (*Bartels, Blow, & Citters, 2005*).
- Occurs at a higher rate in people living in hospitals and nursing homes than in community settings.
- May be brought on by another medical illness and is not always easy to recognize.

Anxiety Disorders

- According to the Anxiety Disorders Association of America, anxiety is as common among older adults as it is in the young. Until a few years ago anxiety was believed to decline with age because older adults are less likely to report psychiatric symptoms and instead emphasize physical complaints.
- The most common anxiety disorder affecting older adults is generalized anxiety disorder (GAD) and is frequently linked with traumatic events such as falls and acute illness.
- Women are twice as likely as men to be affected by GAD, which is characterized by persistent, excessive and unrealistic worry about everyday life situations.

Alzheimer's Disease

- Characterized by decline in memory and other cognitive abilities resulting from damaged brain cells. Symptoms include increasing difficulty with understanding written or spoken language, recognizing or identifying objects, executing motor activities, thinking abstractly and making sound judgments.
- Affects approximately 13 percent of individuals ages 65 and older or 9,600 adults in Wake County (*Alzheimer's Disease Facts and Figures, 2010.*)
- Has recently surpassed diabetes and become the 6th leading cause of death among American adults.
- Mortality rates are on the rise unlike those for heart disease and cancer.
- More women than men are diagnosed with Alzheimer's disease because they live longer, and the greatest risk factor for developing Alzheimer's is advancing age.
- No treatment is currently available to cure this disease, but about 90 experimental therapies aimed at slowing or stopping its progression is in clinical testing.

Substance Abuse

- Estimates of the prevalence of alcohol abuse among older adults in community settings ranges from 1 percent - 15 percent. Studies in primary care settings found 10 percent - 15 percent of older patients met criteria for at-risk or problem drinking.
- Despite its common occurrence, alcohol abuse is often not recognized by health care personnel among older patients. Many senior adults living alone are able to hide their alcohol use and/or family members fail to report it.
- Acute and chronic conditions experienced by senior adults are adversely affected by alcohol intake, and can cause medication interactions as well as liver and cardiovascular disease.
- Substance abuse among senior adults typically involves misuse of prescription and non-prescription medications in contrast to younger adults who abuse illegal drugs.
- Multiple physical, social and emotional changes that accompany the aging process make senior adults vulnerable to substance abuse. These changes include loneliness, decreased mobility, chronic pain, and limited economic and social supports.

Resources and Strengths

- Wake County Human Services has a Geropsychiatry Team that provides outpatient multidisciplinary mental health treatment for patients and their families. The target population is Wake County residents who are age 60 or older with a diagnosis or history of mental illness and who have major concomitant medical problems. These services include

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psychiatric evaluations and treatment, individual psychotherapy, group therapy, medication monitoring and administration, integrated MH/SA treatment services, and case management. Coaching and support are provided to residential facility staff. The team accepts patients with Medicare, Medicaid and those with no insurance.

- The team is led by a psychiatrist who is board certified in Geriatric Psychiatry.
- The team works closely with medical providers and other adult services programs within Wake County Human Services.
- Teams like this do not exist in other areas of the state and represent a significant resource for the geriatric population here in Wake County. The team is currently nearing its maximum number of clients.
- Wake County has a wide variety of residential options for individuals seeking placement in an assisted living facility. Mixing populations of frail elderly with mentally ill residents continues to be a challenge.

Disparities, Gaps and Unmet Needs

- Few empirical studies have focused on substance abuse problems with the elderly resulting in a lack of clinical guidelines and treatment strategies for this population.
- Mental health disorders go undiagnosed due to lack of age-appropriate diagnostic criteria, underreporting of symptoms and misattribution of symptoms to cognitive decline, medical disorders and the normal aging process.
- Few senior adults report seeing a mental health professional for treatment but seek care from primary care physicians who have limited ability to diagnose and treat mental health disorders.
- Prevention services for substance abuse and mental illness are rarely provided as a component of public health programs.
- There is a lack of board certified geriatric psychiatrists in the community.
- There are no inpatient or crisis stabilization beds for this population and the beds at North Carolina's Central Regional Hospital have decreased from 40 to 20 for all counties.
- The shortage of inpatient beds in the State often creates a lengthy wait for patients before a bed is available.
- Due to income eligibility limits, services such as residential placement, assistance with daily needs and transportation is not available to those whose income is over the limit for

programs such as Special Assistance. Private care is usually not affordable to the majority of individuals in this situation.

Implications and Emerging Issues

- Baby boomers are expected to have a significant impact on the future delivery of both mental health and substance abuse services. High rates of lifetime drug use among baby boomers as well as fewer stigmas associated with mental health treatment suggest that boomers will seek care at a higher rate than the current senior population.
- The population of older adults is expected to become more ethnically and culturally diverse, creating potential issues regarding access to services, cultural competence of providers and differences pertaining to perception of illness.
- The substance abuse treatment system will need a shift in focus to address special needs of older adults with emphasis on rebuilding self-esteem, coping with loneliness and depression, building a social support network and providing appropriate case management service.
- Alzheimer's disease research has made considerable progress, and has led to therapies that have eased symptoms and slowed the rate of cognitive decline. The next generation of drugs will not only target symptoms, but the underlying disease pathology.
- Development of prevention and early intervention programs represents the future of age appropriate care that can help offset substantial health care costs for consumers, their families and the government.
- There is a great need for mobile, multi-disciplinary treatment providing in-home assessments, referrals and treatment along with the patient's primary care provider.
- Increased crisis related services, such as facility-based hospital diversion and day treatment for patients with complex medical and psychiatric needs will be needed within the community.

Economic Health

The Economic Health chapter's focus is on employment, job readiness, access to child care, ability to attain basic needs, housing, homelessness and transportation. Deficiencies in any one of these areas can cause hardship to individuals and families, and that hardship is multiplied exponentially when incomes do not meet expenditures for these basic needs. Daily struggles to ensure safe and secure care for children, transportation to and from employment, unexpected expenses and time away from work due to illness of employee and/or children contribute to stress, and in some instances, an inability to manage all aspects of a self-sufficient family life. In worst cases when basic needs cannot be met, individuals succumb to substance abuse, crime, incomplete high school education and other negative activities that can affect short-term and long-term economic health.

Employment

Community Perceptions

The most recent Wake County Community Assessment survey found that unemployment was the issue of most importance to Wake County residents, with 49.3 percent of participants concerned with it. Unemployment was followed by homelessness at 41.8 percent and lack of affordable housing at 36.8 percent.

Despite the high rate of unemployment, survey participants were mixed when asked whether they thought there is enough economic opportunity in Wake County, with 53.7 percent of respondents replying there were enough economic opportunities and almost 37 percent disagreeing.

Statistics and Trends

Consistent with a nationwide trend, the unemployment rate in Wake County has been on the rise since 2007. While the County's rate of unemployment rested at 3.4 percent in 2007, the Employment Security Commission of North Carolina placed the County's rate at 9.2 percent in January 2010, representing 41,577 unemployed workers (*Employment Security Commission of North Carolina, May 2010*). Though the state and national unemployment rates still exceed that of Wake County's, our residents continue to face progressively difficult economic conditions. This significant increase in unemployment will likely have a long-term impact on other economic health indicators, which are discussed throughout this chapter. The widespread effects of this recession have infiltrated personal lives, large and small companies, financial institutions, the real estate development community, philanthropy and government.

An encouraging sign, as reported by Wake County Economic Development in August 2010, was that employment was up 13,000 jobs from 2009, Raleigh's unemployment rate dropped to 8.2 percent, down from 9.1 percent just a year earlier (Wake County, 2010). The Triangle continues to fair well in employment compared to the rest of the state. At 1.7 percent less than the statewide unemployment rate of 9.9 percent, the Triangle continues to move quickly toward recovery.

The Triangle's job gains came amidst an influx of more than 9,000 people to the region's labor pool. This indicates that the Triangle, even in economic recovery, continues to draw talent and skilled labor.

Though bankruptcy filings dropped substantially between 2005 and 2006, Wake County has been experiencing increased business and personal bankruptcy filings each year since that time. There were 2,961 filings for bankruptcy in 2009, which is more than double 2006 (*Wake County Trends & Outlooks, 2010*).

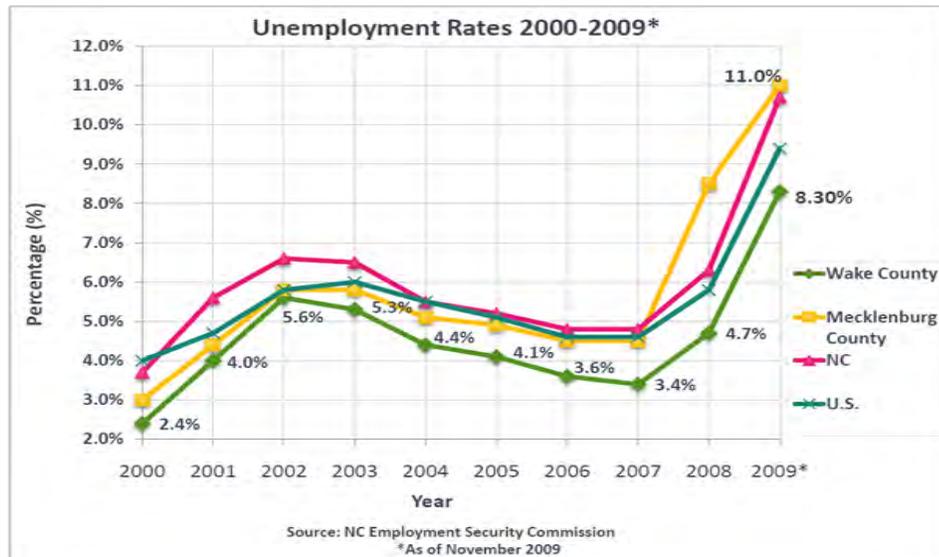
In addition to the increased rate of unemployment, Wake County foreclosure numbers have been increasing in recent years, and tax revenue from retail sales decreased in 2009 (*Wake County Trends & Outlooks, 2010*).

A recent report prepared by UNC's Center on Poverty, Work, and Opportunity showed that Wake County's rate of extreme poverty is 3.8 percent, while the County's total poverty rate in 2008 was 9.1 percent (*Wake County Trends & Outlook, 2010*).

Unemployment is cited by County Health Ranking as a social/economic factor that has an impact on physical health, unhealthy behaviors and access to healthcare (<http://www.countyhealthrankings.org/credits>). Wake County Human Services has noted an increase in adults with mental health and substance use issues. The organization anticipates overall health to be impacted by unemployment, with the potential of increased demands for services (*Wake County Human Services, 2009*).

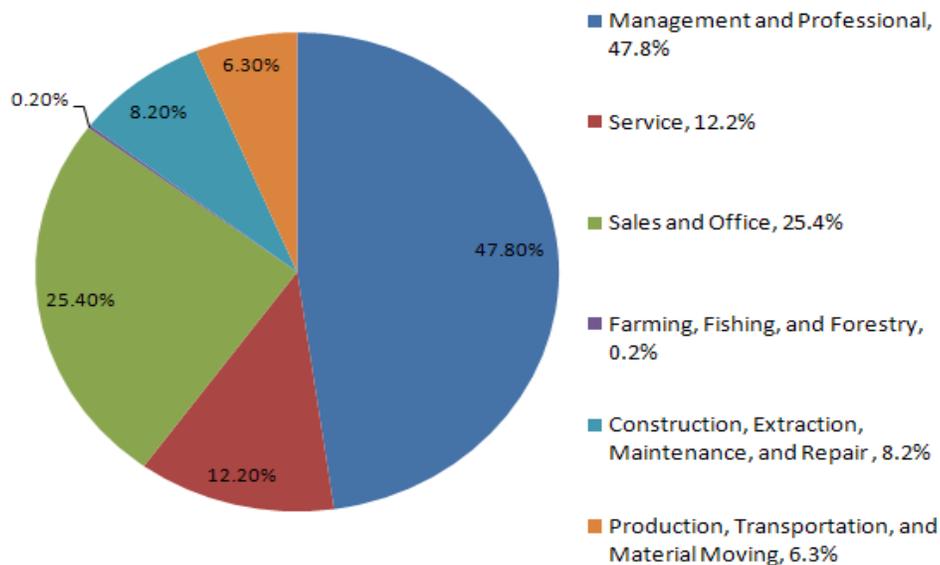
Graph one below compares the unemployment rates in Wake County against Mecklenburg County, the State of North Carolina, and the U.S. This graph represents data from 2000 through November 2009 (*Wake County Trends & Outlook, 2010*).

Graph 1



In May 2010, Wake County had a civilian labor force of 455,375, with only 419,096 employed (*Bureau of Labor Statistics*). Chart one below illustrates employment information by occupation, taken from the U.S. Census Bureau's American Community Survey for 2006-2008 (*U.S. Census Bureau, 2006-2008 American Community Survey*).

Chart 1: Employment by Occupation (2006-2008)



Resources and Strengths

Wake County's largest employers have remained fairly consistent over the years. The list below includes the County's 10 largest employers and the numbers of workers each employ (Wake County Economic Development, 2010).

Wake County's Largest Employers (2010)

State of North Carolina	24,739	GlaxoSmithKline	6,000
Wake County Public School System	16,755	Rex Healthcare	4,400
IBM Corporation	10,800	SAS Institute, Inc.	4,149
North Carolina State University	7,500	Wake County Government	4,000
WakeMed Health & Hospitals	7,100	Cisco Systems	3,400

The Capital Area Workforce Development Board, in partnership with local, state and federal government, is the local policy board responsible for planning, oversight and coordination of workforce initiatives in the County. It currently administers the following programs:

1. Capital Area's JobLink Career Center System brings together an array of services geared towards: (1) helping area residents find employment; (2) improving the education and training of the local workforce and businesses; and (3) assisting area businesses in filling job openings.
2. Rapid Response is a pro-active, business-focused, flexible strategy designed for two major purposes. First, it helps growing companies access an available pool of skilled workers from other companies that are downsizing, or who have been trained in the skills that a company needs to be competitive. Second, it responds to layoffs and plant closings by quickly coordinating services and providing immediate aid to companies and their affected workers.
3. The Workforce Investment Act substantially changes the design and delivery of youth services, and places new emphasis on a comprehensive year-round service delivery system surrounding four themes:
 - a. Improving educational achievement
 - b. Preparing for and succeeding in employment
 - c. Supporting youth
 - d. Developing youth potential as citizens and leaders

In April 2009, Governor Perdue announced the JobsNOW "12 in 6" initiative supported by the Department of Commerce, Division of Workforce Development and local Workforce

Development Boards, and funded by the American Recovery and Reinvestment Act (ARRA). The program provides the infrastructure and resources necessary to help train North Carolinians in needed job skills within six months in 12 approved occupational areas:

- Nursing Assistant
- Phlebotomy
- Hospital Billing/Coding
- Office/Clerical Support
- Masonry/Tile Cutting
- Plumbing
- Carpentry
- Welding
- Food Service
- Auto body Repair
- Manufacturing/Materials
- HVAC/Industrial Maintenance

As of July 6, 2010 the JobsNOW update reported these previous academic year performance metrics:

Table 1: Academic Year Performance Metrics

Expenditures through May 2010	\$6,927,833
Students enrolled	13,777
Completers	7,061
Courses offered	2,091
New courses or new curricula developed	256
New positions filled (full or part time)	722
Students receiving assistance (WIA,TAA,VR, etc.)	6,601

Disparities, Gaps and Unmet Needs

Growth in Wake County will help fuel new job creation, although it will take several years to compensate for jobs lost in the last three years. Because one of the most basic keys to employment is education, efforts must be escalated to engage K-12 students to see the value and relevancy of education to future employment. This effort must go beyond the limited resources that are accessible to teachers. The community at large should become engaged.

Human services programs to assist families with affordable child care, transportation, health insurance, and continuing education and training, will support individuals and families to be self sufficient.

Workforce development challenges in particular are outlined in the following section.

Implications and Emerging Issues

As the regional economy continues its slow recovery and climbs out of the recession, unemployment will continue to be high for many years. New jobs will be created but will not be sufficient to compensate for the extreme loss of jobs during the recession. The community college system, human services support agencies and philanthropy will struggle to meet the needs of the unemployed and under-employed for years to come. Government agencies hit hard by reductions in sales and property tax revenues will continue to face challenges to allocate scarce resources to serve the public.

Fortunately, Wake County is positioned well to attract and retain jobs and investment as reported in two recent articles:

- An analysis conducted by American City Business Journals ranked Raleigh 15th in maintaining job growth among 88 major metropolitan areas across the U.S. Raleigh, along with Seattle, Wash., witnessed a net increase of 200 jobs between December 2007 and December 2008 (*Forbes.com, 2009*).
- The job market is looking up according to Manpower's quarterly employment outlook survey. About 19 percent of employers in the Raleigh-Cary area plan to hire during the third quarter while just 5 percent plan to cut staff. The result is a net employment outlook of 14 percent, up 1 percentage point from the same period last year. Manpower polled 18,000 U.S. employers for the survey, and limited the survey to the top 100 labor markets (*Triangle Business Journal, June 8, 2010*).

Job prospects are strongest in construction, durable goods manufacturing, nondurable goods manufacturing, transportation and utilities information, financial activities, education and health services, leisure and hospitality, and other services and government. Employment in wholesale and retail trade, and professional and business services is expected to remain unchanged.

Unemployment remains high as the economic recovery continues at a slow and uncertain pace. Fortunately Wake County is located in the heart of the world-renowned Research Triangle Region and community leaders have just issued a new five-year plan, *The Shape of Things to Come*, to promote the economic competitiveness of the region. The *Shape of Things to Come* report (www.researchtriangle.org/strategy) calls for three key strategies to continue growing our knowledge-based economy:

- Expand our world-leading life sciences and technology clusters and select new, emerging clusters
- Enhance and preserve the superior quality of life and competitive business climate that enables us to attract the talent and investments we need to continue to be successful

- Engage regional leaders and partner organizations in ensuring our economic competitiveness

The report presents the realities of today's economy, areas of opportunity, an action plan for 2009-2014 and performance measures.

Accolades continue to showcase Wake County and the Triangle in global markets and are effective marketing tools to lure new jobs and investment to the community.

Recent announcements include:

#1 Best Place for Business and Careers	Forbes.com, 2007, 2008, 2009
#5 Strongest Job Market Manpower	(Raleigh-Cary) July 2010
#5 in Job Growth since 2005	U.S. Bureau Labor Statistics (Raleigh-Cary) July 2010
#3 Hottest Job Growth City for Next Decade	BNET.com (Raleigh) April 2010
#3 Best Place for Business and Careers	Forbes.com (Raleigh) April 2010

Job Readiness

Community Perceptions

Job Seekers

In the 2010 Community Assessment Survey respondents indicated that "unemployment" was one of three most important community issues. Additionally, over 25 percent of survey participants stated there is not enough economic opportunity in Wake County, with the highest percentages of those being in the East (69.8 percent) and South (74.3 percent).

In a 2010 survey of JobLink Career Center customers receiving assistance at the Millbrook Human Services Center, job seekers reported needing help with a number of opportunities that would, as one respondent put it, "help anyone get and be ahead in this life." Specifics mentioned in the survey included several needs:

- More job search assistance
- More employment skills workshops
- More job specific training
- A Job Club (networking group)
- Feedback from employers on what they are seeking
- Career Ladder opportunities

Feedback from surveys, anecdotal information from staff who work in various local JobLink Career Centers, and other employment/training programs substantiate the perception that job availability continues to be a challenge. Furthermore, the feedback attributes Wake's economic woes directly to the overall decline in the U.S. economy.

Employers

From the employer's perspective, while the demand for jobs has brought about many more job applicants from which to choose, many individuals are ill-equipped for the workforce.

The Wake Area Business Advisory Council is a group of local employers that meet monthly to promote a partnership between local businesses/employers and employment and training programs in the Wake County area. A consistent refrain heard at meetings is the inability to fill certain positions due to issues like poor training or the criminal records of applicants.

The issue of job readiness among high school graduates, and those recently graduated from institutes of higher learning, is very much a concern for businesses, as highlighted at the 2010 inaugural Jobs Summit, sponsored by the North Carolina Chamber of Commerce. Participants in its roundtable discussion stressed that the large demand for jobs does not necessarily match the supply of available talent. The consensus was that in order for North Carolina to have a strong talent pool and to be competitive in the global economy, both time and attention should be devoted to better preparing students for the workforce.

In the Department of Commerce's Workforce Investment Act - State Plan Modification for 2009, the need for a better trained workforce was highlighted:

...there are more available workers than there are jobs. Employers are reporting large numbers of job applicants for every job opening... skill sets that continue to be important include reading comprehension, active listening, critical thinking, speaking and active learning. Specific areas of knowledge include customer service, personal service, clerical and mathematical (*N.C. Department of Commerce, 2009*). This sentiment mirrors that expressed at the national level. In a 2008 survey conducted by The American Society for Training and Development, The Conference Board, Corporate Voices for Working Families and the Society for Human Resource Management, 217 employers were asked to comment on the readiness of newly hired graduates from high school and college. Nearly half said that they had to provide readiness training for new hires. Of these, the majority indicated that internal training programs were "moderately" or "somewhat successful" in addressing the skills gap:

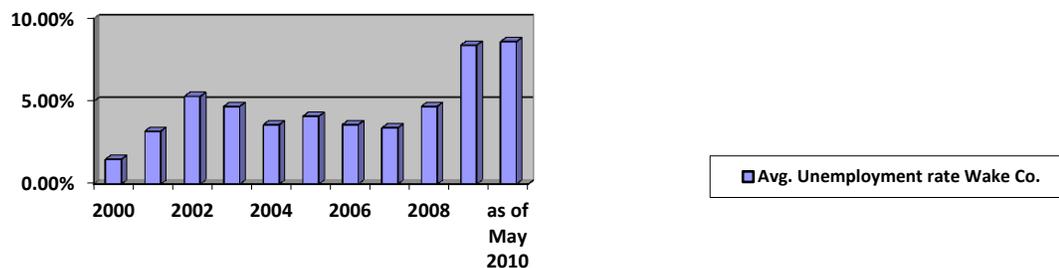
While programs are in place to address training needs in leadership, information technology, and teamwork skills, there are substantial gaps in other applied skills- particularly those employers value most-as well as some of the basic skills like writing and mathematics. Applied skills such as critical thinking and problem solving enable new

entrants to use the basic knowledge acquired in school to perform successfully in the workplace (*North Carolina Department of Commerce, 2009*).

Statistics and Trends

The National Bureau of Economic Research established the start of the national recession as December 2007. According to the N.C. Employment Security Commission's Labor Market Information section, job losses since this time include those in all major industrial sectors. The exceptions include jobs in the education, health and government sectors. All areas of the State, including Wake County, have been negatively affected by the economic downturn. This is in sharp contrast to a few years ago when jobs in Wake County were plentiful and unemployment rates were among the lowest in the state (*State Plan for Title I of the Workforce Investment Act and the Wagner-Peyser act, modification for Program Year 2009*).

Graph 2: Unemployment Rates in Wake County



Unemployment

- In 2007, the average unemployment rate in Wake County for the year was 3.4 percent, or just over 15,000 people. These numbers continued to inch upwards to the 2009 average unemployment rate of 8.4 percent, representing nearly 38,000 people out of work and more than doubling the number of unemployed from just two years ago.
- In May 2008, claims for unemployment insurance (UI) were up substantially from the previous year with 93 of 100 counties showing increased claims.
- The N.C. Employment Security Commission's Job Search division reported that 100,000 more individuals were assisted from July 2008 through May 2009 than the previous year during this same time period (*State Plan for Title I of the Workforce Investment Act and the Wagner-Peyser act, modification for Program Year 2009*).

Education and Workforce Development

- According to the North Carolina Community College System, enrollments have continued to increase at all North Carolina campuses.

- The State's Workforce Development System, including Workforce Investment Act (WIA) programs, has been significantly affected by the recession. In Wake County, at least one provider of WIA-funded training services reports a waiting list of over 300 at the time of this writing.
- Wake County's largest JobLink Center (located at the Swinburne Human Services Center) has experienced record numbers of customers seeking work in the past few years. From FY07/08 to FY08/09, there was a 56 percent increase in traffic in the JobLink center including new and repeat customers. New customers alone represented a 20 percent increase. While FY09/10 figures are slightly down from this, wait lists for services at the JobLink are still common, with an average of 21 people per day having to wait for some period of time to access JobLink computers and other services.
- Work First continues to partner with Wake Technical Community College to provide an onsite Human Resource Development Class (HRD). Work First is able to support short-term training that will lead to employment. Client Assistance funds are available to provide clothing and equipment needed to pursue or maintain employment.
- Although the ultimate impact of State budget cuts is only beginning to be felt, it is clear that these cuts will affect the affordability of educational pursuits for some. It is equally as certain that reductions in funding will have a trickle down impact on human services programs, services for jobseekers, and those in need of training.

Changing Faces of Job Seekers

- The breadth of occupations impacted by the recession is wide and includes jobs in highly skilled, technical fields. This has changed the demographic of job seekers requesting services from Wake County Human Services and community-based programs.
- According to Human Services staff who work in employment and training programs, skilled job applicants are often viewed as more desirable than the "typical" Human Services client, thus making it more difficult for persons with lower skills and employment barriers to compete.
- According to the N.C. Commission on Workforce Development, 40 percent of new jobs that will be created in the next decade will be those requiring "short-term on-the-job training." These jobs are anticipated to be low paying and offer few benefits (*N.C. Commission on Workforce Development, 2007*).
- Staff in all Human Services employment and training programs report an increase in the numbers of former criminal offenders seeking assistance with job preparation and job search. Many of these job seekers are referred by correctional facilities. It is not uncommon to receive correspondence from inmates inquiring about employment services in anticipation of their release from incarceration.

- Staff in Wake County-hosted JobLink Career Centers report an increase in the numbers of older job seekers. Some of these individuals state that the economy has driven them back into the labor market from retirement. Others have been laid off from jobs in which they have worked for many years.
- Staff from employment programs that serve persons with disabilities have reported increasing difficulty in finding job placements. Already scarce jobs are being awarded to persons without perceived limitations.
- The economic recession has swelled the ranks of Wake County families living below the poverty level. In 2000 Wake County had a poverty rate of 4.9 percent or 31,059 individuals; by 2008, the rate had risen to 9.2 percent or 82,831 individuals. In the past, families responded by trying to create more two-earner households. But with the current unemployment rate, that option no longer applies as a guarantee of improving families' incomes (*American Community Survey, 2008*).

Resources and Strengths

While the demand for jobs currently outpaces supply, North Carolina State University economist, Mike Walden, states that the national recession is technically over (<http://www.wral.com/business/story/75109491>, May 1, 2010). But while some indicators point in a positive direction, the stagnation in jobs is an ongoing reality. According to N.C. Chamber Chairman, Lewis Ebert, North Carolinians are now “dealing with a psychological recovery... How do we make sure we're working with all the best ideas, where businesses want to invest (and) why they want to hire people?” (www.unioncountyoc.com)

In this regard, workforce development is a necessary ingredient to a strong and growing economy. Critical components of workforce development include:

- Job readiness refers to developing the “soft” or intangible skills that are needed to be an effective employee. Employers expect that new hires will possess these skills when they enter the workplace.
- Job training or “hard” skills refers to technical expertise required to perform on the job. Sometimes new hires enter the workplace with these skills, and sometimes employers have internal or external resources in place to assist employees in acquiring them.
- Career development provides opportunities for employee growth and advancement. This includes helping individuals assess strengths, set goals and identify career paths/ladders (*The Conference Board, 2009*).

Wake County is fortunate to have a strong complement of institutions, organizations, partnerships and services that offer workforce development activities (including job readiness,

education, training and job assistance) for both youth and adults in Wake County. Some examples of resources include:

- The Wake County Public School System (WCPSS) serves the entire County. In addition to traditional curriculum, WCPSS has a School to Career initiative. Through alliances with business, this program helps students “link their school curriculum to workplace realities.” For the school year 2007-2008, 90 percent of WCPSS graduates planned to pursue some form of higher education (*Wake County Public School System, 2010*).
- There are numerous institutions of higher education in Wake County including North Carolina State University, Meredith College, Shaw University, Peace College and St. Augustine’s College.
- Wake Technical Community College is a public two-year, comprehensive post-secondary educational institution. The College focuses on providing basic skills development; vocational, technical, and occupational training; and college/university transfer preparation.
- The N.C. Employment Security Commission provides job seekers with assistance in filing unemployment insurance claims and looking for work. It offers the business community (and others) information about the economy, job growth, emerging industries, etc. through its Labor Market Information division.
- Capital Area’s JobLink Career Center System brings together an array of services geared towards helping people find jobs, improving the education and training of the workforce and assisting businesses in filling their job openings. There are over 20 JobLinks in Wake and Johnston counties, and they are available to any job seeker. JobLink Centers, as well as smaller JobLink “Access Points,” are located in public facilities, Employment Security Commission offices, Community Colleges and faith-based facilities.
- Skills training is available through Workforce Investment Act (WIA) programs, located at various JobLinks throughout Wake and Johnston counties. WIA funding may also be used for on-the-job training as well as for work experience job placements.
- Wake County Human Services (WCHS) operates the Work First program which provides an array of support services needed to assist families as they attempt to gain employment. These services include, but are not limited to, family assessments and counseling, Job Readiness Support group, mental health counseling, substance abuse testing and treatment, services for victims and child witnesses of domestic violence, housing services, vocational testing, situational assessments, financial assistance and financial literacy classes.
- WCHS operates the Supportive Employment Program which provides intensive job coaching and supports to persons who have a severe mental illness.

- WCHS operates the Wake Area Business Advisory Council (BAC), a membership organization of some 30 business and community organizations that work to support employment and training programs. In addition to offering job openings to WHCS and community partner clients, BAC members participate as speakers at job seeker workshops, recruit at job fairs and serve as mentors.
- N.C. Division of Vocational Rehabilitation offers assistance to persons seeking training and employment who have physical and/or mental challenges.
- Services to former offenders are available through two of the JobLink Centers in Wake County.

Disparities, Gaps and Unmet Needs

The disparities, gaps and unmet needs related to job readiness are incorporated in the sections above in more detail. As a result of these gaps, the following are needs:

- More jobs, in particular those that pay a “living wage” and offer benefits
- Greater capacity at Community Colleges
- More short-term training targeted at in-demand fields
- Greater emphasis on preparing the job seeker for the workforce and helping them to develop skills that employers expect, such as critical thinking
- Greater capacity to serve persons with multiple barriers, in particular those with criminal histories
- Additional job readiness assistance for older workers
- More job opportunities for persons with disabilities

Implications and Emerging Issues

The combination of demand greatly exceeding job availability, reduced resources for educational and human services programs, a greater number of individuals with multiple barriers to employment, and employer disillusionment with the job readiness of graduates/those new to the workplace, is a challenging mix for our community. While the implications appear bleak, there are some responses that appear promising:

- Wake County has a new “one-stop” initiative for senior citizens that will help them access services, including assistance with employment, at one physical and virtual location.
- The N.C. Department of Commerce and N.C. Department of Corrections have joined forces to outpost “offender specialists” in a number of JobLink Career Centers across the state, including in Wake County.

- WorkKeys, a job skills assessment system, is being promoted through the Community College System. WorkKeys measures an individual's communication, interpersonal skills, problem solving and personal skills. The Career Readiness Certificate awarded through WorkKeys demonstrates to employers that "individuals possess basic workplace skills in reading for information, applied math and locating information-skills that most jobs require" (www.crcnc.org, 2010).
- The American Recovery and Reinvestment Act (ARRA) continues to provide limited temporary jobs, notably in the Food & Nutrition Service Program, where eligibility is being expanded to include families with income up to 200 percent of the Federal Poverty Level. There are summer youth programs and services specifically designed to assist ex-offenders in gaining employment.

Access to Child Care

Community Perceptions

According to the 2010 Community Assessment survey results, 15 percent of respondents listed lack of good childcare options as one of the most important community issues for their community. Additionally, during the Community Prioritization process, residents from Western Wake County identified lack of affordable childcare as their second priority for action.

Statistics and Trends

Child Care subsidy vouchers help parents with limited income pay for child care so they can work or attend school. These subsidies benefit all industries in the state by enabling parents to work productively outside the home and attend higher education programs to update their skills.

They lay the groundwork for North Carolina's economic future by preparing upcoming generations for school and workplace success, as well as attracting businesses to the State's skilled workforce. A survey completed by families in homeless shelters reported that the biggest obstacle to obtaining employment is child care.

Ways that Child Care subsidies benefit families:

- Help parents work and attend school
- Provide a safe setting for children
- Better prepare children for school
- Provide quality early childhood education to promote children's success in language, math, and social skills

Ways that Child Care subsidies help the community:

- Enable working families to invest in the local economy and tax system through earnings and purchase of child care
- Offset the cost of child care subsidy services through working families' abilities to pay taxes
- Stabilize childcare arrangements and allow parents to be more focused on being better employees

Currently there are 679 licensed childcare facilities in Wake County, including pre-school, school age, homes, centers and GS-110-106 (religion exempted centers) (*Durham, Orange, and Wake County Child Care Services Association, 2010*). There are:

- 291 licensed centers, 152 with a 4 or 5 star rating (134 accept vouchers)
- 352 licensed child care homes, 77 with a 4 or 5 star rating (56 accept vouchers)
- 36 licensed pre-school or school age programs (9 pre-school & 27 school age programs)
- 425 licensed facilities in Wake County enrolled in the Child Care Subsidy Program

Currently a number of childcare centers have empty classrooms, yet as of June 11, 2010 there were 2,899 children on the waiting list to receive childcare subsidy. The wait list reached 7,000 children by January 2010, and the wait list was cleared at that time with one-time ARRA funding. Since February 2010 the wait list has continued to grow.

In 2007, approximately 25 percent of Wake County's estimated 77,165 children ages birth to 5 were enrolled in regulated child care. The number of children in regulated child care increased 16 percent since 2006 (*Wake County Smartstart Annual Report, 2008*). The total licensed capacity in Wake County as of May 2010 is 37,335 according to information received from Durham, Orange, and Wake County Child Care Services Association.

Resources and Strengths

Wake For Kids is a local fund raising effort to assist with scholarships for families on the child care subsidy waiting list who are in homeless shelters and do not have child care to assist while parents work or seek employment. This effort is possible through the partnering of volunteers, businesses, and non-profit organizations including the Raleigh Rescue Mission.

More at Four, Head Start, Title I Pre-School and Child Care Subsidy have a common intake process and data base for four year olds so that a parent can apply for all four childhood

education programs at the same time. Children are placed in the program that can best meet their needs. All children receive free screening for hearing, vision, dental and school readiness. The Wake County Public School System, Child Care Services Association, 4-H, Raleigh Parks and Recreation, Child Care Providers, Boys and Girls Clubs and WCHS Child Care Subsidy Program have partnered to expand before/after school programs for track-out care of students of year-round schools for safe, affordable, quality arrangements while their parents work.

Implications and Emerging Issues

There is a serious need for more affordable, accessible, quality child care in Wake County. Several factors increase the need/demand:

- Growth in population
- Increasing numbers of low- wage jobs
- Migration to Wake County due to the availability of jobs
- Increased demand for services not met by current resources
- Expense of child care
- Benefits to employees: 1) After receiving child care subsidies, 54 percent of families report they missed less time from work; 2) Seventy-three percent of families who have worked more than two years reported that receiving child care subsidies assisted them in keeping their jobs (*WCHS Child Care Subsidy Annual report 2006*)
- Benefit to the employers: more stable work force
- Benefit to children: Quality child care is important in early childhood education and development (*Raleigh News and Observer, October 21, 2010; US Chamber of Commerce Report, 2010*)

Basic Needs

Community Perceptions

In the 2010 Community Assessment Survey, respondents indicated the following as the top three most important community issues:

- Unemployment
- Homelessness
- Not enough affordable housing

Over 25 percent of survey participants stated there is not enough economic opportunity in Wake County, with the highest percentages of those being in the East (69.8 percent) and South (74.3 percent).

Statistics and Trends

The ability to obtain basic needs is measured by a person's ability to pay for food, clothing, utilities, housing and necessities of life and death.

Economy, Income and Financial Assistance

- The depth of the current economic recession has swelled the ranks of Wake County families living below the poverty level. In 2000, Wake County had a poverty rate of 4.9 percent, 31,059 individuals; by 2008, the rate had risen to 9.2 percent, 82,831 individuals.
- In the past, families have responded by trying to create more two-earner households. But with the current unemployment rate of 9.5 percent in January 2010 (Wake County Trends and Outlook 2009, 2010), up from 2.4 percent in 2000, that option no longer applies as a guarantee of improving the family's income.
- Work First is the current program offering financial support for families in poverty. Wake County's Work First caseloads dropped from 1,642 in October 2009 to 1,511 in February 2010. While this might appear to be a positive indicator, it is more likely due to a statewide policy change that went into effect in October 2009. The new policy, referred to as Work First Benefits, requires families to prove that they have completed the activities in their Mutual Responsibility Agreement by the fifth workday of each month (Wakegov.com, 2009).
- Wake County Human Services no longer helps poor families with financial assistance for prevention of eviction and utility disconnects, or end of life needs (News & Observer, May 11, 2010).

Poverty and Cost of Living

- The most striking indicator of Wake County's affluence is its high median family income, \$82,856 in 2008. The 2008 median household income was \$65,180 (American Community Survey, 2008). However, an increase in affluence is shadowed by an increase in the number of County residents living in poverty.
- While in 2000 the number of people in the County below the poverty line was 47,600 (a 7.8 percent poverty rate), by 2008 the number was 82,831 (a 9.2 percent poverty rate). In 2008, the weighted average poverty threshold for a family of four was \$22,025; for a family of three, \$17,163; for a family of two, \$14,051; and for unrelated individuals,

\$10,991. The cost of living is based upon a much higher family income, meaning those in poverty are priced out of most markets for housing, clothing, food, and other necessities.

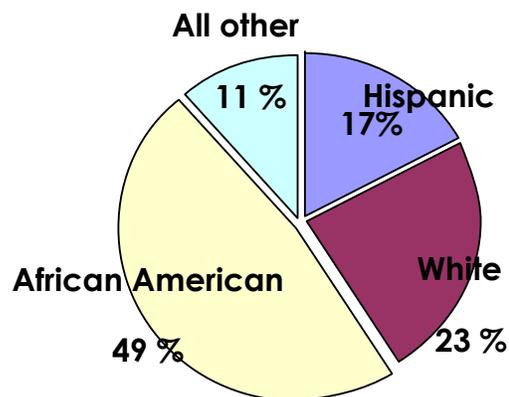
Obtaining Food

- In fiscal year 2007, the Raleigh Branch of the Food Bank of Central and Eastern North Carolina distributed 12,348,491 pounds of food valued at \$18,399,252.
- According to the Cary News (*April 6, 2010*), area food pantries are being stretched beyond historical capacity with the influx of the newly unemployed.
- According to the News and Observer (*March 21, 2010*), more than \$169 million was put on EBT cards across the state, with households in Wake County receiving about \$8.5 million. Two years earlier, the statewide number was about \$90 million, with \$4.5 million coming into Wake.

Basic Healthcare

- From 2007 to April of 2010, the number of families using Wake County's Family Medicaid program increased 14.46 percent. In December 2008, the total number of individuals enrolled in the Wake County Medicaid program was 73,849; By April 2010, the number had risen to 78,553 (*DMA Medicaid Annual Report*).
- The table below reflects the economic disparities by race in basic health care needs. In 2006-2008, the population of Wake County by race was 68 percent White, 20 percent African American, 8 percent Hispanic, and 4 percent all other (*American Community Survey, 2008*).

**Graph 3: Medicaid Enrollment, by race 2008
Wake County**



Resources and Strengths

- The nonprofit community in Wake County provides emergency rent payments and utility payments to families in need. The recent addition of federal stimulus money to prevent eviction and rapidly re-house those about to enter homelessness, HPRP, was timely as Wake County Human Services (WCHS) eliminated such assistance.
- Wake County enjoys a large number of nonprofits and churches that provide food, clothing and financial assistance to low income citizens. As WCHS discontinues services, it contracts with community based non-profits to address these basic needs in the community.

Disparities, Gaps and Unmet Needs

- In 2008, African Americans were 21 percent of the population in North Carolina, but represented 34.4 percent of those in poverty. Hispanics were 6 percent of the population, but 38.5 percent of those in poverty. Twenty-six of those in poverty were under the age of 18 (<http://www.statehealthfacts.org>, 2010).
- The primary national measure, the federal poverty level, is widely regarded as outmoded. Similarly, the prolonged erosion in the value of the minimum wage has undercut its relevance as a basic wage standard. To better inform the debate around work, wages, and opportunity, the North Carolina Budget and Tax Center developed the Living Income Standard (LIS), a market-based approach for estimating how much income a working family with children needs to pay for basic expenses ([http://www.ncjustice.org/sites/default/files/2008_percent20LIS_percent20report_percent20\(Final_percent20March_percent202025\).pdf](http://www.ncjustice.org/sites/default/files/2008_percent20LIS_percent20report_percent20(Final_percent20March_percent202025).pdf)). The table below shows the 2008 Living Income Standard for Wake, considered the most expensive county in North Carolina, with a comparison to the least expensive county, Anson.

Table 2: Living Income Standard for Wake County, 2008

	Annual LIS	Monthly LIS	Hourly LIS	Annual LIS as a Percent of FPL	Hourly LIS as a Percent of Min. Wage
Wake	\$50,435	\$4,203	\$24.25	246.4 %	394.3%
Anson	\$34,145	\$2,845	\$16.42	166.8 %	266.9%

(FPL = Federal Poverty Level)

- The hourly LIS is the total earnings of all the adults in a family, assuming full-time (40 hours) for 52 weeks per year. The comparison of the FPL is the weighted average of the federal poverty level for four family types. The minimum wage is the comparison of the 2007 rate of \$6.15.
- According to *The Impact of the Economic Climate on Partner Agencies*, conducted by United Way of the Greater Triangle in 2009, approximately 55 percent of all clients and patients are new, never having been to agencies for help previously. People have had good jobs with full benefits that they have lost. Unemployment benefits do not provide enough to cover expenses. Cobra Health Insurance payments are too high, so they are no longer insured. They need food, medications and help finding new jobs. Many are losing their homes or facing eviction because they simply cannot keep up making payments (*United Way of the Greater Triangle, 2009*).

Implications and Emerging Issues

On a broader scale, local advocates for low-income citizens have noted, “the working poor are laboring harder and longer than ever before just to get by” (*Wake County Community Health Assessment, 2006*). In addition, as shown in the previous section, more individuals and families who have never done so are seeking basic needs services as a result of the recession. The following are emerging issues for the ability to attain and maintain basic needs:

- Increasing demand for services
- Escalating costs of prescription drugs with job layoffs
- More rapid exhaustion of emergency funds (for medications, food, rental assistance, etc.)
- Significant increase in the number of workers who have been laid off, many of whom are well educated and /or highly skilled
- Disproportionate percentage of income needed for housing and utility costs
- Negative impacts of statewide behavioral health reform
- Budget cuts at the federal, state, and local levels reducing services or making it more difficult to obtain services to address basic needs

With Wake County being the largest provider of services related to basic needs, it is important to note that cuts have been made in the budget for Wake County Human Services for three straight years. With the survival needs of citizens increasing, cutting more services to address budget shortfalls is a solution Wake can ill afford.

While community-based nonprofits and faith communities are striving to meet ever increasing needs, declining or stagnant contributions present a challenge to continue to do more with less over the long haul.

Housing

Housing continues to be a critically important issue in Wake County. In the current economic climate, ensuring that citizens can afford safe, quality, affordable housing is a growing concern. High unemployment coupled with the slow but continual rises in the costs of homeownership and rental units have made it difficult for lower income families to access affordable housing. Meeting the demand for housing that serves people with special needs is also an important issue facing the County.

Community Perceptions

According to the respondents of the 2010 Wake County Community Assessment survey, the lack of affordable housing is one of the top five most important community issues in Wake County. The lack of affordable housing was of particular concern to survey participants in the eastern segment of Wake County.

Statistics and Trends

As the population of Wake County grows, the need for affordable housing increases. Many people are finding it nearly impossible to purchase a home on one income, while paying for basic living expenses and saving money for the future. Problems related to housing are worsening, or failing to improve. Problems include the decline in home sales, the availability of affordable rental units and homelessness.

- Population and Households: Wake County's estimated population in 2008, excluding the populations within the corporate limits of Cary, Raleigh and Holly Springs, was 323,443 (*U.S. Census Bureau*). This is a 30 percent growth from 2000, when the population was 248,025. There are 353,236 households, according to the 2008 American Community Survey.
- Area Median Income (AMI): Wake County's median income for a family of four is \$76,900; this is a 6 percent increase over the 2005 median income of \$72,447. These statistics are for all of Wake County, including Raleigh, Cary and Holly Springs (*Wake County Consolidated Plan, 2010*).

Table 3: Median Incomes in Wake County

Year	Median Income	Percentage Change
2005	\$72,447	
2009	\$76,900	6 %

Source: 2008 American Community Survey

Housing Trends

Wake County's economy has slowed with the recent economic downturn, as demonstrated by the slowing of housing construction and the smaller increase in home sales prices. The table shows that 1,213 permits were issued for new housing in 2009, a 76 percent decrease from 2005, when 5,090 permits were issued. From 2000 to 2005, permits increased by 31 percent (*Wake County Revenue Department, 2010*).

Homeownership continues to be problematic for low- and moderate-income families. Even with the recent economic slowdown, the price of home ownership has increased significantly over the past decade. According to the Wake County Revenue Department, in 2005, the median home sales price in Wake County was \$197,123. In 2009, it was \$203,000, an increase of 3 percent. A moderate-income family of four earning \$61,520 can afford a home costing around \$162,000. This means that persons earning less than 80 percent of area median income may have a difficult time becoming homeowners, especially in the northern, southern, and western parts of Wake County. In 2005, of the 19,472 total home sales, 7,978, or 41 percent, were considered affordable at prices below \$175,000. In 2009, out of 11,734 total sales, 4,388, or 37 percent were considered affordable (*Wake County Revenue Department, 2010*).

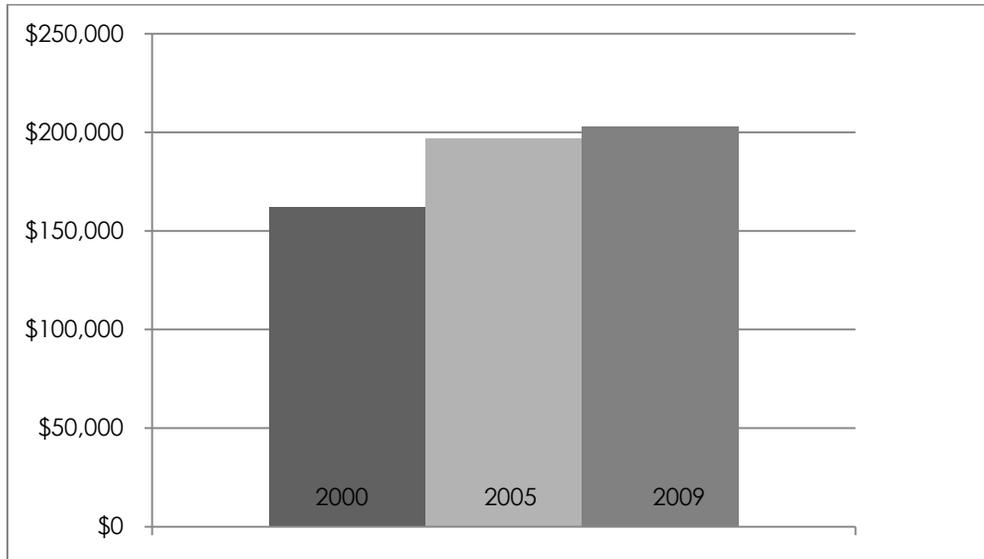
The trend continues to keep low-wage and service workers from being homeowners in Wake County. See the following tables for more information.

Table 4: New Residential Permits 2009

Town	Total
Apex	83
Fuquay-Varina	233
Garner	53
Wake Forest	226
Wake County	223
Morrisville	197
Knightdale	135
Rolesville	25
Wendell	30
Zebulon	8
Total	1,213

Source: Wake County Revenue Department

Graph 3: Increase in Median Home Price



Source: Wake County Revenue Department, 2010

Table 5: All Home Sales by Price

Price	Number of Sales	
	2005	2009
\$0-75,000	297	122
75-100,000	835	306
100-150,000	4,414	2,341
150-200,000	4,434	3,022
200-250,000	2,699	1,907
250,000+	6,793	4,036
Total All Sales	19,472	11,734

Source: Wake County Revenue Department, 2010

Table 6: Affordable Home Sales by Price

Price	Number of Sales	
	2005	2009
\$0-75,000	297	122
75-100,000	835	306
100-125,000	1,817	866
125-150,000	2,597	1,475
150-175,000	2,432	1,619
Affordable Sales	7,978	4,388

Source: Wake County Revenue Department, 2010

- Median Sales Price by Town:** Wendell, Zebulon and Knightdale have the lowest median sales price in Wake County. Wake Forest, Rolesville and unincorporated areas of the County have the highest median sales prices. However, the trend in sales prices continues upward, no matter where one lives in the County.
- Rental Trends:** Approximately 34 percent of all households in Wake County are classified as renters. A typical two-bedroom market rate apartment averaged \$725 in 1998, \$850 in 2006, and \$856 in 2010, an 18 percent increase between 1998 and 2010. In order to afford a market rate apartment in Wake County, a household must earn \$34,240 annually, or \$16.46 per hour for a 40-hour work week (*National Low Income Housing Coalition, 2010*). Options are limited for those who earn less than \$16.46 per hour.

In Wake County, roughly 89,727 housing units are rented at market rates. There are 10,440 subsidized rental housing units. Of these, 343 are Wake County public housing units, 1,710 are Raleigh public housing units, 206 are Wake County Section 8 vouchers, and 3,540 are Raleigh Section 8 vouchers. In addition, there are 6,135 units that are funded with Low-Income Housing Tax Credits. The units funded with Tax Credits serve persons earning 60 percent and less than area median income.

The Raleigh Housing Authority reports a waiting list of 5,300 families for Section 8 vouchers to help pay for rent, and 2,000 families waiting for public housing units. The Housing Authority of Wake County reports a list of 1,200 low-income families waiting for Section 8 vouchers, and 4,000 families waiting for public housing units.

Apartment rents, like home prices, have increased over the past five years, placing a greater burden for housing costs on the lowest wage earners, the elderly, disabled and those most likely on fixed incomes. Vacancy rates currently stand around 8 percent region wide and in

Table 7: Median Sales Price by Town

Town	Median Sales Price	
	2005	2009
Apex	\$214,000	\$220,000
Fuquay-Varina	\$179,000	\$192,000
Garner	\$174,000	\$152,500
Knightdale	\$155,500	\$175,000
Morrisville	\$223,000	\$198,500
Rolesville	\$229,250	\$238,500
Wake Forest	\$257,000	\$249,250
Wendell	\$123,000	\$148,000
Zebulon	\$100,000	\$161,000
Unincorporated Areas	\$245,000	\$234,000

Source: Wake County Revenue Department

Table 8: Rental Cost Trends

Year	1998	2002
1-bedroom	\$673	\$704
2-bedroom	\$794	\$842
3-bedroom	\$1,010	\$1,034

Source: Karnes Research Company and Triangle Apartment Association

Wake County. This is partly due to fewer people moving to the area for employment, as the most recent economic downturn has cost Wake County and the region, which includes Research Triangle Park, many jobs. Low-wage earners and those on a fixed income have benefited because rents have decreased somewhat. See the chart above for rental cost trends.

Public Housing

The Housing Authority of Wake County is responsible for all public housing units and Section 8 vouchers outside the municipal limits of Raleigh. Currently, 343 public housing units and 311 vouchers are available. Of these, 206 are Section 8 vouchers, and 105 are Veterans Affairs Supportive Housing (VASH) vouchers for veterans. The public housing units and Section 8 vouchers both have waiting lists.

The Raleigh Housing Authority is responsible for all public housing units and Section 8 vouchers within the municipal limits of the City of Raleigh. Currently, 1,710 units and 3,540 vouchers are available with waiting lists for both.

Rental Housing Gap

Families earning 50 percent AMI (\$38,450) can afford to pay \$961 or less per month for all housing costs. Families at 40 percent AMI (\$30,760) can afford to pay \$769. However, the average rent for a two-bedroom apartment in Wake County is \$842. These families may struggle to find decent affordable housing, and as income gets lower, the gap between what families can afford to pay and the market rent gets larger. A person earning minimum wage in Wake County can afford maximum monthly rent and utilities of \$377. A person who is disabled and receives Supplemental Security Income (SSI) can afford rent and utilities of no more than \$202.

According to analysis of U.S. Census income data, 31,664 families earn incomes that may cause them to struggle with market rate rents. In Wake County, there are a total of 10,440 subsidized units. Thus, there is a rental gap of 21,224 affordable units (*Wake County Consolidated Plan, 2010*).

Cost Burdened Households

The U.S. Department of Housing and Urban Development (HUD) defines housing as affordable if the monthly housing payments (rent/mortgage + utilities) are 30 percent or less of a household's gross monthly income (\$769 for a family of four earning \$30,760/year at 40 percent AMI). If a lower income household pays more than 30 percent of its gross income for rent or mortgage and utilities, it is considered cost burdened. If a lower income household pays more than 50 percent (\$1,282 for a family of four earning \$30,760/year at 40 percent Area Median Income) of its gross income, then it is considered severely cost burdened. According to the 2008 American Community Survey, in 2008 approximately 50,997 households, or 14 percent of lower income households in Wake County were cost burdened.

Home Ownership Housing Gap

According to the 2007 Wake County Housing Analysis, the homeownership affordability gap is defined as the difference between what a family can pay and what the market indicates the family must pay on a monthly basis.

The 50-80 percent of AMI group is used for the calculation because persons earning 80 percent of AMI, or \$61,520 for a family of four, can afford housing payments of \$978 per month (mortgage, taxes and insurance). The total mortgage that would be affordable for a household at this income level would be around \$162,000. The market is assumed to meet the needs of persons earning 80 percent or more than median income.

Households earning less than 50 percent of median income (\$38,450 for a family of four) will be unable to afford a mortgage on all but a few homes in Wake County. A household at this income level can afford a mortgage of approximately \$61,000.

Vacancy Rates

The rental vacancy rate is one of the most common measures of the health of a given community. The vacancy rate is the percentage of total apartment units that are not occupied. The current vacancy rate is approximately 8.8 percent for all rental units; this is an increase from approximately 8 percent in 2005. The vacancy rate for County subsidized units is 7 percent. Most affordable, subsidized units have waiting lists.

Race and Ethnicity Trends

The past 10 years have seen many changes in the racial and ethnic make-up of Wake County. An overall 27 percent increase in the White population between 2000 and 2008 was the smallest increase in the race and ethnicity categories compared. The African American population has shown an overall 40 percent increase between 2000 and 2008, while the Asian population increased 81 percent during that time and the number of Latino residents, 125 percent, the largest increase of the races and ethnicities compared.

Disproportional Need Among Racial Groups

Wake County defines its areas of racial/ethnic minority concentration by identifying towns whose minority population exceeds 20 percent. According to 2006-2008 American Community Survey data, 2004 Census data, and 2000 Census data, the towns with the highest percentages of minorities are Zebulon, Garner, Wendell and Knightdale. The towns with the lowest percentage of minority populations are Apex and Rolesville. Zebulon has the highest proportion of Latino persons.

Table 9: Race and Ethnicity in Wake County*

Race/Ethnicity	2000	2005	Percent change 2000- 2005	2008	Percent change 2000-2008
White	440,929	503,593	14%	561,790	27%
African American	123,339	150,890	22%	173,358	40%
Native American	1,851	2,781	50%	3,425	85%
Asian	21,549	31,143	45%	39,103	81%
Latino	33,986	55,677	64%	76,375	125%

* Excludes Cary, Holly Springs and Raleigh

Sources: 2000 Census. 2005 and 2008 American Community Surveys

Barriers to Safe and Healthy Affordable Housing

Unemployment

As of August 2010, the unemployment rate in Wake County is approximately 8 percent; this compares to 9.8 percent statewide and 9.5 percent nationwide (Bureau of Labor Statistics, 2010).

Low-Income Households

152,494 households (48 percent of the total) in Wake County are considered low income (*U.S. Census, 2007*). This means that they are earning at or below 80 percent area median income, or \$61,500 for a family of four (this includes Raleigh, Cary and Holly Springs). A total of 79,709 households or 9.2 percent of the total Wake County population earn less than the poverty level (\$22,050 for a family of four). There are only 10,440 publicly and privately subsidized housing units in Wake County (8,473 of these are in Raleigh, Cary, and Holly Springs) (*Wake County Consolidated Plan, 2010*).

Transportation

The lack of adequate public transportation is one of the most significant barriers to the development of affordable housing in rural Wake County. Lower income families who do not

own a car must live near a bus route. The County encourages supportive, transitional and rental housing efforts that are served by public transportation.

Fair Housing

The issue of Fair Housing is addressed by Wake County's Analysis of Impediments to Fair Housing Choice. Wake County plans to focus its efforts over the next five years on providing education on fair housing to the developers it partners with and the customers it serves, and addressing neighborhood resistance (NIMBY-ism, or Not In My Back Yard) and lack of transportation options (*Wake County Consolidated Plan, 2010*).

Substandard Housing

According to the 2005-2007 American Community Survey, 2,277 housing units in Wake County are considered substandard, meaning that they are without heat, without plumbing, or are overcrowded (*U.S. Census Bureau, 2007*).

Overcrowded housing is defined as having more than one person per room, excluding bathrooms and kitchens. According to the 2005-2007 American Community Survey, there are 5,158 overcrowded units in Wake County.

There are limited units available to adequately house large families. A large family is defined as a family with five or more members. The 2008 American Community Survey states that there are approximately 24,074 large families in Wake County.

Table 10: Substandard Housing by Municipality

Wake County Municipalities	Units without Heating	Units without Plumbing
Apex	13	6
Fuquay-Varina	74	1
Garner	51	2
Knightdale	19	8
Morrisville	22	3
Rolesville	3	0
Wake Forest	64	8
Wendell	44	2
Zebulon	91	1
Unincorporated Areas	1,272	142
Total	1,653	173

Source: Wake County Department of Revenue, 2010

Lead-Based Paint Hazards

The problem of childhood lead poisoning is widespread. Medical research shows that even lead exposures too small to cause noticeable illness may cause permanent brain damage, reduce intelligence, cause learning disabilities, hinder growth, and impair perception, speech and hearing. Children under six years old are at greatest risk from lead poisoning because their developing brains and nervous systems are easily damaged by lead, and because they tend to place many nonfood substances in their mouths. Young children also absorb and retain more lead than older children

and adults. Because lead can affect unborn children, pregnant women are at risk. Blood lead levels are considered elevated when they exceed 10 micrograms per deciliter (CDC, 2010).

Although paint manufacturers voluntarily lowered the amount of lead in paint during the 1950s, lead-based paint continued to be used on homes until the Consumer Product Safety Commission banned it in 1978. Homes built before 1978, and especially homes built before 1960, may contain highly poisonous lead-based paint. Recent lead abatement legislation expanded and reorganized the Childhood Lead Poisoning Prevention Program in North Carolina. Responsibilities for administering the program at the state level have been transferred from the Division of Epidemiology to the Divisions of Environmental Health and Maternal and Child Health. This program has been reorganized to better facilitate coordination between the state and local components of the Childhood Lead Poisoning Prevention Program. Prevention of lead poisoning will involve a team effort that brings together components of environmental health and maternal and child health. Wake County's Department of Environmental Services is in charge of the County's Lead-Based Paint Removal Program and is committed to reducing the hazards of lead in Wake County communities. Inspections staff respond to reports by school nurses or medical doctors that a child has been exposed to lead by investigating the child's environment, including his/her house and school, for evidence of lead. When the source is identified, Environmental Services notifies the owner of the lead-hazard in the structure and refers him/her to the State Health Department to initiate abatement procedures.

Elevated blood lead levels have been proven to adversely affect intelligence and behavior in children, limiting their future life opportunities. In Wake County, testing for elevated blood lead levels is conducted by the Wake County Health & Human Services Department and private physicians; all data is submitted to the North Carolina Department of Environment & Natural Resources (NCDENR) where the data are tabulated.

**Table 11: 2008 North Carolina Children Tested for Lead Poisoning
Wake County and State of North Carolina compared**

Geography	Target population *	Ages 1 and 2 Years Tested for Lead Poisoning					Ages 6 months to 6 Years		
		# tested	% tested	Tested among Medicaid* *	Lead 10 or greater	%10 or greater	# Tested	Confirmed 10-19	Confirmed 20 or greater
Wake County	26,148	10,119	38.7	77.4	40	0.4	12,376	9	2
State of NC	258,532	121,023	46.8	77.6	654	0.5	152,222	181	36

*Target Population is based on the number of live births in 2006 and 2007

**Includes ages 9-35 months

Source: Raleigh Community Development Department, 2009



Table 12: North Carolina Children Tested for Lead Poisoning 2004-2008, Ages 6 months to 6 years Wake County

Year	# Tested (Ages 6 months-5 years)	Elevated Blood Lead Level	
		Greater than or equal to 10 micrograms per deciliter	Greater than or equal to 20 micrograms per deciliter
2004	8,661	77	9
2005	9,923	52	8
2006	11,505	57	6
2007	11,887	50	8
2008	12,376	49	9
TOTALS	54,352	285	40

Source: Raleigh Community Development Department, 2009

Table 12 above indicates some positive trends for the County as a whole. Each year the total number of children tested increased over the previous year, while the absolute number of children found with elevated blood lead levels (EBLL's) continued to decline. This is important since early detection can limit the negative impact of lead poisoning. If fewer children are found with elevated blood lead levels, perhaps the threat is actually decreasing over time as hazards are contained or abated and the total number of units with any lead-based paint declines.

Table 13: North Carolina Children Tested for Lead Poisoning 2004-2008, Ages 6 months to 6 years Race / Ethnicity / Medicaid / Non-Medicaid Wake County

Characteristic	Testing Population		Blood lead level	
	#	%	Greater than or equal to 10 micrograms per deciliter	Greater than or equal to 20 micrograms per deciliter
African American	11,843	21.8%	73	9
Caucasian	17,895	32.9%	70	12
Hispanic	11,788	21.7%	64	11
Native American	90	0.2%	0	0
Other	1,681	3.1%	19	3
Unknown	11,055	20.3%	59	5
TOTAL	54,352	100%	285	40
Income				
Medicaid	32,769	60.3%	193	28
Non-Medicaid	21,583	39.7%	92	12
TOTAL	54,352	100%	285	40

Source: Raleigh Community Development Department, 2009

Special Needs Populations

This section discusses the needs of non-homeless individuals and families who have special needs. All statistics are for all of Wake County, including Raleigh, Cary and Holly Springs. According to the American Community Survey, in Wake County, 66,340 persons have some type of disability – physical, mental, or sensory. Of these, 8,560 or 13 percent are living below the federal poverty level (\$10,830 for a single person, \$22,050 for a family of four). Of all persons ages 18–64 with a disability, 44 percent are employed.

Elderly

According to the 2008 American Community Survey, 67,774 persons in Wake County are considered elderly; that is, they are 65 years and older. The North Carolina State Demographer projects that the population of 55 and older will rise from 188,758 in 2010 to 257,383 in 2015. The population of 65 and older will rise from 84,427 in 2010 to 120,708 in 2015.

Frail elderly are defined as persons with limitations in three or more personal care and home management activities, such as bathing, dressing and housekeeping. According to the 2008 American Community Survey, there are 11,744 frail elderly in Wake County (this is 17 percent of the overall elderly population) (*U.S. Census Bureau, 2008*).

Of the 67,774 persons 65 and older, 5,472 earn below the federal poverty level (\$10,830 for a single person), and a subset of these are frail elderly (*American Community Survey, 2008*). There are approximately 1,253 subsidized rental units for the elderly in Wake County and 1,321 non-subsidized units that are affordable (*Wake County Aging Services Plan Update, 2010*). Based on the projected growth in the elderly population, an estimated additional 1,665 units are needed by 2015. This means an average of 333 units/year need to be added to the housing stock every year until 2015. Repairs are needed on 3,286 elderly-occupied homes (owner-occupied and rental).

The Wake County Aging Services Plan update 2010-2014 makes the following recommendations:

- Expand rental housing opportunities for senior adults with emphasis on building new units of affordable housing to meet anticipated demand due to population growth
- Maintain existing local funding for affordable housing
- Promote public understanding of available housing options
- Increase public awareness of, and funding for, programs that assist senior adults with home repairs, upkeep, and energy efficiency (*Wake County Aging Services Plan, 2010*)

Having ready access to transportation is important to persons who may find driving increasingly difficult as they age due to various health conditions. Locating elderly housing near access to the regional rail network is something to keep in mind as the rail system progresses. This will allow ready access to transportation to services for elderly persons who no longer drive.

Mental Illness

An estimated 4,218 adults in Wake County with a diagnosed mental illness are served by Wake County Human Services or organizations that are under contract with Wake County to provide services. Most of them require affordable, supportive housing.

Supportive housing is defined as housing with services. Many times, persons with severe and persistent mental illnesses can function outside an institutional setting with housing that includes services such as medication management, life skills training, employment assistance and case management. According to the Wake County Continuum of Care Housing Inventory Chart 2009, there are currently 770 units of supportive housing for persons with mental illnesses in Wake County. The housing gap is 3,448 units (*Wake County Continuum of Care Housing Inventory Chart, 2009*).

Substance Abuse

Wake County Human Services and contracting agencies serve a total of 1,800 low-income adults with a substance abuse disorder. An additional 384 low-income children with a substance abuse and mental disorder are served. Currently, 236 beds are available for persons with substance abuse disorders in Wake County. Providers are Wake County Human Services, Southlight and the Healing Place of Wake County. The current gap for persons with substance abuse disorders is 1,564 beds.

Developmental Disabilities

There are approximately 16,500 persons in Wake County with developmental disabilities. In 2009, approximately 2,700 children and adults received short- or long-term services through Wake County Human Services and its contractors. Currently, 1,200 people are waiting for services.

In terms of housing, 421 beds and independent living apartments in Wake County serve persons with developmental disabilities. Of these, 144 are Intermediate Care Facilities (ICF-MR) group homes. There are 60 persons waiting for placement in an ICF-MR group home. There are 277 other beds in Wake County in group homes, boarding homes, and independent living apartments for persons with developmental disabilities. Wake County Human Services receives funds from the state Developmental Disabilities Section each year to help persons with disabilities to live as independently as possible. These funds can be used for security deposits, rent, furniture, food, utilities, etc. Wake County received approximately \$70,000 in 2009.

Supportive services needs for this population include case management, independent living skills training, transportation, and access to health care and mental health treatment. The following service providers operate in Wake County: Autism Services, Community Alternatives, Inc., Community Innovations, Tammy Lynn Center for Developmental Disabilities, Lutheran Family Services, Residential Support Services, United Cerebral Palsy, Hilltop Home, Universal MH/DD/SA, Advanced Health Resources, and Coordinated Services.

Physical Disabilities

According to the 2008 American Community Survey, approximately 59,393 persons over the age of 18 in Wake County have a physical disability. Of these, 8,560 persons are below poverty level (\$22,050 for a family of four), and 5,413 people between the ages of 18 and 64 have a physical disability and are below poverty level. There are approximately 600 accessible, affordable housing units in Wake County. The housing gap for this population is 8,152 units.

HIV/AIDS

According to the N.C. 2007 HIV/STD Surveillance Report, 2,306 persons are living with HIV and AIDS in Wake County (1,216 with HIV and 1,090 with AIDS) (*North Carolina Division of Public Health, 2008*).

Wake County also manages the Housing Opportunities for Persons with AIDS (HOPWA) allocation for the Raleigh-Cary, N.C. area (covering Franklin, Johnston, and Wake Counties). According to the 2007 North Carolina HIV/AIDS Surveillance report by the N.C. HIV/STD Prevention & Care Branch, there are 2,657 people in Wake, Franklin and Johnson counties who are living with HIV/AIDS (*North Carolina Division of Public Health, 2008*).

There are 14 HOPWA vouchers with supportive services and one five-bed group home in Wake County for persons living with HIV/AIDS. An estimated 37 percent of persons with HIV/AIDS, or 983 persons, are in need of housing at any given time (*Wake County Human Services, 2010*). This is an approximate gap of 964 units.

Resources and Strengths

The following two tables list the housing resources available in Wake County.

- **Definitions:**

Programs for Home Ownership & Housing Rehabilitation:

- Down payment assistance - Grant or loan to assist with down payment and closing costs
- First mortgage - Primary financing for the house
- Second mortgage - Grant or loan of up to \$20,000 to reduce the amount of the first mortgage
- Developer - Constructs houses for purchase by families
- Credit counseling - A program that helps families with budget/credit issues so they can qualify for a first mortgage
- Home buyer classes - Education on the home buying process and post home ownership counseling; on-going education after the purchase of a home
- Housing rehabilitation - Grant or loan programs for substantial or emergency repair of substandard housing

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Programs for Rental Assistance

- Rental Assistance - Emergency grant or certificate to help individual or family obtain or maintain rental unit
- Emergency Assistance - Grants to prevent eviction or utility shut-offs
- Development Loans - Loan funds to build affordable rental units from a variety of sources
- Support Services - Variety of programs that help individuals and families maintain or obtain affordable rental units

Table 14: Agencies Providing Rental Opportunities in Wake County:

Agency	Program	Target Population	# of Families Served per Year
City of Raleigh	Owns units and makes loans to developers of affordable rental units	Families with incomes at or below 50 percent of AMI	
CASA (Community Alternatives for Supportive Abodes)	Owns units throughout Wake County	Special needs individuals and families, families at or below 60 percent AMI, and/or persons with a history of being homeless	205
DHIC (Downtown Housing Improvement Corporation)	Develops and owns affordable rental units throughout Wake County	Families and elderly households with incomes of less than 60 percent AMI	1,173
Passage Home	Owns rental units in Raleigh; provides support services and transitional housing	Families at or below 80 percent of AMI concentrating on families below 60 percent of AMI	80
Raleigh Housing Authority	Approximately 2,000 public housing units (all in Raleigh) and 3,500 Section 8 Certificates and vouchers (anywhere in Wake County)	Families earning up to 50 percent of the AMI	4,000
The Caring Place	Transitional housing for families who have children	Families earning at or below 30 percent Area MFI	25 people
The Women's Center of Wake County	Owns permanent rental housing	Families earning below 40 percent of Area MFI	2
USDA Rural Development	Direct & Guaranteed loans (Section 515)	Families earning between 31 percent and 50 percent of AMI	
Wake County (Department of Human Services)	Loans to developers of affordable rental; support services and Client Assistance funds.	Families earning less than 40 percent of the area AMI; families participating in the Work First program	

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Table 15: Agencies Providing Homeownership Opportunities in Wake County:

Agency	Program	Target Population	# of Families Served per Year
Wake County Housing Authority	343 public housing units and 311 Section 8 certificates	Families earning up to 50 percent of the area AMI	
Builders of Hope	Developer	Families at or below 80 percent AMI	
City of Raleigh	Second mortgage funds and housing rehabilitation	Families with incomes at or below 80 percent AMI	
DHIC (Downtown Housing Improvement Corporation)	Homebuyer education and credit counseling, 2 nd mortgages	Families with incomes at or below 80 percent AMI	300
Habitat for Humanity	Credit counseling, 1 st mortgage financing, pre and post purchase counseling	Families between 30 percent and 50 percent of AMI with need	50
NAOA (Neighborhood Association of America)	Homeownership counseling, down payment assistance	Anyone who is a homebuyer and does not currently own a home is eligible	
North Carolina Housing Finance Agency	Down payment assistance, second mortgages and first mortgages	Families and individuals earning at or below 120 percent of AMI	3,300
Passage Home	Developer, home buyer classes, credit counseling, post home ownership counseling for 1 year, individual development accounts	Families at or below 80 percent of AMI concentrating on families below 60 percent of AMI	50
Resources for Seniors	Housing rehabilitation, Emergency repair, in home aid service & transportation.	Older Adults	
Triangle Family Services	Credit Counseling Housing Counseling- pre-and post, Reverse Mortgage Counseling and Homebuyer Education Workshops	Anyone is eligible but most clients have a household income of under 80 percent MFI	2,238
USDA Rural Development	Guaranteed loans 1 st mortgage and housing rehabilitation loans	Families earning at or below 80 percent of AMI	1,006
Wake County Housing Authority	Down payment assistance program; Section 8 homeownership program, Family Self-Sufficiency Program	Families earning less than 80 percent area MFI; housing authority residents	657

Homelessness

Community Perceptions

Homelessness is a sad reality for some citizens. Men, women, families and youth experience homelessness for a variety of reasons, such as lack of affordable housing, low paying jobs, substance and alcohol abuse, mental illness and family conflict. Criminal records, bad credit, poor employment histories and deficient independent living skills are additional causes. Wake County's high cost of living, especially housing expenses, makes a homeless person's transition to full economic self-sufficiency an often long and frustrating process. Although numerous supportive services and programs exist for people experiencing homelessness in this community, funding for these services has not kept pace with demand. This has resulted in more people experiencing homelessness on either a temporary or chronic basis.

Over 51 percent of respondents to the 2010 Wake County Community Assessment Survey felt that homelessness was a problem in Wake County.

Statistics and Trends

Over the course of a year, at least 3,500 persons are homeless in Wake County (*Carolina Homeless Information Network, 2009*).

In Raleigh, the South Wilmington Street Center (SWSC), the largest of the city's eight homeless shelters, served 1,764 men, with a total of 79,677 overnight stays and 206,713 meals between July 1, 2009, and June 30, 2010.

The U.S. Department of Housing and Urban Development (HUD) defines homeless persons as those who lack a fixed, regular, and adequate nighttime residence, including persons whose primary nighttime residence fits the following criteria:

- A supervised public or private shelter designed to provide temporary living accommodations
- Time-limited/nonpermanent transitional housing arrangements for individuals engaged in mental health and/or substance abuse treatment
- An institution that provides a temporary residence for individuals not intended to be institutionalized, or a public or private facility not designed for, or ordinarily used as, a regular sleeping accommodation (*United States Code, Title 42, Chapter 119, Subchapter 1*)

Myriad problems that contribute to homelessness include:

- Poor health and disabilities
- Lack of educational and marketable skills
- Lack of stable employment options which pay a living wage and provide benefits
- Lack of accessible and affordable transportation;
- Institutional histories
- Lack of support networks of family and non-homeless friends

The Partnership to End and Prevent Homelessness conducts annual, comprehensive, countywide Point-in-Time counts. The Partnership asks town police and fire departments to identify camps and gathering places of homeless persons. Working without publicity, outreach workers from several agencies and faith communities go to these places and count the number of people who are on the streets, in camps or under railroad bridges in the latter part of the evening. On the same night, emergency shelters and transitional housing programs complete a tally of those staying in their facilities.

Table 16: Triangle Region Point-in-Time Homeless Count:

	Durham	Orange	Wake	Triangle Total
Total 2007	539	224	1,043	1,806
Total 2008	590	195	1,144	1,929
Total 2009	535	156	1,152	1,843
Total 2010	675	181	1,180	2,036

On January 30, 2010, 1,180 people were counted in the one-day survey of homelessness, providing a single "snapshot" of who was homeless on that particular night. Of those, 170 were children. In addition to those counted in shelters, 121 people were found outdoors living on the streets. An estimated 15,000 people were living doubled up with family or friends, and at risk of homelessness. Family homelessness in Wake County is rising by an estimated 11 percent yearly (*Raleigh/Wake County Partnership to End and Prevent Homelessness, 2010*). The chart below provides more detail from the 2010 Point-In-Time Count:

Table 17: Point-in-Time Homeless County, 2010

Homeless Population	Sheltered		Unsheltered	Total
	Emergency	Transitional		
Number of Families with Children (Family Households)	77	30	0	107
Number of Persons in Families with Children	200	135	0	335
Number of Single Individuals and Persons in Households without Children	442	280	121	843
Total Persons	644	415	121	1,18

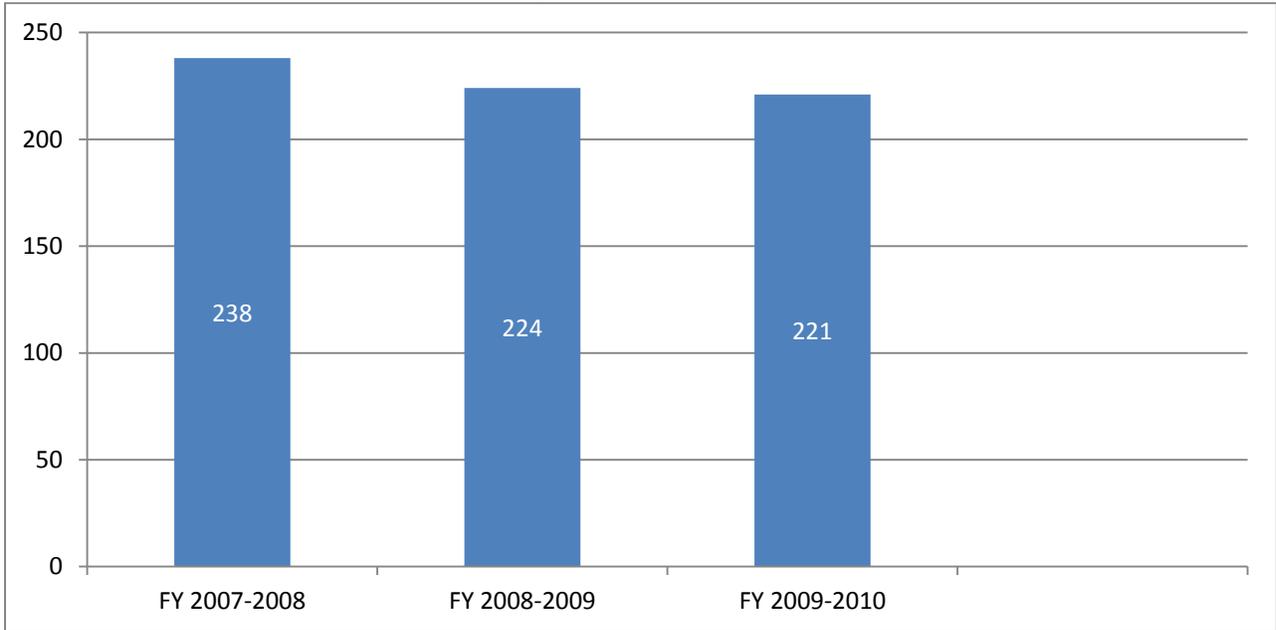
This method, however, has serious limitations in accurately counting the number of persons experiencing homelessness. The count is done only one night per year and during the winter when people are more creative in finding temporary shelter from the weather. The count is limited primarily to the downtown Raleigh area and targets areas where homeless people will most likely be found. The shelter survey does not include all hospitals, jails, or other treatment facilities. Wake County's South Wilmington Street Center (SWSC) alone served over 1,700 unduplicated men during the year. Looking at several data sources, it becomes obvious that the number of people experiencing homelessness fluctuates over a period of several years. It is reasonable to suggest, based on data from shelters, that the actual number of homeless persons in the County is higher than reported through the Point-in-Time count. Regardless of the actual number of homeless persons in the community, the knowledge that many citizens lack a safe, permanent residence is cause for more attention and resources to help eradicate homelessness in the County.

Many homeless persons are priced out of the housing market. A majority of people who are homeless work, most often in low-paying service jobs that provide no benefits. The North Carolina Housing Coalition reports that 856,000 households in the state live in substandard housing or are paying too much for housing. This "housing affordability gap" is especially acute in high-cost housing areas like Raleigh, where the fair market rent for a two-bedroom apartment is \$856. With the minimum wage at \$7.25 per hour, even people earning twice that rate cannot find affordable housing. In fact, over 23,300 additional housing units are needed for people earning less than 40 percent of area median income. The current median income for a family of four is \$76,900 per year.

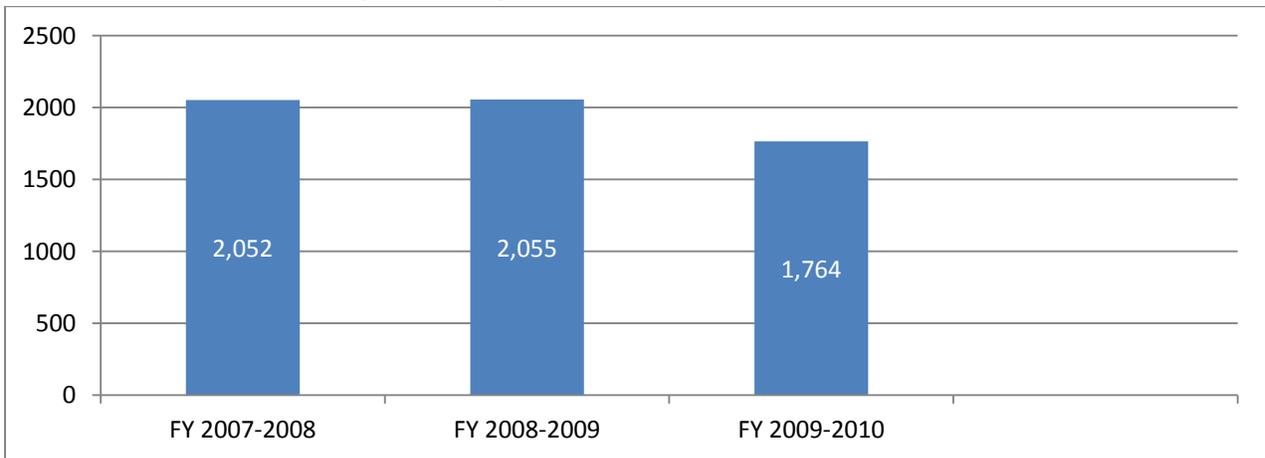
An estimated 671,859 adults and children in the United States experience homelessness each night. Homelessness is a challenging problem with no single or simple solution. Generally, people are homeless because of a complex interplay of individual risk factors and structural barriers that must be addressed in any comprehensive system to prevent and end homelessness. The homeless population is heterogeneous and includes single adults, homeless families with children, and unaccompanied youth. Nationally, the majority of homeless people, 63 percent, are unaccompanied adults, but the number of homeless families is growing. Nearly 1/4 of homeless people are children under age 18 with a parent; 42 percent of the children are under the age of 5 (*U.S. Department of Housing and Urban Development, 2009*).

In Wake County, the SWSC provides emergency shelter and basic needs to men experiencing homelessness. It also offers supportive services and help to develop plans that lead to self-sufficiency. It served roughly 2/3 of the estimated 3,500 persons who experienced homelessness in the County last year. Data taken from SWSC's last three annual reports document the most recent trends among men experiencing homelessness in Wake County:

Graph 4: Average Daily Occupancy of Men:



Graph 5: Unduplicated Number of Men Served:



Graph 6: Number of Beds Utilized:

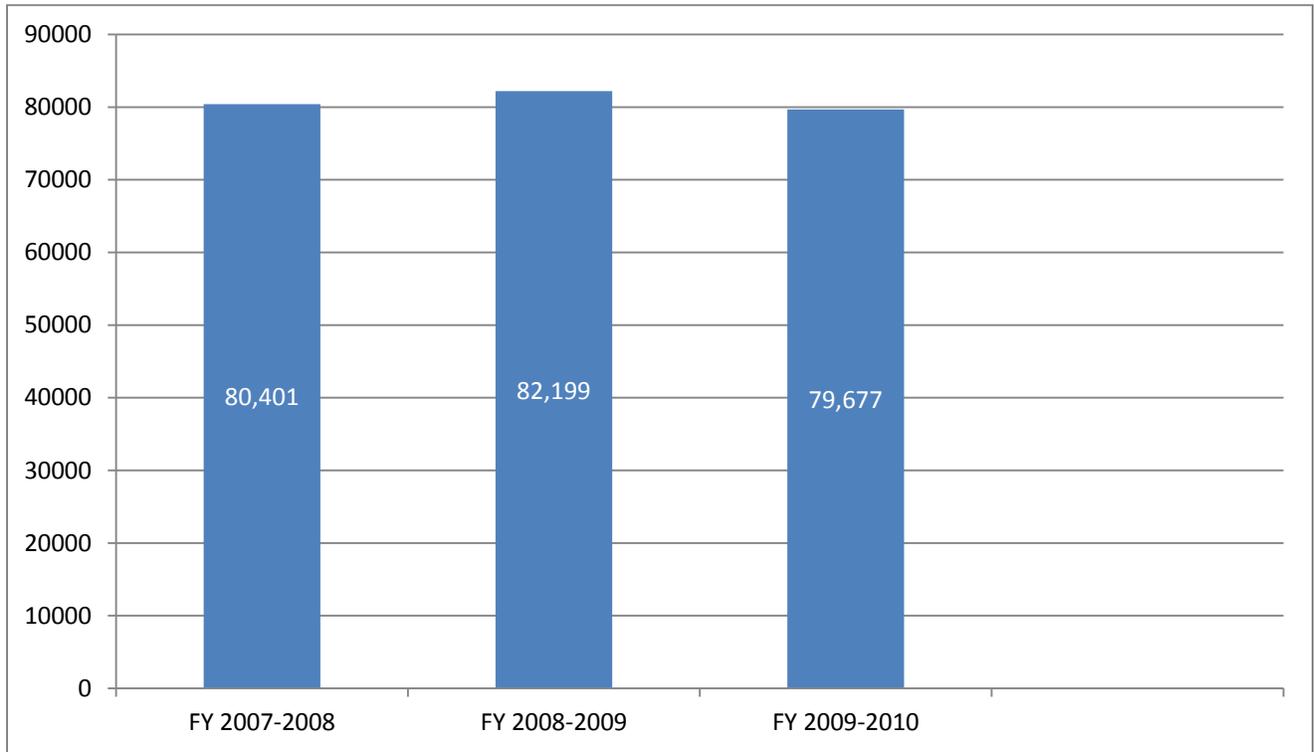
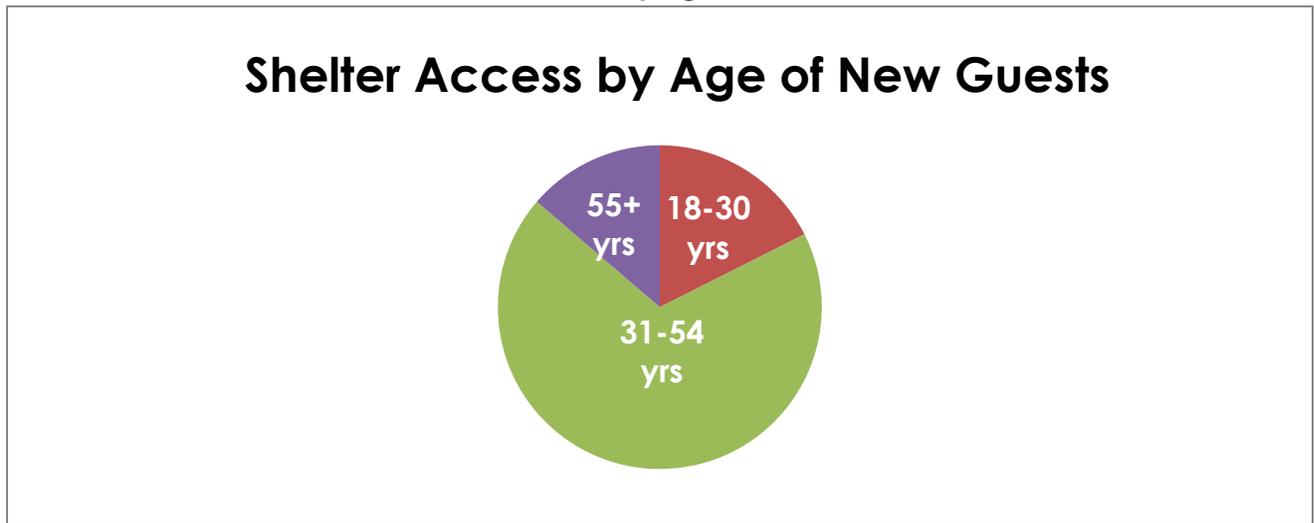
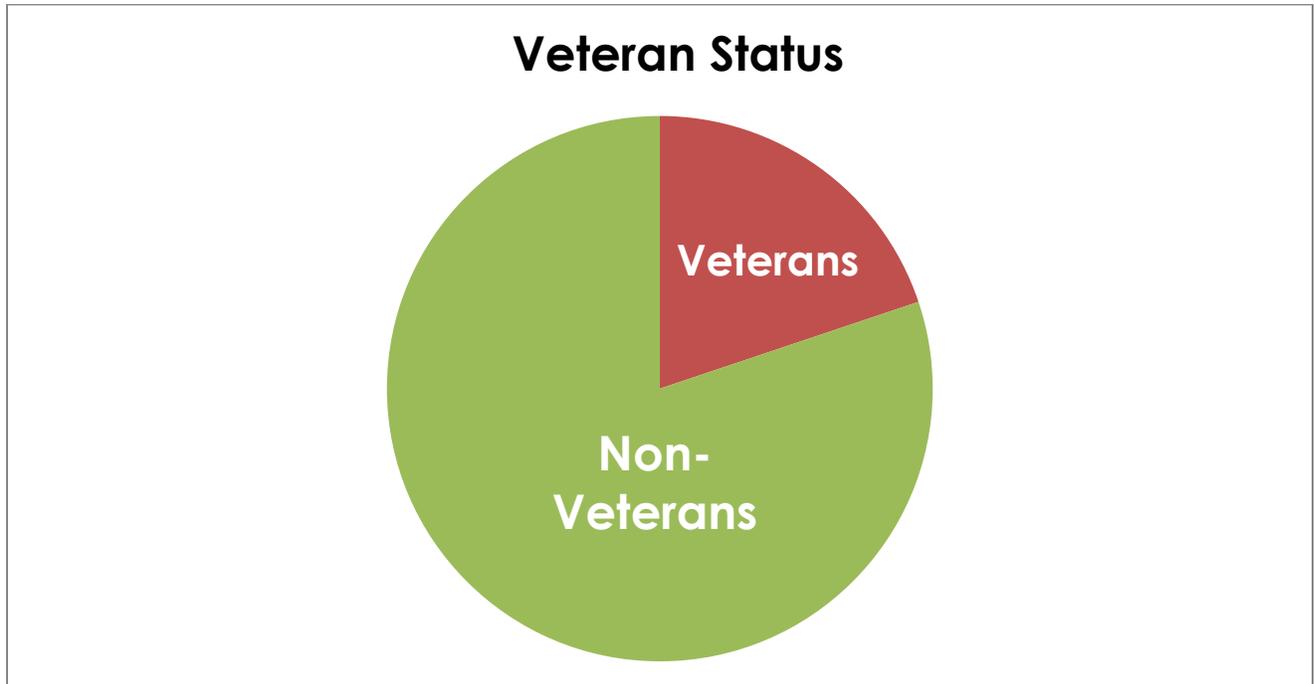


Chart 2: Shelter Access by Age of New Guests:



17 & under= 0
 18-30=310
 31-54=1,212
 55 & over=242

Chart 3: Veteran Status:



Did Not Serve In Armed Forces = 1,414
Served in Armed Forces = 350

Resources and Strengths

A concentrated effort is underway to solve the problem of homelessness. In February 2005, the Raleigh/Wake County 10-Year Action Plan to End and Prevent Homelessness was published. The publication came after many years of discussion and growing frustration with a "manage the problem" approach. Sponsored by a partnership of the Wake Continuum of Care, City of Raleigh, Triangle United Way and Wake County, with input from consumers, citizens, business leaders, and service professionals, this comprehensive plan is now being implemented across the community. The plan, annual progress reports, and implementation information can be viewed on the City of Raleigh's website at www.raleighnc.gov/endinghomelessness. The Plan, updated in the fall of 2010, has identified several key gaps in services along with the corresponding strategies to address these unmet needs:

- **Prevention:** Prevent individuals and families from becoming homeless through comprehensive discharge planning, targeted resources, research and advocacy. Preventing homelessness is more cost-effective and humane than allowing people to become homeless in the first place. Any community effort to end homelessness must include substantial prevention resources.

Key strategies:

- Identify and bring together key stakeholders, including targeted prevention programs, faith-based, nonprofit organizations and consumer representatives to review existing research and design and implement an integrated prevention plan.
- Create and execute comprehensive discharge plans for people leaving institutions.
- Develop advocacy effort to ensure that HPRP funds continue (federal, state, and local activity); educate community about the need and success of this model program, and seek community support for continued funding.
- Housing, Services and Supports: Expand the availability and choices of permanent housing that are affordable to individuals and families with extremely low incomes. Improve and expand services and support resources for people who are homeless, at-risk of homelessness, or recently homeless to help them achieve maximum independence and self-sufficiency. In Wake County, there remains a gap of at least 23,300 units of affordable housing. More than 15,000 people are precariously doubled up with relatives or friends. Many individuals and families, especially those with mental illnesses and/or substance use disorders, need supportive services to help them remain in housing. Housing is necessary but not sufficient to help people who are homeless—particularly those with multiple physical health, mental health and social service needs—achieve residential stability, psychiatric stability, and sobriety. Many individuals and families require some level of supportive services, which will vary in type and intensity depending on individual and family needs.

Key strategies:

- Increase the availability of rental subsidies and vouchers to stimulate use of existing stock, and construct new permanent affordable housing units for people at or below 40 percent AMI
- Strengthen relationships and communication among city and county housing, zoning, and homeless services officials, as well as landlords and owners' associations (Raleigh Housing Authority, Housing Authority of the County of Wake, Triangle Apartment Association, private landlords) to increase support for affordable housing and diverse communities
- Expand the Housing First model
- Create HUD defined Safe Haven
- Create and implement Stabilization Assessment and Referral Centers as intervention and prevention services for citizens in Wake County

- Strengthen the ability of faith-based organizations, providers (law enforcement, health care, and public housing authorities), small businesses, neighborhood organizations, and community members to coordinate efforts to respond to individuals in need of outreach
- Strengthen the coordination and tracking of clients
- Expand the continuum of support services for service-enhanced short-term shelter beds to transitional to permanent supportive housing to maintain housing stability
- Expand the capacity to serve people with mental illnesses and/or substance abuse disorders
- Employment, Education and Income: Create education, job training, and employment opportunities specific to the needs of individuals and families who are homeless, recently homeless, or at risk of homelessness, including those with mental illnesses and/or substance use disorders and youth ages 16-21. Most people who are homeless want and need to work. A survey of homeless assistance providers revealed that clients cited "help finding a job" as their number one need, followed by help finding affordable housing, and help paying for housing (*Burt et al., 1999*)

Key strategies:

- Design and implement education, job readiness, and training programs
- Develop an Employment First design that reviews existing employment programs to identify critical elements that enable people to become employed at their highest capacity
- Plan strategies to link employment to permanent supportive housing, with a focus on an "Employment First" approach
- Create additional subsidized day care openings for parents who wish to seek, obtain and sustain employment
- Work to expand public and other transportation to individuals returning to work, including providing subsidies, increasing availability of public transportation on nights and weekends, and providing reverse commute rides (from urban areas to the suburbs)
- Provide legal services for those working to obtain employment
- Provide professional or volunteer job coaches to offer on-the-job and follow-up support to individuals who are, or have recently been, homeless, and need such services to maintain employment

- Reinvigorate the SOAR program (SSI/SSDI Outreach, Access and Recovery) to assist disabled individuals in obtaining Social Security benefits

Wake County continues to have a homeless services system, made up of many nonprofit and governmental agencies, that provides a wide array of emergency shelter, transitional housing, permanent housing, and supportive services. Most of these agencies belong to the Raleigh/Wake County Partnership to End and Prevent Homelessness, recognized by the Internal Revenue Service as a 501(c)3 organization. The Partnership meets regularly to improve the service delivery system while working toward the goal of ending and preventing homelessness. The Partnership works to obtain substantial funds through a community-wide application for homeless special assistance funds through the U. S. Department of Housing and Urban Development. The funds provide housing and support services to persons who are experiencing homelessness.

Several recent initiatives are strengthening the efforts aimed at homelessness in Wake County:

1. Raleigh/Wake County Partnership to End and Prevent Homelessness

In 2009, the Partnership hired a part-time executive director to further organize and move forward with our community's efforts to end homelessness. A myriad of agencies and volunteers are working tirelessly to implement strategies outlined in a 10-Year Action Plan to End and Prevent Homelessness.

2. Supportive Housing Team

Wake County Human Services staff provide housing information and education to County residents. Services include ready-to-rent tenant educational classes, housing vacancy listings, and housing information sessions and referrals. These services are available to all citizens.

3. Circles of Support

Catholic Charities is coordinating Support Circles for families and individuals who are homeless. Local participating congregations form a "circle" of volunteers to help a family or individual who is experiencing homelessness locate affordable, permanent housing. Support Circles offer support as the family/individual becomes established in the community. Rental subsidies are available to the family/individual.

4. Housing First Program

The Housing First model provides permanent housing immediately to people who are homeless, and offers the residents voluntary supportive services as long as they need them. As opposed to models where the individual has to be "ready for housing" by going through a system of services while living in a shelter, in the Housing First model, the individual moves into permanent housing as soon as possible, and simultaneously receives supportive services and training. Wake County Human Services Housing First programs in the community are helping 83 households.

5. Incentive Housing Dormitory

South Wilmington Street Center's (SWSC) Incentive Housing Dormitory (IHD) is the final phase of shelter services for men participating in the program at SWSC. The IHD is located approximately two miles from the main facility and has 19 units of efficiency housing. This housing is targeted to assist men in re-entering a self-directed and self-sufficient lifestyle by providing them with a realistic apartment-like setting. Men have opportunities to practice lessons they have learned while participating in the case management program. Those who qualify to move to the IHD have earned the privilege of privacy, and are held accountable to demonstrate abilities to live independently. The case management team continues to provide non-obtrusive services to help the men be successful in their goals. While residing in the IHD, case management services also focus on acquisition of safe, decent, affordable housing, and development of community supports.

6. Tax Credit Developments

Beginning in 2003, through a joint venture between the N.C. Housing Finance Agency and the NC Department of Health and Human Services, developers are awarded tax credits to allocate a percentage of their units to households who are homeless, or who are headed by a person with a disability. Each developer must work with a local lead agency that is responsible for providing supportive services to tenants in the targeted units. Currently, 168 targeted units are operational or under development in Wake County.

7. Job Ready Employment Initiative

The job referral process links a strong social mission to end homelessness with a dedication to providing quality workers to the local labor market by securing business partnerships. This initiative has established a "Champion Employer" award to recognize businesses that provide employment opportunities to program participants, or support the agency throughout the year. The initiative also conducted a Reverse Job Fair where partner agencies presented employment ready candidates to employers.

8. Homeless Veterans Services

The Homeless Veterans Project (HVSO) is responsible for outreach and case management services to all homeless veterans who access the SWSC, and who are open to such assistance. The HVSO also conducts outreach in other places homeless veterans are known to congregate. The Homeless Veterans Stand Down is an annual one-day event coordinated by the HVSO that invites Homeless Veterans to connect directly with Homeless Service Providers.

9. Project Homeless Connect

Project Homeless Connect is a one-day event held at three Triangle-area locations: one in Durham, one in Chapel Hill and one in Raleigh at Moore Square Park. Communities across the country hold these events to bring a wide range of services and service providers together to connect to persons who are homeless and begin to move them from homelessness.

10. Let's Get to Work



Let's Get to Work program raises funds to provide day care and transportation funding subsidy assistance to individuals and families who are homeless or at-risk.

11. Project CATCH (Community Action Targeting Children who are Homeless)

Project CATCH is convening monthly conversations between family homeless shelters and early childhood mental health professionals to increase collaboration and create pathways for services for the purpose of enhancing the social-emotional health of homeless children, ages 0-5. The project also conducts focus groups with parents and staff, and observes parent-child interactions at shelters. It documents and reports on strengths and improvements needed in the shelter environment to enhance quality parent-child relationships, collates developmental screening, day care, and social-emotional health resources, and builds referral networks for services related to young children age 0-5 that are underutilized by homeless families.

12. Community Medical Respite Program

The Community Medical Respite Program (CMRP) is the only program in North Carolina that currently serves homeless individuals with acute medical illness. This program provides shelter and comprehensive services to persons released from local hospitals, clinics, or other programs. Its goal is to medically stabilize and develop an individual treatment approach for ending their homelessness.

Disparities, Gaps and Unmet Needs

A number of risk factors may lead to or prolong homelessness. For example, African Americans and Hispanics/Latinos, who are more likely to be in lower income brackets and lack access to health care, are over represented in the homeless population. Nationally, 42 percent of homeless are African-American and 12 percent are Hispanic. At the SWSC in Wake County, 61 percent of the men are African-American, while 21 percent of the general countywide population is African American (*Wake County Human Services, 2010*). A significant percentage of homeless people have mental illnesses and/or substance use disorders, and chronic physical conditions. Nationally, 45 percent of homeless adults who use services report chronic physical disorders. Sixty-six percent report substance use and/or mental health problems. Serious health and behavioral health disorders make it difficult for individuals to find and retain housing, maintain employment, or navigate the health, housing and social service systems. Thirty-five percent of homeless people in Wake County have serious mental illnesses and 66 percent have chronic substance use disorders; many have both disorders. Some of these individuals are among the group now referred to as "chronically homeless."

According to research, the chronically homeless population accounts for 18 percent of shelter users, but the population consumes half of the total shelter days. Another 10 percent of people who are homeless are considered episodically homeless (people who shuttle frequently in and out of the shelter system), and the remaining 72 percent are transitionally homeless (people who typically exit the shelter system after a short stay). At 23 percent, Wake County's population of people who are chronically homeless is well over the national average (*Wake County Human Services, 2010*). Trauma/domestic violence is another individual risk factor that may lead to or

prolong homelessness. The rate of trauma among women who are homeless is staggering. Researchers found that 92 percent of women who are homeless report severe physical and sexual assault over their lifespan, often beginning in childhood (*Bassuk, et al., 1996*). Such trauma may precipitate or exacerbate mental illnesses and substance use disorders. Mental and addictive disorders make women more vulnerable to abuse. In Wake County, 83 percent of female-headed homeless households have recent domestic violence as one contributing factor to their homelessness. People who become homeless generally have small social support networks and the members of their networks, often are unable to offer material help. Any attempt to end homelessness in a city, a state, or the nation must take into account all of the vulnerabilities of homeless people.

People who are homeless require a broad range of housing, health and mental health care, substance abuse treatment, and social services, all of which are provided by separate agencies, each with its own funding streams, eligibility criteria, or treatment philosophies.

Implications and Emerging Issues

The following issues must be considered in regard to homelessness in the community:

Mental Health Transformation

The state of North Carolina undertook a process of transforming the statewide mental health system. As a result, Wake County Human Services (WCHS) became an assessor of services, divesting many of the programs to persons with mental illness, developmental disabilities, and/or substance abuse disorders to the private sector. While it was hoped that any change in service provision would be seamless for the consumer, insufficient state funding for community-based services has been a problem. As a result, admissions to the state hospitals/institutions have increased.

Closing of State Psychiatric Facility Dorothea Dix Hospital

As part of the mental health transformation, the state facility, Dorothea Dix Hospital (DDH), is scheduled to close in 2011. A new state psychiatric hospital was constructed in Butner. The new hospital replaced both DDH and John Umstead Hospital, another state hospital in Butner. This 432-bed hospital will have fewer beds than Dorothea Dix and Umstead combined. Wake County has constructed public inpatient crisis stabilization and addition facilities for the citizens of Wake County.

Efforts must be made to increase housing and accompanying supportive services for persons who will no longer be hospitalized for long periods of time. Some initial funding from the state allowed for the development of a supported housing complex. If these efforts do not continue, the number of persons in the community who are homeless and disabled will grow. Too many people have been discharged to emergency shelters directly from DDH. Some of those discharged are not well served in large settings like shelters and end up on the streets.

In 2006, the NC General Assembly increased funding for supported housing. Wake County has identified the type and number of housing units needed. An emerging issue is ensuring that sufficient housing is available for those who are disabled due to mental illness, developmental disabilities, and substance abuse disorders, and who are living in the community instead of a state hospital.

Health Care

There is an increasing prevalence of serious illness, chronic illness and physical disabilities among persons who are homeless. Like psychiatric hospitals, general hospitals are more often discharging persons to emergency shelters or other precarious housing situations. Homelessness is not conducive to recuperation and rehabilitation. Horizon Health Center is designed specifically to provide primary health care for people who are homeless, but it cannot keep pace with the demand for services. There are coordinated medical respite programs at the South Wilmington Street Center for men, and the Raleigh Rescue Mission for women, that provide limited medical beds for medical issues and recuperation from surgery or other procedures. Because there are limited beds, many others who are in need of respite care are discharged to shelters without coordinated care. The emerging issue is that the illnesses are becoming increasingly more serious. While efforts are being made to address this problem, additional resources are needed to care for the health of persons who are homeless.

Sustainability of the Raleigh/Wake County 10-Year Action Plan to End and Prevent Homelessness

Volunteers have formed strategy groups to implement several strategies that, in combination, will end and prevent homelessness in Wake County. Homelessness is a complex problem, but one that can be solved with perseverance. Many contributors must sustain the effort and maintain the momentum to reach the County's goal. The challenge as a community is to keep the focus and continue the resolute action toward ending and preventing homelessness over the next five years.

Transportation

There is great need for affordable, flexible and reliable transportation services throughout Wake County. Most residents can drive to employment, commerce, retail and residential opportunities in the County. However, for the non-driving section of the populace, transportation alternatives, although improving, are limited.

Community Perceptions

Thirty percent of respondents to the 2010 Wake County Community Assessment survey indicated that access to transportation remained a problem in Wake County. Respondents in the North, East, West and West Central zones cited lack of/inadequate transportation options as one of the top five most important community issues. Participants representing the North zone established lack of transportation as the top priority for action during the Community Prioritization process.

Statistics and Trends

Transit Services

Compared to other counties in North Carolina, Wake County is fortunate to have several transportation service providers available. Traditional fixed route service is available in Raleigh and Cary through the Capital Area Transit (CAT) and Cary Transit (C-Tran) systems. Throughout Wake County, Triangle Transit provides commuter trips on a fixed route system with vanpool/carpool coordination. A free service bus line operated by N.C. State University is also available with limited fixed route service. Demand response service needs are met through the sponsorship of various human service agencies and rural public services that meet the transportation needs of 180,000+ people living in unincorporated Wake County.

Bus systems in the Triangle provide a public transportation system that everyone can use. Individuals with disabilities are encouraged to take advantage of the independence and flexibility that is provided by fixed route and shuttle service, and both seniors and individuals with disabilities are entitled to discounted fares.

All CAT, C-Tran, Triangle Transit and Wolfline buses and shuttles are wheelchair-accessible vehicles. All buses can also kneel (lower entrance areas) to help accommodate passengers with limited mobility.

Most of the buses in the region are now equipped with "Talking Bus" technology that automatically announces the locations of major stops and intersections to help passengers orient themselves and prepare to get off the bus. All personal care attendants and service animals ride for FREE on all buses and shuttles in the Triangle. Persons with physical or mental disabilities that prevent them from using the bus system, may qualify for one of the ADA Paratransit programs throughout the region.

The hearing impaired may contact Paratransit services throughout the region by telephone. The operator will type the information to the caller.

Human Services Transportation

The Triangle Regional Transportation Development Plan (RTDP) is being developed by a consultant team with financial assistance from the North Carolina Department of Transportation. The RTDP will assess the services and functions of the community transportation programs in Durham, Orange and Wake counties, and identify those that can be coordinated or consolidated to provide community transportation services.

In Wake County, the Wake Coordinated Transportation Service (WCTS) is the primary provider of transportation services in non-metropolitan (rural) Wake County. WCTS is a division of the Human Services Department (WCHS) of Wake County government. Two levels of service are provided by WCTS:



- Human services transportation is provided for clients of the various human service agencies
- General public transportation to all members of the community, not just those receiving specified services

Operation of transportation services is contracted out to private transportation providers, including one primary vendor and two secondary vendors for serving the general public.

Rural Public Transportation

In 2004, TRACS (Transportation and Rural ACcesS) began operation, providing transportation services for a small fee per ride to citizens in the southern region of Wake County, including the "zone" composed of Fuquay-Varina, Holly Springs, Willow Springs, parts of Apex and an unincorporated section north of Fuquay-Varina. TRACS now serves northern and eastern areas of Wake County as well. TRACS operates as a local service provider to help meet the transportation needs of people living in unincorporated Wake County. This is an on-call demand responsive system that is set up on a first-come, first-served basis. County residents can contact the Transportation Services Center to make requests for human services and rural trip needs. Rural trip needs are then met by TRACS service.

Transit Providers

Capital Area Transit - Raleigh

Raleigh's Capital Area Transit provides a traditional, fixed route service in the Raleigh urban area. The Capital Area Transit also operates "the R-Line," a free bus service in downtown Raleigh meant to connect employees, residents and visitors to retail, restaurants, services, entertainment venues and parking in the Central Business District (CBD).

Accessible Raleigh Transportation

Accessible Raleigh Transportation (ART) is an Americans with Disabilities Act mandated service that complements fixed route transit service. It serves residents living within 3/4 of a mile of a fixed bus route who are unable to use regular transit service due to a disability.

C-Tran

Cary's C-Tran provides a traditional, fixed route service to the Cary urban area. C-Tran provides one route that connects downtown Cary with western portions of Raleigh that is also served by a CAT bus route. Additionally, C-Tran provides paratransit service to residents of Cary traveling to Raleigh, as well as public transit routes and paratransit in Cary.

WolfLine

The Wolfline operates nearly a dozen routes that serve the North Carolina State University (NCSU) community and surrounding areas in west Raleigh. In addition to serving NCSU students, faculty and staff, the Wolfline system is available for use by the general public.

Triangle Transit

Triangle Transit (formerly the Triangle Transit Authority) provides region-wide, commuter fixed route and vanpool services. Triangle Transit was created to provide commuter trips from Wake, Orange and Durham counties to the Research Triangle Park (RTP). Express bus service is available for RTP commuters. Triangle Transit also provides vanpool and carpool service, an Internet-based trip planner, and park and ride facilities.

Long Distance Transit Services

The City of Raleigh is served by Amtrak (rail service), RDU International Airport (air service), Carolina Trailways (bus service), Greyhound (bus service), Sky Express (bus service, direct to China Town, NYC), Tornado (bus service, targeting primarily the Hispanic population), and Jacksonville Airporter, Inc. (bus service, between RDU and Jacksonville, NC).

Resources and Strengths

The Capital Area Metropolitan Planning Organization (MPO) coordinates all transportation needs and is an advocate for additional funding. MPO staff and elected officials from Wake and other local jurisdictions work to provide a wide variety of projects including roadway, bicycle/pedestrian and transit. The MPO and its elected officials are strong advocates for transit, and are currently working to provide funding for rail service that will provide access to university hospitals and veteran's services through downtown Raleigh.

While the MPO is a strong advocate for transit, it cannot be relied upon as the only source for funding and improving transportation services in the County. The Federal Transportation Bill identified increasing funding levels for transportation services like the Wake Coordinated Transportation Service (WCTS). Increased funding for administration, capital, technology, and operating assistance creates an opportunity to plan and expand services to meet the transportation needs of our community. Wake County received a sizeable grant through the Job Access and Reverse Commute (JARC) program. JARC is a funding source for transportation to assist low-income persons with employment related transportation.

Wake Coordinated Transportation Service uses an Internet-based routing and scheduling software that aides in providing quality service and efficient resource management. New funding provides for the continued implementation of advancing technology.

Implications and Emerging Issues

As the Triangle Region and Wake County continue to grow, and with the expansion of resources and services available to citizens, the demand for transportation service options increases. Transportation needs are consistently identified as one of the top priorities among citizens, evidenced by studies and community-based plans throughout the area. WCTS reorganized its operation to prepare for, and meet, the emerging needs for transportation

services throughout the County. These changes, coupled with enhancements to the transportation services provided through WCTS, resulted in significant growth in services. Existing resources are being stretched as more people learn about the opportunity to access services. Available funding, to this point, has not maintained pace with growth in services. Cost is an ever-growing factor, with cuts in services and denials of trips occurring more frequently than ever before.

Residents of the urban areas of the County have good services; however the difficulty emerges in consistently delivering transportation services in rural areas. These rural areas are the locations where the affordable housing market is growing. Thus it is critical for Wake County to plan for and provide a responsive transportation service providing access and mobility for people throughout rural parts of the County.

Environmental Health

Introduction

The Environmental Health Chapter examines the current state of the natural or built environment, and how it affects citizens of Wake County. Environmental Health assessment helps identify conditions that affect public health influence decisions to help prevent and control disease. This chapter addresses air quality, open space, public health issues, solid waste, water quality and zoonotic diseases. The design of our communities and the conservation of resources promote a sustainable community and a high quality of life for Wake County.

The Environmental Health chapter will include issues related to the following:

1. Air Quality
2. Open Space
3. Public Health Issues
4. Solid Waste
5. Water Quality
6. Zoonotic Diseases

Air Quality

Introduction

This section will cover outdoor or ambient air quality related to ozone and other pollutants such as haze and smoke. It will also cover indoor air quality including mold, asthma triggers and second hand smoke exposure.

Ambient air is the air around us outside. This air is subject to pollutants from a wide variety of sources considered harmful to health and the environment. The Clean Air Act established two types of national ambient air quality standards – primary and secondary. Primary standards set limits to protect public health, including the health of sensitive populations such as asthmatics, children and the elderly. Secondary standards set limits to protect public welfare, including protection against visibility impairment, and damage to animals, crops, vegetation and buildings. These standards are the framework for federal, state, and local governments to use when assessing the quality of ambient air in their jurisdictions.

Outdoor Air Quality

Community Perceptions

According to the 2010 Community Health Assessment, outdoor air pollution ranked five of the top five most important environmental health issues for two of the eight zones in Wake County (West and West Central zones). Researchers collected data from responses to a citizen perception survey. The responses were collected across the County in eight areas known as zones. Findings from the survey are included in the document titled Wake County Survey Results, May 11, 2010. This document captures responses to questions regarding citizen perception in different issues including environmental health. The citizen perception survey identified air pollution as one of the five most important environmental health issues for two of the eight zones in Wake County (West and West Central zones). Overall, air quality did not rank in the top five environmental concerns expressed in the survey. It may be noted that population growth, which is related to air quality was identified as the second most important concern.

Statistics and Trends

As of July 2009, Wake County's population was estimated at 897,214 (*U.S. Census Bureau, 2010*). The North Carolina State Demographer estimates the population will nearly double by 2030 (2009). Data published by WakeUP Wake County in 2008 indicated the Raleigh-Cary region was the fastest-growing in the nation, with 35 acres of forest and farms urbanized per day (*U.S. Census, 2008*). This area is currently one of the most populous in the U.S. North Carolina had an estimated population of 9,380,884 in July 2009 and was ranked as the 10th state by population in the U.S. (*U.S. Census, 2010*). Wake County accounts for almost 10 percent of the total population of the State.

The two main air quality issues in North Carolina are ground-level ozone, the main ingredient in "smog," and particle pollution. Both of these pollutants are mainly caused by emissions from automobiles and from the coal-burning power plants that supply most of our electricity. Also, smoke from outdoor burning and wildfires significantly contribute to ozone and particle pollution.

According to the Wake County Planning Division, the number of drivers on Wake County roads has increased substantially since 1990. The Triangle area had the second largest increase in commute time in the nation and is considered one of the top 20 metro areas with unhealthy air quality days. Wake County Planning Division's web site indicates that by the end of 2007, nearly 706,000 vehicles were registered in the county. The same source indicates one of the main sources of traffic is people commuting to and from work. As the population increases, more people commute to and from work. The most common choice for commuting to work is driving alone (*Wake County Planning Department, May 2009*).

Ozone: North Carolina's Department of Environment and Natural Resources Division of Air Quality (DAQ) reports that ozone is North Carolina's most widespread air quality problem, particularly during the warmer months (DAQ, 2010). High ozone levels generally occur on hot sunny days with little wind, when pollutants such as nitrogen oxides and hydrocarbons react in the air. The EPA makes recommendations to states and tribes regarding geographic areas that may or may not be in attainment status. Attainment means an area meets the EPA's ground level ozone standard. An area of nonattainment does not. These standards were established in 1997 and revised in 2008. Once an area is designated nonattainment, the jurisdiction has three years to develop implementation plans outlining how areas will attain and maintain the EPA standards (U.S. EPA, 2008). Wake County was designated as a non-attainment area for ozone in 2009 (NCDENR, 2009). Non-attainment areas are regions that do not meet federal air quality standards (allowable level from 0.08 to 0.075 parts per million measured over 8 hours) for pollutants such as ozone (U.S. EPA, 2009).

Particle Pollution: Currently, all of North Carolina meets federal particle standards, but historically levels have exceeded the annual standard in several Piedmont counties. Unlike ozone, which is usually highest in the afternoons, particle levels can be high at any time of the day (DAQ, 2010). An Environmental Protection Agency (EPA) study found that backyard burning of trash from a family of four can emit as much pollutants as a well-controlled municipal incinerator serving tens of thousands of households (DAQ, 2010). According to the 2009 DAQ Summary Report, the Triangle (Raleigh, Chapel Hill and Durham) had 289 days of "good" (≤ 50) Air Quality Index (AQI) levels and 76 days of "moderate" (51-100) AQI levels.

Resources and Strengths

Non-attainment areas will be the focus of air quality plans for controlling ozone. These plans, laid out by the DAQ, will include specific proposals for curbing ozone, such as measures to reduce emissions from cars, trucks, industries and power plants. The designations also give the EPA authority to review proposed highway projects and long-range transportation plans (DAQ, 2009).

The State "Open Burning Rule" prohibits most outdoor burning, with exceptions allowed for campfires, land-clearing under certain conditions, disposing of vegetative storm debris and agricultural pest control. The DAQ plans to work with power plants to reduce their emissions of sulfur oxides, the single most important cause of haze in North Carolina. North Carolina has this law because smoke and soot from outdoor fires can cause serious health problems and pollute the air. Smoke from a burning trash pile contains many pollutants that can cause serious health problems and damage the environment. Fires also can burn out of control, destroying forests and burning down homes (DAQ, 2007).

In 2003 Wake County Commissioners created an Air Quality Task Force to provide recommendations to improve the quality of air. Some recommendations included:

- Supporting the Triangle Air Awareness Program
 - Supporting the Triangle Clean Cities Coalition
 - Developing a formally constituted regional air quality agency to implement regional control measures throughout the Triangle
 - Becoming a Best Workplace for Commuters
 - Promoting Ultra Low and Super Ultra Low Emission Vehicles
 - Converting school bus fleets from diesel to Alternative Fuels
- (*Air Quality Task Force, 2004*)

Disparities, Gaps and Unmet Needs

Air Quality impacts people in different ways. Groups especially at risk include children, those with asthma or respiratory disease and anyone frequently active outdoors.

Implications & Emerging issues

The EPA sets non-attainment boundaries based on recommendations from the states and the designations can have important implications for growth and development. Air pollution can harm people's health and damage the environment. It can lead to breathing problems such as asthma and emphysema and can harm you even if you can't see it or smell it. Too much exposure to pollution during childhood can permanently reduce lung function, and some types of air pollution can cause heart problems. It can also damage trees and wildlife, cause haze that blocks scenic views, and contribute to water pollution and climate changes. Smoke from outdoor burning pollutes the air and is unhealthy to breathe (*DAQ, 2009*).

According to the report, "Reality Check for North Carolina," the combination of population growth, land and construction costs and rising energy demands, are straining the capacity and reducing the quality of North Carolina's transportation system (*Partnership for North Carolina's Future, 2007*). The development of a more comprehensive transit/public transportation system can decrease the emissions caused by cars and trucks.

WakeUP Wake County, a nonpartisan citizen group, works to create awareness and address concerns about growth in Wake County. This nonprofit organization has provided suggestions to reduce the impact of transportation on the environment through the development of a transit system. For example, transit systems help guide the development along rail and bus lines, reduces sprawl while allowing growth, creates economic development, jobs, walkable communities, reduces air pollution and decreases driving time (*WakeUP 2009 Overview, retrieved April 30, 2010*).

Indoor Air Quality

Introduction

Indoor air pollution, building-related illness and "sick building syndrome" have received increased attention over the last several years. Research conducted by various agencies such as the EPA has shown that the quality of indoor air can be many times worse than that of outdoor air. Given the fact that many people spend as much as 90 percent of their time indoors, the health risk due to indoor air pollutants is a significant public health concern. Moisture problems in homes can result in the growth of organisms like mold, mildew and dust mites. Exposure to these organisms can increase the risk of allergic illness, trigger asthma, cause respiratory infections, or have other health effects. Common sources of moisture include high indoor humidity, plumbing leaks and water leaks (*North Carolina Division of Public Health, 2006*).

Indoor pollution sources release gases or particles and are the primary cause of indoor air quality problems in homes. Inadequate ventilation can increase indoor pollutant levels by not bringing in enough outdoor air to dilute emissions from indoor sources and by not carrying indoor air pollutants out of the home (*North Carolina Division of Public Health, 2006*).

Community Perceptions

According to the 2010 Wake County Survey results, indoor air pollution did not rank as one of the top 5 most important environmental health issues.

Statistics and Trends

The quality of the air including dust, cigarette smoke, mold and mildew, and other known pollutants are connected to asthma. Asthma is a chronic condition of the lungs. Its two main components include: constriction, the tightening of the muscles surrounding the airways; and inflammation, the swelling and irritation of the airways. The remaining sections will refer to Lifetime Asthma (ever having been diagnosed with asthma by a health care provider), and Current Asthma (history of asthma with wheezing within the last year and who also has been determined to have bronchial hyper-responsiveness).

WakeMed Hospital's website includes a page for the Wake County Asthma Coalition. Information found on the page provides Wake County Asthma Information: A Selected Snapshot view. Data retrieved on January 25, 2011, indicates that in 2006 an estimated 12 percent of Wake County residents had been told by a healthcare professional that they had asthma at some point in their lives (*Wake County Asthma Coalition, 2009*). During 2005 and 2006, nearly 13 percent of Wake County children under the age of 18 had been told by a healthcare professional that they had asthma. In 2005, 10.1 percent of adults (age ≥ 18 years) in North Carolina reported lifetime asthma. Of those adults, 6.5 percent of them reported having current asthma (*North Carolina Division of Public Health, 2006*).

In 2008, Wake County had 834 hospital discharges with a primary diagnosis of asthma and with total charges of \$11+ million, averaging \$13,366 per case (versus NC: 10,689 hospital discharges, \$122+ million total charges, \$11,462 average per case). Of the 834 Wake County hospitalizations, 326 were among children 0-14 years of age (DHHS, 2009). In 2007, Wake County had 68 Medicaid hospital admissions for adults with asthma and 89 Medicaid pediatric admissions (DHHS, 2009).

In 2006 and 2007 Project ASSIST (American Stop Smoking Intervention Study) monitored air quality in Wake County restaurants and bars where smoking was allowed. The first survey samples were collected in 2006-2007 prior to "smoke-free" restaurant and bar legislation. Data was collected from 21 venues. A law banning smoking in restaurants and bars was implemented on January 2, 2010. A second air quality survey was conducted following this legislation. Data was collected from 9 venues. The results follow:

- 2007-average concentration of particulate matter = 58.9 microns per cubic meter of air
- 2010-average concentration of particulate matter = 11.6 microns per cubic meter of air

When comparing the two surveys, the data indicated the concentration of particulate matter decreased by 80.3 percent after the law went into effect.

Methodology: Air quality was measured using a Personal Aerosol Monitor (PAM) to conduct this research. PAMs measure the amount of particles smaller than 2.5 micrograms in the air. The U.S. EPA measures these particles in outdoor air because particles of this size are known to cause breathing problems and contribute to premature deaths. Burning tobacco releases significant amounts of smaller sized particles (<2.5 micrograms); using a PAM offers a proven measure of how toxic indoor air becomes when tainted with tobacco smoke.

Resources and Strengths

In 2004, Wake County Facilities Design and Construction Department and the Wake County Public School System developed "Guidelines for Design and Construction of Energy-Efficient County Government Facilities and Schools" (Wake County Public School System, 2004). This document offers guidance in the design and construction of Wake County buildings (2004).

In addition, North Carolina's smoke-free law for restaurants and bars, "An Act to Prohibit Smoking in Certain Public Places and Certain Places of Employment," went into effect on January 2, 2010. The enactment of the law has resulted in an 89 percent improvement in air quality in the state's venues, according to study results released at a North Carolina Public Health Association meeting in Research Triangle Park in Durham NC DHHS, 2010).

Disparities, Gaps and Unmet Needs

According to the 2007-2012 N.C. Asthma Plan, asthma particularly affects women, children, the elderly, certain minority groups and people with low socioeconomic status. Nationally, according to the 2004 National Health Interview Survey, Hispanic adults had lower rates of asthma than both white and African American adults. These results are potentially explained by the possibility of under diagnosis due to lack of access to care among this group. Adult females in North Carolina have 1.45 greater odds than adult males of having lifetime asthma and have 1.79 greater odds than males of having current asthma. North Carolina adults living in households with an income less than \$15,000 are 1.78 times more likely to have lifetime asthma and are 2.14 times more likely of having current asthma than those who live in households that make more than \$15,000 a year (*North Carolina Division of Public Health, 2006*).

In 2005, 17.8 percent of children (age <18 years) in North Carolina reported having lifetime asthma. Of those children, 11.5 percent reported that they had asthma. Male children in North Carolina are 1.5 times more likely to have lifetime asthma as female children in North Carolina. According to the 2004 NHIS, the national median for lifetime asthma was 12.2 percent for children. For current asthma, the national median reported was 8.5 percent for children. Although 2004 data is not available for North Carolina children, the 2005 available data suggests that North Carolina's childhood lifetime asthma prevalence (17.8 percent) and current asthma prevalence (11.5 percent) greatly exceed the national median (*North Carolina Division of Public Health, 2006*).

Almost 25 percent of children with current asthma in North Carolina visited the hospital emergency room or urgent care clinic because of their asthma in the past 12 months. In North Carolina, African American children were more than twice as likely as white children to have visited the hospital emergency room or urgent care clinic because of their asthma (*North Carolina Division of Public Health, 2006*).

Implications and Emerging Issues

Indoor air quality can affect people's health and can have economic and legal implications. For example:

- Pollutants can cause or contribute to short- and long-term health problems, including asthma, respiratory tract infections, allergic reactions, headaches, congestion, eye and skin irritations, coughing, sneezing, fatigue, dizziness and nausea.
- Indoor air pollutants can cause discomfort and reduce attendance and productivity. Recent data suggest that poor IAQ can reduce a person's ability to perform specific mental tasks requiring concentration, calculation, or memory.
- Indoor air pollutants hasten building deterioration. For example, uncontrolled moisture can result in mold growth that leads to the structural decay of building components.

- Poor indoor air quality strains relationships among employees, family members, parents, teachers, students and school administrations.
- IAQ problems can result in liability issues or lawsuits (*North Carolina Division of Public Health, 2006*).

The Wake County Asthma Coalition has an Air Quality Flag Program that promotes public awareness of the Air Quality Index and daily Air Quality Forecasts.

The American Lung Association estimated that the 2004 annual cost for asthma increased to \$16.1 billion from the previous number of \$14 billion in 2001. The 2004 ALA's national estimate examined both direct and indirect costs of asthma. Direct costs included physician visits, hospital stays and medications. Out of the \$16.1 billion total estimate, approximately \$11.5 billion was attributed to direct costs. Prescription drugs represented the largest single direct medical expenditure at \$5 billion (*North Carolina Division of Public Health, 2006*). In 2004, total charges for hospitalizations in North Carolina for a primary diagnosis of asthma exceeded \$88 million dollars. This represented an average charge of \$8,259 per asthma hospitalization stay. The 2005 North Carolina Behavioral Risk Factor Surveillance Survey indicated that there was a decrease in the current asthma prevalence among adults in North Carolina, as well as a statistically significant decrease in the lifetime asthma prevalence in adults (*North Carolina Division of Public Health, 2006*).

Since the passing of the Smoke free restaurant and bar law, the reduction in each venue is dramatic. This illustrates the impact that the smoke-free air law can have on air quality and public health. Discussions regarding smoking in public places may provide opportunities for local parks and recreation municipalities to address their tobacco policies.

Open Space

Introduction

Open space includes forests, greenways, parks, meadows, fields, wetlands, floodplains, bodies of water, natural heritage sites, farms and other significant lands that have not been developed or improved. Wake County's Open Space program defines open space as protected land that is owned and managed in the public interest for several purposes, including the preservation of natural resources, to manage productions of resources like forest and farmland, and to preserve historic and cultural property. The highest priority is placed on protection of water quality. Open space, in its various forms, offers respite and enjoyment to citizens seeking refuge from the noise and hectic pace of city life, while also protecting critical plant and animal habitat.

Working forests provide open space and wildlife habitat in addition to wood products, like paper and lumber. The U.S. Department of Agriculture reports that one acre of forest absorbs six tons of carbon dioxide and produces four tons of oxygen, thus meeting the oxygen needs of 18 people

annually. Planting trees reduces runoff and erosion and improves water quality. Riparian buffers – the wooded areas located along streams – help prevent sediment and other pollutants from entering streams, provide cover necessary for animals, and prevent stream water temperatures from rising after rainfalls. Timberland and urban forests are effective sources of pollution abatement and control.

According to the National Arbor Day Foundation, over a 50-year period a single tree will generate \$31,250 worth of oxygen, will provide \$62,000 worth of air pollution control, and will recycle \$37,500 worth of storm water. Planting one tree can be worth \$2,615/year or \$130,750 over its 50-year life (*National Arbor Day Foundation, 2007*).

Farmland provides the vast majority of Wake County's remaining forestland, wildlife habitat and open space. The Watershed Management Plan indicates that the country's best water quality is found in agricultural areas. Protected open space in the form of parks provides public access for active and passive recreation. Other types of protected open space provide plant and animal habitat and help protect water quality.

Next to water quality and improved ecological values, open space provides other benefits as well. Open space improves the value of the land surrounding it, increases the connectivity of communities within Wake County, and helps define our sense of place. It adds to the unique identity of Wake County.

Statistics and Trends

More than 45 percent of Wake County's land area has been developed. According to a recent study, the calculated acreage of conserved lands that has been reported by all the different municipalities, nonprofit organizations and federal and state agencies of the Triangle Region, is less than the calculated acreage of conserved lands calculated by GIS analysis. This study states that Wake County has conserved a total of 45,646 acres, or 8.3 percent, of the total land area (*Hebert, 2010*). This differs from the estimate of 10 percent reported in the 2006 Wake County Community Assessment. The majority of these lands are protected by federal and state agencies.

Each day, about 27 acres of land in Wake County are converted from a natural state to a developed state, according to David Taylor in the Land Systems Section of the Wake County Department of Information Services. The Triangle Land Conservancy estimates that as much as 78 percent of the land area in Wake County will be developed by 2020 (*Wake County Division of Parks, 2006*).

As the population continues to grow, competition for undeveloped land increases the market value of that land, making it more costly to develop or to protect as open space. Existing natural areas are threatened by population growth and urban development. The primary source of remaining undeveloped land in Wake County for potential urban development or open space protection is currently in agriculture or forestry.

Over the past four years, Wake County's agricultural land decreased by 3,244 acres, or 3.6 percent. Agricultural land comprised 16.6 percent of the total land area of Wake County in 2006 and comprises 16.0 percent currently. Land used for forestry in Wake County has increased by 1,550 acres, or 5.3 percent in the same four-year period. Timberland comprised 5.3 percent of the total land area of Wake County in 2006, and has increased to 5.6 percent in 2010. This may be due to the current state of the economy and/or housing market; agricultural land owners or owners of planned community development sites before the housing market fell in 2008 may have chosen to switch their land use to forestry in order to generate revenue while the economy is down.

Table 1: Agricultural and Forestry Land Use in Wake County

Land Use	2006	2010	Change06-10	Percent Wake County in 2006	Percent Wake County in 2010
Agriculture	91,184.6	87,940.4	-3,244	16.6%	16.0%
Forestry	29,024.1	30,574.0	+1,550	5.3%	5.6%

The numbers in Table 1 were determined by observing the land use for the taxation of parcels in Wake County and totaling the acreage using ArcGIS software. Wake County's total land area is 597 square miles, or 548,480 acres (*Wake County Planning Department, 2010*).

Community Perceptions

In the 2006 Wake County Community Assessment, 61 percent of focus group participants indicated that geography, including green space, trees and scenery, was the best thing about living in Wake County.

In the 2010 Wake Community Assessment Survey, 79.1 percent of respondents felt that "there are enough recreational and entertainment opportunities in Wake County." However, recreation and entertainment are not considered as some of the main objectives of Wake County's Open Space Program.

The Wake County Division of Parks, Recreation and Open Space (PROS) conducted a Community Aptitude and Interest Survey during March and April of 2007 to establish priorities for the future development of parks and recreation facilities, programs and services within the county. The survey was designed to obtain statistically valid results from households throughout the county. The following are the results from survey questions having to do with open space:

- 52 percent of respondents approved of the acquisition of land by Wake County PROS for passive use; 51 percent of respondents approved of the acquisition of land for both passive and active use; 33 percent of respondents approved of the acquisition of land

purely for active use; 6 percent of respondents felt that no new open space should be acquired.

- 63 percent of respondents were “very supportive” of Wake County continuing to concentrate on partnering with cities and towns on the acquisition of open space primarily for water quality.
- 78 percent of respondents were supportive of the Wake County PROS Division's goal of protecting 30 percent of the land area within the county for environmental stewardship, protection of water quality, developing new parks and recreation sites, and developing trails.
- 70 percent of respondents felt that improvement to physical health and fitness was a potential benefit of parks, trails, and recreation facilities and services, followed by the preservation of open space and the environment (48 percent of respondents) and the fact that parks, trails, recreation facilities and services make Wake County a more desirable place to live (39 percent). The same three answers were found to be the most important to the future of Wake County (desirable place to live 46 percent, preserves open space 46 percent, improves physical health and fitness 31 percent).
- 32 percent of respondents (the majority) would prioritize resources for the Wake County PROS for the improvements/maintenance of existing Wake County Parks, closely followed by the acquisition of new parkland and open space (22 percent). Smaller percentages of respondents would prioritize resources for the development of new trails and pathways, the development of new land-based recreation, the development of new water-based recreation and “other.”

With about 27 acres of land being converted from a natural state to a developed state every day, and the County population increasing by roughly 110,000 between 2006 and 2009, it is safe to assume that with increasing population and development, there will be a discordance between rising demand for open space and recreation and the decreasing availability of land for open space and parks.

Resources and Strengths

Wake County is using a number of strategies to promote land protection, including tax relief, land trust funds and open space acquisition.

The Wake County Board of Commissioners has adopted an ordinance creating a non-binding Voluntary Agricultural District Program through the Wake Soil and Water Conservation District. Currently, Wake County has a total of 4,624 acres from 27 Districts and 42 farms enrolled in Wake's Voluntary Agricultural District program. Currently, consultants hired by Wake Soil & Water Conservation District are in the process of writing a Farmland Preservation Plan, which will establish an Enhanced Voluntary Agricultural District while exploring options for sustainable agribusiness for healthy living in Wake County. Wake County also provides use-value tax relief to qualifying farm owners to reduce the property tax burden on the local farming community. This

reduced tax rate for farm operations has made it possible for agriculture to continue in many areas in the county despite rapidly escalating land values.

Wake County voters have approved three bond issues to purchase open space: one for \$15 million in 2000, another in 2004 for \$26 million, and an additional one for \$50 million in 2007. The County either buys open space directly, or uses the bond proceeds for its Partnership Grant Program. Through that program, Wake County partners with municipal and state governments, nonprofit organizations and individual property owners to protect open space.

As of June 5, 2006, Wake County had purchased outright or assisted in the protection of approximately 4,500 acres of land as open space. This land was purchased at a total cost of approximately \$86 million, with Wake County funding approximately \$60 million of the cost while leveraging partnerships and grant funding to provide the remaining \$26 million.

Other funding programs associated with open space preservation efforts include the State of North Carolina's Clean Water Management Trust Fund, the N.C. Ecosystem Enhancement Program, the Parks and Recreation Trust Fund and the federal Farm and Ranchland Preservation Program administered through the Department of Agriculture. In the last four years these programs have provided more than \$1.2 million in matching funds to help acquire significant properties in Wake County.

Wake County's Division of Parks, Recreation and Open Space strives to partner with municipalities, non-profits and other environmental organizations (such as the Triangle Land Conservancy and WakeNature) in order to acquire and manage open spaces. In the future, the Division hopes to work more closely with other institutions including North Carolina State University and local grass-roots environmental clubs, in order to create a network of connections for volunteerism and support for open space in Wake County.

Implications and Emerging Issues

The goal of the Consolidated Open Space Plan is to protect one third of the 550,000 acres of land area in Wake County, or about 165,000 acres, as open space (see chart below). County staff, in conjunction with the Open Space and Parks Advisory Committee and the Board of Commissioners, has been reviewing the open space acquisition program to ensure it is effective in securing needed open space. The Wake County Open Space Program has been working in collaboration with the Wake County Division of Geographic Information Services to produce an open space land acquisition prioritization process.

The most notable issue to have emerged since the 2006 Wake County Community Assessment is the current economic crisis that began in 2008. Due to the recession, fewer funds have been allocated for Wake County Parks, Recreation and Open Space. However, this economic slowdown has provided the Open Space program more time to devote to the maintenance and improvement of currently protected open space.

Table 2: Future Wake County System of Protected Open Space

Category of Open Space	Goal in Acres (minimum)	Percent of Total Land Area (minimum)
Existing Protected Open Space	61,588	11.2%
Future Conserved Floodplain Lands	60,000	11%
Future OS Protected Through Development	22,000	4%
Future Open Space Acquisitions/Easements	103,412	18.8%
Total Protected Open Space	165,000	30%
Total Potential Open Space (2010)	188,759	34%
Total Land Area of Wake County	548,480	

Existing protected open space was determined using ArcGIS software. The total potential open space for 2010 was found by adding all the undeveloped forestry and agricultural acres with the County's existing protected open space.

Public Health Issues

Introduction

In addition to the issues addressed in the 2006 Wake County Community Assessment, other environmental concerns are explored in this section. Topics include asthma, food safety, and lead poisoning prevention in children, all of which have a direct and sometimes immediate effect on public health.

Community Perceptions

The primary data in the 2010 survey identified population growth as a major issue for the environment. The public health issues listed in this section are directly impacted by increased demand from a growing population. Food safety was identified in the primary data as a concern in the East zone.

Asthma

Statistics and Trends

According to the North Carolina State Center for Health Statistics (SCHS), asthma is a leading chronic disease that affects children and is the most common long-term disease of children. Between 2006 and 2008, Wake County hospital discharges for ages 0-14 with a primary diagnosis of asthma increased by 61 percent (NCSCSHS, 2008).

Comparing 2008 North Carolina Hospital discharges with a primary diagnosis of asthma, the data are presented (NCSCSHS, 2008):

Table 3: Hospital Discharges and Diagnosis of Asthma

Residence	Total No.	Total Rate per 100,000	No. (ages 0-14)	Rate per 100,000 (ages 0-14)
Wake County	834	96.5	326	182.2
Mecklenburg County	1,005	114.6	300	157.7
Martin County	98	410.6	13	286.7
North Carolina	10,644	115.4	2778	151.9

Compared with other areas, Wake County data shows a higher rate in the ages of 0-14 years, for primary diagnosis of asthma than Mecklenburg County and the State of North Carolina in general. Martin County data is shown in order to provide a comparison with a smaller county in North Carolina.

Resources and Strengths

Asthma has a substantial impact on health, quality of life, and the economy. In 2006, as part of a comprehensive approach to asthma management for Wake County citizens, the Wake County Environmental Health and Safety Division established a partnership with Community Care of Wake and Johnston Counties (CCWJC) to identify and address in-home environmental asthma triggers for those cases covered by Medicaid.

Community Care (CCWJC) identifies Medicaid recipients with poorly controlled asthma by evaluating local hospital discharge records, emergency department visits, and health care provider referrals. A staff member from Wake County Environmental Health and Safety Division accompanies a Community Care nurse into the home of the patient. The team performs an assessment of asthma triggers (e.g. dust, mold, roaches), provides education on asthma management and trigger control, and gives a limited scope of supplies needed for remediation of asthma triggers. Community Care nurses provide follow-up with the families after the

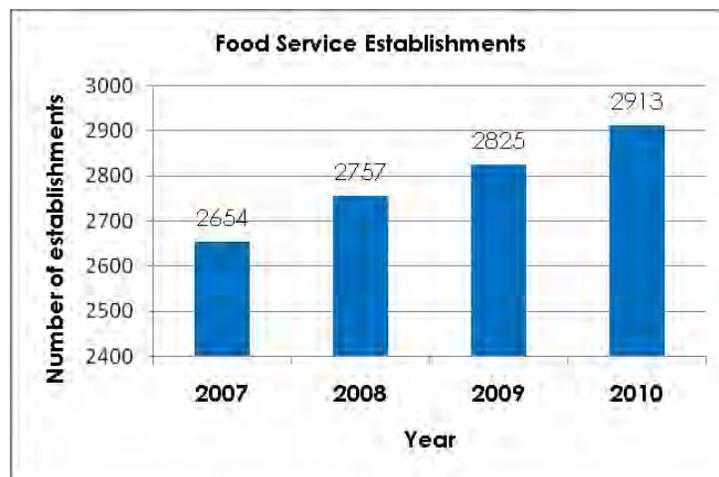
assessment and provide written reports of the findings and recommendations to the family, primary care provider, and landlords (with permission from the family).

Based on the success of an initial pilot phase (2006-2008), CCWJC launched the current program in September of 2008. Since then, more than 100 assessments have been completed. One year follow up data shows an average of almost \$600 per patient cost savings (CCWJC, 2010).

Food Safety

Statistics and Trends

Table 4: Food Service Establishments



According to the Wake County Environmental Health and Safety Division, the number of retail food service establishments in Wake County has increased by 9.8 percent since 2007 (2010). The Environmental Health and Safety Division of the Environmental Services Department is responsible for regulating these facilities.

In spring 2010 the Environmental Health and Safety Division conducted a risk factor study of the five Centers for Disease Control and Prevention (CDC) risk factors associated with food borne illness in Wake County facilities.

According to the CDC there are risk factors associated with food borne illness:

- Food from unsafe sources
- Inadequate cooking
- Improper holding/time and temperature
- Contaminated equipment/prevention of contamination
- Poor personal hygiene

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The 2010 risk factor study assessed risk factors using the 2009 FDA Food Code. The random sample of retail food establishments included 458 Wake facilities. The survey was conducted from February 11 to June 30, 2010. Data from the survey is aggregated by potential risk factor as risk factors OUT of compliance in Table 5:

Table 5: Wake County Retail Food Risk Factor Study

Percentage (%) of OUT of compliance observations for each risk factor															
Risk Factor OUT of compliance	Hospitals			Nursing Homes			Elementary Schools			Fast Food Restaurants			Full Service Restaurants		
	%	n	Total Obs	%	n	Total Obs	%	n	Total Obs	%	n	Total Obs	%	n	Total Obs
Food from Unsafe Source	0%	0	14	0%	0	66	0%	0	115	1%	2	179	10%	22	216
Inadequate Cooking	0%	0	31	8%	11	140	1%	3	224	11%	9	85	8%	11	132
Improper Holding/Time-Temperature	33%	15	46	29%	54	189	41%	126	309	48%	206	430	58%	292	501
Contaminated Equipment/Protection from contamination	6%	2	35	14%	23	162	4%	7	175	13%	46	349	21%	90	429
Poor Personal Hygiene	17%	7	41	31%	60	194	22%	75	342	36%	177	493	41%	210	508
Other/Chemical	9%	1	11	7%	4	56	4%	4	92	11%	10	92	9%	10	115
Totals	14%	25	178	19%	152	807	17%	215	1257	28%	450	1628	33%	635	1901
Risk Factor	Delis			Meat			Seafood			Produce					
	%	n	Total Obs	%	n	Total Obs	%	n	Total Obs	%	n	Total Obs			
Food from Unsafe Source	9%	12	137	4%	5	129	8%	8	96	0%	0	87			
Inadequate Cooking	5%	2	42	NA	0	0	NA	0	0	NA	0	0			
Improper Holding/Time-Temperature	36%	106	297	29%	26	89	34%	33	98	38%	47	123			
Contaminated Equipment/Protection from contamination	7%	17	253	16%	42	266	11%	15	136	8%	10	126			
Poor Personal Hygiene	26%	85	330	26%	73	281	23%	32	137	31%	60	196			
Other/Chemical	5%	4	85	0%	0	65	10%	3	29	14%	12	88			
Totals	20%	226	1144	18%	146	830	18%	91	496	21%	129	620			
Hold is the most significant risk factor across the board															
: top most significant															
: 2nd most significant															

The number of facilities surveyed is indicated by n=x. A total of 458 facilities were surveyed. The findings of the baseline survey of risk factors in Wake County establishments were found to be similar to the findings of previous national FDA risk factor studies. The 2010 Wake County baseline survey identified the following risk factors as the most commonly observed that were OUT of compliance:

- Improper holding/time and temperature
- Poor personal hygiene

Some highlights of the survey showing compliance with the 2009 Food Code:

- 10 – percent of facilities have an employee health policy compliant with the Code
- 44 – percent of observations are compliant with prevention of bare hand contact with ready to eat foods
- 48 – percent of observations are compliant with 41°F for cold holding
- 77 – percent of observations are compliant with the hot holding temperature of 135F
- 65 – percent of observations were compliant with cooling parameters
- 73 – percent of observations are compliant with proper hand washing

A full copy of the 2010 Wake County Risk Factor Study is available at http://www.wakegov.com/food/professionals/fda_report.htm (WakeGov.com, 2010).

Resources and Strengths

The Environmental Health and Safety Division staff inspects retail food service establishments throughout the County. The State reports coverage each year which represents actual inspections compared to inspections required.

Table 6: Wake County Inspection Coverage

Year	Percent Coverage
2008-09	79%
2007-08	58%
2006-07	44%
2005-06	54%

Implications and Emerging issues

Wake County enforces state rules in its jurisdiction. The 2009 North Carolina food rules do not address employee health, bare hand contact of ready to eat foods, date marking for prevention of lysteria monocytogenes, and consumer advisory, as well as other factors. North Carolina's cold holding temperature is 45 degrees Fahrenheit as compared with the Food Code standard of 41 degrees Fahrenheit.

In a 2009 assessment of the North Carolina rules as compared to the 2005 FDA Food Code, the North Carolina rules contained three of the 11 key public health interventions and controls for risk factors that contribute to food borne illness. In addition, the general retail practices of North Carolina rules were 46 percent compliant with the 2005 Food Code.

The Wake County Human Services Board wrote a letter of support for adoption of the FDA Food Code by reference on May 27, 2010. The State is planning to adopt the 2009 Food Code for the basis of regulation by July 2012. The FDA Food Code addresses a number of food safety gaps identified in the Wake County's 2010 Baseline Survey.

The gaps identified in the 2010 Wake County Baseline Survey will be used to target education and outreach. The survey will be conducted in the future to determine any progress toward reducing the risk of food borne illness potential.

Lead Poisoning Prevention

Statistics and Trends

The North Carolina Department of Environment and Natural Resources (NCDENR) requires counties to conduct an environmental lead investigation for children six years of age or younger who have been diagnosed with a confirmed blood lead level. A confirmed blood lead level is a level greater than 20 micrograms per deciliter of lead in the blood. Common sources of lead exposure in children are consumption of lead-based paint chips or inhalation of lead dust. Some toys, vinyl mini-blinds, candle wicks and candy have been determined to be lead poisoning hazards. On July 1, 2008, the State required that these investigations be offered to families with children who have been diagnosed with an elevated blood lead level. An elevated blood lead level is defined as 10-19 micrograms per deciliter of lead in the blood.

Since July 1, 2006, Wake County Environmental Services Childhood Lead Poisoning Prevention Program has investigated 18 elevated blood lead cases, 13 confirmed lead cases, and 15 child occupied facilities. In FY09, there was a 600 percent increase in environmental lead investigations due to offering intervention at a lower blood lead level. The Department investigates pre-1978 constructed schools and daycares (child occupied facilities) for lead poisoning hazards, when a suspected problem has been identified by Environmental Health Specialists during their routine inspections.

Many of the properties where lead poisoning hazards were identified have chosen the Maintenance Standard as their remediation option. The Maintenance Standard is basically the implementation of long term interim measures to control lead poisoning hazards. These properties require annual monitoring, which consists of a visual inspection and environmental sampling for lead contaminated dust. Wake County currently has 22 properties on the Maintenance Standard.

Table 7: Blood Lead Level Testing and Results

County	Number tested(from ages 6months-6 years)	Elevated blood level 10-19 ug/dl	Confirmed 20 ug/dl+
Mecklenburg	12,339	2	1
Wake	12,292	8	3
North Carolina	160,563	143	38

Source: DENR, 2010

Resources and Strengths

Wake County resourced its current X-ray Fluorescence (XRF) machine in 2010. The XRF identifies lead based paint hazards in children's home. In addition, the Wake County Department of Environmental Services employs two full-time equivalencies (FTEs) who are authorized in lead investigations.

Solid Waste Management

Introduction

Wake County Solid Waste Management Division coordinates systems to address the current and future solid waste management needs of Wake County citizens. In order to manage Wake County's growing waste stream, the County provides solid waste management services to meet the needs of different waste generators, from both municipalities and the unincorporated areas of the county. Each Wake County municipality has its own residential solid waste collection system. Some municipalities contract collection services with private service providers while others employ municipal crews to collect municipal solid waste. The County is the only public agency that provides disposal facilities for municipal solid waste generated within the County. Wake County manages the following:

- South Wake Landfill
- East Wake Transfer Station
- 11 Convenience Centers
- Two Multi-Material Recycling Facilities
- Two Household Hazardous Waste Collection Facilities

Wake County Solid Waste Management Division also addresses roadside litter, waste reduction and recycling needs through outreach and education programs.

Community Perceptions

According to the 2010 Wake County Community Assessment Survey, almost 77 percent of respondents agreed that the environment in Wake County is clean, safe and healthy. Additionally, roadside litter was identified by respondents as the 5th most important environmental issue communities are facing.

Sixty five percent of focus groups respondents in the North Central zone identified litter as a concern. One respondent stated "People litter. It smells bad and looks bad. People throw trash and don't care about their community." When specifically asked how the issue of roadside litter affected their community, a respondent stated "People throw garbage from the car. I live near

a busy street and I have to pick up others garbage and I have to walk a little distance to throw away other peoples garbage.”

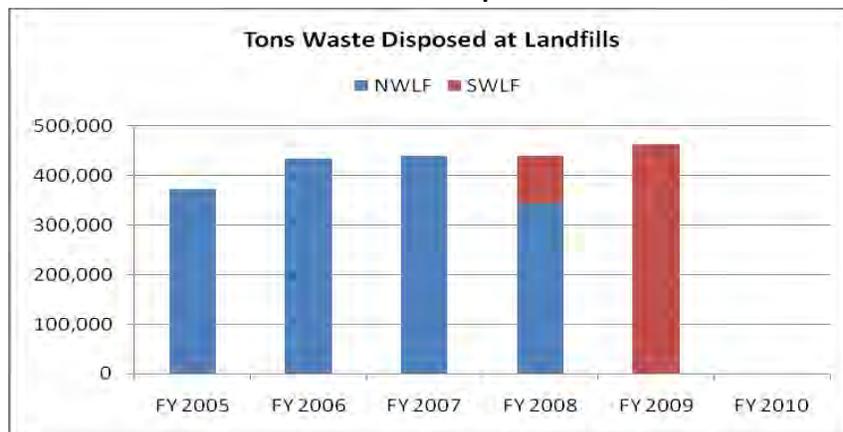
In the Wake County Community Assessment Survey, roadside litter was identified as the top environmental concern in the South Central Zone. Twenty four percent of focus group participants in the South Central Zone identified litter as a top environmental concern. They stated that roadside litter created an unattractive environment and discouraged people from coming to their communities.

Municipal Solid Waste

Statistics and Trends

From FY 2005 - FY 2008, a total of 4,277,754 tons of waste were disposed of in Wake County (*N.C. Division of Waste Management Annual Report, 2008*). The total amount of waste disposed increased with population, although the per capita waste has fluctuated.

Table 8: Tons of Waste Disposed at Landfills



Source: NC Division of Waste Management Annual Report, 2009.

In May 2008 North Wake Landfill (NWLF) reached capacity and stopped accepting waste after 12 years in operation. South Wake Landfill (SWLF) began accepting waste in February 2008. The SWLF is projected to provide nearly 25 years of disposal capacity. It is only permitted to accept waste that is generated from inside Wake County. To facilitate delivery of waste from the northern and eastern parts of Wake County, the City of Raleigh constructed the East Wake Transfer Station (EWTS), which became operational shortly after the opening of the SWLF in 2008. Wake County has entered into an inter-local agreement with the Raleigh to manage the EWTS.

Resources and Strengths

- Eleven jurisdictions and Wake County formed the “South Wake Landfill Partnership” by agreeing to pool their residential municipal solid waste (MSW) streams for disposal at the SWLF in return for improved economy and predictability in waste disposal costs. As a result of this partnership, the tipping fees at the SWLF are currently among the lowest 25 percent in the State (*Wake County Ten Year Solid Waste Management Plan, 2009*).
- North Wake Landfill Post Closure Land Use Master Plan was developed with the North Wake Landfill Citizens Committee and from the input of several hundred citizens and the City of Raleigh, Wake County Public School System, the N.C. Department of Environment and Natural Resources and the North Wake Landfill Citizens Committee. In July 2010, the North Wake Landfill Park opened to visitors as part of the first step toward the implementation of the Master Plan.
- South Wake Landfill Citizens Committee was established in 2006 to provide a forum for citizens in the vicinity of the South Wake Landfill to have a voice in the continuing development of the landfill. Committee members provide a conduit for information between Wake County Environmental Services staff and the neighboring public regarding landfill activities. The committee has been heavily involved in community outreach events including information booths at festivals and hosting public landfill tour days.

Implications and Emerging Issues

South Wake landfill is projected to reach capacity in approximately 25 years. The useable life of that landfill will depend on the success of local governments and businesses to reduce, reuse, recycle or otherwise divert their solid waste. Before the landfill reaches capacity, local leaders and community members will need to determine what to do with the County's waste. There are several emerging technologies that could be considered, as well as disposing the waste out of the County.

East Wake Landfill

Wake County is currently developing an environmental assessment of the two properties that make up the East Wake Landfill, neither of which has received waste in over 20 years. The environmental assessment will provide the basis of the post-closure care and maintenance plan and guide the future activities and monitoring protocols for that site.

Waste Reduction

The jurisdictions of Wake County continue to take actions to focus on ways to reduce waste on a per capita basis. In 2008 several municipalities, including Wendell, Zebulon and Knightdale, switched from 18-gallon bins to larger 48-gallon carts for recyclables to facilitate increased residential recycling and reduce the amount of waste disposed of in a landfill. Other factors

impact per capita waste generation rates including natural disasters, construction starts, industrial output and general household waste. The moderate cost of disposal may be a disincentive to waste reduction. These factors have impacted waste generation in other communities such as Mecklenburg County, which has long been recognized as a state leader in waste reduction and recycling. Mecklenburg County, like Wake County, experienced a similar increase in per capita waste generation rates between FY 2005 and FY 2007, followed by a decrease in FY 2008 (*N.C. Division of Waste Management Annual Report, 2008*).

Statistics and Trends

After achieving a 12.5 percent waste reduction rate in FY 2005, waste disposal in Wake County trended upward for two years, reaching a high of 1.44 tons per person in fiscal year 2007. In FY 2008, waste disposal declined to 1.38 tons per person (*N.C. Division of Waste Management Annual Report, 2008*). The strong local economic conditions of 2006 and 2007 are one expected cause of the increase in waste generation rates on a per capita basis.

A decline in construction and demolition debris (C&D) recycling rates is another factor. According to the 2008 Wake County Construction and Demolition Waste Assessment, the amount of C&D materials recycled has decreased since 2005 while overall C&D waste generation rates have increased. The result is a three percent decline in the C&D recycling rate over time. The number of residential source reduction programs offered and promoted by the local governments also declined from 11 to only five during FY 2008. However, several of the local governments have focused more on waste reduction programs (which includes recycling) than on source reduction. For example, several jurisdictions have increased the number of recyclable materials accepted curbside and improved the collection methods.

Table 9: Waste Disposed and Recycled by Wake County Jurisdictions

Jurisdiction	2008 Population	Tons of Waste Disposed	Tons Recycled	Percentage of Waste Recycled in 2008	Change in Percent from 2005
Apex	34,463	13,319	2,093	15.70 %	2%
Cary	132,647	32,495	9,305	28.60 %	8%
Fuquay-Varina	15,000	5,586	853	15.30 %	4%
Garner	25,429	7,205	908	12.60 %	2%
Holly Springs	22,362	6,471	1,119	17.30 %	-3%
Knightdale	10,000	2,357	434	18.40 %	3%
Morrisville	15,003	2,729	695	25.50 %	13%
Raleigh	380,173	128,831	21,006	16.30 %	5%
Rolesville	2,800	903	173	19.50 %	n/a
Wake Forest	26,150	9,503	2,767	29.10 %	15%

Wendell	5,742	2,093	262	12.50%	6%
Zebulon	4,781	3,602	153	4.20%	1%
Wake County	190,000	43,589	11,640	26.70%	-1%
Overall	864,550	258,683	51,408	19.90%	4%

Source: N.C. Division of Waste Management Annual Report, 2008.

Most jurisdictions have seen increases in both the amount and the percentage of waste recycled versus land filled over the last three years. Countywide, 4,110 more tons were recycled in 2008. Almost 20 percent of waste was recycled (not including yard waste) – an increase of just over 4 percent compared to 2005 (N.C. Division of Waste Management Annual Report, 2008). The almost across-the-board increases in recycling can be attributed to several factors:

- An increase in the types of materials collected curbside. One-half of the municipalities began accepting materials that were previously not accepted curbside, including cardboard, chipboard, junk mail and certain types of plastic.
- Larger bins/carts. Several municipalities have switched to larger, roll-out carts which facilitate household recycling.
- Increased public awareness. The “green” movement continues to raise public awareness of sustainability – one component of which is recycling. Many municipal web sites provide more information related to recycling now compared to three years ago.

In addition to curbside programs, seven jurisdictions operate drop-off centers that accept recyclable materials. Over 22 percent of the residential recycling tonnage during fiscal year 2008 came from Wake County’s 11 convenience centers and two multi-material recycling facilities (N.C. Division of Waste Management Annual Report, 2008). In the last three years, several jurisdictions have reported only total comingled tons of recyclables on their Solid Waste Management Annual Reports; therefore, the totals shown do not reflect the true actual material amounts. However, one trend that is apparent is the significant increase in cardboard. Several municipalities have recently added cardboard to their curbside recycling collection service. While the amount of recyclables recovered continues to rise on an annual basis, yard waste generation and recovery shows more variability due to storm events. Overall, approximately 120,000 tons of recyclables and yard waste were diverted from the landfill in each of the past two years through residential programs.

Resources and Strengths

Residential Waste Reduction

Wake County and the municipal governments continue to provide a variety of source reduction programs to Wake County residents. Six municipalities offer backyard composting programs. Four of the six offer composting bins for distribution or sale and reported giving out 505



composting bins during fiscal year 2008. The City of Raleigh is the only local government currently operating a waste exchange (*Wake County Ten Year Solid Waste Management Plan, 2009*). Wake County supports and promotes waste reduction activities for residents through a variety of means. In addition to providing information on the web site, several programs are in place to reduce the amount of waste land filled including the following:

- The on-line “Trash Takers” database lists numerous reuse and recycling options for various types of waste.
- The Holiday Wrap-up Recycling Program provides opportunities for residents to recycle Christmas trees, corrugated cardboard, chip board, holiday cards, magazines/catalogs, solid bleached sulfate (SBS) board and wrapping paper. The program also provides tips on source reduction around the holidays (Raleigh also provides an 8-page guide listing tips for reducing holiday waste).
- The Master Gardeners’ Program offers backyard composting education through promotions and demonstrations.

Commercial, Institutional and Industrial (CII)

Commercial, Institutional, and Industrial (CII) establishments may participate in recycling by using local haulers or recycling processors. Collection services for conventional recyclables are relatively available for both large and small establishments; however, small establishments are less likely to participate due to cost factors. North Carolina House Bill (HB) 1518, which became effective January 1, 2008, requires establishments with Alcoholic Beverage Control (ABC) permits to separate, store and recycle all recyclable beverage containers. HB 1465, which becomes effective October 1, 2009, prohibits the disposal of motor oil filters, rigid plastic containers, wooden pallets and oyster shells in landfills. To discourage disposal of corrugated cardboard, waste loads that have more than 10 percent cardboard are required to pay a surcharge bringing the total tipping fee to \$60 per ton at the South Wake Landfill and East Wake Transfer Station. Nearly all jurisdictions have taken steps to reduce in-house waste generation through increased use of electronic communication, promoting recycling in government offices, and other CII efforts. Here are some examples:

- Wake County offers technical assistance to CII establishments by identifying recycling haulers, by providing recommendations on self-waste assessments, by assisting with the design of a collection system, and by awarding Commercial Waste Reduction Grants for businesses to start or expand their waste reduction and/or recycling program.
- Wake County’s two multi-material recycling facilities accept several types of materials from businesses, including cardboard, computers, electronics and scrap metal.
- The City of Raleigh allows businesses to use its seven recycling drop off centers.

- The City of Raleigh currently offers free curbside recycling in the Central Business District. Paper, cardboard, chipboard, glass and plastic are all accepted. The City has distributed 64-gallon carts and offers collection service four times a week. Over 100 businesses had joined the program as of the end of FY 2008.
- Several municipalities allow certain small businesses to participate in their residential curbside collection program.
- Wake County's "Feed the Bin" program offers recycling and environmental education opportunities to students of the WCPSS at over 150 school sites. The program focuses on paper recycling. During the 2007-2008 school year approximately 1.6 million pounds of mixed paper (12.4 lbs/student) were recycled (*Wake County Public School Waste Composition Study, 2008*).

Construction and Demolition Debris (C&D)

In 2008, Wake County conducted a study of Construction and Demolition Debris (C&D) waste disposal and recycling. The assessment found that the lack of landfill space is not a motivating factor to achieve increases in C&D recycling. Many local options exist for C&D waste haulers to dispose their material. There is nearly 26 million tons of permitted capacity for C&D available in the area providing more than 50 years of disposal life. The study also noted that any regulatory action by Wake County regarding C&D recycling would lead to increased C&D waste management costs. Due to the variety of different C&D collection systems, transfer/processing plants, and newly licensed disposal sites, the current marketplace is highly competitive with several alternatives, which keeps disposal costs relatively low. The amount of C&D waste land filled has increased steadily in the past four years and C&D recycling in Wake County has dropped slightly since 2005.

Table 10: Construction and Demolition Debris

Fiscal Year	Recycled	Landfilled
2005	99,833	431,615
2006	93,864	467,594
2007	89,403	486,571

Source: *Wake County Construction and Demolition Debris Waste Assessment, 2008.*

Disparities, Gaps and Unmet Needs

In order to meet goals pertaining to waste reduction, Wake County has identified opportunities to increase recycling opportunities for under-served sectors, to increase the types of materials collected, to continue to evaluate the need for mandatory recycling, and to do the following:

- Partner with municipalities to implement recycling at special events
- Continue to evaluate market conditions and demand for C&D materials and reevaluate benefit of a C&D recycling ordinance if conditions warrant
- Explore recycling alternatives for wooden pallets in lieu of the ban on landfill disposal
- Re-assess the number, location, and services to be provided by convenience centers, material recycling facilities, and other current or proposed waste management facilities
- Initiate advertisement and promotional programs to capture a greater market share of recyclable materials at convenience centers and multi-material recycling centers and continue to evaluate recycling market development opportunities
- Evaluate cardboard scavenging from loads dumped at the East Wake Transfer Station
- Evaluate feasibility of re-directing dry loads (paper, cardboard, plastics) arriving at the South Wake Landfill to the South Wake Transfer Station for recycling
- Consider offering recycling collection services to multi-family units using Raleigh's existing multi-family program as a guide

Implications and Emerging Issues

Wake County and the municipal governments are taking action to reduce waste, to increase residential recycling rates, and to expand commercial recycling opportunities. Local jurisdictions recognize that additional effort is needed in order to achieve waste reduction goals.

The 13 local government entities have developed several actions that may result in additional improvements to the jurisdiction's solid waste programs and the county's overall system:

- Provide the maximum opportunity for waste reduction, reuse and recycling
- Offer a convenient method for residents to recycle a wide range of materials
- Educate the public about opportunities to reduce and recycle

Special Waste

Statistics and Trends

Special waste management focuses on items that are difficult to dispose of and are not suitable for landfill disposal. They include household hazardous waste (HHW), "white goods" such as appliances, used motor oil, antifreeze, yard waste, and electronics and computers. The following table lists the amount of these materials collected during FY 2008.

Table 11: Special Categories of Waste

Waste	Amount Collected
Household Hazardous Waste	471 Tons*
White Goods	1,130 Tons*
Used Oil	25,223 Gallons*
Antifreeze	500 Gallons*
Yard Waste	67,940 Tons**
Electronics	603 Tons*

*Collected by Wake County

**Collected by the municipalities

Source: N.C. Division of Waste Management Annual Report, 2008.

Resources and Strengths

- The County's HHW program expanded in 2009. HHW is now accepted at the County's two multi-material recycling facilities six days a week.
- All of Wake County's municipalities offer white goods collection either directly or through their contracted hauler. Four provide this service on a weekly basis while the rest offer by-request service and/or special seasonal collection events. Residents can also drop off their white goods at one of the County's two multi-material recycling facilities six days a week.
- Several municipalities offer used oil drop-off or special collection services. Apex residents may dispose of up to two gallons of used oil per week at the Apex Public Works Department. Cary residents may request curbside pickup for up to five gallons. Both services are offered free of charge. Wake County offers drop-off service at their multi-material recycling facility.
- Land clearing and inert debris (LCID) are banned from North Carolina municipal solid waste landfills. These types of waste (e.g. yard waste) can either be disposed of in an LCID landfill or compost facility. There are three permitted and active LCID landfills in Wake County.
- In response to litter and illegal dumping in Wake County, the local jurisdictions have taken action to better understand and prevent these activities from recurring and have initiated efforts to clean-up after they occur. Some of the current programs addressing litter and illegal dumping include N.C. DOT Adopt-A-Highway, N.C. DOT Litter Sweep, N.C. DOC Inmate Crews, N.C. DOC Maintenance Crews, Neuse River Cleanup, North Carolina Big Sweep, and Wake County Solid Waste Facility Contracts.

- Within Wake County, N.C. DOT collects litter from 811 miles of roads and N.C. DOC collects from 183 miles (*Wake County Roadside Litter Study, 2008*).

Disparities, Gaps and Unmet Needs

- In 2009, oil filters, plastic bottles, and wooden pallets were added to the list of items banned from MSW landfills in N.C. While residents have several options for properly disposing of oil filters and plastic bottles, few options exist for wooden pallets.

Implications and Emerging Issues

- Effective January 1, 2011, computers and televisions will be banned from MSW landfills. Wake County currently offers drop off service at the multi-material recycling facilities; however, it will be important to educate citizens to make them aware not only of the ban, but how and where to properly dispose of the items.
- Respondents of the 2010 Wake County Community Assessment survey identified roadside litter in the top five environmental issues facing their community. Wake County is working on several strategies to tackle this issue, including conducting weekend cleanup events, educating students and developing an outreach campaign to change behavior.

Water Quality

Introduction

This section addresses several aspects of water quality:

- Surface water, including all watersheds, focusing on watersheds that drain to water supplies and includes recreational waters
- Groundwater
- On-site wastewater systems including septic systems

In areas with natural ground cover, typically 40 percent of rainfall returns to the atmosphere by evapo-transpiration through plants; 25 percent of the rainfall infiltrates into the soil to shallow depths and seeps into streams; 25 percent infiltrates deeply to recharge groundwater; and about 10 percent runs off the land. In urban development, including single family residential subdivisions, this mix will change with only 25 percent of rainfall returning to the atmosphere by evapo-transpiration by plants. About 30 percent of the rainfall will infiltrate into the soil to shallow depths and will seep into streams, another 15 percent will infiltrate deeply to recharge

groundwater, and about 30 percent will run off the land (*N.C. Division of Soil and Water Conservation, 2007*).

The runoff has the most potential to affect water quality because it picks up pollutants such as motor oil from cars or fertilizer from lawns. If the runoff is not filtered through natural vegetation or other means, it enters streams with its pollutant load intact. Second, the runoff does not provide a source of water for vegetation, groundwater recharge or base flow for streams. This can cause stream bank erosion or sediment build-up, and can adversely affect aquatic animals, insects and wildlife that depend upon the stream.

A watershed is the land area that drains to a body of water. A watershed can be very small or encompass a major river basin. In Wake County, the Watershed Management Plan divided the county into 81 watersheds that range in size from .9 to 53.3 square miles in area for analysis. A water-supply watershed is one that drains to a lake that serves as a reservoir for water supply. In Wake County, 22 of the 81 watersheds are within water-supply watersheds (*Wake County Watershed Management Program, 2003*).

Surface Water

Community Perceptions

Survey respondents in the 2010 Wake County Community Assessment Survey identified Safe and Clean Drinking Water as one of the top five major environmental concerns. This issue was identified in seven of the eight study areas.

Statistics and Trends

Wake County is 860 square miles in size (water and land area) and lies within two major river basins. Approximately 85 percent of the County lies within the Neuse River basin, and the remaining 15 percent of the County lies within the Cape Fear River Basin. There are approximately 1,500 miles of streams within Wake County (*WakeGov.com, 2010*).

In January 2003, Wake County's Watershed Management Task Force completed a Watershed Management Plan for all local governments in Wake County, classifying watersheds as healthy, impacted or degraded on the basis of an analysis of biological data, chemical pollutants, geomorphology and habitat degradation. Thirty watersheds were classified as healthy, 38 were classified as impacted and 13 were classified as degraded. Most of the degraded and impacted watersheds are located in the more heavily developed portions of Wake County. The healthy watersheds are principally in the outer perimeter of the county and are used primarily for agriculture and forestry (*Wake County Watershed Management Program, 2003*).

An impaired stream is one that does not meet the standards for its designated uses, such as aquatic life protection, swimming and water supply. According to the North Carolina

Department of Environment and Natural Resources (NCDENR) Division of Water Quality 2004 listing, approximately 119.8 miles of Wake County streams are designated as “impaired.” The draft listing of impaired streams for 2006 identifies approximately 118.4 miles of impaired streams (*N.C. Division of Water Quality, 2010*). The following are the primary reasons for listing streams as impaired and potential sources:

- Impaired biological integrity, likely from urban runoff/storm sewers
- Low dissolved oxygen, likely from land development
- Turbidity, likely from urban runoff/storm sewers

Resources and Strengths

Wake County has taken several actions to implement recommendations from the Watershed Management Plan:

- Increasing riparian buffers in water-supply watersheds from 50 to 100 feet in width
- Prohibiting development throughout the floodplains
- Revising storm water runoff controls to use U.S. Department of Agriculture numbers to manage storm water
- Adopting open space subdivisions as an option to maintain open space in new developments
- Acquiring open space, especially in riparian areas (see section on open space for details)
- Evaluating septic systems to determine if they are contributing to water quality degradation
- Increasing public education
- Continuing to restore streams

During FY 2009 and FY 2010, the Water Quality Division realigned existing programs to create the Watershed Programs Section, which integrated stormwater and floodplain management, erosion and sediment control, environmental monitoring and watershed planning. Through the realignment of functional units, the County established a watershed based approach to the management of water and other natural resources. Watershed Management staff worked with the towns of Wendell, Rolesville and Zebulon to finalize a common municipal stormwater ordinance. The collaborative effort fulfilled a recommendation of the Stormwater Management Task Force (SWTF), which was to develop a common stormwater ordinance for Wake County municipalities that did not have a stormwater ordinance in place. Each town adopted the common ordinance during FY 2010 and entered into an interlocal agreement for Wake County’s administration of their stormwater program (*SWTF, 2007*).

Implications and Emerging Issues

Falls Lake is an impoundment in the upper Neuse River Basin in the central Piedmont that drains a mixture of agricultural and urbanized lands. The lake is a major recreational amenity for the area and serves as the main water supply for approximately 450,000 residents of the City of Raleigh and several other Wake County municipalities. (*N.C. Department of Environment and Natural Resources, 2010*) A Falls Lake Technical Advisory Committee (TAC) was formed in July 2005 to assist DWQ with the review and modification of the monitoring strategy and developing levels of confidence for decision making associated with the monitoring and lake modeling activities. The field study was completed in Fall 2007. Based on water quality data collected between 2002 and 2006, Falls Lake was listed as impaired for chlorophyll on the draft N.C. 2008 303(d) list. The portion of the lake above I-85 was also listed as impaired for turbidity. Following questions in 2004 over the condition of Falls Lake, DWQ began more intensive sampling for use support assessment. The proposed Falls Reservoir Water Supply Nutrient Strategy is a comprehensive set of rules designed to address excess nutrient inputs to Falls Lake that can lead to algae blooms and other water quality problems.

Wake County has also launched a stream monitoring program which is attempting to provide baseline data on all of the watersheds in Wake County, and was used to produce, in collaboration with N.C. State University, a water quality report which attempted to compile all available data and rate the condition of Wake County watersheds.

Water-Supply Watershed

Community Perceptions

The community did not provide any comments related to water supply.

Statistics and Trends

Water-supply sources include Falls Lake, Jordan Lake, Wake Forest Reservoir, Little River, Lake Benson (which served as the primary source of raw water prior to the opening of Falls Lake and which will be used again in the future) and the future Little River reservoir in eastern Wake County. The primary sources of water are Jordan Lake in western Wake County, with Apex and Cary drawing water at their joint water treatment plant, and Falls Lake in Northern Wake County, where Raleigh draws and treats water. Wake Forest also has a reservoir and treatment plant, as does Zebulon.

All local governments that have jurisdiction over land in water supply watersheds must comply with state regulations concerning riparian area buffers, impervious surfaces or density, land uses allowed and other requirements.

Demands for drinking water will continue to increase as population and non-residential development continues to increase. Water quality in Falls Lake and Jordan Lake is a concern. NCDENR has developed a nutrient management strategy for Jordan Lake and is in the process of developing one for Falls Lake. Both Falls Lake and Jordan Lake are on the State's 303D list of impaired water bodies. The strategies aim to restore water quality and protect the lakes' classified uses.

Resources and Strengths

The water/sewer plan for Wake County outlined a number of steps to consolidate services. These included increasing the water supply and water treatment capacity to meet demand (including using water from Lake Benson and completion of the Little River Reservoir), increasing the allocation of water from Jordan Lake, and establishing a water supply connection from Harnett County.

Implications and Emerging Issues

Wake County is moving forward with plans to build the Little River Reservoir. Local governments are pursuing conservation measures, such as reuse of treated wastewater for non-potable applications. This includes water used in irrigation and flushing of toilets. Low-impact development practices also have been implemented, such as collecting stormwater in cisterns for later use in irrigation and other non-potable uses. An example is the Legislative Building in downtown Raleigh, which is collecting stormwater in cisterns and using it for irrigation on the grounds.

Recreational Waters

Introduction

Wake County adopted Regulations Governing Public Recreational Waters and Beaches in 2000 to protect swimmers from bacteria in recreational water. These regulations establish levels of indicator bacteria, E. coli and Enterococci, which should not be exceeded in order to protect swimmers.

Most disease-causing microbes exist at very low levels and are difficult and expensive to detect. Indicator organisms are used to help identify where fecal contamination has occurred and, therefore, where disease-causing microbes may be present. Both bacteria are found in the intestines of warm-blooded animals, which include humans.

In 2009, the Watershed Management program assumed responsibility of Wake County's recreational waters program. This public health program collected 344 water samples at 51 sites, processed the samples at a laboratory, read results, and issued declarations of imminent health hazards.

Some declarations resulted in the temporary closure of public, state and local government recreational facilities as well as private and for profit facilities until the hazards were resolved or mitigated. Following extensive media coverage and increased public interest in the closure of recreational swimming areas, the Watershed Management program enhanced data collection, documentation, policies and procedures. The events lead to the development of a web site to provide current information on closures.

Wake County Environmental Services staff tests lakes where primary contact with the water is permitted. These include four beaches at Falls Lake, including Sandling, Beaver Dam, Holly Point north and south, plus New Life Camp, Lake Wheeler, and Camp Kanata.

Community Perceptions

The community offered no comments on recreational water.

Statistics and Trends

The Watershed Management Section continues to implement Wake County's Recreational Waters program.

Bacteria levels have been elevated as stormwater runoff has increased from additional development near these recreational waters.

Resources and Strengths

Wake County will continue to monitor recreational waters and work with owners and managers of these areas to maintain good quality water.

Implications and Emerging Issues

Increased runoff from additional development could cause more beach closures.

Groundwater

Introduction

Groundwater has long been an important component of Wake County's water resources. Citizens residing in areas not served by municipal water access groundwater through either private or community wells. The quantity and quality of groundwater not only affect people who rely on wells for drinking water, but groundwater also typically accounts for between 34 percent and 55 percent of total streamflow in Wake County. Groundwater base flow may

account for nearly all of the streamflow during periods of drought. Without groundwater base flow, streams can run dry in periods of drought.

Groundwater quantity is affected by precipitation, recharge, evapotranspiration, withdrawals, impervious surfaces (which prevent recharge) and septic systems (which enhance recharge). Groundwater quality is affected by naturally occurring pollutants, such as radon, uranium and arsenic, or manmade pollutants via leaking underground storage tanks, industrial and commercial sites or the use of soil fumigants and nutrients.

Community Perceptions

The community offered no comments on groundwater.

Statistics and Trends

The Wake County Comprehensive Groundwater Investigation of 2003 estimated that approximately 141,000 Wake County residents rely on groundwater for drinking and other everyday uses, with 93,000 obtaining water from domestic wells. The remaining 48,000 are served by one of the estimated 275 community water systems. For the four fiscal years 2003 through 2006, Wake County received permit applications for an average of 575 wells per year and 42 replacement wells per year. With the economic recession that started in 2008, the number of applications for new well permits has declined.

Generally, supply of groundwater does not appear to be a problem, since withdrawals range from one percent to six percent of average annual rainfall. However, in certain localized areas of the County high volume wells (such as community or irrigation wells) may impact neighboring private wells. In fact, in 2005 and again in 2007, private wells near the intersection of Norwood Road and Creedmoor Road in Northwestern Wake County experienced lost capacity due to drought conditions combined with combined pumping volume that exceeded the storage and recovery capacity of the fractured rock aquifer.

In many areas of Wake County that are served by community water systems, groundwater is void of contaminants that would prevent or restrict its use as drinking water. Disinfection, pH adjustment, and sequestration to remove iron and manganese are the only treatment methods used in the majority of systems. Several community water systems, primarily in the eastern portion of Wake County, treat groundwater to reduce the level of radionuclides to below drinking water standards.

Since September of 2003, Environmental Services has gathered water quality data on all newly constructed private wells. Results for bacteriological and inorganic contaminants indicate that the groundwater serving private wells continues to be of high quality with few exceedances of maximum contaminant levels.

The economic recession that began in 2008 and continues into 2011 has reduced the number of applications for well permits. The persistent series of droughts from 1999 through 2008 fueled the increase in irrigation and replacement wells from 2006 through 2008. The trend to use green technologies is resulting in the emergence of geothermal wells for high efficiency heating and cooling systems.

Resources and Strengths

In June of 2006, Wake County formed a stakeholders committee with a goal of reaching a consensus on a definition of groundwater sustainability in Wake County and to decide what, if any, strategies are necessary to reach sustainability, with a primary focus on private wells. The task of defining groundwater sustainability ultimately resides with the Wake County Board of Commissioners, but the stakeholders committee did develop four primary recommendations. The recommendations are that Wake County:

- Implement a data collection and analysis program
- Develop a GIS based "risk level" map
- Develop mitigation strategies where groundwater quantity issues arise, and
- Establish a permit system for Large Capacity Wells

In 2009, The Wake County Human Services and Environmental Services Board adopted "Regulations Governing the Investigation and Mitigation of Well Interference." The adoption of this ordinance was the product of extensive negotiations with the local Homebuilders Association and water utility companies. This ordinance is the first of its kind in North Carolina and sets clear procedural steps to investigating complaints of well interference. In 2008, Wake County Environmental Services entered into an agreement with the United States Geologic Survey to provide groundwater monitoring and real time data of a well in the Creedmoor Road area north of Norwood Road.

Wake County Environmental Services has an inspection and testing program for wells. Information regarding water quality results and the Groundwater program in general can be found at <http://www.wakegov.com/water/wells/default.htm> (Wake County Water Quality Division, 2010).

Implications and Emerging Issues

The future trend in the development of groundwater resources in Wake County remains unclear. Municipal water supply plans suggest that fewer residents will rely on groundwater for their water supply in 2020. Yet, over the last several years the number of people connected to a community well system as well as the number of people served by a new domestic well has continued to increase. The demand for irrigation wells and geothermal wells will most likely increase.

Sustainability will continue to be an area of concern. Monitoring of groundwater levels, especially during times of stress, will be key. Limited resources will dictate if additional well monitoring stations can be installed to form a groundwater monitoring network.

The potential presence of radionuclides in private well water, especially in the eastern portion of Wake County will necessitate an increased level of monitoring of private wells. State regulations will require monitoring of certain volatile organic compounds, beginning as early as October 2010.

On-site Wastewater Treatment and Disposal Systems

Introduction

On-site wastewater treatment and disposal systems, or septic tank systems, are accepted as a safe and effective means of treating and disposing of wastewater. Properly functioning and well-maintained septic tank systems provide an effective means of mitigating residential wastes, but when septic tank systems fail they pose public health concerns, potentially contaminating surface and groundwater with pathogens and nutrients.

Factors significantly related to failure include landscape position, soil type, maintenance (especially for low-pressure pipe systems), system age, site maintenance, construction of structures over the drainfield, lack of vegetation or trees, the number of adults occupying the home and lack of understanding about system operations and limitations.

Community Perceptions

The community offered no comments on wastewater treatment and disposal systems.

Statistics and Trends

Approximately 60,000 septic tank systems are in use by nearly one quarter of Wake County's residents. According to a study completed in 2005 by Wake County Environmental Services, in cooperation with N.C. State University, approximately 9.7 percent of septic systems installed between 1982 and 2001 had failed. Older systems located in poorer soils with drainage fields that are not shaped to divert stormwater away from the drainage fields tend to fail more than other systems that do not share these characteristics.

An average of 1,178 new septic tank systems was permitted each year from 2006 to 2010. Fiscal year 2006 saw a peak of new construction applications, with 1,699, but in fiscal 2009, only 540 applications were submitted. Fiscal year 2010 saw 818 applications submitted. Septic tank repair permit applications average around 404 per year. In Fiscal year 2005 the department began reviewing expansion requests by both field visits and office review of paperwork.

On average 300 field investigations were conducted each year from 2008 to 2010, 483 office reviews were conducted each year from 2008 to 2010.

Resources and Strengths

Wake County Environmental Services reorganized its on-site wastewater functions to devote staff directly to repairs and maintenance of on-site wastewater systems. This change allows some Water Quality staff to concentrate on new systems and others to concentrate on repairs and maintenance.

Even though the Water Quality section has lost a number of positions due to the downturn in the economy, it has been able to take on performing inspections of certain septic systems that require a pump, as required by state regulations.

Because proper management of individual systems is critical for proper functioning, Wake County Environmental Services attempts to educate property owners on the proper use and maintenance of on-site systems. To that end, Environmental Services provides the Raleigh Regional Association of Realtors with educational materials, including DVDs on proper on-site system operation and maintenance practices, which the Realtors give to purchasers of homes served by septic systems. Environmental Services also works with property owners to address failed systems.

In a cooperative effort between Water Quality, the County's Information Services Department and an outside vendor, the On-site Septic System Database (OSSD) has been developed. This database contains scanned images of septic permits and is available for the public to access through the county's IMAPS application on the Internet. Over 8,000 permits have been entered into the system, after one year of scanning. The department is continuing to scan all systems requiring inspections by the state regulations and is working toward scanning all permits into the system.

Implications and Emerging Issues

Better prevention of failures could be accomplished through more public education efforts and post-installation inspections to ensure that septic tank owners do not take actions to reduce the viability of their systems. The County is in the process of revising their local regulations to require that all septic systems be inspected by the private sector on a recurring schedule. This schedule will be based on several factors including system type, age and proximity to watersheds. The majority of systems will be inspected on a five-year schedule, with some systems being inspected on a three-year rotation. The County will be the repository of all inspection records.

As municipalities continue to expand and extend municipal sewer service to existing developments that are served by on-site systems, existing on-site systems in those areas will be phased out. Areas in the Falls Lake, Swift Creek and Wake Forest Reservoir watersheds will, by policy, not have municipal sewer service extended to them.

As the price for land continues to escalate and the attractiveness of conservation subdivisions continues to increase, it will be increasingly more difficult to locate septic systems, including repair areas, on smaller lots.

Zoonotic Diseases

Introduction

Diseases transmitted from animals to humans are called zoonotic diseases. According to Emerging Infection Diseases, zoonotic diseases are important to monitor because of known and emerging disease potential (*Murphy, Frederick A., 1998*). Insects act as vectors to transmit infections. This chapter will review current diseases that are attributed to vector borne infections and nuisance. This section addresses bed bugs, mosquito related disease, tick borne illness, and rabies.

Community perceptions

During the 2010 Community Health Assessment, mosquitoes ranked 3rd of the top five environmental issues. Six of eight zones in the survey identified mosquitoes as a major concern. Mosquitoes are, in fact, significant vectors of a number of illnesses worldwide (*CDC, 2007*). The survey did not identify other nuisance insects or significant vectors of known diseases in Wake County.

Bed Bugs

Statistics and Trends

While bed bugs (*Cimex lectularius*) are not known to transmit disease, according to the Centers for Disease Control and Prevention, they are a nuisance that significantly impacts the quality of life of citizens. Bed bugs cause a variety of negative physical health, mental health and economic problems, including secondary skin infections. In addition, there are adverse affects on the mental health of people living in infested homes (anxiety, insomnia, and feelings of helplessness and isolation), and significant economic costs (including extermination, furniture being discarded, health care, absence from work, and reduced productivity) (*CDC and Environmental Protection Agency, 2010*).

Bed bugs are easily spread in attached housing units, within highly mobile communities, and among travelers. Treating bed bugs through extermination is expensive and difficult since bed bugs have become resistant to many pesticides available for use inside dwellings (*Hwang, Svoboda, De Jong, Kabasele, Gogosis, 2005*). In October 2010, Wake County hosted a stakeholder meeting to engage interested parties. Over 45 people participated and plan to continue collaborating to address this concern.

Bed bugs infestations are not reportable, so exact data are difficult to verify. However, since 2008 complaints about bed bug infestations in apartment buildings and private dwellings have been increasing in Wake County. Environmental Services, communicable disease nurses and communicable disease health educators, as well as staff at the N.C. Department of Environment and Natural Resources, all receive numerous complaints monthly about bed bugs in Wake County.

Two years ago inspectors at Triangle Pest Control reported receiving only a couple of calls about bed bugs each month, while they now report receiving 20-30 calls each month (*Minnick, 2010*). Environmental Services confirmed the presence of bed bugs at four nursing homes and one residential care facility in Wake County over the past year. In July 2010, the [News and Observer](#) reported a bed bug infestation at the Sir Walter Raleigh Apartments in downtown Raleigh (*News and Observer, 2010*). As in many other “gateway” cities throughout the U.S., bed bug infestations are on the rise in Wake County and are expected to get worse in the coming years.

Resources and Strengths

The Communicable Disease Program has developed educational materials for Wake County citizens which are widely distributed in a variety of ways, including presentations, newspapers, TV shows, radio shows, written materials and web pages in both English and Spanish.

Wake County has recently presented information about bed bugs in Wake County to the Public Health Committee of the Human Services Board to garner support for efforts to control and prevent the spread of bed bugs.

Researchers at N.C. State University study bed bugs, ways to eliminate them and infestations across the state.

Wake County is planning to invite representatives from a variety of stakeholder groups to join a task force to outline recommendations regarding educational efforts and defining responsibilities of tenants and landlords as they relate to bed bugs.

Disparities, Gaps and Unmet Needs

There are no public policy and/or city codes in North Carolina or Wake County that address bed bugs, specifically, except for in hotels/motels. However, there are several needs in this area:

- There is a lack of financial resources to eliminate bed bug infestations.
- There is no clear delineation of responsibility of tenants and landlords regarding bed bugs.
- It is difficult to collect data indicating the number of households infested with bed bugs in Wake County.

Tick Related Diseases

Community Perceptions

The community offered no comments on tick related diseases.

Statistics and Trends

Tick related illness is the primary vector borne illness reported in Wake County (*Wake County Human Services, 2010*). Ticks are vectors for a number of diseases, including Rocky Mountain Spotted Fever, Ehrlichiosis, and Lyme Disease (*Borrelia burgdorferi*). In 2009, two residents of Wake County were diagnosed with laboratory-confirmed early Lyme disease, with no reported history of travel outside the county in the month before they became ill. According to the case definition for disease surveillance from the CDC, once it has been determined that at least two confirmed cases have been acquired in a county, then, the county is defined as “endemic” for Lyme disease for surveillance purposes (*CDC, 2008*). “Endemic” means that a disease is characteristic or occurs in a particular area. Wake County received this designation for Lyme disease in early 2010.

The following cases of tick borne illness (Table 12) were reported to Wake County Human Services Communicable Disease and Surveillance team over the represented periods:

Table 12: Tick Related Disease Cases in Wake County

Disease	2008	2007	2006	2005
Ehrlichiosis	6	10	6	6
Rocky Mountain Spotted Fever	40	77	97	105
Lyme Disease*	15	7	5	16
Total Tick Disease Reports	61	94	108	127

* This cases did not meet the CDC's case definition of Lyme Disease

Compared to data on mosquito borne illness reports (see Table 13), Wake County residents report more incidences of tick borne infections than mosquito related illness. Tick associated illness is statistically of greater concern to Wake County citizens than mosquito infections.

Resources and Strengths

The endemic status for Lyme Disease may provide awareness in the medical community and increase the likelihood for early treatment, if diagnosed.

Mosquito Related Diseases

Community Perceptions

As stated previously, mosquitoes were identified as the third most important environmental issue by 2010 Wake County Community Assessment Survey participants. Focus group participants in the South and East Central zones identified mosquitoes as areas of concern for their communities. Focus group participants in the South said that mosquitoes come from standing water (20 percent) and unmaintained creeks, ponds and lakes (13 percent), and can cause allergies (13 percent) and diseases (13 percent). Twenty-five percent of focus group participants in the East Central zone identified diseases as an important environmental concern. One participant stated “The litter looks dirty. It can bring animals and insects like mosquitoes and flies. Mosquitoes can bring viruses.” When specifically asked how the issue of mosquitoes impacts their communities, 39 percent of respondents in the East Central zone said mosquitoes carry diseases. One respondent stated “Mosquitoes carry diseases. When I was a child we didn't need screens. Then the mosquitoes came. They came from standing water.”

Statistics and Trends

Arboviruses are viruses that are maintained in nature through biological transmission between susceptible vertebrate hosts by blood feeding arthropods, like mosquitoes. Mosquitoes present both a public health concern and a community nuisance to citizens. In the 2010 Wake County Community Assessment Survey, citizens identified mosquitoes as the third most important environmental concern. There are four main virus agents of encephalitis in the U.S., all of which are transmitted by mosquitoes (CDC, 2005). While disease reports of mosquito borne infections in Wake County are low, there are risks associated with emerging diseases.

The mosquito species of public health significance in Wake County is the Asian Tiger mosquito (*Aedes albopictus*), a species that breeds in water-filled containers, such as clogged gutters, flower pot dishes, and bird baths. The Asian tiger mosquito is active during the daytime, especially in the late afternoon, so typical evening mosquito spraying is not effective (N.C. Department of Environmental and Natural Resources, 2010).



Table 13 identifies cases of mosquito borne illness that were reported to Wake County Human Services Communicable Disease and Surveillance team over the represented periods.

Table 13: Mosquito Related Disease Cases in Wake County

Disease	2008	2007	2006	2005
Encephalitis	0	1	0	0

Compared to data on mosquito borne illness (see Table 13), Wake County residents report more incidences of tick borne infections than mosquito related illness.

Resources and Strengths

- Ordinance: Wake County Human Services Board adopted a local public health ordinance in June 2004. The ordinance requires owners and occupants to maintain their premises in such a manner to prevent conditions that promote mosquito breeding. (*Wake County Regulations Governing Mosquito Control, 2004*).
- Surveillance: Wake County Human Services Communicable Disease Surveillance Team collects data on reportable diseases as required by NCGS 130A-144.
- Education and Outreach conducted by but not limited to the following:
 - Wake County Community Health Educators
 - Wake County Communicable Disease Surveillance Team
 - Wake County Environmental Health Specialists
 - North Carolina Department of Health and Human Services
 - North Carolina Department of Environment and Natural Resources
 - Wake County Public School System
- Media opportunities: websites and educational materials

Implications and Emerging Issues

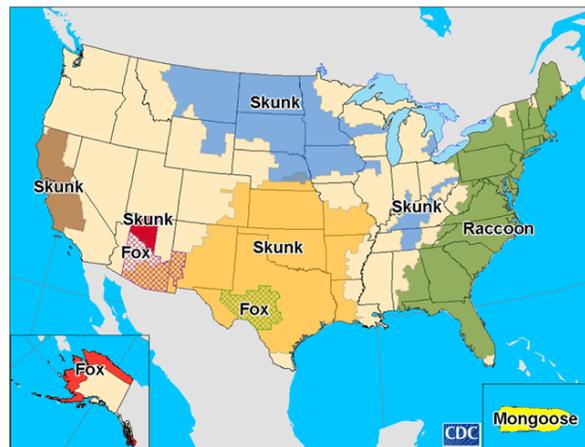
Mosquitoes are known vectors of a number of diseases that affect humans. While reports of mosquito borne illness are relatively low as compared to other insect borne illnesses in Wake County, the potential exists for mosquitoes to become a significant means of transmission for an unknown and emerging disease.

Rabies

Introduction

Rabies, a disease of the central nervous system, is a preventable viral disease of mammals most often transmitted through the bite of a rabid animal. The vast majority of rabies cases reported to the Centers for Disease Control and Prevention (CDC) each year occur in wild animals like raccoons, skunks, bats and foxes (CDC, 2010). More than 90 percent of all animal cases reported annually to CDC now occur in wildlife; before 1960 the majority was in domestic animals. Rabies is enzootic, present in wildlife, in all North Carolina counties, including Wake County. Raccoon rabies virus variant is the most likely form of rabies in Wake County.

Figure 1: Terrestrial Rabies Reservoir Species in the United States



(CDC, 2010)

Community Perceptions

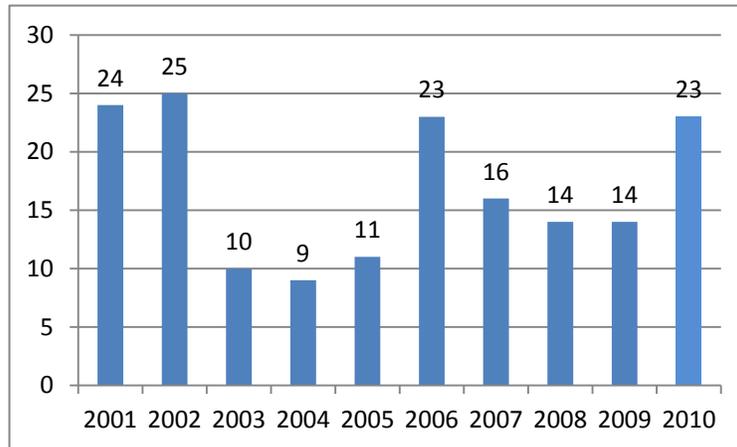
The community offered no comments on rabies.

Statistics and Trends

Because rabies is almost always fatal, prevention is essential. Rabies in humans can be prevented either by eliminating exposures to rabid animals or by providing exposed persons with prompt local treatment of wounds combined with the administration of human rabies immune globulin and vaccine (CDC, 2008). A significant measure to prevent exposure is to vaccinate cats, dogs and ferrets. North Carolina added ferrets to the list of required vaccinated animals in October 2009.

Rabies is enzootic in Wake County. The primary host reservoir for the virus is raccoons. Table 14 lists the counts of cases of laboratory confirmed rabies in animals in Wake County. All counties report positive lab cases through the North Carolina Laboratory of Public Health (*N.C. DHHS, 2008*). There have been no human documented cases of rabies in N.C. since 1953 (*N.C. DHHS, 2010*).

Table 14: Positive Confirmed Laboratory Rabies Cases



Resources and Strengths

Wake County has a number of veterinarians that offer rabies vaccine for pets. In addition, N.C. State University (NCSU) College of Veterinary Medicine is a significant resource for the citizens of the County.

Wake County veterinary resources include 128 veterinary offices, 17 mobile units, 13 large animal practices, and 13 emergency animal clinics. There are 544 licensed veterinarians in Wake County, including those at NCSU's teaching hospitals (*N.C. Veterinarian Medical Board, 2010*). Twenty-five Certified Rabies Vaccinators (CRV) are authorized to provide rabies vaccinations in association with shelters. In addition to private veterinarians, the Wake County Animal Care, Control and Adoption Center provides annual rabies clinics throughout the year.

NCGS 130A-189 requires veterinarians to submit rabies certificates to the local health department. Vaccination certificates are housed at the Wake County Animal Care, Control and Adoption Center.

Five jurisdictions provide animal control enforcement throughout the County: Cary, Garner, Holly Springs, Raleigh and Wake County. These jurisdictions employ a total of 24 animal control officers who enforce state and local rules: Wake County employs seven officers; Raleigh employs 11 officers; Cary employs three officers; Garner employs one officer; and Holly Springs employs two officers.

Three jurisdictions have licensure programs. Raleigh, Cary and Garner currently license cats and dogs in their jurisdictions.

Education is an essential component of rabies prevention, and Wake County staff provides education and outreach in association with their clinics, in news releases associated with positive confirmed laboratory specimens, and in conjunction with events like World Rabies Day.

Implications and Emerging Issues

Currently the compliance rate for vaccinations of dogs, cats and ferrets is unknown in Wake County. While NCGS 130A-189 requires veterinarians to send rabies vaccination records to the local health department, records are currently maintained in paper format. An electronic database would provide useful information to animal control officers across the County to determine the vaccination status of animals.

Geographic data regarding rabies vaccination compliance across the county would provide useful data for targeting education and outreach.

Lifelong Learning

Introduction

The values, beliefs and aspirations of a community are reflected in the lifelong learning opportunities offered to its citizens. Formal and informal educational experiences are helping to shape Wake County's future. Formal education spans elementary schools to major universities, while museums, parks and libraries add to the informal learning adventures across the County.

Early Childhood Education

Community Perceptions

- Eighty-four percent of survey respondents in the 2010 Wake County Community Assessment survey agreed that Wake County is a good place to raise children.
- Affordable and safe child care ranked 38th as a need in the 2006 Wake County Community Assessment. Some families report experiencing frustration and fear when applying for benefits, particularly if they are immigrants.
- In the 2010 Wake County Community Assessment Community Prioritizing Meetings, lack of affordable childcare was selected as a priority for action in the West Zone.
- Low-income families with young children continue to struggle with the high cost of child care.
- In Wake County the cost of child care for an infant in a five-star facility could exceed \$1,000 a month, and \$800 a month for an older child (Subsidy Market Rate Five-Star Center \$972 for infants and \$845 for two year olds). These costs put high-quality care out of reach for many families. Even in lower quality facilities the expense of child care exceeds the means of families struggling to meet their basic needs.
- The cost of care for an infant in a one-star facility could exceed \$600 a month and \$500 a month for an older child (Subsidy Market Rate One-Star Center \$592 for infants and \$513 for two year olds).

Statistics and Trends

- In 2009, an estimated 77,097 children, birth to age five lived in Wake County. Approximately 66,276 of children birth to age five were not yet in Kindergarten. This is an increase of 8.4 percent over figures reported in 2005.
- Research shows that quality childcare and pre-kindergarten programs improve the lives of children from disadvantaged families.
- A review of 36 studies of early childhood programs, including preschool, found sizeable long-term effects on school achievement, grade retention, placement in special education and social adjustment.
- As of December, 2009, 18,955 children birth to age five (not yet in Kindergarten) attended regulated childcare in Wake County, which represents more than one of every four children in this age range. This represents an 11.5 percent increase over figures reported in December, 2005.
- As of May, 2010 the number of children birth to age five who benefitted from child care subsidy exceeded 4,700, which is an increase of 27 percent from slightly over 3,700 in July of 2009.
- A range of 500-5000 children were on the waiting list for child care subsidy at different points in time throughout FY 2009/10.
- In 2009-10, more than \$39,000,000 was spent on child care subsidy services through funding received from the N.C. Division of Child Development and Wake County SmartStart.
- Several programs specifically designed to serve at-risk preschool age children have experienced expansion over the past few years. During the 2009-10 school year 1,013 children were enrolled in the More at Four Program, which targets disadvantaged children for a year of preschool before the start of kindergarten. This represents a 43 percent increase from the number of children served in FY2007 (764).
- During FY2010 both Head Start and Title I programs increased their capacity to serve additional children. In 2009 Head Start received ARRA funds to expand the Head Start program for at risk three and four year olds as well as to create an Early Head Start Program for children birth to age two.
- Head Start provided services to a total of 690 children in FY2010, an increase of more than 50 percent from the total reported for FY2007. Another 684 at risk four year olds were

able to receive federally funded Title I preschool services through the Wake County Public School System (WCPSS).

- An emphasis on the promotion of quality childcare has resulted in the following trends for the 665 licensed facilities in Wake County:
 - The highest quality levels of the rated license system is four or five stars and this rating level has been obtained by 236 facilities;
 - Additional breakdown of the ratings are as follows: Centers – One Star Programs – 48; Two Star Programs – 14; Three Star Programs – 72; Four Star Programs – 65; Five Star Programs – 95. Family Child Care Homes–One Star Programs –161; Two Star Programs – 44; Three Star Programs – 52; Four Star Programs – 40; Five Star Programs – 36.
 - There are also 22 Religious Sponsored Programs in the County.

Table 1 below identifies how child care quality, as measured by the star rated license system, has improved over time.

Table 1: Average Star Rating and Percentage of Children in Four and Five Star Childcare Facilities

Year	Average Star Rating/ percent of children in 4 and 5 stars for ALL children	Average Star Rating/ percent of children in 4 and 5 stars for children receiving subsidy	Average Star Rating/ percent of children in 4 and 5 stars for children with special needs
FY2005	3.52/62%	3.60/6 %	3.78/70%
FY2007	3.61/6 %	3.69/65%	4.14/88%
FY2009	3.78/62%	3.96/70%	4.47/90%

- The increase has been especially significant for higher needs populations, those children receiving subsidy and children with special needs. In FY2009, nine of every 10 children with special needs attended a four or five star rated facility.
- In recent years the numbers of children birth to age two receiving subsidies have shown a steady increase, from approximately 700 in 2004 to over 1,900 in FY2009.
- The number of children age 3 to 5 served through WCPSS Preschool Special Education Services (PSES) had roughly remained the same, at approximately 1,200, for the past several years. With a growing population, this represents a decreasing percentage of children age 3 to 5 served through PSES. This may be due to a number of factors, including the increasing presence of additional Pre-K resources in Wake County as described earlier.



Resources and Strengths

- The receipt of additional one time federal funding through the American Reinvestment and Recovery Act (ARRA) helped provide child care subsidy services to a significant number of children on the waiting list.
- Many of the most at-risk children birth to age two are provided with early intervention services through the Children's Developmental Services Agency (CDSA).
- Children ages 3 to 5 with special needs are served through WCPSS Preschool Special Education Services (PSES).

Disparities, Gaps and Unmet Needs

- Low-income families with young children struggle with the high cost of childcare. The cost of quality care can exceed \$1,000/month per child.

Implications and Emerging Issues

Low-income families with children are faced with a wide variety of issues that should be addressed by the community:

- Increasing costs of quality care for providers and parents
- Increasing need and demand for high quality low cost or no cost Pre-K programs like More at Four
- Increasing demand for child care subsidy services

Public Education

Community Perceptions

According to the 2010 Community Assessment Survey Results, 84.1 percent of respondents agreed or strongly agreed that Wake County is a good place to raise children. However, when asked to identify the most important community issues facing the community, school dropout was listed as the fourth most important issue for all zones. During the focus groups, participants were asked the question "what do Wake County youth need to be successful?" The second most common response was education.

Statistics and Trends

The Wake County Public School System (WCPSS) is the largest school district in North Carolina and is the 18th largest district in the nation. In 2010, the population had grown by more than 43 percent to almost 140,000. As Table 2 shows, the change over the last several years has been experienced at all grade spans. The increases shown continue a trend that has been occurring for the last 10 years.

Table 2: Increase in Population by Grade Span

Year	Grades K-5	Grades 6-8	Grades 9-12	Total	Percent Change
2006-07	62,395	29,031	36,646	128,072	***
2007-08	65,680	29,975	38,347	134,003	4.60%
2008-09	67,508	30,921	39,277	137,706	2.76%
2009-10	67,790	31,584	40,225	139,599	1.37%

However, some groups of students—those qualified for free/reduced price meals (FRL); those who are of limited English proficiency (LEP); and students with disabilities (SWD)—grew at a faster rate than the general population. Table 3 below shows the growth in the population of students. The first three rows present duplicated counts. That is, a student may be counted in more than one row if he/she qualifies for any condition. The next three rows show unduplicated counts of students as described by the row header. In the last row of the table a complete census of all students is provided.

TABLE 3: POPULATION DYNAMICS IN WCPSS, 2001-2010

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Inc
All FRL	21,959	24,172	25,782	28,428	30,881	35,195	37,215	38,932	41,878	44,307	202%
All SWD	14,179	14,483	14,948	16,025	16,630	17,264	17,508	17,699	17,606	17,731	125%
All LEP	4,398	5,451	6,610	5,659	6,371	7,989	9,478	12,072	12,889	12,417	282%
FRL and LEP	2,686	3,455	4,157	3,801	3,982	5,429	6,172	7,379	7,979	8,115	302%
FRL and SWD	4,806	5,134	5,320	5,851	6,050	6,752	6,689	6,610	6,720	6,951	145%
LEP and SWD	72	96	128	109	115	128	191	260	307	288	400%
FRL and LEP & SWD	204	289	387	408	441	553	725	917	1,045	1,224	600%
ALL WCPSS	97,522	100,912	104,464	108,712	113,934	121,114	127,981	133,441	137,394	139,011	143%

As Table 3 shows, the absolute number of students has increased in every category, indicating that the population of students with these three risk factors—poverty, non-English proficiency,

and disability–has increased. In only one case–students with disabilities–has the increase been smaller than the natural population growth. Thus, the challenge to educators in WCPSS has grown significantly over the past 10 years.

Academic Achievement: Elementary and Middle Grades

Qualitatively, WCPSS students perform at high academic levels. Every year, the State of North Carolina requires that all students in grades 3 through 8, with the exception of some Special Education and some Limited English Proficient (LEP) students, take End of Grade tests (EOG) in reading and mathematics. Students in grades 5 and 8 also take an EOG test in science. The tables below present information about the performance of WCPSS students on these tests.

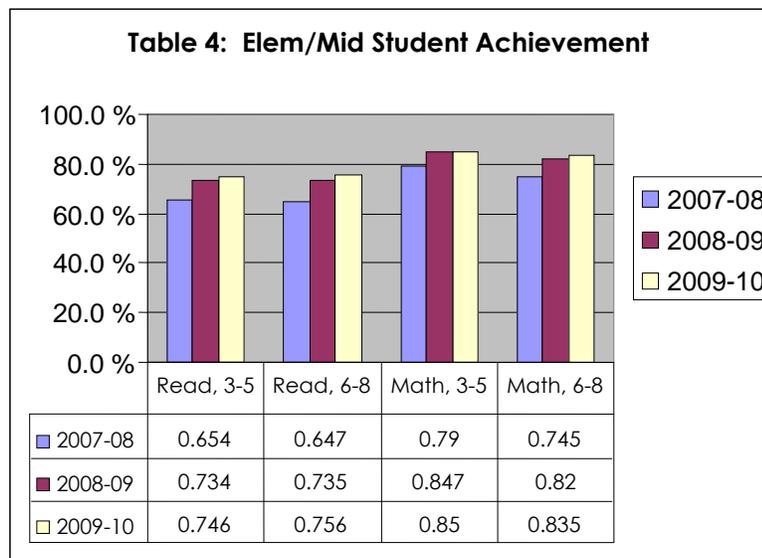


Table 4 shows that a larger percentage of students in each grade span have been successful on both the reading and the mathematics tests over the last three years. Currently, about three out of four students in grades 3 through 8 are reading at/above grade level, while more than eight out of 10 students in these same grades are working at/above grade level in mathematics. The pattern of somewhat higher achievement in mathematics than in reading has been observed in WCPSS for several years (it should be noted that re-tests were allowed, beginning in 2008-09 for any student who had not earned a passing score on these tests).

Table 5 provides additional information about reading achievement in WCPSS. It is clear from the table that different population sub-groups achieve at different levels on the reading tests and that these differences persist over time. However, it is also true that, with the exception of LEP students, all student sub-groups' performance improves over time. Moreover it is clear from Table 5 that the achievement gaps between White/Asians and African American/Hispanics is closing, albeit slowly.

Table 5: Reading Achievement, 3-8 by Sub-Group

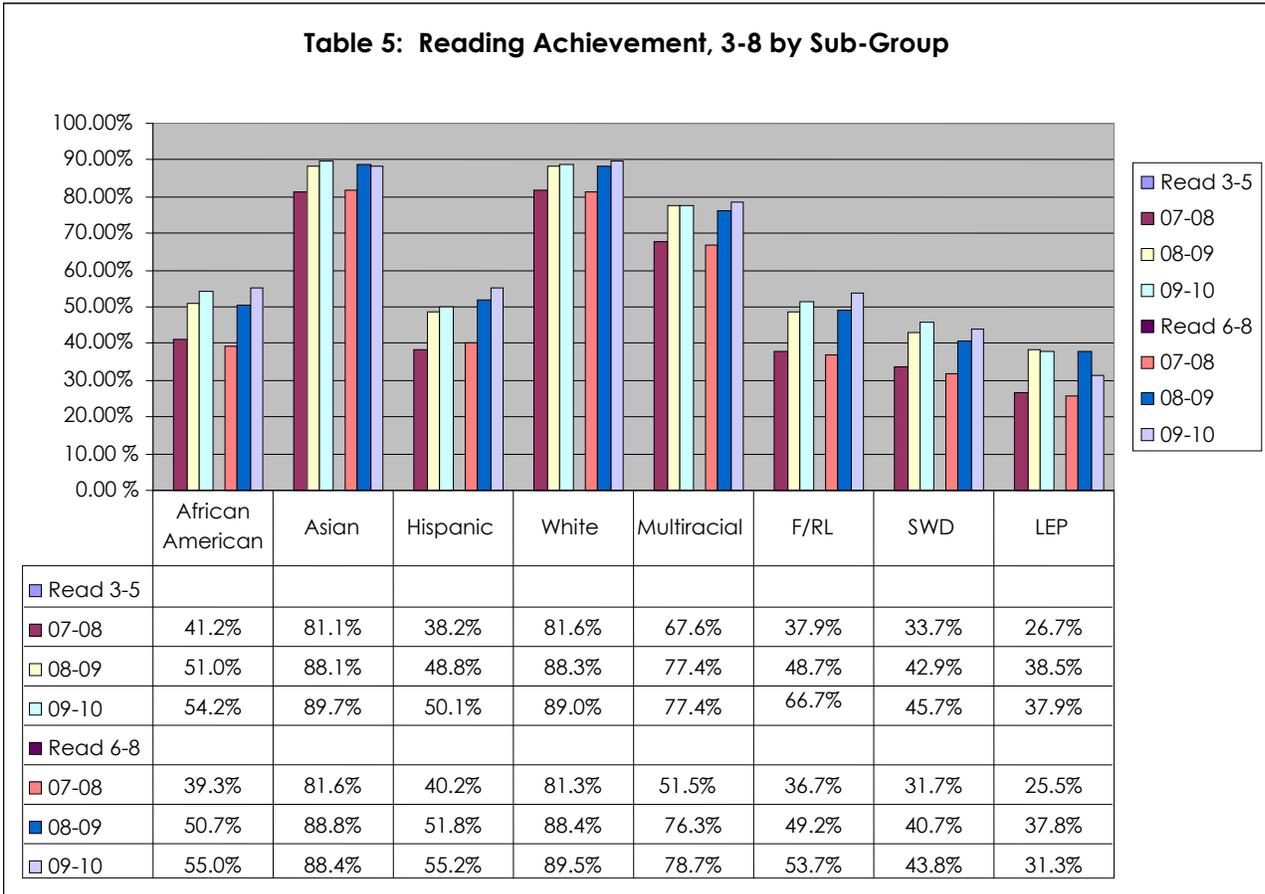
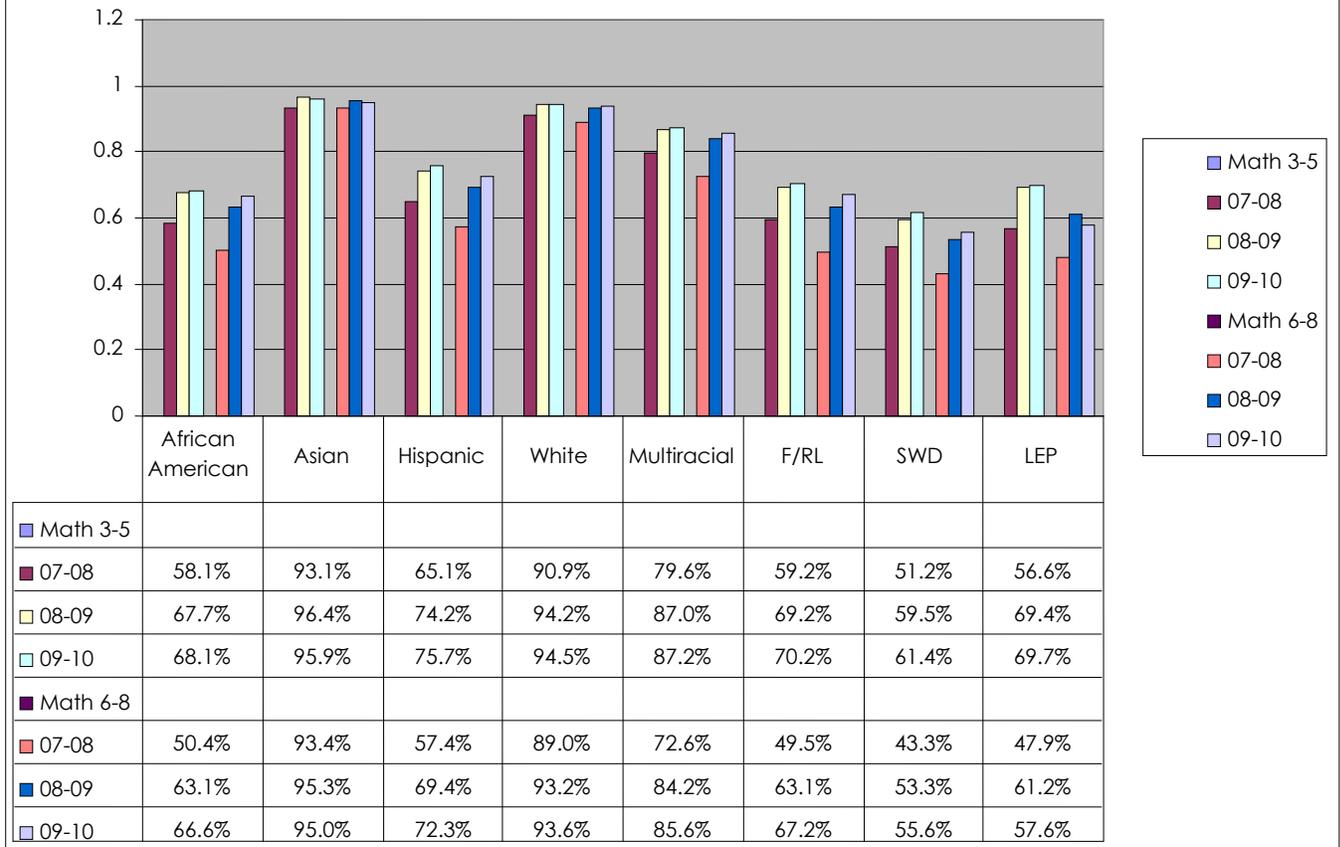


Table 6 below presents information related to mathematics achievement in a format similar to the chart above. Here a pattern can be seen similar to the one seen in reading, except that the percentages are larger. This is especially noticeable for students who qualify for Free/Reduced price meals and for Hispanic and African American students. Again, all sub-groups' performance improves over time but the discrepancies among sub-groups tracks the discrepancies seen in reading. Again, the performance gaps between groups decreases over time.

Table 6: Math Achievement, by Sub-Group, Over Time



Academic Achievement: High Schools

The State of North Carolina requires that all high school students enrolled in selected courses participate in End of Course (EOC) exams. Five of these courses/exams—Algebra 1, English 1, Biology, Civics & Economics, and U.S. History—must be passed as a condition of graduation. High school students' performance on these EOC exams is presented in Table 7. Over the last three years, high school students' performance on each of these exams has improved (that is, a larger percentage of students passes the exam).

Beginning in 2009-10, students who were not initially successful on the EOC tests were allowed to take a different form of the test, as is true for End of Grade tests. Therefore, Table 7 shows the percent of students successful on EOC tests in 2008-09 and 2009-10, both with and without the retests. It may be observed that, with the exception of Biology and Civics & Economics (C&E),

a larger percentage of students were successful on the initial 09-10 tests than was true the year before. The addition of the successful retests raised the percentage of successful test takers for every subject. As a consequence, there was a five percentage point improvement in the combined outcomes for all tests in 2009-10, as compared with the prior year.

Table 7: EOC Performance 2008 – 2010

Subject	2008-09	2009-10 (w/o retest)	2009-10 w/retest
Algebra 1	76.7%	79.6%	84.9%
Geometry	81.0%	81.6%	86.5%
Algebra 2	81.6%	83.6%	88.7%
Biology	80.5 %	80.0%	84.2%
Physical Science	67.2%	74.8%	81.2%
C&E	80.4%	79.8%	84.0%
US History	77.6%	80.7%	85.4%
English 1	81.2%	81.3%	85.4%
All Tests	80.1%	80.6%	85.3%

In addition to the EOCs administered by the State of North Carolina, a large percentage of WCPSS students participate in the SAT testing program administered by the College Board. For the past 20 years, students in WCPSS, on average, have out-performed students in the State and in the nation. In 2010, the average combined score (mathematics and critical reading) for WCPSS students was 1,067, while for the State the average was 1,008 and for the nation 1,017. Moreover, when SAT scores are disaggregated by race/ethnic group, White students, Hispanic/Latino students and African American students in WCPSS outperformed their peers in the state and in the nation. Finally, WCPSS has a high participation rate on the SAT. In 2010, 69 percent of students in WCPSS took the test, as compared with 63 percent for the State and 47 percent for the nation. Table 8 below compares the performance and participation rates of WCPSS students and those of five other large districts in North Carolina for the past two years. While it should be observed that the 2010 average score for WCPSS (and some other districts) is lower than the prior year's score, the declines are relative small and allow the positive trend for the last 20 years to be continued.

Table 8: SAT Performance and Participation of Large NC Districts

LEA	2009				2010			
	Total	Math	Crit. Read	Partic. percent	Total	Math	Crit. Read	Partic. percent
Wake	1074	548	526	64.3	1067	543	524	69
Mecklenburg	1007	510	497	60.6	1016	515	501	66.3
Forsyth	1002	505	497	57.9	1000	505	495	61.3
Guilford	988	500	488	58.6	988	499	489	64.9
Durham	965	489	476	63.2	963	483	480	82.8
Cumberland	949	479	470	51.3	947	477	470	54.2

An additional indicator of high school academic performance that should be mentioned is the Advanced Placement (AP) program. AP courses and tests are offered to students at all WCPSS high schools. Typically, students who are successful on the tests associated with these very rigorous courses may be offered college credit. The number and proportion of WCPSS students taking AP courses and exams has continued to grow.

Between 1996-97 and 2008-09, the last year for which data are available, the number of students enrolled in WCPSS grew by 54 percent. During that same time, however, the number of students taking AP exams increased by 228 percent and the number of exams taken increased 252 percent.

As more students in WCPSS are taking AP exams, both the average exam score and the percent of exams with scores of three or higher have declined, albeit very slightly, over the past decade. This pattern is consistent with both state and national trends. WCPSS AP exam scores (both average score and percent of scores three or higher) have surpassed the corresponding state and the national figures each year since 1996-97.

The exams with the largest number of test-takers in WCPSS in 2008-09 were Environmental Science (1,383), English Language/Composition (1,200), Psychology (1,021), and U.S. History (1,005).

Disparities, Gaps and Unmet Needs

Of course, not every student in WCPSS high schools is successful. Some students drop out of school and, although they may come back to school, each year the State requires that drop-out statistics be reported. Two tables below, Tables 9 and 10, show the number and the ethnic/racial composition of the WCPSS drop-out population and the drop-out rates for other large districts in the state for the last several years. Table 9 shows clearly that African American

students have a larger drop-out rate than any other group except Hispanic/Latino students. Moreover, this pattern has persisted for a number of years. However, it should also be noted that, generally speaking, the drop-out numbers are declining over time, suggesting that a smaller percentage of students, regardless of ethnicity, are dropping out.

Table 9: DROPOUT RATE BY ETHNIC GROUP, GRADES 9-12, 2000-2009

	1999-2000	2000-2001	2001-2002	2002-2003*	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
Hispanic/Latino	8.7	7.2	7.7	6.5	9	8.8	10.1	9.2	8.8	7.4
Multi-racial	5.5	4.8	4.1	4.8	3.4	4.7	3.8	5.8	4.3	3.3
African American	7	6.1	6.3	3.9	5.4	6	5.8	6.6	6.8	5.7
Asian	2.3	1.3	0.9	2.4	1.6	1.9	1.7	1.6	1.4	1
White	3	2.7	2.2	2	2.2	2.1	2.3	2.3	2.2	1.8
WCPSS	4.1	3.7	3.5	2.8	3.4	3.7	3.9	4.2	4.2	3.5

Table 10 shows that WCPSS has historically experienced fewer drop-outs than the state as a whole. Moreover, among large districts, WCPSS has always seen fewer drop-outs than any of the districts, with the exception of Guilford County over the past several years. Interestingly, many districts experienced the lowest drop-out rates in the 2002-2004 period, with small increases for many districts since then.

Table 10: Drop-Outs in NC and Selected Large Districts, Over Time

	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003*	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
Durham	8.2	6.1	4.6	6.2	5.8	5.9	5.7	5.2	4.9	4.2	4.3
Forsyth	7.2	6.4	5.5	5.8	5.3	5.2	5	5.7	6.4	5.5	4.8
Guilford	6.4	6	3.9	3.8	3	3.1	3	3.4	3	3.3	3.1
Mecklenburg	7.7	6.8	5.8	4.8	4	4.5	3.1	4.6	6.4	5.9	5
Wake	4.7	4.1	3.7	3.5	2.8	3.4	3.7	3.9	4.2	4.2	3.5
NC	6.8	6.4	5.7	5.3	4.8	4.9	4.7	5	5.2	5	4.3

Of course, all of these measures of academic achievement and student success are only partial. The ultimate measure of school district performance is the graduation rate. Table 11 below presents information for the last three years concerning graduation rates.

As Table 11 shows, the graduation rate has remained fairly stable, changing by less than half a percentage point over the period shown. Within sub-groups there appears to be some change, some of which may be ephemeral, but some of which appears substantial. The rates for American Indian youth, for example, appear to fluctuate widely, but this is at least in part related to the small size of this sub-group of students. Small changes in numbers will result, therefore, in large swings in percentages. By contrast, the percent of students who qualify for free/reduced price lunch appears to have gained more than three percentage points over the time shown. This is both a substantial change and a large improvement. The relative stability for Asian students, students with disabilities, and African American students reflects the relatively stable district rate over time. Other changes, whether positive or negative, represent real change for these groups, but cancel out, so that there is little impact at the district level.

Table 11: Graduation Rates, Over time, Disaggregated by Race/Ethnic and by Risk Factor

	All	Am. Ind.	Asian	Afr. Am.	Hispanic	Multi	White	F/RL	LEP	SWD
2008	78.8%	52.0%	91.8%	64.6%	52.2%	80.6%	87.8%	56.5%	38.6%	56.3%
2009	78.4%	86.7%	88.3%	63.4 %	51.1%	81.2%	89.4%	54.2%	38.9%	56.8%
2010	78.4%	95.7%	91.3%	64.2%	54.5%	76.4%	89.5%	59.7%	36.9%	57.3%

Summary of Academic Achievement

Wake County Public Schools has been experiencing a large amount of growth for a long period of time. Moreover, the percentage of students at-risk, whether because of poverty, disability, or language needs, has increased over the same period. Nevertheless, the district has continued to post relatively high measures of academic success. While there are certainly noticeable gaps in achievement when population sub-groups are compared, over all the district has posted good results in measures of high academic achievement as well as seeing declines in negative factors.

Non-Public Education

Community Perceptions

The community provided no comments on non-public education.

Statistic and Trends

Wake County has 65 non-public schools, which are conventional schools that may be defined as religious, independent, or independent with a religious component. Traditionally, non public schools pride themselves on providing a personalized approach to education. These schools vary widely in size and type of campus.

Table 12: Number and Percentage of Students Enrolled in Non-Public Schools, 2000-2010

Academic Year	Private Schools	Home Schools	Charter Schools	WCPSS 20th Day*	K-12 Totals	Private Schools	Home Schools	Charter Schools	WCPSS 20th Day	Total (Rounded)
2000-2001	12,006	3,131	2,334	97,691	115,162	10.4%	2.8%	2.0%	84.8%	100%
2001-2002	12,615	4,490	2,964	101,432	121,501	10.4%	3.7%	2.4%	83.5%	100%
2002-2003	13,267	5,042	3,471	104,461	126,241	10.5%	4.0%	2.8%	82.7%	100%
2003-2004	12,951	5,374	3,962	108,969	131,256	9.9%	4.1%	3.0%	83.0%	100%
2004-2005	13,375	5,801	4,531	114,068	137,775	9.7%	4.2%	3.3%	82.8%	100%
2005-2006	13,525	6,361	4,997	120,504	145,387	9.3%	4.4%	3.4%	82.9%	100%
2006-2007	14,021	6,516	4,985	128,072	153,594	9.1%	4.2%	3.3%	83.4%	100%
2007-2008	14,696	7,059	5,319	134,002	161,076	9.1%	4.4%	3.3%	83.2%	100%
2008-2009	15,123	7,571	5,776	137,706	166,176	9.1%	4.5%	3.5%	82.9%	100%
2009-2010	15,689	7,890	6,090	139,599	169,268	9.3%	4.6%	3.6%	82.5%	100%

*N.C. Department of Public Instruction 1st month membership last day reports for Wake County Public School System: 20th day.

Sources: Private and Home schools data compiled from the N.C. Division of Non-Public Education website. Charter schools data compiled from N. C. Department of Public Instruction reports. Home and Private Schools data collection may not reflect 20th day enrollment.



Non-public institutions in North Carolina are required to report only the institutions name, address, and names of its chief administrator and owner(s) to the Division of Non-Public Education (DNPE). Therefore, significant information based on demographics and achievement is hard to obtain and determine. As Table 13 below indicates there has been an increase in enrollment over the past five years.

Table 13: Non-Public Schools Membership by Grade Span 2005-2009

Year	GradesK-2	Grades 3-5	Grades 6-8	Grades 9-12	Total	Percent Change
2005-2006	3,470	3,133	3,107	3,815	13,525	1.10%
2006-2007					14,021	3.60%
2007-2008	3,666	3,514	3,380	4,136	14,696	4.80%
2008-2009	3,706	3,541	3,628	4,248	15,123	2.90%
2009-2010	4,013	3,588	3,776	4,312	15,689	3.70%

Implications and Emerging Issues

More research is needed on each segment of non-public education within Wake County to better determine academic achievement and school demographics.

Higher Education

Community Perceptions

The community provided no significant comments on higher education.

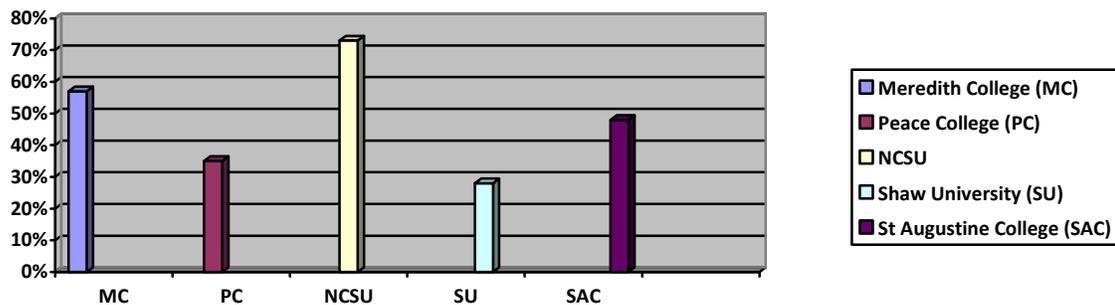
Statistics and Trends

- Wake County in-state undergraduate degree credit headcount enrollment grew from 18,358 in 1998 to 29,384 in 2008.
- N.C. State University (NCSU) enrollment grew an average of 15 percent between 2000 and 2010; 33,819 students enrolled in fall semester of 2009.
- 2010 resident students at NCSU paid \$6,393, and nonresident \$18,928, in tuition and fees, an increase of 25 percent and 9 percent over a four year period.
- Tuition and fees for four year private not-for-profit colleges ranged from \$11,696 (Shaw University) to \$24,490 (Meredith College) for full-time, first-time undergraduate students over a three year period.

Chapter 5 LIFELONG LEARNING

- Number of curriculum students enrolled at Wake Technical Community College (WTCC) in 2007 was 16,899; number enrolled in 2010 was 22,193, a 31 percent increase; percentage of enrollment growth from 1999 to 2009 was 58 percent.
- Continuing Education enrollment at WTCC increased 11 percent from 2006 to 2009; 10 year growth was 24 percent.
- Community College tuition increased by 30 percent from 2006 to 2010.
- Retention rates for first-time students pursuing a Bachelor Degree who began their studies in Fall 2008 and returned in Fall 2009 enrolled in four year institutions ranged from a low of 58 percent to a high of 91 percent.

Graph 1: OVERALL GRADUATION RATES FOR STUDENTS WHO BEGAN THEIR STUDIES IN FALL 2003



- Average amount of financial aid received through Federal grants for an undergraduate student attending a four-year institution was \$4,438; state/local grant or scholarships averaged \$4,552 per student per year.

Resources and Strengths

- NCSU is a participating member of the Burroughs Wellcome Fund (BWF), a program that works to counteract the shortage of qualified science and mathematics teachers at today's public high schools (<http://www.ncsu.edu/Partners/index.php>).
- The Centennial Campus located at NCSU is home to more than 100 corporate and government partners and N.C. State research units, working with nearly 500 N.C. State students and faculty members on projects involving industries as diverse as nanosciences, biomanufacturing, environmental sciences, textiles and others. Industry powerhouse companies that call Centennial Campus home include Agilent Technologies, Ericsson, GlaxoSmithKline, the Iams Company, Red Hat, U.S. Department of Agriculture, and many other corporate and government units (<http://www.ncsu.edu/Partners/index.php>).

- Peace College partners with the Society of Human Resource Management (SHRM) to offer a certificate in Human Resources through a continuing education program (<http://www.peace.edu/content/page/id/621>).
- Meredith College, one of the largest private women's colleges in the U. S., offers N.C. Teaching Fellows a dynamic educational experience enriched with opportunities to receive classroom experience, to learn from professional teachers, to volunteer for community projects and to travel and study abroad (<http://www.meredith.edu/rpa2009/reports.htm>).
- To meet the growing needs of the nursing profession, Wake Technical Community College added two more classrooms and clinical labs to its Public Safety Education Campus.
- In 2008, Wake Tech implemented the minority male mentoring program, "Pathways Leadership Initiative," to address and eventually improve the low academic retention and graduation rates of its minority male population.

Disparities, Gaps and Unmet Needs

- Percentage of minorities enrolled as first-time undergraduate students continues to lag behind their counterparts
- Nonresident tuition and fees charged to undocumented students graduating from Wake County high schools to pursue post-secondary education
- Decrease in legislative funding to support educational programs for senior citizens
- Limited access to higher education for low-income working adults (<http://www.ncsu.edu/iei/programs/transforming-education/debate/educate-all.php>).

Implications and Emerging Issues

- Access to higher education needs to be increased for every student, particularly for groups that tend to experience significant barriers (<http://ncsu.edu/iei/programs/transforming-education/debate/econ-development.php>)
- Combating the rising cost of education for first-time undergraduate students
- Eliminating financial barriers for post-secondary education
- Meeting the educational needs of an increasing number of displaced workers due to the recession
- Targeting technical skills education to meet the needs of employers (<http://ncsu.edu/iei/programs/transforming-education/debate/econ-development.php>)

- Developing student soft skills that are essential to workplace successes in a new and consistently changing economy
- Limited funding and resources to train a “Green Workforce”

Community Enrichment and Education

Wake County Public Libraries is the most utilized public library system in the state of North Carolina. With recent budget reductions in the Charlotte/Mecklenburg County Library system, Wake offers more service outlets and a larger number of service hours than any other public library system, even with less than half of the budget of Charlotte/Mecklenburg. The dramatic use of the library system reflects the core values of the community where books and information are critical to the quality of life we share.

Community Perceptions

- Customers “vote” with their feet—8.6 million visitors in 2009, or nine annual visits per capita (highest door count in the State).
- Recent (2007) bond referenda to support libraries passed with 74 percent approval rate.
- Customer Service surveys administered in 2009 indicate 91 percent of library customers are “very satisfied” with public library service in Wake County.

Statistics and Trends

- Twenty service outlets in a decentralized system; six regional facilities, 11 community facilities and three specialty facilities.
- Libraries are open and available 57,000 hours per year.
- Annual book circulation is 12 million volumes per year; highest in N.C.
- Nearly ½ of the book circulation involves materials for children; highest in N.C.
- Collection size is 1.6M—largest in the State.
- 459,075 registered borrowers (library cards have been used within the past three years).
- More than 260,000 people attended 8,500 library programs in 2009.

- There are more than 600 computers for public use. They are utilized 1.2 million times, and are busy an average of 60 percent of the hours open. It is the highest number of public computers and public computer use of any public library in the State.
- Electronic and downloadable books were added in 2010.
- Library use in all categories (book circulation, visits, computer use, program attendance, etc) has increased during the economic downturn.
- More self-service for book check out and for reserving materials online, as well as for information retrieval via the Internet and library databases have been added.
- Staff has determined (through focus groups, surveys, internal suggestion boxes, and professional reading) that there is a great desire for libraries to be community gathering centers for art, culture, education, etc. Libraries are viewed as a means to keep individuals connected to the communities in which they reside.

Resources and Strengths

- Services to Children
- Recreational Reading
- Lifelong Learning
- Library as Center for the Community
- Technology

Disparities, Gaps and Unmet Needs

- As a decentralized system with a shared book collection and universal computer access, customers from Apex to Zebulon have access to the same materials.
- Libraries are located within a 15-minute drive time to any resident in Wake County.
- Traditionally, libraries have been located in areas of dense population, closest to where people live, shop, work and travel.
- Wake County libraries have a small, but adequate, collection of materials in languages other than English for both children and adults; this collection may need to grow as the diversity in population increases.

Implications and Emerging Issues

- Population (even during recessed economic times) continues to grow in Wake County while resources are thinner, making the service delivery itself challenging.
- Communities use libraries more intensively and more often during difficult economic times.
- Libraries are seeing the need for increased security as more of our population seems to demonstrate unhealthy or antisocial behaviors in terms of mental health, social interactions and economic welfare.
- Maintaining and/or enhancing an over-taxed book collection is challenging.
- Budget reductions have taken large amounts of money from the book budget in the past three years-adding to the issue of having an overtaxed book collection for an expanding population.

Physical Health

Introduction

In many ways Wake County is well equipped to protect and improve the physical health of its residents. It is home to six hospitals, a large physician community and multiple health clinics. The county benefits from a developed public health infrastructure, a dedicated non-profit sector and an active community of volunteers. The numbers bear out the power of these assets. Wake County has been rated the healthiest county in the state, albeit in a state whose health status ranks 37th nationally.

In recent years, this County has seen some improvements in health indicators among its residents. After substantial decrease seen statewide, teen pregnancy rates have remained stable, for instance. Pregnant women are less likely to smoke than they once were, as are all County residents. The number of people dying from heart disease has fallen. Women in Wake County are more likely than other state residents to receive pap smears and breast cancer screenings.

Nevertheless, many very serious, long-term problems persist, and newer ones are gaining steam. Sobering disparities in health outcomes between racial minorities and whites have not been eliminated. The implications of the rapid rise of obesity in our communities are profound. So are the coming consequences of the graying of our population and the demands on health care that inevitably will follow. These substantial problems require attention and action during the toughest economic times in memory, when individuals, governments and philanthropies all face new financial limits.

The newly-passed federal Affordable Care Act will open doors to preventative and medical care now out of reach to the many uninsured and underinsured residents of our communities. In this complex and changing context, this chapter explores the state of Wake County residents' health, efforts to improve their wellbeing, and important work that remains to be done.

Infant Health

Community Perceptions

The Wake County Community Health Assessment Survey did not solicit views regarding infant health.

Statistics and Trends

Table 1: Perinatal and Infant Mortality and Morbidity

2008 Causes of Infant Mortality (0-1 year of age)	Wake	NC
Conditions originating in the perinatal period	44.3%	46.6%
Congenital malformations, deformations and chromosomal abnormalities	29.5%	18.5%
Diseases of the heart	2.3%	2.0%
Acute bronchitis and bronchiolitis	1.1%	
All other unintentional injuries	1.1%	4.3%
Assault (homicide)	1.1%	1.6%
Cancer	1.1%	
Infections of kidneys	1.1%	
Influenza and pneumonia	1.1%	1.2%
Nephritis, nephritic syndrome and nephrosis	1.1%	0.6%
All other causes (residual)	16.2%	

Source: N.C. Center for Health Statistics. Health Data Query System: Mortality Data. Last accessed: (7-20-10)
<http://www.schs.state.nc.us/SCHS/data/lcd/lcd.cfm>.

Perinatal and infant death rates for Wake County infants are lower than State rates and peer-county rates (Table 1). However, Wake County minority infants, like minority infants statewide, have higher mortality rates than their white counterparts (Tables 2 and 3).

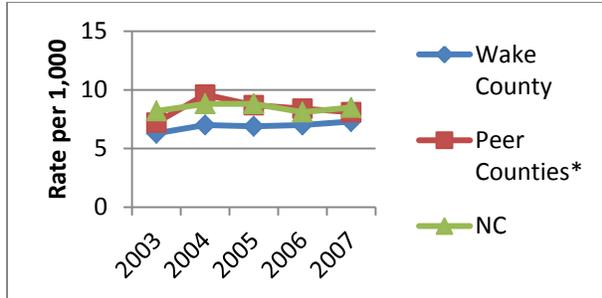
Table 2: Perinatal Mortality Rates for Wake County and North Carolina (2004-2008)

Perinatal Mortality	2004-2008 Wake County	2004-2008 NC comparison
Fetal death rate/1000 deliveries	Total 6.3 White 4.3 Minority 11.5	Total 6.7 White 5.0 Minority 11.2
Neonatal (<28 days) death rate/1000 live births	Total 4.9 White 3.4 Minority 8.8	Total 5.7 White 4.1 Minority 9.9
Post neonatal (28 days-1 year) death rates/1000 live births	Total 1.9 White 1.4 Minority 3.1	Total 2.7 White 2.1 Minority 4.5

Source: N.C. State Center for Health Statistics, 2010. N.C. County Health Data Book

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Graph 1: Infant (1 year) death rate/1000 live births



Peer Counties: Forsyth, Guilford, Mecklenburg
 Source: N.C. Comprehensive Assessment for Tracking Community Health (CATCH). Last accessed: 7-20-10). <<http://www.ncpublichealthcatch.com/ReportPortal/design/view.aspx>>

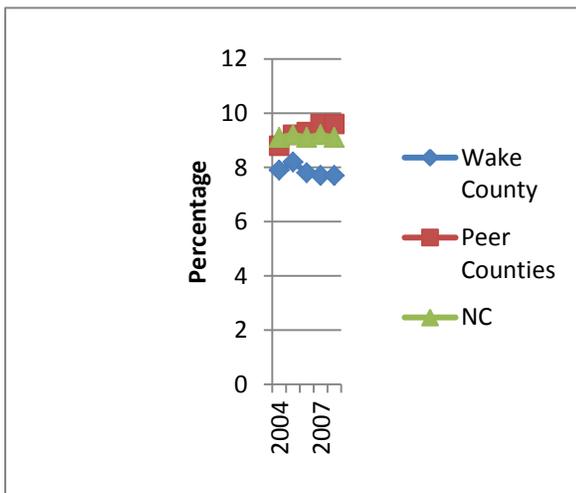
Table 3: Infant Death Rate/1,000 Live Births for Wake County and NC (2004-08)

	Wake County	NC
Total	6.8	8.4
White	4.8	6.2
Black	14.1	15.5
Minority	11.9	14.3

Source: N.C. Statewide and County Trends in Key Health Indicators. Last updated: December 7, 2009. <<http://www.schs.state.nc.us/SCHS/data/trends/pdf/>>.

The percent of infants with low birth rates in Wake County is below State and peer-county percentages (Forsyth, Guilford, Mecklenburg Counties) (Graph 2). However, as is the case for mortality rates, the percent of minority infants with low birth rates in Wake County exceeds the percentages for white infants (Table 5).

Graph 2: Percent of Infants with Low Birth Weight (<2,500 g)



Peer Counties: Forsyth, Guilford, Mecklenburg
 Source: N.C. State Center for Health Statistics. NC-CATCH, 2010.

Table 4: Percent of Infants with Low Birth Weight (<2,500 g) for Wake County and NC (2004-08)

	Wake County	NC
Total	7.9%	9.1%
White	6.4%	7.4%
Minority	11.7%	13.6%
Black	13.1%	14.4%

Source: N.C. State Center for Health Statistics, 2010.

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Table 5: Percent of Infants with Low Birth Weight (<2,500 g) for Wake County (2008)

Wake County	
White	6.4%
Black	12.7%
American Indian	8.7%
Other	6.2%

Source: N.C. Statewide and County Trends in Key Health Indicators

Graph 3: Percent of Infants with Very Low Birth Weight (<1,500 g)

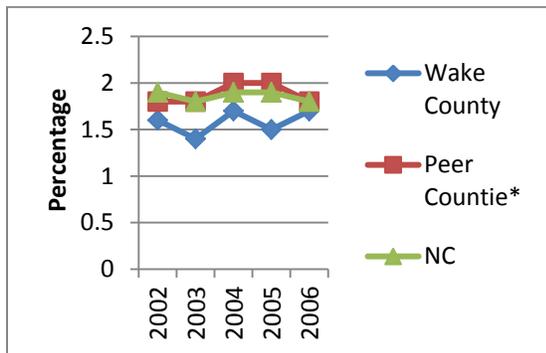


Table 6: Percent of Black Infants with Very Low Birth Weight (<1,500 g) for Wake County and NC (2004-2008)

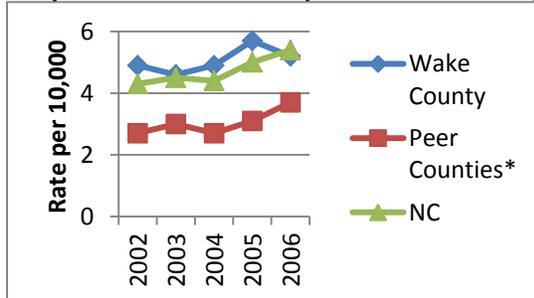
	Wake	NC
Total	1.6%	1.8%
Black	3.4%	3.5%

Source: N.C. State Center for Health Statistics, 2010.

Peer Counties: Forsyth, Guilford, Mecklenburg
 Source: N.C. State Center for Health Statistics. NC-CATCH, 2010.

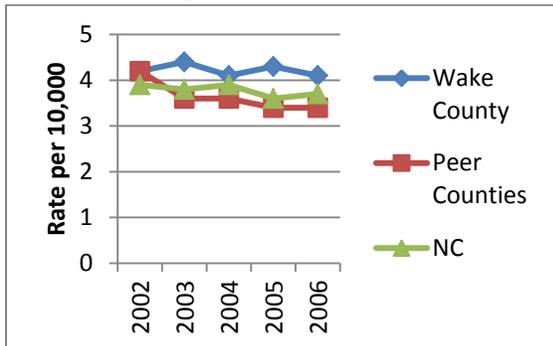
As seen in Graphs 4 and 5, rates of perinatal complications and congenital malformations for Wake County infants are higher than state and peer-county rates.

Graph 4: Perinatal Complications Discharges per 10,000 Population



Peer Counties: Forsyth, Guilford, Mecklenburg
 Source: N.C. State Center for Health Statistics. NC-CATCH, 2010

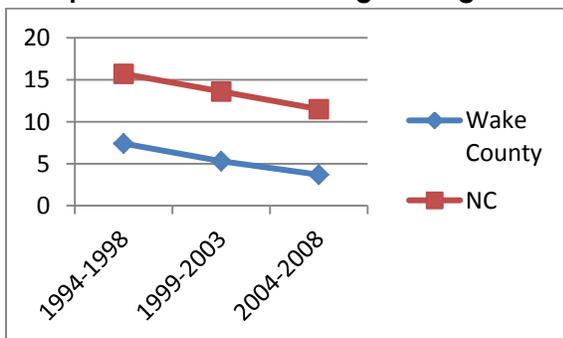
Graph 5: Congenital Malformations Discharges per 10,000 Population



Peer Counties: Forsyth, Guilford, Mecklenburg
 Source: N.C. State Center for Health Statistics. NC-CATCH, 2010.

Maternal smoking rates for Wake county mothers have declined and remain lower than the statewide N.C. rate (Graph 6).

Graph 6: Maternal Smoking Among Live Births



Source: N.C. State Center for Health Statistics, 2010.

Resources and Strengths

- The relatively low incidence of perinatal/infant mortality and low birth weight in Wake County may be a reflection of maternal and infant programs in Wake County. These include:
 - Nurse Family Partnership: Initiated in March 2009, the partnership is an evidence-based grant-funded program that provides intensive prenatal support and home visits by registered nurses for low-income, first-time mothers. Nurses continue visits until babies are 2-years-old. Specially trained, the nurses deliver psychosocial case management that focuses on maternal roles, family/friend support, life goals, self-efficacy, appropriate utilization of human services resources and personal and environmental health. Among the positive outcomes are improved prenatal health, fewer childhood injuries, fewer subsequent pregnancies, increased intervals between births, increased maternal employment and improved school readiness. The program has enrolled more than 100 families, the vast majority of them minority members (59

percent African-American and 31 percent Hispanic). The pre-term delivery rate for babies born to families enrolled in the program is 8.8 percent. The N.C. and Wake County 2008 averages were 12 to 13 percent and 70 percent of the babies were breastfed.

- Maternal Health Skilled Nurse Home Visits: All Wake County patients of WakeMed Faculty Physicians High Risk Prenatal Clinic are screened and referred for these visits as needed. These monthly (or more frequently if needed) one-to-one, face-to-face visits produce assessments of the high-risk condition(s), treatment as prescribed by medical providers, referrals to community resources, and written follow up for medical providers. Nurses making these home visits also provide education regarding patients' high-risk medical conditions and stress the importance of follow-up for the best-possible pregnancy outcome. They consult and coordinate services with others involved with their patients' care.
- 17-P Initiative: Weekly injections of the naturally occurring hormone, 17-hydroxyprogesterone (17-P), have been shown to significantly decrease the rate of premature deliveries and complications from premature deliveries. The statewide 17-P Initiative strives to reach all North Carolina women who meet the clinical criteria for 17-P. Wake County is considered one of the best practice sites statewide. The program collaborates with the Wake County Human Services (WCHS) low-risk prenatal clinic, the WCHS Pharmacy, WCHS Maternal Health Home Visiting Program and WakeMed Faculty Physicians High Risk Obstetrical Clinic. All pregnant women seen at WCHS low-risk prenatal clinic are screened to see if they meet the criteria for 17-P treatment. If a woman meets criteria and is willing to receive treatment, she is referred to WakeMed Faculty Physicians High-Risk OB Clinic for prenatal care. Weekly injections are given in the High-Risk Prenatal Clinic or at home. Since 2007, 17-P injections have been given to women in the course of 87 pregnancies. As of May 2010, 66 percent of women using this service delivered at more than 34-weeks gestation.
- Newborn Assessment Home Visits: Each month, WCHS Maternal Health Home Visiting Program nurses conduct approximately 250 newborn assessment home visits (performed within two weeks of a baby's delivery). A registered nurse who delivers health, social support and educational services directly to families in their homes conducts the newborn home visit. The one-time visit includes a physical assessment, counseling, teaching and referral to community resources.
- Tobacco Cessation Programming: Statewide and countywide, maternal smoking rates have declined. A contributing factor may be that in 2007 tobacco cessation counseling became a mandated component of the public health maternal health agreement. It has been phased into the family planning and child health agreements in successive years.



Disparities, Gaps and Unmet Needs

- Just as is true statewide, significant racial disparities exist regarding perinatal and infant deaths and low-birth weight babies in Wake County. Minority babies, especially African-American babies, have worse outcomes than do white babies. The reasons are likely complex and may reflect the health of mothers before pregnancy. Access to prenatal care may also play a role. While pediatrician participation in the Medicaid program is good (more than 40 practices accept Medicaid-enrolled children), there is a relatively low participation in Medicaid by private obstetrics providers. Besides Wake County Human Services and WakeMed, which are the major providers of prenatal care for Medicaid-enrolled and uninsured women, only five private providers accept pregnant Medicaid patients, and in a limited capacity. This can delay some women from obtaining prenatal care.
- Unlike rates of infant mortality and low birth rate, rates of perinatal complications and congenital malformations in Wake County exceed state and peer-county rates. One possible explanation may be the relative abundance of high-risk obstetrical facilities in Wake County compared to elsewhere in the State. Women with high-risk pregnancies may prefer to live here.

Implications and Emerging Issues

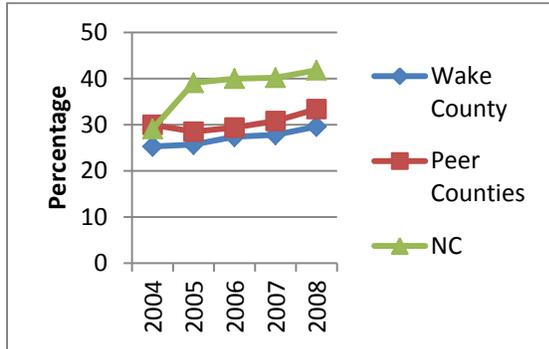
- With all its strengths in this area, Wake County, like the State as a whole, continues to struggle with marked racial disparities in birth outcomes. Elimination of these disparities will require continued effort.

Nutrition

Statistics and Trends

The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) Program: Research shows many benefits from participating in WIC (*Jeng, et al., 2009*). Children younger than age 3 who receive WIC are more likely to be in good health, have a lower risk for developmental delays, have sufficient iron stores, have food security and have a healthy height and weight when compared to children who are eligible for WIC services but do not receive them. WIC has an especially powerful effect on the health of children younger than 12 months, a time of rapid brain growth.

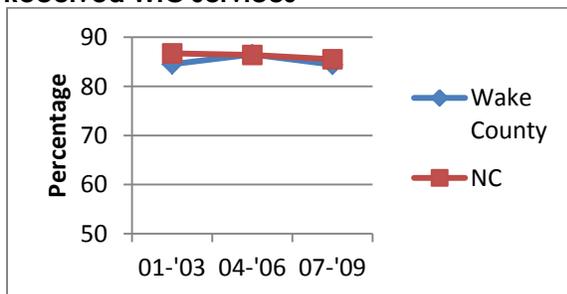
Graph 7: Percent of Births to WIC Mothers



Source: N.C. State Center for Health Statistics. NC-CATCH, 2010.
Peer Counties: Forsyth, Guilford, Mecklenburg

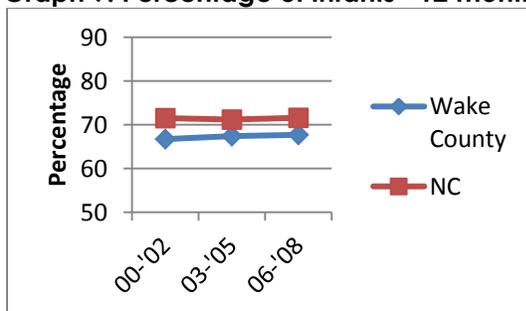
The percentage of Medicaid-covered infants cared for in the WCHS Child Health clinics who are enrolled in the WIC program is high and on par with the statewide percentage (Graph 8). However, the percentage of countywide infants enrolled in Medicaid who receive WIC services is lower than the state percentage and lower than the percentage of infants cared for at WCHS (Graph 9).

Graph 8: Percentage of Infants <12 months Served in the WCHS Child Health Clinic Who Received WIC services



Source: N.C. WIC Program Assurance Deliverables Fiscal Year 2010-2011 Trend Data. Last accessed (7-20-10). <http://www.nutritionnc.com/wic/wicLAR.htm>.

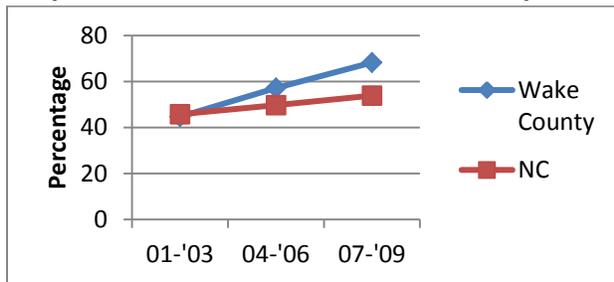
Graph 9: Percentage of Infants <12 months Enrolled in Medicaid Who Receive WIC Services



Source: N.C. WIC Program Assurance Deliverables Fiscal Year 2010-2011 Trend Data. Last accessed (7-20-10). <http://www.nutritionnc.com/wic/wicLAR.htm>.

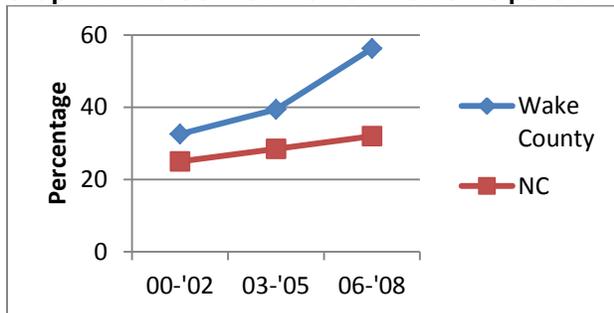
Breastfeeding provides protection against infectious, allergic and chronic diseases, including obesity. Breastfed babies are more likely to be at a healthy weight and score higher on IQ tests (Jeng, et al., 2009). The percentage of infants participating in the WCHS WIC Program who initiated and continued breastfeeding has increased steadily and is greater than the State rate (Graph 10). Among North Carolina infants, 66.2 percent were breastfed (N.C. Institute of Medicine, 2008). Among all N.C. infants, 37.5 percent were still breastfeeding at six months (N.C. Institute of Medicine, 2008).

Graph 10: Percent of Women Who Participated in WIC and Initiated Breastfeeding



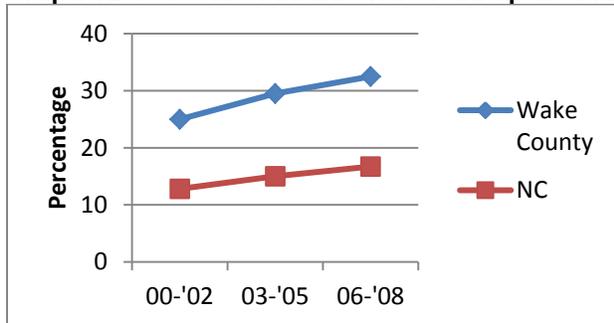
Source: N.C. WIC Program Assurance Deliverables Fiscal Year 2010-2011 Trend Data. Last accessed (7-20-10). <http://www.nutritionnc.com/wic/wicLAR.htm>.

Graph 11: Percent of Infants Who Participated in WIC and Were Breastfeeding at 6 Weeks of Age



Source: N.C. WIC Program Assurance Deliverables Fiscal Year 2010-2011 Trend Data. Last accessed (7-20-10). <http://www.nutritionnc.com/wic/wicLAR.htm>.

Graph 12: Percent of Infants Who Participated in WIC and Were Breastfeeding at 6 Months of Age



Source: N.C. WIC Program Assurance Deliverables Fiscal Year 2010-2011 Trend Data. Last accessed (7-20-10). <http://www.nutritionnc.com/wic/wicLAR.htm>

Resources and Strengths

- WIC Availability: Nationally, access problems reported by mothers of children who did not receive WIC services include limited business hours at WIC offices, difficulty getting to those offices to pick up vouchers and transportation problems. In Wake County, however, WIC services have been made accessible. (For specifics, see “Nutrition” in the Child Health section of this chapter.) Additionally, WIC nutrition counseling services are available three mornings per week at the WakeMed Special Infant Care Clinic (SICC) for premature and medically fragile infants and children.
- WIC in Wake County coordinates the In-Home Breastfeeding Support Service. Available to English-speaking and Spanish-speaking women, the service provides home visits to local WIC mothers who want to breastfeed their babies. Breastfeeding technicians provide hands-on assistance and information to help avoid or resolve problems quickly. Mothers receive initial home visits and as many additional home visits or phone contacts as needed to resolve problems until infants breastfeed effectively. The trained breastfeeding technicians serve an average of 135 mothers a month. Breastfeeding support is also available at a Wednesday breastfeeding clinic. WIC programs in North Carolina counties, including Wake, that offer support programs consistently meet or exceed the state average for initiation and duration of breastfeeding.
- Before a baby’s birth, the WIC Prenatal Breastfeeding Peer Counselor Service offers culturally sensitive social support along with information from professionals and trained peer counselors. Peer counselors are also trained and encourage women to consider breastfeeding as their infant feeding choice. Peer counselors are available for both English-speaking and Spanish-speaking women. When a client delivers her baby, her support transitions from a telephone-based peer counselor to a breastfeeding technician to provide postpartum in-home support.

Disparities, Gaps and Unmet Needs

The percentage of infants seen at the WCHS Child Health Clinic who receive WIC services is comparable to state levels. But the percentage of Medicaid-enrolled infants countywide who receive WIC services is lower than the state percentage and lower than the percentage of children receiving care at the Child Health Clinic. This suggests that, despite the availability of WIC services, infants enrolled in Medicaid and other WIC-eligible infants seen in private practices have more difficulty connecting with WIC services than do infants receiving care at WCHS.

Implications and Emerging Issues

Connecting WIC-eligible infants who are cared for in Wake County private practices to WIC services may be an important initiative.

Child Health

Community Perceptions

Among Wake County Community Health Assessment Survey respondents, 44 percent indicated that excess weight and obesity is the most important health issue. This was the most commonly identified health priority by respondents.

Child Mortality

Statistics and Trends

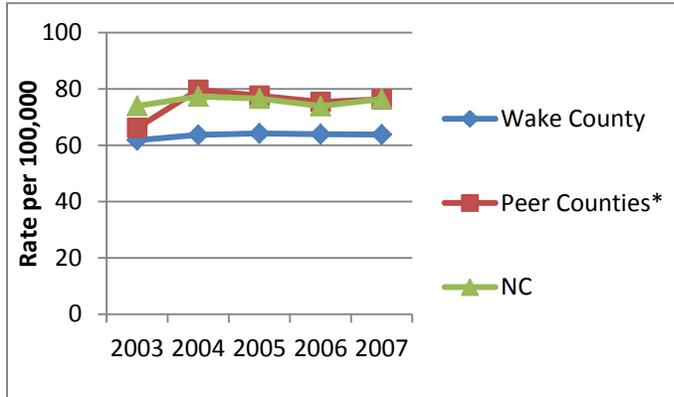
Table 7: 2008 Causes of Child Mortality for Wake County and NC

2008 Causes of Child Mortality (1-17 years of age)	Wake County	NC
Motor vehicle injuries	19.3%	27%
Assault (homicide)	12.3%	10.2%
Congenital malformations, deformations and chromosomal abnormalities	12.3%	4.9%
Cancer	8.8%	8.6%
All other unintentional injuries	7%	17%
Diseases of heart	5.3%	3.4%
Intentional self-harm (suicide)	5.3%	5.7%
Acute bronchitis and bronchiolitis	1.8%	n/a
Cerebrovascular diseases	1.8%	1.1%
Cholelithiasis and other disorders of the gallbladder	1.8%	n/a
Chronic lower respiratory diseases	1.8%	n/a

Source: N.C. Center for Health Statistics. Health Data Query System: Mortality Data. Last accessed: (7-20-10)
<http://www.schs.state.nc.us/SCHS/data/lcd/lcd.cfm>.

The death rate of Wake County children is lower than the death rate for children statewide and for children in peer counties (Graph 13). However, the death rate for African-American children in Wake County is substantially higher than the death rate for white children (Table 8).

Graph 13: Child Death Rate/100,000 (0-17 years)



Peer Counties – Forsyth, Guilford, Mecklenburg
 Source - N.C. State Center for Health Statistics. NC-CATCH, 2010.

Preventive Care and Screenings

Statistics and Trends

In 2009, 88 percent of 24-month-old children seen at WCHS and 60 percent of children throughout Wake County had the appropriate set of immunizations (Table 10) (Rowe-West, 2010).

Success rates consistently have been higher among children seen at WCHS than among children seen at local health departments statewide or among children cared for in private medical practices. Only 61 of the 112 Wake County practices (54 percent) that participate in the N.C. Immunization Program utilize the North Carolina Immunization Registry (NCIR). It should be noted that accurate immunization records are dependent upon providers entering complete immunization history, which may not be done consistently.

Table 8: 2007 Child Death Rate/100,000

White	54.9
Black	114.5
Other	16.2

Source: N.C. Statewide and County Trends in Key Health Indicators

Table 9: Percent of children with appropriate immunizations at age 2

2002 All statewide	69.7%
2007 All statewide	77.3%

Source: N.C. Child Health Report Card

Table 10: Percentage of Children with Appropriate Immunizations by Age 24 months

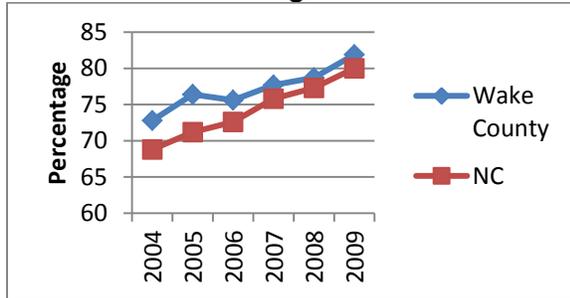
Year	Wake County	NC comparison
2005	WCHS – 93% County wide – 60%	LHD – 76% Statewide – 50%
2006‡	WCHS – 87 % County wide– 48%	LHD – 82% Statewide – 44%
2007	WCHS – 88% County wide–52%	LHD – 87% Statewide – 54%
2008*	WCHS – 86% County wide– 55%	LHD – 86% Statewide – 57%
2009	WCHS – 88% County wide– 60%	LHD – 81% Statewide – 60%

Source: Rowe-West, 2010

*2008 – HIB (Haemophilus influenza type B) shortage - LHD: Local health department

In 2008, 85 percent of all children received preventive care (N.C. Institute of Medicine, 2008). The percentage of children enrolled in Medicaid receiving preventive care at least once has risen and is close to the age interval for all children. The percentage of children enrolled in Medicaid receiving preventive care is higher in Wake County Medicaid than it is statewide (Graph 14).

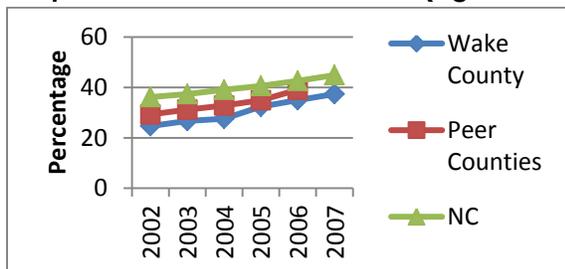
Graph 14: Percentage of Medicaid-Enrolled Children Receiving at Least One Screening and Evaluation Exam During Recommended Interval



Source: N.C. Division of Medical Assistance: Health Check Participation Rate. Last accessed: (7-20-10) <<http://www.ncdhhs.gov/dma/healthcheck/participationdata.htm>>.

The percentage of all children ages 12–36 months being screened for elevated blood lead levels has increased over the past five years. Wake County screening rates are now almost equal to State and peer county rates (Graph 15).

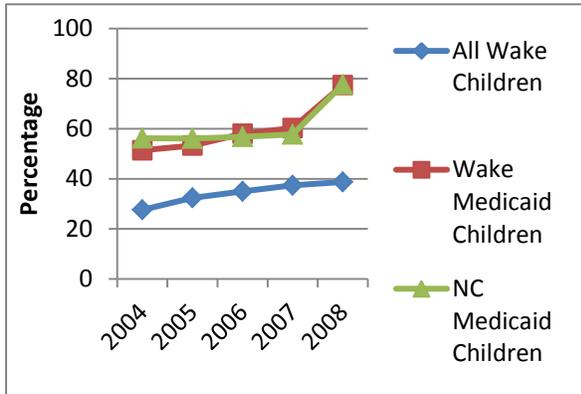
Graph 15: Percent of all children (age 12-36 months) Screened for Elevated Blood Lead Levels



Peer Counties – Forsyth, Guilford, Mecklenburg
 Source: N.C. State Center for Health Statistics. NC-CATCH, 2010.

Wake County screening rates of children covered by Medicaid are rising. They are on par with statewide screening rates, and are higher than screening rates of all Wake County children (Graph 16).

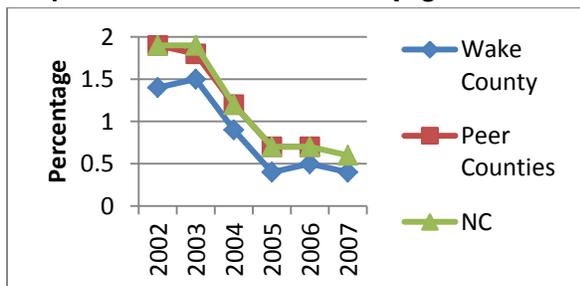
Graph 16: Percent of Children (age 12-36 months) Screened for Elevated Blood Lead Levels by Medicaid Status



Source: N.C. Childhood Blood Lead Surveillance Data, 2008.

The percentage of Wake County children found to have an elevated blood lead level has dropped steeply in the past five years and remains below the statewide and peer county average (Graph 17).

Graph 17: Percent of Children (Age 12-36 months) Found to Have Elevated Blood Lead Levels



Source: N.C. State Center for Health Statistics. NC-CATCH, 2010.

Resources and Strengths

- **Preventive Visits:** Wake County private medical providers have a high rate of participation in Medicaid, with more than 60 practices accepting children covered by Medicaid. This may account for the high rate of preventive visits among the Medicaid population. In addition, the Health Check program actively works to ensure Medicaid children receive preventive visits.
- **Lead Screening:** Higher rates of elevated blood lead levels among Medicaid children as compared to all Wake County children may be due to the fact that Medicaid requires screening children for lead exposure. In addition, WCHS Child Health Clinic collaborates with Wake County WIC program and Community Care of Wake and Johnston Counties to increase screening rates among children enrolled in Medicaid.

Disparities, Gaps and Unmet Needs

- Immunizations: Only 54 percent (61 of 112) of Wake County medical practices who participate in the NCIR and receive immunizations through the Vaccine for Children program utilize the NCIR. In comparison, the statewide percentage is 85 percent. (Verbal Communication, Beth Rowe-West, N.C. Immunization Branch, 2010 North Carolina Pediatric Society Annual Meeting). Failure to utilize the NCIR may limit the ability to track and ensure complete immunizations if children are seen across multiple sites.
- In addition, the percentage of children with complete immunization series recorded in the NCIR (among children seen at practices utilizing the NCIR) is lower in private practices than at local health departments. This may be a reflection of the limitations of the NCIR data as stated above, but it may also truly be a reflection of lower rates of complete immunization series in private practices.
- Lead: Because children of lower income have higher rates of lead exposure, federal and state regulations dictate that all children covered by Medicaid be screened. While the Wake County screening rates have been increasing, and are almost the same as the State rate, only 60 percent of children covered by Medicaid here have been screened.

Implications and Emerging Issues

- Immunizations: Due to State budget deficits, State funding for vaccines was eliminated on July 1, 2010. The N.C. Immunization Branch previously used federal funds to provide vaccines for children eligible for the federal Vaccines for Children (VFC) program and state funds to provide vaccines to others. The branch now provides vaccines only for children (birth to 18 years) eligible for the federal VFC program. Providers now must privately purchase vaccines for VFC-ineligible patients and bill private insurers. This affects insured children, including those covered by N.C. Health Choice.
- Children eligible for the VFC program include those who are Medicaid-eligible, American Indian or Alaskan native, uninsured or underinsured. Underinsured children are those whose plans do not cover vaccines because they lack wellness plans, do not have coverage for all vaccines or enact a wellness plan cap. Not being fully reimbursed for the cost of vaccine no longer results in an underinsured status. Having deductibles or co-payment requirements do not either.
- With these changes, immunization rates may drop. Practices may have difficulty navigating different ordering and billing systems and may be reimbursed less than the cost of purchasing vaccines. In addition, parents facing a deductible or co-pay may choose to delay or refuse vaccines.

- Preventive visits: Following the Bright Futures recommendations advanced by the American Academy of Pediatrics, Medicaid policy now includes annual preventive exams for children older than five. Traditionally, the recommended frequency for this group was every three years. With this change, the percentage of Medicaid children receiving a preventive exam within the recommended interval will decrease.
- Lead: Traditionally, older housing with lead-based paint was one of the main sources of lead exposure for children, but this threat has decreased. However, new potential lead exposure risks are emerging, including imported toys, household products, pottery, herbs, foods and candy.

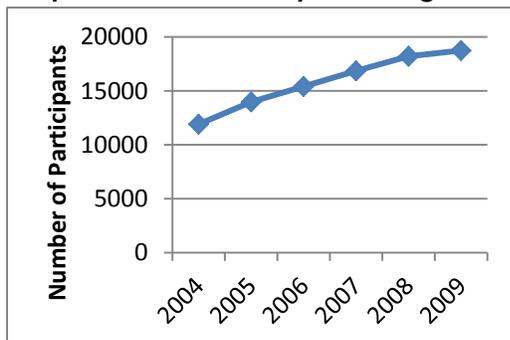
Nutrition/Obesity

Statistics and Trends

Nutrition

WIC Participation: WIC participation in Wake County has been steadily climbing in recent years (Graph 18). As stated previously in this chapter, Wake County WIC program provides food assistance (in the form of vouchers) and nutrition education for pregnant women and families with children younger than five who have a health/nutrition risk factor and meet income guidelines. Research has documented many benefits from WIC participation (*Jeng, et al., 2009*).

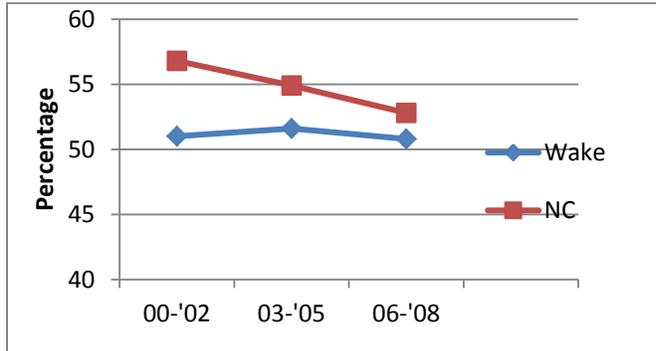
Graph 18: Wake County WIC Program Participants



Source: Wake County WIC Program

Despite the rise in WIC participation, the percentage of Wake County children enrolled in Medicaid who receive WIC services is lower than the statewide percentage (Graph 19).

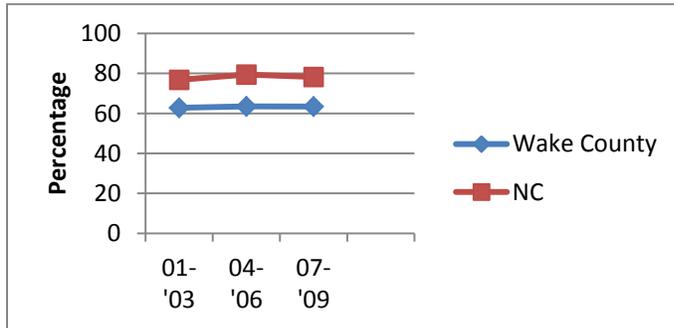
Graph 19: Percent of Medicaid Clients Age 1–5 Who Received WIC Services



Source: N.C. WIC Program Assurance Deliverables Fiscal Year 2010-2011 Trend Data. Last accessed (7-20-10). <http://www.nutritionnc.com/wic/wicLAR.htm>.

The percentage of WIC participation among children enrolled in WCHS Child Health Clinic is also lower than the statewide percentage of children receiving local health department services (Graph 20). However, WIC participation among WCHS clients is higher than participation among Medicaid patients countywide.

Graph 20: Percentage of Children 1–5 Enrolled In Child Health Clinic Who Received WIC Services

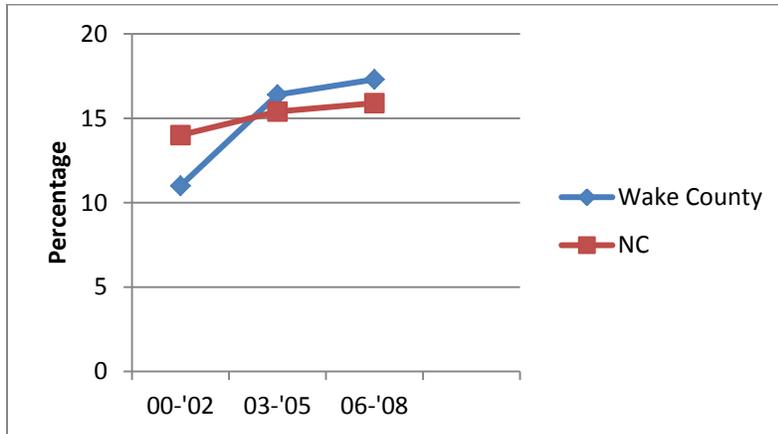


Source: N.C. WIC Program Assurance Deliverables Fiscal Year 2010-2011 Trend Data. Last accessed (7-20-10). <http://www.nutritionnc.com/wic/wicLAR.htm>.

Obesity

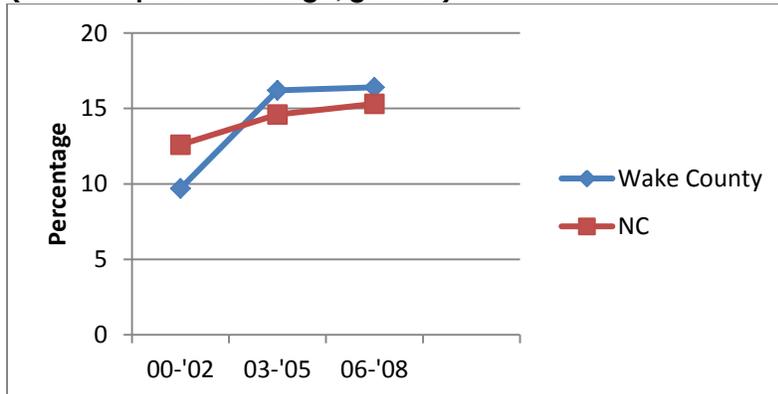
After a period of increase, the percentage of Wake County children age 2 to 4 who are overweight or obese has leveled off among children receiving services at WCHS and has decreased for all Wake County children (Graphs 21, 22 and 23).

Graph 21: Percentage of Overweight Children Ages 2–4 Receiving Health Department Services (85th percent > BMI < 95th percent for age/gender)



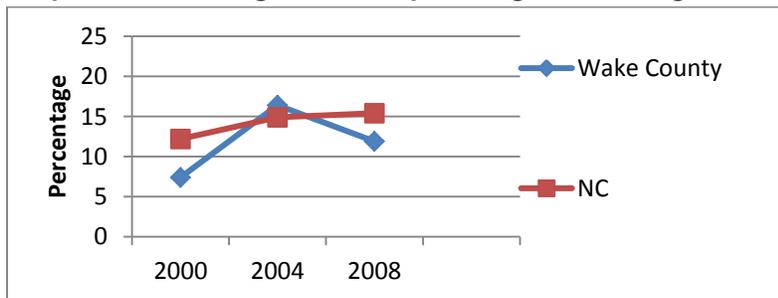
Source: N.C. WIC Program Assurance Deliverables Fiscal Year 2010-2011 Trend Data. Last accessed (7-20-10). <<http://www.nutritionnc.com/wic/wicLAR.htm>>.

Graph 22: Percentage of Obese Children Ages 2–4 Receiving Health Department Services (BMI > 95th percent for age/gender)



Source: N.C. WIC Program Assurance Deliverables Fiscal Year 2010-2011 Trend Data. Last accessed (7-20-10). <http://www.nutritionnc.com/wic/wicLAR.htm>.

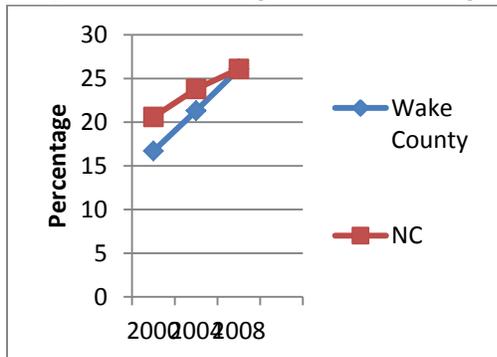
Graph 23: Percentage of Obesity Among Children Ages 2–4



Source: N.C. Statewide and County Trends in Key Health Indicators. Last updated: December 7, 2009. <<http://www.schs.state.nc.us/SCHS/data/trends/pdf/>>.

However, the percentage of older Wake County children who are obese continued to rise (Graph 24).

Graph 24: Percentage of Children Ages 5–11 Who Are Obese



Source: N.C. Statewide and County Trends in Key Health Indicators. Last updated: December 7, 2009. <
<http://www.schs.state.nc.us/SCHS/data/trends/pdf/>>.

Resources and Strengths

- WIC sponsors the Ready to Change Obesity Prevention and Intervention Project. This is a family-focused, 12-class series of weekly sessions on specific nutrition and exercise topics such as smart beverage choices, the importance of eating breakfast, healthy portion sizes, family recreation and meal preparation. The sessions are available in English and Spanish.
- WCHS Child Care Health Consultant (CCHC) Program, funded by Wake County SmartStart, provides childcare centers with registered nurse consultants. These nurses train staffers on issues of health, nutrition, sanitation and safety for infants and children. In FY 2009–10, the CCHC Program provided services to 368 centers with over 16,000 children. The Nutrition and Physical Activity Self-Assessment for Child Care Project (NAP SACC) recently was introduced in 16 centers. This best-practice model enables nurses to better identify center needs and methods of improvements related to nutrition and physical activity practices for preschoolers.
- Although the percentage of older Wake County children who are obese has steadily increased, the percentage of younger children who are overweight or obese has started to level off. This may be a signal, a slowing, or perhaps even a reversal of the obesity trend for Wake County children and may be due to the many resources and programs Wake County has to address the issue of childhood obesity.
- Advocates for Health in Action (AHA) is comprised of community members and about 50 organizations, including county and state public health agencies, health care providers and organizations, schools, children’s museums, the YWCA, and parks and recreation departments. AHA works to shape policy and environments that ensure available and

affordable access to healthful foods and physical activity for all community members. The goal is to create a community that works together to identify gaps and prevent a duplication of efforts. AHA activities include supporting nine pieces of state legislation passed in 2010, working on zoning with the City of Raleigh and other Wake County municipalities, encouraging smoke-free parks, supporting wellness policy and joint use agreements with Wake County Public School System (WCPSS), and training healthcare providers and youth to become advocates for policies related to childhood obesity. AHA is funded by John Rex Endowment, Blue Cross Blue Shield of North Carolina Foundation and WakeMed Health & Hospitals.

- John Rex Endowment Healthy Weight Initiative: The endowment invests in the development and support of activities, programs and organizations that improve the health of underserved people in Wake County. It set a new priority in 2006 to determine the best way to promote healthy weight in Wake County's children. Since then, the endowment has designated \$2.5 million for innovative projects and community-wide solutions to combat obesity in various Wake County settings. Grant recipients and community groups include the following: 15 Wake County elementary schools, Gethsemane Seventh-Day Adventist Church, Inter-Faith Food Shuttle, Marbles Kids Museum, North Carolina Museum of Art, Town of Cary, Town of Holly Springs, Triangle Transit Authority and the WakeMed Pediatric Diabetes Program.
- Community Care of Wake and Johnston Counties (CCWJC) is one of 14 local Community Care of North Carolina (CCNC) networks dedicated to improving the quality and affordability of care for Carolina Access Medicaid patients. CCWJC works with Medicaid patients' primary care providers and offers resources and tools to help providers follow best practice guidelines for obesity screening, management and counseling. CCWJC also works with providers and patients to connect Medicaid patients to community resources targeting obesity. In addition, it works collaboratively with AHA to train healthcare professionals to become advocates within their community and foster collaboration across multiple disciplines and sectors of healthcare to promote policy that supports obesity prevention.
- Expanded Food and Nutrition Education Program (EFNEP) and Families Eating Smart and Moving More offers free nutrition classes for low-income families with children.
- WakeMed's ENERGIZE! Program provides family-based nutrition and exercise programming for children with metabolic syndrome.
- Duke Children's Healthy Lifestyles is a multi-disciplinary referral clinic for pediatric weight management.
- Wake Teen Be Fit Get Moving program offers nutrition and exercise counseling and group sessions for children, youth and young adults ages 10 to 23 years.

- Wake County's Department of Parks, Recreation and Open Space, along with 12 municipal parks and recreation departments, offer many low-cost and free resources to promote physical activity including public greenways, community centers with fitness facilities, specialized recreation, athletics, teams and leagues, aquatics and tennis.
- YMCA of the Triangle offers low-cost resources for physical activity including exercise and classes for the entire family, sports leagues, camp programs for youth, nutritionists and personal training programs, swim teams and swimming lessons.
- Boys & Girls Clubs offers many sports, fitness, recreation, arts, education, career and health and life skills programs.
- WCPSS Child Nutrition Services (CNS) meets state nutrition standards which require, among other things, that federally reimbursable meals contain (on average over a week) no more than 35 percent of calories from fat; four fruits and/or vegetables offered daily; and all milk with 1 percent or less fat. Plans are in place to provide additional fruits and vegetables through various programs including the Farm-to-School Program, Fresh Fruit and Vegetable Grant Program and others. In the 2009-10 school year, CNS provided 65,000 daily lunches in Wake County. Totals for the year were approximately 11.6 million lunches and 3.4 million breakfasts.

Disparities, Gaps and Unmet Needs

- WIC Participation: The percentage of children receiving services at the public health center who receive WIC services is lower than the statewide percentage in other local health departments. In addition, the percentage of Wake County Medicaid children who receive WIC is lower than the statewide percentage and lower than the percentage of children receiving services at the public health center. Children receiving private care from the private sector may experience additional barriers to accessing WIC services than do children cared for in the public sector. Promoting increased access to WIC for that group may be an important initiative.
- Obesity: Rates of excessive weight and obesity are higher for children in minority populations, with parents with low educational attainment and in households with low incomes (as evidenced by no insurance or Medicaid coverage) (*Child Health Assessment and Monitoring Program (CHAMP) Last accessed: March 11, 2010.* < <http://www.schs.state.nc.us/SCHS/champ/>>). The disparity may reflect a need for further education on healthy eating and physical activity or may reflect cultural norms and expectations. However, this disparity may also reflect limited access to healthy foods and opportunities for physical activity due to finances, resource availability, transportation and safety issues.

Implications and Emerging Issues

- Despite the encouraging trend regarding a decline in obesity in younger children, childhood obesity still remains one of the most important child health issues in Wake County, North Carolina and the United States. The disparity between minority and lower-income children and others adds to the importance of this issue. As such, it is encouraging that much attention is being paid to this epidemic at the national, state and county level.
- The N.C. Alliance for Health's Obesity Prevention Policy Priorities for children for 2010 call for promoting implementation of quality, comprehensive physical education (PE) statewide, including implementation of mandatory health assessments for students in all public schools, and PE and health honors courses. Regarding nutrition, they advocate fully funded child nutrition standards K-12 and the availability of healthy foods and beverages in schools.
- On the national level, in February 2010, a Presidential Task Force on Childhood Obesity was established as part of the First Lady's "Let's Move" campaign and was charged with developing an interagency action plan to solve the childhood obesity problem. The campaign strives to engage both public and private sectors to help children become more active and eat healthier within a generation, so that children born today will reach adulthood at a healthy weight.
- In Wake County, Advocates for Health in Action continues to expand partnerships and activities. The John Rex Endowment continues a long-term commitment to a [Healthy Weight Initiative](#) with more than \$1.8 million recently awarded for projects that will focus on encouraging healthy eating, physical activity and community-wide solutions to combat childhood obesity.
- The WCHS Board has identified childhood obesity as a high priority issue.
- The North Carolina General Assembly convened a Legislative Task Force on Childhood Obesity in the 2010 session. Bills that resulted call for several things:
 - Development and implementation of evidence-based fitness testing for students statewide in grades K–8.
 - Development or identification of academically rigorous, honors-level high school courses in healthful living education.
 - Development of improved nutrition standards and guidelines for increased levels of physical activity in childcare facilities.
 - Exploration of ways to implement body mass index screening for certain children who are at risk of becoming obese, and to reduce body mass index levels for all children.

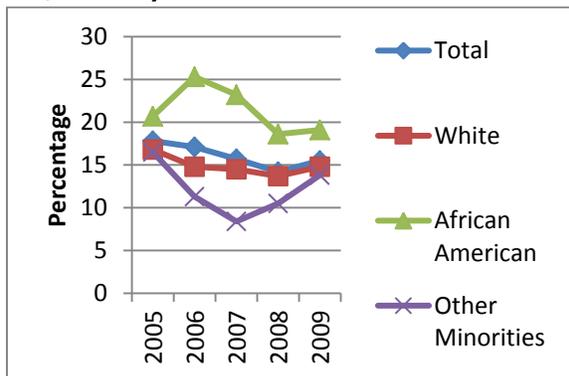
Childhood Asthma

Statistics and Trends

Besides dental disease, asthma is the most common chronic disease of childhood. The American Lung Association estimated in 2008 that 211,215 North Carolina (21,281 in Wake County) children younger than 18 had asthma. That is approximately one out of every ten North Carolina children (*Child Health Assessment and Monitoring Program (CHAMP)*. Last accessed: March 11, 2010 < <http://www.schs.state.nc.us/SCHS/champ/>>). The N.C. percentage continues to be higher than the U.S. level (9.8 percent vs. 9.3 percent) (*Bloom and Cohen, 2007*). Asthma is the most common chronic health condition reported by N.C. schools, affecting 83,440 students. It is also the leading cause of missed days of school (*N.C. Annual School Health Services Report, 2007*).

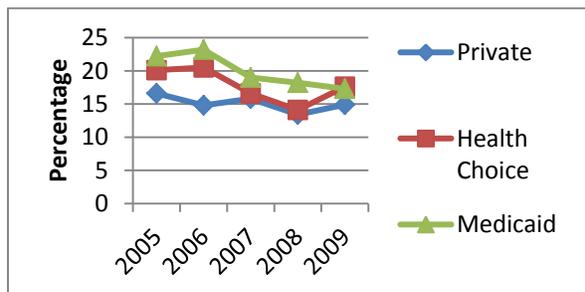
The percentage of children who have asthma varies by race, ethnicity and insurance status. African-American children and children covered by Medicaid are more likely to have asthma than other populations (Graphs 25, 26, 27 and 28).

Graph 25: Percentage of N.C. Children <18 Years Who Have "Ever Had" Asthma by Race/Ethnicity



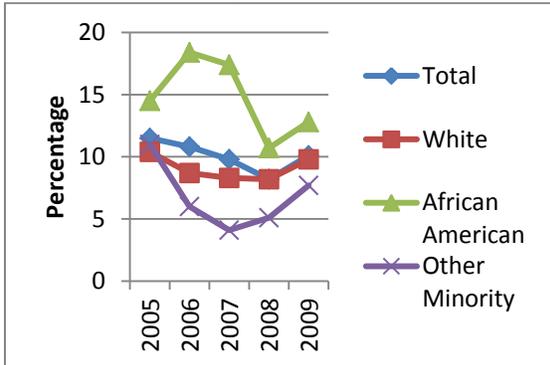
Source: Child Health Assessment and Monitoring Program (CHAMP). Last accessed: March 11, 2010. < <http://www.schs.state.nc.us/SCHS/champ/>>

Graph 26: Percentage of N.C. Children <18 Years Who Have "Ever Had" Asthma by Insurance Status



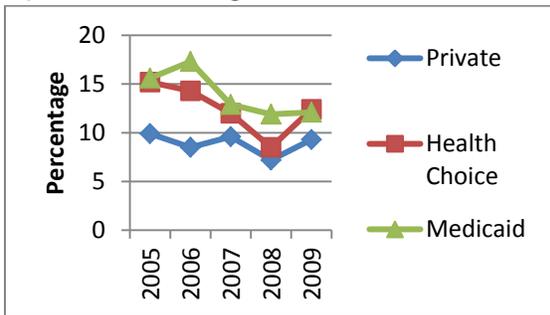
Source: Child Health Assessment and Monitoring Program (CHAMP). Last accessed: March 11, 2010. < <http://www.schs.state.nc.us/SCHS/champ/>>

Graph 27: Percentage of Children <18 Years Who Have Asthma “Now” by Race/Ethnicity



Source: Child Health Assessment and Monitoring Program (CHAMP). Last accessed: March 11, 2010. < <http://www.schs.state.nc.us/SCHS/champ/>>

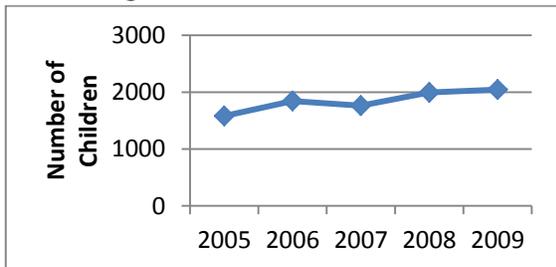
Graph 28: Percentage of Children <18 Years Who Have Asthma “Now” by Insurance Status



Source: Child Health Assessment and Monitoring Program (CHAMP). Last accessed: March 11, 2010. < <http://www.schs.state.nc.us/SCHS/champ/>>

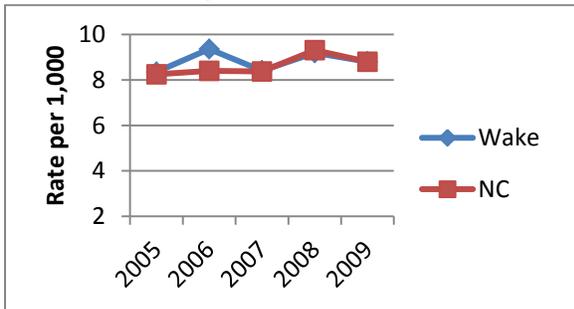
Asthma is one of the leading causes of emergency department visits and hospitalizations among children. In 2008, approximately 2,000 Wake County children visited emergency departments due to asthma (Graph 29), and 834 Wake County children were hospitalized with asthma (Graph 31).

Graph 29: Asthma-Induced Emergency Department Visits for Wake County Children Age 0-7



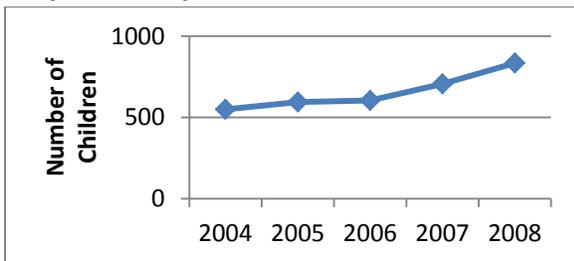
Source:Thompson Reuters N.C. Hospital Database

Graph 30: Emergency Department Asthma-Related Visit Rate per 1000 Population, Age 0–14



Source:Thompson Reuters N.C. Hospital Database

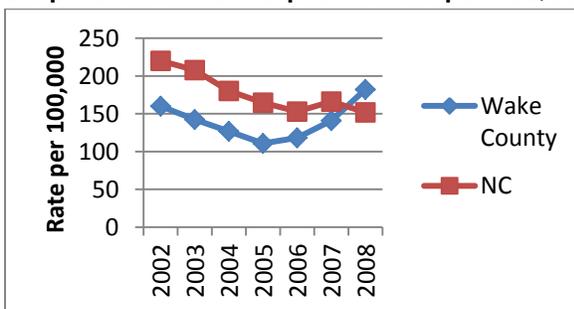
Graph 31: Hospitalizations Due To Asthma for Wake County Children Age 0–17



Source: N.C. State Center for Health Statistics, 2010.

The rate of asthma-related hospitalizations for Wake County has, until recently, been below the statewide rate. However, since 2006 the rate of asthma-related hospitalization for all Wake County children has been rising. It surpassed the state rate in 2008 (Graph 32).

Graph 32: Asthma Hospitalizations per 100,000 Age 0–14



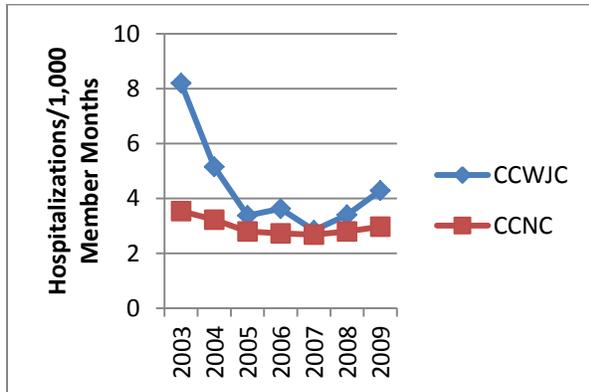
Source: N.C. State Center for Health Statistics, 2010.

For children enrolled in Carolina Access Medicaid, the 2003 rate of asthma-related emergency room visits and hospitalization was significantly higher for children in the Wake and Johnston County Community Care network (CCWJC) than for children enrolled in other Community Care

Chapter 6 PHYSICAL HEALTH

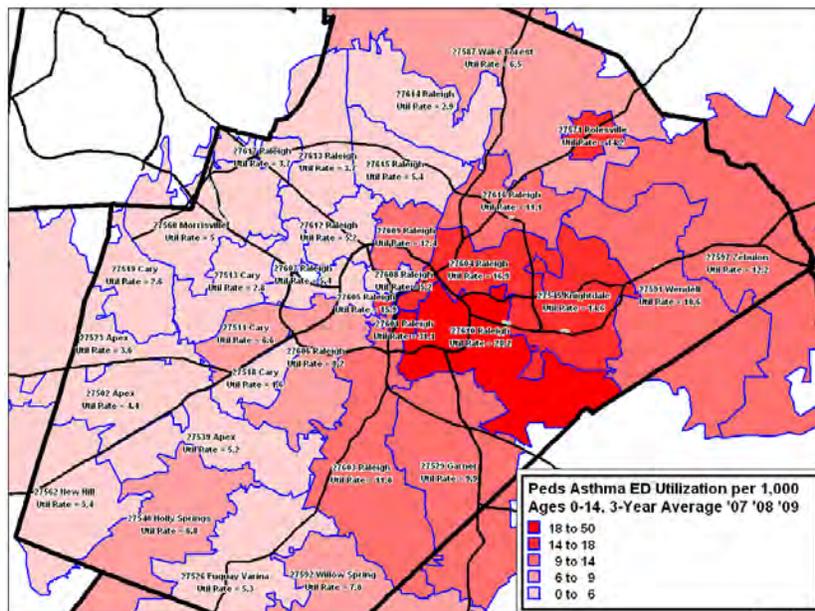
networks (CCNC) statewide. However, since 2003, asthma-related emergency room visits and hospitalizations have declined steeply and are close to the statewide CCNC rates. Rates of hospitalizations among CCWJC Carolina Access patients, however, have begun to rise recently, as have the rates for all children (Graph 33).

Graph 33: Asthma-Related Hospitalizations for Carolina Access Medicaid Patients per 1,000 Member Months



Source: CCNC CA Medicaid Claims

The asthma-related emergency department visit rate varies by geographical area in Wake County, with central and southeast Wake County having the highest emergency department visit rates.



Resources and Strengths

- WakeMed Children's Asthma Program strives to improve management of asthma for children, ages 3 to 17, and families in Wake County and surrounding areas by concentrating on comprehensive education. Goals are to decrease the need for hospitalizations related to asthma, decrease the need for emergency department visits related to asthma, decrease school absences and improve quality of life. The Children's Asthma Program is a service provided without charge to families. The program provides individualized and group educational sessions, pulmonary function testing (for children ages 5 to 17) and asthma knowledge assessments. Educational sessions provide information related to a basic understanding of asthma, triggers, environmental control, warning signs, medications, the use of spacers, nebulizer use and peak flow monitoring.
- Wake County Asthma Coalition is a group of healthcare professionals in the public, private and commercial sectors, with an interest in asthma outcomes in Wake County. The group strives to increase public awareness about asthma, its prevalence and related health issues in Wake County, and to provide education about asthma and related health issues. It also strives to support and empower Wake County citizens to identify ways to improve conditions related to asthma health in communities. Specific projects: annual Asthma Fair, an educational event for families with asthma; the "Coaches Clipboard Project," an asthma education program designed for PE teachers, coaches and park and recreation staff; and the "Air Quality Flag Program" designed to promote public awareness of the Air Quality Index and daily Air Quality Forecasts.
- Community Care of Wake and Johnston Counties (CCWJC) is the local network of the statewide Community Care of North Carolina. CCWJC attempts to improve quality and continuity of care for Carolina Access Medicaid patients. It offers primary care providers resources and tools to follow evidence-based, best-practice guidelines while assessing and treating Medicaid patients with asthma. Nurse care managers work intensively with high-risk Medicaid patients to promote self-management and adherence to recommended therapies. They build links to primary care medical homes and other community resources. Further, through a partnership with CCWJC, WCHS and Wake County Environmental Services, environmental health specialists conduct home visits to try to mitigate environmental triggers of asthma. Medicaid funds the program at no cost to practices or to patients.
- Improving Performance in Practice (IPIP) is a national initiative available to primary care practices that helps physicians adopt proven tools and systems that support the delivery of consistently high quality care to all patients. IPIP provides in-office training to improve care quality, efficiency and satisfaction for both patients and the healthcare team. Pediatric practices focus on asthma while developing efficient patient-centered systems.

- The program is offered free of charge via Wake Area Health Education Center. As of June 2010, 11 Wake County pediatric practices (representing 24 practice sites) participated.
- The Rex Asthma Program (RAP) has been available to asthmatic students for four years. Over 474 students have completed the asthma educational program. RAP is provided to students in grades K–8 and has conducted 89 sessions in over 60 schools. Students attend weekly sessions for up to seven weeks. The RAP is conducted in a group setting, so the students do not feel alone in coping with their disease. Asthma educators conduct the program either before or after school. Students are coached on how to better manage their asthma by empowering the asthmatic students with tangible means to manage their disease and to reduce missed school days and hospital emergency department visits. The John Rex Endowment, GlaxoSmithKline, Rex Foundation and Rex Healthcare have provided funding. Although full funding has ended, some limited funding continues for a few school-based programs.

Disparities, Gaps and Unmet Needs

- Low-income children, including Medicaid clients and African-American children, experience higher-than-average rates of asthma than others. One explanation may be increased environmental exposures, both indoor and outdoor.
- In addition, children living in central and southeast Wake County, especially zip codes 27601, 27604, 27605 and 27610, have higher rates of asthma-related emergency department (ED) visits than other children in Wake County. These zip codes represent some areas of lower income neighborhoods and thus the higher rates of Asthma ED visits may be due to differences in socio-economic status. There may be an increased incidence of asthma exacerbations in populations of lower socio-economic status due to increased environmental triggers or lack of understanding of asthma control. In addition, high asthma ED rate may also reflect a lack of access to non-emergency outpatient care.
- Caring for asthmatic children in school is a challenge. Because Wake County has the second worst nurse-to-student ratio in N.C., school nurses can typically work with only the most severe asthmatics. In addition, many students are without emergency care plans. When 3,207 students with asthma were identified, only 660 had individual emergency action plans or health care plans in the public schools (*WCHS School Health Nursing Survey and Program Summary 2009-2010 End of Year Report, June 2010*).

Implications and Emerging Issues

- After a period of steady decline in asthma-related ED visits and hospitalizations, rates have started to increase. In a recent report of county health rankings, Wake County ranked very high in most categories. But Wake County ranked very low (98th out of the 100 N.C. counties)



in physical environment factors. Problems included air pollution, both particulate matter and the frequency of ozone days. Worsening air pollution may be contributing to the rise in asthma hospitalizations.

- In addition, because of the state budget deficits, Community Care resources are being directed to the high-cost and high-risk aged, blind, and disabled Medicaid population and away from support for asthma management among the pediatric Medicaid population. The rise in asthma emergency department and hospitalization rates among the Carolina Access Medicaid patients may be a reflection of this resource diversion.

Children of Foreign-Born Parents

Statistics and Trends

- In 2008, the foreign-born population represented 7 percent of North Carolina's population. From 2000–2008, that population in North Carolina grew from 430,000 to 641,130 people, a 49 percent increase that establishes N.C. as having the nation's seventh-fastest growing immigrant population. The rate of increase actually represents a slowing in the rate of growth of the N.C. foreign-born population, which grew from 115,077 to 430,000 between 1990 and 2000, a difference of 274 percent (*Migration Policy Institute, 2008*). In 2008, the foreign-born represented 12 percent of Wake County's population. From 2000–2008, that population in Wake County grew from 60,602 to 101,057, a 67 percent increase.
- Immigrants to North Carolina and Wake County come from many countries and continents. In 2008, 0.6 percent was from Oceania, 2.4 percent from Northern America (Canada, Bermuda, Greenland, and St. Pierre and Miquelon), 5.1 percent from Africa, 11.6 percent from Europe, and 20.9 percent from Asia (*Migration Policy Institute, 2008*). Children in the Wake County Public School System come from households which make up 90 different languages (*Baenen, et al., 2007*).
- The largest percentage (59.4 percent) of N.C. immigrants, however, came from Latin America (South America, Central America, Mexico, and the Caribbean) (*Migration Policy Institute, 2008*) and Spanish is the most common non-English primary household language for children in the Wake County Public School System (*Baenen, et al., 2007*). In N.C., the number of persons of Hispanic or Latino origin in 2000 was 378,963 (4.7 percent of the total population) and in 2008 was 682,459 (7.4 percent of total population). In Wake County, the number of persons of Hispanic or Latino origin in 2000 was 33,985 (5.4 percent of the total population) and in 2008 was 76,244 (8.8 percent of the total population) (*U.S. Census*).
- In the U.S., children of immigrants are the fastest-growing component of the child population. While immigrants are 12 percent of the total U.S. population, children of immigrants make up 23 percent of all children and almost 30 percent of all low-income children (*Migration Policy Institute, 2008*).

- In North Carolina, in 2008, immigrant children totalled 1.3 percent of North Carolina children younger than age 5 and 3.5 percent of children 5 to 17 years. However, children residing with at least one immigrant parent accounted for 15.6 percent of North Carolina children. This marks an increase from 9.1 percent in 2000. The vast majority of these children (84 percent) are U.S. citizens by birth (*Migration Policy Institute, 2008*).
- In 2008, 53 percent of all immigrants age 5 and older in North Carolina had limited English Proficiency (LEP). However, among children between ages 5 and 17 who resided in homes in which members spoke a language other than English, 68 percent spoke English "very well" (*Migration Policy Institute, 2008*).

Resources and Strengths

- Wake County has responded to increasing diversity, especially to the growth of the Latino/Hispanic community.
- Latino Resource Guide: WCHS compiles and shares the Latino Resource Guide. This compilation of services and resources is available for those who speak Spanish as their primary language. It was developed and is updated by WCHS staff in collaboration with the Network of Spanish-speaking Therapists & Counselors and the Network of Spanish-speaking Community Support Professionals. It was designed to assist service providers to better match clients with resources. As a companion to the Latino Resources Guide, intended for service providers, WCHS has also developed updates, and shares a Latino Resource Pamphlet written in Spanish intended for Spanish-speaking clients.
- Su Hogar Médico is a John Rex Endowment funded initiative administered through the Wake County Medical Society/Community Care of Wake and Johnston Counties. The project began in October of 2007 and will end this year. The goal is to improve access to and quality of care for children of Spanish-speaking families in Wake and Johnston counties. The key elements are to increase practice adherence to federal standards for cultural and linguistic appropriate services; to increase bilingual health care workforce; to identify and link practices and patients to community resources; and to foster acculturation to the U.S. health care system for newly immigrated families. Eighteen Wake County practices have participated, eight bilingual professionals have graduated from healthcare programs and 34 Wake County practices caring for children report on-site Spanish speaking capabilities.
- ALPES (Alianza Latina Pro-Educacion en Salud) is a group that meets monthly to discuss various topics on Latino healthcare in Wake County, review resources in the area, and network among Latino professionals.

- Líderes de Salud is a Wake County-based lay health advisor program of El Pueblo, Inc. that was funded by the John Rex Endowment from 2004 to December 2009. The program focuses on improving Latino children's health in the county by training lay health advisors (promoters de salud) at partner sites and by working to improve communication between health care providers and administrators and the Latino communities in the County. El Pueblo, Inc. is seeking funds to continue the work and is building on their experience as they consider other health initiatives.
- The Mexican Consulate is located in Raleigh and is working collaboratively with Community Care of Wake and Johnston Counties to provide information and resources about health and health care to persons of Mexican descent or origin.
- On a statewide level, the Governor's Hispanic/Latino Advisory Council meets quarterly to discuss health care and other issues facing Latinos in the State. The North Carolina Academy of Family Physicians began focus groups with Hispanic adults in the fall of 2010 to discuss issues regarding the healthcare in their area.

Disparities, Gaps and Unmet Needs

- Children of immigrants can be described as "at risk" if they share three of these four conditions: neither parent is proficient in English; neither parent is a U.S. citizen; neither parent has more than a ninth-grade education or neither parent has been in the country more than 10 years. The number of risk factors is closely associated with poverty for children in immigrant families. In North Carolina, 26 percent of children were in immigrant families with three or more risk factors. This is higher than the nationwide percentage of 18 percent (*Mather, 2009*).
- In 2007, 24 percent of foreign-born families in North Carolina with children under 18 lived in poverty. In comparison, 16 percent of native families with children under 18 lived in poverty. Children of immigrants accounted for 22.4 percent of all children below 200 percent of the federal poverty threshold in 2008, 12.2 percent in 2000, and 3.2 percent in 1990 in North Carolina (*Migration Policy Institute, 2008*).
- In 2008, 27.3 percent of North Carolina's foreign-born population age 25 and older had a bachelor's or higher degree while 35.6 percent lacked a high school diploma. In comparison, 26.0 percent of native-born persons above age 25 had a bachelor's or higher degree in 2008, and 14.6 percent lacked a high school diploma. (*Migration Policy Institute, 2008*) In 2003, 46 percent of immigrant adults scored below basic on prose literacy. These adults had difficulties reading simple English words and phrases and using written materials such as newspapers. A significantly lower share of native-born adults scored at the below-

basic level (9.3 percent) (*Migration Policy Institute, 2008*). Because children are dependent on their parents to understand and negotiate health-related information, instructions, and systems, the health and health care of children with parents of low education and literacy may be compromised. In addition, many immigrant adults who lack English-reading skills may also lack literacy in their native language.

- Further, in the face of the rapidly growing foreign-born population, there has been a lack of linguistically and culturally competent care in the community. A recent survey of North Carolina family practices conducted by the N.C. Academy of Family Physicians showed low adherence to national standards on culturally and linguistically appropriate services. These trends have limited access to primary care, led to increased cost of care, threatened quality of care, and may contribute to health disparities among this population. Studies have found that patients who encounter language barriers in health care settings tend to use less primary care, receive less preventive care, experience higher rates of hospitalization, encounter more medication errors and complications, have lower patient satisfaction and may have more delayed diagnoses (*Flores, 2006, Kominski, et al., 2006, Flores, 2005, Flores, et al., 2003, Youdleman & Perkins, 2002*).
- Children of foreign-born families experience higher rates of some health problems. For example, children of families originally from Latin America, where tuberculosis remains endemic, experience higher rates of pediatric tuberculosis in N.C. and Wake County (*Stout, 2006*). Also, refugee and immigrant children are considered at higher risk for lead poisoning (*American Academy of Pediatrics, 2005*). The socio-economic life circumstances for a refugee or newly arriving immigrant in the U.S. often means living in older, sub-standard housing where lead-paint hazards are more likely to exist. Additional lead hazards are often found in products from their native culture such as cosmetics, home remedies, pottery, food, spices and candy that are popular, both in their home countries and in the U.S.

Implications and Emerging Issues

- In 2008, 10 percent of immigrant women in North Carolina had given birth in the previous year as compared to 5.3 percent of native-born women (*Migration Policy Institute, 2008*). In light of this relatively higher birth rate of immigrant women, it can be expected that children of immigrant families will continue to be a growing segment of our community. As such, policies that affect families, in general, and low-income families with children in particular—such as early schooling, family literacy, child health and day care—will have an increasing impact on immigrant families.

Adolescent and Women's Health

The greatest opportunity for preventing infant deaths is to prevent premature births and promote healthy behaviors among women prior to and between pregnancies. While the pregnancy rates for teens has improved over the past two decades, we cannot deny the profound effect that teen pregnancy has on communities, future generations and the teens themselves (*Adolescent Pregnancy Prevention Campaign of North Carolina, 2010*).

Community Perceptions

According to the 2010 Community Health Assessment survey results, teenage pregnancy was identified as one of the top five most important health issues facing the community in four out of eight zones (North Central, East Central, South Central, and the East). Furthermore, teenage pregnancy was listed as the fifth most important health issue for all zones combined, with almost 26 percent of respondents identifying it as a concern.

Adolescent Pregnancy

Statistics and Trends

Table 11: Adolescent Pregnancy at a Glance

	2009		2008	
	Wake	North Carolina	Wake	North Carolina
Adolescent pregnancies among 10-14-year-olds	18	324	33	376
Rate per 1,000 girls aged 10-14 years old	**	1.1	1.1	1.3
Adolescent pregnancies among 15-19-year-olds	1,152	18,142	1,231	19,398
Rate per 1,000 girls aged 15-19 years old	37.6	56.0	39.5	58.6
NC county ranking (1st highest – 100th lowest) *	92	--	91	--
*Based on the rate for 15-19-year-olds. **Rates based on fewer than 20 cases are statistically unreliable and are not presented.				
<i>(Adolescent Pregnancy Prevention Campaign of North Carolina, 2010)</i>				

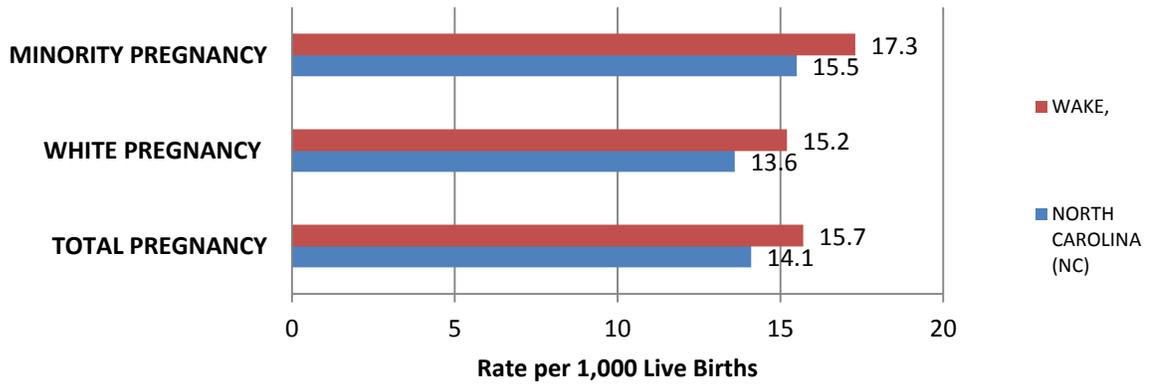
North Carolina

- North Carolina's overall teen pregnancy rate dropped 4.4 percent in 2009.
- Teen pregnancy rates fell in all racial and ethnic categories. Abortions also fell in all categories.
- North Carolina still has the 14th highest teen pregnancy rate in the nation (*Adolescent Pregnancy Prevention Campaign of North Carolina, 2010*).

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Graph 34: WAKE COUNTY AND NORTH CAROLINA, 2005-2009, RESIDENT LIVE BIRTH RATES PER 1,000 POPULATION

Total resident pregnancies for this population
 WAKE , 64964 North Carolina, 639115



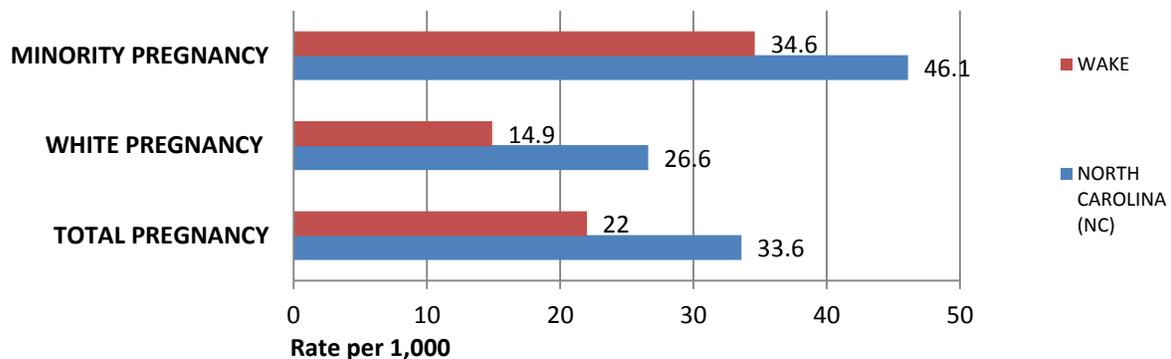
Source: N.C. Department of Health and Human Service, N.C.State Center for Health Statistics

Table 12: NORTH CAROLINA RESIDENT LIVE BIRTH RATES PER 1,000 POPULATION, 2005-2009

	TOTAL BIRTHS	TOTAL RATE	WHITE BIRTHS	WHITE RATE	MINORITY BIRTHS	MINORITY RATE
NC	639,115	14.1	458,829	13.6	180,286	15.5
WAKE	64,964	15.7	46,680	15.2	18,284	17.3

Graph 35: WAKE COUNTY AND NORTH CAROLINA GIRLS 15-17, BY RACE, 2005-2009 PREGNANCY RATES PER 1,000 POPULATION

Total resident pregnancies for this population
 WAKE , 886 North Carolina, 16006



Source: N.C. Department of Health and Human Service, N.C. State Center for Health Statistics

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Table 13: NORTH CAROLINA RESIDENT PREGNANCY GIRLS 15-17, BY RACE, 2005-2009

	WHITE PREGNANCIES	WHITE RATE per 1,000	MINORITY PREGNANCIES	MINORITY RATE per 1,000	TOTAL PREGNANCIES	TOTAL RATE per 1,000
NC	16,006	26.6	13,538	46.1	30,063	33.6
WAKE	886	14.9	935	34.6	1,905	22

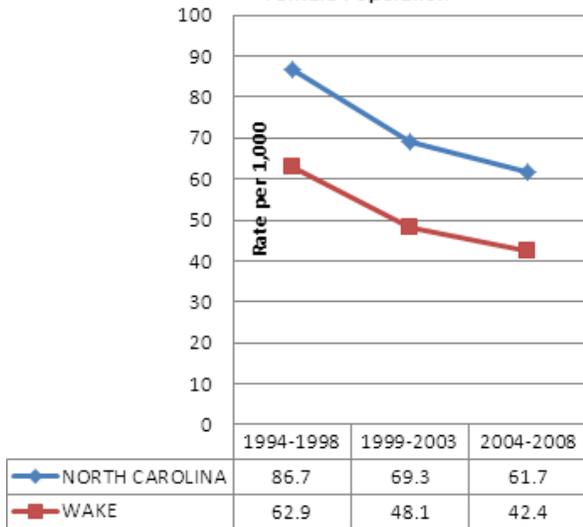
Table 14: Adolescent Pregnancy - Wake County at a Glance

	2009 Wake	2009 North Carolina	2008 Wake	2008 North Carolina
Adolescent pregnancies among 10-14-year-olds 18	18	324	33	376
Rate per 1,000 girls aged 10-14 years old	**	1.1	1.1	1.3
Adolescent pregnancies among 15-19-year-olds	1,152	18,142	1,231	19,398
Rate per 1,000 girls aged 15-19 years old	37.6	65	39.5	58.6
NC county ranking (1st highest – 100th lowest)	* 92	--	91	

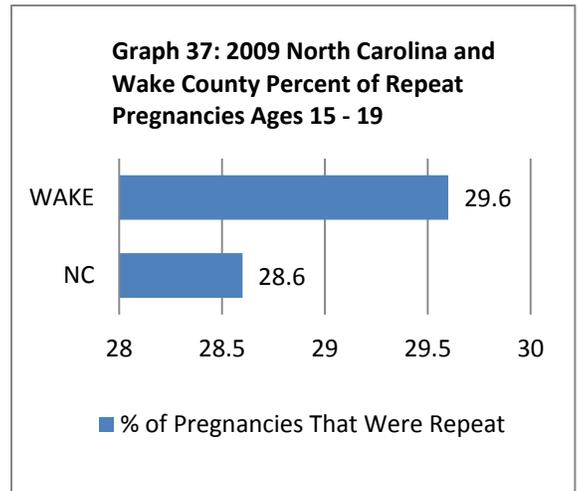
*Based on the rate for 15-19-year-olds. **Rates based on fewer than 20 cases are statistically unreliable and are not presented.

Adolescent Pregnancy Prevention Campaign of North Carolina, 2010)

Graph 36: Resident Teen Pregnancies (Ages 15-19) per 1,000 Female Population



Graph 37: 2009 North Carolina and Wake County Percent of Repeat Pregnancies Ages 15 - 19



(Adolescent Pregnancy Prevention Campaign of North Carolina (APPCNC), 2010)

Graph 38: 2009 N.C. Resident Hispanic Teen Pregnancies, Rate per 1,000 Ages 15-19

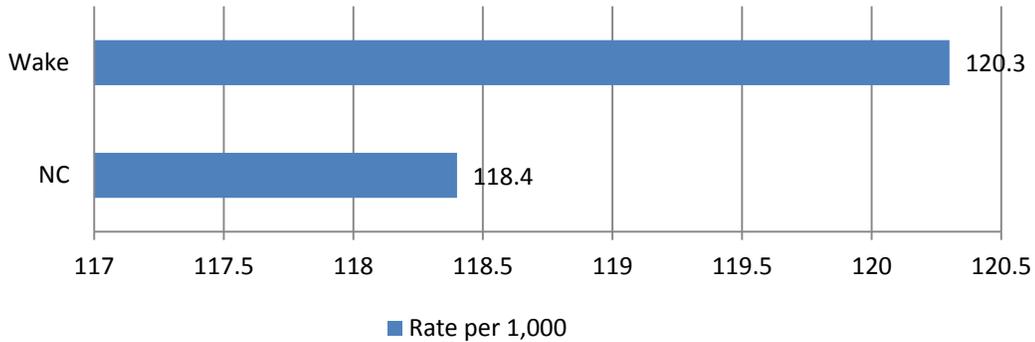


Table 15: 2009 North Carolina and Wake County Percent of Repeat Pregnancies Ages 15 - 19

	Total Number of Pregnancies	# of Repeat Pregnancies	percent of Pregnancies That Were Repeat
NC	18,142	5,192	28.6
WAKE	1,152	341	29.6

Table 16: 2009 N.C. and Wake County Resident Hispanic Teen Pregnancies, Number, Rate and Rank Compared to Other N.C. Counties Ages 15-19

	Number of Pregnancies	Population	Rate per 1,000	Rank
NC	2,865	24,192	118.4	-
Wake	289	2,402	120.3	14

Graph 39: 2009 N.C. and Wake County Resident White Teen Pregnancies Rate per 1000 Ages 15-19

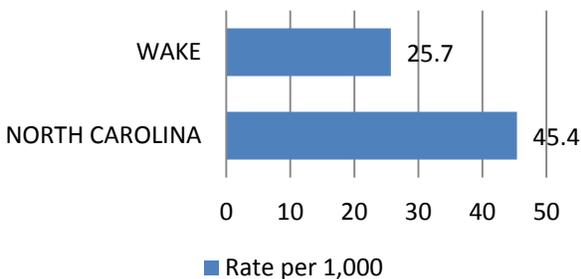


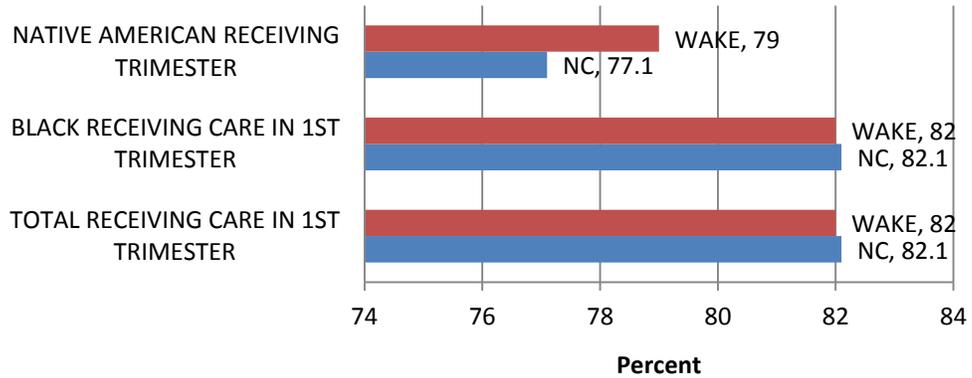
Table 17: 2009 N.C. and Wake County Resident White Teen Pregnancies Rate per 1000, Ages 15-19

	White Pregnancies	Rate per 1,000
NC	9,941	45.4
WAKE	536	25.7

(Adolescent Pregnancy Prevention Campaign of North Carolina (APPCNC), 2010)

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**Graph 40: WAKE COUNTY AND NORTH CAROLINA), 2005-2009
PERCENT OF WOMEN RECEIVING PRENATAL CARE IN THE FIRST TRIMESTER
(TOTAL, BLACK, AND NATIVE AMERICAN)**

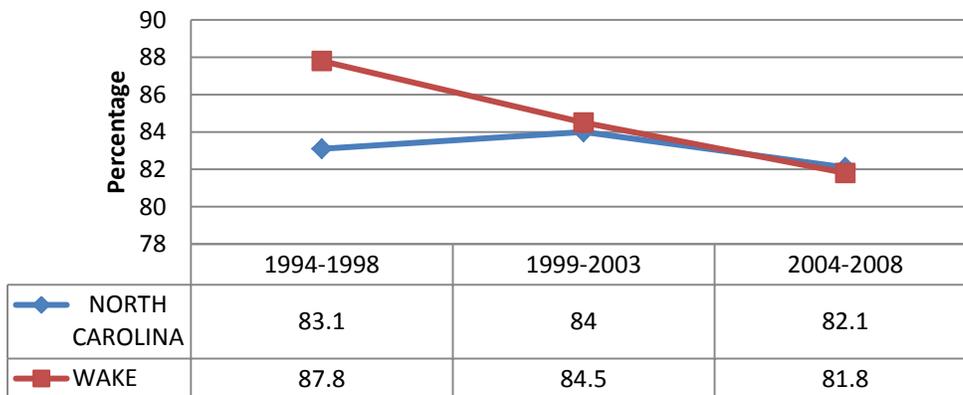


Source: N.C. Department of Health and Human Service, North Carolina State Center for Health Statistics, 2009

**Table 18: NUMBER AND PERCENT OF WOMEN RECEIVING PRENATAL CARE IN THE FIRST TRIMESTER
(TOTAL, BLACK, AND NATIVE AMERICAN), 2005-2009**

	TOTAL RECEIVING CARE IN 1ST TRIMESTER		BLACK RECEIVING CARE IN 1ST TRIMESTER		NATIVE AMERICAN RECEIVING CARE IN 1ST TRIMESTER	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
NC	524902	82.1	113383	82.1	6779	77.1
WAKE	53,271	82	10,064	82	154	79

Graph 41: Percentage of Resident Live Births Where Mother Received Prenatal Care in the First Trimester



Source: N.C. Department of Health and Human Service, North Carolina State Center for Health Statistics

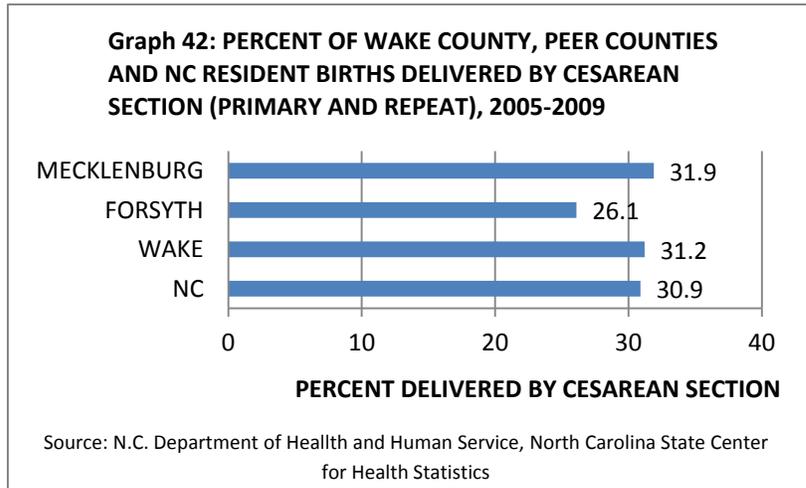


Table 19: NUMBER AND PERCENT OF NC, WAKE AND PEER COUNTIES RESIDENT BIRTHS DELIVERED BY CESAREAN SECTION (PRIMARY AND REPEAT), 2005-2009

	TOTAL BIRTHS	BIRTHS BY CESAREAN
NC	639115	639115
WAKE	64,964	20,275
FORSYTH	24,786	6,468
MECKLENBURG	71,993	22,941

Other Data

North Carolina PRAMS, the Pregnancy Risk Assessment Monitoring System, is a Centers for Disease Control and Prevention (CDC) initiative to reduce infant mortality and low birth weight. PRAMS collects data on maternal attitudes and experiences prior to, during, and immediately after pregnancy for a sample of North Carolina women. The sample data are analyzed in a way that allows findings to be applied to all North Carolina women who have recently had a baby (North Carolina State Center For Health Statistics, 2009, p. 235). Regional PRAMS data may be found at:

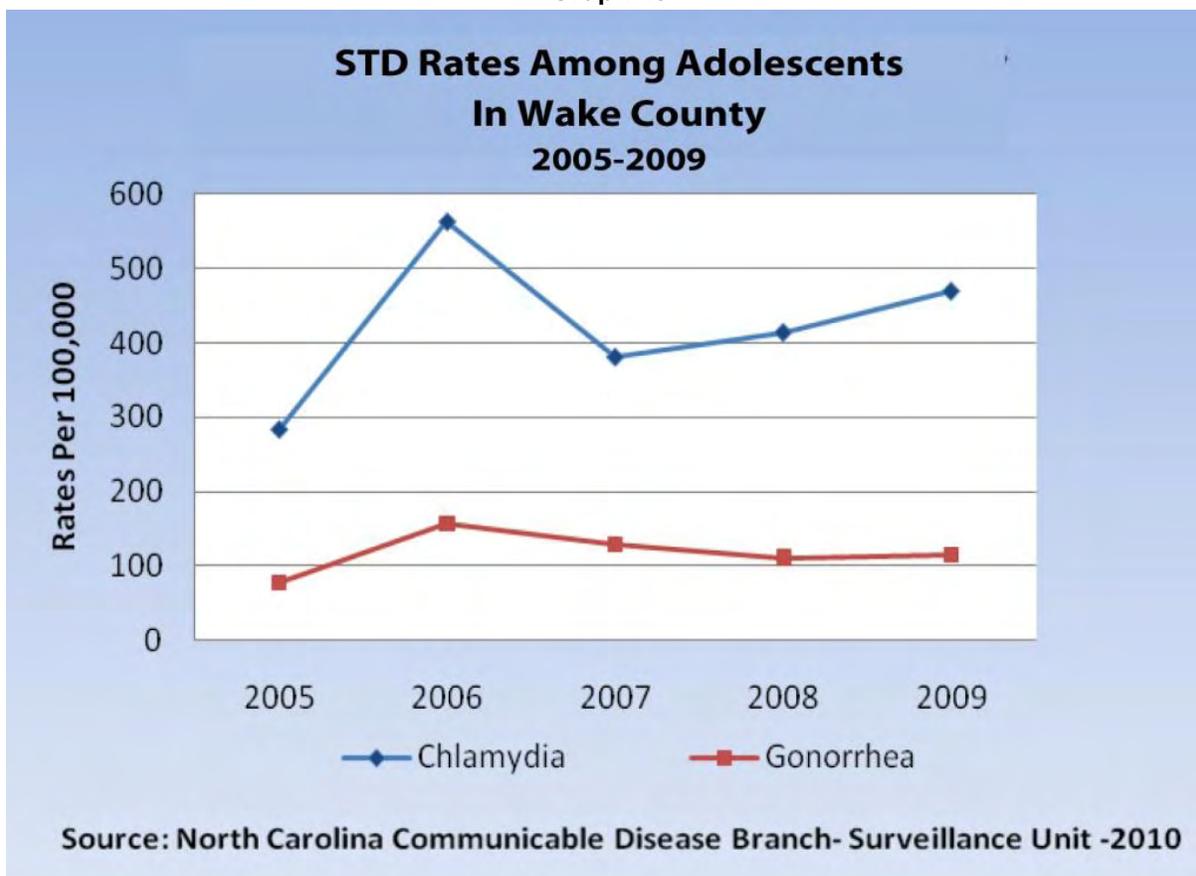
www.schs.state.nc.us/SCHS/prams/2006to2008/index.cfm?region=Northeast®no=IV#21

Sexually Transmitted Diseases

Another issue affecting adolescent health is the issue of sexually transmitted diseases (STD). Five year trend data for STDs in adolescents show that although there was a drop in chlamydia rates from 2006-07, there has been a steady increase in rates since then (Graph 43).

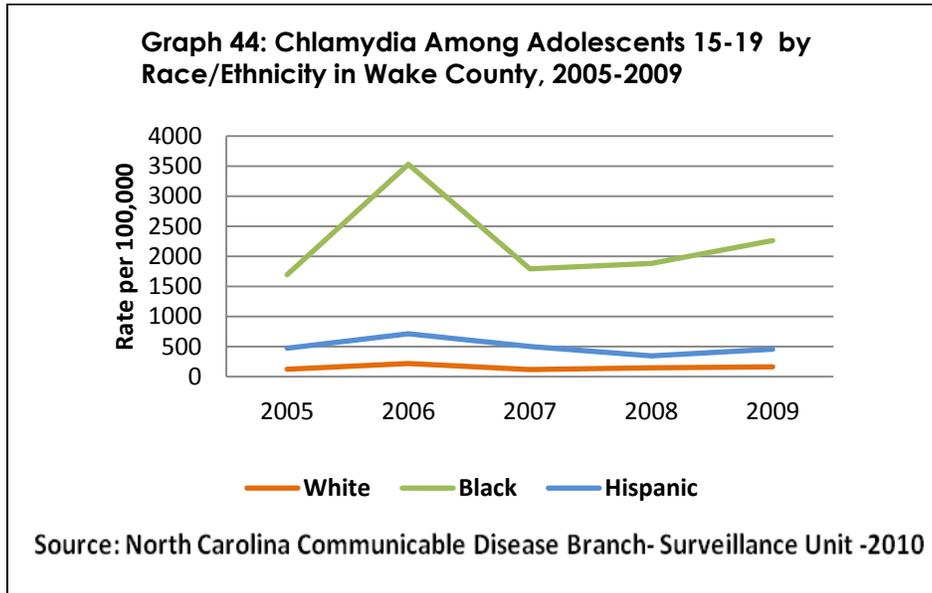
Gonorrhea rates, on the other hand have remained steady since 2007 (Graph 43).

Graph 43

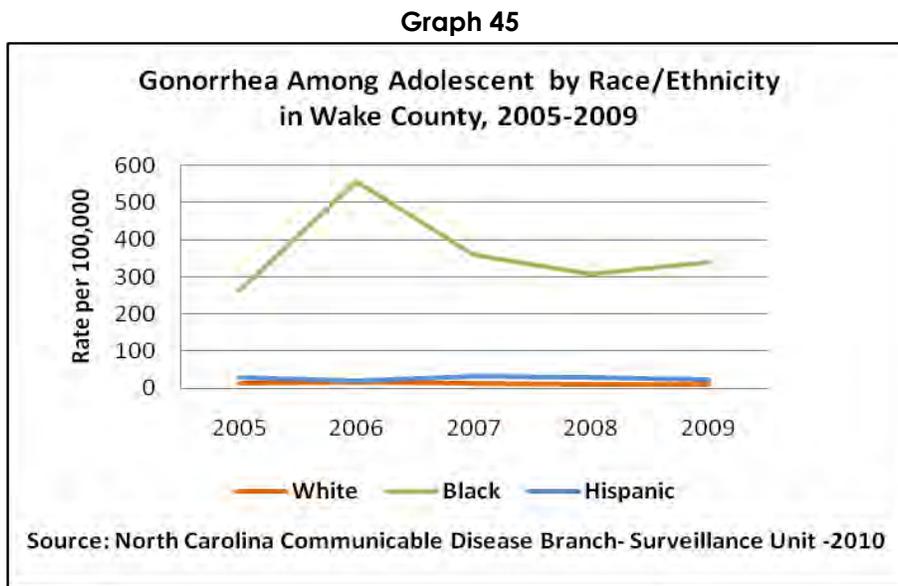


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Disparities exist in rates of chlamydia and gonorrhea between Whites, Blacks and Hispanics. Chlamydia rates for Blacks were more than 20 times higher than chlamydia rates for Whites in 2009 and almost 15 times higher than the rate for Hispanics (Graph 44).



In 2009, the gonorrhea rate for Blacks was almost 300 times that of the rates for Whites and Hispanics (Graph 45).



Disparities, Gaps and Unmet Needs

- Lack of broad public knowledge of available services. Service providers are not fully aware of the availability of other services and are often not referring women.
- Private providers are less likely to screen applicants for issues such as substance abuse and domestic violence, and therefore, do not identify women in need.
 - The Step by Step program, for instance, receives few referrals from private providers yet statistics show that substance abuse knows no economic boundaries.
- Transportation is another barrier to service accessibility. The City of Raleigh's public transportation system can be difficult to use. Coordinated transportation is available in several rural areas for a nominal fee, but due to demand, services are limited. Medicaid-eligible women have access to free transportation, but some women and providers may be unaware of the availability and/or the timeliness of arranging it.
- Language is another barrier. While Latina women have actively sought services, there are limitations due to language barriers or residency status.
- Limited support services available to fathers. Community-based organizations such as churches and fraternities have strong linkages with men, but are not necessarily addressing their health and social support needs related to pregnancy and parenting. Services focused on pregnant and parenting families are open to working with the male partners of the women but their primary focus is women and children. Unfortunately, many of the organizations that work with men are centered on negative issues such as domestic violence, criminal activities and child support enforcement, and do not offer positive parenting, self-help or prevention programs. There is a major gap in services that promote healthy behaviors in a preventive manner.

Resources and Strengths

The Wake County community has incredible strengths that can be built upon to promote healthy births. In addition, Wake County has multiple agency resources available for families. In addition to major area hospitals, Wake County Human Services provides programs for women while pregnant and postpartum, and has a comprehensive Public Health Center. Additionally, a strong network of community-based organizations provides informal delivery of services. Numerous churches and community groups serve as resources to assist needy families. Also, private prenatal care providers have become increasingly available for Medicaid eligible prenatal women. Finally, there are multiple educational and support programs available to women who choose to use them. These support services include case management, parenting

skills training, child development support, outreach and treatment for substance abusing pregnant women.

- Local health department – Wake County Human Services at 212-7000, <http://www.wakegov.com/departments/humanservices.htm>
- Information about availability of services developed and funded by the North Carolina Department of Public Health, Women's Health Branch <http://whb.ncpublichealth.com/services.htm#top>. These programs and services improve the overall health status of women, increase planned pregnancies, reduce infant sickness and death, and strengthen families and communities.
- Baby Love Program – Baby Love is North Carolina's Medicaid for pregnant women program. This program is designed to ensure that pregnant women have access to prenatal care and other services during pregnancy. The Baby Love Program's Maternity Care Coordinators (MCCs) and Maternal Outreach Workers (MOWs) provide extra support services to low income pregnant women statewide. They help women have healthy pregnancies and healthy babies by providing information and helping families find the resources they need. This service is available to low-income pregnant and postpartum women through their local health department.
- Family Planning and Reproductive Health Services – Family Planning and Reproductive Health Services are a wide range of preventive care services, critical to women's reproductive and sexual health. This service is available to all women, regardless of income on a sliding fee scale, through their local health department.
- The Nurse-Family Partnership – The Nurse-Family Partnership is a nationally recognized nurse home-visitation program that focuses on first-time, low-income parents and their children (<http://www.nursefamilypartnership.org/locations/North-Carolina/Wake-County-Nurse-Family-Partnership>).
- Health and Behavior Intervention – This program empowers women and their families to address complex lifestyle issues that are likely to affect the health of the mother and her baby. This service is offered in some health departments to all women regardless of income on a sliding fee scale.
- Healthy Beginnings – Healthy Beginnings is North Carolina's minority infant mortality reduction program. Resources are provided to community and faith-based organizations, along with local health departments, to implement programs and partner with communities of color. The Healthy Beginnings program can provide your organization with more information about availability of funds at (919) 707-5700.

- High-Risk Maternity Clinics – This program provides funding for the state's network of High Risk Maternity Clinics to assure that women with high-risk conditions, such as diabetes, get the specialized care and support services they need. Local health departments and physicians refer pregnant women with a medically indicated high-risk condition to the closest of the 16 funded High Risk Maternity Clinics in the State.
- Maternal Health Program – The Maternal Health Program provides resources to local health department prenatal clinics to make sure that all pregnant women in the state have access to early and continuous prenatal care. This service is available to all women regardless of income on a sliding fee scale.
- Medical Nutrition Therapy for Pregnant and Postpartum Women – This program is designed to provide intensive nutrition intervention for pregnant women and those who have recently delivered a baby. Medical Nutrition Therapy is important for those mothers with chronic diseases and nutrition-related problems, such as diabetes. This service is available by referral from local health department maternity clinics.
- North Carolina Baby Love Plus Initiative – The N.C. Baby Love Plus Initiative is a federally-funded healthy start program, in 14 North Carolina counties, in three regions of the State. The aim of this program is to reduce the racial disparities that affect infant mortality, to deliver healthy babies, and to improve the health of pregnant and interconceptional women and their families. Contact the Baby Love Plus program at (919) 707-5700 for more information about program availability in your area.
- Sickle Cell Syndrome Program – The Sickle Cell Syndrome Program promotes the health and well-being of persons with sickle cell disease and other blood disorders by providing them with genetic counseling, psychological and social support, medical referral and specialty care services. The disease prevention program also has a strong commitment to disease prevention through community education and the promotion of sickle cell trait testing. Contact the Sickle Cell Program at (919) 707-5700 for more information.
- Sudden Infant Death Syndrome Grief Counseling – SIDS counselors help families after the loss of a baby due to Sudden Infant Death Syndrome (SIDS), providing information, grief counseling, and resource/referral services. The program seeks to reduce SIDS through public awareness and education focusing on risk reduction methods and safe sleep practices. SIDS Grief Counseling is available through local health departments.
- Targeted Infant Mortality Reduction Projects – Targeted Infant Mortality Reduction (TIMR) provides funding to local health departments for maternal and infant health services in counties with especially high rates and numbers of infant deaths. Priorities also include addressing health disparities. Local health departments that apply will be considered for TIMR funds as they become available.

- Teen Pregnancy Prevention Initiatives – Teen Pregnancy Prevention Initiatives (TPPI) funds communities across North Carolina to implement programs that prevent teen pregnancy and support teen parents. Call TPPI at (919) 707-5700 for more information.
- Voluntary Sterilization Services – This program provides special funds to support, on a limited basis, voluntary sterilization services for low-income men and women through local family planning programs. Local health departments have the set of criteria they use to determine eligibility for this program.
- Women's Health & Tobacco Use Program – The purpose of this program is to reduce infant illness and death by helping women of childbearing age, including pregnant women, to stop tobacco use and to assist them in reducing their family's exposure to tobacco smoke. Contact your local health department to learn what programs are being offered in your area.
- N.C. Health Info – N.C. Health Info is an online guide to web sites of quality health and medical information, and local health services throughout North Carolina. Designed to meet the needs and interests of North Carolinians, N.C. Health Info leads users to resources that are reliable and easy to understand. Links on N.C. Health Info are selected and maintained by North Carolina librarians. A key component of N.C. Health Info is the N.C. Go Local database, a collection of Web links to more than 6,000 web sites of local health facilities in all 100 of North Carolina's counties. This database of local links was the first resource of its kind to link local health services with corresponding information from MedlinePlus, the consumer health site maintained by the National Library of Medicine and the National Institutes of Health http://www.nchealthinfo.org/about_us/index.cfm.
- North Carolina 211 – United Way 2-1-1 is a comprehensive, confidential telephone service providing information about community services and offering referrals to health and human services. Service is available 24 hours a day and can be accessed in Chatham, Durham, Orange and Wake counties simply by calling 2-1-1. Bilingual Services are also available through United Way 2-1-1 or www.unitedwaytriangle.org.
- 4-H Youth Development – 4-H offers clubs, staff-led programs and projects, summer camps, teen programs, leadership experiences, and after-school programs. Wake County Cooperative Extension's unique partnership with Wake County Human Services enables 4-H to reach a diverse and growing group of youth, including many teenagers. 4-H youth, along with trained adult and teen volunteers, gain knowledge, skills and experience that help them become responsible citizens and leaders.

Emerging Issues

- The dramatic increase in the Latina population and the related births are significant emerging issues. There is an opportunity in Wake County to promote the maintenance of healthy birth outcomes among the Latina population in a preventive manner.
- The promotion of women's health outside of pregnancy as a means to promote healthy births and reducing infant mortality outcomes is an opportunity for Wake County. Often promoting healthy behaviors during pregnancy is too late to affect the health of the fetus, particularly since many women are unaware of their pregnancy until late in the first trimester.
- Also, research indicates a link between periodontal disease and preterm deliveries. Findings indicate that women with periodontal disease are more likely to deliver a preterm, low birth weight infant. This information and its continued study is an opportunity for dental and prenatal care professionals to work together for better outcomes.
- Disparity between White/Latina and Black/other mortality rates is a significant concern. Wake County must continue to address these disparities and risk factors.

Adult Chronic Disease

Community Perceptions

When asked to rank the most important health issues, participants in the Wake County 2010 Community Assessment survey, in all zones, designated obesity/overweight as number one. That was followed by mental health, injuries, diabetes and teenage pregnancy. Breast cancer was the most common concern among respondents who listed cancer a priority health issue.

Table 20: Survey Results - Top Five Health Concerns for All Zones Combined

All Zones Combined	
1	Obesity/overweight
2	Mental health
3	Injuries
4	Diabetes
5	Teenage pregnancy

Source: Schwantes, et al., 2010

When survey respondents were asked about their top five most important risky behaviors, lack of exercise was observed to be a major concern in the community, ranked at number five.

Table 21: Survey Results – Top Five Risky Behaviors for All Zones Combined

All Zones Combined	
1	Drug use or abuse
2	Gang activity
3	Reckless/drunken driving
4	Alcohol Abuse
5	Lack of exercise

Source: Schwantes, et al., 2010

Statistics and Trends

Chronic diseases such as heart disease, stroke, cancer, diabetes and arthritis are among the most common, costly, and, in some cases, preventable of all health problems in the U.S., and the most common cause of death and disease (*U.S. Centers for Disease Control and Prevention – Chronic Disease Prevention & Health Promotion (2010) Retrieved from http://www.cdc.gov/chronic_disease/overview*). Four modifiable health risk behaviors are responsible for much of the illness, suffering, and early death related to chronic diseases:

- lack of physical activity
- poor nutrition
- tobacco use
- excessive alcohol consumption

2008 mortality statistics for Wake County adults (18-64 years) show 638 chronic disease-related deaths, many of which were potentially preventable.

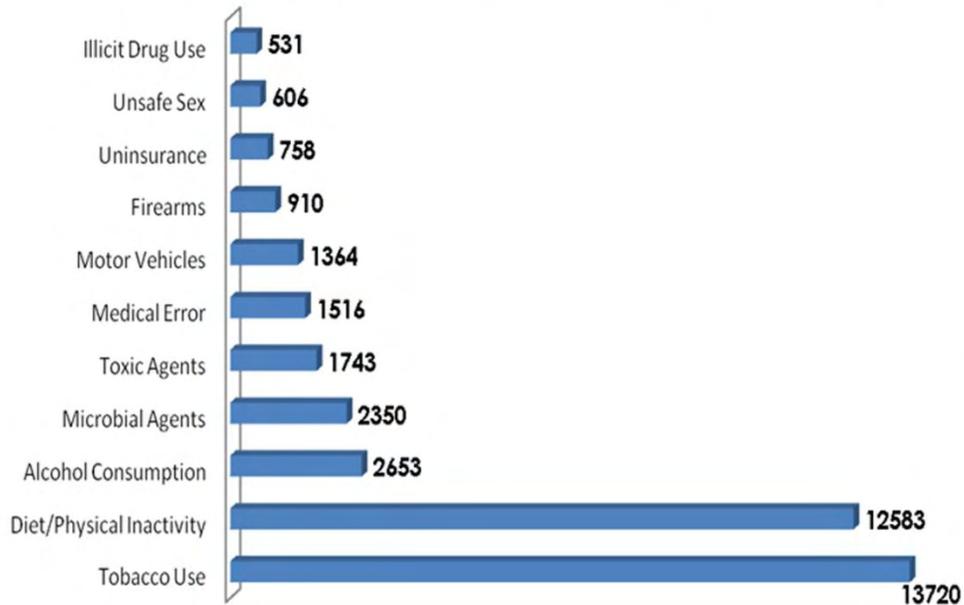
Table 22: Leading Causes of Death in Wake County, 2008			
Age:	18 - 64 years		
Rank	Cause	Number	percent
1	Cancer	359	31.4
2	Diseases of heart	197	17.2
3	All other unintentional injuries	77	6.7
4	Intentional self-harm (suicide)	73	6.4
5	Motor vehicle injuries	62	5.4
6	Cerebrovascular diseases	34	3.0
7	Assault (homicide)	33	2.9
8	Human immunodeficiency virus (HIV) disease	28	2.4
9	Diabetes mellitus	26	2.3
10	Chronic lower respiratory diseases	22	1.9
	All other causes (Residual)	232	20.4
Total Deaths -- All Causes		1143	100.0

Source: N.C. State Center for Health Statistics, NC CATCH, 2009

Overweight and obese individuals are at increased risk for developing heart disease, stroke, hypertension, type 2 diabetes, osteoarthritis, asthma and certain cancers. The 2009 Health Profile of North Carolinians offers evidence that diet and physical inactivity are ranked second to tobacco use as the most preventable cause of death in N.C. (Graph 46) (NCDHHS, 2009).

Graph 46

Estimated Number of Preventable Deaths in NC, 2007

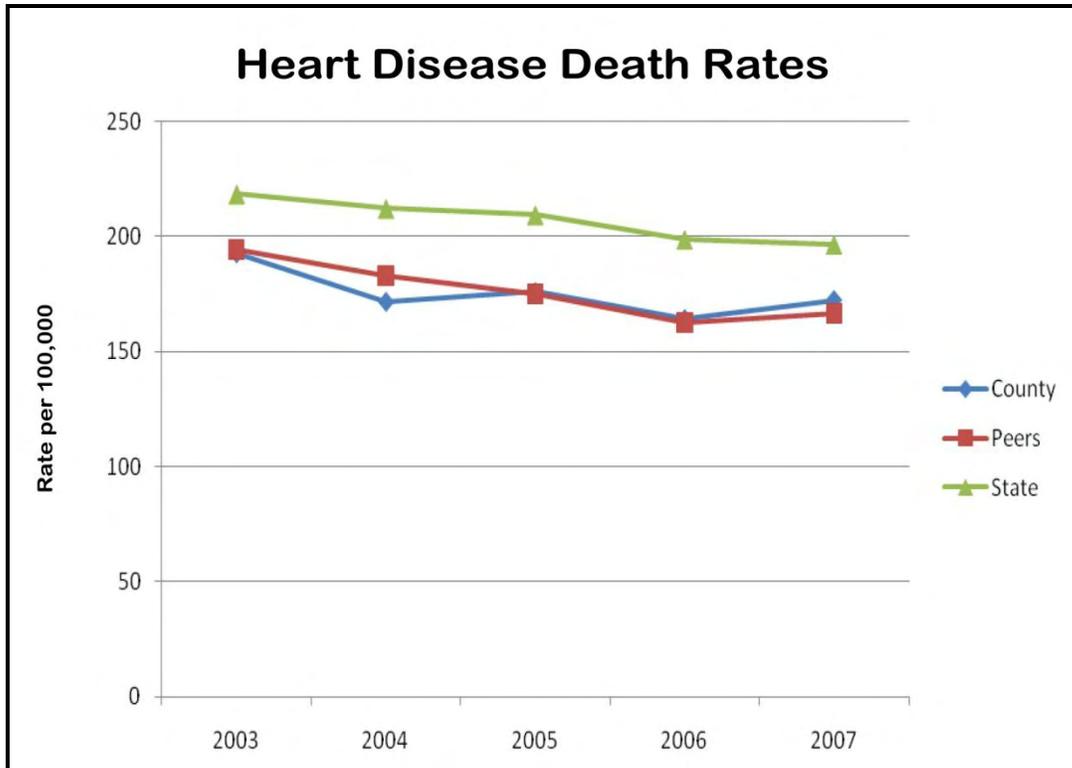


Source: NCDHHS, 2009

Chronic Disease Mortality

Figures below compare the age-adjusted heart disease, cerebrovascular disease and diabetes death rates (per 100,000 population) in Wake County to its peer counties and to all of North Carolina. Between 2003 and 2007, heart disease declined by 20.2 deaths (from 192.7 to 172.5) per 100,000 population in Wake County (Graph 47). Over the same time, cerebrovascular disease deaths declined by 12.7 deaths per 100,000 population (from 63.0 to 50.3) (Graph 48) and diabetes deaths declined at a slower rate, by 4.7 deaths per 100,000 population (from 29.2 to 24.5) (Graph 49) (*N.C. State Center for Health Statistics, NC-CATCH, 2003-2007*).

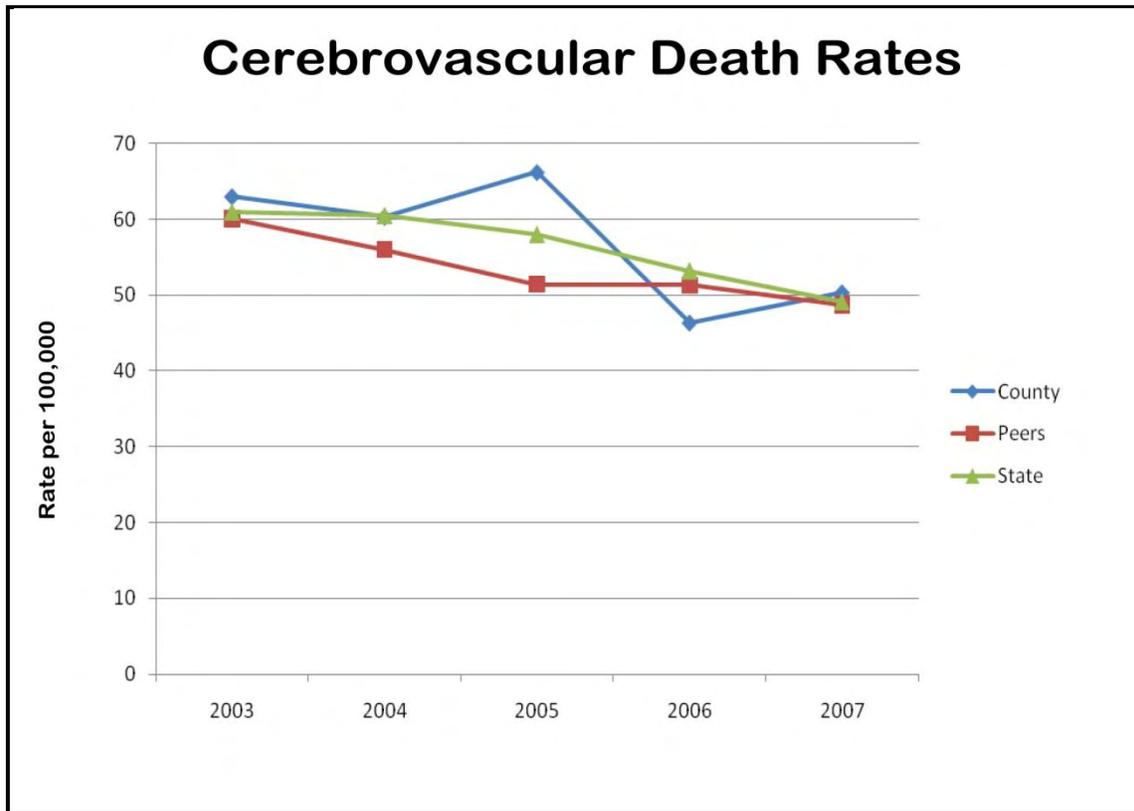
Graph 47



CATCH-NC, 2003-2007 Peer counties are Forsyth, Guilford, and Mecklenburg

Heart disease hospitalizations have declined in North Carolina since 2001. But heart disease still results in substantial morbidity and disability in this state (Graph 47). Among those hospitalized to treat heart disease in North Carolina, 40 percent are younger than 65 (N.C. Department of Health and Human Services - Heart Disease and Stroke Prevention Branch, "The Burden of Cardiovascular Disease in NC." July 2010).

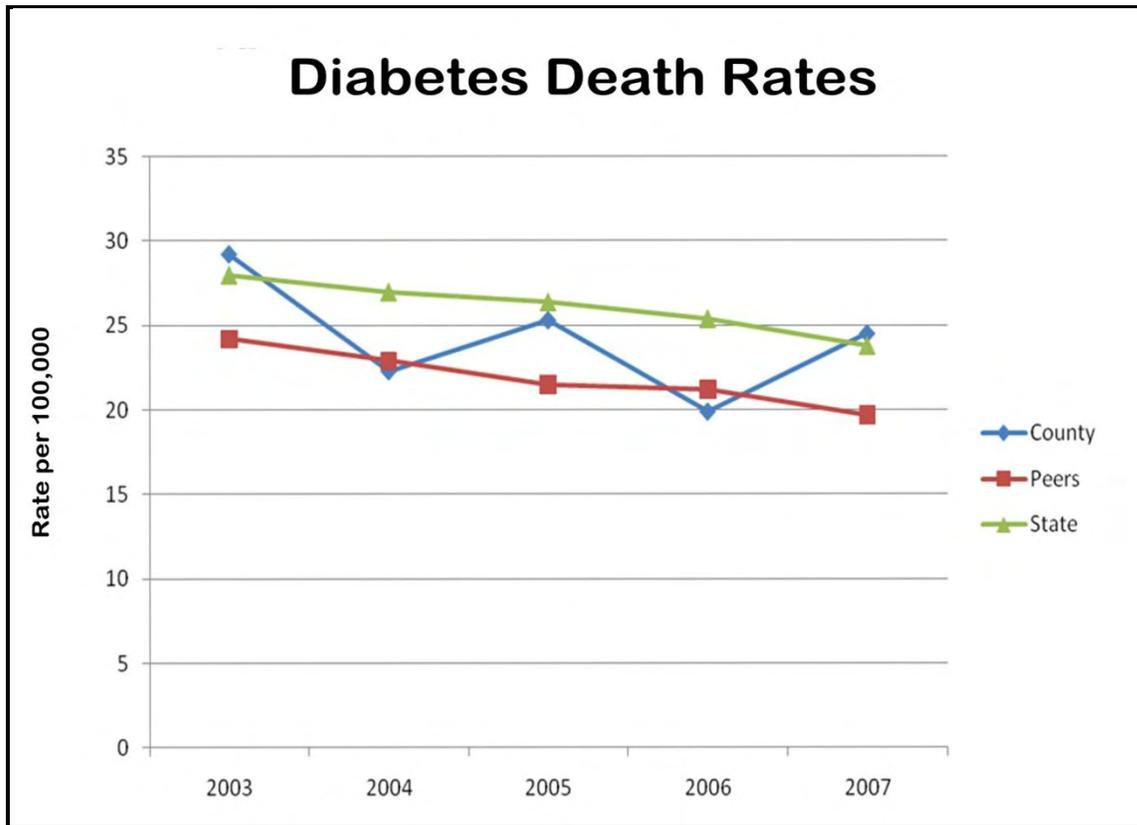
Graph 48



N.C. State Center for Health Statistics. NC-CATCH., 2003-2007; Peer Counties are Forsyth, Guilford and Mecklenburg

North Carolina has the sixth-highest stroke death rate in the country. While that rate is declining, it remains substantially higher than the national rate and exceeds the Healthy People 2010 target (N.C. Department of Health and Human Services - Heart Disease and Stroke Prevention Branch, "The Burden of Cardiovascular Disease in NC" July 2010).

Graph 49



N.C. State Center for Health Statistics. NC-CATCH, 2003-2007; Peer Counties are Forsyth, Guilford and Mecklenburg

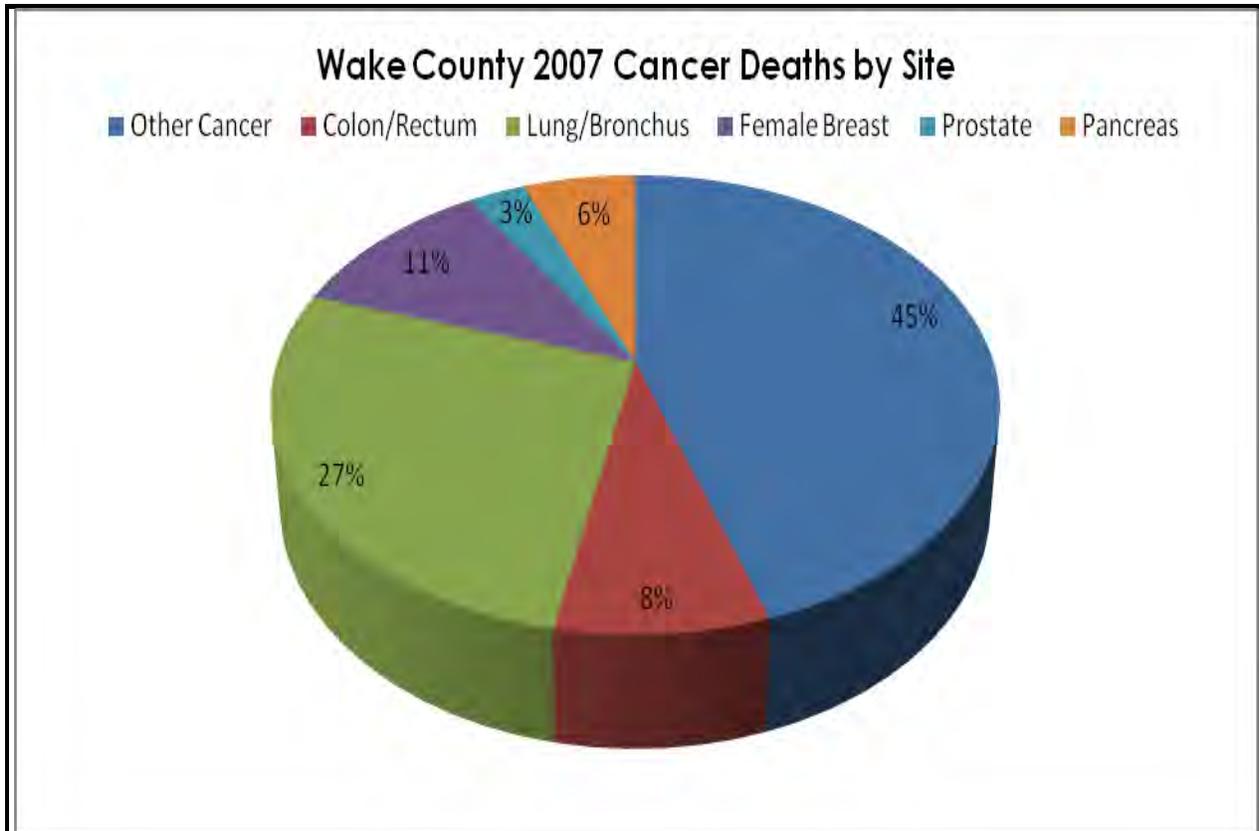
Incidence of diabetes has doubled in North Carolina over the last decade, ranking 17th nationally in its rate of adult diagnosed diabetes (NCDHHS, 2008).

Inactivity and less-than-healthy diets are prevalent among North Carolinians diagnosed with diabetes. In one survey, 68.7 percent reported no moderate physical activity, 79.6 percent said they did not consume five or more servings of fruits or vegetables each day and 85.2 percent reported being overweight (NCDHHS, 2008).

Diabetes is a major contributor to heart disease, stroke, blindness, kidney disease, non-traumatic leg and foot amputation, neuropathy, gum disease and dementia.

Cancer

Chart 1



Cancer Profiles: N.C. Central Cancer Registry, 2009

Cancer is the second leading cause of death in North Carolina and the U.S., and the leading cause of death in Wake County. In 2007, 17,425 persons in North Carolina died from cancer, 992 in Wake County. Nearly four in 10 North Carolinians are expected to develop cancer during their lives. The majority of cancers occur at five sites: colon/rectum, lung/bronchus, female breast, prostate and pancreas (Chart 1). More than 60 percent of cancers may be related to personal lifestyle or environmental factors, such as smoking and diet (*N.C. Central Cancer Registry, 2009*). Men and women face both common and different cancer risks:

**Table 23: 2003-07 Cancer Incidence per 100,000 population
Age-adjusted to the 2000 U.S. Census**

	Colon/Rectum		Lung/Bronchus		Female Breast		Prostate		All Cancers	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
NC	21,000	47.4	33,559	75.8	36,562	149.6	30,578	153.8	216,944	487.0
Wake	1,208	42.8	1,671	62.2	2,896	165.4	2,300	174.0	14,414	480.4

N.C. Cancer Registry, 2010

Mammograms and Pap tests are an effective means of reducing the incidence of late stage breast and cervical cancers, respectively, and mortality caused by these cancers. In Wake County, the overall rate of Pap tests was 87.9 percent, which is near the *Healthy People 2010* goal of 90.0 percent. The overall mammography rate was 78.4 percent exceeding the goal of 70 percent (*N.C. State Center for Health Statistics-BRFSS, 2008*).

Other than skin cancer, prostate cancer is the most common cancer in American men, accounting for about 11 percent of cancer deaths in men. About one man in six will be diagnosed with prostate cancer during his lifetime. Prostate cancer is the second leading cause of cancer death in American men, behind only lung cancer. About one man in 36 will die of prostate cancer. Nationally, African-American men have the highest incidence rate for prostate cancer and are more than twice as likely as white men to die of the disease (*U.S. National Institutes of Health – Surveillance Epidemiology and End Results, 2010. Retrieved from www.cancer.gov*).

A Prostate-Specific Antigen test, also called a PSA test, is a blood test used to check men for prostate cancer. It is not clear whether the potential benefits of testing outweigh the harms of testing and treatment. Starting at age 50—or age 45 for African-Americans—men should talk to their doctors about the pros and cons of testing.

Table 24: Males (40+) Who Reported Having Ever Had a PSA Test

NC	68.0 percent
Wake	72.7 percent
Caucasian	75.6 percent
Minority	66.0 percent

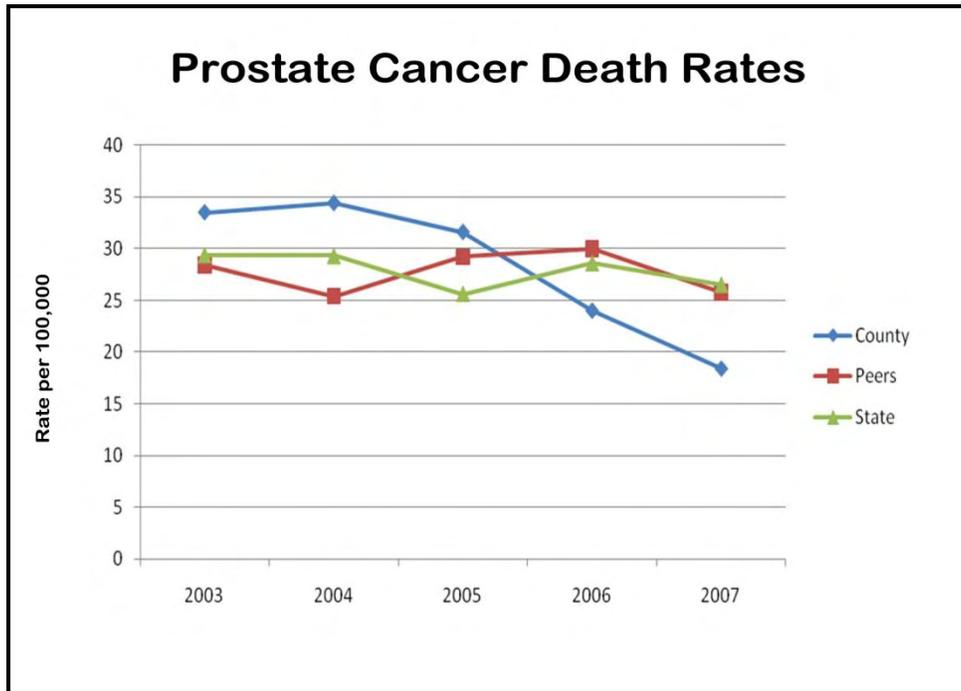
N.C. State Center for Health Statistics-BRFSS, 2008

Table 25: Males (40+) Who Reported Having Been Told By a Health Professional That They Had Prostate Cancer

NC	4.5 %
Wake	3.1 %
Caucasian	3.2 %
Minority	2.9 %

N.C. State Center for Health Statistics-BRFSS, 2008

Graph 50



N.C. State Center for Health Statistics. NC-CATCH.,

Obesity

Behavioral Risk Factor Surveillance System (BRFSS) data from 2004 to 2008 show that the percent of Wake County residents who reported being overweight or obese rose by 8.4 percent. Health problems related to obesity are also on the rise. The number of those reporting high blood pressure rose by 1.3 percent between 2005 and 2007, and the number reporting diagnosis of diabetes rose by 3.4 percent.

As determined by the 2009 BRFSS, 61.1 percent of Wake County adults were either overweight or obese, while 36.9 percent were of normal weight and 2 percent were underweight.

Figures below from the N.C. Comprehensive Assessment for Tracking Community Health (N.C. State Center for Health Statistics, N.C.-CATCH, (2008) portal, 2004 to 2008, compare Wake County with the Piedmont Region and State of North Carolina (Table 26).

Table 26: Obesity Rate (%)					
Year	2004	2005	2006	2007	2008
Wake County	17.9	20.4	23.3	28.1	29.4
Piedmont Region	23.3	24.6	25.7	28.2	29.1
State of NC	25.2	25.9	26.6	28.7	29.5
Overweight Rate (%)					
Wake County	37.9	42.3	38.5	33.8	34.8
Piedmont Region	37.7	37.6	35.2	35.6	36.1
State of NC	37.9	36.7	36.2	35.9	36.2

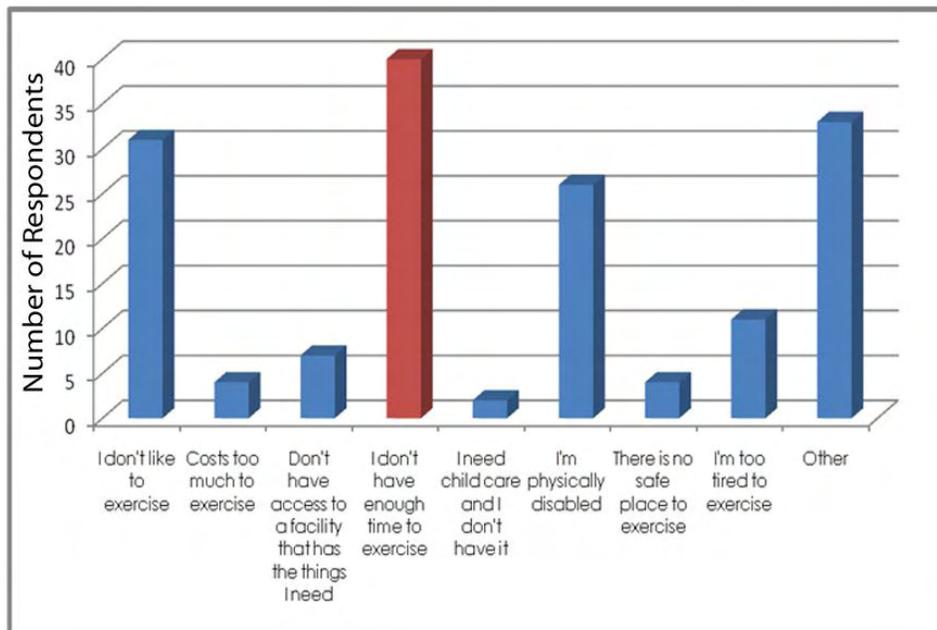
In BMI screenings of 1,720 at-risk, mainly minority adults in Wake County, 79 percent were found to be either overweight (35 percent) or obese (44 percent) (WCHS, 2007, WCHS 2008, WCHS, 2009).

2009 BRFSS figures also showed the following:

- Only 25.9 percent of Wake County citizens met the recommendation to consume five or more servings of fruits or vegetables each day. Improvement has occurred, however. In 2005, only 21.5 percent met that standard.
- Only 47.4 percent of Wake County residents met the physical activity recommendation to complete either (1) moderate physical activity for 30 or more minutes a day, five or more days a week or (2) vigorous physical activity for 20 or more minutes per day, three or more days a week. Again, improvement has been observed. In 2005, only 42 percent met the moderate-exercise recommendation and only 24.5 percent met the vigorous-exercise standard.
- Contributing factors for obesity and overweight are reflective of inherited, metabolic, behavioral, environmental, cultural, psychosocial and socioeconomic conditions. In addition, physical inactivity and poor diet are major risk factors for becoming obese and overweight at the national, state and local levels. Obesity consistently has been more common in North Carolina than the national average.

- According to the 2010 Wake County Community Assessment Survey, only 61.1 percent of adults reported engaging in physical activity for at least three days per week, with 10.5 percent reporting no weekly physical activity at all. Of the respondents who reported no weekly physical activity at all, the most common reason cited was, “No time to exercise” (Graph 51).

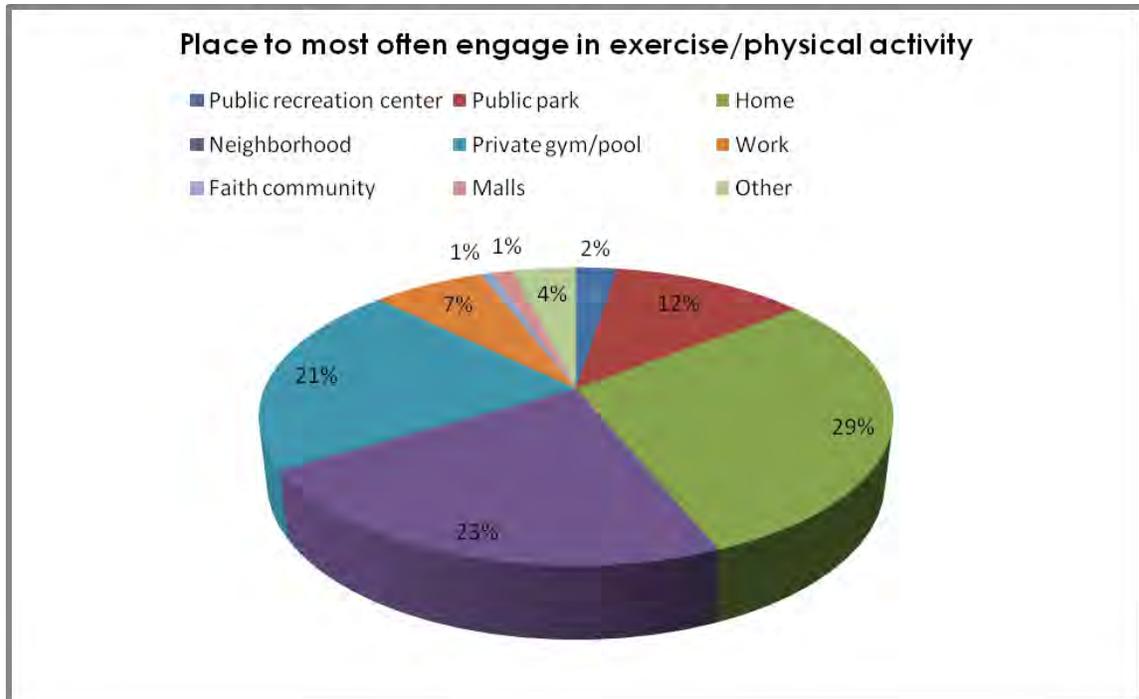
Graph 51: Reasons for Not Engaging in Weekly Physical Activity – 2010 Wake County Community Assessment Survey Results



Source: Schwantes, et al., 2010

- When asked, “Where do you most often engage in exercise/physical activities?” Wake County residents reported a variety of locations, with the largest proportion (29 percent) reporting “home.”

Chart 2: Places Most Often Engaged in Physical Activity – 2010 Wake County Community Assessment Survey Results



Source: Schwantes, et al., 2010

Resources and Strengths

Medical Care

- Public and private medical practices in Wake County, along with the six hospitals, offer multiple services for the prevention and treatment of chronic diseases, including access to specialized care. Nearby, Duke University Hospital in Durham and UNC Hospitals in Chapel Hill offer highly specialized care as well.

Disease Prevention/Control

- WCHS Health Promotion Chronic Disease Prevention (HPCDP) Section offers screening and counseling. County residents, predominantly from high-risk populations, get screened, counseled and referred to medical services. From 2006-2007 to 2008-2009, 1,876 individuals were screened for blood pressure. Of these, 71 percent (1,331) had blood pressure levels higher than desired. About 10 percent (187) displayed blood pressure levels at stage II hypertension and were referred for further care. Of those found with stage II, 52 responded to follow-up calls or letters and reported that they had received care for hypertension. Since hypertension is the primary risk factor for stroke, this screening and follow up potentially saved up to \$5.2 million in health care costs for these individuals (\$100,000 X 52 potential stroke events). This cost estimate may be conservative since it is based on the work of T.N. Taylor published nearly 15 years ago that concluded that average lifetime cost of a stroke is estimated at \$103,576 per stroke event (Taylor, 1996).

- From 2006-2007 to 2008-2009, the Breast and Cervical Cancer Control and Prevention (BCCCCP), Healthy Women, Healthy Wake (HWHW), and Komen Educate Our Women (EOW) Programs have provided mammograms, clinical breast exams and cervical cancer screenings primarily to women of ethnic minorities and those who are uninsured. From 2006-2009, 1,618 mammogram screenings, 248 clinical breast exams, and 254 cervical cancer screenings were provided. Of these, 34 breast cancers were discovered, resulting in a potential medical costs savings of \$2,040,000 (at an estimated \$60,000 per case) (*WCHS Health Promotion Chronic Disease Prevention, 2009*). Cost-effectiveness estimates of mammography screening vary widely. It is estimated that breast cancer screening saves \$3,400 to over \$83,000 per life-year saved (*Brown & Fintor, 1993*).
- Southeast Raleigh Health Matters is a partnership between WCHS and several African-American churches in the southeast Raleigh community, formed to reduce the incidence of diabetes in these communities via sponsorship of fitness challenges, educational programs and trainings, community fairs and public education campaigns.
- wellLIFE is a diabetes clinic and educational resource center that provides comprehensive diabetes and chronic disease management services in collaboration with medical providers and community-based organizations.
- Project DIRECT (Diabetes Intervention Reaching and Educating Communities Together) is a program focused on reducing the burden of diabetes and its complications in the African-American community. DIRECT involves a partnership among the southeast Raleigh community; the NC DHHS Division of Public Health, WCHS the CDC and Strengthening The Black Family, Inc.

Health Policies and Healthy Living Promotion

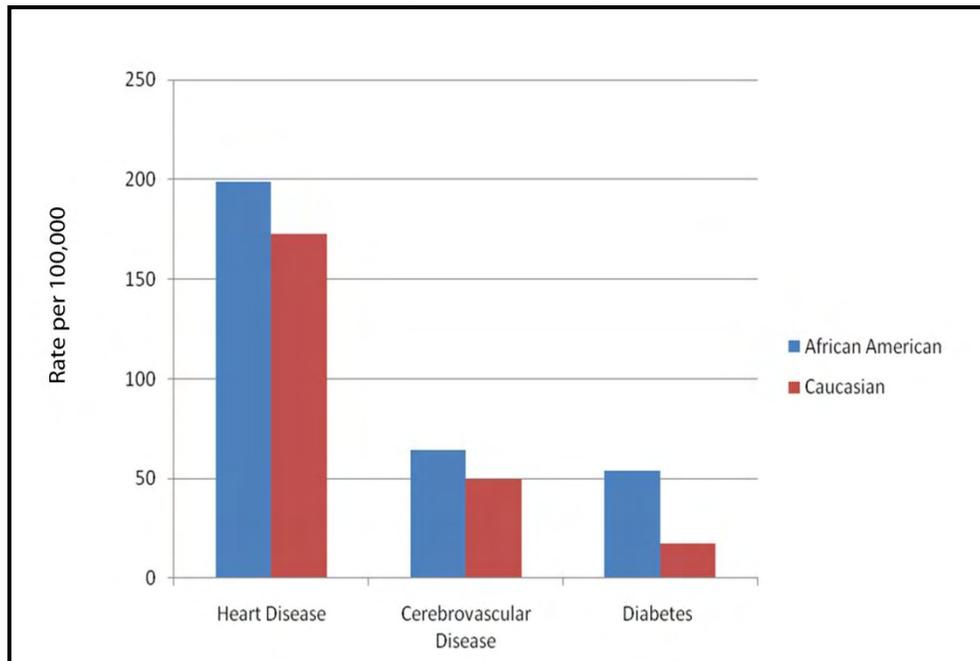
- Wake County institutions are involved with the N.C. Alliance for Health, including Advocates for Health in Action (AHA). The alliance's obesity prevention policy priorities for 2010 are as follows:
 - Built environments: Promote routine physical activity and healthy eating through development of environment including multi-modal transportation infrastructure (mass transit, sidewalks, bike lanes), recreation opportunities (parks, trails greenways), and food venues (grocery stores, farmers' markets, community gardens). Support the integration of healthy land use ("sustainable communities") and multi-modal transportation options ("complete streets" policies). (*Editor's note: See a description of N.C. Alliance for Health's priorities focused on children in the obesity/implications and emerging issues section under Child Health section*).
 - The 2009 outcome from N.C. Alliance for Health was HB148, the Intermodal Transportation Funding Bill, which passed the House and Senate and was signed by the governor.

- Advocates for Health in Action (AHA) works to shape policy and environments that ensure available and affordable access to healthful foods and physical activity for all community members. *(Editor's note: For a fuller description of Advocates for Health in Action, see the obesity/resources and strengths section in the Child Health section).*
- N.C. Obesity Prevention Funders Alliance in 2009 released a Prevention Action Plan.
- WakeMed, Rex, and Duke Raleigh hospitals; Wake County Cooperative Extension; and the YMCA/YWCA offer free and fee-based wellness programs. Twelve municipal governments, the County, the State, the U.S. Army Corps of Engineers and a host of private and non-profit organizations provide parks and recreation services within Wake County. Citizens also have access to programming on diabetes control, heart disease prevention, weight loss/management, stress reduction and more.
- WCHS-HPCDP Section assists disparate faith- and community-based organizations through interactive wellness education, including walking programs; obtaining funding for exercise equipment, walking trails and playgrounds; and encouragement of policies to serve healthier foods and beverages and to provide wellness information via newsletters. From 2006-2009, over 19,000 individuals in 53 organizations received education and opportunities to engage in healthier behavior, which some adopted.
- Trails and Greenways of Wake County Pocket Guide was developed to inform the Wake County community about existing trails and greenways and encourage physical activity. This guide was developed by these partners: WCHS' Health Promotion Chronic Disease Prevention (WCHS-HPCDP) Section, Parks and Recreation Partnership for a Healthier Wake, John Rex Endowment, and WakeMed Health & Hospitals. Advocates for Health in Action are distributing maps, along with a "physical activity prescription," to health care providers throughout the community.
- Faith groups address health issues through community outreach together in the community.
- (Project FACT) is an organization developed in collaboration with the Gethsemane Seventh Day Adventist Church, N.C. Cooperative Extension, N.C. State University and WCHS- HPCDP Section to provide community-based educational and physical-activity intervention opportunities. They include community gardening, walking programs, youth entrepreneurship, lay health advisor trainings and other fitness related activities.
- Ready To Learn Centers Program is collaboration between WCPSS, WCHS and community agencies. Although the program is for children and encourages healthy development and education, it includes healthy eating habit trainings for families.

Disparities, Gaps and Unmet Needs

- Factors such as income, education, access to health care, and stress are believed to be among the major causes of disparity in health status of minorities on many health measures when compared to whites (*Women's Health Report, 2009*). In the graph below (Graph 52), this is demonstrated in the incidence heart disease, cerebrovascular disease and diabetes mortality rates per 100,000 population (*N.C. State Center for Health Statistics, NC-CATCH, 2007*).

Graph 52: Wake County Death Rates per 100,000 Population



N.C. State Center for Health Statistics. NC-CATCH., 2007

(Editor's note: The figure above does not include the data on American Indian, Hispanic ethnicity or "other race" because rates or percentages which have a numerator value less than 20 are statistically unstable and have been shaded grey on the county profile and fact sheet reports.)

- The adult incidence of obesity and being overweight is increasing in N.C., particularly among African Americans. In 2009, the percentages of excessive weight and obesity in White, Hispanic and African-American adults were 63.2 percent, 68.2 percent and 74.9 percent, respectively (*N.C. State Center for Health Statistics-BRFSS, 2009*).
- Poor physical activity and nutrition contribute to this problem among minorities more than Whites. In 2009, the BRFSS indicated that only 39.9 percent of minority respondents achieved the recommended amount of daily physical activity, compared to 50 percent of Whites. Of the minority population reporting, 76.5 percent considered themselves to be either overweight or obese. This is higher than that of the White population, 54.8 percent of whom reported being overweight or obese (*N.C. State Center for Health Statistics-BRFSS 2009*).

- African-American women have higher death rates per 100,000 population than do White women when it comes to heart disease (244.2 versus 187.2), breast cancer (43.9 versus 28.3), stroke (76.4 versus 55.6) and diabetes (14.2 versus 7.7). Despite a higher incidence of breast cancer among White women, minority women have a higher death rate, primarily due to later diagnosis and treatment (*N.C. Women's Health Report Card, 2009*).
- Tobacco use is a major contributor to lung disease, heart disease, and stroke mortality and is also associated with breast and cervical cancers. The percentage of North Carolina women who smoke is decreasing in all racial groups except for Hispanics, whose rate increased by 10 percent. Smoking in N.C. women remains 73 percent, higher than the 2010 Healthy People objectives (*Women's Health Report, 2009*).
- Among American-Indian and Alaska-Native women in the U.S., those residing in North Carolina were hardest hit by cardiovascular disease, with 8.8 percent reporting at least one cardiovascular condition (*C.V. James et al., 2009*).
- Compared with White women, racial minority women had higher rates of Pap tests within the last three years for women over 18 years and lower rates of mammography screening within the last two years for women over 40 years (*N.C. State Center for Health Statistics-BRFSS, 2008*).
- Breast cancer is the most commonly diagnosed cancer and the leading cause of cancer death among Hispanic American/Latina women. Although breast cancer is diagnosed about 30 percent less often among women of Hispanic origin, it is more often diagnosed at a later stage (when the disease is more advanced) than when found in non-Hispanic women. This is true even when access to health care is adequate (*Breast Cancer Resource Directory of North Carolina, Multicultural Issues and Resources, 2010. Retrieved from http://bcresourcedirectory.org/directory/05-hispanic_american.htm*).
- Hispanic/Latina females have the highest rates of cervical cancer of any ethnic group, including Whites. Both of these distressing statistics are related to Hispanic/Latina women not getting adequate screening with mammograms, clinical breast exams and Pap smears (*Davidson, & Mahanna, 2010*).
- Among Hispanic women in North Carolina, 57.2 percent have no personal health care provider. States with the largest population of minorities tended to have physician workforces that were the least reflective of their demographic composition. Twenty states, including N.C., would need to increase the number of underrepresented minority physicians four-fold or more in order to reach population parity with White physicians (*James, et al., 2009*).

Implications and Emerging Issues

- A recent Duke University study found that the number of lost work days for obese adults was almost 13 times higher, compared with healthy weight employees (*Ostbye, et al., 2007*). The direct and indirect medical costs related to excess weight and obesity are significant and are projected to increase. The N.C. Alliance for Health reports that individuals who are obese have annual medical costs 37.4 percent higher than their healthy weight peers, representing an additional \$732 per obese person, per year.

Table 27: Direct and Indirect Medical Costs Related to Overweight and Obesity

	Costs in 2006	Projected Costs for 2011	Projected Costs for 2015
Adults 18+: Direct & Indirect Medical Costs Related to overweight and obesity*	\$ 57.37 billion	\$75.64 billion	\$94.31 billion

N.C. Alliance for Health, 2010

*Costs are calculated according to the prevalence of the following risk factors: poor nutrition, physical inactivity, overweight and obese, hypertension, high cholesterol, tobacco use, depression and type 2 diabetes.

- New findings from a 16-year survey of more than 3.5 million adults reveal that being overweight equals and may exceed cigarette smoking as contributing to preventable poor health in the U.S. (*Jia & Lubetkin, 2010*).
- The Centers for Disease Control and Prevention advises that “policy and environmental change initiatives that make healthy choices in nutrition and physical activity available, affordable, and easy will likely prove most effective in combating obesity” (*Centers for Disease Control and Prevention, 2010*).
- In 2009, the N.C. State Health Director, Jeffrey Engel, reported that the state would use evidence-based strategies to improve community health and strive to make N.C. the healthiest state in the nation (*N.C. Public Health Annual Report, 2009*). In order to accomplish this, policy makers, educators, and citizens alike, must work to combat the growing problem of obesity.
- On January 2, 2010, House Bill 2 (HB2), a smoke-free restaurants and bars law, went into effect across the state of North Carolina. N.C. Division of Public Health created a subcommittee with members from interested programs within the Chronic Disease and Injury Prevention Section to examine rates of emergency room visits and hospitalizations for both acute myocardial infarctions (AMI) and asthma before and after implementation of HB2. Using data from a number of sources (hospital emergency department data from NCDETECT, hospitalization data, second-hand smoke exposure data from BRFSS, etc.), the subcommittee intends to determine whether rates of AMI and asthma change following the

ban and what the rates may have been had the ban not been in place. Evaluations of public support, compliance, air quality and economic impact are also in progress and a final evaluation is likely to be available mid-2011.

Senior Adult Health

Community Perceptions

Community surveys of Wake County senior adults reveal that:

- 22.5 percent achieved at least 30 minutes of physical activity, six to seven times weekly
- 50.6 percent ate fruit at least six times weekly
- 72 percent ate vegetables at least six times weekly
- 81.3 percent of men received an annual prostate exam
- 75 percent of women received an annual mammogram
- 48.8 percent of women received a Pap test at least every other year
- 78.4 percent had obtained a colonoscopy
- 30.6 percent had been tested for HIV

Statistics and Trends

According to the N.C. Aging Services Plan 2007-2011, we are "on the brink of a longevity revolution" (*N.C. Aging Services Plan, 2007*). In 2009, 63,864 (7.7 percent) of Wake residents were 65 years and older (*Wake County by the Numbers, 2009*). By 2030, however, Wake County's 65 years and older population is projected to rise to 208,297, a 259 percent increase (*N.C. Roadmap for Healthy Aging, 2008*). This aging population can be attributed to several factors, including:

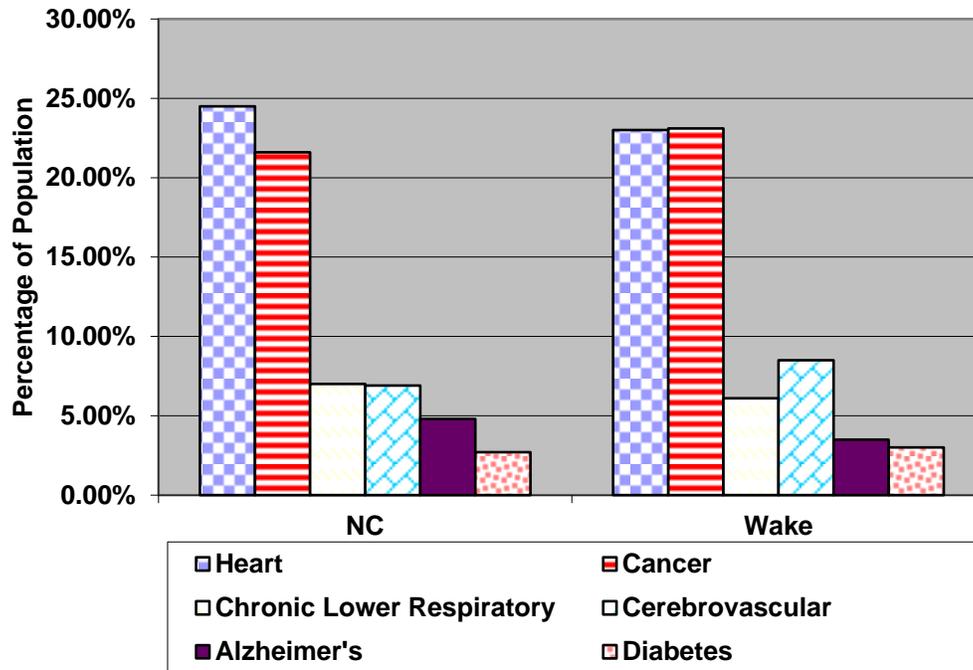
- the large cohort of baby boomers (those born between 1946 and 1964) who are approaching age 65
- increasing longevity; the N.C. State Center for Health Statistics reports that for those 60 years old in 2009, their life expectancy is 83 years
- increasing migration into Wake County from outside the state and from rural N.C. counties (*N.C. Roadmap for Health Aging, 2008*)

Wake County seniors are somewhat more educated and have higher incomes than seniors in North Carolina as a whole. However, approximately 7 percent of Wake County residents ages 65-74 have incomes below the federal poverty level and almost 20 percent fall below 200 percent of the federal poverty level. Older females are more likely than males to be poor (*NCDHHS-Division of Aging and Adult Services, 2009*).

According to the 2008 American Community Survey, African-American females ages 75 years and older (33.1 percent) are the group of older adults in North Carolina most likely to have incomes below the poverty level (*American Community Survey, 2008*).

Graph 53 shows similarities between causes of death among older people in Wake County and in the state overall.

Graph 53: Leading Causes of Death for 65+ Population



N.C. State Center for Health Statistics, 2009

Lifestyle

- Getting regular physical activity, eating healthfully and avoiding tobacco can reduce much of the illness and disability associated with age. Physical inactivity increases one's risk of heart disease, colon cancer, diabetes, hypertension and obesity (*Wake County Aging Plan, 2005*). In the Behavioral Risk Factor Surveillance System, N.C. residents 65 years and older reported the following:

- 76 percent consumed less than the recommended five fruits and vegetables a day
- 23 percent were physically inactive
- 61 percent had a Body Mass Index (BMI) > 25 indicative of being overweight/obese
- 29 percent were in fair/poor health

(N.C. State Center for Health Statistics-BRFSS, 2007, N.C. State Center for Health Statistics-BRFSS, 2008, N.C. State Center for Health Statistics-BRFSS, 2009)

Dementia

- Seniors with dementia of varying causes (Alzheimer's Disease, Parkinson's Disease, stroke-related dementia and other syndromes) are among those most vulnerable seniors (*Wake County Aging Plan, 2005*). Those with dementia present major challenges to caregivers, care facilities and the community. They can become ill from exposure, dehydration or malnutrition and can die of self-neglect or neglect by others. They can choke on food or fall easily. An adult who suffers from Alzheimer's disease must be continuously supervised (*Wake County Aging Plan, 2005*). There are currently 9,600 individuals 65 years and older in Wake County affected by Alzheimer's Disease. The likelihood of developing Alzheimer's doubles about every five years after age 65, and that risk reaches nearly 50 percent by age 85 (*Wake County Aging Plan, 2010*).

Depression

- Although depression affects an estimated 11,000 individuals over age 65 in Wake County, it should not be considered a normal part of aging. Approximately 20 percent of older adults living in the community, and 50 percent of adults in nursing homes, are believed to suffer from depression (*Wake County Aging Plan, 2010*). Depression tends to last longer in elderly adults and increases their risk of developing cardiac disease or dying of other illnesses (*American Psychological Association, 2010*). (Editor's note: For additional information on dementia and depression, visit the Behavioral Health chapter of this document.)

Resources and Strengths

Health Promotion: Physical Activity

- Wake County seniors have access to activity centers in Raleigh, Garner, Wake Forest, Wendell and Cary, which offer a variety of senior wellness programs at minimal or no cost. Physical activities for seniors are also offered through YMCA, YWCA, church programs, the City of Raleigh Senior Programs, hospital-based fitness classes and private fitness clubs. Affordable transportation, however, is a major barrier to accessing these centers (*Wake County Aging Plan, 2005*).
- In 2006-2007, a U.S. Administration on Aging Evidence-Based Disease and Disability grant program began to help adults maintain their health and independence. Its programming includes Living Healthy (Chronic Disease Self-Management Program), Arthritis Self-Management and Matter of Balance. Other evidence-based health promotion programs include tobacco cessation programs, Arthritis Foundation programs, Fit and Strong (a physical activity program targeting people with osteoarthritis), and Powerful Tools for Caregivers (self-care program for caregivers) (*Wake County Aging Plan, 2010*).

Health Promotion: Nutrition

The Elderly Nutrition Program provides meals to older adults in group settings and individual homes. The congregate meals programs provide opportunities for social interaction, mental stimulation and informal support. The home-delivered meals program allows volunteers who deliver meals an opportunity to check homebound older adults and acquire assistance. Referrals frequently are made for transportation, in-home aides, home modification and food assistance (*Wake County Aging Plan, 2005*). Meals on Wheels of Wake County, Inc. has efficiently operated congregate and home-delivered meals programs for more than 30 years. Many of the clients receiving its hot and nutritious meals are at moderate to severe risk of malnutrition. In Wake County, 51 percent of clients receiving home-delivered meals are at high risk of malnutrition (*Wake County Aging Plan, 2005*).

- The need for senior meals services in Wake County exceeds the available funding. Meals on Wheels provides one hot meal per day, five days per week, but many vulnerable older adults need more. In addition, daily home delivery of meals is not available throughout the County. In some areas, only frozen meals are available. In others, there is a waiting list due to a shortage of volunteers. Meals on Wheels has collaborated with the Inter-Faith Food Shuttle to expand their programming and make frozen meals, fresh produce, hot meals and shelf-stable meals available to more adults in Wake County (*Wake County Aging Plan, 2005*). In 2006, Meals on Wheels set a goal of serving 390,000 meals by June 30, 2009. That goal was nearly met with 378,500 meals served during FY2008–2009—the most meals served in one year. Total financial support has increased from \$1.8 million to \$2.3 million, and more emphasis is placed on fund-raising. The agency has also upgraded its technology, recruited additional volunteers and staffed additional home-delivery meal routes (*Wake County Aging Plan, 2010*).

Health Promotion: Public Awareness

- On November 2, 2009, The North Carolina Roadmap for Healthy Aging (www.ncroadmap.org) was launched. It provides information on healthy aging and listings of organizations that provide health promotion programming to older adults (*Wake County Aging Plan, 2010*).

Physicians and Medicare

- Wake County has a large number of practicing physicians. Medicare's website (www.medicare.gov) provides a means to search by specialty and location for physicians who accept Medicare. However, many of these doctors do not accept new patients, a problem for consumers. No centralized local information source tracks physician availability (*Wake County Aging Plan, 2005*).

Health Insurance Problem

- For older, uninsured Wake County residents who are not yet Medicare-eligible and do not qualify for Medicaid, there is no help available to purchase health insurance. These individuals must either pay for private coverage or go without. If they become ill, they face financial disaster and place strain on public health resources. Clinics in Wake County provide

free or sliding-scale healthcare, but demand is great and availability is limited (*Wake County Aging Plan, 2005*). The clinics include Open Door Clinic, Wake Health Services (at four sites), Alliance Medical Ministries and Mariam Clinic. On January 1, 2009, North Carolina began offering Inclusive Health, a health insurance option for people with pre-existing conditions who would otherwise be denied coverage or have to pay extremely high premiums (*Wake County Aging Plan, 2010*).

Prescription Drugs—Medicare Part D

- Medicare prescription drug coverage (Medicare Part D), enacted as part of the Medicare Modernization Act, went into effect on January 1, 2006 and is available to anyone enrolled in Medicare. About 90 percent of Medicare beneficiaries now have prescription drug coverage, compared to 66 percent in 2004 (*Wake County Aging Plan, 2010*).
- Medicare Part D plans differ in their premiums, co-payments and formularies, but all offer limited coverage. As a result, many seniors encounter a gap in coverage at some point during the year and must pay full price for their medications. For those who qualify, a low-income subsidy program, called *Extra Help*, provides reduced premiums, deductibles and co-payments. The NCRx program was created after Medicare Part D went into effect. This state-funded program provides a subsidy for part of the Medicare Part D premium for seniors with limited income and resources who do not meet criteria for the low-income subsidy (*Wake County Aging Plan, 2010*). Despite limitations, the Medicare Part D program has been beneficial for many seniors, providing prescription coverage that previously was unavailable.

Home Care

- In 2005, Resources for Seniors, Inc. reinitiated Companion Plus, a training program for healthy older adults (individuals over 50 years of age) who desire to work with other seniors who need light-duty “homemaker” or “companion” assistance. This program provides training in senior-oriented care, CPR, First Aid and North Carolina Interventions (a training program to prevent the use of restraints and seclusion for individuals with dementia and related issues). Resources for Seniors, Inc. maintains a registry of graduates who have completed their certifications and training (*Wake County Aging Plan, 2010*). Because of the need for additional services to assist clients with homemaker-level care and to provide respite to family caregivers, the Center for Volunteer Caregiving (CVC) is also engaged (*Wake County Aging Plan, 2005*).

Adult Day Care

- In the 2008/09 Directory of Resources for Older Adults in Wake County, there are 14 adult-day and respite programs in Wake County. In addition there are give support groups, a Community Alternatives Program for Disabled Adults, Companion Plus and Sitters' Registry, Friendly Visitor and Telecare Program. Other programs and services are listed in the directory and on-line at www.resourcesforseniors.com.

Assisted Living Facilities

- In 2009, The North Carolina Star-Rated Certificate program for assisted living facilities (also called adult care homes and family care homes) was established. This system provides on-line access to facility ratings derived from annual inspections. All facilities are rated with one to four stars, along with a limited amount of explanation of the ratings (*Wake County Aging Plan, 2010*).

Dementia Care

- Alzheimer's North Carolina, Inc. (formerly the Eastern North Carolina Chapter of the Alzheimer's Association) provides education and support services for patients and families. Specialized dementia evaluation is available from clinics at Duke University and UNC-Chapel Hill. Some local long-term care facilities offer specialized dementia care units with added security and individualized programming needed to maintain a quality of life for these patients (*Wake County Aging Plan, 2005*). Some medical professionals are not comfortable with diagnosing and treating dementia. Alzheimer's North Carolina, Inc. is supporting the work of Dr. Daniel Kaufer at the UNC Memory Disorders Clinic, as he begins to train primary care physicians throughout the state on how to screen their patients and refer them to specialists (*Wake County Aging Plan, 2010*).
- Significant gaps in service still exist. Many Alzheimer's patients are cared for at home or in long-term care settings that are not specialized for their needs. In many facilities, they are housed with younger/older adults suffering from chronic mental illness with different needs. When behavioral crises arise, dementia patients may be sedated or restrained because their care providers are not trained to do otherwise. If the crisis becomes severe, dementia patients may be transferred to a hospital setting for stabilization. Such hospitalizations are traumatic for both patients and families (*Wake County Aging Plan, 2005*).

Hospice Care

- In January 2010, Hospice of Wake County opened the Hospice and Palliative Care Center. This facility provides spaces designed to help patients and families approach the end of life in comfort and with dignity. The campus also houses a bereavement center and spiritual retreat open to the entire community (*Wake County Aging Plan, 2010*).

Cooperation and Communication

- Since 2005, several professional groups focused on senior health have urged more cooperation within the Wake County continuum of care. Groups were created for staff education and industry or consumer advocacy. Examples are: the GOLD (Growing Older Living with Dignity) Coalition, HART (Health Affairs Round Table), Senior Resource Alliance of the Triangle, Easing Transitions and PALS (Partners of Assisted Living) (*Wake County Aging Plan, 2010*).
- The GOLD Coalition, a coalition of individuals and agencies, strives to improve services for older adults. It strives to implement strategies and monitor progress of the Wake County Aging Plan and serve as advocate for the senior community. In 2010, it planned to launch the Wake County Community Resource Connections for Aging and Disabilities (Wake

County CRC). The CRC will provide information and assistance to individuals with immediate service needs, individuals planning for future long-term care needs and professionals seeking assistance on behalf of clients. A major benefit will be the development of common data collection procedures that will reduce duplication of effort and frustration that result when a client is referred from one agency to another in search of services (*Wake County Aging Plan, 2010*).

Disparities, Gaps and Unmet Needs

Physicians Accepting Medicare

- Fewer physicians in Wake County are willing to take new Medicare and Medicaid patients because of low reimbursement rates (*Wake County Aging Plan, 2010*).

Physicians Making Home Visits

- For seniors whose disabilities make doctor office visits difficult, home-based primary care can be ideal. Physician home visits may improve care and save Medicare and Medicaid spending by reducing unnecessary emergency room visits and hospitalizations. Insurance does not pay for physician travel time so availability of this service has been limited in Wake County. As of July 2010, there was one medical practice regularly making routine care home visits in Wake County (*Wake County Aging Plan, 2010*).

Prescription Drugs

- Medicare Part D improved the affordability of prescription drugs but did not solve all of the issues. Many Medicare recipients reach a coverage gap – when they must pay the full cost of medications – and they drop prescriptions until the beginning of the next plan year. Health care reform legislation passed in spring 2010 promises to close that gap, but the change will be phased in gradually until 2020 (*Wake County Aging Plan, 2010*).
- Medicare Part D has produced increases in premiums and cost-sharing requirements over time. Between 2006 and 2009, the weighted average monthly premium for prescription-drug plans increased by 35 percent, from \$25.93 to \$35.09 per month, with some of the more popular plans posting steeper increases. Co-payments have increased with many plans. Enrollees switch plans to save money only to learn later that new plans do not cover some of their medications (*Wake County Aging Plan, 2010*).
- Medicare recipients lost access to Patient Assistance Programs that formerly provided free medicines through drug companies. In Wake County, Resources for Seniors' Medication Assistance Program for Seniors (MAPS) now counsels people about how to best use their Medicare D benefit and facilitates applications for assistance when they exhaust coverage limits (*Wake County Aging Plan, 2010*).

Nutrition

- Meals on Wheels has increased its financial support and the number of meals it serves but cannot yet keep up with a growing demand for services. Due to limited funding and a shortage of volunteers, there is always a waiting list for delivered meals. Efforts to recruit and retain additional volunteers, as well as establish and cultivate additional community and corporate partnerships, are planned (*Wake County Aging Plan, 2010*).

Dementia Care

- Families and professional caregivers need training to provide adequate support to people with dementia. There is also need for increased dementia-specific care in long-term care facilities and a specialized geriatric evaluation unit in Wake County (*Wake County Aging Plan, 2010*).

Implications and Emerging Issues

Health Care Reform

As a result of the Patient Protection and Affordable Care Act of 2010:

- The Medicare doughnut hole (out-of-pocket money that must be paid between the first and third levels of coverage in Medicare Part D) for prescription drugs will slowly close over the next decade.
- Seniors cannot be denied health coverage because of illness-onset or pre-existing conditions.
- Older people not yet eligible for Medicare will have access to health coverage.
- Health coverage will include annual preventive checkups (including mammograms and screenings for cancer and diabetes).

Economic Crisis

- With the current recession, thousands of North Carolinians lost jobs and health insurance coverage. Workers 50 to 65 years old were particularly affected. Many could not find new employment and were ineligible for Medicare or Medicaid. In North Carolina, increasing numbers of people have nowhere to turn for help. Health care reform may address some of this need, but changes will take years (*Wake County Aging Plan, 2010*).

In-home Care

- Hospitals are discharging sicker patients more quickly to lower levels of care. This process has negative effects on the entire system of long-term care. More people with severe health problems are now housed in nursing homes and assisted-living facilities, and patients frequently are discharged to their homes without adequate home-based care (*Wake County Aging Plan, 2010*).

- In-home services can extend an individual's ability to remain at home and out of more costly institutional placement. Although home-care companies have increased in number, many Wake County residents cannot afford the service. Public funding for home-care is inadequate and has become more limited due to recent economic trends and funding cuts. In 2008, for every \$100 spent on nursing home-care by Medicaid, only \$35 was spent on home-based care (*Wake County Aging Plan, 2010*).

Waiting Lists

- Table 28 below shows the growth of waiting lists in three programs designed to keep people in their homes:

Table 28: Number of People on Waiting Lists		
Program	FY 07-08	FY 08-09
Meals on Wheels	197	354
In-Home Services	158	173
CAP/DA* (in-home alternative to nursing home placement)	263	320

Source: Wake County Aging Plan, 2010

Adult Day Care

- Low utilization is also a problem for many adult day-services in Wake County. As a whole, adult day-services in Wake County are at 45 percent of certified capacity (with nine out of 11 centers reporting). This includes programs available to younger adults ages 18 to 55, as well as people age 55 and older. One cause of under-utilization is the lack of subsidies for lower- and middle-income families. In 2009, the North Carolina Adult Day Service Association reported that the average cost of the program had increased from \$49.98 per day in 2004 to \$55.68 per day in 2009. While adult day care is much less expensive than home care, it remains too expensive for many (*Wake County Aging Plan, 2010*).

Long-Term Care

- Although many long-term care facilities provide quality care, public concern about substandard conditions in long-term care facilities continues. Newspaper disclosures on cases of neglect and abuse exacerbate public fears and suspicions. Efforts have been made within the long-term care industry to increase community volunteerism, memberships on Community Advisory Committees and family councils. However, maintaining volunteer involvement is a challenge. Wider public awareness of these committees, councils and volunteer opportunities is needed (*Wake County Aging Plan, 2010*).
- Funding for long-term care, especially assisted living is another problem. Income eligibility guidelines for special assistance have improved little in recent years. An individual who is over the income limit for special assistance—currently \$1,248 per month—is still far from being able to afford the private-pay cost of care in the most modest facilities (\$2000/month).

When a person falls into this gap, their family faces an impossible choice between leaving them at home and at risk, or placing them in an unnecessarily restrictive nursing home setting to receive Medicaid benefits (*Wake County Aging Plan, 2010*).

Personal Care Workforce

- The people who assist patients with feeding, bathing, dressing, grooming, etc. are the backbone of long-term care services. As the aging population grows, the availability of adequately skilled workers is a major concern. Personal care workers are still underpaid and under-recognized, and employee turnover remains an epidemic as workers move from one workplace to another to pursue minor wage increases (*Wake County Aging Plan, 2010*).

Volunteer Programs

- Wide community involvement is needed to help seniors. Volunteerism must expand in transportation and in-home assistance (*Wake County Aging Plan, 2005*).

Additional Challenges

- Unique needs of an aging Latino population
- Questionable availability of Social Security benefits and private pensions for baby boomers
- Fiscal, social and emotional impact of increased longevity due to improvements in medical care
- Effects of governmental changes to health care, including Medicare and Medicaid programs (*Wake County Aging Plan, 2005*)

Communicable Disease

Communicable disease control is one of the core functions of public health. During the 20th century, the health and life expectancy of persons residing in the U.S. improved dramatically. Since 1900, the average lifespan of persons in the United States has lengthened by greater than 30 years; 25 years of this gain are attributable to advances in public health (*CDC, 2010*). Many notable public health achievements have occurred during the 1900s, such as vaccination and control of infectious diseases (*MMRW, 1999*).

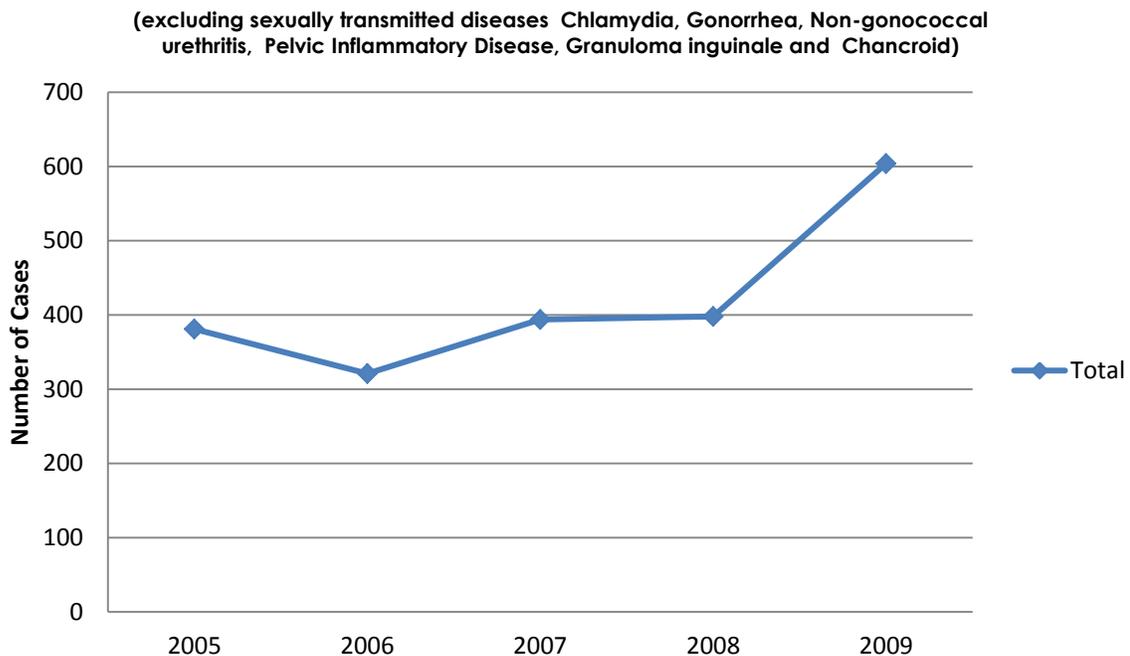
The Health-care providers in the U.S. are required to report certain infectious diseases to a specified state or local authority. A disease is designated as notifiable if timely information about individual cases is considered necessary for prevention and control of the disease (*CDC, 2010*). Notifiable disease reporting at the local level protects the public's health by ensuring the proper identification and follow-up of cases (*CDC, 2010*).

Community Perceptions

The community expressed no opinions in either the survey or the focus groups concerning communicable diseases.

Statistics and Trends

**Graph 54: Wake County 2005-2009
Communicable Reportable Diseases**

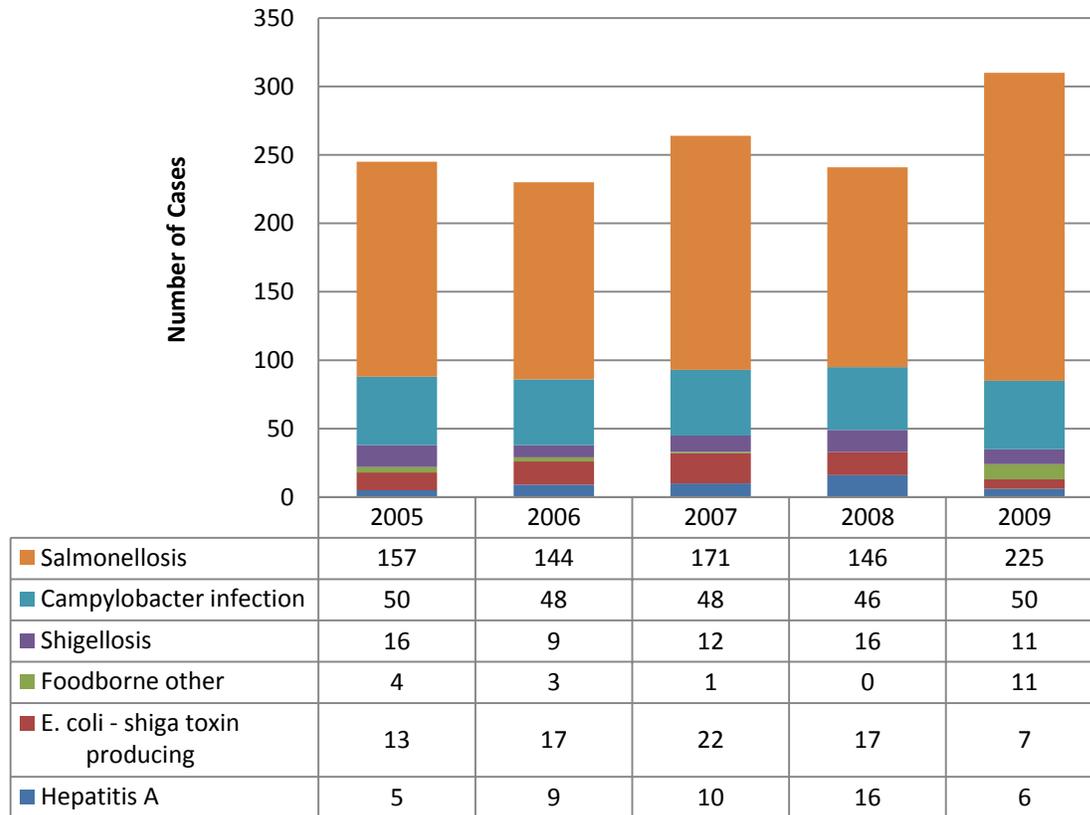


Source: N.C. Electronic Disease Surveillance System, last accessed 10/13/10.

- An increase in the number of cases of Influenza, NOVEL virus infection and food-borne illnesses contributed to the significant increase in the total number of cases for 2009 (Graph 54).
- Salmonellosis is the most frequent food-borne illness in Wake County with 225 cases reported in 2009 (Graph 55).
- Every year, approximately 40,000 cases of salmonellosis are reported in the U.S. Because many milder cases are not diagnosed or reported, the actual number of infections may be 30 times greater or higher (CDC, *Salmonella*, 2010).
- Children are the most likely to get salmonellosis. The rate of diagnosed infections in children less than five years old is higher than the rate in all other persons. Young children, the elderly,

and the immunocompromised are the most likely to have severe infections. It is estimated that approximately 400 people die each year with acute salmonellosis.

Graph 55: Wake County Food Borne Illness, 2005-2009



Source: N.C. Electronic Disease Surveillance System, last accessed 10/13/2010.

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Table 29: Reported Communicable Diseases (Total Cases) in Wake County 2005-2009

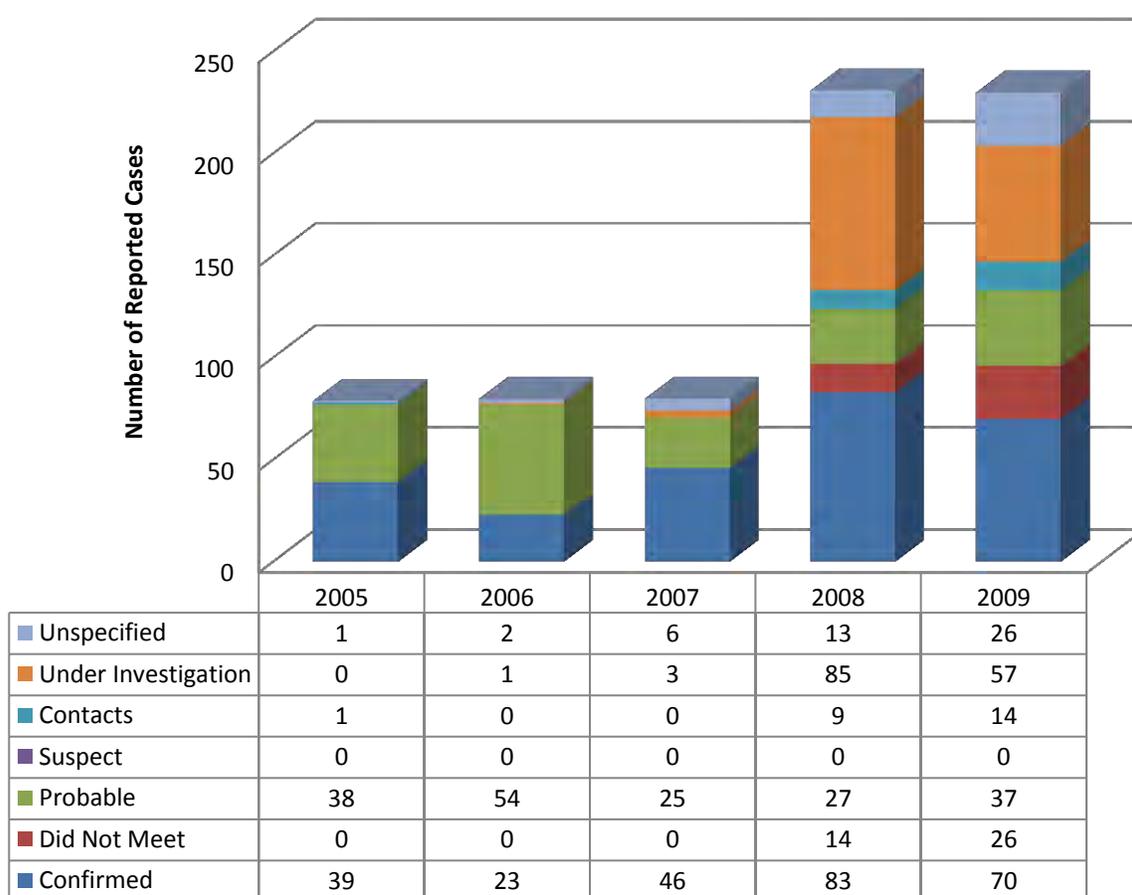
Communicable Disease	2005	2006	2007	2008	2009	Communicable Disease	2005	2006	2007	2008	2009
Botulism - foodborne/wound	0	0	2	0	0	Influenza, NOVEL virus infection	0	0	0	0	148
Campylobacter infection	50	48	48	46	50	Influenza, pediatric death < 8 years of age	0	0	0	0	1
Creutzfeldt-Jakob Disease	0	0	0	0	3	Legionellosis	4	1	5	3	3
Cryptosporidiosis	8	10	16	7	5	Leptospirosis	0	1	0	0	0
Cyclosporiasis	0	0	1	0	1	Listeriosis	3	2	0	2	3
Dengue	3	0	1	0	1	Lyme Disease	17	5	6	3	4
E. coli - shiga toxin producing	13	17	22	17	7	Malaria	7	9	6	6	4
Ehrlichiosis, Human Monocytic Ehrlichiosis	0	3	1	2	1	Meningitis, pneumococcal	6	5	4	1	1
Encephalitis, arboviral, other	0	0	0	1	0	Meningococcal invasive disease	4	6	3	0	0
Foodborne - other/unknown	4	2	1	0	0	Mumps	0	0	0	1	0
Foodborne - Staphylococcal	0	1	0	0	0	Pertussis	9	5	10	12	10
Foodborne poisoning fish/mushroom/ciguatera	0	0	0	0	11	Rocky Mountain Spotted Fever	8	1	0	0	1
Granuloma inguinale	0	1	1	1	0	Salmonellosis	157	144	171	146	225
Haemophilus influenzae, invasive disease	7	6	1	10	12	Shigellosis	16	9	12	16	11
Hemolytic Uremic Syndrome	0	1	3	0	2	Staph aureus, reduced suscept. to vancomycin	0	0	0	2	0
Hepatitis A	5	9	10	16	6	VISA/VRSA	0	0	0	0	0
Hepatitis B - Acute	11	2	4	5	8	Streptococcal invasive infection, Group A	16	9	8	8	10
Hepatitis B - Chronic Carrier	27	15	50	89	66	Toxic Shock Syndrome, non-streptococcal	1	5	2	0	0
Hepatitis B - Lab/Condition Report	0	0	0	2	0	Toxic Shock Syndrome, streptococcal	1	3	0	1	0
Hepatitis C - Acute	0	0	1	1	1	Tularemia	0	0	1	0	0
Influenza, adult death - 8 years of age or more	0	0	0	0	5	Typhoid Fever - acute	1	0	2	1	3
						Vibrio infection other than cholera & vulnificus	1	2	3	0	1
						Vibrio vulnificus infection	2	0	0	0	0

Source: N.C. Electronic Disease Surveillance System

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- Public health workers ensure that persons who are already ill receive appropriate treatment; trace contacts who need vaccines, treatment, quarantine or education; investigate and halt outbreaks; eliminate environmental hazards and close premises where spread has occurred (CDC, 2010).
- Local public health professionals investigate all reported cases of communicable disease. In Wake County the Communicable Disease Surveillance Team follows up to protect the citizens of Wake County.
- In 2008, the North Carolina Electronic Disease Surveillance System allowed the ability to track outcomes of reported diseases. As a result, in 2008 and 2009 the Hepatitis B reports investigated were twice the number of actual confirmed cases (Graph 56).

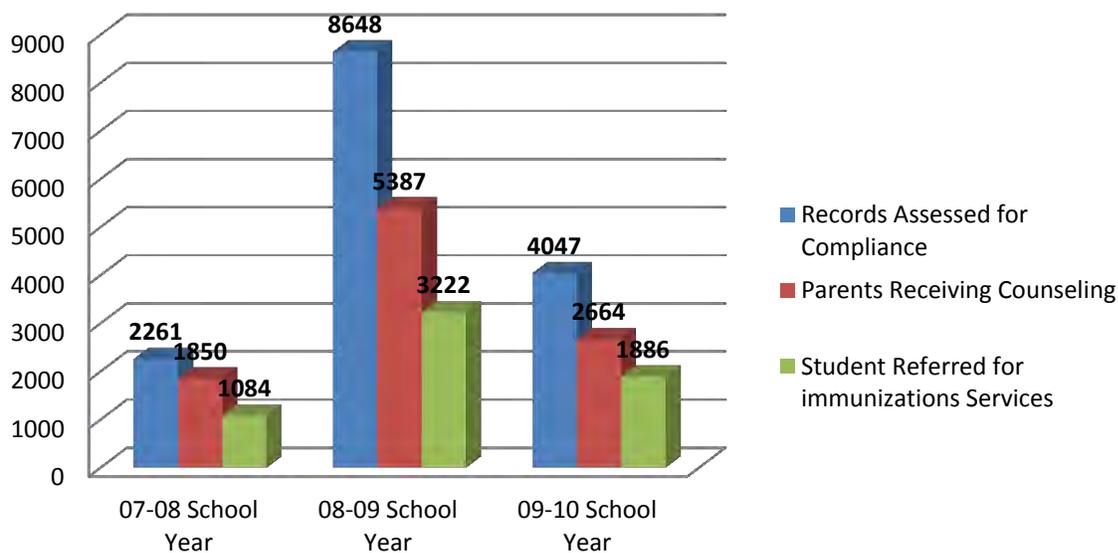
Graph 56: Hepatitis B Reported Cases in Wake County, 2005-2009



Source: N.C. Electronic Disease Surveillance System. Beginning in 2008, the N.C. Electronic Disease Surveillance System allowed improved ability for tracking outcomes of reported diseases.

- In 2006 the Advisory Committee on Immunization Practices (ACIP) recommended replacement of the adolescent tetanus and diphtheria toxoids (Td) booster with combined tetanus toxoid, reduced diphtheria toxoid and acellular pertussis vaccine (Tdap) (Amanda F. Dempsey, 2008).
- A North Carolina law requiring a dose of Tdap vaccine for rising 6th graders was enacted in January 2008.
- A nurse on the Immunization Outreach Team works closely with the Wake County School Health program and Wake County Public School System to track students for immunization compliance, and to provide educational materials to parents, staff and school administration.
- School nurses in public schools assess immunization records for compliance, counseling parents of students out of compliance, and support families in accessing care to assure students are in compliance with the law and to prevent exclusions from school (Graph 57).

Graph 57: School Nurse Immunization Services in Wake County Public Schools

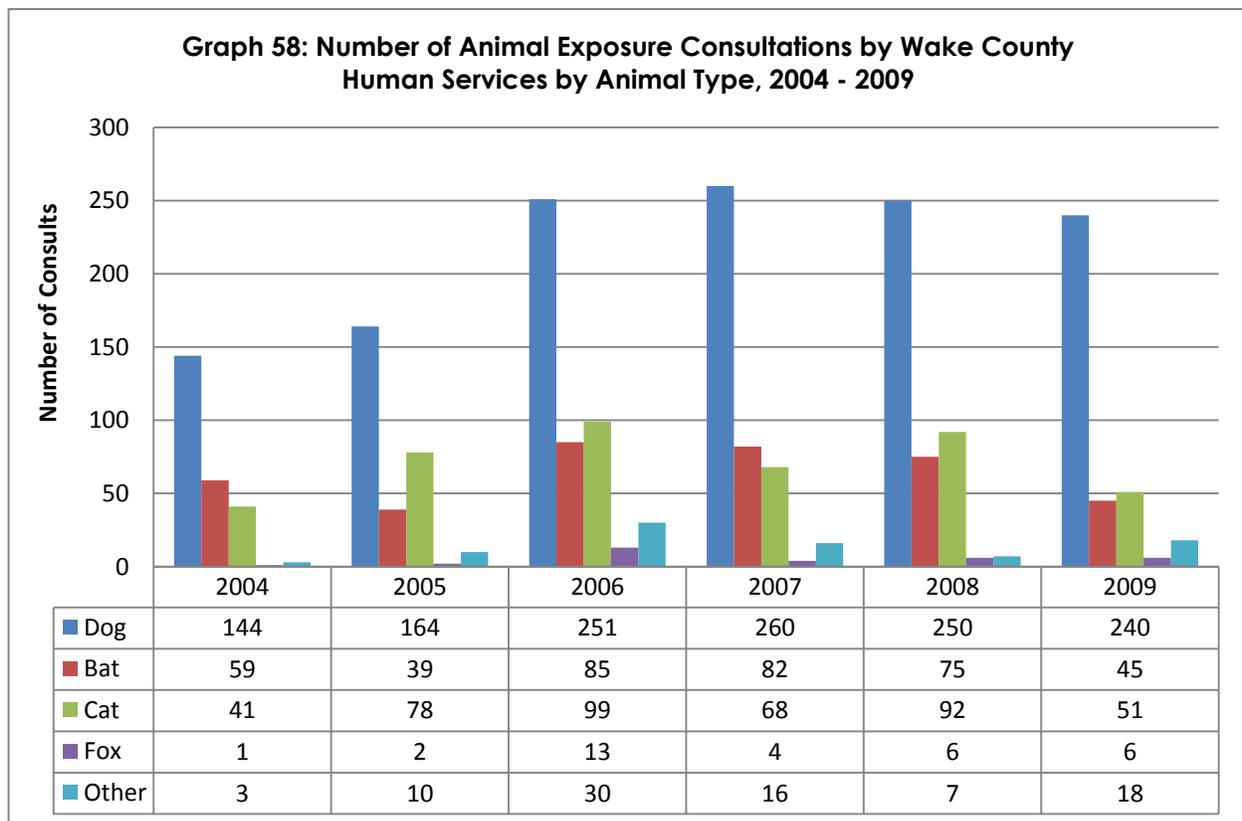


Source: WCHS School Health Monthly Report, June 2010

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- The North Carolina General Statutes (G.S. 130-A-152(a)) require immunizations for every child present in this State.
- There are two exemptions to required immunizations in North Carolina: medical and religious. A non-religious personal belief or philosophy (i.e. clean living, fresh air, pure water) is not considered to be a religious exemption and is not allowed under North Carolina law (NC Immunization, p. 274).
- There is an increasing trend in Wake County as compared to the state of North Carolina in the percent of children with immunization exemptions.
- In 2006 the Wake County Human Services' Communicable Disease Surveillance Team improved surveillance of reports of animal bites in Wake County.
- Dogs are the leading cause of concern for transmission of disease related to animal bites.

Graph 58: Number of Animal Exposure Consultations by Wake County Human Services by Animal Type, 2004 - 2009



Gaps and Emerging Issues

- Increase in number of foodborne outbreaks within restaurants, as well as assisted living facilities and nursing homes
 - Increase in amount of people eating out and not preparing their own foods. Lack of education on food handling procedures
 - Need to change laws on food safety regulations for food service establishments
- Shortage of rabies vaccine, both state-supplied and self-pay
 - Problems with manufacturing, delivery by manufacturers, and process of allocation and distribution by the CDC and State of North Carolina
 - Vaccine becomes unavailable without notice and there is no opportunity to prepare
 - Shortages can result in missed opportunities for the prevention of human rabies. The shortage also created a critical issue for the State Veterinarian and Communicable Disease Surveillance Team, and forced prioritization and rationing of doses to patients based on need
 - The Communicable Disease Surveillance Team was the “gatekeeper” for evaluation of exposures before clients could proceed with rabies vaccines. Prior approval and password codes were given out from the State before the vaccine could be administered
 - New vaccine marketing creates a demand for vaccines that overextends the manufacturer
 - The cost of the vaccine prohibits most private providers from keeping it in their offices
- The Refugee Health Program sees fluctuations in the number of refugees referred for service. The numbers served by Wake County are dependent on refugees assigned to Wake County by the federal government, along with a number of refugees that choose to settle in this county rather than their assigned destination. Wake County must be prepared for surge capacity.
- Surveillance is important to detect the occurrence of vaccine preventable diseases, such as pertussis, especially because of the trend of unimmunized students in the school population.

Resources and Strengths

Wake County Human Services (WCHS)

- Immunization Outreach Team
 - Tracks Wake County children for immunization compliance in accordance with N.C. Immunization Law G.S. Chapter 130A Article 6 Part B, with a special focus on children 19 to 35 months of age who receive their primary medical care at WCHS.
 - Promotes the utilization of the N.C. Immunization Registry (NCIR) to Vaccines for Children (VFC)-participating providers in Wake County in accordance with the Local Health Department Provider Agreement and provides on-site training and support to these providers. In addition, WCHS administers the NCIR at WCHS by training and supporting WCHS staff, and providing reports and system oversight for the agency.
 - Provides vaccine management for the agency by maintaining inventory oversight, ordering vaccine supply, and managing the distribution of vaccine to clinics and outlying sites and vaccine transfers between WCHS and community providers when indicated.
 - Collaborates with Wake County Public School System to promote compliance to N.C. Administrative rule: 10A NCAC 41A.0401 concerning the immunization of 6th grade students for Tdap vaccine.
 - Supports the Communicable Disease department and Community Health division by staffing seasonal and H1N1 flu clinics with nursing and administrative staff, assisting with disease outbreak mitigation or other emergency situations in the community as indicated.
 - Administers and monitors the NACo Prescription Discount Card Program at WCHS by providing program materials and card supplies to retail pharmacies, non-profit agencies, town halls and Wake County buildings with public access. Receives and processes card requests from individuals on an as-needed basis.
- Immunization Clinics
 - Provide clinical and outreach immunization services to the citizens of Wake County and the public at large to promote public health through elimination of vaccine preventable diseases. The clinics also manage the seasonal flu campaign for WCHS.
- Refugee Health
 - Identifies and treats the health problems of newly arrived refugees that could pose a threat to public health or interfere with the resettlement of the refugees. Refugees are treated either on site or through referral.

- Communicable Disease Health Education
 - Provides communicable disease education to Wake County residents
 - Provides educational support to Clinic E, Communicable Disease Surveillance, Immunization Tracking and Outreach, School Health, Emergency Preparedness and Environmental Services, and other Wake County departments, as needed
 - Provides support for Human Services Public Health Governance (e.g. Public Health Committee of HS and ES Board) and other public health activities, such as community assessment, EPI Team and public health accreditation
 - Provides support to Human Services initiatives, such as the Middle Class Express, Human Services Academy, Professional Learning Communities and Human Services Cabinets
- Communicable Disease Surveillance Team
 - Protects health of the citizens of Wake County by controlling the spread of communicable diseases through the utilization of preventive measures, enforcement measures, and case management of individuals diagnosed with a reportable disease and their contacts
 - Provides specialized education and prevention
 - Investigates communicable disease outbreaks and disasters for clients, contacts, community agencies, private providers and the public
 - Provides clinical component for communicable disease investigation and treatment
- School Health
 - Provides communicable disease/infection control management by working with the school community to decrease and manage the incidence and prevalence of infectious diseases. Monitors at-risk population for compliance; provides vaccine/screening in collaboration with WCHS Communicable Disease Program; provides consultation to school staff, families and parents; and facilitates access to services.
 - Provides immunization/vaccination management by training school staff on immunizations needed for school entry; reviewing student immunization records for compliance; monitoring immunization status, providing consultation to parents; facilitating access to immunizations.

- All major hospitals in Wake County contribute to the diagnosis, treatment and investigation of communicable diseases. The hospitals and WCHS have strong partnerships in place should any disease outbreak or bioterrorism incident take place in, or around, Wake County.
- Local private health care providers in Wake County contribute to the diagnosis, treatment and investigation of communicable diseases.
- North Carolina Division of Public Health Communicable Disease Branch has four main objectives:
 - To promptly investigate disease outbreaks and unusual situations affecting public health, and to implement control measures to minimize further transmission of disease
 - To monitor disease-reporting by physicians and laboratories in order to detect trends and to assess the public health impact of diseases
 - To provide a channel of communication between public health agencies, private physicians, and hospital and occupational infection control personnel, as an essential part of disease control efforts
 - To explain public health interventions and disseminate health education messages to the community and the media in order to enhance disease control efforts (www.epi.state.nc.us/epi/gcdc).

Influenza

Seasonal influenza is an acute viral infection caused by an influenza virus (*WHO*). Every flu season is different, and influenza infection can affect people differently (*CDC*):

- It can cause mild to severe illness, and at times can lead to death (*CDC*).
- It can affect anybody in any age group (*WHO*).
- Even healthy people can get very sick from the flu and spread it to others (*CDC*).
- Illnesses can result in hospitalizations and deaths mainly among high-risk groups (the very young, elderly or chronically ill) (*WHO*).

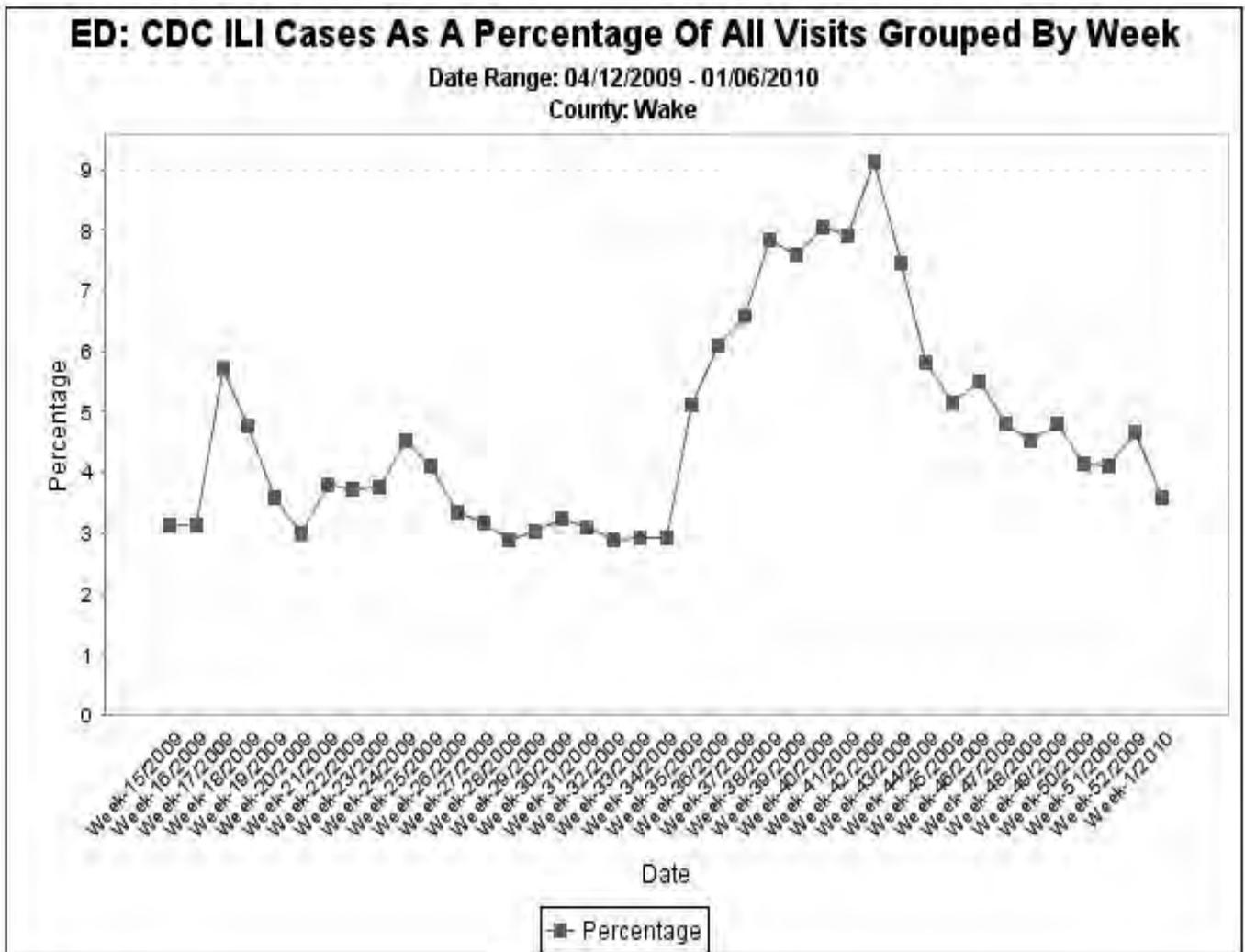
From 2009-2010, a new and very different flu virus (2009 H1N1) spread worldwide causing the first flu pandemic in more than 40 years (*CDC*). Pandemic influenza is transmitted like seasonal influenza, but people have virtually no immunity to it. Mitigating its effects is a public health priority (*WHO*).

Statistics and Trends

Wake County

Graph 59 below shows Wake County Emergency Department (ED) visits from April 2009 through January 2010 for Influenza Like Illness (ILI) as defined by the Centers for Disease Control and Prevention (CDC). The CDC case definition for ILI is fever (> 100° F) and cough or sore throat.

Graph 59



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April 2010
Week 17: April 25, 2010 – May 1, 2010

2009–10 ILI Surveillance Report PHRST REGION 4
(see map below for counties)

Percentage of ILI Patients Admitted through ED
Previous Week vs. Current Week

Week 16	Week 17
18.23%	14.56%

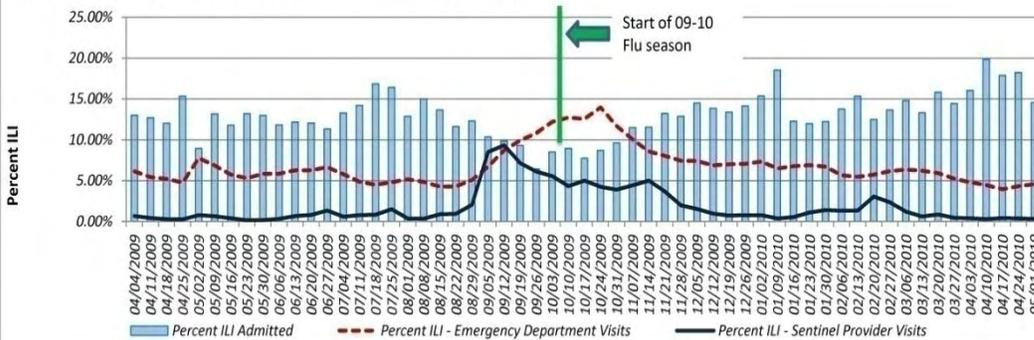
Deaths Due to Influenza
STATEWIDE (NC)
As of 5/4/10 11:30 am

Total deaths : 107*
New deaths: 0
(4/25/10 - 5/1/10)
*since 9/26/09 and including 13 H1N1 lab confirmed deaths

Visits for Current Week				
Total Visits and Visits due to ILI				
		Total Visits	Visits Due to ILI	% of Visits Due to ILI
Emergency Departments	STATEWIDE (NC)	84,992	2,699	3.18%
	PHRST Region 4	12,482	570	4.57%
Sentinel Providers	STATEWIDE (NC)	20,319	87	0.43%
	PHRST Region 4	5,474	16	0.29%

Proportion of ILI Visits and Admissions by week: PHRST 4

Data Range: Week 13/2009 (Ending 4/4/2009) - Week 17/2010 (Ending 5/1/2010)



All data are preliminary and may change as more reports are received.

Data Sources:
- ED Visits reported by NCDTECT
- Sentinel Provider visits, deaths reported by NC Public Health.

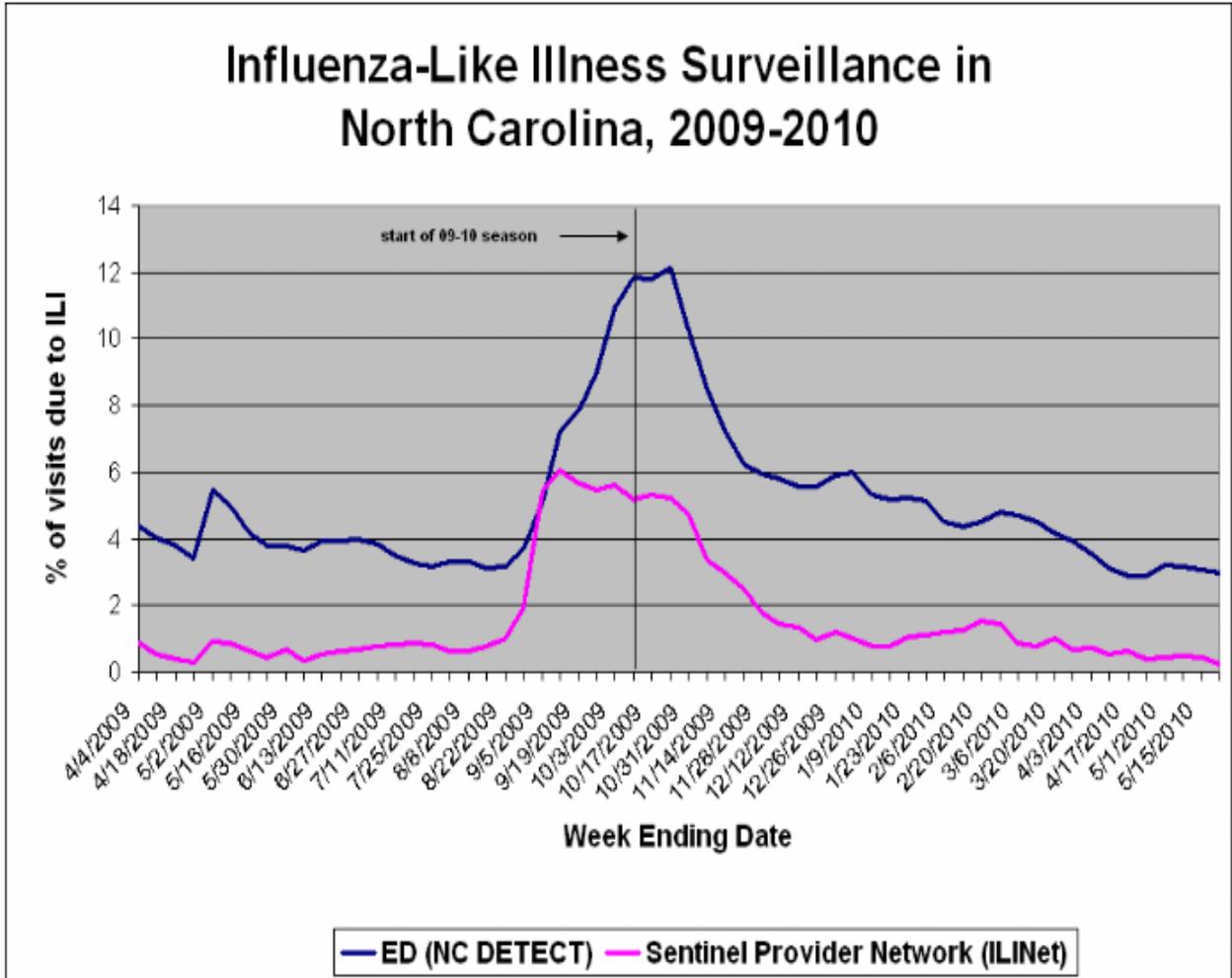


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North Carolina

The graphs below illustrate the difference between the 2009-1010 influenza season and other seasonal years (Graphs 61, 62 and 63).

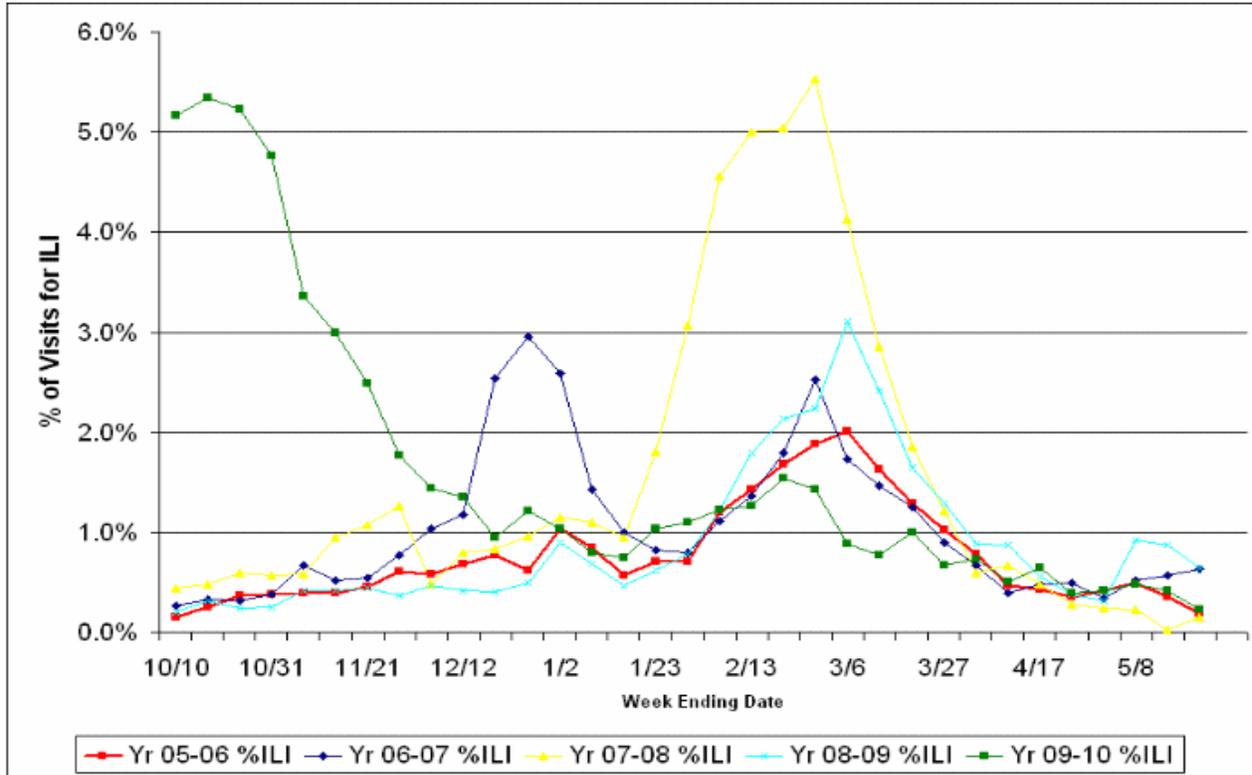
Graph 61



The peak of the Influenza season was in October, the time of the typical start of the influenza season.

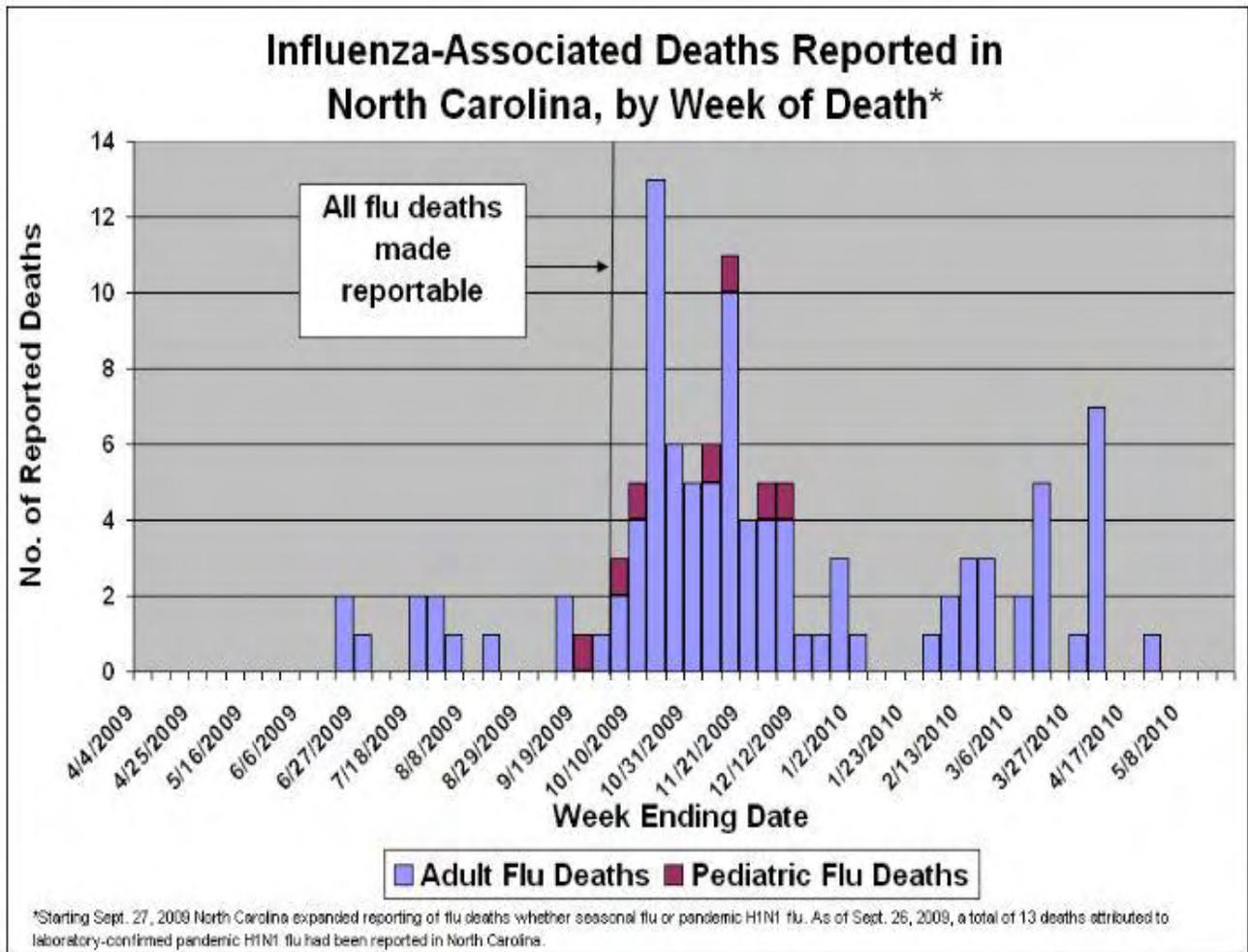
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Graph 62: Annual ILI Trends from The Influenza Sentinel Provider Network For 2005 – 2010



Source: N.C.-DETECT Influenza surveillance is not based on identifying every individual case

Graph 63



Prior to the H1N1 pandemic, only pediatric flu deaths were reported. Reporting of all flu-related deaths is now required.

World

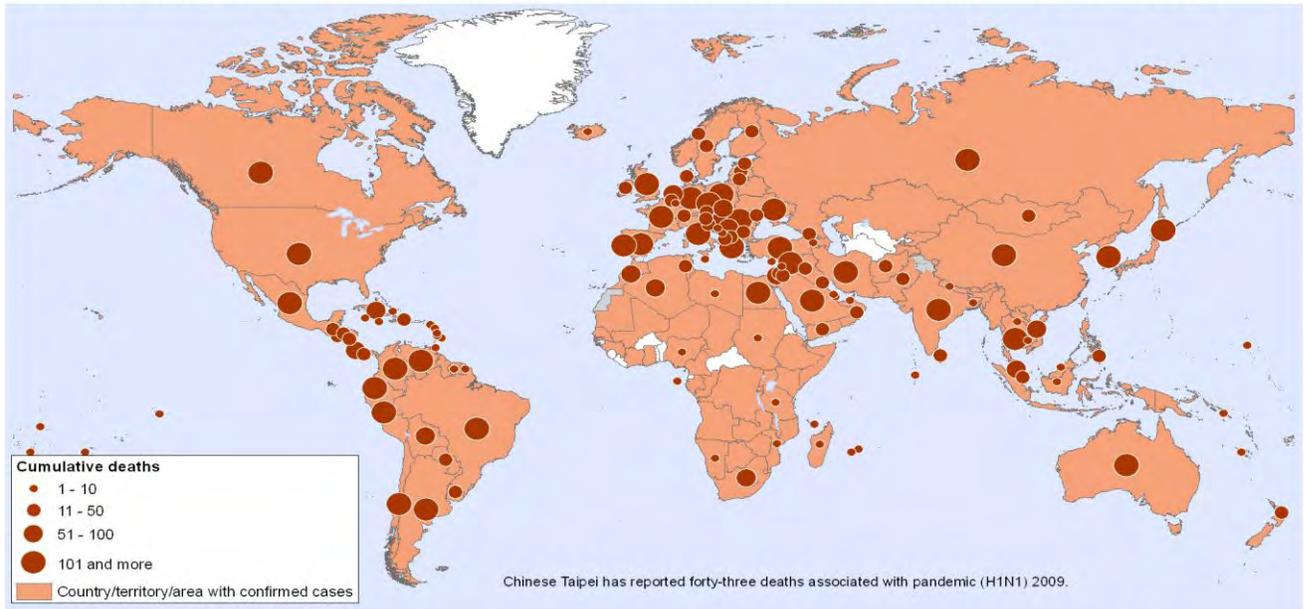
Influenza circulates worldwide causing epidemics. Each year, seasonal influenza affects 5-15 percent of the population in the northern hemisphere (Map 2). With the ability to travel across the world, there is a greater risk of disease spread and possible outbreaks.

Map 2

Pandemic (H1N1) 2009

Status as of 11 July 2010

Countries, territories and areas with lab confirmed cases and number of deaths as reported to WHO



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
Map Production: Public Health Information and Geographic Information Systems (GIS)
World Health Organization



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Map produced: 15 July 2010, 09:15 GMT

Disparities

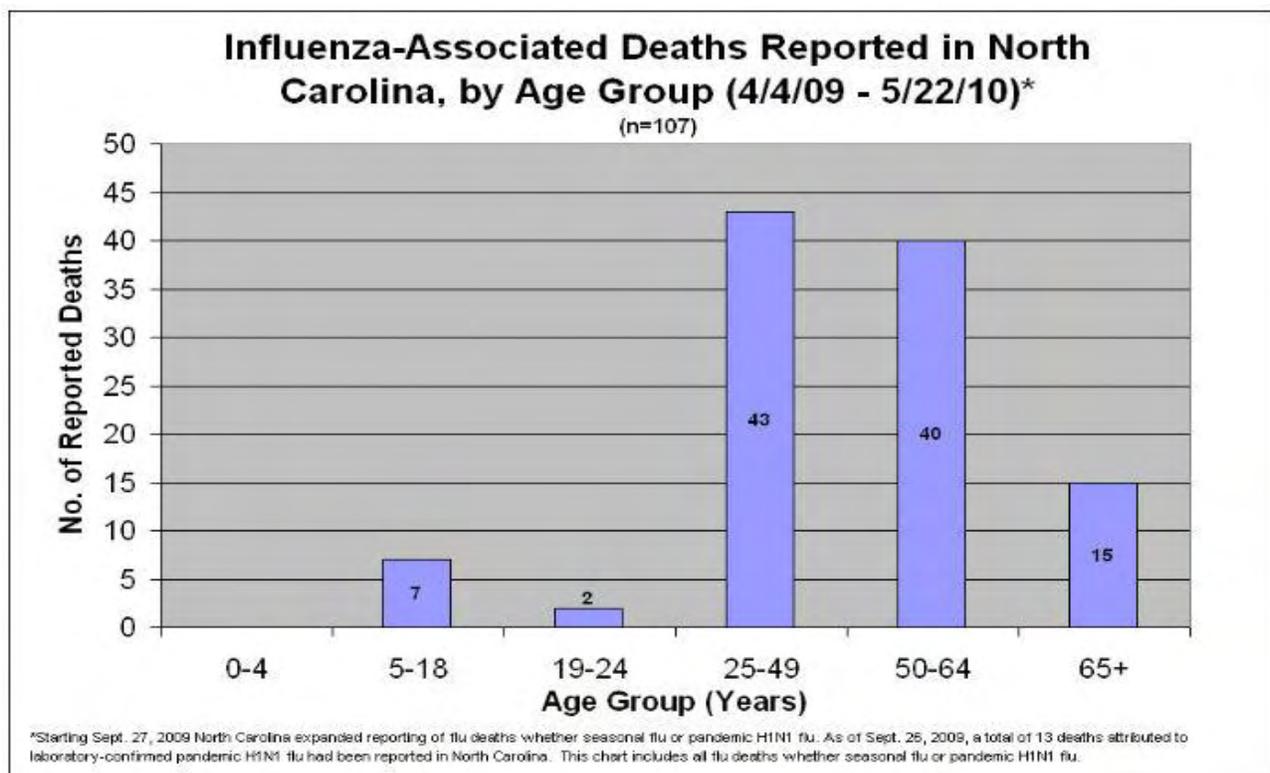
No differences exist between the non-Hispanic Black and non-Hispanic White populations' influenza and pneumonia mortality rates. However, mortality data collected since 1984 indicates that Hispanic persons age 65 years and older have lower influenza and pneumonia death rates than those of the non-Hispanic White and non-Hispanic Black populations in the same age group (Yelena Gorina, February 2008).

- Non-Hispanic Black and Hispanic persons continue to have significantly lower vaccination rates than those of non-Hispanic White persons (Yelena Gorina, February 2008).
- Until the Pandemic Influenza of 2009-2010, influenza illness and death were concerns for the elderly population, with outreach focused on that population.
- Men 65 years of age and older have higher influenza and pneumonia age-adjusted death rates than those of women in the same age group (Yelena Gorina, February 2008).
- In 2004, influenza and pneumonia ranked seventh among the leading causes of death for persons 65 years of age and older, accounting for three percent of total deaths in that age group (Yelena Gorina, February 2008).

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- The death rate from influenza and pneumonia is nearly 130 times higher among persons 85 years of age and older than among persons 45–54 years of age (*Yelena Gorina, February 2008*).
- This increase in risk with age is substantially larger than that seen for heart disease, cancer, stroke and other leading causes of death (*Yelena Gorina, February 2008*).
- Between 1997 and 2006, the rate of persons age 65 years and older with an annual influenza vaccination remained relatively stable and was 64 percent in 2006 (*Yelena Gorina, February 2008*).

Graph 64



- The rate for lifetime pneumococcal vaccination increased from 43 percent in 1997 to 56 percent in 2002, and remained at 56 to 57 percent through 2006 (*Yelena Gorina, February 2008*).
- During the 2009-2010 influenza season, the elderly were not as at risk as some other age groups.
- During a regular flu season, about 90 percent of deaths occur in people 65 years and older (CDC).

Gaps and Emerging Issues

This very communicable disease affects certain groups more severely. Vulnerable populations may differ from year to year based on the strain of the influenza virus that specific year. Surveillance and monitoring of ILI incidence and deaths is important to guide public health response for prevention and treatment recommendations for at-risk populations.

- Vaccine availability from year to year varies.
 - Every year the virus causing influenza must be identified and vaccine produced for the specific type of influenza virus circulating in the population.
 - Vaccine was slow to arrive for the 2009-2010 influenza season due to manufacturing delays and a slow approval process at the FDA.
- At the outset of the 2009-2010 flu season, only certain priority groups were eligible for vaccination, causing some anxiety in the community. Citizens who would normally line up to receive a flu vaccine, such as the elderly, were asked to wait until priority groups were immunized.
- There is a need for planning and implementation of a clinical response through large-scale vaccination clinics throughout the County.
- There is a need to collect and report data to the state of North Carolina as required, and provide timely information to the citizens of Wake County regarding clinic schedules, vaccine availability and disease communicability.

Resources and Strengths

- The World Health Organization (WHO), with its partners, monitors influenza globally and annually recommends a seasonal influenza vaccine composition, while supporting member states' efforts to develop prevention and control strategies. WHO works to strengthen national and regional influenza diagnostic capacities, disease surveillance, outbreak responses and increase vaccine coverage among high-risk groups (www.who.int/mediacentre/factsheets/fs211/en/index).
- Centers For Disease Control and Prevention (CDC) collects, compiles and analyzes information on influenza activity year round in the United States.
- North Carolina Department of Health and Human Services Epidemiology (NCDHHS) collects, compiles and analyzes information on influenza activity year-round in North Carolina.
- Wake County Human Services provides community surveillance and education to private providers, hospitals, and the public may enforce Isolation orders for the sick and quarantine orders for those exposed if necessary to contain the spread of disease in the community.

- Local health care providers are major assets.
- Food and Drug Administration (FDA) is responsible for protecting public health by assuring the safety, efficacy, and security of human and veterinary drugs, biological products, medical devices, our nation's food supply, cosmetics and products that emit radiation.
- Pharmaceutical manufacturers are very important.

Tuberculosis (TB)

TB is one of the world's deadliest diseases

- Someone in the world is newly infected with TB every second (*WHO*).
- Five to 10 percent of people who are infected with TB (but who are not infected with HIV) become sick or infectious at some time during their life (*WHO*).
- People with HIV and TB infection are much more likely to develop TB disease (*WHO*).
- TB is a leading cause of death among people who are infected with HIV.

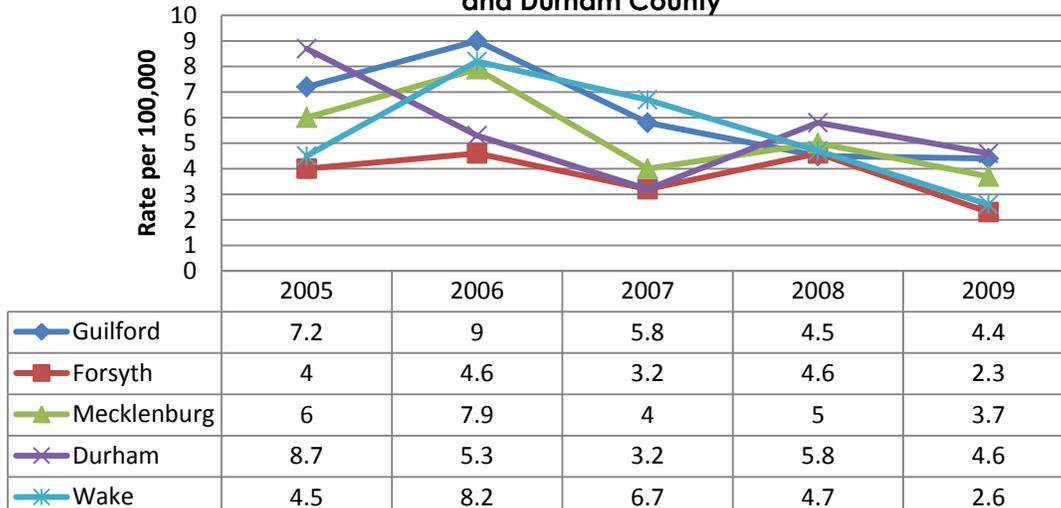
Statistics and Trends

Wake County

- There was an increase in the number of TB cases in 2006, but a steady decline since, as there was for North Carolina.
- The average incident rate for peer counties of Forsyth, Mecklenburg and Guilford in North Carolina also increased in 2006 and 2008.
- There are several factors that influence the transmission of TB such as:
 - Infectiousness of the person with TB disease
 - Environment in which exposure occurred
 - Duration of exposure
 - Virulence of the organism

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Graph 65: Comparison Of TB Incident Rates for Individual Peer Counties and Durham County



Source: N.C. TB Control Program, 2010

Because of these factors, it is not unusual to see variability in the incident rates for TB as seen in Graph 65.

- Since 1993, when the TB surveillance system was expanded to include drug-susceptibility results, reported multidrug-resistant (MDR) TB* cases have decreased in the U.S. Among all reported TB cases in the U.S., the percentage of primary MDR TB cases decreased from 2.5 percent (407 cases) in 1993 to 1.0 percent (86 cases) in 2008.

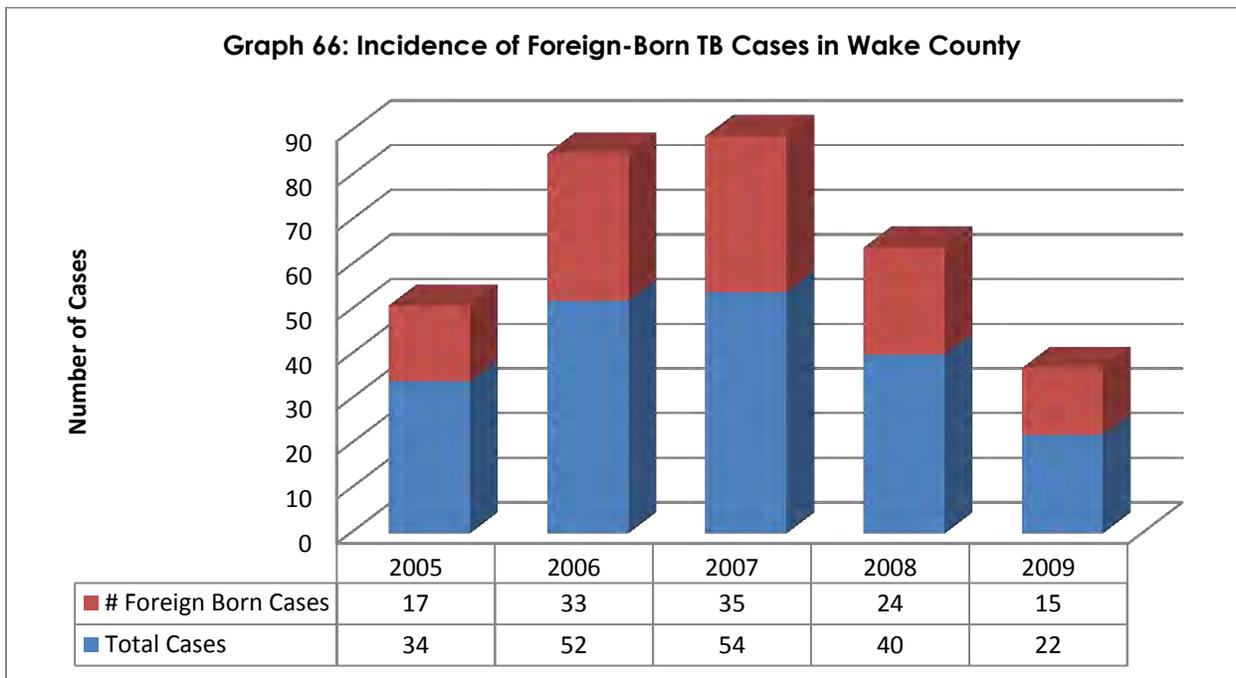
Table 30: Number of Reported TB Cases in Wake County and North Carolina

Year		INH Resistance	INH & SM Resistance	INH & RIF Resistance	Any Other Resistance	Total
2005	North Carolina	12	8	3	19	42
2005	Wake	3	1	0	1	5
2006	North Carolina	14	8	1	13	36
2006	Wake	0	2	1	1	4
2007	North Carolina	6	3	2	15	26
2007	Wake	1	0	0	5	6
2008*	North Carolina	14	NA	2	NA	16
2008*	Wake	3	NA	1	NA	4
2009*	North Carolina	12	NA	1	NA	13
2009*	Wake	1	NA	0	NA	1

Source: N.C. TB Control Program (*multidrug-resistant (MDR) TB cases)

- Isoniazid (INH) resistance: The TB bacteria have become resistant to INH rendering it no longer effective for treatment. INH resistance includes INH and any other drugs except SM or RIF. Resistance may have been found at either initial or final testing.
- INH and Streptomycin (SM) resistance: The TB bacteria have become resistant to INH and SM, rendering these two drugs no longer effective for treatment. This resistance includes INH, SM and any other drugs except RIF. Resistance may be found at either initial or final testing.
- INH and Rifampin (RIF) resistance: The TB bacteria have become resistant to both INH and RIF rendering neither drug effective for treatment. This resistance includes INH, RIF, and any other drugs, including SM. Resistance may be found at either initial or final testing.
- Any other resistance: includes resistance to any first or second line drugs, but not resistance to INH, RIF, or SM. Resistance may have been found at either initial or final testing.

Foreign-Born Tuberculosis



Source: Wake County Human Services Tuberculosis Program Information

**Table 31: Foreign-Born Cases by Country of Origin
North Carolina, 2005-2009**

Country of Origin	2005	2006	2007	2008	2009	Total Cases
Total # countries	110	135	141	122	92	599

Source: N.C. Tuberculosis Control Program, April 12, 2010 www.epi.state.nc.us/epi/gcdc/tb/foreignborn

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**Table 32: Foreign-Born Cases by Country of Origin
North Carolina, 2005-2009**

Country of Origin	2005	2006	2007	2008	2009	Total
Albania	0	1	1	0	0	2
Algeria	1	1	0	0	0	2
Argentina	0	0	0	1	0	1
Azerbaijan	1	0	0	0	0	1
Bangladesh	1	0	0	0	0	1
Belarus	1	0	0	0	0	1
Bhutan	0	0	0	1	0	1
Bosnia & Herzegovina	1	0	0	0	0	1
Brazil	0	1	0	0	0	1
British Virgin Islands	0	0	1	0	0	1
Burma	0	1	1	2	0	4
Cambodia	2	9	4	1	3	19
China	1	3	4	2	1	11
Colombia	1	2	1	0	1	5
Congo	3	1	0	1	0	5
Costa Rica	0	0	0	1	0	1
Cuba	0	1	0	0	0	1
Dominican Republic	0	1	0	0	0	1
Ecuador	0	1	2	0	0	3
El Salvador	2	3	6	4	2	17
Ethiopia	3	5	3	3	1	15
Gambia	1	0	0	0	0	1
Ghana	0	0	1	2	1	4
Guatemala	2	3	3	3	7	18
Haiti	0	0	1	2	1	4
Honduras	6	6	8	11	2	33
India	7	14	16	11	6	54
Indonesia	1	1	3	1	0	6
Iran	0	0	0	0	1	1
Ivory Coast	0	1	0	0	0	1
Jordan	0	0	0	0	1	1
Kazakhstan	0	1	0	0	0	1
Kenya	0	2	3	3	2	10
Korea Democratic Peoples Rep.	0	1	1	0	0	2
Korea Republic	1	0	2	3	1	7
Kuwait	0	0	0	0	1	1
Laos	1	1	4	0	2	8
Liberia	4	2	2	0	0	8
Malaysia	0	0	1	0	1	2
Mexico	44	44	54	41	33	216
Morocco	0	0	2	0	1	3
Nepal	1	2	1	0	0	4
Netherlands	0	0	0	0	1	1

**Table 32: Foreign-Born Cases by Country of Origin
North Carolina, 2005-2009 (continued)**

Country of Origin	2005	2006	2007	2008	2009	Total
Niger	1	1	0	0	0	2
Nigeria	1	0	0	0	3	4
Pakistan	0	2	0	2	1	5
Peru	2	1	1	1	1	6
Philippines	4	3	6	7	4	24
Puerto Rico	0	0	0	0	1	1
Romania	0	1	0	0	0	1
Senegal	1	0	0	1	1	3
Somalia	1	1	0	1	0	3
South Africa	1	0	0	0	0	1
Soviet Union	1	0	0	0	0	1
Sudan	0	0	0	1	1	2
Taiwan	1	0	0	1	0	2
Thailand	0	1	0	1	0	2
Turkey	0	1	0	0	0	1
Turkmenistan	0	0	0	1	0	1
Ukraine	1	0	0	2	0	3
Uruguay	0	1	0	0	0	1
Vietnam	8	16	9	11	10	54
Zaire	0	0	0	0	1	1
Total	110	135	141	122	92	599

Source: N.C. Tuberculosis Control Program, Date: April 12, 2010.

<http://www.epi.state.nc.us/epi/gcdc/tb/foreignborn.html>

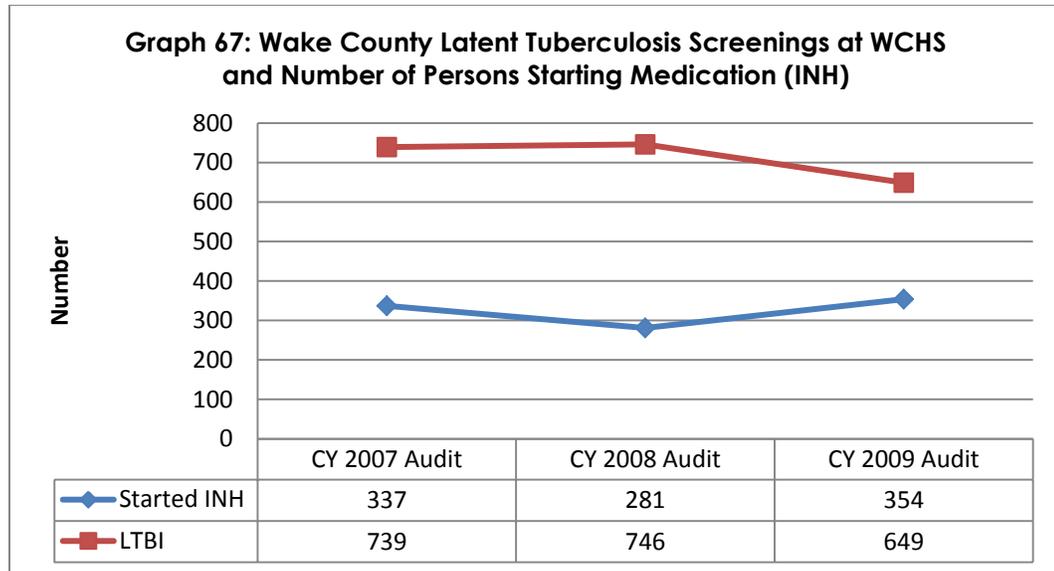
<http://www.epi.state.nc.us/epi/gcdc/tb/foreignborn.html>

Latent Tuberculosis (LTB)

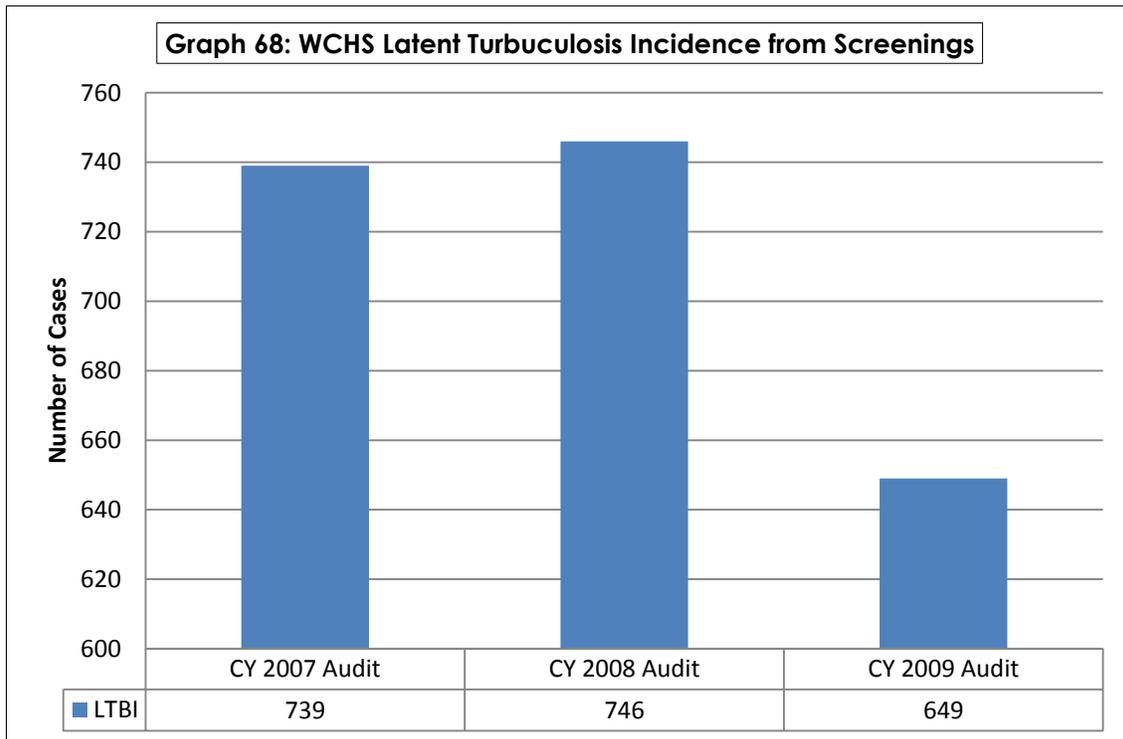
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- Treatment of latent TB infection (LTBI) is essential to controlling and eliminating TB in the U.S. Treatment of LTBI substantially reduces the risk that TB infection will progress to disease.
- Certain groups are at very high risk of developing TB disease once infected, and every effort should be made to begin appropriate treatment and to ensure those persons complete the entire course of treatment for LTBI

www.cdc.gov/tb/publications/factsheets/treatment/treatmentLTBI.



Source: WCHS Tuberculosis Program Audit



Source: WCHS Tuberculosis Program Audit

- People with latent TB can take medicine so that they do not develop active TB.

North Carolina

- Per the latest state report on TB (2008), North Carolina is ranked as the 22nd highest state for TB case rates in the nation (in 1980, N.C. was #3). In 2008, there were 335 total cases in the state; 40 of which were located in Wake County and 15 in Durham County.
- The TB Control Program has made progress. In 2007, North Carolina had a TB rate of 3.8 cases per 100,000 persons, a significant decrease from the 2003 rate of 4.6 cases per 100,000 persons (*N.C. Division of Public Health - Epidemiology*).

United States

- In 2008, 12,904 TB cases (a rate of 4.2 cases per 100,000 persons) were reported in the U.S. (*CDC*).
- The TB rate in 2008 was the lowest recorded since national reporting began in 1953 (*CDC*).
- The TB rate has been going down in the U.S. each year since 1992. However, progress has slowed in recent years. The average annual percentage decline in the TB rate slowed from 6.6 percent for 1993 through 2002, to an annual average decline of 3.4 percent for 2003 through 2008 (*CDC*).

- There were 644 deaths from TB in 2006, the most recent year for which data is available. Compared to 1996 data, when 1,202 deaths from TB occurred, this represents a 46 percent decrease in TB deaths in the last decade.

Table 33: Estimated TB Incidence, Prevalence and Mortality, 2008

WHO region	Incidence ¹			Prevalence ²		Mortality	
	no. in thousands	percent of global total	rate per 100 000 pop ³	no. in thousands	rate per 100 000 pop	no. in thousands	rate per 100, 000 pop
Africa	2 828	30 %	351	3 809	473	385	48
The Americas	282	3 %	31	221	24	29	3
Eastern Mediterranean	675	7 %	115	929	159	115	20
Europe	425	5 %	48	322	36	55	6
South-East Asia	3 213	34 %	183	3 805	216	477	27
Western Pacific	1 946	21 %	109	2 007	112	261	15
Global total	9 369	100 %	139	11 093	164	1 322	20

¹Incidence is the number of new cases arising during a defined period.

²Prevalence is the number of cases (new and previously occurring) that exists at a given point in time.

³Pop indicates population.

Source: WHO, 2009

Disparities

Foreign-Born Persons

- In 2008, the TB rate in foreign-born persons in the U.S. (20.3 cases per 100,000 persons) was 10* times greater than that of patients born the U.S. (2.0 cases per 100,000 persons). Also of note, 59 percent of all TB cases in the U.S. occurred in foreign-born persons in 2008. * Ratio calculation is based on unrounded data values (CDC, 2009).
- Since 1997, the percentage of patients born in the U.S. with MDR TB has remained at one percent or less. However, of the total number of reported primary MDR TB cases, the proportion occurring in foreign-born persons increased from 25.3 percent (103 of 407) in 1993, to 76.7 percent (66 of 86) in 2008.
 - Primary multidrug-resistant TB (MDR TB) is defined as no previous history of TB disease and is resistant to at least isoniazid and rifampin, the two best first-line TB treatment drugs (CDC, 2009).

Minorities

- Tuberculosis in U.S. Minorities in 2008:
 - American Indians or Alaska Natives: 6.0 cases per 100,000 persons
 - Asians: 25.6 cases per 100,000 persons
 - African Americans: 8.8 cases per 100,000 persons
 - Native Hawaiians and other Pacific Islanders: 15.9 cases per 100,000 persons
 - Hispanics or Latinos: 8.1 cases per 100,000 persons
 - Whites: 1.1 cases per 100,000 persons

† For this report, persons identified as White, African American, Asian, American Indian/Alaska Native, Native Hawaiian or other Pacific Islander, or of multiple races are all non-Hispanic. Persons identified as Hispanic may be of any race (CDC, 2009).

Emerging Issues and Gaps

- There are increasing numbers of foreign-born TB cases. This poses cultural, linguistic and treatment issues.
- There has been an increase in the number of immigrants from high-incidence countries relocating to Wake County.
- There are potential risks for treatment failures and development of drug resistance to anti TB medications.
- There are cultural, linguistic and treatment barriers with diverse populations.
- The Tuberculosis Control Program will continue collaboration with STD/HIV programs to identify high-risk clients who would benefit from multiple communicable disease screenings.
 - High-risk populations are at greater risk of exposure to more than one communicable disease.
 - High-risk populations would benefit from the education, screening and treatment to prevent disease spread in their community.

Substance Abuse a Hindrance to TB Treatment

- Patients who have tuberculosis, and also abuse alcohol and illicit drugs, turn out to be more difficult to treat and more contagious than other patients (*Issues & Research » Health » NCSL Substance Abuse Snapshot, 2009*).
- Drug-resistant TB is of increasing concern. Multidrug-resistant or MDR TB is TB resistant to at least two of the most effective drugs, isoniazid and rifampin (also called first-line drugs). Extensively resistant, or XDR TB, is resistant to at least these two drugs and any fluoroquinolone, and at least one of three injectable drugs (i.e., amikacin, kanamycin, or

capreomycin). Although MDR TB occurs globally, it is less common than drug-susceptible TB. There are nearly 500,000 new cases of MDR TB each year, with some countries having proportions of MDR TB as high as 20 percent. MDR and XDR TB are of particular concern among HIV-infected or other immunocompromised persons wwwnc.cdc.gov/travel/yellowbook/2010/chapter-5/tuberculosis.aspx (CDC, 2009-2010 *Travelor's Yellow Book*).

- Several factors likely contribute to the burden of TB in minorities:
 - Among people from countries where TB is common, TB disease may result from infection acquired in their country of origin.
 - Among racial and ethnic minorities, unequal distribution of TB risk factors, particularly HIV infection, can also increase the chance of developing the disease (WHO).

Resources and Strengths

- By state law in North Carolina, any health care provider who diagnoses or suspects a case of TB must notify the county's local health department director within 24 hours. That notification must be followed by a written report. Treatment of the patient then begins immediately (www.epi.state.nc.us/epi/tb/collaborative).
- WCHS has the legal authority and responsibility to coordinate all TB efforts in its jurisdiction by aggressively interrupting transmission through appropriate disease treatment, minimizing the number of people who become newly infected and providing appropriate preventive treatment to those who are infected. They provide staffing and services for TB screening, investigation, diagnosis, treatment and follow up of tuberculosis.
- The Tuberculosis Control Program will continue collaboration with STD/HIV programs to identify high-risk clients who would benefit from multiple communicable disease screenings.
- Physicians and other private health care providers in the County also screen and notify WCHS of diagnosed or suspected case of tuberculosis.
- The N.C. TB Control Program in the N.C. DHHS Division of Public Health supports tuberculosis control efforts (www.epi.state.nc.us/epi/tb/collaborative).
- Featured CDC TB Guidelines and Recommendations can be found at National Prevention Information Network (www.cdcnpin.org/scripts/tb/cdc.asp).
- Duke University Medical Center is an active partner in the fight against TB. The Division of Infectious Diseases of the Department of Medicine at Duke University Medical Center partners with the North Carolina Tuberculosis Control Program to provide medical expertise to aid health care teams and researchers (www.epi.state.nc.us/epi/tb/collaborative).

- Data on TB cases is reported to CDC from 60 reporting areas, including all 50 states, the District of Columbia, New York City, Puerto Rico, and seven other U.S. jurisdictions in the Pacific and Caribbean.

Dental Health

Community Perceptions

- Responses from the Wake County Community Assessment survey indicate that 14.9 percent of individuals needing dental care in the previous year could not get it. The percentage was highest, 35.5 percent, in the South Region.
- Of that group, respondents from the North, South, East, West, North Central and East Central indicated that their greatest challenge to getting proper dental care was a lack of dental insurance. The South Central and West Central zones reported that covering their share of dental costs was the biggest obstacle.
- Among all respondents, 55.6 percent had visited a dentist for a routine checkup within the previous year. In addition 26.1 percent had visited a dentist within one to two years and 10.9 percent had visited a dentist within three to five years. Residents of the East and South were more likely to visit a dentist every one to two years, rather than within the previous year, which was the case for the majority in the six other zones.

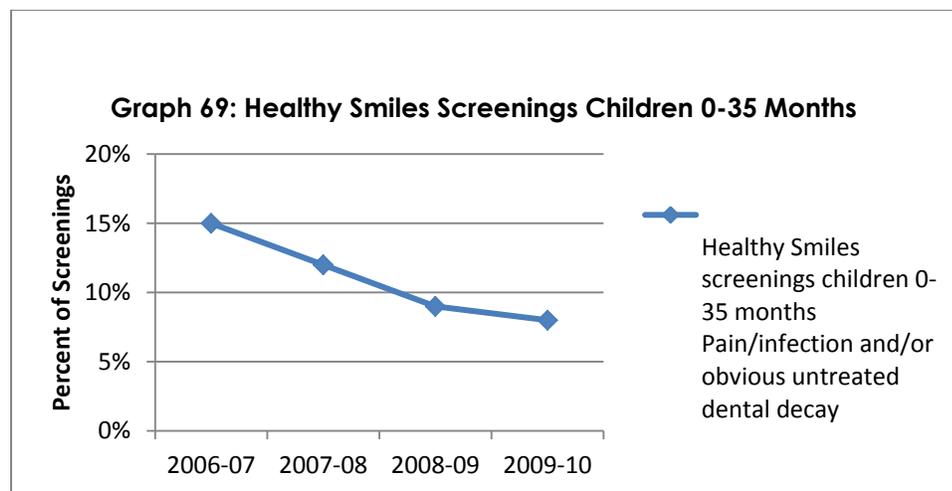
Statistics and Trends

Children

- Dental decay is the most common chronic disease of childhood and is on the rise among young children for the first time in 40 years, according to the October 2009 issue of *National Oral Health Policy Center Trend Notes*. Nationally, it is estimated that 51 million school hours are missed annually due to dental visits and oral health problems. For children in low-income households, the number of restricted activity days is 12 times that of those with higher income (*Barzel, 2010*).
- Each year in Wake County, screenings are conducted in elementary schools and preschools. In the 2009-2010 school year, approximately 5,300 kindergarten, second-grade and special-class students in targeted Title I schools were screened. Of those, 10.2 percent presented with pain/infection, and/or obvious untreated dental decay compared to 12.9 percent screened across all schools in 2000. Additional students were found to have questionable areas that would likely be diagnosed as decay by a dentist.
- In 2009-2010, screenings in all Wake County More at Four classrooms indicated that 10 percent of students had pain, infection and/or obvious untreated disease. An additional

nine percent displayed questionable areas. This is an improvement from the 2002-2003 school year, the first time More at Four classrooms were screened. That year, the rate of pain/infection and/or obvious untreated dental decay was 14 percent with an additional eight percent observed to have questionable areas.

- Among children 0 to 35 months of age screened as part of WCHS Preventive Dental Visit program in 2010, eight percent presented obvious untreated disease and another six percent had questionable areas of decay. In 2001-2002, the population examined was at the older end of 0 to 35 months and 29 percent were observed to have pain, infection and/or obvious untreated dental decay. An additional one percent had questionable areas. The graph below (Graph 69) represents exams starting 2006-2007 when Healthy Smiles increased the number of infants and toddlers examined.



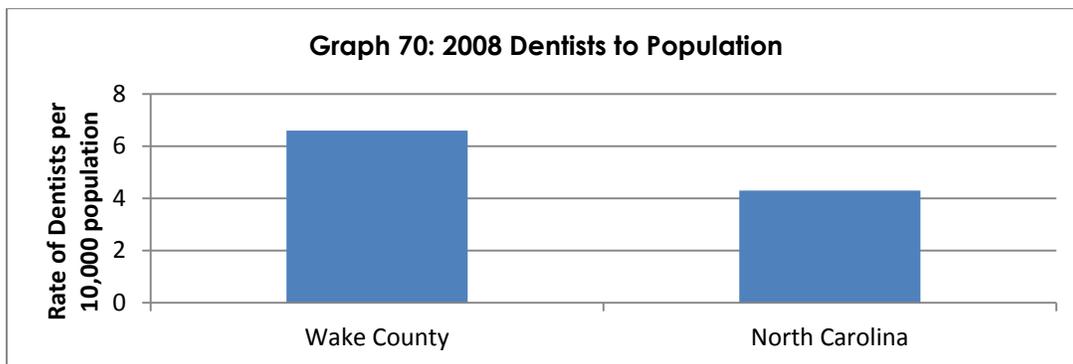
Adults

- The National Institute of Dental and Craniofacial Research (NIDCR) reports the following for adults (20 to 64 years old) and seniors (65 years and older) (National Institute of Dental and Craniofacial Research, last updated March 20, 2010):
 - Adults have an average of 25 remaining teeth, and four percent have no remaining teeth.
 - Seniors have, on average, 19 remaining teeth, and 27 percent of seniors have no teeth remaining.
 - Of adults and seniors with remaining teeth, 92 percent have had dental caries, 23 percent have untreated dental decay.

Resources and Strengths

Dentists in the Community

- Wake County and the Triangle area has a higher ratio of dentists to residents compared to North Carolina overall.



Source: <http://www.schs.state.nc.us/SCHS/data/trends/pdf/Wake.pdf>

- There were 4,605 dental service providers eligible for Medicaid reimbursement in N.C. as of 2007 (NCDHHS, Division of Medical Assistance, 2008).

Safety Net Clinics

- In addition to the private practices in Wake County, there are safety net clinics, a public health dental program and additional resources in bordering counties for those who are uninsured and unable to afford the full cost of private dental care. Safety net clinics include the following:
 - WCHS Dental Clinic, which provides care to children and pregnant women, as well as prevention outreach to families.
 - New Bern Ridge Dental Center (NBRDC), affiliated with a community health center, provides care to children and adults.
 - Wake Smiles, a free clinic staffed by volunteer dentists, provides services for adults at 100 percent of the poverty level and below.
 - WCHS and NBRDC accept Medicaid and Health Choice. Both bill uninsured patients on a sliding fee scale based on their ability to pay.
 - The UNC School of Dentistry and several federally qualified community health centers are located in adjacent counties.

Fluoridation

- All community water systems in Wake County are fluoridated, and therefore approximately 77 percent of Wake County residents benefit from optimal levels of fluoridated water. Water fluoridation continues to be the most significant dental therapy available. It has a greater than 60-year history of safety in the U.S. and is responsible for an approximately 30 percent reduction in caries (baby bottle decay) in both primary and permanent dentitions. Fluoridated water is especially effective because its use is passive, requiring no specific behavior from consumers.

Disparities, Gaps and Unmet Needs

- Dental disease is not self-limiting and cannot be cured with a short course of antibiotics. If left untreated, it becomes more serious, painful and even life-threatening. According to Healthy Carolinians, the determinants and risks for dental disease are low socio-economic status, lack of access to dental care, lack of education on the importance of oral health and a poor diet that is high in sugar. Dental care is costly and for many people, particularly those with low income, it is an expense that they cannot afford.
- Medicaid reimburses approximately 64.4 percent of dentists' retail fees in North Carolina, which contributes to Medicaid-eligible patients having difficulty accessing care.

Children

- Children affected with dental disease do not perform as well in school as their healthy counterparts. They can have difficulty eating and may have low self-esteem from the appearance of their decayed teeth.
- Minority and children from low-income households experience the highest rates of dental decay and the lowest rates of care (*National Oral Health Policy, 2009*). According to the N.C. Child Health Assessment and Monitoring Program, in 2008:
 - Eighty percent of parents said their child had seen a dentist in the past year. By race, 82 percent were White, 77 percent African-American and 73 percent "other."
 - Among parents who had less than a high school education, 68 percent said their child had been to the dentist in the past year. Among those with a high school education the figure was 76 percent. For those with some college education, it was 74 percent and among college graduates, it was 85 percent.
- The Kaiser Commission on Medicaid and the Uninsured estimated in April in 2009 that there are three children lacking dental insurance for every one lacking health insurance. There are five times more untreated dental caries among children in low-income families than among children from higher-income families. According to *Oral Health in America: A Report of the Surgeon General*, 78 percent of children have experienced dental caries by age 17.

- The 2003-2004 Statewide Dental Survey of N.C. School Children reported that, “Depending on race and ethnicity, 21-36 percent of parents wanted dental care for their children, but were unable to get it.” Many parents indicated that their children needed treatment. This survey found that approximately 31 percent of elementary school children have untreated decay in primary teeth and 13 percent in permanent teeth. The disease is concentrated in a small group of these children. Twenty percent of the children have 90 percent of the untreated decay in primary teeth and 10 percent have 90 percent of the untreated decay in permanent teeth.

Adults

- In the U.S., workers lose 160 million hours on the job due to dental disease. This has a significant impact, especially for low-wage workers regarding employability and maintaining employment. Good oral health is critical for general health. Research has linked bacteria associated with dental disease to heart disease, diabetes and pre-term and low-weight births.
- The National Institute of Dental and Craniofacial Research (NIDCR) reports the following for adults (20-64 years old) and seniors (65 years and older):
 - African-Americans and Hispanic adults, seniors and people with low incomes, have more untreated dental decay.
 - Hispanic adults and seniors, and those with low incomes, have more severe dental decay.
 - For adults and seniors, African-Americans and those with lower incomes and less education, have fewer remaining teeth.
 - For adults, African-Americans, Hispanics, and those with lower incomes and less education, are more likely to have no remaining teeth.
 - For seniors, those who are female, African-American, or have lower incomes and less education, are more likely to have no remaining teeth (NIDCR).
- Adults and seniors encounter obstacles to dental care in Wake County if they are uninsured and cannot afford the out-of-pocket expense of dental services.
- Medicare does not include coverage for dental services.
- Adults are limited in their ability to acquire Medicaid, but for those who do qualify, North Carolina Medicaid includes adult dental services. Adult services are not mandated and therefore vulnerable to budget cuts.

- New Bern Ridge Dental Center (with a sliding fee scale) and Wake Smiles (with a minimum co-pay) are the only dental programs in Wake County that provide discounted adult dental services with fees based on income. These programs serve a limited population so adults travel outside the County to receive dental care.

Implications and Emerging Issues

- The Children's Health Insurance Program Reauthorization Act (CHIPRA), signed into law in February 2009, renewed and expanded the Children's Health Insurance Program (CHIP). It includes several requirements and options expected to improve children's oral health.
- All CHIP programs will be required to include comprehensive dental benefits. CHIPRA also allows states with separate Children's Health Insurance Programs to offer a dental plan only, for children who have health insurance but not dental coverage.
- Oral health education will expand for parents of newborns. Parents will be informed about the risk for early childhood caries, how to prevent disease, how to access benefits and how to find providers.

The Health Care Reform Bill includes the following provisions:

- Guarantees oral health coverage for children and includes resources to improve dental disease prevention measures in every state.
- Oral health care for children younger than 21 must be among the benefits provided by any health insurance exchange.
- Helps increase access to preventive services with school-based sealant programs in all 50 states and an oral health education program for vulnerable populations, such as children, pregnant women and older Americans.
- Current health reform measures will not solve dental care access problems for the growing population of people 65 years and older. Medicare does not provide routine dental care benefits. As North Carolina contends with budget short falls, it will be vital to ensure that Medicaid adult dental services are maintained.
- Fluoride treatments, sealants and good oral hygiene practices are proven therapies for the prevention of dental disease, and to reduce the need for fillings and tooth removal. It is critical to maintain programs that emphasize prevention of dental disease to improve the health of Wake County's families. It is also critical to address disparities in access to care and the frequency of dental disease experienced by minority populations.

Sexually Transmitted Diseases

Community Perceptions

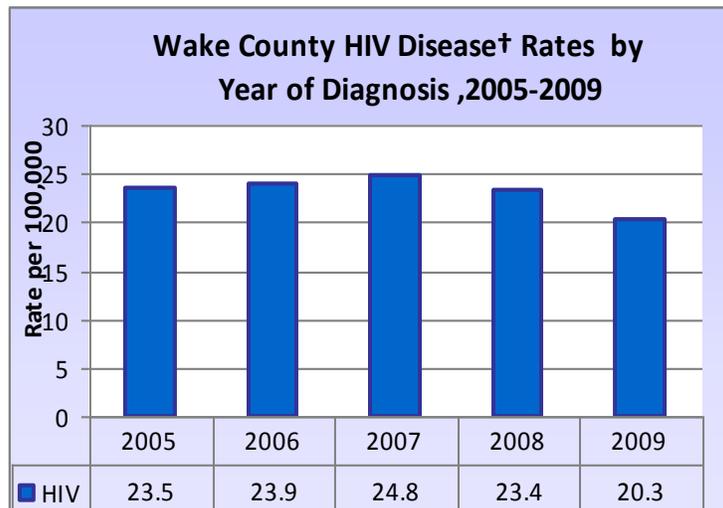
Wake County residents are concerned about HIV/AIDS and sexually transmitted diseases (STDs). When asked to rank the five most pressing health issues facing the community in the Wake County Community Health Assessment, 15 percent included HIV/AIDS and 14 percent cited STDS.

Statistics and Trends

HIV

- As of December 31, 2008, more than 35,000 people in North Carolina were estimated to live with HIV or AIDS, including individuals unaware of their infection. In 2007, the State designated HIV/AIDS the seventh leading cause of death for adults ages 25 to 44 years old.
- As of December 2008, Wake County had the second highest number of HIV cases among all of North Carolina's 100 counties, with a total of 3,412 cumulative HIV disease cases. While the number of HIV cases has fluctuated slightly annually over the last few years. In 2009, there was a noticeable decrease compared to 2007 and 2008 (Graph 71). Not all demographic and risk groups have experienced the same trend; racial and ethnic disparities still exist in Wake County, reflecting national trends.

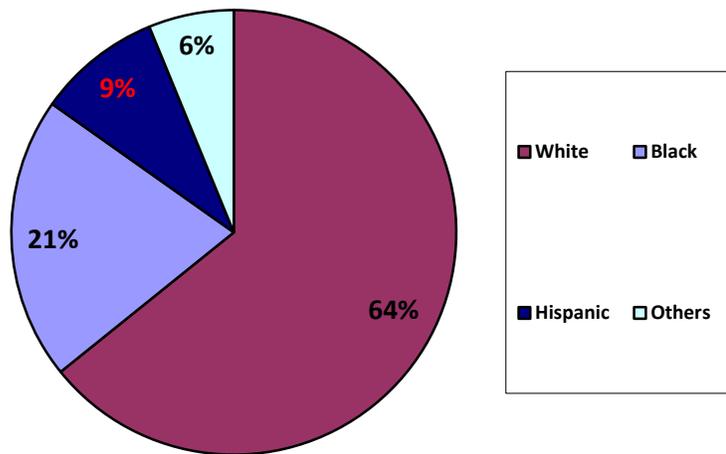
Graph 71



- Profiles of newly diagnosed HIV infections in Wake County show that HIV heavily impacts males and people of color. Blacks make up approximately 21 percent of the population in Wake County, but accounted for 64 percent of the new HIV diagnosis cases in 2009.

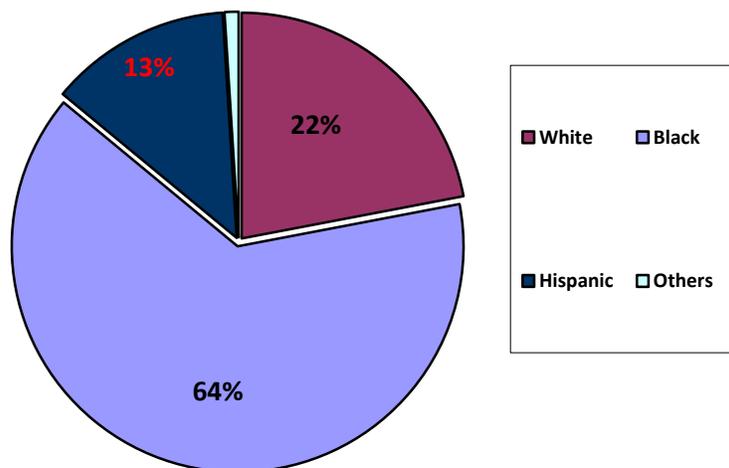
- Latinos/Hispanics make up only nine percent of the County's population, but account for 13 percent of new HIV infections in 2009. The rate of HIV disease was 9.1 times higher for Blacks than for Whites, and the rate was 4.3 times higher for Hispanics than for Whites in 2009.

Chart 3: Wake County Estimate Population by Race/Ethnicity, 2009



9/2010: <http://quickfacts.census.gov/qfd/states/37/37183.html>

Chart 4: HIV Disease† by Race/Ethnicity by Year of Diagnosis in Wake County, 2009

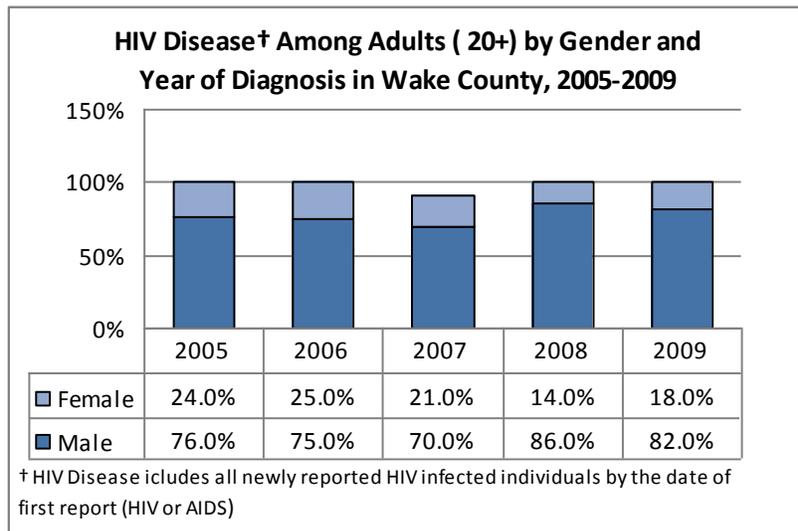


† HIV Disease includes all newly reported HIV infected individuals by the date of first report (HIV or AIDS)

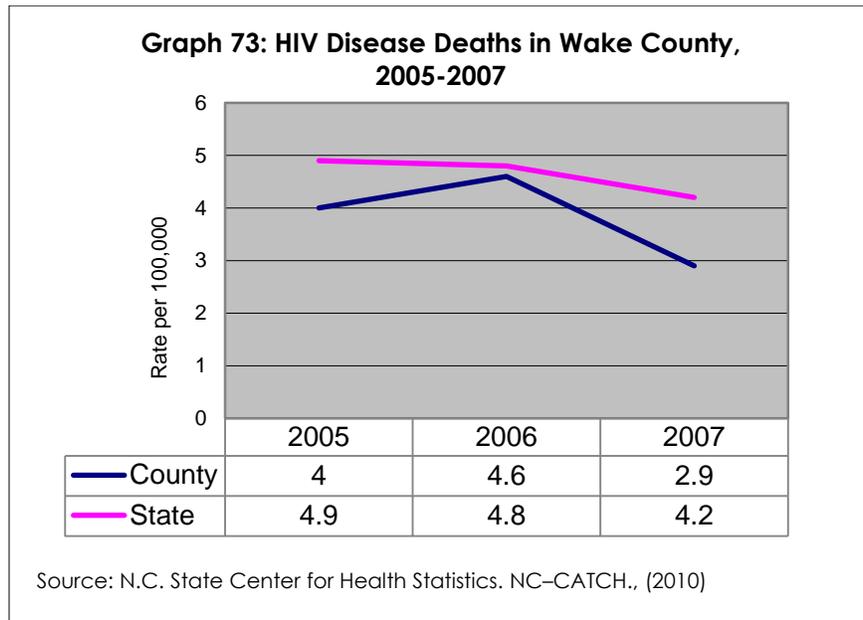
Source: N.C.Communicable Disease Branch -Surveillance Unit- 2010

- Among all new HIV diagnosis, 82 percent were male and 18 percent female.
- Men are infected with HIV primarily through male-to-male sexual contact; the leading mode of transmission for women is heterosexual contact.
- In 2009 the rate of infection among Black males was 102.6; for Black females it was 63.2.
- As for Hispanic/Latino males, the rate of newly diagnosed HIV in 2009 was 48.6 percent. There were fewer than five cases involving Hispanic women.
- The HIV disease rate among Black males was the highest of all gender and race groups in 2009.
- The HIV rate for Black women in Wake County in 2008 was almost 13 times higher than that for White women.

Graph 72

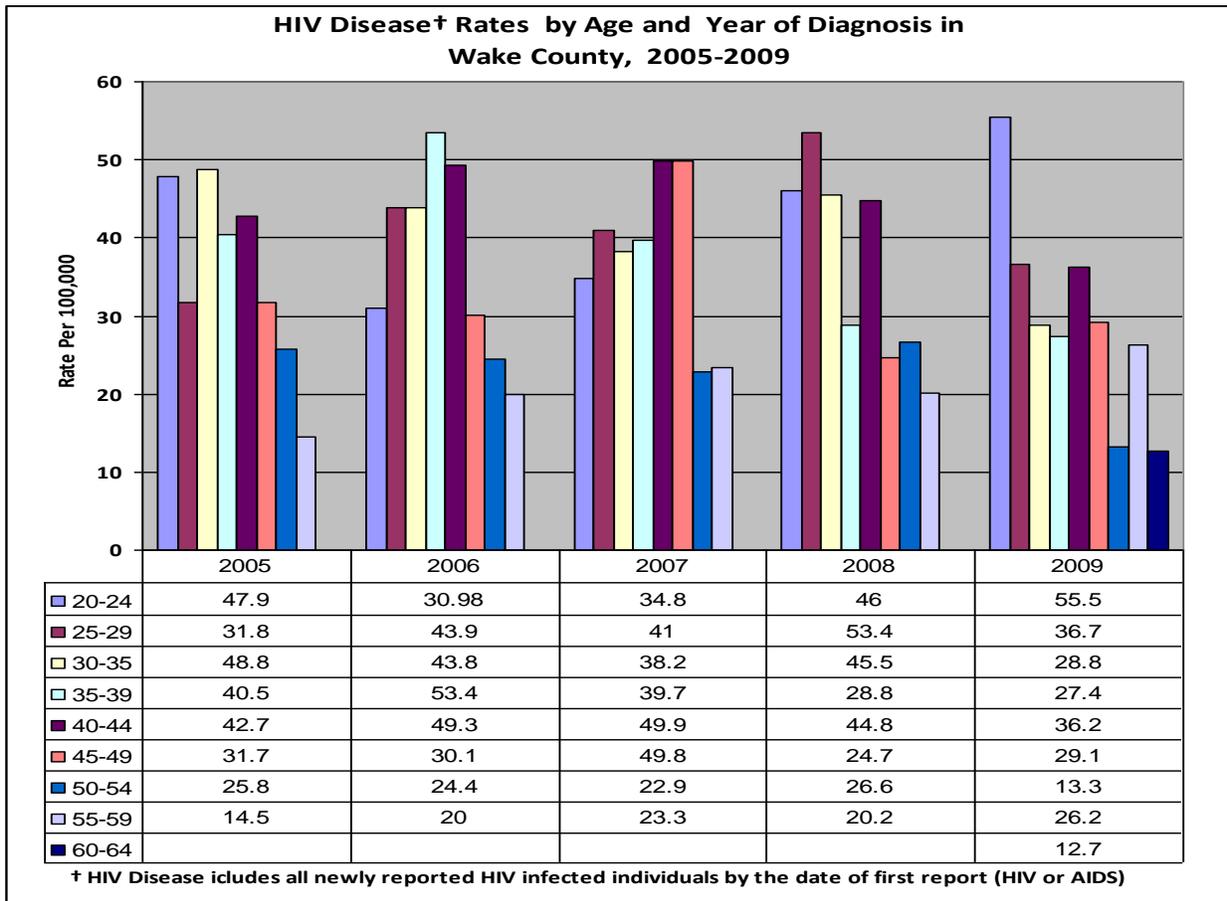


- The number of deaths from AIDS in Wake County dropped 37 percent from 2006 to 2007. Fewer people are dying because HIV is diagnosed earlier and today's treatments are effective. Anti-HIV treatment keeps viral loads low, which reduces transmission of the disease. Furthermore, many people now use condoms and have fewer sexual partners (*N.C. State Center for Health Statistics, NC-CATCH., 2010*).



- Young adults ages 20-24 accounted for 20 percent of all newly diagnosed HIV infections in 2009, an increase of almost 43 percent from 2008. Adults between the ages of 55-59 also experienced an increase of 40 percent of HIV infections in 2009 compared to 2008 (Graph 74).

Graph 74

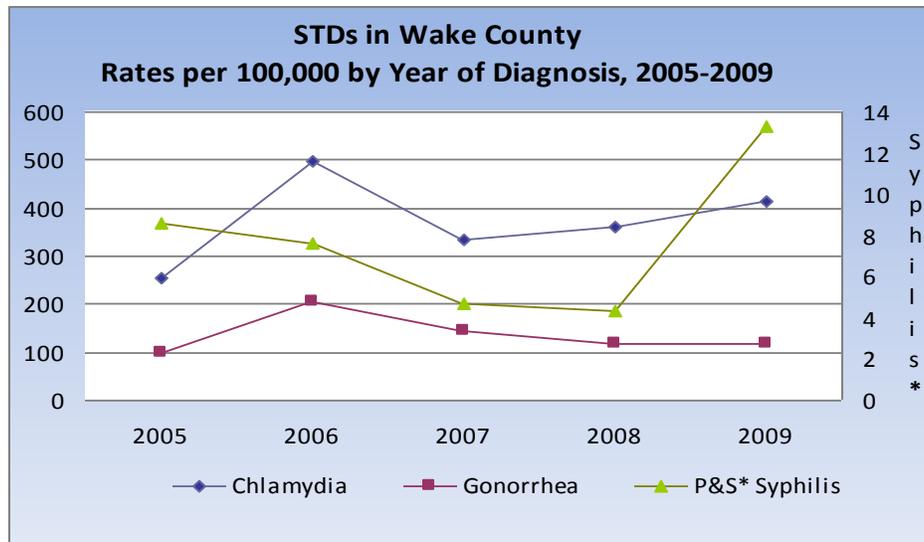


- Sexually transmitted diseases, such as gonorrhea and syphilis, increase the risk of HIV infection. High STD rates in Wake County are markers for high-risk sexual practices and are cause for concern. Psychosocial problems such as depression, childhood sexual abuse, using more than one drug, and partner violence have been shown to increase high-risk sexual behavior. Vulnerable individuals such as women, young adults, and men who have sex with men who have these problems are at greater risk for HIV infection (*Centers for Disease Control and Prevention, July 2003*).

Sexually Transmitted Diseases (STDs)

- STDs are hidden epidemics of enormous health and economic consequences. It is common for someone to be infected, but have no symptoms; most people with an STD do not even know that they are sick. People can be infected without knowing and pass disease on to their partners, having a significant health and economic impact on individuals and the community at large. Out of the 18 reportable STDs in North Carolina, the three most commonly reported are chlamydia, gonorrhea and syphilis (Graph 75).

Graph 75



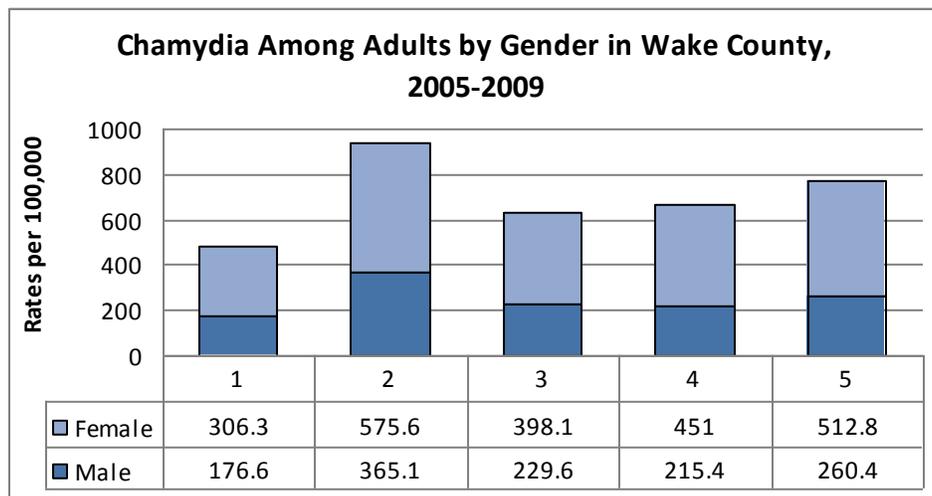
Primary, Secondary, Latent Syphilis

Source: NCHHS-Communicable Disease Surveillance Unit, 2009

Chlamydia

- In 2008, North Carolina ranked 18th among 50 states in chlamydia infections (414 per 100,000 persons). Wake County has the second-highest rate of infection in the State and the highest chlamydia infection rates among adolescent/adults, with a rate of 360.2 per 100,000 people.
- Chlamydia remains the most commonly reported disease in Wake County. In 2009, the rate of chlamydia infection was 392.1, up by 61.6 percent from 2005.
- From 2005 to 2009, Wake County females were diagnosed with chlamydia at a rate ranging from 1.6 to 2.0 when compared to that of males. Overall, the chlamydia infection rate for females in Wake County increased by 67.4 percent from the same period (2005-2009) (Graph 76).

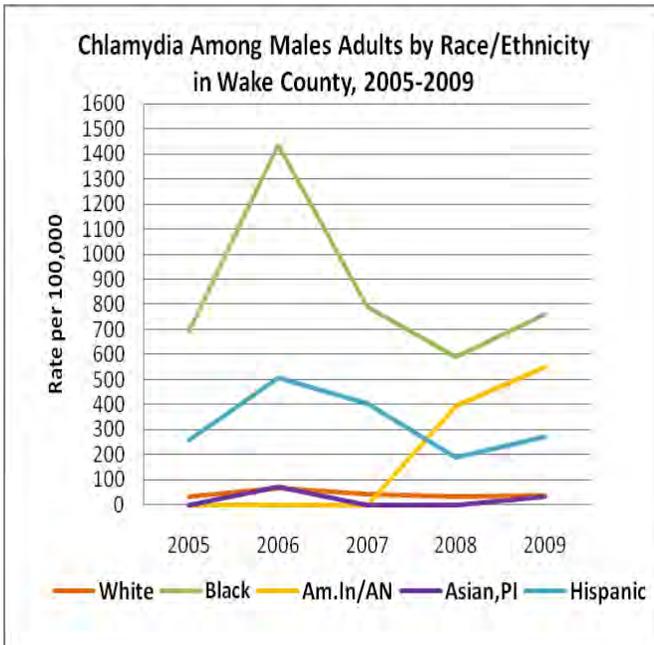
Graph 76



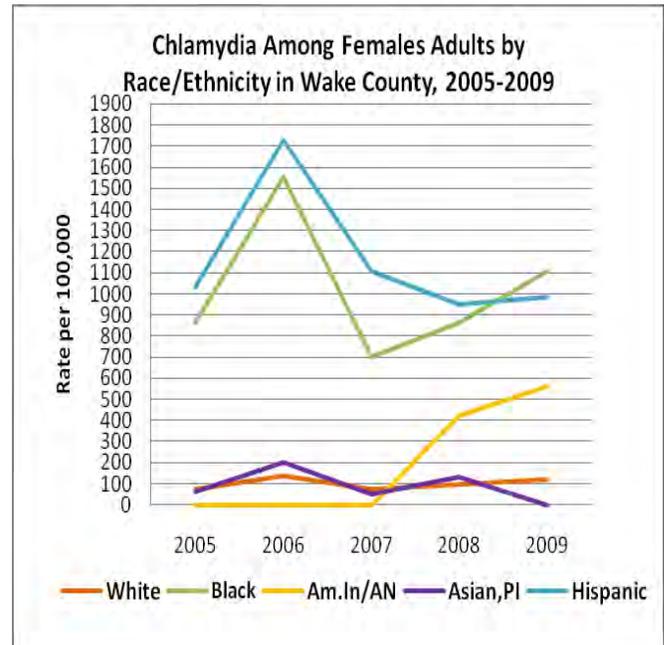
- In 2009, Wake County reported the highest rate of chlamydia among adult (age 20 or older) Black males (953.3 per 100,000), which was 12 times greater than the rate for White males; the male Hispanic/Latino rate was 7.8 times greater than the White male rate (Graph 77).
- Hispanic women have been diagnosed with chlamydia at a rate that is three to five times greater than that of Hispanic/Latinos males (Graphs 77 and 78).
- The major increase regarding chlamydia infection rates from 2005 to 2009 occurred among Whites (from 55.3 in 2005 to 79.1 in 2009). The rates for Blacks and Hispanics steadily increased (Blacks by 21.8 percent and Hispanics by 2.1 percent).
- The most recent data on American Indian/Alaska Native shows that there was an increase on chlamydia infection rate by 31.3 percent from 2008 to 2009.
- The rate of chlamydia among Hispanic females increased by 15.6 percent from 2008 to 2009 after a dramatic drop from the rate of 1729.7 per 100,000 in 2006.

Chapter 6 PHYSICAL HEALTH

Graph 77

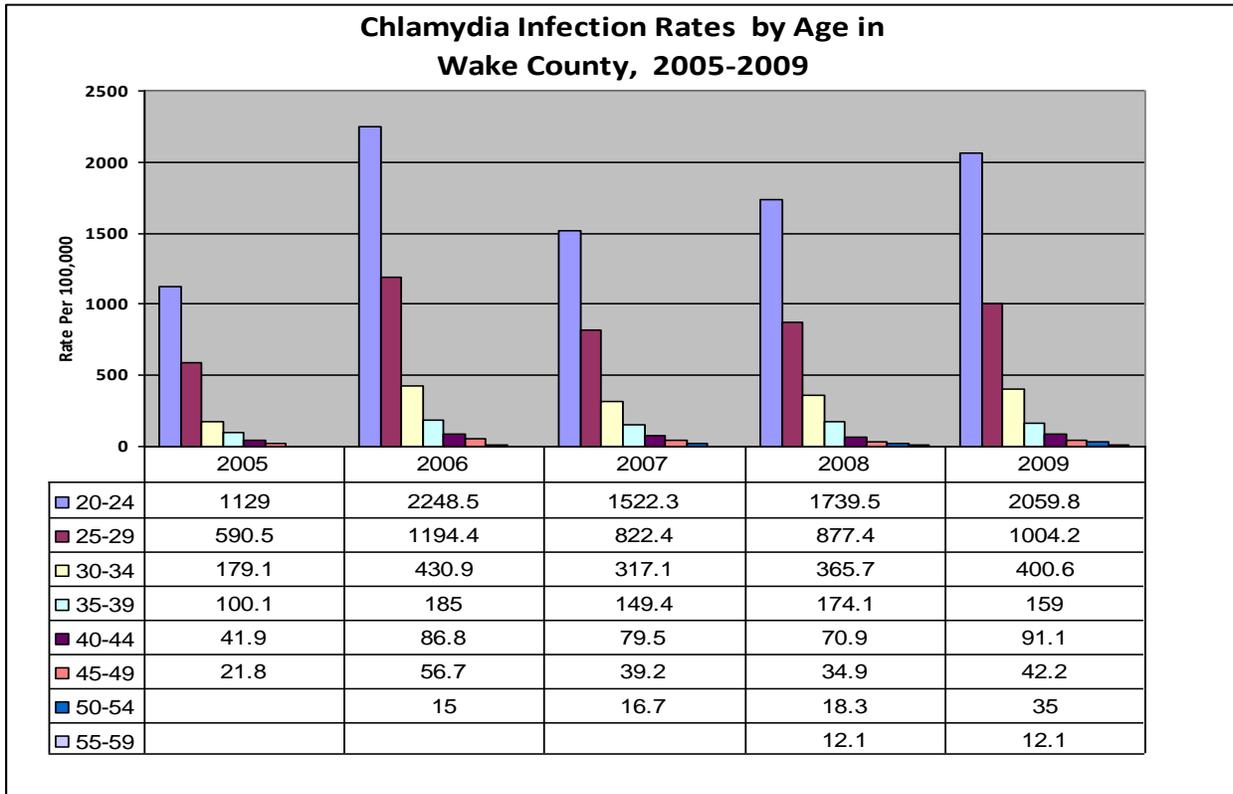


Graph 78



- Chlamydia infection is most common among youth in their teens and 20s.
- Chlamydia rates in Wake County are consistently higher in the 20 to 24 age group, an increase of 18.4 percent in 2009, and nearly two times more than was reported in 2005.

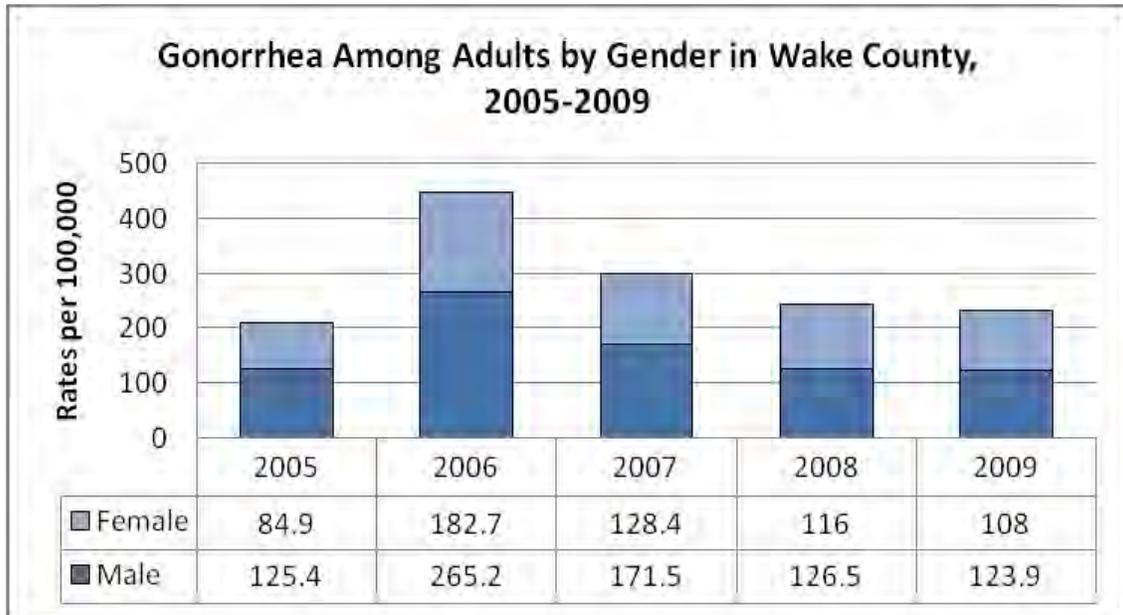
Graph 79



Gonorrhea

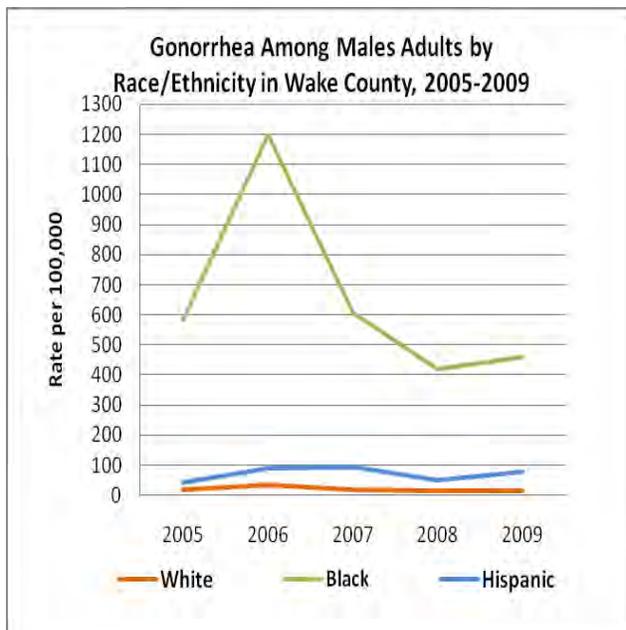
- In 2008, North Carolina ranked fifth nationally in gonorrheal infections (176.3 per 100,000 persons). Gonorrhea is the second most commonly reported infectious disease.
- Gonorrhea infection in Wake County has been steadily decreasing from 2006. In 2009 the rate was 117.1 per 100,000; a decrease of 47.5 percent compared to 2009.
- In 2009, Wake County reported gonorrhea rates among males (123.9 cases per 100,000) slightly greater than those among women (108 cases per 100,000).

Graph 80

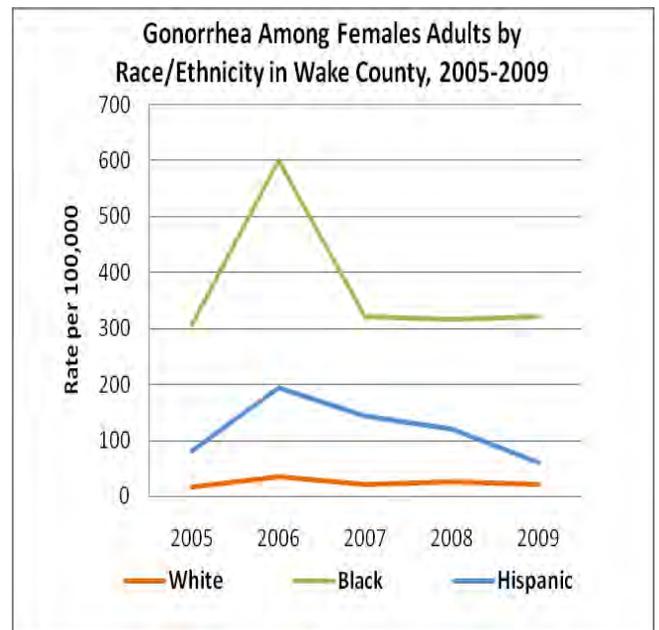


- The highest rate of gonorrhea infection in 2009 was among Blacks with 386.3 per 100,000; 20 times greater than Whites and 5.3 times than Hispanics.
- Gonorrhea rates among Hispanics in 2009 was almost four times (72.8 per 100,000) greater than Whites. In 2009, the rates among Hispanic males increased by 50 percent in 2009.

Graph 81

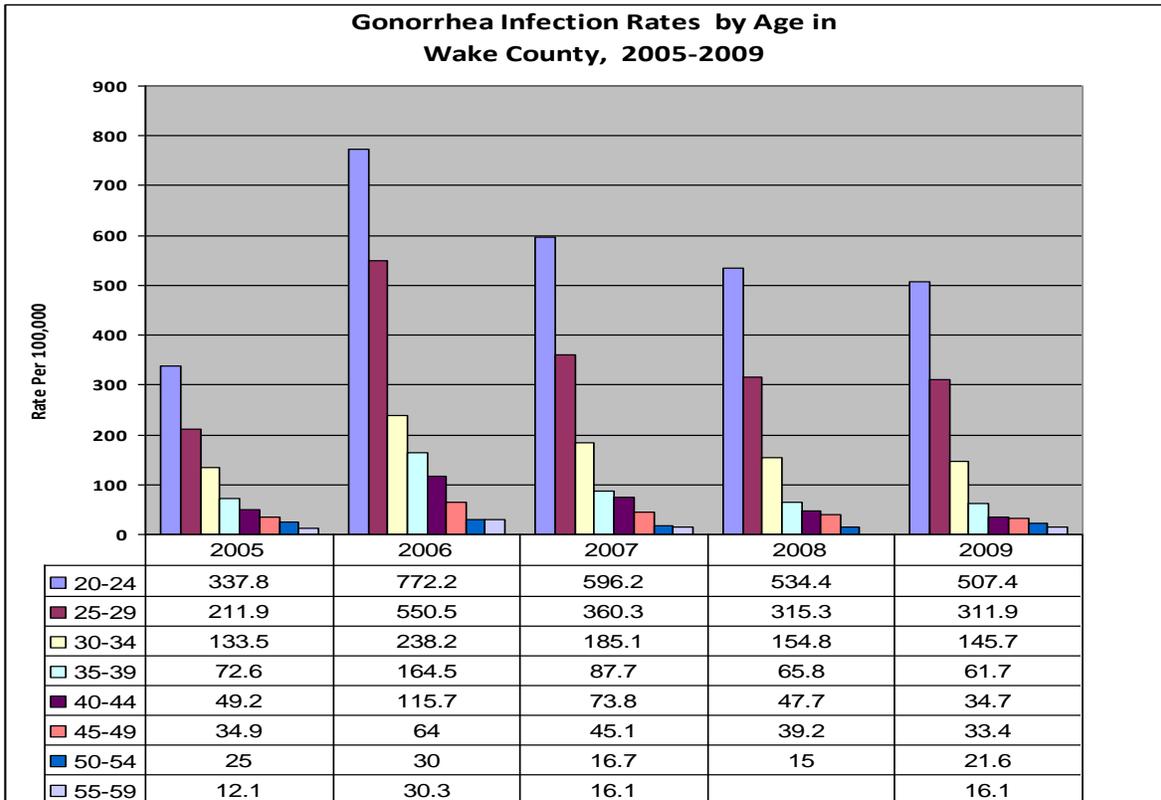


Graph 82



- Overall, gonorrhea cases in Wake County are decreasing; however, the rate in the 20 to 24 age groups is consistently higher than any other age group.

Graph 83

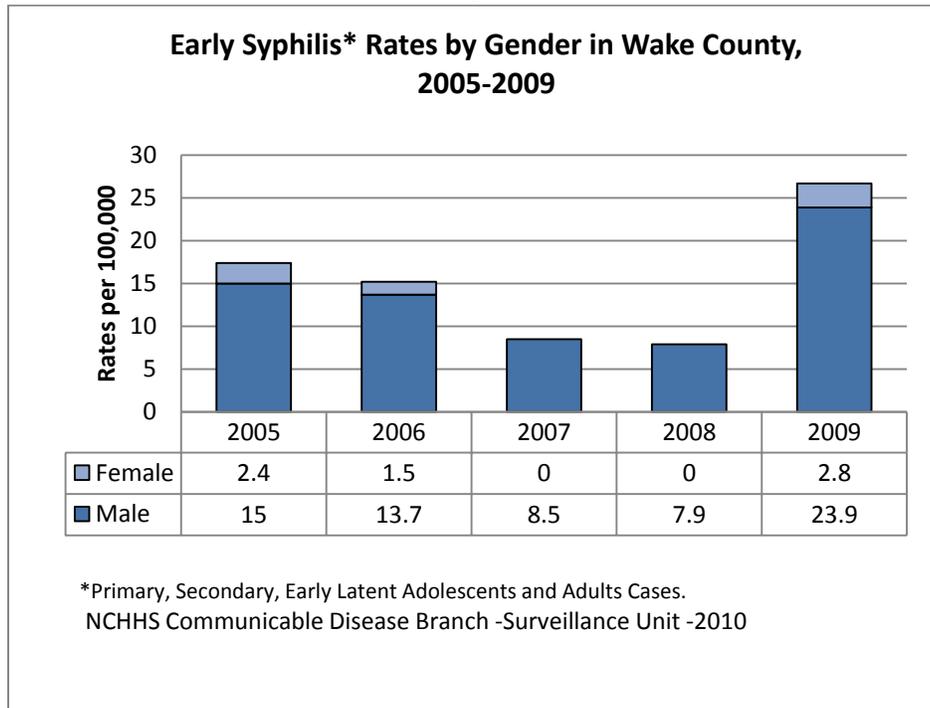


Syphilis

- Primary and secondary (P&S) syphilis, the stages when syphilis is most infectious, remain a problem in the southern U.S. and some urban areas. North Carolina ranked 17th among 50 states, with 3.2 cases of P&S syphilis per 100,000 persons in 2008. The number of congenital syphilis cases decreased from 19 in 1999, to 11 in 2008.
- In 2009, the State of North Carolina experienced a significant outbreak of new syphilis cases. Wake County ranked third among the counties with the highest number of syphilis cases with a rate of infection of 13.3. The rate in Wake County increased by 54.6 percent from 2008, almost two times the 2005 rate.
- The rate of male early syphilis cases in 2009 was 23.9 per 100,000, an increase of 70 percent from 2008; and eight and a half times higher than for women in 2009. Syphilis among women was less than five cases in 2007 and 2008; however, the numbers are slightly higher (12 cases)

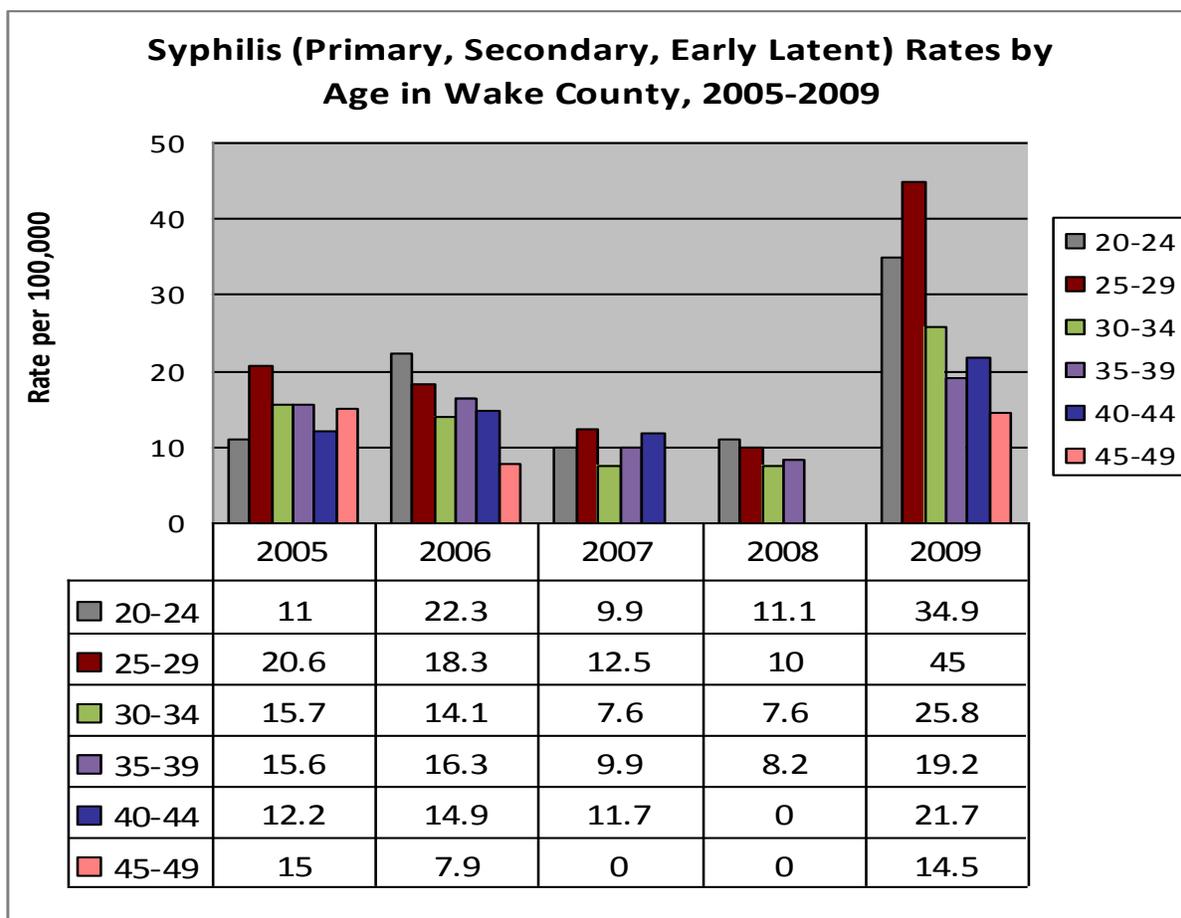
in 2009. The male-to-female ratio (five male cases per female) reveals an increasingly larger proportion, which also suggests increasing transmission among men who have sex with men.

Graph 84



- In Wake County most early syphilis cases occurred among Black males (blacks 91.7 per 100,000), a rate 10.8 times higher than for Whites. The disease among White residents was observed mostly among males with a rate of 8.5.
- Syphilis cases previously were found in an older population compared with those affected by chlamydia and gonorrhea. For the past five years there has been a shift in Wake County. Of late, every year the 25 to 29 age group has the highest rate, the next year the younger group (20 to 24) has the highest. Together, both age groups comprised 42 percent of syphilis cases in 2009.

Graph 85



Resources and Strengths

Sexual health education and screenings encourage responsible sexual behavior among high-risk populations. The WCHS HIV/STD Community Program and the Sexually Transmitted Disease Clinic offer a continuum of care with STD prevention education, screening and HIV testing; AIDS case management, surveillance and investigation; and treatment for HIV disease and STDs. On average the programs provide 14,853 HIV tests per year. Ninety percent of individuals are also tested for syphilis. Half of HIV and syphilis tests occurred at nontraditional testing sites, such as churches, colleges, jail, community-based organizations, etc. The Disease Intervention Specialist team locates and investigates partners and personal contacts of individuals testing positive for HIV or STDs to prevent the spread of disease. The STD Clinic provides services to uninsured and underinsured clients in Wake County, including high-risk populations and other individuals with HIV and other sexually transmitted diseases.

Other AIDS services organizations include the following:

- The Alliance of AIDS Services–Carolina provides emergency funds for housing, transportation and medical services; a food pantry and a ministries program.
- Wake Health Service, Inc.'s Horizon Health Center provides medical care to the County's homeless population at reduced or no cost.
- BERT-C (Basic Education Resource Treatment) and the Touching Life Center provide AIDS Case Management Services to Medicaid clients only.
- Glory to Glory House, Inc. provides housing for women with HIV/AIDS and mental health illnesses, and offers AIDS case management to Medicaid clients only. Staff is based at Under One Roof, located across the street from the County STD clinic. With the extreme expense of HIV medications and the temporary closure of the State's AIDS Drug Assistance Program, more patients are seeking case managers' help in accessing pharmaceutical assistance programs. A social worker (bridge counselor) assists newly diagnosed individuals as they enter the HIV care system, and require short-term care and coordination services.

Disparities, Gaps and Unmet Needs

- As detailed in the previous Statistics and Trends subsection, HIV bears witness to the most extreme disparity in chronic disease. HIV heavily impacts people of color. In 2009, Blacks experienced new HIV infections at 9.2 times the rate of the White population, the chlamydia rates was 19.8 times higher, the gonorrhea rate was 21 times higher and the syphilis rate was 10 times higher when compared to Whites. Overall, the HIV and STD rates for African-Americans are at least nine times higher than the rates for the white population.
- Women, primarily those who are younger, bear disproportionate burden of complications associated to STDs. Pelvic inflammatory disease (PID), ectopic pregnancy, infertility and chronic pelvic pain are the most common complications. Chlamydia and gonorrhea infections in women are usually asymptomatic and often go undiagnosed.
- HIV and STDs seriously impact young adult males and females, and Wake County residents are getting infected with HIV at a younger age. As of December 2009, one out of five new HIV infections were observed in young adult between the ages of 20 to 24 years, a statistic that excludes those unaware of their infection.
- Hispanics experience new HIV infections at 4.3 times the rate of the White population, gonorrhea 4.0 times greater and chlamydia 7.2 times greater. According to the Centers for Disease Control and Prevention (CDC), groups with the highest rates of STDs are often the same groups in which access to health care is the most limited. Hispanics are 4.6 times greater than the White population to be uninsured. Hispanics face an additional set of barriers in accessing health-care services in the U.S., such as language barriers, cultural

differences with health-care providers and the administrative complexity of the health care system. Immigration laws also pose an enormous barrier for Hispanics in North Carolina to seek health care, especially preventive care. Such obstacles might place Hispanics at increased risk for not seeking preventive services.

Access to Care

Community Perceptions

- Almost a quarter of respondents to the 2010 Wake County Community Assessment survey reported a household income in 2009 between \$30,000 and \$49,999. Those making more than \$100,000 mostly lived in the North and Western County zones. Those making below \$30,000 tended to reside in the East Central, South Central and West Central zones, highlighting an economic divide within Wake County.
- A slight majority of the respondents (57.1 percent) consider the County healthcare system good.
- Respondents identified six of the most important health issues in Wake County as: obesity, mental health, injuries, diabetes, teenage pregnancy and lack of access to health services.
- About three-quarters of respondents (76.8 percent) reported having some health insurance during the past 12 months. However, 38.9 percent of respondents from East Central, 25.8 percent from West Central and 24.8 percent from North Central regions reported having no insurance at times during the previous 12 months. Among those with health insurance, most respondents (43.7 percent) reported receiving coverage through their employer. One-quarter of respondents from the East Central zone reported that they had no health insurance, compared to 15.9 percent of respondents from all zones combined.
- Approximately 65 percent of respondents reported going to a doctor's office when they were sick. Just under half of the respondents from the East Central zone (48.1 percent) reported going to a doctor's office when they were sick and another 35.4 percent reported going to the Wake County Health Department. Respondents in the East zone reported going to the hospital when sick more frequently (16.8 percent) than other zones.
- Cary and Raleigh (the County's largest communities) were the most likely places where respondents received primary care.
- A majority of respondents (62.3 percent) visited a doctor for a routine check up within the previous year. However, when looking at each individual zone, respondents from East and South were more likely to report having last visited a doctor for a routine check up one to two years ago. Approximately half of the respondents from the Southern and Eastern zones reported not having visited their doctor in the past one to two years.

- Most respondents (86.9 percent) reported that they do not have a problem getting health care; however, those in the East Central and East zones were more likely (18.9 percent and 16.4 percent respectively) to report having trouble getting needed care. Among those who reported problems, the biggest problems were a lack of insurance (64.7 percent) and costly co-pays (35.8 percent). In the South, 100 percent of the respondents indicated that a lack of coverage was a problem; whereas, a majority of the respondents (70.4 percent) with a problem getting care in the East indicated that cost was the barrier. This indicates a disparity in insurance coverage and access to healthcare across the County.
- In terms of refilling prescriptions, most respondents (90.3 percent) did not have a problem filling a prescription. Those in North Central, East Central, South Central and West Central reported problems more frequently. Because of the small sample size it is difficult to determine, a significant difference. Again, insurance coverage (52 percent) and cost (44.1 percent) were the most frequent challenges reported.

Statistics and Trends

- Access to health care is tied to the availability of health insurance. In the last 10 years, the number of uninsured people rose dramatically in the U.S., North Carolina and Wake County, with growth in this state outstripping national growth. Between 2000 and 2007, N.C. experienced a 29 percent increase in uninsured residents, compared to a 12 percent increase nationally (*NCIOM-HealthAccess Study Group, 2009*).
- Estimates based on the unemployment surge suggest that from January 2007 to January 2009, North Carolina's uninsured rate climbed 3.1 percent, the fourth largest increase in the country (behind CA, TX and FL). N.C.'s unemployment rate was been projected to climb to 12 percent by the end of 2010, meaning further increases in the number of uninsured adults could be likely (*NCIOM-Health Access Study Group, 2009*).
- Wake County has six hospitals: WakeMed, Rex, Duke Health Raleigh, WakeMed Cary, WakeMed Apex and WakeMed North. The bulk of Wake County's uninsured care is delivered at WakeMed's Raleigh campus. In 2009, WakeMed recorded approximately 50,500 unreimbursed visits to the Emergency Department (ED). Assuming the lower visit cost for those visits (a very conservative estimate), the cost totaled \$126,250,000.
- North Carolina's estimated uninsured census as of January 2009 was approximately 1.75 million people, or about 21.5 percent of all non-elderly North Carolinians. Comparatively, Wake County's total percentage of uninsured for all non-elderly residents was 12.5 percent, or about 107,000 people (*U.S. Census 2009 American Community Survey, 2010*). The number of uninsured people is widely expected to continue to increase with the ongoing recession.

Table 34: Health Impact of No Insurance in N.C.

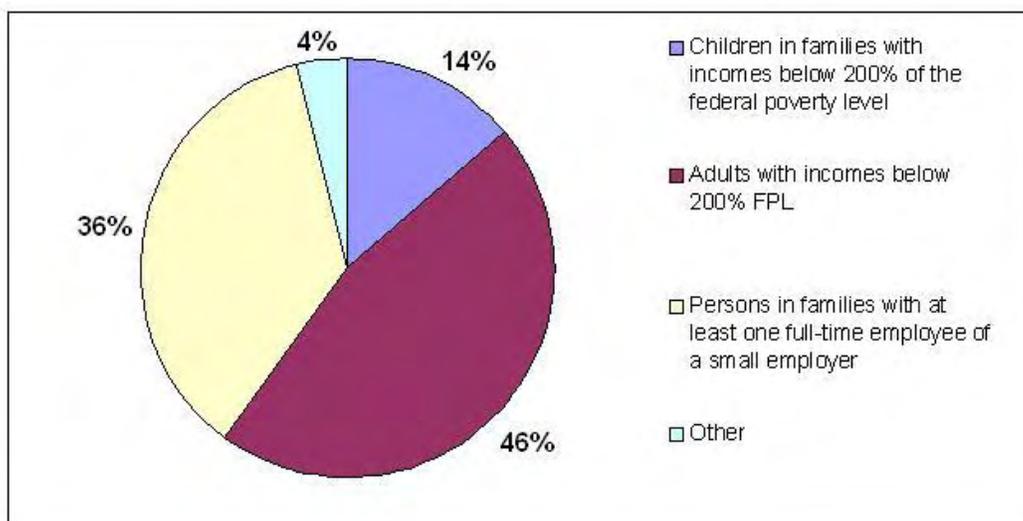
About 75 percent of those without insurance have gone without coverage for more than one year.
45 percent of the uninsured did not fill a prescription in the last year, and 60 percent did not see a doctor or visit a clinic despite having medical problems.
25 percent of the uninsured do not fill prescriptions due to the cost.
If uninsured, 50 percent of people with chronic conditions skip medications.
Result: Uninsured people wait until conditions become critical, and more complicated and more costly to treat. Adults without health insurance are 25 percent more likely to die prematurely than adults with insurance.

Sources: NCIOM-Health Access Study Group, 2009, Kaiser Commission on Medicaid and the Uninsured, 2009, Families USA, 2009, Robert Wood Johnson Foundation, 2005.

Approximately 79 percent of people without health insurance in N.C. fall into three categories:

- Children in families with incomes below 200 percent of the federal poverty level (FPL), representing 14 percent of all non-elderly uninsured
- Adults with incomes below 200 percent FPL (46 percent of all non-elderly uninsured)
- Persons in families with at least one full-time employee of a small employer (36 percent of all non-elderly uninsured) (*NCIOM-Health Access Study Group, 2009*).

Chart 5: Profile of Wake County’s Uninsured Population



Here are some additional facts about our uninsured:

- In North Carolina, one in 12 children are uninsured. In Wake County, the number of uninsured decreases to one in 15 (*U.S. Census Bureau, 2009 American Community Survey, 2010*).
- More than 22 percent of all North Carolinians ages 18-64 are without health insurance. In Wake County, that percentage drops to 17 percent, or approximately 98,000 people (*U.S. Census Bureau, 2009 American Community Survey, 2010*).
- In North Carolina, less than 1 percent (7,100 people) of residents over the age of 65 lack health insurance (*U.S. Census Bureau, 2009 American Community Survey, 2010*).

Resources and Strengths

- Wake County, which is a growing community, is home to 758 primary care physicians (internal medicine, family medicine, pediatrics and OB-Gyn) and 475 nurse practitioners and physician assistants (*N.C. State Center for Health Statistics. NC-CATCH., 2010*).
- Since 2005, Rex added 43 inpatient beds, WakeMed Cary added 42 and WakeMed Raleigh added 60. The total in all County hospitals is 1,348.
- Since 2005, Duke Raleigh Hospital has opened primary and urgent care centers in Knightdale and Morrisville, as well as a “primary care only” facility in Raleigh.
- Since 2005, two new emergency facilities have opened, at WakeMed North and WakeMed Apex. Total WakeMed ED bed capacity (at its four campuses) is 136. In addition, Duke Raleigh has 18 ED treatment beds, while Rex has 46.
- There are more than 50 Urgent Care Centers in Wake County.
- The Capital Care Collaborative, formed in 2007 to help improve access to quality care for the uninsured in Wake County, has—as its primary initiative—developed and implemented a database system to help improve access to care among the uninsured. The system is being implemented at the area’s hospitals and free/low-cost clinics to screen for Medicaid eligibility, to track patient access (in order to provide better medical care and reduce duplication of services), to make referrals for ongoing care, to complete Medicaid applications and increase the enrollment rate for those who are eligible but not enrolled, and for electronic enrollment of patients in prescription assistance programs. By 2011, it will also be used to track and share basic health information among partner organizations.
- A number of health clinics and programs serve Wake County’s uninsured and under-insured at low or no cost. Many of these organizations will likely consider accepting Medicaid

recipients given how their ranks are expected to grow with implementation of recent federal health care reform legislation.

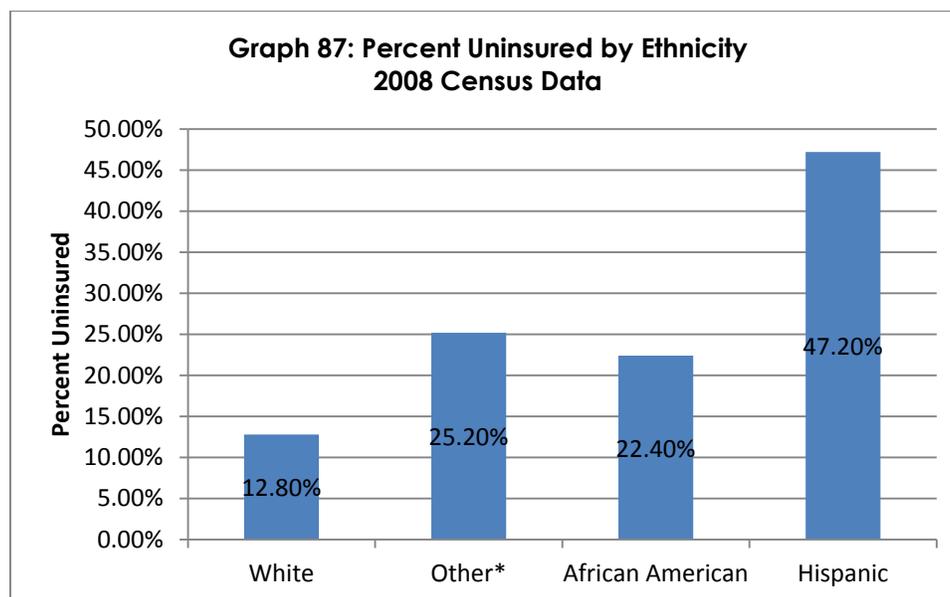
- In 2010, Alliance Medical Ministry and Wake Health Services, Inc. opened acute care clinics that offer same-day appointments for minor health issues at minimal cost.

Helpful resources/advocacy organizations:

- NCHHealthCareHelp.org: Connects North Carolinians to free and reduced-cost healthcare services and is based in Wake County.
- Health Access Coalition: Advocates statewide for expanding access in all N.C. counties. The Coalition is based in Wake County.
- CareShare Health Alliance: Supports local collaborative networks of care statewide to improve the health of low-income, uninsured North Carolinians.

Disparities, Gaps and Unmet Needs

- Among different ethnic groups, great disparities in access to health care exist across all age groups. Minority groups make up a disproportionate share of the uninsured in N.C., especially Hispanics who make up only about 9 percent of the population in Wake County.



Source: Thompson Reuters N.C. Hospital Database, 2010

* "Other" includes Asian-Americans, Pacific Islanders, American Indians, Aleutians, Eskimos and persons of "Two or more Races"

- According to the 2007 “Faces of the Uninsured” Report by Blue Cross and Blue Shield of North Carolina (BCBSNC), approximately 65,000 N.C. adults are eligible for Medicaid, but are not enrolled. However, the number is likely a lot higher in 2010 (*Blue Cross Blue Shield of North Carolina, 2007*). There are now an estimated 1.3 million uninsured in N.C. and, according to an analysis published by the Kaiser Family Foundation in January 2010, the percentage of Medicaid-eligible, but uninsured is estimated at 42 percent. The implications are significant. Consider the following facts about the low-income uninsured:
 - 4.5 times more likely to have diabetes
 - 30 percent more likely to have high blood pressure
 - 50 percent more likely to have high cholesterol
 - Almost twice as likely to have fair or poor health (*Blue Cross Blue Shield of North Carolina, 2007*)

Ages 0–17

- Approximately 60 percent of uninsured N.C. children are eligible for insurance (*NCIOM-Health Access Study Group, 2009*). Although children in families with incomes below 200 percent FPL are usually eligible for public health insurance, they are the most likely to be uninsured. More awareness of, and enrollment in, Medicaid and in N.C. Health Choice (NCHC) are needed.
- A majority of N.C. children (65 percent) in immigrant families have at least one parent from Latin America. A high concentration of these children resides in Wake County, the Triangle, the Triad and Charlotte metropolitan areas. Almost a quarter of children in immigrant families have no health insurance coverage, compared to only eight percent of children born to families from the U.S. (*N.C. Child—Children in Immigrant Families, 2010*).

Table 35: Percent of Uninsured Children by Income Level

	North Carolina		United States	
	Number	%	Number	%
Income				
0–200 % FPL	186,000	63.6 %	5,164,000	60.4 %
201–400 % FPL	80,000	27.4 %	2,450,000	28.7 %
401 % FPL or higher	26,000	9 %	931,000	10.9 %

Source: “Left Behind: North Carolina’s Uninsured Children”. Families USA. October 2008.

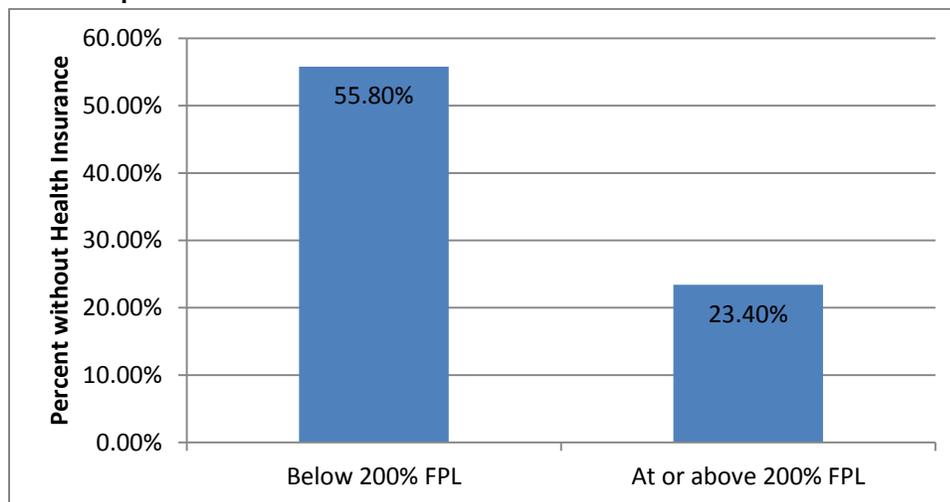
Ages 18–64

- In Wake County, more than 18 percent of adults under age 65 lack health insurance. Uninsured adults are less likely to seek care for chronic conditions and are 25 percent more

likely to die prematurely than adults with health insurance (*NCIOM-Health Access Study Group, 2009*).

- For low-income adults who do not meet the stringent disability and family status requirements for Medicaid eligibility, private market insurance is all but impossible to afford. Between 1999 and 2008, insurance premiums rose 119 percent, compared to a 34 percent increase in wages and a 19 percent increase in overall inflation (*NCIOM-Health Access Study Group, 2009*).
- Low-income adults (incomes less than 200 percent FPL) are much more likely than their higher-income counterparts to be uninsured. While 23.4 percent of those with incomes at or above 200 percent FPL were uninsured for six months or longer in 2007-2008, 55.8 percent of individuals with incomes below 200 percent FPL were uninsured during the same time period (*Families USA, 2009*).

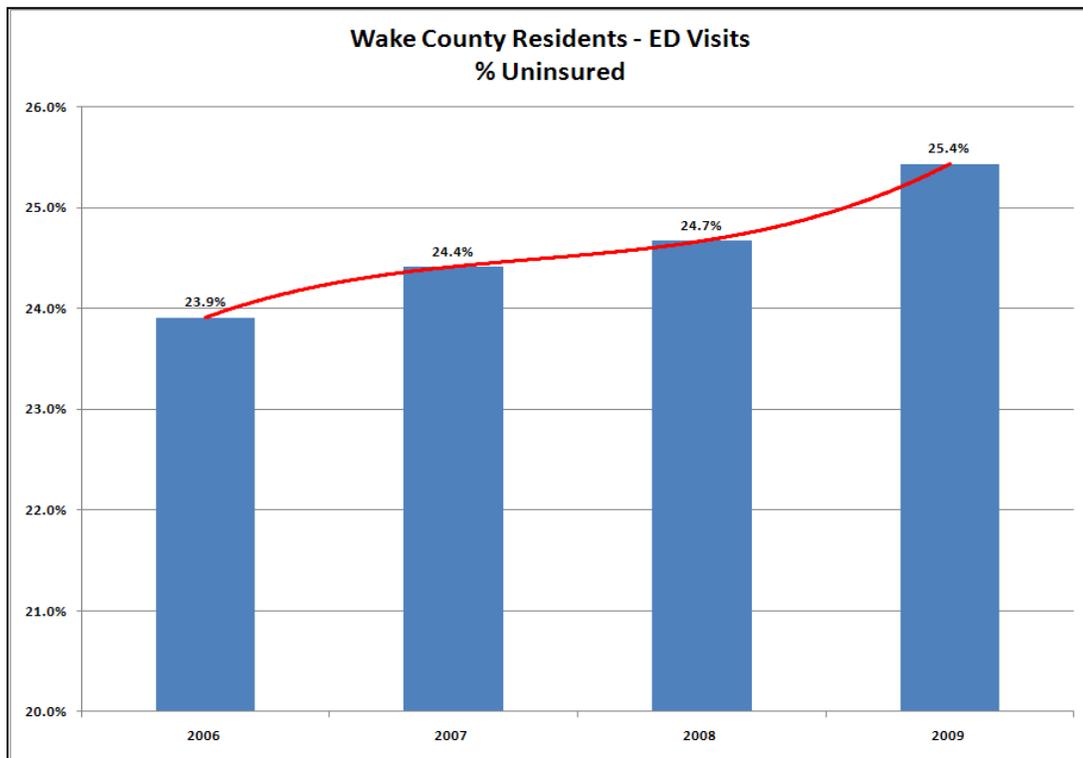
Graph 88: Percent of Individuals without Health Insurance



Source: Families USA, 2009.

- With current resources, we are unable to meet the needs of uninsured, low-income adults in Wake County. Free or low-cost care options detailed in the “Strengths and Resources” section serve an estimated 15,000 people each year. The population of uninsured people reached 140,000 in 2010. The default care provider for people without health insurance who cannot get an appointment at a local clinic is a hospital emergency department.

Graph 88



Source: Thompson Reuters N.C. Hospital Database, 2010

Ages 65 and older

- Due to the availability of universal coverage for older adults through Medicare, the percentage of adults older than 65 without health insurance is very small—less than 2 percent, or about 16,000 people in N.C. Although the vast majority of adults in this category are covered, that coverage is at times unaffordable, especially for lower-income seniors.
- Health care reform will bring important changes to Medicare, including the closing of the prescription “doughnut hole,” eliminating co-pays for preventive care, and fixing the Medicare reimbursement schedule so that more doctors will accept the insurance. These will improve access to care for Wake County seniors.

Implications and Emerging Issues

- The number of uninsured people in Wake County is higher than ever, stretching County resources beyond capacity. In March 2010, Congress passed a comprehensive healthcare reform bill that will expand public health care safety nets and provide affordable private-insurance options for people ineligible for public plans. This will have great local impact.
- In the short term, highlights include (2010-2013):
 - Children will be able to maintain coverage under a parent's insurance up to age 26.

- The Medicare “doughnut hole” will begin to close with a \$250 rebate issued to people who reach the Part D coverage gap.
- A temporary high-risk pool will be created for people with pre-existing conditions who have been uninsured for six months or more. The annual cost of coverage is capped at \$5,950 for an individual and \$11,900 for a family.
- An additional \$11 billion in new funding will be available to Community Health Centers, the National Health Service Corps, school-based health centers and nurse-managed health clinics.
- In the long term (by 2014), highlights include:
 - With few exceptions, everyone will be required to purchase health insurance (with subsidies offered to individuals and families with incomes less than 400 percent of FPL).
 - Medicaid eligibility will be expanded to everyone below 133 percent of FPL, and categorical requirements, such as being pregnant or disabled, will be dropped.
 - Insurance companies will be barred from denying or dropping coverage for people with pre-existing conditions.
- It is estimated that when all reform measures are enacted, more than 95 percent of North Carolinians will have affordable health insurance. For Wake County, these changes equal the opportunity to provide better care for our most vulnerable residents and to spend County dollars in more efficient ways.
- Wake County's biggest challenge likely will be the availability of providers unless something is done to address this issue quickly. Otherwise, people will continue to use hospital emergency departments for primary and other non-urgent care needs.
- Wake County has a lower than average ratio of providers to population than peer counties of similar population and make-up. Wake County should support N.C. Institute of Medicine recommendations for expanding provider supply statewide. As the population grows and ages, incidence of chronic illness increases and older physicians begin to retire (*NCIOM-Health Access Study group*).

Safety

Introduction

This chapter addresses a range of issues that affect the safety of the residents of Wake County. Topics covered include child safety, juvenile crime, gangs, adult crime, domestic violence, unintentional injuries and disaster preparedness. While many behaviors and activities have a direct impact on community wellness, the five most significant as defined by the community include:

- Drug Use or abuse
- Gang Activity
- Reckless/drunken driving
- Alcohol Abuse
- Lack of Exercise

Despite challenges to community safety, 85.7 percent of those surveyed agree that Wake County is a safe place to live (13.8 percent of which “strongly agree”).

In this chapter the following sections will be discussed:

- Child Safety
- Juvenile Crime
- Gangs
- Domestic Violence
- Intentional and Unintentional Injuries
- City of Raleigh Crime
- Wake County Crime
- Disaster Response and Preparedness

Child Safety

This section addresses intentional and unintentional injuries to children in Wake County. It includes perceptions of Wake County residents, and data that uncovers resources and strengths, disparities, gaps and unmet needs, and implications and emerging issues as it relates to child safety in Wake County.

Community Perceptions

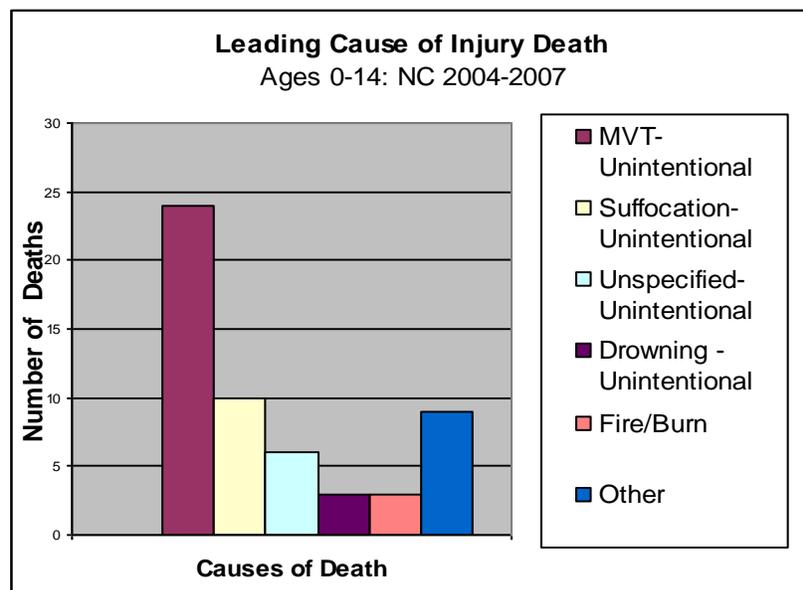
- Data from the 2010 Wake County Community Assessment Survey shows that 85 percent of the 1,349 survey respondents believe Wake County is a safe place to live, and 83 percent felt that it is a good place to raise children. According to this survey, safety as it relates to children was not a top community concern for Wake County residents.

- Child safety remains a concern that extends beyond Wake County. A national survey conducted by Safe Kids USA revealed that an astounding 42 percent of the parents were not aware that unintentional injuries were the leading cause of childhood deaths.
- According to the survey conducted by Safe Kids USA, parents have the desire to learn more about child safety, as evidenced by 77 percent of the survey respondents reporting the need to become more educated about child safety (*Safe Kids USA, 2008*).

Statistics and Trends

- Injury is the leading cause of death for children in North Carolina and Wake County. A significant number of child safety incidents occur in the home, at school and in the community. According to the N.C. Division of Public Health, between 2004 and 2008, an average of 276 North Carolina children died each year as a result of an unintentional injury (Graph 1).

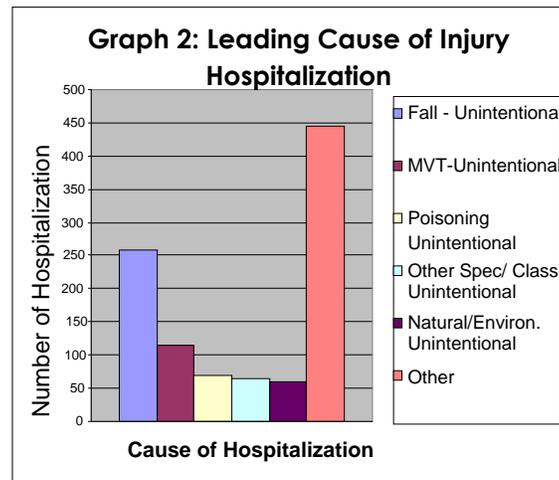
Graph 1



Source: N.C. Division of Public Health, 2010

- Unintentional injuries include those sustained in motor vehicle accidents, falls, suffocation, bicycle accidents, fire, drowning and poisoning. Motor vehicle accidents are the leading cause of injury death to children ages 1 to 14 in Wake County. Injuries sustained by falling are the leading cause of visits to the emergency department and general hospital admissions for Wake County children ages 1 to 14 (*N.C Injury and Violence Prevention Branch, Retrieved August 4, 2010*).

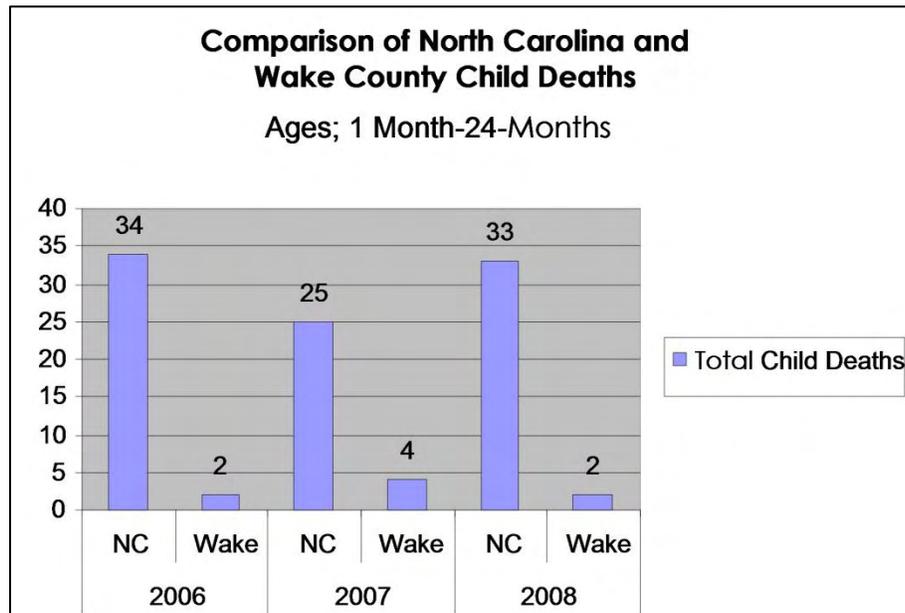
- For children ages 12 to 17, sports injuries were the leading cause of emergency department visits, according to the University of North Carolina Injury Prevention Program report (*University of North Carolina, 2005*).



Source: N.C. Injury and Violence Prevention Branch, August 4, 2010

- Suicide continues to be a top cause of adolescent death in North Carolina, according to Action for Children's 2009 North Carolina Children's Index Report. Risk factors for teens include depression, aggressive behavior and substance abuse (*Action for Children, 2009*).
- School violence, including bullying, threats and assaults is another area where children's safety is at stake. It is difficult to ascertain how many Wake County children attending private and public schools are affected annually, as many of these incidents are not reported to school officials (*N.C. Department of Public Instruction, 2010*).
- Infants were found to have the highest rate of violent death among children under 18. According to Action for Children 2009 North Carolina Children's Index, most of the violent child deaths were a result of homicide (*Action for Children, 2009*).

Graph 3



Source: N.C. Council for Women/Domestic Violence Commission, 2008

Resources and Strengths

- The number of injuries that happen to children in their homes, schools and communities can be reduced by prevention efforts. Wake County has many resources and strengths available through its agencies and organizations dedicated to service provision and prevention efforts. Some of these agencies include, but are not limited to:
 - Action for Children North Carolina
 - The Wake County Child Fatality/Child Protection Team
 - Safe Kids NC
 - SAFEchild
 - Prevent Child Abuse North Carolina

- Wake County also has many other organizations that provide programs and services focusing on the well-being of Wake County children.

- Action for Children North Carolina has taken the lead in promoting safety awareness and advocating for policy changes. They have spearheaded many recent successes related to policy changes, and new laws and regulations, which will positively affect children's safety including the following:
 - Prohibiting children under the age of 16 from riding in the open beds of pick-up trucks

- Requiring carbon monoxide detectors in certain rental properties
 - Requiring vertical driver's license formats for those under age 21 to reduce the incidence of children purchasing alcohol and tobacco products
 - Banning cell phone use among teenagers currently under the graduated driver's license provision
 - Requiring the use of seat belts by each occupant in a motor vehicle through the passage of the backseat safety belt law;
 - Passage of the All Terrain Vehicle (ATV) safety bill which is expected to reduce serious injuries of children by 50 percent
 - Passage of the booster seat law, which is expected to reduce the motor vehicle death rate among young children ages 5 to 7
- Recognizing the importance of awareness and education in reducing child safety incidents, the Wake County Child Fatality Prevention Team/County Child Protection Team meets monthly to review a representative sample of infant, child and teen deaths, and to review any systems issues needing to be addressed. They make recommendations for trainings, education or awareness events.
 - The leading cause of death of Wake County children is due to motor vehicle accidents. Prevention efforts are being led by Safe Kids North Carolina. One of their programs, N.C. Safe Kids Buckle Up, involves fire and rescue personnel, as well as other health and safety advocates, in safety seat distribution and education programs. This program coordinates child passenger safety training programs for the State, and has several permanent car seat check sites located in Wake County.
 - Another resource in Wake County is SAFEchild, a child abuse prevention agency. With the ultimate vision of eliminating child abuse in Wake County, SAFEchild delivers support and education to families by helping them break negative parenting patterns through parent education classes. Other classes focus on intimate partner abuse and the impact it has on children, sexual abuse awareness trainings for first grade students in Wake County schools and support for first-time mothers. In October 2010, SAFEchild opened the SAFEchild Advocacy Center with a goal to serve children who have been traumatized by physical and/or sexual abuse. They provide on-site physical exams, forensic exams, case management and coordination of needed services.

Disparities, Gaps and Unmet Needs

- In examining national trends, Safe Kids USA found “there are large disparities between the fatality rates among children of different races and ethnicities.” Their studies reflect that

racial and ethnic disparities in unintentional injury rates have more to do with economic conditions than with biological differences, and living in an impoverished community is a significant predictor of injury. Native American/Alaskan Native children have the highest fatality rate from unintentional injuries, and Black children have the second highest, with fatality rates nearly 1.5 times that of White children. Non-Hispanic children have a fatality rate 15 percent higher than Hispanic children (*Safe Kids USA, 2008*).

- Additional research is needed to determine the level of disparities surrounding children's safety, specifically with Wake County children. Questions need to be asked regarding access to medical services in the event of injuries, knowledge about safety prevention measures and access to information regarding safety.

Implications and Emerging Issues

- Efforts to develop more improved data collection systems across Wake County and all North Carolina counties should be encouraged and supported. It is recommended that data systems be integrated across multiple agencies. The need exists for additional policy, programs and funding, as it relates to child well-being and safety as a means to deliver more accurate and complete data.
- Analysis of statistics and trends indicates that children's safety related to unintentional injuries and the prevention of child maltreatment are still an issue in Wake County. Prevention efforts are needed regarding motor vehicle safety and car seat safety. The consistently high child abuse rates indicate that programs and services are still needed to support and strengthen Wake County families. Better tracking of statistics related to intentional and unintentional injuries are needed at the county and state level.
- In a 2008 report, Wake County's Child Fatality Prevention Team/County Child Protection Team indicated that there were several areas that warranted continued prevention efforts. They included:
 - Advocacy for improved safety to prevent back-over injury and death through audible back up signals, warnings and cameras.
 - Increased advocacy for parental involvement in driver's education was recommended, and included collaboration with the provider of driver's education for both Wake and Johnston counties. The aim is to reduce the number of motor vehicle traffic injuries and deaths to young teen drivers.
 - Caretaker education regarding infant sleep positioning was recommended with a review of the Back to Sleep campaign and support of legislative appropriations for enhanced social marketing.

- Parental education surrounding parent-child co-sleeping was also cited among the parental education needs, including the need to focus on the risks of placing infants to sleep on soft bedding, sofas, or improvised cribs.

Juvenile Crime

Juvenile Crime is at the forefront of the minds of many citizens in Wake County. In 2009, the estimated population of children and youth younger than age 18 in Wake County was 237,116, according to the American Community Survey (ACS). Wake County has the second largest school district in the State. This section will highlight the school data, juvenile crime data, and resources that are available to youth in Wake County (*American Community Survey, 2009*).

Community Perceptions

- According to the citizens of Wake County surveyed in the Community Assessment, youth dropping out of school was ranked as the fourth most important community issue. It was ranked second for the East Central and South Central zones, and fifth in the East and South zones.

Statistics and Trends

- There has been a steady increase in the number of students enrolled in the Wake County Public School System. In the 2005-2006 school year there were 120,507 students enrolled compared to the 2007-2008 school year, where there were 134,206 (an 11 percent increase). In the 2008-2009 school year there were 137,706 enrolled (*Wake County Juvenile Crime Prevention Council, 2010*).
- In 2009, preliminary data shows the Wake County Public School System's overall graduation rate held steady at 78.4 percent for a second year in a row. In addition, seven student subgroups showed improvement, while three subgroups had a lower graduation rate. The three student subgroups with the largest four-year graduation rate gains are American Indian (9 percentage points), economically disadvantaged (5.5 percentage points) and Hispanic (3.3 percentage points) (*NBC17, 2010*).
- Wake County is often compared to other metropolitan areas in North Carolina. Table one below compares Wake County Public Schools' dropout rates to other counties with an urban area(s).

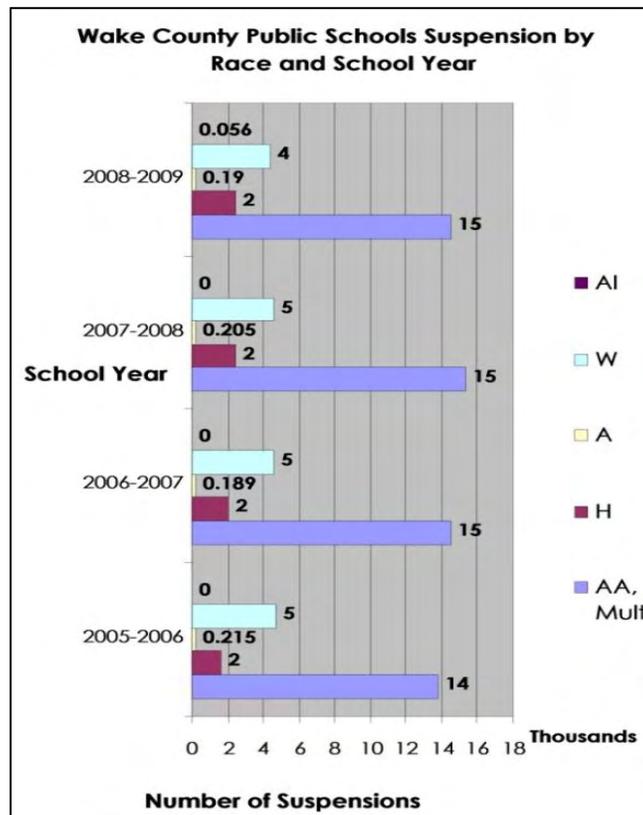
Table 1: Dropout Counts and Rates, 2007-08 and 2008-09

Local Education Agency	2007-08	2008-09	% Change	2007-08	2008-09
Durham County	439	444	1.1 %	4.19	4.26
Charlotte-Mecklenburg County	2355	1976	-16.1 %	5.91	4.99
Wake County	1689	1430	-15.3 %	4.17	3.47

Source: N.C. Department of Public Instruction, 2009

- In a school survey on crime and safety conducted during the 2007-2008 school year, 75 percent of public schools recorded one or more incidents of violence. Incidents of violence included rape, attempted rape, sexual battery, threatened or actual physical attack or fight, and robbery.
- In a 2009 nationwide survey of students in grades 9-12, one in five students reported having been bullied on school property at least once in the previous 12 months. Further, 11.1 percent of students reported having been in a physical fight, and 7.7 percent reported having been threatened with a weapon (e.g., a gun, knife, or club) on school property during that same time period (http://www.findyouthinfo.gov/spotlight_safeSchools.shtml, Last accessed August 08, 2010).
- In North Carolina, a student can decide to drop out of school at the age of 16. Short-term and long-term suspension has been linked to dropout rates and delinquency. There has been a significant rise in the number of African American, Asian, and multiracial students suspended since 2001. Graph five below shows trends from the last four school years on the number of students suspended in each school year.

Graph 5

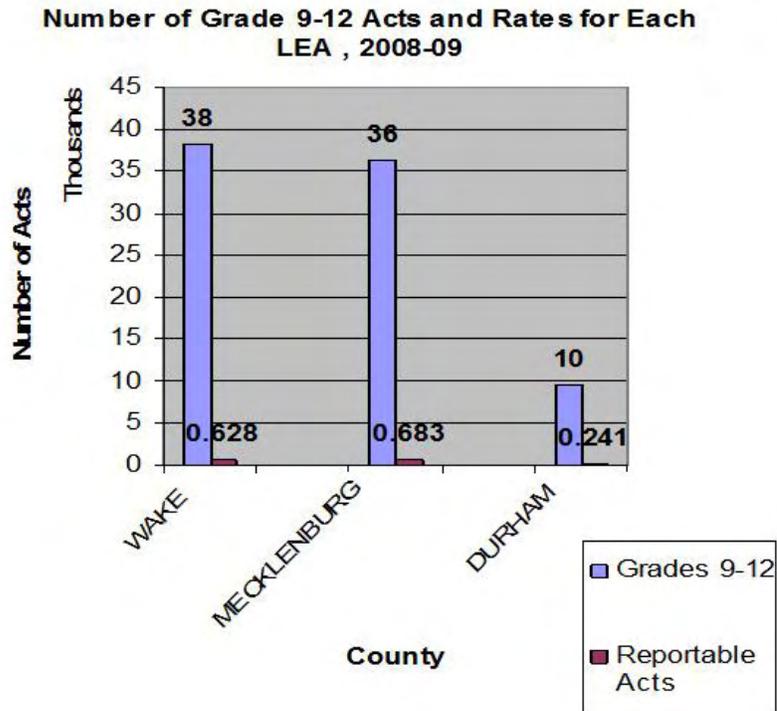


Source: N.C. Department of Public Instruction, 2009

- In 1993, the General Assembly passed the Safe Schools Act requiring Local Educational Agencies (LEAs) to report specified acts of crime and violence to the State Board of Education (SBE). General Statute 115C-288(g) describes the school principal's responsibility "to report certain acts to law enforcement" and lists a number of acts to be reported. The SBE later expanded the list of acts to be reported to law enforcement. GS 115C-12(21) requires the SBE "to compile an annual report on acts of violence in the public schools." The SBE has defined 17 criminal acts that are to be included in its annual report, 10 of which are considered dangerous and violent.
- The 10 dangerous and violent acts are:
 - Homicide
 - assault resulting in serious bodily injury
 - assault involving the use of a weapon
 - rape
 - sexual offense
 - sexual assault
 - kidnapping
 - robbery with a dangerous weapon
 - robbery without a dangerous weapon
 - taking indecent liberties with a minor

- Graph six below provides comparable data for all reported acts in the 2008-2009 School Year.

Graph 6



Source: N.C. Department of Public Instruction, 2009

- Not all youth who are suspended go on to receive criminal charges. The chart below shares a general picture of the number of youth encountering the Juvenile Justice System over the past six years. An encounter with the Juvenile Justice System is a result of a criminal charge. Violent offenses (a) are any Class A-E Felony (i.e. armed robbery or a felony assault). Serious offenses (b) are Class F-I felony and A1 Misdemeanors. A class F-I Felony includes breaking and entering. An A1 misdemeanor includes assault on a government employee.
- The majority of charges being brought by school resource officers in the Wake County Public School System to the court are affray charges. Policy 6425.1a states: "No student shall engage in fighting or physical aggression towards others, including but not limited to: (A) hitting, slapping, shoving, scratching biting, blocking the passage of, or throwing objects at another person in an aggressive or confrontational manner."
 - There were 5,228 different suspensions that were issued for violation of this policy.
 - One third of court-involved youth are the result of school-related behaviors.
 - The majority of Teen Court referrals come from the schools. Ninety-seven percent of referrals to Teen Court are made by School Resource Officers, defense attorneys, District Court judges, DA's and local law enforcement.

- In FY 06-07 there were 21,285 short- and long-term suspensions in the Wake County Public School System.
- In FY 07-08 there were 23,844 short and long-term suspensions

**Table 2: Wake County Juvenile Crime Data
2004-2009**

	'04	'05	'06	'07	'08	'09
Total Complaints	2580	2968	3074	3096	2762	2432
Violent Offenses (a)	70	60	89	80	98	87
Serious Offenses (b)	762	902	917	1000	755	566
Minor Charge	1564	1805	2063	1779	1644	1512
Transfer to Superior Court	0	1	0	2	1	3
Commitments to YDC's*	6	7	11	14	26	18

* YDC Youth Development Center

- Age and gender specific information is documented relative to Youth Development Center (YDC) commitments. The Department of Juvenile Justice and Delinquency Prevention currently operates nine YDCs statewide. YDCs provide mentoring, education and therapeutic treatment to prepare youth for a fresh start when they re-enter their communities. YDCs promote learning and development through a wide range of educational and vocational courses. This makes YDCs sound like a place a youth might want to go when in fact these are secure facilities that youth are ordered into by a judge. YDC's are secure facilities for juveniles that have been adjudicated.

Resources and Strengths

- The North Carolina Department of Juvenile Justice and Delinquency Prevention (DJJDP) in partner with the Juvenile Crime Prevention Councils (JCPCs) in each county galvanizes community leaders, locally and statewide, to reduce and prevent juvenile crime. DJJDP allocates approximately 23 million dollars to these councils annually. Funding is used to subsidize local programs and services (*N.C. Department of Juvenile Justice and Delinquency Prevention, 2010*).
- Wake County JCPC has funded several programs such as:
 - 4-H Bases
 - CORRAL, Haven House–Structured Day Program
 - Haven House–Second Round
 - Haven House–Wrenn House
 - Haven House Community Service
 - Re-Entry–Teen Court
 - Family Resource Center–Parenting Wisely
 - Right Choice

- Literacy Council of Wake County–Juvenile Literacy Center
 - Standing Inside of the Gap.
 - To learn more about them visit JCPC.
- Other resources are the collective efforts by all entities working with the juvenile population. Recently Wake County Juvenile Justice Youth Solutions Summit was convened to address the roles and responsibilities of multiple systems working with youth and create strategies across these systems to reduce risk factors of youth and their families. Participants included: Wake County Local Management Entity, Wake County Public School System Counseling and Student Service (CASS), Wake County Human Services Child Welfare, Department of Juvenile Justice and Delinquency Prevention-10th District Juvenile Court Counselors, School Resource Officers and School Security, Raleigh PD Juvenile Investigations and Raleigh PD Youth & Family Services Unit, Juvenile Crime Prevention Council and Wake County Gang Prevention Partnership.
 - In 2007, the Wake County graduation rate was 78.8 percent. Wake County Boys & Girls Clubs had a 100 percent graduation rate for members involved for four or more years. These results are attributed to the homework and tutoring program, Power Hour, which benefited over 1,582 Club members last year. Much of the success was achieved by the dedication of 200 active volunteers of the Boys & Girls Clubs serving Wake County (*Boys and Girls Clubs of Wake County, 2009*).
 - The Wake County Public School System's Prevention Services Department had as one of its goals for the 2008-2009 school year "to create and establish continuous relationships with Wake County faith-based organizations of all denominations and faiths to support students." The focus of this relationship has been on encouraging faith-based organizations to provide support to students through mentoring/tutoring in all Wake County schools (*WCPSS, 2010*).

Disparities, Gaps and Unmet Needs

- While most youth are doing well in Wake County, not all youth have the same experiences. Major service gaps identified by the Wake County JCPC include the development and strengthening of effective and accessible alternatives for suspended youth, interventions for violent and gang involved youth, and programs that increase parental involvement and support. Wake County JCPC is particularly interested in programs that are culturally competent, inclusive and accessible to youth and their families.
- The disparities with African-American males in the suspension rates and commitments into Youth Development Centers are alarming.
- There is a trend of youth age 15 being most frequently sent to Youth Development Centers.
- The rate of Hispanic youths getting suspended has been increasing at alarming rates.

Implications and Emerging Issues

- School enrollment increased by 1,893 students for 2010-11 and the school system will be opening four new schools: Heritage High, Holly Grove Middle, Mills Park Middle and Alston Ridge Elementary (WCPSS, 2010).
- On September 07, 2010, the Wake County School Board voted unanimously to change the long-term suspension policy to mirror that of the State. Now, long-term suspensions will be between 10 and 180 school days instead of the remainder of any school year. Overall, there must be a concerted effort of all systems that are working with minority youth to reduce the rates of delinquent acts.
- One of the most significant legislative changes was made on November 12, 2009, the mandatory closing of many Level III and IV mental health youth group homes. According to a survey done through the Court Services Division of DJJDP, there are potentially 500+ youth that will need an alternative, long-term, residential placement this year. Court counselors are already working hard through Child and Family Support Teams in an effort to find immediate, appropriate placement options.
- The current state of federal, state and county funds resulted in the loss of many programs in Juvenile Justice during the 2010-2011 budget year. The following programs are direct losses in all North Carolina counties:
 - Support Our Students (statewide afterschool programming)
 - Governor's One-on-One (statewide mentoring for at-risk and court-involved youth)
 - Center for the Prevention of School Violence (statewide technical assistance to schools for violence prevention and crisis planning).
- In addition, the following resources were cut from the State Department of Juvenile Justice and Delinquency Prevention budget:
 - Two Eckerd Wilderness Camps
 - Two Multipurpose Group Homes
 - Critical Youth Development Center/Central Office/Court staff positions
 - Cuts to other contractors (Project Challenge, Boys' and Girls' Club, Juvenile Assessment Center)
 - Substantial & critical losses in operating capital (continuation funding), repairs / renovation funds, training dollars, & all capital for the 5th new YDC (NC Department of Juvenile Justice and Delinquency Prevention, 2010).
- North Carolina is one of only two states in the nation that prosecute all 16- and 17-year-olds charged with a crime in the adult criminal justice system, regardless of the severity of their alleged crimes.

- During the 2008 legislative session, Action for Children and its partners advocated for the development of a comprehensive plan to phase 16- and 17-year-old children into the juvenile justice system with adequate resources so that they can receive a developmentally appropriate, research-based continuum of services. The 2008-09 state budget allocated \$200,000 for the Governor's Crime Commission to study this issue. The task force met for the first time in October 2009 and released a final report to the General Assembly in January 2011 (*N.C. Action for Children, 2010*).
- Keeping youth in school and out of the juvenile justice system has major implications on our workforce. Youth who enter into the juvenile justice system have begun a trajectory that will make getting employment and housing difficult. If there is no intervention they are more likely to enter into the adult criminal justice system and become a financial burden rather than a contributor to the tax base.

Gangs

Since the previous Community Health Assessment, Wake County has been working diligently to curtail gangs with aid from federal initiatives such as the Department of Justice Comprehensive Anti-Gang Initiative grant funds, and state initiatives such as the North Carolina Street Gang Prevention Act grant funds.

Community Perceptions

The 2010 Wake County Community Assessment Survey stated that gangs were a top area of concern.

- Residents surveyed in the East Central, South Central and North Zones ranked gangs as the most concerning risky behavior.
- Gang activity was second in the West Central Zone, third in the North Central and West Zones, and fourth in the East Zone.
- The sale of illegal drugs is the major revenue source for gang members. Citizens in the East and South Zones rated drug use and abuse the most critical risky behavior. It was rated second by the North Central, East Central, South Central and West Zones; third by the North Zone and fourth by the West Central Zone.
- Violent behavior is also associated with gangs; however, it was ranked as the third most risky behavior by the East Zone, fourth by the South Zone, and fifth by the East Central and North Zones.

- One of the risk factors for gang involvement is low socio-economic status, a symptom of unemployment. Unemployment ranked as the most important community issue for all zones. Unemployment ranked first in the North Central, South Central, North, East and South Zones; second in the West Central and West zones; and fourth in the East Central Zones. Another risk factor for gang involvement is dropping out of school, which was the fourth most important community issue for all zones. East Central and South Central zones ranked dropping out of school as the second most important community issue; North Central and West zones ranked it fourth; and East and South zones ranked it as fifth.

Statistics and Trends

- Since 2005, the Raleigh Police Department (RPD) has extensively monitored gang membership in Raleigh, validating over 3,000 members. In 2009, RPD began tracking and analyzing crimes associated with gang members, documenting 1,417 known gang-related incidents for the year. Citywide gang activity is centered on robbery, assault, burglary, vandalism and drug activity, with 56 percent of the city's gang crime occurring in the Southeast District. The trends in the Southeast District made it ideally suited for the federally-funded Comprehensive Anti-Gang Initiative (CAGI) grant, which focuses on developing new strategies to counteract gangs and their impact on the community (*Raleigh Police Department, 2010*).
- Wake County Department of Juvenile Justice reports that in FY 08-09 26 percent of youth assessed at intake were identified as gang members or having some gang association. In comparison, 25 percent of those assessed in FY 07-08 were identified in this way. Twenty-one percent of those assessed in FY 06-07 were identified in this way, and 14 percent in FY 05-06. Wake County is 13 percent higher than the State average in this area. The increase may be a result of Wake County's Juvenile Court Counselors receiving training on identification of gang members and having a clearer and more consistent definition of the term "gang member" (*Wake County Juvenile Crime Prevention Council, 2010*).
- Wake County Sheriff's Office reports that over the past five years, inmates identified as known gang members have increased by about 1.5 percent per year. The total daily average in number of known gang members in custody in 2005 was about 55; in 2010 the average number of known gang members exceeds 110. Out of the 110 known gang members, there are three dominant gangs:
 - 65 percent are "Bloods"
 - 13 percent are "Crips"
 - 6 percent are "Folks"
- The following gangs are present in Wake County jails: Latin Kings, Vice Lords, Orphans, Sureños, Aryan Brotherhood, Brown Pride Azteca, Mara Salvatrucha 13- MS13, Nortenos, Black Presidents, Hells Angels, Gangster Disciples, 5 percent Nation, KKK and Mexican Mafia.

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Although few in number gang related incidents account for 10 to 15 percent of the individuals in lockdown population.

- In 2007 Wake County and Durham County were awarded the Comprehensive Anti-Gang Initiative (CAGI), worth \$2.5 million. This grant enabled the Raleigh Police Department (RPD), Wake County Human Services and various community service providers funds to reduce crime in Raleigh, primarily in the 27601 and 27610 zip codes. Table 3 below outlines crime in the CAGI area and the rest of Raleigh.

Table 3: City of Raleigh Gang Activity 2009-2010

Gang Activity	2009		2010	
	1Qtr		1Qtr	
	City Gang	CAGI Gang	City Gang	CAGI Gang
Murder	0	0	0	0
Rape & Sex Crimes	2	1	1	0
Robbery	39	25	12	7
Assault	85	44	47	24
*Aggravated	42	27	15	10
*Simple	43	17	32	14
*Domestic	16	9	25	15
Burglary	33	17	13	3
*Residential	28	15	13	3
*Commercial	5	2	0	0
Larceny	19	7	12	7
MTV Theft	4	1	0	0
Arson	2	0	1	1
Drug	122	90	75	48
*Possession	73	48	36	24
*Sale	49	42	39	24
Disorderly Conduct	14	2	8	3
Stolen Prop.	2	2	2	1
Vandalism	74	37	39	12
Weapons	16	7	6	5
Fraud	1	0	2	1
Family Crimes	0	0	0	0
Juv. Runaway	26	8	5	2
* Indicates a subsets of type of crime committed				

Source: Raleigh Police Department, 2010

Resources and Strengths

- According to the Director of the Security Department of the Wake County Public School System, there was a 33 percent increase in gang incidents/violations from the 2006-2007 school year to the 2007-2008 school year. Additionally, the school system has emphasized gang awareness presentations to staff, which may contribute to an increased number of incidents identified as gang involved or gang related (*WCHS, 2010*).
- The Wake County-Durham County partnership is vital to the success of the CAGI Grant.
- CAGI's purpose is to take the identified gaps, unmet needs and disparities, and create programs to address them. In the second year of implementation, the following programs were established and are ongoing:
 - Afternoon adult-supervised recreation
 - Gang Education
 - Evaluation of Behavioral Problems
 - Creative Skills Development
 - Educational Support
 - Family Support
 - Life skills
 - Self-discipline
- Wake County Gang Prevention Partnership (WCGPP) has increased its membership from 30 members in 2005 to 108 in 2010. WCGPP has expanded to include regional efforts that meet on a monthly basis with occasional community-wide educational forums. Eastern Wake Gang Prevention Partnership (Knightdale, Wendell, and Zebulon) has been in existence since 2007 and the South-West Youth and Family Partnership (Cary, Fuquay-Varina, Garner, Holly-Springs and Morrisville) has been in existence since 2008.
- In the 2009-2010 fiscal year, Wake County Juvenile Crime Prevention Council (JCPC) received \$1,171,637 from the Department of Juvenile Justice and Delinquency Prevention, and \$349,879 from county matching funds. JCPC allocated these funds to support 11 programs aimed at decreasing delinquency, specifically targeting the reduction of subsequent juvenile complaints, the reduction in violations of community supervision, the reduction in subsequent juvenile court convictions, and increased parental involvement and support.
- Hammond Road Community Task Force formed a community-based collaboration to provide education, information, social skills, life skills and job readiness skills to young adults while they are incarcerated at the Hammond Road Detention Center. Key members include staff from Wake County Sheriff's Office, Wake County Human Services, Bethlehem Baptist Church, Workforce Empowerment Alliance Community Team Community Success Initiative,

AmeriCorps, retired school and law enforcement personnel, as well as other community individuals and entities.

- During the past two years, the Wake County Gang Prevention Partnership's Opportunities, Provision and Social Intervention committee, has reviewed numerous gang prevention and intervention services, and provided technical assistance to enhance and strengthen these services to better meet best practice standards. In addition, best practice classes have been held for active service providers. The objective is best practice prevention and intervention strategies that can be integrated into existing programs. A "train-the-trainer" package has been developed. Over 27 providers have been trained.

Disparities, Gaps and Unmet Needs

- North Carolina GangNET (NC GangNET) is a criminal justice gang intelligence database with information populated by trained and authorized users from law enforcement and correctional organizations. According to the 2009 Governor's Crime Commission Report, many smaller and mid-sized agencies with limited personnel may not have the manpower to enter data into GangNet (*N.C. Department of Crime Control and Public Safety, 2009*).
- When agencies are unable to document gang activity it is impossible to create an accurate data picture. Moreover, locales have a difficult time garnering resources for anti-gang initiatives.
- According to the director of the Security Department of the Wake County Public School System, there was a 33 percent increase in gang incidents/violations from the 2006-2007 school year to the 2007-2008 school year.
- In April 2010, the Wake County Juvenile Justice Youth Solutions Summit was convened (for a list of participating agencies, see the Juvenile Crime Section of this report). The purpose of the collaborative is to adequately address the roles and responsibilities of each system, and create strategies across systems that will reduce risk factors among youth and their families.
- Although Wake County has made major strides in the area of gang reduction, youth still have either no or limited access to elements of effective gang reduction strategies. Many of the municipalities in Wake County do not have an abundance of youth programs that are able to address the needs of gang-involved youth. Wake County Gang Prevention Partnership's Intervention Team listed the following existing needs:
 - Transportation
 - Programs that have the capacity to serve the population of gang involved youth
 - Witness/victim protection mechanisms for youth exposed to gang violence
 - Readily available employment for re-entrants

- According to a needs assessment conducted by Wake County Juvenile Court counselors, 74 percent of youth who were court involved in 2008-2009, were assessed as coming from homes with marginal or inadequate family supervision. Additionally, JCPC members surveyed in 2007 noted low parental involvement, inappropriate structure and supervision in the home, and ineffective parenting as areas of concern regarding the needs of youth in the County (*Wake County Juvenile Crime Prevention Council, 2010*).

Implications and Emerging Issues

- More than half of the law enforcement agencies in North Carolina reported that inter-gang conflict (between-gang conflict) and drug-related factors directly affected levels of gang violence (*National Youth Gang Center, 2009*).
- Since the previous Community Health Assessment, North Carolina has created and adopted new legislation surrounding gangs. The North Carolina Street Gang Prevention Act under Article 13 A was enacted into law on December 1, 2008, in an effort to protect North Carolinians against gangs and their criminal behavior. General Statute 14-50.16 defines "criminal street gang" as any ongoing organization, association, or informal group of three or more persons, whether formal or informal, that:
 - Has as one of its primary activities the commission of one or more felony offenses, or delinquent acts that would be felonies if committed by an adult
 - Has three or more members individually or collectively engaged in, or who have engaged in, criminal street gang activity
 - May have a common name
 - Has common identifying signs or symbols (*N.C. Gang Investigators Association, 2010*)
- The N.C. Street Gang Prevention Act addresses many issues that were not previously covered under the general statutes and are now felonies. Examples include
 - Soliciting - encouraging participation
 - Soliciting - encouraging participation of minor threats to deter from gang withdrawal
 - Threats of punishment or retaliation
 - Discharging a firearm from within an enclosure (*North Carolina Gang Investigators Association, 2010*)
- If offenders are found guilty under this legislation the jail or prison sentence will be enhanced resulting in a longer sentence.

Domestic Violence

Domestic violence is a disturbing and costly problem in Wake County, the state and nation. Locally, one in four women will experience domestic violence during her lifetime. Violence toward a partner, or the threat of violence causing fear in that partner, is considered a crime. Domestic violence also contributes to the increasing number of families who are homeless.

Community Perceptions

In the 2010 Wake County Community Assessment Survey, respondents expressed that the following were the top community issues:

- Unemployment– 49.3 percent
- Homelessness– 41.8 percent
- Not enough affordable housing– 36.8 percent
- Dropping out of school– 34.8 percent
- Lack of /inadequate transportation options 30.4– percent

Note that abuse/neglect was tied with homelessness. Types of abuse/neglect include: Children (15 percent), Domestic partner (12 percent), and Elder (10.2 percent)

Additionally, respondents perceived that the following were the most risky behaviors:

- Drug use or abuse– 51.6 percent
- Reckless/drunk driving– 44.7 percent
- Alcohol Abuse– 40.9 percent
- Violent Behavior– 33.4 percent

Securing and maintaining adequate employment is essential to achieving self-sufficiency and freedom from abuse. For many clients, choosing to leave an abusive situation may mean living “on their own” for the first time. It is necessary to provide an array of life skills geared toward aiding clients in achieving financial success, along with improving overall health and wellness.

Statistics and Trends

- Domestic violence affects an estimated four million women each year, though the number could reach as high as six million, given that many cases go unreported, and that definitions of domestic violence vary among cultures and law enforcement agencies. Wake County provided services to almost 3,000 victims of domestic violence from 2008 to 2009, according to the N.C. Council for Women/Domestic Violence Commission. This was the second highest number of any county in North Carolina (*N.C. Department of Administration's Council on Women, Retrieved August 1, 2010*).

- The Family Justice Center Model has been identified as a best practice in the field of domestic violence intervention and prevention services by the U.S. Department of Justice. The documented and published outcomes in the Family Justice Center Model have included reduced homicides, increased victim safety, increased self-sufficiency and empowerment for victims; reduced fear and anxiety for victims and their children; increased efficiency and coordination among service providers; and reduced minimization by victims when wrapped in services and support (*Family Justice Center, 2010*).
- According to the N.C. Council for Women, Wake County reported 9,663 calls from 2,997 domestic violence victims from 2008 to 2009. The calls represented the following populations:
 - 35 percent (1,049) were Caucasian
 - 31 percent (930) were African American
 - 7 percent (210) were Hispanic/Latino
 - 94 percent (2,817) were female and 6 percent (180) were male
 - 61 percent or 1,828 were over the age of 18 years old

Table 4: Age Demographics of Interact Clients from 2008-2009

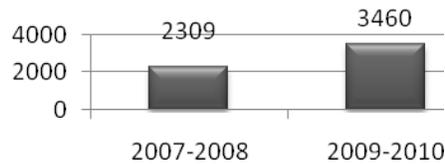
Age	Number	Percentage
Under 25	46	2 %
25 – 34	31	1 %
35 – 44	502	18 %
45 – 54	1,150	38 %
55 – 64	583	19 %
65+	43	1 %
Unknown	642	21 %

Source: N.C. Department of Administration's Council on Women. (n.d) 2008-2009

- Graphs 7, 8 and 9 below show the number of clients seen in InterAct's office and on the crisis lines. Specifically, the charts show the number of crisis line calls received, and families who stayed in InterAct's Residential Counseling Shelter prior to 2007-2008 and after 2009-2010, when the Family Violence Prevention Center opened.

Graph 7

Number of Clients Served In Office



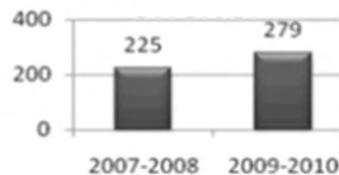
Graph 8

Number of Crisis Calls



Graph 9

Number of Clients Staying in Residential Shelter



- Overall demand for InterAct's services since moving to the Family Safety and Empowerment Center is up over 100 percent (*Interact, 2009*).

Resources and Strengths

- In 2009, InterAct opened a first-of-its-kind Family Safety & Empowerment Center on Oberlin Road in Raleigh. Families struggling with abuse who are seeking services can come to the Center and not only receive InterAct's crisis intervention programs, but also continue on to stable, productive and safe lives through the long-term supports of nine on-site partners. Partners in this pioneering project include:

- Easter Seals UCP – coordinates the provision of mental health services
- Inter-Faith Food Shuttle – operates a commercial kitchen and provides culinary skills training
- Kiran - promotes self-reliance and empowerment of South Asian immigrants
- Legal Aid of North Carolina – offers InterAct's clients legal assistance
- Raleigh Police Department – houses its entire Family Violence Intervention Unit on-site
- SouthLight – offers family substance abuse counseling services
- Wake Health Services – provides primary medical care using InterAct's medical clinic
- YMCA of the Triangle — operates after school and summer youth programs
- YWCA of the Greater Triangle – offers its Women In Transition Program
- InterAct collaborates with state and local governments, law enforcement, faith communities and other agencies throughout the County. Information is available at www.interactofwake.org.
- Several other community nonprofits focus on homelessness and substance abuse, and deal with issues of violence in the populations they serve. These include the Women's Center, Urban Ministries and The Healing Place for Women. The N.C. Council for Women Domestic Violence Commission funds various initiatives at the county level.

Disparities, Gaps and Unmet Needs

- Starting in 2007, and furthered by the opening in 2009 of the Family Safety and Empowerment Center, InterAct began increasing access to health care by implementing a coordinated system of care that provides for crisis counseling, response to physical trauma, mental health care and substance abuse treatment for victims who have been traumatized by family violence. These key programs are meeting clients' needs by specifically addressing the overlap of mental health, substance abuse and trauma. When occurring together, each problem is intensified. Integrated treatments are needed to address these complicated issues concurrently. Traditional approaches to working with clients who have substance abuse and/or mental health issues held strongly to the idea that only one of the three issues could be dealt with at a time (sequentially).
- Research has documented that trauma can affect one's physical, mental, emotional, spiritual, social and economic well-being. Some long-term effects for women with histories of trauma include: anxiety, panic disorder, major depression, substance abuse and dependence, personality disorders, dissociative disorders, psychotic disorders, somatization, eating disorders and PTSD. Without appropriate treatment, victims will not have the support and coping mechanisms to gain safety and stability for themselves and their children. Nationally, about half of all shelter residents return to their abusers.
- While it is well-known that there is a high rate of mental health and substance abuse among those who abuse their partners, it is lesser-known that adult victims, and adolescents growing up in violent homes, are disproportionately represented in the population of those seeking

treatment for mental health and substance abuse. For many victims, substance use can begin as a way to numb the pain of mental disorders resulting from trauma. Over time, this can develop into substance abuse and dependency. A growing body of research has shown that child exposure to family violence is a leading indicator of life-long dependency and mental health disorders, including physical, emotional, social and academic problems.

- Without intervention, children raised in violent homes are more likely to become a second generation of unstable, unhealthy households. These children grow up bearing “invisible bruises” that linger and often go unnoticed. Children who live in families with domestic violence frequently show symptoms of post-traumatic stress disorder, aggressive behavior, reduced social skills, depression, anxiety, sleep problems and poor academic performance. Programs like InterAct must continue to help children deal with the psychological effects of witnessing violence, and to maximize the relationship-building between the victimized parent and his/her children, thus helping families to be healthier, and better able to create safe and more emotionally stable homes.

Implications and Emerging Issues

- InterAct is a nonprofit agency providing services to women, men and children who are victims of domestic violence. The agency has seen a nine percent to 12 percent increase each of the last several years in the number of people calling its emergency crisis lines.
- Trends include an increase in the number of women with children being served and increase in Hispanic/Latino and South Asian immigrant populations. The increase is due in part to InterAct's new efforts targeting support services, outreach and community education to reach growing populations in the community.
- The collaborative service delivery model will help South Asian and Hispanic/Latino families struggling with domestic violence to improve their overall health, safety, and well-being.
- The agency provides two 24-hour crisis lines, group and individual counseling, bilingual counseling, specialized children's counseling, case management, court and hospital advocacy, professional training and a full curriculum of violence prevention in the Wake County schools. InterAct also operates Wake County's only confidential residential program for women and children fleeing abuse.
- The number of crisis line calls received reflects a 30 percent increase.
- Families who stayed in InterAct's Residential Counseling Shelter reflects a 24 percent increase.
- InterAct provided in-office services to more than 3,300 people in the 2008-2009 year, representing a 44 percent increase over the previous year.

- The increased volume of clients endangers the high quality, one-on-one work that InterAct provides with on-going child and adult counseling sessions, and case management support systems.
- Programs that support families through crisis, and then help to establish long-term support systems to ensure they are successful, are the ones being compromised in order to ensure the immediate safety needs of the 20 scared families showing up almost every day. The situation is expected to worsen as the population grows, unless additional resources are focused on serving this population.
- Born out of a common concern to meet an immediate need to reduce disparities in accessing safety and support services, InterAct has formed a collaboration preparing to address the needs of “Immigrants Seeking Safety.” This innovative program includes primary collaborators lead by InterAct (Latino/Hispanic crisis intervention and case management) and supported by SAFEchild (culturally-specific child abuse prevention and parenting education), Legal Aid of North Carolina (immigration and protective order legal services), ALPES (Alianza Latina Pro Educacion en Salud provide bilingual/bicultural) and Kiran (crisis intervention for South Asian families).

Intentional & Unintentional Injuries

The focus of this section is the impact of intentional and unintentional injuries on Wake County as a community. In the context of the Wake County Community Assessment, injury has been defined to mean “bodily injury,” which is limited to the injury of a person by accident or otherwise.

Community Perceptions

- Data collected and presented by the North Carolina Institute for Public Health makes it clear that injuries are key health concerns of the residents of Wake County in 2010.
- Injuries were identified as one of the top five most important health issues in six of the eight zones surveyed. In the summation of all the data collected in the eight zones, injuries were named number three of the top five most important health issues. For clarification, it should be noted that in three of the zones, “injuries” were specific to motor vehicle injuries. For the purposes of this section, the term “injuries” includes motor vehicle injuries.

Statistics and Trends

- Injuries result in more than 148,000 hospitalizations and 819,000 visits to Emergency Departments (ED) each year in North Carolina. Unintentional injuries caused 4,300 deaths in North Carolina in 2007, and were the fourth leading cause of death and disability. The North

Carolina Institute of Medicine Task Force on Prevention identified the leading causes of unintentional injuries as motor vehicle crashes, unintentional poisonings and falls (*North Carolina Public Health Foundation, 2010*). Table 5 shows the age adjusted death rates for major causes of death by race/ethnicity.

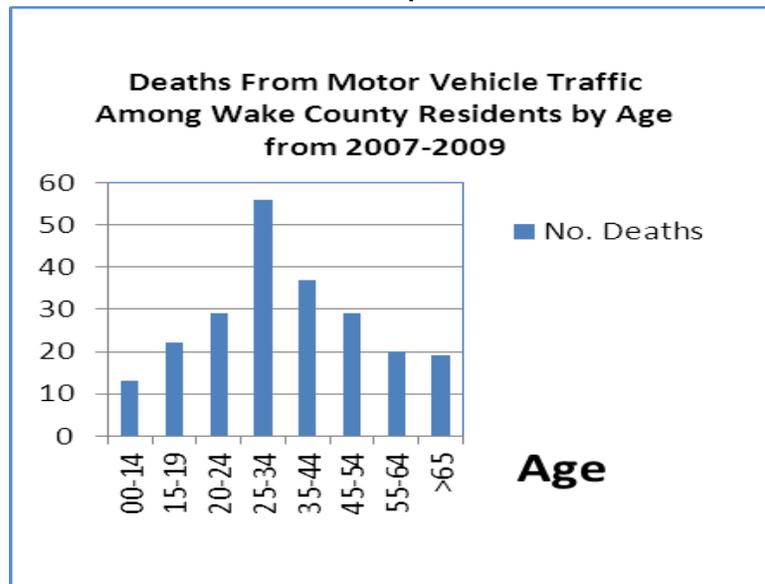
- The perception that injuries are a significant public health problem in Wake County is validated by the statistical data available. In 2008, there were a total of 3,961 deaths reported in Wake County. Of all the reported deaths, unintentional injuries were the fifth leading cause of death and accounted for 40,959 emergency department (ED) visits in Wake County. There was a total of 65,793 ED visits in Wake County in 2008. Unintentional injuries accounted for 62 percent of all ED visits. Intentional injuries such as assault and self-inflicted injuries were the basis of another 3.6 percent of all the accounted for ED visits in Wake County that year (*Wake County Human Services, 2009*).

Cause of Death	H	W	AA
Motor Vehicle Injury	24.1	18.1	18.0
Other unintentional injuries	13.4	30.9	21.8
Homicide	10.3	3.6	16.4
Suicide	5.6	14.4	5.0

*Rates are age-adjusted to the 2000 U.S. standard population and are expressed as deaths per 100,000 populations – using underlying cause of death. Note: Surname matching was used to enhance identification of Hispanic/Latino deaths (*Wake County Human Services, 2009*).

- Motor vehicle injuries have been the leading cause of death from unintentional injuries for persons of all ages over the past decade. Of particular concern are the high number of deaths for young adults from 2007-2009 (Graph 10).

Graph 10



Source: Death Certificates of Wake County Residents, 2010.

- Intentional and unintentional injuries are a larger public issue than is often realized. There is no demographic that is immune from possible injury, and some demographics are disproportionately statistically overrepresented.

Resources and Strengths

- Wake County has access to leadership at both the state and county levels, as well as business and education partners who serve as resources to meet the on-going challenges with respect to injuries. Meeting these on-going challenges will require partnerships, education, measurement and access to reliable information. Specific partners include:
 - Wake County Gang Prevention Partnership (WCGPP)
 - North Carolina Institute of Medicine Task Force on Substance Abuse Services
 - North Carolina Department of Public Instruction
 - Crisis Intervention Team (CIT)
 - Wake County Human Services Department
 - Wake County Community & Family Advisory Committee

Disparities, Gaps and Unmet Needs

- The growing number of reports for child neglect and abuse; from 2000-2001 thru 2008-2009 the number more than doubled
- The suicide rate for White males is almost 3 times higher than the rate for African American and Hispanic males

- The growing demographic of persons over the age of 65
- Injuries associated with accidental poisonings
- Deaths and injuries from motor vehicle traffic, especially among young adults
- The growing number of maltreated children that are neglected (*N.C. SCHS, 2010*)

Implications and Emerging Issues

- Unintentional injuries due to motor vehicle crashes for individuals between the ages 25 to 34 are much greater than any other age group. Safe driving techniques could be reinforced to this age group.
- Education is needed for caretakers of the elderly populations to reduce the number of accidental poisonings.

City of Raleigh Crime

Over the past three years, the Raleigh Police Department has undergone a change in its approach to police service. Community Oriented Policing has served as the model for this change. Drawing community members into the department's efforts to lower crime and build safer neighborhoods is at the heart of the approach. Raleigh Police Department sought not only to become a daily presence in the lives of Raleigh's citizens through the assignment of community officers and the opening of community police offices, but they have also drawn all of the resources and services available through the city to address crimes concerns in a holistic way.

Community Perceptions

- Following a series of in-person feedback sessions in 2009, Raleigh citizens recommended that the following three areas receive focus: gang investigation and suppression, property management of rooming houses or vacant structures, and drugs and vice enforcement. An online survey of citizens also requested that gang activity receive attention, and emphasized a desire for high visibility patrols and community based officers as well.
- In 2009, the RAND Corporation, in conjunction with CALEA conducted a community perception survey in which 277 Raleigh residents were surveyed through several types of media including phone calls, web surveys and mailings. While this was a very low sample number in proportion to the population, respondents agreed in many areas and gave the Raleigh Police Department several high marks:

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- 77.7 percent of respondents said the RPD was doing a good or somewhat good job of fighting crime in their neighborhood.
- 65.2 percent of respondents said that the RPD treats people fairly or somewhat fairly regardless of who they are.
- 68.6 percent of respondents said that the RPD responded promptly or somewhat promptly to calls for assistance (*Anderson, S. 2010*).

Statistics and Trends

Table 6 details the crime statistics for the City of Raleigh from 2006 to 2009. It lists the total number of crimes for each category.

Table 6: City of Raleigh Crime Statistics, 2006-2009

Incident Type	2006	2007	2006/2007		2007/2008		2008/2009		
			CHANGE	2007	2008	CHANGE	2008	2009	CHANGE
Murder	19	23	21.1%	23	35	52.2%	35	14	-60.0%
Rape	125	130	4.0%	130	108	-16.9%	108	111	2.8%
Robbery	839	879	4.8%	879	1064	21.0%	1064	859	-19.3%
Aggravated Assault	1341	1160	-13.5%	1160	1112	-4.1%	1112	1064	-4.3%
Simple Assault	4268	4186	-1.9%	4186	3899	-6.9%	3899	4150	6.4%
Burglary	3061	3019	-1.4%	3019	3145	4.2%	3145	3208	2.0%
Larceny	8811	8876	0.7%	8876	9287	4.6%	9287	9913	6.7%
Motor Vehicle Theft	1153	1171	1.6%	1171	1057	-9.7%	1057	911	-13.8%
Arson	72	74	2.8%	74	69	-6.8%	69	69	0.0%
Forgery	278	268	-3.6%	268	281	4.9%	281	328	16.7%
Fraud	1495	1664	11.3%	1664	1753	5.3%	1753	2101	19.9%
Embezzlement	287	269	-6.3%	269	267	-0.7%	267	198	-25.8%
Poss/Rec Stolen Property	358	345	-3.6%	345	307	-11.0%	307	237	-22.8%
Vandalism	4066	4368	7.4%	4368	3994	-8.6%	3994	3845	-3.7%
Weapons Violations	776	718	-7.5%	718	770	7.2%	770	760	-1.3%
Prostitution & Vice	132	115	-12.9%	115	64	-44.3%	64	182	184.4%
Sex Offenses	404	415	2.7%	415	384	-7.5%	384	390	1.6%
Drug Violations	3917	3958	1.0%	3958	3674	-7.2%	3674	3707	0.9%
Crimes Against Family	300	352	17.3%	352	322	-8.5%	322	337	4.7%
Liquor Law Violations	22	40	81.8%	40	26	-35.0%	26	33	26.9%
Disorderly Conduct	437	461	5.5%	461	431	-6.5%	431	386	-10.4%
Vagrancy	6	1	-83.3%	1	1	0.0%	1	2	100.0%
All Other Offenses	2085	2164	3.8%	2164	1998	-7.7%	1998	2534	26.8%
Truancy	44	56	27.3%	56	28	-50.0%	28	26	-7.1%
Runaways	243	203	-16.5%	203	235	15.8%	235	211	-10.2%
Miscellaneous - No Offense	9865	9508	-3.6%	9508	8597	-9.6%	8597	8885	3.4%
Humane	469	676	44.1%	676	628	-7.1%	628	689	9.7%
Noise Violations	8	9	12.5%	9	10	11.1%	10	18	80.0%
TOTALS	44881	45108	0.5%	45108	43546	-3.5%	43546	45168	3.7%

(*Anderson, S. 2010*)

- Table 6 above reflects the same four-year time span and format used in the 2006 Wake County Community Assessment. A review of these statistics highlights some important trends.

Between 2006 and 2009, RPD experienced a significant turn-around in reducing Part 1 Crimes most likely to be reported crimes.

- Between 2006 and 2007, Raleigh experienced a reduction in only two of the eight offenses defined as Part 1 crimes.
- However, from 2007 to 2008 and 2008 to 2009, Raleigh experienced a reduction in four of the offenses defined as Part 1 crimes.
- Some of the most dramatic changes occurred with respect to robberies and murder.
- The 2006-2007 and 2007-2008 periods saw double-digit percent increases in the number of homicides. This was reversed dramatically in the 2008-2009 period with a 60 percent decrease.
- From 2007 to 2008, Raleigh experienced a 21 percent increase in robberies. Again, this trend was reversed in the 2008-2009 period with a 19 percent decrease.
- There was a large increase (184 percent) in the number of drugs and vice offenses. However, it is believed that this is the result of extra effort on the part of officers to engage in proactive patrol in a successful attempt to stem the increases in robbery.

Resources and Strengths

- The Raleigh Police Department has created a Youth and Family Services Unit to provide a more holistic approach to the special needs of families in crisis.
- A well-established Gang Suppression Unit with emphasis on enforcement and intelligence gathering was formed.
- A unique Technical Assistance Response Unit which provides added power to ongoing, high-priority investigations by giving detectives access to the advanced technology and the officers trained to use them was developed.
- Community Police Officers have established a strong presence in neighborhoods that could benefit from permanently assigned officers who direct most of their attention toward solving problems that generate the greatest need for police service. Most recently, the RPD has joined other city departments in implementing a community oriented government approach, which supports the development of partnerships comprised of various city departments working together and hand with neighbors to more effectively respond to neighborhood concerns. This includes the opening of community police offices, which increase the availability of police services and police contact.
- The Raleigh Police Lateral Academy program, which graduated its first class in July of 2008, allows the department to hire experienced police officers from across the country and take

advantage of their experience while paying them a salary commensurate with their experience. Additionally, retired officers are returning to volunteer as youth mentors in community centers around the city.

- The creation of the RPD Volunteer Program allows citizens to volunteer their time to improve the efficiency and effectiveness of certain police services.

Disparities, Gaps and Unmet Needs

- Prostitution suspects are the subject of multiple arrests for the same types of offenses, and in need of a more comprehensive response to include social services and counseling.
- Dwindling funds for public mental health services and the continuing loss of beds at Dorothea Dix Hospital will place a greater burden on policing services.
- An outdated RMS/CAD system prevents RPD from expanding services to citizens, such as web-based reporting and faster response times through the use of AVL.
- Main RPD station currently housed in a temporary building with a decision yet to be made regarding a future permanent location.
- RPD continues to be concerned over the disproportionate number of young men of color becoming involved in violent crime. A great deal more attention and resources must be applied to confront this vital issue. Specific services designed to support young citizens in crisis is critical to reducing violent crime and enhancing the future for our young citizens.
- In 2009, 44 percent of the suspects arrested for Part 1 crimes were African American or Hispanic between the ages of 16 and 25.
- This appears disproportionate when compared to 2008 data, which showed African American and Hispanic residents of all ages and genders comprised 38 percent of the city's total population.
- It was this age group of 16 to 25-year-olds across all ethnic groups which accounted for 54 percent of RPD Part 1 arrests in the same year.

Implications and Emerging Issues

- Like many government entities, Raleigh will continue to contend with budget cuts in light of the economic climate. In the 2010-2011 budget, RPD was asked to cut \$1.9 million dollars from their budget. The 2011-2012 budget could likely see similar cuts.
- The use of "green" technology, especially in vehicles will become more and more important.

- Increasing the age of juveniles from 16 to 18 (possible legislation) in criminal proceedings will overburden the juvenile unit.
- The growth of the agency outpacing its physical structures has created a need for permanent district houses, a new main station and a new training academy.
- RPD will need to keep pace with current standards in technology and equipment.
- The vehicle currently used as the backbone of the department fleet will no longer be manufactured and a new one must be selected.
- Continued population growth in the eastern portion of the city may require an additional (seventh district) in order uphold current level of services.

Wake County Crime

The Sheriff's Office is the primary law enforcement agency for the unincorporated areas of the County. The Sheriff's Office patrols neighborhoods and investigates crimes, provides security in the courthouse, manages the Firing Range, registers sex offenders, issues gun permits and serves civil papers. In addition, the Sheriff's Office oversees the jail, processing over 35,000 inmates each year, and also partners with U.S. Immigration and Customs Enforcement to manage the 287(g) program, which checks the legal status of each person arrested and brought to the jail.

Community Perceptions

- Of the 1,349 Wake County citizens who completed the 2010 Wake County Community Assessment survey, 51.6 percent stated drug use or abuse was an area of concern, followed by gang activity (50.1 percent), and reckless/drunk driving (44.7 percent).

Statistics and Trends

- Table 7 represents adult crime statistics for Wake County's unincorporated areas for the past four years. Statistics were provided by the North Carolina State Bureau of Investigation, Records and Criminal Statistics Division.
- It should be noted that crime statistics reported to the North Carolina State Bureau of Investigation during the latter half of this assessment period were found to be inconsistent when compared to internal statistics. An antiquated records management system appears to be the cause of this inconsistency. Though crime data reflected by the North Carolina State Bureau of Investigation's statistics shows an increase in the crime rate, internal records reflect a decrease in the crime rate totaling 11.1 percent in the last 2 years.

Table 7: Wake County Crime Statistics, 2006-2009

Offense	2006	2007	2008	2009
Rape	21	29	14	21
Robbery	35	43	39	33
Aggravated Assault	147	138	126	150
Violent Crime	207	217	183	210
Burglary	1,062	1,070	763	1,043
Larceny	1,486	1,558	1,153	1,257
MV Theft	280	319	258	246
Property Crime	2,828	2,947	2,174	2,546
Index Crime Total	3,035	3,164	2,357	2,756

Source: Stephens, P. (2010). [Wake County Sheriff's Office Section for the Community Health Assessment]. Unpublished Raw Data

Resources and Strengths

- Over the four-year assessment period, a closer examination of community concerns shows the number of drug offenses to be down 43.42 percent and DWI charges to be up 51.97 percent within the assessment period. Expanding current resources has allowed the Wake County Sheriff's Office to be more effective in tackling the issues that face our community.
- Even though overall crime decreased in the unincorporated areas of Wake County, efforts to fight crime remain high. Gangs, illegal immigrants and drug trafficking are the root causes of most of the crimes that occur in the County. In order to curb these crimes and be proactive in serving and protecting the citizens of the County, the Wake County Sheriff's Office has:
 - Used the 5th floor of the jail to identify gang members and collect information about them
 - Tracked the number of illegal immigrants charged with crimes, while continuing to partner with Immigration and Customs Enforcement in the identification and deportation of these immigrants
 - Supported the funding of an IMPACT Unit, which is an interdiction team that focuses on targeted areas throughout the County. This unit conducts enforcement operations

designed to arrest criminal offenders and suppress a wide variety of criminal activity from street drug sales to traffic violations

- Supported efforts of the Sheriff's Traffic Observation Patrol (STOP) Team for the purpose of reducing criminal activity and traffic enforcement
- Expanded the STOP Team
- Added speed timing device equipment, Light Detection And Ranging (LIDAR), to the IMPACT and STOP Team
- Encouraged the use of the Special Response Team (SRT) to work with the Drugs and Vice Unit, and local agencies to ensure their safety
- Expanded the K-9 Unit to 13 canines
- Reorganized the Gang Unit
- Provided gang training to School Resource Officers

Disparities, Gaps and Unmet Needs

- Dwindling funds for public mental health services and the continuing loss of beds at Dorothea Dix Hospital will place a greater burden on policing services.
- Fiscal Year 2009-2010 the Sheriff's Office suffered a \$1,322,015 budget cut. The economy has not yet recovered and subsequent budget cycles promise more cuts.

Implications and Emerging Issues

- Like many government entities, Wake County Sheriff's Office will continue to contend with budget cuts in light of the economic climate.
- Increasing the age of juveniles from 16 to 18 (possible legislation) in criminal proceedings will overburden the Juvenile Unit.

Disaster Response and Preparedness

With a population approaching 1 million citizens by 2012, Wake County needs to continue to develop plans for responding to natural or man-made disasters. Wake County and its partners are working together to provide a rapid, efficient and seamless response to disasters that affect local citizens or to lend support and assistance to other areas of the county that may experience such disasters and require emergency support.

A coordinated response will require strong relationships among public health, emergency management, emergency medical service, fire and rescue, hospitals, public and private schools, the medical community and law enforcement.

Community Perceptions

In the 2010 Community Assessment Survey, respondents expressed the following:

Table 8: Does your household have a family emergency plan and emergency supply kit?

Response by Zone	NC (n=154)	EC (n=190)	SC (n=180)	WC (n=163)
Yes, plan only	12.3 %	9.5 %	10.0 %	12.3 %
Yes, supply kit only	19.5 %	19.5 %	23.9 %	18.4 %
Yes, both	28.6 %	23.7 %	25.6 %	17.8 %
No	39.6 %	47.4 %	40.6 %	51.5 %
Response by Zone	N (n=165)	E (n=160)	S (n=141)	W (n=166)
Yes, plan only	13.9 %	9.3 %	7.8 %	16.9 %
Yes, supply kit only	23.0 %	21.1 %	27.7 %	21.1 %
Yes, both	27.3 %	15.5 %	12.1 %	21.1 %
No	35.8 %	54.0 %	52.5 %	41.0 %

- The results also show that the majority of citizens receive their information from television, with a consistent percentage in all zones except the East and South Zones. In these zones, over 80 percent of persons rely on television for their information. It also shows that about 20 percent of the citizens responding rely on the Internet for emergency information, while in the East and South zones again, the percentage is much smaller, around 5 percent to 6 percent. Radio is again consistent in all zones of the County, except in the East and South Zones where once more the percentage is lower than the other zones. The categories “other” and “word of mouth” are for all zones a much lower percentage for emergency information.
- For many years, emergency management and the American Red Cross have been encouraging citizens to develop an emergency plan and to create an emergency supply kit to be self-sufficient for the first 72 hours following a disaster. Public Service Announcements (PSAs), community presentations, and even a billboard along I-440 near New Bern Avenue directed individuals to be prepared and make a plan.
- Across all Human Service zones of the County, about 12 to 15 percent of respondents said that they had an emergency plan only. Another 25 percent indicated that they had an emergency kit prepared for a disaster. The survey also indicted that 40 to 50 percent of persons from all zones did not have an emergency plan or an emergency kit. There did not appear to be any significant variations in responses among the Human Service zones.
- For many years emergency management has been encouraging the population to prepare for an impending emergency. Campaigns to educate the public have been undertaken for

many years, with the American Red Cross leading the way in many efforts. Nevertheless, almost half of persons do not have an emergency plan or an emergency kit.

- Efforts in educating the public should be ongoing to better prepare the county citizens to ensure that they understand the need to be self-sufficient for at least a 72-hour period after a disaster.
- Government agencies will be attempting to provide emergency services as soon as possible, but may be unable due to their resources being damaged or the situation overwhelming the local capabilities. For the protection of themselves and their families, citizens need to become "self-sufficient" immediately after a disaster.

Statistics and Trends

The top three hazards, as identified in the latest Wake County Hazard Analysis conducted by Wake County Emergency Management are as follows:

- **Nuclear attack:** A nuclear attack is defined as an attack upon the U.S. using nuclear weapons. Because Wake County and the surrounding area is the seat of state government, a major research and development center and key transportation transit points, direct weapons effects could be expected from a nuclear attack. In a worst-case scenario of a nuclear device within the City of Raleigh, it is anticipated that greater than 10 percent of the population would be vulnerable to casualties and 10 percent of property would be vulnerable damage.
- **Water supply failure/contamination:** A water supply failure is the absence of adequate water supply sufficient to maintain public health needs, essential business functions and/or services. Due to the integrity and reliability of Wake County's water supply system, the most likely cause of a disaster type water supply failure in the County would be contamination of the raw water supply, rendering it unusable. Contamination could be precipitated by an accidental release of contaminants into the supply system or by an act of sabotage. Terrorism in particular is an increasing concern because of heightened activity in recent years. If a true water supply failure or contamination disaster were to occur in the County, more than 10 percent of the population and more than 10 percent of the property (economic value) would be vulnerable to negative effects. Efforts have been made to provide interconnection between water systems, so that sources for water other than Falls Lake can be utilized in an emergency. The rapidly increasing population of Wake County presents a significant problem as the capacity of these emergency interconnect systems is limited, thus only "essential, emergency water services" would be available.
- **Severe winter storms:** Winter storms include cold, ice, snow and wind in all forms and combinations; in the worst situation, a storm could paralyze cities, trap travelers, destroy property and take lives. Severe winter storms generally affect a minor percentage of the population such as the elderly, young, those requiring specialized medical treatments and

those who cannot care for themselves. These storms are rarely of sufficient duration to create a lengthy shutdown of business operations. The major vulnerability in terms of casualties would include those citizens who lack sufficient shelter or are not in good health; this would be less than 1 percent of the total population. Similarly, the amount of property vulnerable to damage from a severe storm would be less than 1 percent (*Wake County Government, 2010*).

Resources and Strengths

- Often there is a need for some level of sheltering of disaster victims. The following is a list of Mass Care Centers that the American Red Cross, Wake County Government and a host of community partners are prepared to staff and manage:
 - General Population Evacuation Centers
 - Special Needs Evacuation Centers
 - Family Centers Medical
 - Triage and Basic Care Centers
 - Domiciliary Care Contingency Shelters (Contingency Shelter)
 - Mass Medication Dispensing Centers
- Members of the Wake County Disaster Preparedness Task Force have worked together since 2003 to develop plans, share resources, participate in exercises and support each other in disaster/emergency situations. The Task Force is facilitated by Wake County Emergency Management, and has seven subcommittees: Fire Services, Law Enforcement Services, Emergency Medical Services, Hospital Services, City/County/State Services, Private Industry Services and Public Health Services. This partnership works to ensure that resources coming into the county are used to address the most urgent needs, improving our overall response capabilities.
- The County and municipalities work together in an incident command structure that meets federal requirements and allows all emergency responders to share a common language and framework, which improves their response capabilities during county disasters.

Disparities, Gaps and Unmet Needs

- Community perceptions clearly indicate to county agencies responding to a disaster within Wake County, that partnership with television media is the best way of getting emergency information disseminated to disaster victims. The Internet is important, but television is the preferred method for receiving emergency information by the majority of citizens in all eight Human Service zones participating in the Community Assessment survey.

Implications and Emerging Issues

- On April 24, 2009, the Centers for Disease Control and Prevention (CDC), publically announced that a “novel” strain of flu had developed in Mexico and two cases had spread to the U.S. These two cases resulted in fatalities and the CDC was very concerned that this disease would rapidly spread across the nation.
- The H1N1 flu, initially called “Swine Flu” with the assumption that the strain had developed and spread to humans from swine, spread rapidly across the nation from may to June of 2009.
- Wake County had many suspected cases of H1N1 influenza, but because the N.C. Public Health Laboratory was the only facility certified for testing, only severe hospitalized cases were being confirmed for H1N1 influenza.
- The summer also resulted in a “vaccine” being developed to protect the public from this virus. Wake County developed “mass immunization” plans, based on the concept of having a “mass vaccination module,” which would be capable of providing vaccinations to a designated number of County citizens.
- A very limited number of vaccines were received by Wake County in mid-October 2009; these were initially distributed to the highest priority patients identified by the CDC.
- Wake County, along with other areas of North Carolina, continued to see a rapid increase in the number of “sick citizens” and the number of fatalities as a result of complications from H1N1 influenza.
- Vaccine supplies became more plentiful by early December 2009 and Wake County's Community Health Director declared on December 8, 2009 that all citizens of Wake County could receive the vaccine, if available.
- Numerous vaccination sites were opened. Initially lines of citizens wanting the vaccine began forming at 4:00 a.m., for an opening time of the vaccination clinic at 9:00 a.m.
- Wake County developed plans to “blitz” the community with vaccinations during early January 2010 in order to provide protection to the citizens before the projected “third wave” developed.
- Vaccination sites were opened in schools, churches, a shopping mall, and at other venues where citizens could receive the H1N1 vaccination.
- Throughout the month of January, the number of persons with H1N1 illness continued to decline as did the demand for the vaccine from the public.

- By the end of January 2010, vaccination clinics were not being attended by citizens.
- By May 31, 2010, Wake County Human Services' Public Health Department had accomplished the following:
 - Conducted 130 clinics (in addition to the normal clinic operations which also provided H1N1 vaccine) from October 9, 2009 through May 31, 2010
 - Administered 51,112 vaccinations (traditional number of vaccinations for the seasonal flu number around 11,000)
 - Directly distributed 24,300 doses of the vaccine to private providers
 - Of the 86,650 doses received within Wake County, 87.1 percent of those doses (75,502) were administered to the citizens of the community
- Continued proper planning and training for a pandemic flu will produce benefits even if a true pandemic never develops. The preparation involved is transferable to virtually any type of public health emergency.

Raleigh-Wake E 9-1-1 Communications

The Raleigh-Wake Emergency Communications Center is a department of the City of Raleigh that provides 9-1-1 and emergency dispatch services to the majority of Wake County as part of an intergovernmental agreement. The agency was the first in North Carolina to be accredited by the Commission on Accreditation for Law Enforcement Agencies (CALEA), and is also recognized as an Accredited Center of Excellence for emergency medical dispatching by the Academy of Emergency Medical Dispatch.

Statistics and Trends

- Wake County boasts one of the best cardiac survival rates in the country. As part of this critical process, the 9-1-1 center provides pre-arrival instructions to callers, including step-by-step information on how to perform CPR. Additionally, fire apparatus and ambulances are assigned to all critical emergency calls. Ambulances are dispatched through the use of AVL (Automatic Vehicle Location) which assures that the closest ambulance is always en route.
- Cellular telephones now make up the majority of the calls to 9-1-1, representing more than 68 percent of the total. Table 9 below displays the number of 9-1-1 calls processed for three fiscal years and an estimated figure for the fiscal year ending June 30, 2010.

Table 9

EMERGENCY COMMUNICATIONS 9-1-1 Calls Processed			
FY 06-07 Actual	FY 07-08 Actual	FY 08-09 Actual	FY 09-10 ESTIMATE
502,492	523,184	520,431	517,823

Resources and Strengths

- All personnel are required to successfully complete a 14-week classroom academy and six months of practical training prior to completion of probation. Maintenance of certifications and attendance at continuing education classes is also required.
- The training academy is certified by the Association of Public-Safety Officials International. There are approximately 6,100 public safety emergency communications facilities in the U.S. Only four possess the combination CALEA, ACE, and APCO approval.
- In 2010, Raleigh-Wake Emergency Communications received the prestigious APCO "Horizon Award" for their innovative use of technology. Included here is the use of Twitter and Google Maps to present citizens with electronic access to traffic and accident information.
- The center is currently working towards the establishment of "Next Generation 9-1-1," which will allow for the receipt of text messages, pictures, and a broad range of data. This is part of a statewide plan currently being developed, and will require cooperation and technology upgrades with and from consumers, telephone providers, and public safety.
- Public viewer access to info and resources related to Raleigh-Wake E 9-1-1 info is available via the Internet.
- Raleigh Wake E 9-1-1 Event Incidence trackers are accessible to the public via the web and offer informational updates on events: <http://incidents.rwecc.com/> (City of Raleigh, 2010).

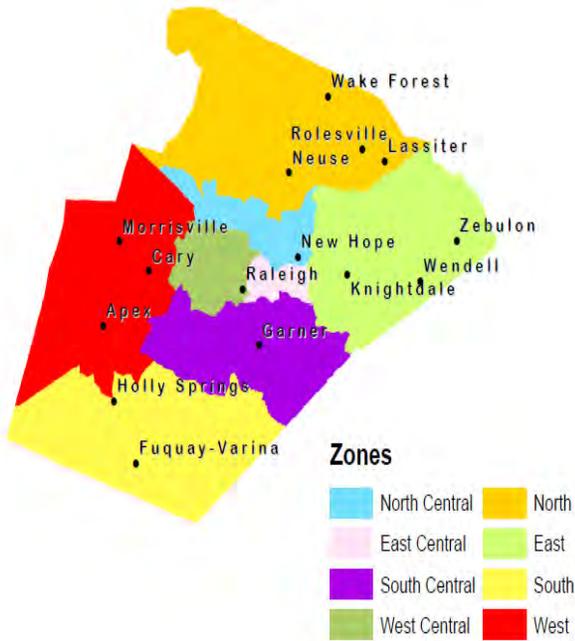
Disparities, Gaps, and Unmet Needs

- Non-English speaking callers are also on the rise. A third-party translation service is retained for immediate "conferencing in" on emergency calls. While almost 99 percent of translation services are utilized for the Spanish language, a variety of other languages and dialects must be provided for.
- Both non-English speaking callers and cellular telephones require increased contact time between citizens and the 9-1-1 staff, thereby causing additional demands on service not represented solely through numbers.

- The most critical issue facing Raleigh-Wake Emergency Communications is their current physical plant, which is outdated, cramped, and has not kept pace with the community. The center has been housed in the same location since 1986 without expansion.
- According to accepted modeling formulae, Raleigh-Wake Emergency Communications Center is also understaffed. Personnel handle significantly more calls per employee than the state average.

Implications and Emerging Issues

The population of Wake County continues to grow and brings with it increases in the usage of E 9-1-1 Services. Emergency services dispatches will increase as the number of calls and requests for services increase. Implications for the future suggest a need to prepare to provide services based on recommended responder to population ratios.



What Happens Next?

On November 4, 9 and 15, 2010 over 250 community stakeholders, including business, nonprofit, government, education, hospital, faith-based and citizen representatives came together to evaluate the most critical needs to be addressed across the County and to establish these needs as priorities for action. Participants were first randomly divided into three groups in order to hear selected data from each of the six issue committees. After that, participants were asked to vote, using a nominal group process, on issues they thought were important for action; these were established as community priorities. Because the needs of Wake County communities

vary greatly across the County, specific priorities were established based on geographic location.

Zone Priorities for Action

East Zone

1. Lack of Health Insurance
2. Unemployment

North Zone

1. Overweight and Obesity
2. Lack of Health Insurance

South Zone

1. Unemployment
2. Overweight and Obesity

West Zone

1. Overweight and Obesity
2. Lack of Affordable Childcare

North Central Zone

1. Overweight and Obesity
2. Poverty

East Central and South Central Zones

1. Lack of Health Insurance
2. Mental Health Services

West Central Zone

1. Overweight and Obesity
2. Child Abuse Prevention

Youth Priorities for Action

Youth from across the County were invited to participate in the three Community Prioritizing meetings. Youth followed the same process as the other participants, however during the prioritizing part of the meetings, youth were not included in the zone prioritizing process, but broken out to established separate youth priorities. Those priorities were as follows:

Central and North Zones

1. Disparities in Short- and Long-Term School Suspensions
2. Teenage Pregnancy

East Zone

1. Unemployment
2. Lack of Access to Affordable Childcare

South and West Zones

1. Lack of Health Insurance
2. Increase in enrollment in colleges and universities

County Priorities for Action

After priorities were established in each of the eight zones, countywide priorities were determined based on the number of zones in which an issue was selected and the importance each zone placed on the issue.

Overall County priorities were

1. Overweight and Obesity
2. Lack of Health Insurance
3. Unemployment

Action Planning

The Community Assessment and priority-setting process represent only the first doors we have unlocked as we move toward creating a community that will make all our lives better. Now we must address the concerns and issues we have prioritized with solutions. We must continue to combine the many strengths and resources we have in Wake County and agree to focus our efforts on the identified priorities. In order to make this happen, action planning sessions will be held across the County, by zone, to establish specific strategies for addressing the identified priorities. Here is how you can help:

1. Pick an area or issue in the Community Assessment that is of interest to you and let us know how you want to help. You may want to volunteer your time and expertise to help determine a plan of action, link us to other communities and organizations that are interested in the issue, or help us find the resources to address the issue.
2. Tell your family, neighbors, co-workers, faith groups, community organizations and business associates about the Community Assessment. Encourage them to read the information and get involved.

3. Stay involved and informed. Check the wakegov.com web site regularly for updates on the progress of the Community Assessment action planning process and the State of the County Health Report.

To volunteer, make suggestions or request more information, please contact us at (919) 518-0219. This can be an effective effort only if our community lives it, supports it and participates in it. Please find the areas that resonate with you, and be a partner in bringing solutions to problems and building on successes for the benefit of all Wake County.

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