Data Sources, Definitions, and Notes

Community Health Status Indicators 2008

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Community Health Status Indicators Project

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Note: The Data Sources, Definitions, and Notes, referred to as the companion document, provides health indicator definitions, sources, and methods used in the Community Health Status Reports created by the Community Health Status Indicators (CHSI) Project Working Group. It is not intended to stand alone but to be used as a reference for the user of the county health profile provided for every U.S. County and is available at http://communityhealth.hhs.gov .

The Community Health Status Report is a collection of nationally available indicators for counties representing several areas of responsibility for public health. While, for many of the indicators, there may be more than one method for calculating rates or percentages as well as more than one definition of the same problem, or source, the descriptions that follow are the choices made for this project and the means for ensuring that health measures for communities are consistent and not based on differing definitions or methodologies.

The estimates presented here rely on various data sources, methods, and calculations, some of which may not be appropriate for particular counties or purposes. Users should be aware of the limitations of these estimates. Those data that are estimated do not represent official Department of Health and Human Services statistics. We hope that the indicators provided in the CHSI Reports will be useful to communities and request feedback and comments.

DEMOGRAPHIC INFORMATION

This section describes the context for county health — characteristics of a county's population that have a potential effect on the amount and type of services used, health status, and resources available.

Data for population size, poverty level, population by age, and population by race/ethnicity were obtained from the Current Population Survey (CPS) conducted by the U.S. Bureau of the Census. The CPS is an ongoing survey of states from which estimates for counties are derived. Due to the survey's small sample size, the confidence intervals for these measures may be wide and should be consulted when making comparisons to peer counties. Information on survey methodology and confidence intervals are found at http://www.census.gov/cps/.

Population Size — This number is from "County Population Estimates by Sex, Race and Hispanic Origin by Five-Year Age Groups: July 1, 2005," obtained from the Population Estimates Program, Population Division, U.S. Census Bureau. These data are mid-year estimates of the resident population for 2005, and can be obtained at http://www.census.gov/popest/counties/asrh/CC-EST2005-alldata.html.

Population Density — This number is calculated by using the following formula: mid-year 2005 Population Estimate divided by 2000 Land Area (square miles). Land area is from the Geographic Comparison Table GCT-PH1-R. Population, Housing Units, Area and Density: 2000, Census 2000 Summary File (SF1) 100-Percent Data, U.S. Census Bureau. "2000 Land Area by County" is a statistical abstract supplement published by the U.S. Bureau of the

Census and obtained from the Area Resource File, Health Resources and Services Administration, 2005; www.arfsys.com).

Poverty Level — The percentage of individuals living below the poverty level in 2003 is data obtained from the "Small Area Income Poverty Estimates (SAIPE)," U.S. Bureau of the Census and can be obtained at http://www.census.gov/housing/saipe/estmod03/est03ALL.xls .

Population by Age — Age-specific population sizes are from "County Population Estimates by Sex, Race and Hispanic Origin by Five-Year Age Groups: July 1, 2005." These data are estimates of the resident population for mid-year 2005, U.S. Bureau of the Census, and can be obtained at http://www.census.gov/popest/counties/asrh/CC-EST2005-alldata.html .

Population by Race/Ethnicity — Race- and ethnicity-specific population sizes are from "County Population Estimates by Sex, Race and Hispanic Origin by Five-Year Age Groups: July 1, 2005." These data are mid-year estimates of the resident population of 2005, and reflect standard race and ethnicity categories in use by the U.S. Bureau of the Census, and can be obtained at http://www.census.gov/popest/counties/asrh/CC-EST2005-alldata.html . Note, the percentages of white, black, Asian American/Pacific Islander, and American Indian do not total to 100% due to the multiple race category. The percent Hispanic is non-additive with the race categories.

Peer County Range — The low and the high values found in each stratum of peers is provided. The low number is the tenth percentile of rates or percents in the stratum; the high number represents the ninetieth percentile. Eighty percent of all county values within the strata lie within

this range. Source: Snedecor GW and Cochran WG. Statistical Methods (6th Edition). The Iowa State University Press; Ames, Iowa: 1976. Pages 123-125.

FIPS (Federal Information Processing Standards) Code — These standard codes, which indicate state and county, are maintained by the National Bureau of Standards. The combined state and county codes create a unique county identifier. The state portion of the code is a two-digit number, while the county portion consists of a three-digit number. In general, numbering is sequential when states and counties are listed alphabetically. Some independent cities in Virginia have been combined into their original counties. However, in this edition of the CHSI reports, more local areas are represented in Alaska, Hawaii, and Virginia. There are 3,141 counties for which data are presented in 2008.

PEER COUNTIES

A distinctive aspect of this report is the ability to compare a county with its peers, those counties similar in population composition and selected demographics. Comparison of a county to its peers is thought to take into account some of the factors that make a difference in a community's health.

Strata, or peer groups, were developed with input from an advisory committee composed of Federal, State, and local public health professionals and members of academia for CHSI 2000. The project goal was to develop strata of 20-50 counties each, providing several peers for each county. The relatively large number in each stratum allows counties to choose a few peers that they believe to be most like them. In CHSI 2008, stratum size averages 36 and ranges from 15

to 62 counties. There are a total of 88 strata. For the most part, counties are assigned to the same peer groups in CHSI 2008 as in CHSI 2000. New counties or newly reported entities (such as some Virginia independent cities, 27 Alaska counties) were (re)assigned to peer groups based on their frontier status, population size, poverty, age distribution, and/or population density in 2000.

To define the strata, the following five factors were used:

(1) Frontier status, The National Committee on Rural Health recommended classifying areas as frontier if they had fewer than 7 persons per square mile. Source: Popper, F.J. The strange case of the contemporary American frontier. *Yale Review* 1986;76(1);101–121;

(2) Population size, using the National Association of County and City Health Officials' population categories (less than 25,000; 25,000–49,999; 50,000–99,999; 100,000–249,999; 250,000–499,999; 500,000–999,999; 1,000,000 or more);

(3) Poverty quartiles (less than or equal to 10.55%; 10.56–14.15%; 14.16–19.25%; 19.26% or more), based on the percentage of individuals in the county living below the poverty level (e.g., in 2000 and for a family of four, the poverty level is $17,603);

(4) Median age categories, based on the percentage of children (percentage of persons age<18 less than 26.13%, or greater than or equal to 26.13%) and elderly (percentage of persons age 65+ less than or equal to 14.70%, or greater than 14.70%) in the county; and

(5) Population density, as measured by half deciles (e.g., CHSI stratum 45 ranges between 44–187 persons per square mile).

Using an ordered, staged approach, counties were first grouped according to frontier status. Population size was used next. Then, as the number of counties in each category allowed, further groupings were made based on the remaining variables until the optimum stratum size was reached. Therefore, while all strata were classified according to the first two variables, only some were defined by factors of poverty, age, and population density. A schematic of the stratification

process is in Appendix A. Each of the 88 strata is uniquely defined by two or more of the factors. It is possible that counties that are similar in several factors may not be in the same stratum due to category divisions.

The Strata Listing (see Appendix B) contains data on the number of counties and the ranges for population size, density, and poverty level by stratum. This table provides the demographic characteristics of all strata (based on data in CHSI 2008) and allows identification of other strata having similar characteristics. We encourage you to use this table to examine the strata generated using this method and to explore other counties' reports. This is the project's initial (2000) strategy to form peer groupings of counties and it was applied to the updated (2008) reports. Please feel free to comment at the CHSI Web site available at http://communityhealth.hhs.gov . Future reports may use different methods and criteria for determining strata or provide an update to this process.

Finally, because the number of events for an indicator may be too small to report for a county for any single year, data were aggregated over several years (3, 5, or 10 years depending on county population) for several indicators to increase the number of counties with available data. Table 1 presents the number of years aggregated for measures of births and deaths as well as infectious diseases. Data from the Behavioral Risk Factor Surveillance System were also aggregated over time (see Appendix C for details), 2000–2006, for all counties.

Table 1: Years of data aggregated based on county population size applied to birth, death (not life expectancy), and infectious disease indicators:

County Population Size	# of Years Aggregated	Years	Peer County Stratum
<25,000	10	1994–2003	37–44, 54–76,78–88

25,000–99,999	5	1999–2003	8,17–36,45–53, 77
>100,000	3	2001–2003	1–7, 9–16

SUMMARY MEASURES OF HEALTH

These are broad measures of health. Each measure captures a single, comprehensive measure of population-based health but each provides only a single perspective. Four measures include the length of life (average life expectancy), the risk of dying (rates of death), and health-related quality of life (self-rated health status and average unhealthy days).

Average Life Expectancy — This measure represents the average number of years that a baby born in a particular year is expected to live if current age-specific mortality trends continue to apply. Calculations for the 5-year life expectancies (1997–2001) were made by Chris Murray and colleagues at the Harvard School of Public Health. Methodology and data source information is described in: Murray CJL, Kulkarni SC, Michaud C, Tomijima N, Bulzacchelli MT, et al. (2006) Eight Americas: Investigating Mortality Disparities across Races, Counties, and Race-Counties in the United States. PLoS Med 3(9): e260 doi:10.1371/journal.pmed.0030260.

All Causes of Death — Mortality from any cause is the period rate for all causes of death for the most recent 3, 5, or 10 years, ending with 2003, age-adjusted to the year 2000 Standard Population. County-specific data are only reported if there are at least 10 deaths. Confidence intervals are in the printed CHSI Report, on the inside back cover. The abbreviation “nrf” is given for too few events or few respondents. Data are from the National Vital Statistics System, National Center for Health Statistics, 1994–2003.

Self-rated Health Status — The percentage of adults aged 18 years and older who report “fair” or “poor” overall health is provided by the Behavioral Risk Factor Surveillance System (BRFSS),

2000–2006, a survey conducted jointly by states and the Centers for Disease Control and Prevention. See Appendix C for details. When no county estimate is available, the user may go to the BRFSSS Web site to find the statewide prevalence for these years at http://apps.nccd.cdc.gov/brfss/index.asp. County-specific data are only reported for this indicator and average number of unhealthy days in the past month (below) if there are more than 50 respondents in the specific time period to the survey; BRFSS generated state weights are used in calculating the county prevalence. Confidence intervals are in the printed CHSI Report, on the inside back cover.

Average Number of Unhealthy Days in Past Month) — The average number of unhealthy days (mental or physical) in the past 30 days, reported by adults aged 18 years and older is provided by the Behavioral Risk Factor Surveillance System (BRFSS), 2000-2006. Confidence intervals are in the printed CHSI Report, on the inside back cover. See Appendix C for details.

NATIONAL LEADING CAUSES OF DEATH

Using selected major categories created by the National Center for Health Statistics, deaths by race or ethnicity and age group are reported and arranged in the order of magnitude in which they occur nationally. Locally, the order may vary.

Note: Listed are selected national leading causes of death for each age category. Depending upon county population size, percentages for the most recent 3, 5, or 10 years are reported (see Table 1 in Peer County Section). However, county-specific data are only reported if there are at least 20 deaths in the age/race category and the cause of death accounts for at least 10% of the deaths in the age/race category for the nation and for the county. The abbreviation “nrf” (not

reported, few (events)) is used when no report is given because of too few events. The abbreviation "nda" (no data available) is used to represent indicators for Broomfield, Colorado, because only 2003 data were available. Mortality data are from the National Vital Statistics System, National Center for Health Statistics, 1994–2003.

For each cause of death, the International Classification of Diseases (Ninth edition/Tenth) (ICD 9/10) codes are listed after each variable below. As previously noted, ICD 9 coding pertains to data before 1999 and ICD 10 coding is applied from 1999 forward. The cause-of-death categories in this section correspond to those published in the *National Vital Statistics Reports* from the National Vital Statistics System, National Center for Health Statistics, Centers for Disease Control and Prevention and differ somewhat from the categories used in the death measures section. The causes of death listed in the table are selected national leading causes of death in each age group by race/ethnicity for the year 2004. Therefore, a partial listing of causes of death is reported and columns will not add up to 100%.

ICD-9/10 Codes — The World Health Organization (WHO) maintains the International Classification of Diseases (ICD). The Ninth Revision (ICD-9) was used in the United States for mortality coding from 1994 to 1998. In 1999, the Tenth Edition (ICD-10) was adopted for mortality coding in the U.S. The ICD provides a worldwide standard framework and definitions for comparison of birth, death, and disease data. For more information about the ICD, visit the WHO Web site at: http://www.who.int/classifications/icd/en/.[1] Revisions of the ICD often introduce discontinuities in cause-of-death trends which are the result of changes in the coding structure and rules. For information on major changes from ICD-9 to ICD-10 see: Anderson, RN, et al. *National Vital Statistics Reports* 2001;Vol 49 (2), available at

[1] Links to non-Federal organizations are provided solely as a service to our users. Links do not constitute an endorsement of any organization by CDC or the Federal Government, and none should be inferred. The CDC is not responsible for the content of the individual organization Web pages found at this link.

http://www.cdc.gov/nchs/data/nvsr/nvsr49/nvsr49_02.pdf. While differences between the revisions may affect the death rates calculated when combining years spanning the revision, these differences should generally be consistent across counties. Therefore, comparisons between counties should not be substantially affected. Comparisons with previously published CHSI data (based on ICD-9 only); however, should be made with caution.

Complications of Pregnancy/Birth — Low birth weight, short gestation, complications of birth, respiratory conditions (e.g., respiratory distress syndrome, intrauterine hypoxia, and birth asphyxia), and other conditions at the time of birth. Certain Conditions Originating in the Prenatal Period, ICD-9 codes: 760-779. ICD 10 codes: P00-P96.

Birth Defects — Congenital anomalies, ICD-9 codes: 740-759. ICD-10 codes: Q00-Q99.

Injuries — All accidents (unintentional injuries) resulting from motor vehicle accidents, other transport accidents and all other non-transport accidents, ICD-9 codes: E800-E949. ICD-10 codes: V01-V99, W00-W99, X00-X59, Y85, Y86.

Homicide — Assault, ICD-9 codes: E960-E969. ICD-10 codes: X85-X99, Y00-Y09, Y87.1.

Cancer — Malignant neoplasm, ICD-9 codes: 140-208. ICD-10 codes: C00-C97.

Suicide — Intentional self harm, ICD-9 codes: E950-E959. ICD-10 codes: X60-X84, Y87.0.

Heart Disease — Diseases of the heart, ICD-9 codes: 390-398, 402, 404-429. ICD-10 codes: I00-I09, I11, I13, I20-I51.

HIV/AIDS — Human Immunodeficiency Virus (HIV) disease, NCHS codes: *042-*044. Note the asterisks before the category numbers indicate that they are not specified in the ICD-9. ICD-10 codes: B20-B24.

Hispanic Ethnicity — This classification is a description of persons, separate from their categorization by race. The reader is cautioned to use either race or ethnicity and not to treat the race and ethnicity as mutually exclusive. Currently all states report ethnicity data, although this has not been the case in the past. This indicator is most complete for the most recent

years, since 1997 for deaths and since 1993 for births.

MEASURES OF BIRTH AND DEATH

Healthy People 2010 is a national health goal and objective setting activity led by the Office of Disease Prevention and Health Promotion and a compendium of health outcomes desired by the year 2010. Achievable target levels for many health outcomes are provided. Many communities will be adopting or adapting these for local use. *Healthy People 2010* target rates/percents and 2003 U.S. rates/percents are presented as a point of comparison for counties in assessing their current health status.

NOTE: Death rates age-adjusted to the year 2000 standard were calculated by Health Research and Services Administration. Mortality data are from the National Center for Health Statistics, National Vital Statistics System, 1994–2003 for the ICD-9/ICD-10 codes listed after each variable. Population estimates are from the U.S. Bureau of the Census and represent the best available estimate for each year between 1994 and 2003. Depending on the population estimates used, other sources may have different rates. Depending upon county population size, the period age-adjusted rate for the most recent 3, 5, or 10 years is reported (see Table 1 in Peer County Section). The abbreviation “nda” (no data available) is used to represent indicators for Broomfield, Colorado, because of only 2003 data available.

An indicates that the county’s value is favorable (equal or better) when compared with the median of the peer county rate or percent.

A indicates that the county’s value is unfavorable (worse than) by comparison (i.e., higher than the median).

Age Adjustment — This is a tool used to account for the different age distributions of the population. Age adjustment enables populations (e.g., counties) with dissimilar age distributions (e.g., high percentage of elderly residents) to be compared. Age adjustment to the same standard population allows meaningful comparisons of vital rates over time and between geographic areas and population groups.

Age-adjusted rates are based on the newer, year 2000 standard. Using the year 2000 standard has generally resulted in age-adjusted death rates that are substantially larger than those based on the previously used 1940 standard. Rates age-adjusted to year 2000 cannot be compared with rates age-adjusted to a different standard year (e.g., 1940). For more information regarding age adjustment and the year 2000 standard, refer to: Anderson, R and Rosenberg, H. Age Standardization of Death Rates: Implementation of the Year 2000 Standard. *National Vital Statistics Reports 1998;* 47(3). This publication can be obtained at http://www.cdc.gov/nchs/data/nvsr/nvsr47/nvs47_03.pdf.

County Percent or Rate — Each county-specific health indicator is provided as a rate or percent. Birth measures are percents, infant mortality measures are deaths per 1,000 births, and death measures are age-adjusted death rates per 100,000 population. Small numbers are defined for birth and infant mortality indicators as fewer than 500 births and 5 events (births or infant deaths) or for death measures as fewer than 10 deaths.

Confidence Interval for County Percent or Rate — A 95% confidence interval is presented for each county indicator, which alerts the reader to the natural random variation found in vital statistics from one year or one period to another. A 95% confidence interval is calculated using the method most appropriate to the measure (see below).

Peer County Range — The low and the high values found in each stratum of peers is provided.

The low number is the tenth percentile of rates or percents in the stratum; the high number represents the ninetieth percentile. About 80% of all county values within the strata lie within this range.

2003 U.S. Percent/Rates — Presented as a point of comparison for counties in assessing their current health status. The U.S. death rates are age-adjusted to the year 2000 standard; per 100,000 population. The 2003 U.S. death rates and most birth measures were accessed at the *Healthy People 2010* database (http://wonder.cdc.gov/data2010/focus.htm) maintained by NCHS. The percent for "Births to Women younger than 18"; "Births to Women older than 40"; and "Births to Unmarried Women" have no corresponding objective or target from *Healthy People 2010*.

Healthy People 2010 Target — Is a national health goal and objective setting activity led by the Office of Disease Prevention and Health Promotion and a compendium of health outcomes desired by the Year 2010. Achievable target levels for many health outcomes are provided. The 2010 targets used in the county reports are those published in the *Healthy People 2010 Midcourse Review* available at http://www.healthypeople.gov/data/midcourse/default.htm. The 2010 targets are subject to revision when baseline data are revised. The most recent *Healthy People 2010* data and targets can be found at http://wonder.cdc.gov/data2010/focus.htm.

BIRTH MEASURES

NOTE: Data are from the National Center for Health Statistics, National Vital Statistics System; 1994–2003. Depending upon county population size, the period county percent for the most recent 3, 5, or 10 years is reported (see Table 1 in Peer County Section). A 95% confidence

interval is calculated based on the normal distribution (Martin, JA et al., 2005. National Vital Statistics Reports Vol, 54(2)), available at http://www.cdc.gov/nchs/data/nvsr/nvsr54/nvsr54_02.pdf.

Low Birth Weight — Percentage of all births less than 2,500 grams.

Very Low Birth Weight — Percentage of all births less than 1,500 grams.

Premature Births — Percentage of births with a reported gestation period of less than 37 completed weeks.

Births to Women under 18 — Percentage of all births to mothers less than 18 years of age.

Births to Women over 40 — Percentage of all births to mothers 40 years of age or older.

Births to Unmarried Women — Percentage of all births to mothers who report not being married.

No Care First Trimester — Percentage of births to mothers who reported receiving no prenatal care during the first trimester (3 months) of pregnancy, and includes those with no prenatal care. No comparable 2003 data are available for Pennsylvania and Washington States, which implemented the 2003 revision to the U.S. Standard Birth Certificate for that year. For the 106 Pennsylvania and Washington counties, 2, 4, or 9 years (1994–2002) of data were used for this birthrate measure, depending on county population size.

INFANT MORTALITY

NOTE: The linked birth/infant death data files are from the National Center for Health Statistics, National Vital Statistics System, 1995–2003. (A linked birth and death file was not available for 1994, thus making the longest interval only nine years in length.) Infant deaths are weighted so numbers may be not an exact integer, and the summation of 3, 5, or 9 years of infant death count is rounded to the next whole integer before infant mortality rate is calculated. The methodology used is described at http://www.cdc.gov/nchs/data/nvsr/nvsr55/nvsr55_14.pdf. All rates are deaths per 1,000 births. Depending upon county population size, the period infant mortality rate

for the most recent 3, 5, or 9 years is reported (see Table 1 in Peer County Section). A 95% confidence interval is calculated using the method from NCHS (Mathews TJ and MacDorman MF. 2007. National Vital Statistics Reports Vol. 55(14) available at http://www.cdc.gov/nchs/data/nvsr/nvsr55/nvsr55_14.pdf).

Infant Mortality — Death of an individual less than one year old from any cause.

Neonatality mortality — Infant deaths occurring before day 28.

Postneonatal mortality — Infant deaths occurring day 28 to less than one year.

White Non-Hispanic Infant Mortality — Death of an infant born to a white non-Hispanic mother less than one year old from any cause.

Black Non-Hispanic Infant Mortality — Death of an infant born to a black non-Hispanic mother less than one year old from any cause.

Hispanic Infant Mortality — Death of an infant born to an Hispanic mother less than one year old from any cause.

DEATH MEASURES

NOTE: In this section, the ICD codes include causes of death corresponding to the definitions used in the Nation's health objectives outlined *in Healthy People 2010: National Health Promotion and Disease Prevention Objectives* (Conference Edition). From 1994–1998, underlying cause of death was coded using ICD-9. From 1999 forward, underlying cause of death was coded using ICD-10. Due to the changes in the classification of deaths, the ICD-9 categories used for1994–1998 may not be strictly comparable to the ICD-10 categories used for 1999 and later years (see http://www.cdc.gov/nchs/data/nvsr/nvsr49/nvsr49_02.pdf). All death rates (excluding infant mortality) are per 100,000 population, and age-adjusted to the year 2000 standard. A 95% confidence interval is calculated according to method provided by NCHS at

http://www.cdc.gov/nchs/data/nvsr/nvsr47/nvs47_03.pdf (Anderson R and Rosenberg H. 1998. *National Vital Statistics Reports* Vol. 47(3)).

Breast Cancer (Female) — Death due to malignant neoplasm of the female breast, ICD-9 code: 174. ICD-10 code: C50.

Colon Cancer — Death due to malignant neoplasm of the colon, rectum and anus, ICD-9 codes: 153 and 154. ICD-10 codes: C18-C21.

Coronary Heart Disease — Death due to hypertensive heart disease and ischemic heart diseases (acute myocardial infarction, other acute ischemic heart diseases, and other forms of chronic ischemic heart disease), ICD-9 codes: 402, 410-414, and 429.2. ICD-10 codes: I11, I20-I25.

Homicide — Death due to assault, ICD-9 codes: E960-E969. ICD-10 codes: X85-X99, Y00-Y09, Y87.1.

Lung Cancer — Death due to malignant neoplasm of the trachea, bronchus and lung, ICD-9 code: 162. ICD-10 codes: C33-C34.

Motor Vehicle Injuries — Death due to motor vehicle accidents classified under accidents (unintentional injuries), ICD-9 codes: E810-E825. ICD-10 codes: V02-V04, V09.0, V09.2, V12-V14, V19.0-V19.6, V20-V79, V80.3-V80.5, V81.0, V81.1, V82.0, V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0, V89.2.

Stroke — Death due to cerebrovascular diseases, ICD-9 codes: 430-438. ICD-10 codes: I60-I69.

Suicide — Death due to intentional self harm, ICD-9 codes: E950-E959. ICD-10 codes: X60-X84, Y87.0.

Unintentional Injury (excluding motor vehicle accidents) — Death due to all accidents (unintentional injuries) not related to motor vehicle accidents, ICD-9 codes: E800-E807 and E826-E949. ICD-10 codes: V01–V99, W00-W99, X00-X59, Y85, Y86 minus Motor Vehicle Injury (ICD-10 codes as noted above).

RELATIVE HEALTH IMPORTANCE

The Relative Health Importance Table conveys a straightforward way of prioritizing health issues for counties. Comparisons to 2003 U.S. rate or percent and to its peers allow a quick and easy method for assessing one's county health relative to others.

The Relative Health Importance Table creates four categories of relative concern by simply comparing one's county rate or percent to its median of peers and to 2003 U.S. rate or percent. The table highlights favorable and unfavorable standing between one's county, and other counties and the nation, and points to indicators which may warrant more attention.

A county's indicators in the upper left-hand box may be ripe for improvement. They are higher than 2003 U.S. rate or percent and half of the peer counties. The county compares unfavorably to both peers and the nation for the indicators listed (i.e., a county rate higher than the median of peer county rate or percent is categorized as "unfavorable").

Conversely, indicators in the lower right-hand box of the table compare favorably to both peers and 2003 U.S. rate or percent. For these indicators, the county has been doing relatively well. It is important to note that though a favorable relationship currently exists, these indicators are likely to call for continued attention so that the current positive level of health status is sustained or additional progress made.

The other two boxes represent intermediate levels of health status. In one instance, the county does well relative to its peers while comparing unfavorably relative to 2003 U.S. rate or percent. In the other, the county does poorly compared to its peers while comparing favorably to 2003 U.S. rate or percent. In each case, one's county rate is lower than either its peers or 2003 U.S.

rate or percent, but not both. When the county's rate or percent is not reported (nrf), that data element is excluded from the comparison.

Peer median values and 2003 U.S. national rate or percent are used to designate indicators as favorable or unfavorable. Indicator values that are equal to the median or 2003 U. S. rate or percent are placed in the "favorable" column or row. Public health practitioners at the University of South Florida College of Public Health (Studnicki J, et.al., 1997. Community health report card: Comprehensive Assessment for Tracking Community Health (CATCH), Best Practices and Benchmarking in Healthcare, Vol. 2(5):96-207) developed this methodology to allow counties to establish priorities among indicators, based on relative standing to peers and the United States.

VULNERABLE POPULATIONS

Vulnerable populations are estimates of individuals in various categories who tend to have poorer health status and more medical needs than the general population.

NOTE: To obtain the estimates provided in this section, a national, local, or multivariate modeled prevalence is applied to the current local total or subpopulation (based on the county population; see the Demographic Measures section). While estimates using the same formula and source of population provide consistency across jurisdictions, as was desirable for this project, they may not supply individual counties with the only estimates of these populations. Other estimates may have been made by and be available from others, and in particular, the local or State health department. The number of individuals is thought to represent the burden in a local area.

No High School Diploma — The number of individuals aged 25 years and older who have not

graduated from high school. Prevalence estimates of no high school diploma (from the 2000 Census of Population and Housing Demographic Profile: 2000, U.S. Census Bureau, STF3A, U.S. Bureau of the Census, and obtained from the Area Resource File, Health Resources and Services Administration, 2005) were applied to the mid-year 2005 county population estimates (ages>25).

Unemployed Individuals — The number of persons who had no employment was available for work, and had made specific efforts to find employment were obtained. The number of unemployed individuals for each county was obtained from Bureau of Labor Statistics' Labor Force Data by County, 2005 Annual Averages. This data is available to the public at http://www.bls.gov/lau/.

Severe Work Disability — Estimates were developed by Case Western Reserve University faculty (Jia H, Muennig P and Borawski E. 2004. "Comparison of small-area analysis techniques for estimating county-level outcomes 2000, Behavioral Risk Factor Surveillance System" *American Journal of Preventive Medicine* Volume 26(5):453–460. Prevalence estimates are applied to the 2005 county population estimates (age 18–64). Severe work disability is defined as the inability to work due to health problems — mental or physical. Because of the small sample size, the confidence intervals for these data may be wide and should be consulted when making comparisons to peer counties due to the variations observed may not be statistically valid. Estimates are based on national prevalence information and adjusted to reflect local demographic characteristics including mortality, SES (income, education, etc.), resources (hospitals, beds, admissions); therefore these estimates may not be accurate at the county level.

Major Depression — An estimate of the number of individuals aged 18 years and older experiencing a major depressive episode during the past year, was calculated by multiplying 2004–2005 Annual Averages Major depression prevalence by state for age 18 and older by 2005 mid-year county population estimates for people aged 18 years and older. The 2004–2005 annual average prevalences are from the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA), Office of Applied Statistics State-age-specific percentage of adults 18 years and older experiencing a major depressive episode during the past year from website http://www.oas.samhsa.gov/2k5State/AppB.htm#TabB.24. Table B.24 Having at Least One Major Depressive Episode in Past Year, by Age Group and State: Percentages, Annual Averages Based on 2004 and 2005. Definition of a major depressive episode appears on page 459. This publication can be accessed electronically at http://www.oas.samhsa.gov/2k5State/ch6.htm. Estimates are based on state prevalence information and adjusted to reflect local demographic characteristics; therefore these estimates may not be accurate at the county level.

Recent Drug Use — An estimate of the number of individuals aged 12 years and older using illicit drugs within the past month was calculated. The figure was calculated by multiplying 2000–2001 Percentages Reporting Past Month Use of Any Illicit Drug by Age Group and State for age 12 and older by 2005 county population estimates for ages 12 and older. Illicit drug use includes use of one or more of the following: marijuana, cocaine (including crack), heroin, hallucinogens (including LSD and PCP), inhalants, or non-medical use of psychotherapeutics, Substance Abuse and Mental Health Services Administration (SAMHSA, Office of Applied Statistics, Table B.1 Illicit Drug Use in Past Month, by Age Group and State: Percentages, Annual Averages Based on 2004 and 2005 NSDUHs). This publication can be accessed electronically at http://www.oas.samhsa.gov/NHSDA/2k1State/vol1/appA.htm#taba.1

Estimates are based on state-level prevalence information and adjusted to reflect local demographic characteristics; therefore, these estimates may not be accurate at the county level.

ENVIRONMENTAL HEALTH

These measures provide a context for good health — clean air, water, land, and waste disposal — and are particularly important in assuring a healthy population. We have provided some available basic measures which may reflect the state of environmental health. For instance, the infectious diseases presented are frequently tied to good water quality and sound food growing, handling, and storage practices. (Shane AL. Red book: 2006 report of the Committee on Infectious Diseases, 27th edition [book review]. *Emerg Infect Dis* [serial on the Internet]; 2006 Dec. Available from Redbook online at http://aapredbook.aappublications.org/ (accessed July 14, 2008) http://www.cdc.gov/ncidod/EID/vol12no12/06-1045.htm .Toxic substances and air quality measures indicate the environmental presence of specific influencers of health.

Infectious Diseases — Disease classifications are from the Centers for Disease Control and Prevention, “Case definitions for infectious conditions under public health surveillance,” MMWR 1997: 46(No. RR-10). This publication is available at http://www.cdc.gov/epo/dphsi/casedef/. The National Notifiable Diseases Surveillance System home page is at http://www.cdc.gov/epo/dphsi/nndsshis.htm. Data are from the

Centers for Disease Control and Prevention, National Center for Infectious Diseases, 1994–2003. Depending upon county population size, the number of total cases for the most recent 3, 5, or 10 years is reported (see Table 1 in Peer County Section). Not all counties have all years of data and some diseases are rare. In some states, specific nationally notifiable infectious diseases (NNID) are not reportable during certain reporting years. In those states and years, the cases reported by counties were set to "zero." Similarly, in states that did not report cases for specific nationally notifiable infectious diseases (NNID) in a given year, the number of cases were assigned a "zero" value. The National Notifiable Disease Surveillance System receives reports of infectious disease cases; however, the system does not require reporting jurisdictions to send null reports (reports of zero cases). The states that did not report any data are identified and included in the *MMWR Summary of Notifiable Diseases--United States Annual Summary* (http://www.cdc.gov/mmwr/summary.html). To calculate total "Reported Cases" for counties, all cases reported for the most recent 3, 5, or 10 years, were summed across years. To allow a county to compare itself to its peers, the number of cases expected based on the peer group's experience is provided. The number of "expected cases" for a county was calculated by multiplying each county's population by the incidence rate among the peer counties stratum for the same time period as "Reported Cases." The incidence rate for a peer county stratum was calculated by summing reported peer county cases for the most recent 3, 5, or 10 years divided by the summation of peer county populations for the most recent 3, 5, or 10 years. To indicate that the county's incidence rate is favorable (equal or better) or unfavorable (worse than) when compared to the median incidence rate among its peer counties, individual county incidence rates and the stratum's median incidence rate were computed.

Toxic Chemicals — Toxic Release Inventory (TRI) data, amount (in pounds) of total chemical releases was extracted using TRI Data Explorer software, 2005 data, U.S. Environmental Protection Agency, available at http://www.epa.gov/tri/tridata/tri05/index.htm.

Air Quality Standards — The Clean Air Act directs the Environmental Protection Agency (EPA) to identify and set national ambient air quality standards for pollutants that cause adverse effects to public health and the environment. EPA has set standards for the following six pollutants: Carbon Monoxide (CO; 9 parts per million; 8-hour average), Nitrogen Dioxide (NO_2; 0.053 parts per million), Ozone (O_3; 0.08 parts per million), Lead (Pb; 1.5 microgram per cubic meter), Particulate Matter (diameter < 10 micrometers; 50 micrograms per cubic meter); and Sulfur Dioxide (SO_2: 0.030 parts per million). In 2006, 995 counties out of 3,141 current counties reported the above six pollutants. A “No” indicates that the county reported a value that exceeds the air quality standard. A "Yes" indicates that a county did not exceed the standard or does not report data for that pollutant (which generally means that there is a low probability of exceeding the standard for that pollutant). An exceedance in any single year is not necessarily an indication that the county violates the national air quality standard. For more information on the National Ambient Air Quality Standards, how to determine if a county is in violation of these standards, and Summary 2006 data are presented at http://www.epa.gov/air/data/.

PREVENTIVE SERVICES USE

INFECTIOUS DISEASE CASES

Infectious disease cases can be reduced with the systematic application of various public health measures — testing, counseling, treatment, and vaccination.

Note: Disease classifications and case definitions are provided by the Centers for Disease Control and Prevention, in "Case definitions for infectious conditions under public health surveillance," *MMWR* 1997; 46:No. RR-10. This publication is available at http://www.cdc.gov/epo/dphsi/casedef/.

Data are from the Centers for Disease Control and Prevention, National Center for Infectious Diseases and the National Center for HIV, STD, and TB, 1994–2003. Depending upon county size, the number of cases for the most recent 3, 5, or 10 years is reported (see Table 1 in Peer County Section). Data include all cases for which county of residence was specified. Not all counties have all years of data and some diseases are rare. Please refer to the "Environmental Health" section regarding the reported cases, expected cases, and indicators for Infectious Disease data process.

ADULT PREVENTIVE SERVICES USE

Our risk of developing certain cancers and suffering fatal consequences from respiratory illnesses can be reduced with the use of various preventive services. Early detection of cancer, through the use of screening tests, increases survival. In addition, preventing or reducing the severity of respiratory illness through the use of vaccinations reduces morbidity and death rates.

NOTE: The Behavioral Risk Factor Surveillance System (BRFSS), a survey conducted jointly by states and the Centers for Disease Control and Prevention, provides information about adult health practices related to a variety of health issues. County-level BRFSS survey data from

2000 to 2006 are presented when feasible. State data, including confidence intervals for state survey estimates, are available on the BRFSS Web site at http://apps.nccd.cdc.gov/brfss/index.asp and when printed, inside the back cover of the CHSI report. Other local survey estimates may be available through your State BRFSS coordinator. See Appendix C.

Pap Test — The percentage of females aged 18 years and older who have had a Pap test within the past 3 years. A Pap test detects abnormal changes in cervical cells that may lead to cancer. Early detection of precancerous conditions and treatment can prevent cancer or death.

Mammogram — The percentage of females aged 50 years and older who have had a mammogram within the past two years. A mammogram is a type of X-ray used to detect tumors or abnormal cells in the breast. Early detection and treatment of cancer can prevent death from breast cancer.

Sigmoidoscopy (and Colonoscopy) — The percentage of adults aged 50 years and older who have ever had a proctoscopic exam. This type of exam uses a flexible scope to detect polyps (non-cancerous tumors) and cancerous tumors in the colon and rectum. Finding and removing them early can prevent cancer or death from colon cancer.

Pneumonia — The percentage of adults aged 65 years and older who have ever had a pneumonia vaccination. Pneumonia is a leading cause of death among older Americans; many pneumonia deaths can be prevented through increased use of this vaccine.

Flu — The percentage of adults aged 65 years and older who have had a flu shot within the past year. Influenza is more likely to lead to serious complications, such as pneumonia, in older adults. Much of the illness and death caused by influenza can be prevented by yearly

vaccination.

RISK FACTORS FOR PREMATURE DEATH

The characteristics presented here convey risks for heart disease and cancer, our nation's leading killers. They include risk factors, personal behaviors, and lifestyle choices. Persons with risk factors are at increased risk of disease and its effects.

NOTE: The Behavioral Risk Factor Surveillance System (BRFSS), a survey conducted jointly by states and the Centers for Disease Control and Prevention, provides information on the prevalence of adult risk characteristics associated with the leading causes of death. County-level BRFSS survey data from 2000 to 2006 are presented when feasible. State data, including confidence intervals for survey estimates, are available on the BRFSS Web site at http://www.cdc.gov/BRFSS/ and when printed, inside the back cover of the report. Other local survey estimates may be available through your State BRFSS coordinator. These factors, reported for adults, are also important indicators of health in children and youth. See appendix C.

No exercise – The percentage of adults reporting of no participation in any leisure-time physical activities or exercises in the past month.

Few fruits/vegetables — The percentage of adults reporting an average fruit and vegetable consumption of less than 5 servings per day.

Obesity — The calculated percentage of adults at risk for health problems related to being overweight, based on body mass index (BMI). A BMI of 30.0 or greater is considered obese. To calculate BMI, multiply weight in pounds by 703 and divide the result by height (in inches) squared.

High Blood Pressure — The percentage of adults who responded yes to the question, “Have you ever been told by a doctor, nurse, or other health professional that you have high blood pressure?”

Smoker — The percentage of adults who responded “yes” to the question, “Do you smoke cigarettes now?”

Diabetes — the percentage of adults who responded “yes” to the question, “Have you ever been told by a doctor that you have diabetes?”

ACCESS TO CARE

Access to care measures include health care resources available in a county and provide measures of medical care coverage or lack thereof.

Uninsured Individuals — the estimated number of uninsured individuals in the county in 2000 is from the U.S. Census Bureau, Small Area Health Insurance Estimates Program (SAHIE), released on July 21, 2005. The SAHIE program models county-level health insurance coverage by combining survey data with population estimates and administrative records. Data and information on survey methodology and confidence intervals are found at http://www.census.gov/hhes/www/sahie/index.html.

Medicare Beneficiaries — Beneficiaries are the number of individuals enrolled in Medicare by county of residence. The 2003 Medicare Enrollment county data are from Centers for Medicare and Medicaid Services (CMS), as of July 1, 2003, Aged and Disabled, March, 2004 Update. The data is obtained from the Area Resource File, Health Resources and Services Administration, 2005.

Medicaid Beneficiaries — The Centers for Medicare and Medicaid Services (CMS) were not able to provide the number of beneficiaries by county. This number may be available for your county from the State Medicaid office.

Primary Care Physicians — this is the total number of active, non-federal physicians per 100,000 population in 2004. This figure includes those who practice in one of the four primary care specialties — general or family practice, general internal medicine, pediatrics, and obstetrics and gynecology. Source: American Medical Association Physician Master File, 2004, Area Resource File, Health Resources and Services Administration 2005; www.arfsys.com.

Dentists — This is the total number of active dentists per 100,000 population, 1998. Source: American Dental Association, State and County Demographic Reports, 1998, Area Resource File, Health Resources and Services Administration, 2005; www.arfsys.com.

Community Health Centers — These centers are a source of care for low-income and uninsured individuals and families and receive a portion of their funding through grants from HRSA. The data is current as of March 22, 2007. Source: HRSA. Geospatial Data Warehouse, http://datawarehouse.hrsa.gov/.

Health Professional Shortage Area — These are counties that have been designated as single-county, primary medical care, health professional shortage areas, as determined by the Secretary of Health and Human Services, current as of March 22, 2007. They have a shortage of health professionals, meeting the criteria from 42 Code of Federal Regulations, Chapter 1

part 5 (October 1, 1993, pp.34–48). Source: HRSA. Geospatial Data Warehouse, http://datawarehouse.hrsa.gov/.

Appendix A: CHSI Stratification Algorithm

Appendix A conveys the decision making process for selection of the original strata defined for CHSI (i.e., in 2000) and the number of counties placed in each strata at that time. Using an ordered, staged approach, counties were first grouped according to frontier status. Population size was used next. Then, as the number of counties in each category allowed, further groupings were made based on the remaining variables until the optimum stratum size was reached. Therefore, while all strata were classified according to the first two variables, only some were defined by factors of poverty, age, and population density. A schematic of the stratification process is in Appendix A. Each of the 88 strata is uniquely defined by two or more of the factors. It is possible that counties that are similar in several factors may not be in the same stratum due to category divisions.

Appendix A. Community Health Status Indicators Peer County Criteria by Stratum, 2000

CHSI Stratum Number	Number of Counties	Frontier (Y/N)	Population Size	Poverty (%)	Age <18 (%)	Age 65+ (%)	Population Density (people per square mile)
1	34	No	1,000,000+	Any	Any	Any	Any
2	31	No	500,000-999,999	<=10.5	Any	Any	Any
3	39	No	500,000-999,999	>10.5	Any	Any	Any
4	24	No	250,000-499,999	10.6-14.1	Any	Any	Any
5	26	No	250,000-499,999	>14.1	Any	Any	Any
6	51	No	100,000-249,999	14.2-19.2	Any	Any	Any
7	34	No	100,000-249,999	>19.2	Any	Any	Any
8	55	No	50,000-99,999	>19.2	Any	Any	Any
9	23	No	250,000-499,999	<=10.5	<=26.1	<=14.7	Any
10	38	No	250,000-499,999	<=10.5	Any*	Any*	Any
11	45	No	100,000-249,999	<=10.5	<=26.1	<=14.7	Any
12	58	No	100,000-249,999	<=10.5	>26.1	<=14.7	Any
13	16	No	100,000-249,999	<=10.5	Any	>14.7	Any
14	40	No	100,000-249,999	10.6-14.1	<=26.1	<=14.7	Any
15	24	No	100,000-249,999	10.6-14.1	>26.1	<=14.7	Any
16	28	No	100,000-249,999	10.6-14.1	Any	>14.7	Any
17	31	No	50,000-99,999	<=10.5	<=26.1	<=14.7	Any
18	17	No	50,000-99,999	<=10.5	Any	>14.7	Any
19	37	No	50,000-99,999	10.6-14.1	<=26.1	<=14.7	Any
20	32	No	50,000-99,999	10.6-14.1	>26.1	<=14.7	Any
21	42	No	50,000-99,999	10.6-14.1	Any	>14.7	Any
22	28	No	50,000-99,999	14.2-19.2	<=26.1	<=14.7	Any
23	37	No	50,000-99,999	14.2-19.2	>26.1	<=14.7	Any
24	33	No	50,000-99,999	14.2-19.2	Any	>14.7	Any
25	20	No	25,000-49,999	<=10.5	<=26.1	<=14.7	Any
26	39	No	25,000-49,999	<=10.5	<=26.1	>14.7	Any

Appendix A. Community Health Status Indicators Peer County Criteria by Stratum, 2000

CHSI Stratum Number	Number of Counties	Frontier (Y/N)	Population Size	Poverty (%)	Age <18 (%)	Age 65+ (%)	Population Density (people per square mile)
27	23	No	25,000-49,999	<=10.5	>26.1	>14.7	Any
28	39	No	25,000-49,999	10.6-14.1	<=26.1	<=14.7	Any
29	37	No	25,000-49,999	10.6-14.1	>26.1	<=14.7	Any
30	58	No	25,000-49,999	10.6-14.1	<=26.1	>14.7	Any
31	22	No	25,000-49,999	10.6-14.1	>26.1	>14.7	Any
32	33	No	25,000-49,999	14.2-19.2	<=26.1	<=14.7	Any
33	41	No	25,000-49,999	14.2-19.2	>26.1	<=14.7	Any
34	22	No	25,000-49,999	14.2-19.2	>26.1	>14.7	Any
35	26	No	25,000-49,999	>19.2	<=26.1	>14.7	Any
36	23	No	25,000-49,999	>19.2	>26.1	>14.7	Any
37	21	No	<=24,999	<=10.5	<=26.1	<=14.7	Any
38	35	No	<=24,999	<=10.5	>26.1	<=14.7	Any
39	50	No	<=24,999	10.6-14.1	Any	<=14.7	Any
40	58	No	<=24,999	10.6-14.1	>26.1	>14.7	Any
41	33	No	<=24,999	14.2-19.2	<=26.1	<=14.7	Any
42	52	No	<=24,999	14.2-19.2	>26.1	<=14.7	Any
43	57	No	<=24,999	14.2-19.2	>26.1	>14.7	Any
44	34	No	<=24,999	>19.2	<=26.1	<=14.7	Any
45	38	No	50,000-99,999	<=10.5	>26.1	<=14.7	42-157
46	27	No	50,000-99,999	<=10.5	>26.1	<=14.7	158-562
47	33	No	25,000-49,999	<=10.5	>26.1	<=14.7	7-80
48	48	No	25,000-49,999	<=10.5	>26.1	<=14.7	83-278
49	36	No	25,000-49,999	14.2-19.2	<=26.1	>14.7	14-57
50	27	No	25,000-49,999	14.2-19.2	<=26.1	>14.7	58-461
51	33	No	25,000-49,999	>19.2	Any	<=14.7	7-43
52	40	No	25,000-49,999	>19.2	Any	<=14.7	45-67
53	28	No	25,000-49,999	>19.2	Any	<=14.7	70-164

Appendix A. Community Health Status Indicators Peer County Criteria by Stratum, 2000

CHSI Stratum Number	Number of Counties	Frontier (Y/N)	Population Size	Poverty (%)	Age <18 (%)	Age 65+ (%)	Population Density (people per square mile)
54	38	No	<=24,999	<=10.5	<=26.1	>14.7	7-26
55	48	No	<=24,999	<=10.5	<=26.1	>14.7	27-137
56	39	No	<=24,999	<=10.5	>26.1	>14.7	7-22
57	41	No	<=24,999	<=10.5	>26.1	>14.7	23-57
58	48	No	<=24,999	10.6-14.1	<=26.1	>14.7	7-14
59	32	No	<=24,999	10.6-14.1	<=26.1	>14.7	15-26
60	47	No	<=24,999	10.6-14.1	<=26.1	>14.7	28-73
61	32	No	<=24,999	14.2-19.2	<=26.1	>14.7	7-14
62	32	No	<=24,999	14.2-19.2	<=26.1	>14.7	16-22
63	32	No	<=24,999	14.2-19.2	<=26.1	>14.7	23-30
64	41	No	<=24,999	14.2-19.2	<=26.1	>14.7	31-44
65	31	No	<=24,999	14.2-19.2	<=26.1	>14.7	45-93
66	37	No	<=24,999	>19.2	>26.1	<=14.7	7-18
67	31	No	<=24,999	>19.2	>26.1	<=14.7	19-26
68	34	No	<=24,999	>19.2	>26.1	<=14.7	27-34
69	45	No	<=24,999	>19.2	>26.1	<=14.7	35-159
70	37	No	<=24,999	>19.2	<=26.1	>14.7	7-18
71	33	No	<=24,999	>19.2	<=26.1	>14.7	19-26
72	32	No	<=24,999	>19.2	<=26.1	>14.7	27-38
73	23	No	<=24,999	>19.2	<=26.1	>14.7	40-90
74	30	No	<=24,999	>19.2	>26.1	>14.7	7-14
75	37	No	<=24,999	>19.2	>26.1	>14.7	15-22
76	38	No	<=24,999	>19.2	>26.1	>14.7	23-63
77	14	Yes	25,000+	>19.2	Any	Any	Any
78	36	Yes	<=24,999	<=10.5	Any	<=14.7	Any
79	33	Yes	<=24,999	<=10.5	Any	>14.7	Any
80	35	Yes	<=24,999	10.6-14.1	Any	<=14.7	Any

Appendix A. Community Health Status Indicators Peer County Criteria by Stratum, 2000

CHSI Stratum Number	Number of Counties	Frontier (Y/N)	Population Size	Poverty (%)	Age <18 (%)	Age 65+ (%)	Population Density (people per square mile)
81	58	Yes	<=24,999	10.6-14.1	<=26.1	>14.7	Any
82	37	Yes	<=24,999	10.6-14.1	>26.1	>14.7	Any
83	24	Yes	<=24,999	14.2-19.2	Any	<=14.7	Any
84	52	Yes	<=24,999	14.2-19.2	<=26.1	>14.7	Any
85	25	Yes	<=24,999	14.2-19.2	>26.1	>14.7	Any
86	37	Yes	<=24,999	>19.2	Any	<=14.7	Any
87	32	Yes	<=24,999	>19.2	<=26.1	>14.7	Any
88	22	Yes	<=24,999	>19.2	>26.1	>14.7	Any

Frontier status: area having 7 or fewer people per square mile.
Poverty: percentage of individuals in an area at or below poverty (quartiles).
Age <18: percentage of the population under age 18 (median).
Age 65+: percentage of the population age 65 or older (median).
Population density: number of individuals per square mile (semideciles).
*Any nonfrontier counties of size 250,000-499,999 with poverty <=10.5, and Age<18 not <=26.1 or Age 65+ not <=14.7.

Appendix B: Peer County Strata Listing (provides the number of counties and the range of demographic data among peer counties for CHSI 2008)

CHSI 2008 Peer County Strata Listing: Number of Counties and Range of Population Size, Population Density, and Poverty							
Strata ID Number	Number of Counties	Population Size		Population Density		Poverty (%)	
		min.	max.	min.	max.	min.	max.
1	34	1,004,666	9,935,475	98	69,390	5.9	26.8
2	32	526,801	1,017,787	314	3,854	5.5	10.5
3	39	518,249	1,132,152	93	15,837	10.7	31.0
4	25	264,309	544,758	146	3,177	9.4	14.3
5	25	254,274	557,917	74	5,561	11.9	29.5
6	53	100,169	303,442	14	4,317	12.0	19.8
7	33	105,517	252,284	20	3,226	14.6	27.1

8	54	47,911	108,432	10	865	14.7	36.2
9	24	266,160	523,008	61	1,621	4.2	11.8
10	36	287,767	659,457	266	7,944	4.1	12.3
11	44	108,958	271,927	74	8,915	3.5	12.7
12	57	107,394	333,457	83	1,069	2.2	10.4
13	16	112,604	228,943	57	1,008	5.5	11.6
14	40	108,039	268,080	47	2,811	9.8	14.2
15	23	102,605	278,484	118	1,879	9.9	14.2
16	27	102,592	307,242	24	738	8.1	13.7
17	32	59,478	140,393	12	805	3.6	11.4
18	20	50,591	99,286	61	389	6.2	11.1
19	37	51,065	127,668	17	576	9.6	14.8
20	32	55,767	124,432	13	313	8.9	15.7
21	44	48,968	128,594	27	260	8.7	15.6
22	28	51,667	123,254	11	234	12.0	17.0
23	37	48,745	105,453	10	314	10.5	17.5
24	35	55,928	110,624	21	2,160	11.7	17.5
25	21	30,848	49,276	49	166	6.0	11.0

26	40	26,602	76,410	20	2,137	6.9	11.3
27	25	24,463	49,671	21	3,783	5.1	10.6
28	39	24,885	60,813	16	375	8.7	14.8
29	37	26,571	60,658	21	370	9.0	13.4
30	57	24,515	54,359	11	379	8.9	15.0
31	22	26,010	49,111	14	107	9.4	13.4
32	37	27,757	56,196	7	3,941	12.2	19.4
33	41	24,540	69,932	12	212	10.9	18.6
34	22	27,995	47,971	7	72	11.1	18.4
35	27	24,695	64,182	13	1,072	13.1	20.9
36	23	24,273	51,663	11	67	15.0	32.4
37	30	111	26,598	8	5,418	3.0	11.3
38	35	4,232	33,381	7	160	4.4	11.6
39	51	5,412	31,099	7	125	8.3	14.5
40	62	3,666	28,485	6	2,692	8.2	13.6
41	47	3,677	28,338	9	2,721	11.1	18.5
42	53	2,289	30,975	8	2,216	10.1	17.6
43	57	3,309	24,756	7	84	9.8	18.9

44	33	7,583	28,118	15	122	13.3	26.5
45	38	51,475	110,730	44	187	4.2	12.1
46	26	63,138	167,848	155	601	3.8	10.9
47	34	25,184	51,762	8	88	4.1	11.9
48	31	32,323	79,514	89	489	4.1	9.9
49	35	26,992	52,491	17	63	11.3	17.4
50	27	25,060	52,889	54	425	13.2	16.4
51	33	24,107	51,181	7	47	16.0	29.8
52	40	24,479	52,659	44	71	14.7	30.3
53	27	24,434	61,454	64	173	16.6	26.6
54	38	3,849	17,919	7	27	5.2	11.3
55	47	6,784	30,246	24	150	5.8	11.7
56	39	4,600	19,766	6	23	6.8	10.7
57	42	6,094	27,490	21	4,667	5.6	10.6
58	48	2,878	20,835	6	14	8.4	13.0
59	32	5,163	25,277	14	28	8.0	12.9
60	48	6,437	26,784	27	942	7.8	14.1
61	32	3,572	22,427	6	20	9.8	15.8

62	32	2,705	22,537	15	24	10.1	17.3
63	32	5,329	23,075	21	34	10.9	17.1
64	41	7,988	27,463	31	50	11.1	17.6
65	30	7,376	27,209	37	104	12.2	15.7
66	37	4,154	19,622	7	23	16.7	33.7
67	31	7,852	23,733	19	33	16.0	33.9
68	34	6,809	25,192	25	38	15.9	32.2
69	45	7,553	28,286	36	164	16.1	30.3
70	37	2,174	23,218	6	21	13.0	22.0
71	33	2,279	22,916	17	29	14.6	24.1
72	32	4,718	26,346	24	43	14.3	31.9
73	23	9,559	25,930	40	98	15.7	21.7
74	30	1,826	26,498	7	15	15.0	28.7
75	37	3,242	24,614	14	23	16.0	28.6
76	38	6,753	25,499	23	67	15.5	27.3
77	15	26,664	123,866	2	7	7.7	27.5
78	43	62	24,623	0	8	5.6	16.1
79	33	670	11,156	1	5	7.0	12.7

80	41	709	15,331	0	9	7.7	15.7
81	58	378	18,156	1	7	8.4	13.2
82	37	484	22,067	0	7	8.5	15.0
83	29	417	19,193	0	11	9.0	19.3
84	52	744	17,674	0	7	9.0	16.2
85	25	689	13,755	0	5	12.2	16.5
86	38	1,909	18,148	0	7	14.3	35.6
87	32	951	21,007	0	7	12.7	25.5
88	23	507	20,238	0	7	12.1	27.7

Appendix C: Behavioral Risk Factor Surveillance System Data Preparation

County estimates were calculated by the Health Care and Aging Studies Branch, Centers for Disease Control and Prevention. Data are presented only for those counties with a survey sample size of 50 or greater. Abbreviation “nrf” is used to present the county with few sample size and its corresponding confidence interval. County-specific percentages were calculated using state weights, which may not be as accurate when county age-sex-race distributions differ substantially from that of the state. Because of a small sample size, the confidence intervals for these data may be wide and should be consulted when making comparisons to peer counties due to the differences observed may not be important statistically. The number of surveys available for each county and indicator varies based on age or gender of the respondent, whether the question is posed to the respondent, whether the respondent answered the question with a yes or no, or whether the state asked the question in these years. No county-level data available in Alaska. Below is a table (Table 1) providing information about the approximate number of counties for whom county-specific prevalence are calculated. Source years for specific indicators are found in Table 2.

Table 1. Number of counties with individual risk factor prevalence reportable from BRFSS, 2000–2006*	
BRFSSS Indicator	Number of Counties with Sufficient Sample Size for CHSI Reporting (n>50)
Adults	

Self-rated Health Status	2,797
Unhealthy Days	2,747
Sedentary Lifestyle	2,797
Obesity	2,783
Current Smoker	2,798
Few Fruits and Vegetables	2,462
High Blood Pressure (>age 18)	2,343
Diabetes(>age 18)	2,799
Older Adults	
Colonoscopy (>50)	1,841
Pneumococcal Vaccine (>65)	1,397
Flu Vaccine (>65)	1,533
Women	
Pap (age >18)	2,094
Mammography (age > 50)	1,465

* Not all questions are asked each year during this period. For instance, report of high blood pressure was collected in 2000-2005, fruits and vegetable servings 2000–2003 and 2005, and others as described at http://www.cdc.gov/brfss/.

Table 2. Number of counties reportable* from aggregation of BRFSS surveys, 2000–2006.								
Summary Measures of Health	# Reportable Counties	2000	2001	2002	2003	2004	2005˟	2006
Fair/Poor Self-Reported Health Status	2477	✓	✓	✓	✓	✓	✓	✓
Unhealthy Days **	2596	✓	✓	××	✓	✓	✓	✓
Risk Factors for Premature Death (All adults)	# Reportable Counties	2000	2001	2002	2003	2004	2005˟	2006
Diabetes	2719	✓	✓	✓	✓	✓	✓	✓
Few Fruits and Vegetables	1904	✓	NA	✓	✓	NA	✓	NA
High Blood Pressure	1522	NA	✓	NA	✓	NA	✓	NA
Obesity	2224	✓	✓	✓	✓	✓	✓	✓
Sedentary Lifestyle	2206	✓	✓	NA	✓	NA	✓	NA
Smoker	2267	✓	✓	✓	✓	✓	✓	✓

Adult Preventive Services Use	# Reportable Counties	2000	2001	2002	2003	2004	2005*	2006
Pap, women 18+ years (past 3 years)	1548	✓	NA	✓	NA	×××	NA	✓
Mammogram, women 50+ years (past 2 years)	894	✓	NA	✓	NA	×××	NA	✓
Sigmoidoscopy, 50+ years (past 5 years)	904	NA	NA	✓	NA	×××	NA	✓
Pneumonia Vaccine, 65+ years (ever)	687	NA	✓	✓	✓	×××	✓	✓
Flu vaccine, 65+ years (past year)	766	NA	✓	✓	✓	×××	✓	✓

* Reportable counties meet the following criteria for statistical precision:

1. Having at least 50 BRFSS respondents in a county during this time period; and
2. The indicator estimate's 95% confidence-interval half-width being less than 0.10 [=10%] of the indicator's range [100 for the percentage indicators or 30 for overall unhealthy days, and county populations contributed at least 10,000 person years (e.g., 5 years x 2,000 people = 10,000 person-years).

The largest percentage of counties with missing values occur with indicators that are subsets of the population (women, those above a certain age); or are not asked every year as part of the BRFSS "Core" questions from 2000 through 2006; or are asked only as BRFSS "Module" questions. State survey weights were used to obtain county prevalence.

**Unhealthy days= physically unhealthy + mentally unhealthy days, with a maximum of thirty allowed.

✓: All states asked the question.

×: Louisiana's survey was disrupted during this year, affecting all questions.

××: Twenty states asked these questions.

×××: All states but Hawaii asked the question.

NA: Not available; the question was not asked.