

Collaborative Community Health Assessment in North Carolina

Recommended Secondary Data Topics and Sources

INTRODUCTION

This set of recommendations for topics for inclusion in the secondary data collection phase of collaborative community health assessment (CHA) specific to North Carolina (NC) was requested by the North Carolina Institute for Public Health (NCIPH). The author, a former NCIPH employee currently practicing as an independent public health consultant, has over 13 years' experience in community health assessment (CHA) and environmental assessment (EA), both as an NCIPH staff member and as a consultant. She has participated in CHA development in 39 NC counties and EA development in 34 NC counties. Many of the recommendations presented stem directly as a result of the consultant's experience with the CHA process.

Local health departments (LHDs) across NC are required to conduct a comprehensive community health assessment at least every four years. It is required of public health departments in the consolidated agreement between the NC Division of Public Health and local public health departments. Furthermore, it is required for local public health department accreditation through the NC Local Health Department Accreditation Board (G.S. § 130A-34.1). As part of the US Affordable Care Act of 2011, non-profit hospitals are also now required to conduct a community health (needs) assessment at least every three years. Recognizing that duplicate assessment efforts are a poor use of community resources, LHDs and non-profit hospitals across the state are developing models for collaboratively conducting the community assessment process. The NCIPH currently facilitates a Learning Collaborative among several LHD/hospital partnerships to explore new methods and models for assessment and community health improvement planning.

In NC, community health assessment refers both to a process and a document. Through the *process*, the assessment team investigates and describes the current health status of the community, what has changed since a recent past assessment, and what still needs to change to improve the health of the community. The process involves the collection and analysis of a large range of secondary data, including demographic, socioeconomic and health statistics, and environmental data, as well as primary data such as personal self-reports and public opinion collected by survey, listening sessions, or other methods. The *document* is a summary of all the available evidence and serves as a resource until the next assessment. Together, the process and document provide a basis for prioritizing the community's health needs, and for planning to meet those needs.

The consultant's assignment from the NCIPH was to recommend a core set of secondary data parameters generally applicable and available statewide, with consideration given to "new" parameters stemming from the LHD/hospital partnership. The active participation of hospitals in the assessment process provides access to hospital-based health data not otherwise available in the public domain. The core data recommendations presented here include both proprietary and public hospital-based data.

In developing the core secondary data parameters list the consultant applied five data-judging principles: (1) accessibility, (2) authority, (3) currency, (4) reproducibility, and (5) utility. The justifications for applying each principle follow.

First, it is important that data and data sources provide easy **accessibility** by data researchers and users with a range of experience and skills. Although not particularly difficult, researching secondary data can be a very time-consuming and tedious process, and sometimes falls to persons without specific training in the identification and use of numerical and statistical data. Fortunately, in our electronic age, abundant, trustworthy data is available in the public domain, readily accessible via the Internet. Occasionally, basic data does not suffice to describe a health problem, but even higher-level data and data manipulations (e.g., census-block mapping of demographic data) can be accomplished via the Internet. In most—but not all--cases, the data recommended in this paper are available via readily accessible electronic sources.

Secondly, it cannot be assumed that all electronic data is equally valid. Most CHA data researchers do not have the time or training to judge the **authority** of data sources. To eliminate the need to vet resources, all data sources recommended in this paper are widely recognized as credible, professional authorities. While national *data warehouses* that compile statistics from various state and local sources are becoming more widespread, this author has a distinct preference for mining data as close to the original source as possible. As a result, with few exceptions, the data resources recommended are national, state or local government agencies, public institutions, LHDs, and hospitals that are accountable for the data they produce. One noteworthy exception is the Annie E. Casey Foundation *Kids County Data Center*, which has a long and credible national reputation as a keeper of a variety of data on child well-being, all collected from vetted sources.

Since the assessment results will be used in community health improvement planning, it is important that the data collected have **currency** in that while they may describe the past they especially describe the present. One fault of data warehouses is the near impossibility of their being as current as locally available data. (For instance, some of the data used in the *County Health Rankings* dashboard dates from the mid-2000s.) Demographic data may be the exception, since the most reliable, comparable source for *everyone* is the US Census Bureau. Until electronic medical records make it possible to track health data in real time, local and state health data will be more current than comparable data maintained in national data warehouses.

Fourth, sources that frequently revise or change their data collection and presentation formats complicate the secondary data process because the resulting data lacks **reproducibility** for comparison over time. While there is no guarantee that *any* data resource will reproduce data annually in a consistent format, the author has selected data sources with the most stable reporting presentations. Another reproducibility problem is the tendency for sources to change their Internet addresses or URL. While many websites have built-in re-direct utilities, some do not. For that reason, in this paper the citations presented with data sources tend to be rather basic, focusing on the organization's home page or possibly a gateway page specifically for data. Additional descriptive detail provided with the citation should help users find the specific data being referenced.

Finally, there is little point in collecting and presenting data that fails the test of **utility**. The best data is that which clearly and simply illustrates a point, is meaningful to the community, can be compared from place to place and over time, and is a parameter against which improvement can be identified and measured. Because they usually are reliably comparable, rates and

percentages are preferred over counts wherever they are available. Also preferred are age-adjusted, aggregate data, which also have been cited where available.

Because health occurs – or fails to occur – within a context, the health data recommended in this paper are heavily supplemented by the demographic and socioeconomic data that describe more broadly the context of life in the community. An examination of these *social determinants of health* helps in understanding the age-, racial-, gender-, educational-, and economy-based disparities that influence the health and well-being of people in communities throughout the state.

STRUCTURE FOR PRESENTATION OF RECOMMENDATIONS

The recommended secondary data parameters are grouped into the following broad categories:

1. Demographic Parameters: Data that enumerate populations, and track numerical changes in populations
2. Socioeconomic Parameters: Data that describe economic conditions of the community as a whole and of specific populations in the community; data that describe families and their living circumstances; data on educational attainment and the school environment; data on community safety
3. Health Care Resource Parameters: Data that describe health care providers and facilities; data on health care utilization; data on uninsured and Medicaid populations
4. Health Statistics Parameters: Data that describe leading causes of mortality and morbidity (including chronic disease)

Recommended parameters are presented on two levels: **Level One** parameters should be considered universal and necessary; **Level Two (indicated in blue)** parameters are optional measures that can expand the understanding of the Level One parameters to which they are linked; they are recommended especially in communities where a level one parameter raises concern. In some cases additional specific measures and resources are recommended for further consideration. Note that this report **does not** include recommendations for monitoring environmental parameters. Proper environmental assessment deserves separate attention.

Each recommended parameter is presented with a recommended data source; in some cases alternate sources are cited. Sample data is offered occasionally to illustrate a presentation format that has proven useful in the past.

RECOMMENDED SECONDARY DATA PARAMETERS

1. Demographic Parameters.

- a. **General Demographic Characteristics (Level One):** Most recent point-in-time count, total and stratified by gender; median age and median age by gender. Example:

Location	Total Population	Number Males	% Population Male	Median Age Males	Number Females	% Population Female	Median Age Females	Overall Median Age
Target County	21,282	10,534	49.5	39.5	10,748	50.5	45.7	42.9
Peer County	9,980	5,006	50.2	39.7	4,974	49.8	40.4	40.1
State of NC	9,535,483	4,645,492	48.7	36.0	4,889,991	51.3	38.7	37.4

Source: US Census Bureau *American FactFinder, 2010 Census or American Community Survey 5-Year Estimate or 3-Year Estimate* (whichever provides the desired currency). Note: The *American Community Survey (ACS)* is conducted annually, with data summarized at 1-Year, 3-Year and 5-Year intervals. The 1-Year ACS data is useful for communities with a population of 65,000 and higher; the 3-Year ACS estimates are based on 36 months of data and are best used for communities of 20,000 or larger; the 5-Year ACS estimates are based on 60 months of data and are applicable at any population level including Census tracts. In small counties and rural communities the margin of error can be very large for the 3-Year ACS estimates, so users should decide for themselves the margin of error (displayed with the data) that is acceptable. The access path for US Census data is: <http://factfinder2.census.gov>.

- b. **Population Growth Trend (Level One):** Decadal growth according to US Census (or state) data; users can choose the optimum data range, but may themselves have to calculate the percentage change. Example:

Location	Number of Persons and Percent Change								
	1990	2000	% Change 1990-2000	2010	% Change 2000-2010	2020 (Projection)	% Change 2010-2020	2030 (Projection)	% Change 2020-2030
Target County	20,388	19,757	-3.1	21,282	7.7	22,677	6.6	24,042	6.0
Peer County	5,904	6,885	16.6	9,980	45.0	10,801	8.2	11,600	7.4
State of NC	6,632,448	8,046,485	21.3	9,535,483	18.5	10,966,956	15.0	12,465,481	13.7

Source: There are several sources for this data. Historical and current data are both available from the US Census Bureau *American FactFinder* (<http://factfinder2.census.gov>) as well as *LINC* (Log Into North Carolina) (<http://linc.state.nc.us/>), a state-level data warehouse. Another alternate source that is both convenient and pertinent is the NC Office of State Budget and Management, whose population projections are especially pertinent. The OSBM figures are the same ones the state uses in the distribution of revenues to local governments and for long-range

planning, so the use of this data at the local level is completely justifiable. The access path for OSBM data is: <http://www.osbm.state.nc.us>, *Facts and Figures* section, *Socioeconomic Data*.

- c. Population by Race/Ethnicity (Level One):** Most recent point-in-time counts and percentages, stratified according to standard, basic US Census Bureau race and ethnicity categories; percentages may need to be calculated by the user, depending on the breadth of categories employed. Users are reminded that “Hispanic/Latino” is an ethnicity, not a race, and that persons of that ethnicity may be of any race; hence, the percentage of the population in this category is *not* additive to the other racial percentages. Standard US Census Bureau race/ethnicity categories useful throughout most of NC include: White, Black/African American, American Indian/Alaskan Native, Asian/Native Hawaiian/Other Pacific Islander, Some Other Race, Two or More Races, and Hispanic/Latino.

Optional: Population by Race/Ethnicity, by Township (Level Two): In some communities it will be useful to know where predominantly minority populations reside geographically. Through *American FactFinder* it is possible to retrieve data at the township (sometimes Census tract) level.

Source: US Census Bureau, *American FactFinder, 2010 Census Data or American Community Survey 3-Year or 5-Year Estimates* (<http://factfinder2.census.gov>).

- d. Population by Age (Level One):** Most recent point-in-time counts and percentages, stratified according to standard, basic US Census Bureau age categories and (if desired) by gender. Example:

Age Group	Target County						North Carolina					
	No. in Population			% of Total Population			No. in Population			% of Total Population		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
All ages	40,661	19,969	20,692	100.0	49.1	50.9	9,535,483	4,645,492	4,889,991	100.0	48.7	51.3
Under 5	2,693	1,396	1,297	6.6	3.4	3.2	632,040	322,871	309,169	6.6	3.4	3.2
5 to 9	2,557	1,331	1,226	6.3	3.3	3.0	635,945	324,900	311,045	6.7	3.4	3.3
10 to 14	2,417	1,216	1,201	5.9	3.0	3.0	631,104	322,795	308,309	6.6	3.4	3.2
15 to 19	3,209	1,624	1,585	7.9	4.0	3.9	659,591	338,271	321,320	6.9	3.5	3.4
20 to 24	3,489	1,746	1,743	8.6	4.3	4.3	661,573	336,648	324,925	6.9	3.5	3.4
25 to 29	2,701	1,443	1,258	6.6	3.5	3.1	627,036	311,499	315,537	6.6	3.3	3.3
30 to 34	2,523	1,254	1,269	6.2	3.1	3.1	619,557	304,807	314,750	6.5	3.2	3.3
35 to 39	2,440	1,265	1,175	6.0	3.1	2.9	659,843	324,681	335,162	6.9	3.4	3.5
40 to 44	2,518	1,289	1,229	6.2	3.2	3.0	667,308	329,652	337,656	7.0	3.5	3.5
45 to 49	2,957	1,497	1,460	7.3	3.7	3.6	698,753	341,432	357,321	7.3	3.6	3.7
50 to 54	2,945	1,383	1,562	7.2	3.4	3.8	669,893	323,702	346,191	7.0	3.4	3.6
55 to 59	2,488	1,165	1,323	6.1	2.9	3.3	600,722	285,244	315,478	6.3	3.0	3.3
60 to 64	2,211	1,067	1,144	5.4	2.6	2.8	538,039	255,034	283,005	5.6	2.7	3.0
65 to 69	1,716	759	957	4.2	1.9	2.4	403,024	188,125	214,899	4.2	2.0	2.3
70 to 74	1,247	579	668	3.1	1.4	1.6	294,543	133,021	161,522	3.1	1.4	1.7
75 to 79	982	397	585	2.4	1.0	1.4	223,655	94,981	128,674	2.3	1.0	1.3
80 to 84	831	319	512	2.0	0.8	1.3	165,396	63,573	101,823	1.7	0.7	1.1
85+	737	239	498	1.8	0.6	1.2	147,461	44,256	103,205	1.5	0.5	1.1

Optional: Population by Age, by Township (Level Two): In some communities it will be useful to know where concentrations of populations of certain age groups (e.g., persons age 65 and older) reside geographically. Through *American FactFinder* it is possible to retrieve data at the township (sometimes Census tract) level. It is also possible to generate maps of this data.

Note: *Whenever* using age categories in the CHA process it is a good idea to be sure they match US Census Bureau categories, since that permits the largest range of comparisons.

Source: US Census Bureau, *American FactFinder, 2010 Census Data or American Community Survey 3-Year or 5-Year Estimates* (<http://factfinder2.census.gov>).

- e. **Special Populations: Special Needs Registry (Level One):** Minimally, the CHA researchers should identify what community agency keeps the local *Special Needs Registry*, a list of residents who have special medical needs that they might need help in meeting in the event of a natural disaster or other wide-spread community emergency. Of course CHA researchers should take care to assure that references to the registry list do not reveal the identity of individuals. It is necessary primarily to know (1) that such a list exists, (2) how often and how it is updated, and (3) what policies and procedures are in place for implementing the appropriate response in the event of an emergency. Maintaining the Special Needs Registry is often the responsibility of the local county Department of Social Services, but the responsibility can vary from county-to-county in NC, and must be researched at the local level. A good place to begin inquiry is with the county Office of Emergency Management.

Optional Special Populations: Populations with Limited English Language Skills (Level Two): Some communities are home to significant numbers of persons of limited ability to speak the English language. This population may need special assistance in order to utilize the health and human services network, so it will be helpful to understand the extent of need. The US Census Bureau tracks households in “linguistic isolation”, meaning households in which no member 14 years and over (1) speaks only English, or (2) speaks a non-English language and speaks English “very well”. In other words, households in which all members 14 years old and over have at least some difficulty with English.

Source: Data on “Household Language by Linguistic Isolation”, available at the county-level, can be accessed via *American FactFinder*, most recently in the *2009 American Community Survey 5-Year Estimate* (<http://factfinder2.census.gov>).

Optional Special Populations: Major Cultural Minorities (Level Two). Some communities are home to significant numbers of persons belonging to one racial or ethnic minority (e.g., persons of Hmong descent in Catawba and Burke Counties, or persons belonging to the Eastern Band of the Cherokee in Jackson and Swain Counties) whose problems and needs may be of special interest. Where such populations exist, CHA researchers should collect in-depth demographic data specific to those groups; this data is available through *American FactFinder*. Users should be cognizant that the US

Census Bureau will be the best and largest source of demographic data on these populations. In addition to mining demographic data, researchers should investigate the basic cultural and religious beliefs and practices that influence the behaviors of these populations.

Source: US Census Bureau, *American FactFinder, Decadal US Census data or American Community Survey 5-year Estimate* (<http://factfinder2.census.gov>).

2. Socioeconomic Parameters

- a. Income (Level One):** There are three income measures that are useful to the CHA process: (1) per capita personal income, (2) median household income, and (3) median family income. *Per capita personal income* is the income earned per person 15 years of age or older in the reference population. *Median household income* pertains to the incomes of all the people 15 years of age or older living in the same household (i.e., occupying the same housing unit) regardless of relationship. For example, two roommates sharing an apartment would be a household, but not a family. *Median family income* pertains to the income of all the people 15 years of age or older living in the same household who are related either through marriage or bloodline. For example, in the case of a married couple who rent out a room in their house to a non-relative, the household would include all three people, but the family would be just the couple. It is especially useful to present these single point-in-time data in a manner that shows the local difference from the comparable state figure. Example (for August 2012):

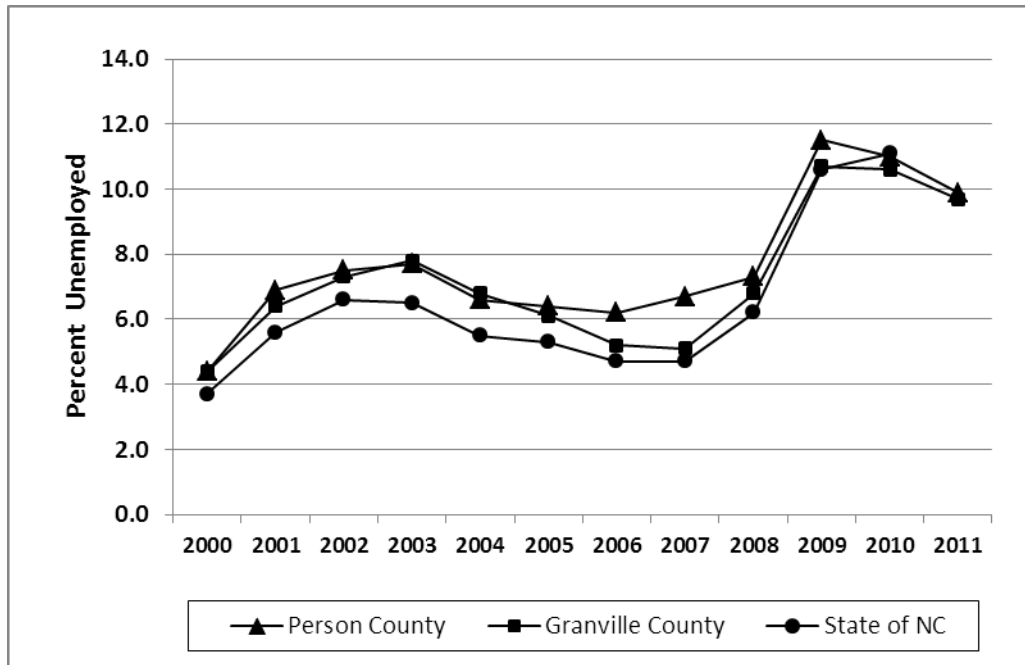
Location	Per Capita Personal Income ¹	Per Capita Income Difference from State	2011 Est Median Household Income ²	Median Household Income Difference from State	2010 Est Median Family Income ³	Median Family Income Difference from State
Target County	\$26,788	\$2,833	\$49,524	\$5,608	\$65,778	\$12,858
Peer County	\$21,219	-\$2,736	\$42,960	-\$956	\$66,213	\$13,293
State of NC	\$23,955	n/a	\$43,916	n/a	\$52,920	n/a

Source: NC Department of Commerce *AccessNC, Community Demographics, County Report, County Profile*, available at: <http://accessnc.commerce.state.nc.us>.

- b. Employment by Sector (Level One):** The information included in the basic data set includes the average number of persons and percent of the total workforce employed in each sector and the annual average wage per employee in each sector. This information can help illuminate other community characteristics, such as low average income, lack of health insurance, or a high rate of population loss due to out-migration. For example, in a county in which the highest proportion of the workforce is employed in the lowest paying sector, a low average per capita income might be expected. A county with a high proportion of workers in the Accommodation and Food Services sector, which typically offers part-time, low-wage employment and few or no benefits, might note a correlated large number of uninsured adults.

Source: NC Employment Security Commission, *Labor Market Information, Industry Information. Employment and Wages Data by Industry, Annual Summary* (or other desired period). By State or by County. <http://eslmi23.esc.state.nc.us/ew/>.

- c. **Unemployment Rate (Level One):** This data, basically representing the percent of the civilian labor force not currently employed but available for work and actively seeking employment, should be presented as trend data spanning at least 10 years, to best illustrate both cyclical and catastrophic change. Furthermore, this data is most effectively presented graphically. Example:



Source: NC Employment Security Commission, *Labor Market Information, Workforce Information, Employed, Unemployed and Unemployment Rates, Labor Force Statistics, Single Areas for All Years*; <http://eslmi03.esc.state.nc.us/ThematicLAUS/clfasp/startCLFSAAY.asp>.

- d. **Overall Poverty Rate (Level One):** The overall poverty rate is the percent of the total population (both individuals and families) whose money income (which includes job earnings, unemployment compensation, social security income, public assistance, pension/retirement, royalties, child support, etc.) is below the threshold established by the US Census Bureau. (Note that the threshold changes over time, so old poverty rate data may not be exactly comparable to more recent data.) Data are sometimes presented relative to 100% of the poverty level, other times relative to 200% of the poverty level (a threshold sometimes used to determine eligibility for government services), so it is important to cite the precise definition of poverty being used.

Source: Historical decadal poverty rates from 1970 through 2000 are most easily accessed via the LINC (Log Into North Carolina) Database, under the Topic Group *Employment and Income* (Data Item 6094), available at: <http://linc.state.nc.us>.

Poverty data since the 2000 US Census is best accessed via *American FactFinder*, especially the most recent *American Community Survey 5-Year Estimate* available (<http://factfinder2.census.gov>).

Optional: Poverty by Race (Level Two): This data, which stratifies the poverty rate according to race, may be of special importance in communities with significantly large minority populations.

Source: Historical decadal poverty rates from 1970 through 2000 stratified by “total”, “white”, and “black” are most easily accessed via the *LINC* (Log Into North Carolina) Database, under the Topic Group *Employment and Income* (Data Items 6094, 6096 and 6098), available at: <http://linc.state.nc.us>.

Poverty data since the 2000 US Census is best accessed via *American FactFinder*, especially the most recent *American Community Survey 5-Year Estimate* (<http://factfinder2.census.gov>), which should provide more extensive racial stratifications than the LINC source.

- e. **Children Receiving Free- or Reduced-Price Lunch (Level One):** This data can be used to determine the extent of the child population experiencing poverty at home, since program eligibility is dependent on both family income and federal poverty guidelines. Data sources report program participation by both number and percent of participants; for purposes of place and time comparisons, the percentage figure is preferred to the number figure.

Source: A national source for comparative data is the Annie E. Casey Foundation *Kids Count Data Center, Data by State, North Carolina, Profiles* (state and counties), *Other Education, Percent of Students Enrolled in Free and Reduced Lunch*; <http://datacenter.kidscount.org/data/>.

Another source that may provide historical data as well as the most current data on this topic is the Local Educational Authority (LEA) or school system in the target jurisdiction.

- f. **Housing Cost (Level One):** There are two primary parameters than can be used to estimate the burden of housing costs on residents: (1) housing cost as a percent of household income, and (2) median monthly housing cost. The first measure is based on the percentage of rented housing units (or owned housing units) occupied by householders spending greater than 30% of household income on housing. The second measure represents the median monthly gross rent (for renters) or median monthly median mortgage cost (for owners).

Source: The source for either parameter is the US Census Bureau *American FactFinder American Community Survey 5-Year Estimates* (<http://factfinder2.census.gov>).

- g. Homelessness (Level One):** In NC the most comparable form for this data is the annual Point-in-Time Count of the Homeless, a project sponsored by the NC Coalition to End Homelessness.

Source: NC Coalition to End Homelessness, *Point-in-Time Count Data*, available at: <http://www.ncceh.org/PITdata/>. In counties without an annual count, CHA researchers should contact agencies and organizations that house, or advocate on behalf of, the homeless. The Annie E. Casey Foundation *Kids Count Data Center* (<http://datacenter.kidscount.org>) maintains county-level data on the number of children experiencing homelessness.

- h. Child Care Facilities (Level One):** The availability of child care is a necessary adjunct to employment for many people. The NC Division of Child Development keeps a list of all state-regulated child care facilities, both large “child care centers” and smaller “family child care homes”, accompanied by a state “star rating” that indicates a measure of “quality” for each facility. It is not necessary to name or locate each facility on the lists, which can be quite long in larger counties. Example (for a small county):

Type of Facility	Number
Child Care Centers (13)	
Five-star	5
Four-star	1
Three-star	4
Two-star	0
One-star	0
GS 110-106 (Church-affiliated)	1
Temporary	2
Family Child Care Homes (14)	
Five-star	0
Four-star	3
Three-star	4
Two-star	6
One-star	1

At the present time there are no uniform, comparable data describing the adequacy of child care in NC communities. The Annie E. Casey Foundation *Kids Count Data Center* tracks the number of children ages 0-5 and 0-12 enrolled in state-regulated child care, but this utilization figure is not expressed as a percentage of the real or potential total demand.

Source: NC Department of Health and Human Services, Division of Child Development, *Child Care Facility Search site*; <http://ncchildcaresearch.dhhs.state.nc.us/search.asp>.

- i. Schools and Enrollment** (including K-12 public, charter, and private schools) **(Level One):** Depending on the jurisdiction, it may be helpful for the CHA to include a list of all schools and their enrollments. Example (for Perquimans County Public Schools):

School	Location	School Type/Calendar	Grade Range	Enrollment SY2011-12
Hertford Grammar	Hertford	Regular School, Traditional Calendar	3-5	397
Perquimans Central	Winfall	Regular School, Traditional Calendar	PK-2	417
Perquimans County High	Hertford	Regular School, Traditional Calendar	9-12	483
Perquimans County Middle	Winfall	Regular School, Traditional Calendar	6-8	411

Source for public school data (including charter schools): NC Department of Public Instruction, *Data and Statistics, Education Data, NC School Report Cards*; <http://www.ncschoolreportcard.org/src/>.

Source (for private school data): Private School Review, *North Carolina Private Schools, Search by Zip Code*; http://www.privateschoolreview.com/find_schools.php.

Minimally, the CHA should include trend data for total K-12 school enrollment. Example:

Location	Number of Students per School Year						
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Target County Schools	5,078	5,145	5,059	4,954	4,945	4,930	4,989
Peer County Schools	4,100	4,269	4,254	4,207	4,169	4,096	4,067
State of NC	1,395,810	1,428,912	1,452,420	1,458,156	1,456,558	1,446,650	1,450,435

Source: NC Department of Public Instruction, *Data and Statistics, Education Data: NC Statistical Profile. NC Statistical Profile Online: Local Education Agencies Information, Pupil Accounting.* (Select LEA and Year). <http://apps.schools.nc.gov/pls/apex/f?p=1:1:497147721913602>.

- j. **Educational Attainment (Level One):** Pertinent measures in this education category include the percent of the population with a high school diploma or GED, the percent of the population with a bachelor's degree or higher, percentages of 3rd and 8th graders with at or above grade-level scores in end-of-grade reading and math tests, and SAT participation rates and average scores. It may be useful to combine these parameters in one table. Example:

Location	% Population High School Graduate (or GED) or Higher	% Population Bachelor's Degree or Higher	% 3rd Graders At or Above Grade Level, ABCs EOG Reading Test	% 3rd Graders At or Above Grade Level, ABCs EOG Math Test	% 8th Graders At or Above Grade Level, ABCs EOG Reading Test	% 8th Graders At or Above Grade Level, ABCs EOG Math Test	% SAT Participation Rate	Average Total SAT Scores
	2010	2010	SY2011-12	SY2011-12	SY2011-12	SY2011-12	SY2011-12	SY2011-12
Target County	76.7	11.7	72.5	70.0	77.8	> 95	52	953
Peer County	78.2	10.7	58.4	68.5	75.0	88.2	45	898
State of NC	83.6	26.1	68.8	82.8	71.1	85.2	68	997

Source for HS and BA graduates: US Census Bureau *American FactFinder*, *American Community Survey 5-Year Estimates* (<http://factfinder2.census.gov>).

Source EOG Test Results and SAT Results: NC Department of Public Instruction, *Data and Statistics, Education Data, NC School Report Cards. District Profile*. <http://www.ncreportcards.org/src/>.

Optional: Educational Investment (Level Two): When considering educational attainment data it may be helpful to also examine the total annual federal, state and local per-pupil expenditure in the target school system. While a total is useful, it is also possible to view the separate federal, state and local breakdowns at the same resource.

Source: NC Department of Public Instruction, *Data and Statistics, Education Data, NC School Report Cards. District Profile*. <http://www.ncreportcards.org/src/>.

- k. Drop-Out Rate Trend and/or Graduation Rate (Level One):** Since an individual's personal success is highly correlated with educational achievement, it is a goal of most communities to assure its students stay in school until they earn at least a high school diploma or GED. Most communities want to know the rate at which their high school students drop out (or conversely the rate at which they graduate).

It is important to acknowledge that measuring drop-out and graduation rates is somewhat controversial, and different educational entities use different algorithms to do so. Because of these differences, it is best to use only one source of data and to compare data from only within that source.

According to the NC Department of Public Instruction, a "dropout" is any student who leaves school for any reason before graduation or completion of a program of study without transferring to another elementary or secondary school. For reporting purposes, a dropout is a student who was enrolled at some time during the previous school year, but who was not enrolled (and who does not meet reporting exclusions) on day 20 of the current school year. In this case, the data of interest is the High School (Grade 9-12) Drop-out Rate.

Source: NC Department of Public Instruction, *Research and Evaluation, Dropout Data and Collection Process, Annual Dropout Reports*; <http://www.ncpublicschools.org/research/dropout/reports/>.

Since "drop-out" has a negative connotation, some researchers prefer to use the figure with the more positive connotation, "graduation rate" to describe the rate at which students complete the high school course of study. Furthermore, beginning in 2002 the federal *No Child Left Behind* legislation required schools to report their four-year cohort high school graduation rates. Public schools in NC keep an accounting of each ninth grader as he or she moves through high school. The goal of this record keeping – the four-year cohort graduation rate – provides the state with a count of how many students graduate with a diploma in four years. A five-year graduation rate also is available, but that is not the parameter being recommended. Graduation rates are available as an

overall rate as well as stratified by students' gender, race, economic status, proficiency with the English language, and disability.

Source: Public Schools of North Carolina, Accountability Services Division. *Cohort Graduation Rates. 4-Year Cohort Graduation Rate Report.*
[http://www.ncpublicschools.org/accountability/reporting/cohortgradrate.](http://www.ncpublicschools.org/accountability/reporting/cohortgradrate)

- I. School Environment (Level One):** Violent and/or criminal behavior in schools (and on school grounds) is a real or perceived issue in many communities. The NC Department of Public Instruction maintains records on violent and criminal incidents that occur in or on school property. If CHA researchers opt to use this data it is important to include in the report the definitions on which the categories of data are based. Likewise, it is important to know which grade levels are included in the data presented.

Source: NC Department of Public Instruction, Research and Evaluation. *Discipline Data, Annual Reports, Annual Reports of School Crime and Violence;*
<http://www.ncpublicschools.org/research/discipline/reports/>. Note: this authoritative site houses historical data that may lag the current school year by as much as two years. For the most recent data available, CHA researchers should contact the local LEA or school system in the target jurisdiction.

Optional: Local Data on Youth Health/Youth Behavior (Level Two): The CDC sponsors the national Youth Risk Behavior Surveillance System (YRBSS), which monitors six categories of priority health-risk behaviors, plus obesity and asthma, among adolescents at the national, state, territorial, tribal, and local levels. While this data customarily is reported at the state level, some LEAs and school systems in NC have themselves administered a version of the survey instrument. CHA researchers should work with the LEA in the target jurisdiction to obtain the results from this or any other local survey focused on the health or behaviors of the community's youth.

- m. Community Safety (Level One):** There are several measures reflective of community safety that should be included in the CHA, among them: (1) crime rates, including rates for index, violent and property crime, (2) registered sex offenders, (3) gang activity, (4) juvenile justice complaints and outcomes, (5) sexual assault and domestic violence data, and (6) child and adult abuse/neglect data.

Source for Crime Rates: Rates for overall index crime as well as for violent crime and property crime (basic components of index crime) are available for multiple years from the NC Department of Justice, State Bureau of Investigation, Crime, View Crime Statistics, *Crime Statistics (by Year)*; <http://ncdoj.gov/Crime/View-Crime-Statistics.aspx>.

Optional: Detailed Report on Violent and Property Crime by Category (Level Two): Some CHA researchers may be interested in specifically which types of crimes (e.g., murder, rape, robbery, larceny, etc.) occur in the target jurisdiction in a single year or over time. This data is available from the NC Department of Justice via *Annual Crime Reports*: <http://crimereporting.ncdoj.gov/Reports.aspx>.

Source for Registered Sex Offenders: County-level data on registered sex offenders is available directly from the NC Department of Justice, *Sex Offender Statistics, Offender Statistics*; <http://sexoffender.ncdoj.gov/stats.aspx>. This site has a link to specific detailed information about offenders listed in the registry; in most cases this information is well outside the realm of the CHA report.

Source for Gang Activity: Although gang activity—both real and perceived—is of increasing concern in communities throughout NC, data on gang activity and gang membership in the public domain is limited and dated. Perhaps the most authoritative source for county-level NC data is a 2012 report by the Governor’s Crime Commission, *Gangs in North Carolina*. This report is based on local law enforcement reports submitted to *GangNET*, a proprietary data management system in use by law enforcement agencies throughout the US and Canada, and by the Bureau of Alcohol, Tobacco, Firearms, and Explosives, the Department of Homeland Security’s Immigration and Customs Enforcement, and the FBI. The NC Governor’s Crime Commission report is available at: NC Department of Crime Control and Public Safety, Governor’s Crime Commission, Publications. *Gangs in North Carolina: An Analysis of GangNET Data*, March 2012, Table 4. Gang Numbers and Node by County; <http://www.ncgccd.org/pdfs/pubs/gang%20crime/2012GangReport.pdf>.

Source for Juvenile Justice Complaints and Outcomes: Information on complaints (and outcomes of those complaints) of undisciplined and delinquent juveniles is kept by the NC Department of Juvenile Justice, and is available at: NC Department of Juvenile Justice and Delinquency Prevention, *Statistics and Legislative Reports, County Databooks* (Search by Year); <http://www.ncdjjdp.org/statistics/databook.html>.

Source for Sexual Assault Data: Information on the number of individuals filing complaints of sexual assault is maintained by the Domestic Violence Commission of the NC Council for Women, and is available at: NC Department of Administration, Council for Women, *Domestic Violence Commission, Statistics, County Statistics* (search by year); <http://www.doa.state.nc.us/cfw/stats.htm>.

Optional: Sexual Assault Complaint Details (Level Two): The same source cited immediately above also maintains information regarding the details of sexual assault complaints, such as type of assault (adult rape, date rape, child sexual offense, etc.) and the type of offender (relative, stranger, boy-/girlfriend, etc.).

Source for Domestic Violence Data: The Domestic Violence Commission of the NC Council for Women also tracks the number of individuals filing complaints of domestic violence. This data is available at: NC Department of Administration, Council for Women, Domestic Violence Commission, *Statistics, County Statistics* (search by year); <http://www.doa.state.nc.us/cfw/stats.htm>.

Optional: Domestic Violence Complaint Services Received (Level Two): The same source cited immediately above also maintains information regarding domestic violence complaint service outcomes (information, counseling, hospital, court, etc.)

Source for Child Abuse and Neglect Data: The best NC source for child abuse/neglect data is the School of Social Work at UNC Chapel Hill, which maintains

such data on its *Child Welfare, WorkFirst, Food & Nutrition Services in North Carolina* website, specifically the *Child Welfare, Reports of Abuse and Neglect* section, available at: http://sasweb.unc.edu/cgi-bin/broker?_service=default&_program=cwweb.icans.sas&county=North%20Carolina&label=&entry=10. (Note: the target region—including individual counties—must be selected via a drop-down menu in the far upper right hand corner of the page. Note also that at press time some parts of this website were still under construction.)

An alternative source would be the local county Department of Social Services, specifically the Child Protective Services unit.

Source for Adult Abuse and Neglect Data: Victims of this type of maltreatment include not only the elderly, but also homeless, mentally ill, and other impaired and vulnerable adults. Adult abuse may occur in the community at large, but sometimes also in institutions charged with caring for these populations. At the present time there is no state-level data warehouse that catalogs data on adult maltreatment, leaving the best source the local county Department of Social Services, specifically the Adult Protective Services unit. Below is an example of how this data might be presented:

Parameter	Year					
	2005	2006	2007	2008	2009	2010
Number of reports received	84	54	72	82	82	88
Number of reports evaluated	75	42	58	57	60	57
Percent of reports evaluated	89.3	77.8	80.6	69.5	73.2	64.8
Number of reports confirmed	21	19	23	31	21	24
Percent of reports confirmed	25.0	35.2	31.9	37.8	25.6	27.3
Number of reports substantiated	20	20	22	29	20	22
Percent of reports substantiated	23.8	37.0	30.6	35.4	24.4	25.0
Number of guardianships	12	13	20	25	29	26
Number of incompetency petitions filed	15	15	13	26	25	23

3. Health Care Resource Parameters

- a. **Active Health Professionals per 10,000 Population (Level One):** The provider-to-population ratios for several categories of health professionals are calculated at intervals by the Cecil B. Sheps Center for Health Services Research at UNC-Chapel Hill. Because these data are presented as ratios relative to a common base, the data are comparable from jurisdiction to jurisdiction.

Source: Cecil G. Sheps Center for Health Services Research, *North Carolina Health Professions Data System, North Carolina Health Professions Data Books* (2008, 2009, 2010); <http://www.shepscenter.unc.edu/hp/publications.htm>.

Optional: Dentists Accepting Medicaid Patients (Level Two): Many regions of NC have a shortage of dentists (as would be revealed by the data cited immediately above). Where access to dental care is already a problem, access by the Medicaid population is especially difficult, since experience has shown that there are relatively few dentists (by percent) that accept Medicaid patients. The NC Division of Medical Assistance

maintains a county-by-county list of dentists who accept Medicaid and Health Choice patients.

Source: NC Division of Medical Assistance, *NC Medicaid and NC Health Choice Dental Provider List*, <http://www.ncdhhs.gov/dma/dental/dentalprov.htm>.

- b. Number of Health Care Providers by Specialty (Level One):** This data can reveal county-level shortages of providers by specialty.

Source: Cecil G. Sheps Center for Health Services Research, North Carolina Health Professions Data System. *NC Health Professions Data Book* (published annually); <http://www.shepscenter.unc.edu/hp/publications.htm>.

Optional: Health Professional Shortage Area Determination (Level Two): Official designation as a federal health professional shortage area (HPSA) is used by a variety of federal programs—including programs that provide grants for health professions. In the event that the CHA researchers do not know whether or not their county qualifies as an HPSA, they should explore listings on the searchable HRSA HPSA website.

Source: US Department of Health and Human Services, Health Resources and Services Administration, *Find Shortage Areas: HPSA by State and County*, <http://hpsafind.hrsa.gov/>.

- c. Inventory of Health Care Facilities (Level One):** At a minimum, CHA researchers should include an inventory of NC-licensed hospitals, medical centers, federally-qualified health centers, mental health facilities, the local health department, and specialty medical service facilities (e.g., dialysis centers and rehabilitation facilities) in the CHA document. Whether or not a community has a significant elderly population the CHA researchers should also explore data on long-term care facilities (nursing homes, adult care homes/homes for the aged, family care homes, and adult day health facilities), in-home aide services (including Home Health agencies), and organizations providing hospice services. The NC Division of Health Services Regulation, which licenses several categories of these facilities, keeps lists of entities under current licensure.

Source for listings of adult care homes, ambulatory surgical facilities, cardiac rehabilitation facilities, family care homes, home care services (including home care, hospice, home health services and nursing pools), hospitals, intermediate care facilities for individuals with intellectual disabilities, mental health facilities, mental health private psychiatric hospitals, and nursing homes: NC Department of Health and Human Services, Division of Health Services Regulation, *Licensed Facilities*, <http://www.ncdhhs.gov/dhsr/reports.htm>.

It is more difficult to create comprehensive lists of medical care providers that are *not* listed on the NC Division of Health Services Regulation website even though they may be licensed by the state (e.g., outpatient rehabilitation providers, dialysis centers and clinical laboratories). **Possible sources** for this information include (1) community 211 information call center services, (2) local phone books, (3) local health care resource directories, and (4) topical/geographical Internet searches.

- d. Mental Health Care Resources (Level One):** It is apparent that mental health care is an increasingly important topic nationally, and the author's experience in conducting community health surveys has shown that the public is increasingly willing to reveal and discuss mental health issues that they once hid or avoided. Particularly alarming is that often times utilization of mental health services appears to be limited more by lack of information (e.g., where to go/who to see) than by lack of resources. It is likely that CHA researchers' new access to emergency department utilization data (see section "e", below) may reveal an unexpected preponderance of mental health diagnoses in some communities. For that reason, this report is recommending that the CHA include comprehensive information on mental health service providers and community mental health support services.

In NC at the present time the government agency responsible for overseeing mental health services is the Division of Mental Health, Developmental Disabilities and Substance Abuse Services (DMH/DD/SAS). The NC mental health system is built on a system of Local Management Entities (LMEs)—area authorities or county programs—responsible for managing, coordinating, facilitating and monitoring the provision of MH/DD/SAS services in the catchment area served. To begin, the CHA researchers should first identify the LME serving the target population or local jurisdiction.

Source: NC Department of Health and Human Services, Division of MH/DD/SAS, *Local Contacts: Local Management Entities by County*, <http://www.ncdhhs.gov/mhddsas/lmeonblue.htm>.

Once the LME is identified, the researchers can work directly with the LME to learn about facilities, providers, and services available to the target population. Since an LME may cover a large geographic area, the researchers should be aware that some services offered within the LME jurisdiction may *not* be convenient to the people in the CHA target population. If possible, the CHA researchers should work with the LME to obtain de-personalized diagnosis-related utilization data for residents of the target jurisdiction in order to determine the range of problems presenting in that population. Lacking access to that, the researchers should attempt to obtain a list of services rendered among the target population.

Optional: Mental Health Service Utilization Data, by Facility Type, by County (Level Two): LINC (Log Into North Carolina) maintains basic county-level data on the number of persons served annually by LMEs, in NC state psychiatric hospitals, in NC state developmental centers, and in NC state alcohol and drug treatment centers.

Source: Log Into North Carolina (LINC) Database, Topic Group *Vital Statistics and Health* (Data Items 519, 516, 517, 518); http://data.osbm.state.nc/pls/linc/dyn_linc_main.show.

- e. Health Services Utilization Data (Level One):** The active partnership of hospitals in the CHA/CHNA process opens access to an entire range of data previously missing from most assessments: local hospital utilization data. While the NC State Center for Health Statistics (NC SCHS) publishes extensive data concerning pregnancy, people who have

died, and people with reportable communicable diseases, as well as annual self-reported data about peoples' health behaviors and medical diagnoses, it has been much more difficult for CHA researchers to learn about non-fatal chronic and acute health events. In time, with ever-widening of electronic medical records, such data should be more widely available, but until then access will depend on the willingness of hospitals to share their data—data which in most cases they are required to maintain. Presently local health departments and hospitals in several regions of NC are working together to jointly develop protocols for data sharing and data management formats through which to effectively utilize, analyze and display hospital data in the context of community health while still maintaining the privacy of individual patients. The recommendations that follow for categories of hospital data useful to the CHA/CHNA process are based on the deliberations of several of those partnerships.

Hospital utilization data will be of special use to CHA researchers if it can be stratified according to (1) DRG (diagnosis related group), (2) zip code of patient, (3) patient gender, (4) patient age group (especially the under 18 and over 60 age groups), (5) patient race, and (6) payer group (e.g., private insurance, Medicaid, Medicare, etc.). Depending on the size of the patient population it may not be possible to reveal counts in multivariable stratifications due to patient privacy concerns, but it should be possible to reveal gross counts such as number of visits in each basic stratification group.

Data of interest includes: (1) emergency department visits, (2) inpatient hospitalizations/discharges, (3) hospital re-admissions and (4) visits to hospital specialty and outpatient clinics (e.g., urgent care, ambulatory surgery, etc.)

While there are centralized databases that compile hospital data in real time (e.g., emergency department data collected by NC DETECT) accessing such data may be a complicated and lengthy process. In the author's personal experience, NC DETECT data proved to be less current than similar data available directly from hospitals.

One useful alternate source may be the list of *Top 35 DRG Procedures* cataloged for individual hospitals by the NC Hospital Association (<https://www.ncha.org/issues/finance/top-35-drgs>). Another source is the NC State Center for Health Statistics, which maintains data on *Inpatient Hospital Utilization and Charges by Principal Diagnosis, and County of Residence, (Excluding Newborns & Discharges from Out of State Hospitals)* on the County Health Data Book website: <http://www.schs.state.nc.us/schs/data/databook/>.

If possible, the same sort of information should be collected from any Federally-Qualified Health Center, public health department, or other community health center (e.g., free clinic) in the target jurisdiction willing to share its utilization data.

Finally, a review of the Annual Calls Summary of the local Emergency Medical Services provider can reveal much about the reasons for and manner in which residents utilize emergency services. In communities with a high rate of traffic accident injuries it may even be useful to examine the geographic response pattern of EMS accident calls, since such data can reveal "trouble spots" on local roadways.

- f. **Uninsured and Medicaid Populations (Level One):** In most communities, citizens' utilization of health care services is related to their ability to pay for those services, either directly or through private or government health insurances plans/programs. People without these supports are called “medically indigent”, and theirs is often the segment of the population least likely to seek or to be able to access necessary health care.

Critical to the CHA process is learning the proportion of “uninsured”, the population without health insurance of any kind. Although data of this type tends to be reported in several ways, this particular dataset—based on age (0-18, 19-64, and 0-64)—was selected on the basis of the reliability of the source.

Source: NC Institute of Medicine, *Uninsured Snapshots, North Carolina County Estimates on Non-Elderly Uninsured, 2006-2007, 2008-2009, 2010-2011*; <http://www.nciom.org/nc-health-data/uninsured-snapshots/>.

Medicaid is the US health insurance program for individuals and families who cannot afford health care costs. It serves low-income parents, children, seniors, and people with disabilities. The coverage is different for people with different kinds of needs, as are the eligibility requirements. Chief among these requirements is low income, which depending on service can range from 51% to 200% of the Federal Poverty Guideline. The NC Division of Medical Assistance keeps annual records of the total number of individuals, by category of need, eligible for Medicaid in each NC county.

Source: NC Division of Medical Assistance, *Statistics and Reports, Authorized Medicaid and Health Choice for Children Eligibles Reports, Title XIX Authorized Medicaid Eligibles* (by year), <http://www.ncdhhs.gov/dma/elig/index.htm>.

In 1997, the Federal government created the State Children’s Health Insurance Program (SCHIP)—later known more simply as the Children’s Health Insurance Program (CHIP)—that provides matching funds to states for health insurance for families with children. The program covers uninsured children in low-income families who nevertheless earn too much to qualify for Medicaid. The NC CHIP program is called *NC Health Choice for Children* (NCHC). Children enrolled in NCHC are eligible for benefits including sick visits, check-ups, hospital care, counseling, prescriptions, dental care, eye exams and glasses, hearing exams, hearing aids, and more. In NC, the maximum income limit for participation in the NCHC program is 200% of the Federal Poverty Guideline. While helpful to provide NCHC eligibility and enrollment data in the CHA document, it should be noted that enrollment is directly related to the funding available, which may change at either the Federal or state level.

Source: NC Division of Medical Assistance, *Statistics and Reports, Authorized Medicaid and Health Choice for Children Eligibles Reports, North Carolina Health Choice for Children* (by year), <http://www.ncdhhs.gov/dma/elig/index.htm>.

Optional: Medicaid (including NCHC) County-Specific Snapshots (Level Two).

These summaries show county-level information for a multitude of data variables that help paint a picture of the population in each county, including the financial atmosphere,

the services the Medicaid population is using, and the quality of care being delivered (by looking at outcomes).

Source: NC Division of Medical Assistance, Statistics and Reports, County Specific Snapshots for NC Medicaid Services, <http://www.ncdhhs.gov/dma/countyreports/index.htm>.

4. Health Statistics Parameters

- a. **America's Health Rankings and County Health Rankings (Level One):** Each year for 20 years, *America's Health Rankings*TM, a project of United Health Foundation, has tracked the health of the nation and provided a comprehensive perspective on how the nation—and each state—measures up. America's Health Rankings are based on several kinds of measures, including determinants (socioeconomic and behavioral factors and standards of care that underlie health and well-being) and outcomes (measures of morbidity, mortality, and other health conditions). Together the determinates and outcomes help calculate an overall rank. In order to understand the proper context in which to use the County Health Rankings (following section), it is important first to learn where NC ranks in various categories relative to other states in the US.

Source: United Health Foundation, *America's Health Rankings*; <http://www.americashealthrankings.org/>.

Building on the work of America's Health Rankings, the Robert Wood Johnson Foundation, collaborating with the University of Wisconsin Population Health Institute, supports a project to develop *County Health Rankings* for counties in all 50 states. Each state's counties are ranked according to health outcomes and the multiple health factors that determine a county's health. Each county receives a summary rank for its health outcomes and health factors, and also for four different specific types of health factors: health behaviors, clinical care, social and economic factors, and the physical environment. Presently in more common use than in previous years, the County Health Rankings nevertheless have the drawback of being based on data from various sources and representing many different time periods. Some of the data used in the rankings is several years older than comparable data available from authoritative state and local sources, so researchers should acknowledge, when appropriate, the age of the data used in the rankings.

Source: *County Health Rankings and Roadmaps*, <http://www.countyhealthrankings.org/>.

- b. **Maternal and Neonatal Health (Level One):** Data in this category, usually of considerable interest to CHA researchers, includes pregnancy and abortion rates, rates for pregnancy risk factors (e.g., high parity births, short-interval births, smoking during pregnancy, and late or no prenatal care), and rates for birth outcomes (low- and very-low birth rates, proportions of Caesarian deliveries, and infant mortality rates). It is customary to report this data stratified by age group (women 15-44 and women ["teens"]

15-19) and where applicable, by race/ethnicity. Some communities focusing on teen pregnancy reduction may also be interested specifically in pregnancy data specific to the 15-17 year old age group. Sometimes birth rate is also included among the data in this category, although birth rate, calculated on the basis of a denominator that includes the total population (both males and female) has more to do with population growth than with pregnancy outcome.

Sources: NC State Center for Health Statistics, *County Health Data Books, Pregnancy and Live Births* (<http://www.schs.state.nc.us/schs/data/databook/>), and *Basic Automated Birth Yearbook* ([http://www.schs.state.nc.us/schs/births/babybook/\[year\]](http://www.schs.state.nc.us/schs/births/babybook/[year])). Note that infant mortality (“infant death rates”) data is reported in the Mortality section of the County Health Data Book.

Optional: Pregnancy Risk Assessment Monitoring System (PRAMS) data (Level Two): CHA researchers with a particular interest in contextual data about pregnancy and the post-partum period may wish to explore this data set. *PRAMS* is a CDC survey initiative that collects self-reported data on maternal attitudes and experiences prior to, during, and immediately after pregnancy for a sample of women. It should be noted, however, that these data are *not* available at the county level. Data for 2009 and 2010 are statewide; data for earlier periods are available at the regional level.

Source: NC State Center for Health Statistics, *PRAMS Survey Results*, <http://www.schs.state.nc.us/schs/prams/results.html>

From time to time the NC State Center for Health Statistics (NC SCHS) publishes separate reports (available on the SCHC website) focused on particular health topics related to pregnancy, infants, and children. It should be noted that most of those reports present state-wide data rather than county-level data.

- c. **Mortality (Level One):** A significant portion of the health data section of a CHA may be focused on mortality rates, especially those for the *Leading Causes of Death* customarily reported in the *County Health Data Book*. With one exception, it is preferable to use five-year aggregate, age-adjusted rates when reporting mortality. (The exception is consideration of *Leading Causes of Death by Age Groups*, where it is necessary to refer to crude death rates.) Note that since the 2005-2009 aggregate period, NC SCHS has suppressed mortality rates based on fewer than 20 deaths in a cause of death category in any five-year aggregate period. CHA researchers should stratify mortality rates by gender in every case, since in NC there are significant mortality rate differences between males and females for many causes of death. Mortality rates also should be stratified by race/ethnicity where the minority populations are sufficiently large to permit the calculation of non-suppressible rates.

Source: NC State Center for Health Statistics, *County Health Data Books, Mortality*, <http://www.schs.state.nc.us/schs/data/databook/>.

Optional: Detailed Analysis of Causes of Death (Level Two): CHA research may discover mortality data that seems to call for further analysis. One source of this

additional information is the annual report, *Detailed Mortality Statistics, North Carolina Residents*, for the target county. These detailed county-level reports provide annual death counts (not rates) specific for detailed underlying causes of death (according to 4-digit ICD-10 codes) as well as age-race-sex groups.

Source: NC State Center for Health Statistics, *Vital Statistics Available from SCHS, Annual Reports, Detailed Mortality Statistics, North Carolina Residents*, <http://www.schs.state.nc.us/schs/data/vitalstats.cfm>. Note that CHA researchers may also use the NC SCHS *NC Health Data Query System* to access this data specifically by gender, race, age, and cause of death by ICD-10 code categories (<http://www.schs.state.nc.us/schs/data/dms/dms.cfm>).

- d. **Cancer Incidence (Level One):** Mortality rates for the 4 (or 5) major site-specific cancers are reported in the Mortality section of the *County Health Data Book*. An important supplement to cancer death rates is data on the rate at which new cases of cancer are diagnosed (“incidence”). While the *County Health Data Book* contains cancer incidence data in the Morbidity section, the most complete reports on cancer incidence are available on the *Cancer Data Available from the SCHS* page of the *Health Data, Cancer* Section of the NC SCHS website. (The source of the data on this site is the Central Cancer Registry.) Note that it may be especially useful to present cancer incidence data as a trend line tracking many years of data.

Source: NC State Center for Health Statistics, *Cancer Data Available from SCHS, NC Cancer Incidence Rates, Cancer Incidence Rates for North Carolina*, <http://www.schs.state.nc.us/schs/CCR/reports.html>.

- e. **Morbidity (Level One):** Data available in this category from the *County Health Data Book* includes cases and rates of sexually transmitted infections (gonorrhea and syphilis), inpatient hospital utilization (and charges) data, and asthma hospital discharges.

Source: NC State Center for Health Statistics, *County Health Data Books, Morbidity*, <http://www.schs.state.nc.us/schs/data/databook/>.

In addition, information on cases and rates of **chlamydia infection and HIV infection** is available from the Communicable Disease Branch of the Epidemiology Section of the NC Division of Public Health.

Source: NC DHHS, Division of Public Health, Epidemiology Section, Communicable Disease Branch. *Facts and Figures, NC Communicable Disease Reports, N.C. HIV/STD Reports*, <http://epi.publichealth.nc.gov/cd/stds/figures.html>.

Recent data on **other communicable diseases** is available from the Communicable Disease Branch only in state-summary format. For county-specific communicable disease data CHA researchers should contact the Communicable Disease staff at the local health department.

County-level data on the prevalence of **adult diabetes** is available from the CDC, but CHA researchers should note that these data are estimates based on self-reporting in the annual Behavioral Risk Factor Surveillance System (BRFSS) survey.

Source: Centers for Disease Control and Prevention, *Diabetes Data and Trends, County Level Estimates of Diagnosed Diabetes - of Adults in North Carolina, 2005-2010*; <http://apps.nccd.cdc.gov/ddtstrs/default.aspx>. (Note: subsequent data may be available at a later date.)

General notes on the BRFSS: Residents throughout NC participate in the state's annual Behavioral Risk Factor Surveillance System (BRFSS) Survey. The NC SCHS reports annual survey results as statewide data and as regionally-aggregated data where each region includes approximately one-third of the state. Each year some counties are over-sampled adequately to produce county-level results. It is not possible to isolate survey responses from every NC county, and since the aggregate regional data covers such a diverse area the regional results are not especially useful in describing health in any non-oversampled county. In addition, the CDC conducts a Selected Metropolitan/Micropolitan Area Risk Trends (SMART) project using the Behavioral Risk Factor Surveillance System (BRFSS) to analyze the data of selected metropolitan and micropolitan statistical areas (MMSAs) with 500 or more respondents. There are 10 SMART MMSAs in NC. Because of all these special circumstances, this report makes no general recommendation on the use of BRFSS data. CHA researchers will have to determine for themselves whether BRFSS or SMART data is applicable to their particular target jurisdiction.

County-level data on the **prevalence of adult obesity** is available from the CDC, but CHA researchers should note that these data are estimates based on self-reporting in the annual BRFSS survey. CHA researchers should check local sources such as the LHD or hospital for local data on overweight/obesity or BMI data.

Source: Centers for Disease Control and Prevention, *Obesity Data and Trends, County Level Estimates of Diagnosed Obesity - of Adults in North Carolina, 2005-2010*; <http://apps.nccd.cdc.gov/ddtstrs/default.aspx>. (Note: subsequent data may be available at a later date.)

Accurate county-level data on the **prevalence of child overweight/obesity** is difficult to locate. Measured county-level BMI data on a subsample of the youth population limited to children seen in NC DPH-sponsored WIC and Child Health Clinics, as well as some school-based Health Centers, is available through the NC Nutrition Physical Activity Surveillance System (NC NPASS).

Source: NC Division of Public Health, Nutrition Services Branch, *Surveillance Data and Statistics, North Carolina Nutrition and Physical Activity Surveillance System (NC-NPASS), Physical Activity and Nutrition Data Resources, Data on Children and Youth, NC-NPASS Data on Childhood Overweight, County-Specific Data*; <http://www.eatsmartmovemorenc.com/Data/ChildAndYouthData.html>.

Data reported by parents on the **height and weight (and calculated BMI) of their children** is reported via the results of the annual NC Statewide Child Health Assessment and Monitoring Program (CHAMP) Survey

Source: NC State Center for Health Statistics, *Child Health Assessment and Monitoring Program (CHAMP) Data Available from SCHS, Annual Survey Results*;
<http://www.schs.state.nc.us/schs/champ/results.html>.

CHA researchers interested in the topic of childhood obesity should also check whether the LEA/school system in their local jurisdiction has conducted any recent child weight/obesity studies. Some schools are participating in grant programs and other studies that require a weight assessment component.

CONCLUSION

The recommended data parameters and sources covered in this report are not “exhaustive”, but rather represent a basic set that covers a broad range of topics of interest that will serve the NC CHA process well. The author encourages CHA researchers to be particularly open-minded and flexible about adding data from authoritative state and local sources that further illuminate problems and issues indicated by data in the basic core set. Institutional members of the CHA team likely possess—or can access—local data of particular import. If they fail to offer this data “up front”, once the researchers have an initial idea about possible issues for further investigation they should reach out to their partners for this local data. In some cases, key local data is not available; in those instances the CHA research team may need to conduct local research to fill the information gap. Most CHA research teams are familiar with collecting local primary data via surveys, focus groups, or listening sessions, and any of these exercises can bring further clarity to issues initially discovered through a study of secondary data. This author firmly believes that the *best* application of the primary data collection effort is in clarifying issues discovered through the study of secondary data.

Finally, it is important to note that new data sources appear continually, some old sources disappear without warning, and other data sources—some of them likely useful and good—are not known to the author. Each CHA researcher likely has developed his or her own “go-to” resources list; the present effort was intended only to highlight what the author believes constitutes the best basic core set of parameters and resources.