

# The Status of Health in Spartanburg County

An Evaluation of Goal 5 of 10

spartanburg   
community indicators  
 project

Inspiring dialogue, strategy and change.

# The Status of Health in Spartanburg County

An Evaluation of Goal 5 of 10

## Spartanburg Community Indicators Project

*A collaboration of:*

**The Spartanburg County Foundation  
United Way of the Piedmont  
Spartanburg County Government  
The University of South Carolina Upstate**

*Data collected and prepared by:*

**Kathleen Brady, PhD – MSI Director  
Metropolitan Studies Institute at The University of South Carolina Upstate, © 2008**

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**Mary Black Health System  
Spartanburg Regional Healthcare System  
Spartanburg Regional Healthcare System Foundation**

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## A Letter to the Community

As collaborators of the Spartanburg Community Indicators Project; The Spartanburg County Foundation, United Way of the Piedmont, Spartanburg County Government, and The University of South Carolina Upstate are pleased to provide you with an in-depth assessment of Community Indicator Goal 5. Produced by the Metropolitan Studies Institute of The University of South Carolina Upstate, this document builds upon previous Community Indicator reports by providing a quantitative, comprehensive examination of Indicator Goal 5: "Our citizens will healthy."

The information contained in this report is informed by the many subject matter experts in our community who influence the achievement of the goal. Please take the opportunity to review this information and consider its observations relative to the status of jobs for the citizens of our County. In the coming months, community discussions focused on the findings of this report will be initiated. At these meetings you will be asked to not only contribute your commentary but also to help engage the appropriate action in response to the data and discussion.

This report could not have been accomplished without support from all of the community partners, funders, and experts in our community who commit the time and effort to advance understanding of the issues that affect our County. We would also like to thank Dr. Kathleen Brady at the Metropolitan Studies Institute of The University of South Carolina Upstate for her work to produce this report. This document represents more than just data. It represents a fundamental advancement in our Community Indicator effort. Valid, objective data underpinning discussion of issues in our community profits us all. A report for each Indicator goal will be produced by the MSI so that our community remains fully informed of the measures that reflect upon our progress. These reports are provided for the community in an effort to inspire dialogue, strategy and change.

Sincerely,



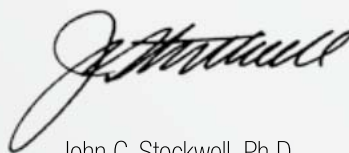
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## Strategic Spartanburg Goals

- Goal 1:** Our children will excel academically through the provision of quality education.
- Goal 2:** Our citizens will obtain the degrees and training to equip them to compete in a knowledge-based workforce.
- Goal 3:** Our senior population will be able to live independently in so far as possible with necessary support from their communities.
- Goal 4:** Our families will be stable and nurturing.
- Goal 5:** Our citizens will be healthy.
- Goal 6:** Our citizens will have access to living wage jobs.
- Goal 7:** Our communities will be viable.
- Goal 8:** Our communities will be increasingly safe.
- Goal 9:** Our citizens will have opportunities for civic engagement that promotes well-being and higher quality of life.
- Goal 10:** Our citizens will manage our natural resources in a way that will support current and future generations.

## The University of South Carolina Upstate

The University of South Carolina Upstate defines itself as a “metropolitan university.” It is a member of the international Coalition of Urban and Metropolitan Universities; and, similar to the missions of its fellow members, The University of South Carolina Upstate regards its relationship to Spartanburg and Greenville and to the Upstate’s I-85 corridor communities as of fundamental importance to its purposes and future. Our recent establishment of “The Metropolitan Studies Institute” as a regional research enterprise is a direct expression of that relationship.

As one of the fastest growing universities in South Carolina over the past 10 years reflecting the growth of the Upstate, and enrolling the second largest number of South Carolina students among the State’s 10 comprehensive universities, The University of South Carolina Upstate aims to be regarded as one of the leading metropolitan universities in the Southeast.

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## The Metropolitan Studies Institute at The University of South Carolina Upstate

The mission of The University of South Carolina Upstate’s Metropolitan Studies Institute (MSI) is to support research efforts between The University of South Carolina Upstate and the community, enhancing relationships, promoting the reciprocal flow of information and ideas, assisting community and economic development, and increasing the strategic use of the University’s scholarship and outreach capabilities. The MSI engages in selected community-based research and assessment projects, notable among them the Spartanburg Community Indicators Project, and partners with community agencies to undertake program evaluations, needs assessments, feasibility studies, and data management projects.

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Spartanburg Community Indicators Project

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## Executive Summary

In 2005, The Spartanburg County Foundation and the United Way of the Piedmont released *Community Indicators VI: Strategic Spartanburg*. The sixth edition was a culmination of many hours of discussion and research which has resulted in a community-wide project focused on the quality of life for all citizens in our community. Transitioning the data collection and assessment component of the Community Indicators Project to the Metropolitan Studies Institute has allowed for a more comprehensive assessment of the status of each goal, via examination of a wider variety of indicators.

Originally, the Community Indicators Project identified six indicators relative to Goal 5, "Our families will be healthy." The current iteration is based on indicators identified by *Healthy People 2010*, a set of health objectives established by the Centers for Disease Control and Prevention through a broad collaborative effort among federal, state and territorial governments, as well as hundreds of private, public and nonprofit organizations. *Healthy People* has two overarching goals: to increase the quality and years of healthy life and to eliminate health disparities among segments of the population through achievement of goals for the nation over the first decade of the new century. *Healthy People 2010* is being used in many states and communities to develop programs to improve public health, building on initiatives pursued over the past two decades. The 1979 Surgeon General's Report, *Healthy People*, and *Healthy People 2000: National Health Promotion and Disease Prevention Objectives* both established national health objectives and served as the basis for the development of state and community plans. Like its predecessors, *Healthy People 2010* was developed through a broad consultation process, built on the best scientific knowledge and designed to measure programs over time.

### **The Leading Health Indicators established in *Healthy People 2010* are:**

- Overweight and Obesity
- Tobacco Use
- Responsible Sexual Behavior
- Injury and Violence
- Immunization
- Physical Activity
- Substance Abuse
- Mental Health
- Environmental Quality
- Access to Health Care

These indicators were selected on the basis of their ability to motivate action, the availability of data to measure progress, and their importance as public health issues. Goal 5 indicators are aligned with these *Healthy People 2010* indicators and are reported accordingly in this document. (However, Injury and Violence and Environmental Quality indicators are not assessed in this report as they will be assessed in depth in reports on Goals 8 and 10.)

In addition to these indicators, the current iteration of Goal 5 includes indicators from *Community Indicators VI: Strategic Spartanburg* and a number of sub-indicators to provide a more comprehensive evaluation of the status of health in Spartanburg County. Goal 5 has been broadened to include all residents of Spartanburg County, rather than confining the assessment to families, and now reads, "Our citizens will be healthy."

Each indicator and sub-indicator is thought by subject matter experts, namely local public health professionals, to be a useful and valid reflection of Goal 5, providing assessment of the status of health in Spartanburg County in as comprehensive fashion as possible. This is the fifth report issued in 2008 relative to the Community Indicators goals and the third of four in the Health and Wellness cluster of indicator goals.

A primary source of the data contained in this report is the Behavior Risk Factor Surveillance System (BRFSS), which is the world's largest random telephone survey of non-institutionalized population aged 18 or older to track health risks in the United States. Initiated by the Centers for Disease Control and Prevention (CDC) in 1981, the BRFSS monitors health risk behaviors in all 50 states, the District of Columbia, Guam, Puerto Rico, and the Virgin Islands. The BRFSS collects data on actual behaviors, rather than on attitudes or knowledge – data that is useful for planning, initiating, supporting, and evaluating health promotion and disease prevention programs. More than 14,000 S.C. residents participated in the 2007 BRFSS.

Other primary sources of data include the S.C. Office of Research and Statistics, the Spartanburg Regional Healthcare System, the S.C. Department of Health and Environmental Control, and the Centers for Disease Control and Prevention. Data are reported for Spartanburg County and, for comparison purposes, for communities with similar population demographics - Greenville County, Richland County and Charleston County. Where available and appropriate, state and national data are reported.

Spartanburg County Subject Matter Experts have reviewed this document to ensure the greatest possible integrity of the data reported. All information has been deemed appropriate, reliable and valid as indicative of the health status of Spartanburg County.

Health, in addition to being a physical quality of life issue, is also an economic quality of life issue. In 2007, the U.S. spent \$2.3 trillion on healthcare, or 16% of the Gross Domestic Product (GDP). This is higher than any other developed nation in the world. The average American spent \$7,600 on healthcare in 2007. At current growth rates, the U.S. will spend \$4.2 trillion on healthcare in 2016; however, the GDP will not increase at the same rate, and these costs will equate to 20% of the GDP.

Among states, South Carolina generally has a greater incidence and prevalence of health risk factors and poor health outcomes. Results of indicator analyses for Goal 5 demonstrate that, within S.C., the health status of Spartanburg County falls below that of peer counties on many measures. Correlates and causal factors are numerous. For example, in addition to physical risk factors, Spartanburg County's per capita and household income and the low educational attainment of its residents are risk factors that are predictive of poor health outcomes.

Health care professionals in Spartanburg County are working to decrease health disparities and poor health outcomes for residents. They cite the need for programs that address chronic disease management, increased access to mental health services, and increased opportunities for aftercare (especially for seniors and high-risk babies).

## Strengths and Challenges

**Upon examination of the data for each indicator, and other data relevant to the status of health in Spartanburg County, there are a number of positive findings. Primary among these are:**

- Among peer counties and compared to the state average, greater percentages of women in Spartanburg County receive prenatal care.
- Among peer counties, Spartanburg County has the highest rate of residents vaccinated for pneumonia in 2007.
- Statewide immunization efforts have dramatically increased immunization rates. In 2001, 17.3% of Spartanburg County children less than two years old were not fully immunized, constituting a dramatic improvement since 1990 when 47.6% of these children were not fully immunized.
- Spartanburg has the lowest number of residents hospitalized for drug dependence, the second lowest average cost per admission, and the second lowest average length of stay among peer counties.
- Of peer counties, Spartanburg has the lowest number of residents hospitalized for alcohol dependence, the second lowest average cost per admission, and the lowest average length of stay.
- Residents of Spartanburg County are more likely to exercise than residents of peer counties.
- Of peer counties, Spartanburg has the lowest rate of HIV / AIDS and ranks 30th of 46 S.C. counties.
- Spartanburg County ranks below the state average for prevalence of syphilis and chlamydia.
- There are generally decreasing trends in self-reported risk behaviors for S.C. teens.

**Assessment of the indicators also results in a number of negative findings or challenges for Spartanburg County. These include:**

- In Spartanburg County, 33.2% of pregnant women receive less than adequate prenatal care, and 29.2% receive no prenatal care for the first three months of pregnancy.
- There is a significant difference by race in prenatal care, with the greatest disparity among peer counties being in Spartanburg.
- Additional hospitalization charges in Spartanburg, 2003-2005, for low birth weight and very low birthweight babies was \$16,883,585.
- Spartanburg County has the second lowest rate of residents age 18+ vaccinated for influenza and hepatitis B.
- Non-vaccinated persons age 65 and over who reside in Spartanburg County are at markedly increased risk of contracting both influenza and pneumonia – higher than any peer county and higher than S.C. aggregated.
- During the decade since 1992-1994, the overall infant mortality rate for Spartanburg County increased by 26.8%.
- For whites, the infant mortality rate increased by 18.7%, while for blacks and others, this rate increased by 50.8%.
- Of peer counties, Spartanburg has the highest average inpatient hospitalization charges.
- Spartanburg County residents have greater risk for chronic disease than residents of peer counties on every primary risk factor.
- Spartanburg County residents have slightly higher rates than the state average for all but one primary risk factor.
- There is a higher prevalence of smokers in Spartanburg County than in S.C. generally and than in Greenville or Richland Counties.
- Among peer counties and S.C. generally, Spartanburg County has the lowest prevalence of smokers who are trying to quit.
- Spartanburg County residents have greater morbidity and mortality from chronic diseases than most residents of S.C.
- Fifteen percent of Spartanburg residents report that they could not see a doctor at least once in the last 12 months due to cost.
- Charges for inpatient mental health treatment at acute care hospitals are proportionately higher in Spartanburg than in other peer counties.
- The crisis in the state's behavioral health system is mirrored in Spartanburg County.
- Sixty-three percent of Spartanburg County residents are overweight or obese – higher than any peer county.
- Spartanburg County ranks above the state average for prevalence of gonorrhea.
- Residents of Spartanburg County have the poorest oral health among residents in peer counties.
- There is not an identified source of dental care for low income families in Spartanburg County.

## Access To Health Care

*Healthy People 2010* objectives for access to health care include that for people age 18 and over, at least 96% will have a specific source of ongoing primary care and 100% will have health insurance. As of 2001, S.C. BRFSS data showed 80.7% of S.C. residents had a specific source of ongoing primary care and 83.6% had health insurance.

According to the U.S. Census Bureau (2006), 667,000 residents of S.C. are uninsured. This constitutes 16% of the state's population. This is slightly higher than the national uninsured rate of 15%.

Results of the 2007 S.C. Behavior Risk Factor Surveillance Survey indicate that residents of Spartanburg County report having the second lowest rate of health insurance coverage (after Greenville County). All peer counties, except Greenville, had higher rates of insurance coverage than the 2006 S.C. total rate. Spartanburg also ranks second, after Greenville, for residents who report that cost prohibited them from seeking care from a physician when they needed it (Table 1).

<b>Do you have any kind of health care coverage?</b>		<b>Was there a time in the last 12 months when you needed to see a doctor but could not because of cost?</b>	
	<b>No</b>		<b>Yes</b>
Spartanburg	15.3%	Spartanburg	14.7%
Greenville	19.1%	Greenville	18.7%
Richland	14.4%	Richland	9.8%
Charleston	10.9%	Charleston	10.4%

*S.C. DHEC*

Patients who do not have any source of health insurance and go without primary care often end up being treated as emergency patients. The emergency room at Spartanburg Regional Medical Center is a level one trauma unit and receives 98,700 visits per year, rendering it the second busiest emergency room in the Carolinas. However, the admission rate from SRMC emergency room is only 13%, indicating that a vast proportion of cases could be treated more appropriately in non-emergency settings (the national rate of admission from emergency rooms is 50%). From September 2007 through October 2008, SRMC spent \$80 million on indigent patient care.

**An analysis of SRMC emergency room visits by self-pay patients from July 2006 to June 2007 finds that:**

- The primary patient age range was 25 – 64 (63% of visits)
- The primary ethnicity of patients was Caucasian (56% of total)
- The primary diagnoses (> 500 visits) were unspecified abdominal pain, acute urological symptoms, lumbago, bronchitis, headache, pharyngitis, dental disorders, chest pain and contusion of the face or scalp
- 76 patients had visited the emergency room more than 10 times

**Analysis of the top 20 self-pay users of the Spartanburg County EMS system from December 2006 through November 2007 finds that:**

- Frequency of usage by individual ranged from 10 to 24 calls
- EMS Charges to these individuals for the period ranged from \$4,097 to \$11,913 for a total of \$109,229
- The most frequent user had 24 calls during this period with a primary diagnosis of cardiac problems / chest pain and a secondary diagnosis of respiratory distress
- The second most frequent user had 19 calls during this period and had a primary diagnosis of headache and a secondary diagnosis of depression

**Analysis of the top 20 users of EMS during the same period, for all payer sources, finds that:**

- Eleven of the users were covered by Medicare, 6 by Medicaid, 2 were self-pay, and 1 was covered by insurance
- Frequency of usage by individual ranged from 14 to 32 calls
- EMS charges to these individuals for the period ranged from \$6,980 to \$16,838 for a total of \$181,389

**Subject matter experts indicate that there are a number of access to care issues in Spartanburg County other than insufficient non-emergency sources of care for the indigent. These include:**

- Lack of chronic disease management programs
- Lack of home health programs to address the special needs of neonatal intensive care babies for months or years
- Lack of parity and inpatient treatment for psychiatric patients (addressed further under the Mental Health indicator)

The cost of insurance has made it unaffordable for increasing numbers of U.S. residents. Although most individuals who have health insurance are covered through employer-sponsored health plans, increasingly fewer employers are offering this benefit, from 69% in 2000 to 59% in 2007. Accordingly, the numbers of uninsured U.S. employees rose from 39 million in 2000 to 47 million in 2007. During the same time period, the average wage increased by 24%, but health insurance premiums increased by 98% (although inflation increased by 21%). Clearly, the cost of health insurance coverage is outpacing the ability to meet it.

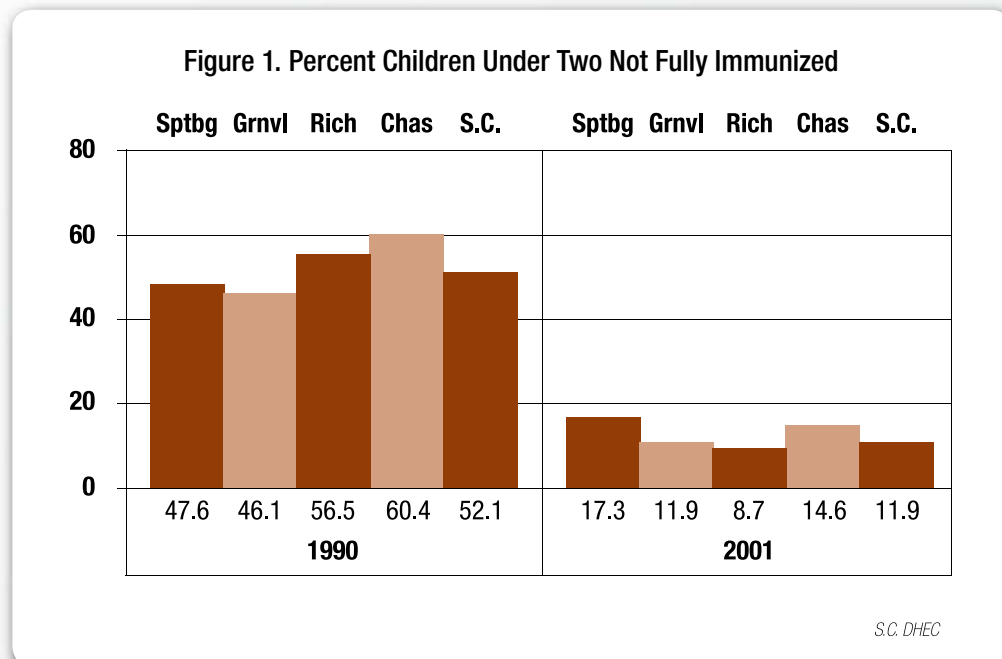
It should be noted that access to public transportation is a determinant of public health - lack of good public transportation limits access to health care. Residents who do not have reliable transportation are frequently unable to keep routine medical appointments, forgo prevention efforts, and delay treatment until conditions become acute or necessitate emergency treatment. Although beyond the scope of this report, high usage of Spartanburg Regional emergency center should be studied as a correlate of the local public transportation system.

## Immunization

*Healthy People 2010* objectives for immunizations include that, for people over age 65, 90% will be vaccinated for pneumococcal pneumonia and 90% will be vaccinated for influenza within the past year. As of 2001, 57.9% of S.C. residents age 65 and over had received pneumonia vaccination and 66.2% had received influenza vaccination within the past year.

### Pediatric Immunization

Immunization rates are indicators of whether children in communities are receiving adequate preventive health care. After a statewide campaign to increase immunizations for Polio, Measles, Diphtheria, Tetanus, Haemophilus Influenza B, and Whooping Cough, the percentage of S.C. children who are fully immunized has increased. In Spartanburg County in 1990, 47.6% of the children less than two years old seen in public health clinics were not fully immunized. This number had declined to 17.3% in 2001 (figure 1).



In 2001, the DHEC statewide birth registry survey of all two year old children in Spartanburg County found that 88.1% were fully immunized. S.C. Kids Count data indicate that, by 2006, 84% of two-year-olds in S.C. were immunized. This was slightly above the national rate of 83%. Immunization rates since 2002 have held fairly steady for S.C. pediatric immunization, fluctuating from 79% to 86%.

## Adult Immunization

**As with pediatric immunization, adult immunization rates are indicative of the level of preventive health care in a community. Statewide BRFSS data for 2007 found that:**

- Higher percentages of whites had been vaccinated in general.
- For pneumonia vaccinations, higher percentages of residents with low educational levels and low incomes had been vaccinated.
- For influenza vaccinations, the inverse was true as vaccination rate increased with increasing educational level and increasing income level.
- Hepatitis B vaccination rates are higher for blacks than whites and are even higher for residents of other races.
- Hepatitis B Vaccination rates increase with increasing educational level and income level.

Among peer counties and the state aggregate, Spartanburg County had the second lowest rate of residents age 18+ vaccinated for influenza and hepatitis B. However, Spartanburg County had the highest rate of residents vaccinated for pneumonia (Table 2).

**Table 2. Vaccination Rate, Age 18+, 2007**

	<b>Influenza</b>	<b>Pneumonia</b>	<b>Hepatitis B</b>
Greenville	36.2%	22.3%	32.0%
Spartanburg	33.2%	25.2%	34.3%
Richland	32.8%	23.9%	44.7%
Charleston	36.5%	23.8%	38.2%
S.C. Aggregate	36.3%	24.6%	37.3%

*S.C. DHEC*

Of all S.C. residents age 18 or over, 37.3% had been vaccinated for Hepatitis B at least once (vaccination is complete after the third injection). Rates do not differ significantly by gender; however, rates decrease dramatically by age.

Risk factors for contracting influenza and pneumonia are significantly increased among persons age 65 and above. Further, mortality from influenza and pneumonia is significantly higher in this age group. In 2007, 35.8% of S.C. residents age 65 and over had been vaccinated for pneumonia (usually given only once or twice in a lifetime) and 29.8% had been vaccinated for influenza in the last 12 months (table 3). These are lower rates than reported in 2001.

## Immunization (cont.)

Table 3 shows that non-vaccinated persons age 65 and over who reside in Spartanburg County are at markedly increased risk of contracting both influenza and pneumonia – higher than any peer county and higher than S.C. aggregated.

	<b>Influenza</b>	<b>Pneumonia</b>
Greenville	24.7%	29.2%
Spartanburg	39.2%	40.4%
Richland	31.1%	26.3%
Charleston	22.1%	36.6%
S.C. Aggregate	29.8%	35.8%

*S.C. DHEC*

## Mental Health

In fiscal year 2006-2007, the S.C. Department of Mental Health reported an unduplicated count of all services to 93,713 consumers. This included both inpatient hospitalization and community-based treatment. Of this number, 6,570 individuals were served via community-based services by Spartanburg Mental Health Center. There were 494 inpatient psychiatric admissions from Spartanburg Mental Health Center to Department of Mental Health facilities. In addition, acute care hospitals reported 1,339 inpatient discharges in 2006 for mental disorders. Comparative data follows in Table 4.

	<b># Discharges</b>	<b>Average Charge</b>	<b>Total Charge</b>	<b>Average Stay (days)</b>
Spartanburg	1,339	\$17,274	\$26,539,397	7.6
Greenville	1,195	\$18,799	\$25,558,762	9.8
Richland	2,073	\$16,005	\$37,465,495	9.4
Charleston	2,106	\$11,079	\$26,412,946	6.6
S.C. Aggregate	19,483	\$13,445	\$286,240,026	7.1

*S.C. Office of Research and Statistics*

All peer counties, except Charleston, had higher than state average charges and higher than state average stays for hospitalizations for mental disorders. Of the peer counties, Spartanburg had the second highest average charge and the second lowest average length of stay, indicating that charges for inpatient mental health treatment at acute care hospitals are proportionately higher in Spartanburg than in other peer counties.

Trend data for inpatient mental health admissions among peer counties do not show a steady annual increase (Table 5). However, they do show a 22% increase in admissions for residents of Spartanburg County between 2003 and 2006. This is a significant increase, as compared to peer counties and the state average increase.

**Table 5. Inpatient Discharges, Mental Health Disorders**

	2003	2004	2005	2006	% change 2003-2006
Spartanburg	1,101	1,302	1,186	1,339	21.62%
Greenville	1,222	1,177	1,252	1,195	-2.22%
Richland	2,026	2,056	2,070	2,073	2.32%
Charleston	1,969	1,871	1,967	2,106	6.96%
S.C. Aggregate	19,337	19,516	19,550	19,483	0.76%

*S.C. Office of Research and Statistics*

Data collected in the 2007 Behavior Risk Factor Surveillance Survey indicate that for residents who report having mental health problems in the past month, the largest percentage in all peer counties and S.C. report that their mental health was not good for 3 to 7 days. For the three to seven day period, prevalence rates were fairly comparable by peer county; however, all peer counties were above the state rate. Spartanburg County residents reported the lowest percentage of mental health problems for 30 days during the past month (Table 6).

**Table 6. BRFSS Survey Results for Mental Health, 2007**

<b>For how many days during the past 30 days was your mental health not good?</b>					
	None	1-2 days	3-7 days	8-29 days	30 days
Spartanburg	65.6%	9.2%	12.3%	9.0%	3.9%
Greenville	66.0%	9.0%	11.2%	7.7%	6.1%
Richland	65.6%	5.1%	13.7%	10.8%	4.9%
Charleston	64.8%	11.2%	11.2%	8.6%	4.2%
S.C. Aggregate	67.1%	7.8%	10.9%	8.5%	5.7%

*S.C. BRFSS*

## Mental Health (cont.)

Spartanburg subject matter experts report that the state's behavioral health system is in crisis. Although the state is required by statute to provide a statewide system for delivering mental health services, budget cuts have led to reductions in the number of psychiatric beds in state-run mental health facilities. Community-based services are inadequate and there is significant concern regarding the lack of parity between treatment for medical issues and treatment for mental illness. The shortage of facilities for long-term treatment of mental illness has resulted in increased burden on jails, EMS, law enforcement agencies, emergency rooms, and short term inpatient units ill-equipped to treat chronic major mental illness.

Depressive disorders ranked 17th of the top diagnostic groups for self-pay patients visiting the emergency room at Spartanburg Regional Medical Center from July 2006 to June 2007, constituting 323 visits. Patients have remained in hospital emergency rooms for days or weeks waiting for psychiatric beds to become available in appropriate facilities. Most patients presenting with psychiatric disorders at the emergency room, however, are discharged to their homes. Five years ago, most of these patients would have been admitted for behavioral health treatment (see Table 7).

**Table 7. Top 10 Dispositions of Emergency Room Psychiatric Patients, SRHS**

	<b>2002</b>	<b>#</b>	<b>%</b>	<b>2007</b>	<b>#</b>	<b>%</b>
1	Admitted	516	19.4%	Home	1304	38.8%
2	Mental Health Clinic	512	19.2%	Admitted	649	19.3%
3	P. Harris Hospital	226	8.5%	Detox Spartanburg	209	6.2%
4	Detox Spartanburg	222	8.3%	P. Harris Hospital	181	5.4%
5	SADAC	191	7.2%	Disposition Pending	179	5.3%
6	Other	173	6.5%	Mental Health Clinic	168	5.0%
7	Private Physician	137	5.2%	Carolina Center for Behavioral Health	135	4.0%
8	Home	115	4.3%	Admitted for Medical Care	91	2.7%
9	Carolina Center for Behavioral Health	92	3.5%	Other	75	2.2%
10	Outpatient Psych	84	3.2%	SADAC	62	1.8%

*Spartanburg Regional Healthcare System*

The challenge of placing patients in long-term care facilities from acute care facilities is significant due, frequently, to the patient's chronic behavioral management issues. Even though these patients usually have payer sources, they are not discharged when appropriate because long-term placements cannot be found for them. If a behavioral health patient has no payer source, there is no skilled long-term care facility available for them in S.C. The average length of stay was 29.4 days for patients discharged from the behavioral health unit at Spartanburg Regional Medical Center from June 2007 to July 2008. As of August 2008, one patient, however, had been at the hospital in excess of 460 days as no long-term psychiatric facility would consider her for admission.

Mental health issues are frequently contributory to a number of social issues. For example, in 2006, the S.C. Department of Corrections reported that 1,165 offenders (9%) reported having mental health problems, and this number is thought to be significantly underreported. Because inmates do not have access to a full range of treatment services, untreated mental illness may be contributory to recidivism rates. Further, an additional 10,451 offenders (45%) reported having substance abuse problems. Because mental health problems and substance abuse are frequently comorbid conditions, this combined 54% is of significant concern.

## Substance Abuse

*Healthy People 2010* objectives regarding substance abuse include that, for people over age 18, no more than 6% will have engaged in binge drinking during the past month. As of 2001, S.C. BRFSS data showed 12.3% of residents over age 18 had engaged in binge drinking within the past month.

The S.C. Department of Alcohol and Other Drug Abuse Services (DAODAS) reports a generally increasing trend in numbers of clients served since 2005. However, these numbers are not keeping pace with the S.C. population growth, as there was an 8% growth in S.C. population between 2005 and 2007, while there was only a 2% growth in DAODAS services (Table

**Table 8. SC DAODAS Unduplicated Services by County**

	2005	2006	2007
Spartanburg	3,455	3,561	3,154
Greenville	3,185	3,562	3,816
Richland	2,763	2,876	2,835
Charleston	3,291	3,258	3,417
S.C. Aggregate	47,825	48,299	48,558
<i>S.C. DAODAS</i>			

**The Spartanburg Alcohol and Drug Abuse Commission (SADAC) served 3,749 clients during the 2005-2006 fiscal year. Of these clients:**

- 774 received detoxification services
- 1,279 were referred as a result of being arrested
- 1,374 had received SADAC services previously
- 2,329 were male and 1,023 were female
- 938 clients were age 30–35, 892 were age 20-29, and 852 were age 40-49
- 1,563 were white males, 758 were white females, 712 were black males, and 247 were black females
- 1,165 were employed full-time
- 543 were eligible for Medicaid
- 983 had completed high school and 87 had completed college
- 3,139 reported having no family income
- 914 reported alcohol as their primary problem, 861 reported cocaine / crack as their primary problem, 443 reported marijuana / hashish as their primary problem, and 295 reported having no substance problem
- 814 were self-referred, 554 were referred by the Highway Department, 466 were referred by the Probation Department, and 264 were referred by Department of Social Services
- 2,784 lived in Spartanburg County

## Substance Abuse *(cont.)*

Of peer counties, Spartanburg had the lowest number of residents hospitalized in general hospitals for drug dependence in 2006. After Charleston County, Spartanburg County had the second lowest average cost per admission and the second lowest average length of stay (see Table 9) in general hospitals. All peer counties, except Charleston, had a higher than S.C. average cost per drug dependence admission.

**Table 9. Analysis of Inpatient Discharges From General Hospitals: Drug Dependence, 2006**

	# Discharges	Total Charge	Average Charge	Average Stay (days)
Spartanburg	32	\$415,841	\$10,646	5.5
Greenville	57	\$911,566	\$14,540	7.5
Richland	78	\$1,048,513	\$13,255	7.8
Charleston	106	\$900,042	\$7,994	4.9
S.C. Aggregate	890	\$9,482,516	\$10,022	5.7

*S.C. Office of Research and Statistics*

These data are mirrored for alcohol dependence. Of peer counties, Spartanburg had the lowest number of residents hospitalized in general hospitals for alcohol dependence in 2006. After Charleston County, Spartanburg County had the second lowest average cost per admission. Spartanburg County had the lowest average length of stay (see Table 10). All peer counties, except Charleston, had a higher than S.C. average cost per alcohol dependence admission.

**Table 10. Analysis of Inpatient Discharges From General Hospitals: Alcohol Dependence, 2006**

	# Discharges	Total Charge	Average Charge	Average Stay (days)
Spartanburg	20	\$280,581	\$9,848	4
Greenville	50	\$697,160	\$12,849	6.1
Richland	167	\$1,806,543	\$10,016	6.1
Charleston	181	\$1,646,067	\$8,260	4.8
S.C. Aggregate	1,240	\$12,064,905	\$9,241	4.9

*S.C. Office of Research and Statistics*

The data are counterintuitive in light of the fact that chronic liver disease is the 10th leading cause of death for Spartanburg County residents. Since chronic substance abuse is a predictor of liver disease, this issue begs further study. Because substance abuse frequently goes undiagnosed due to social and legal ramifications, incidence and prevalence data are likely underreported.

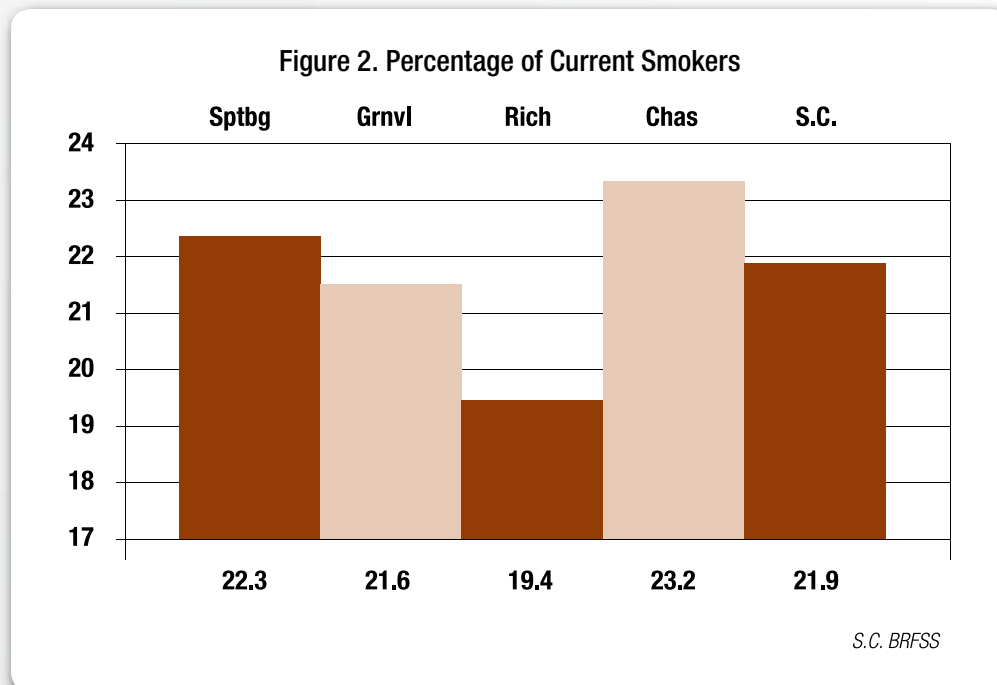
Substance abuse is a contributory to a number of social issues, including crime. As aforementioned, in 2006, the S.C. Department of Corrections reported that 10,451 (45%) of offenders reported having a substance abuse problem; there were 672 substance abuse treatment beds in department of corrections facilities. The chronicity of substance abuse is evidenced by the fact that 42% of offenders are repeat offenders.

S.C. teens report binge drinking at slightly lower rates than the national average (see Table 25).

## Tobacco Use

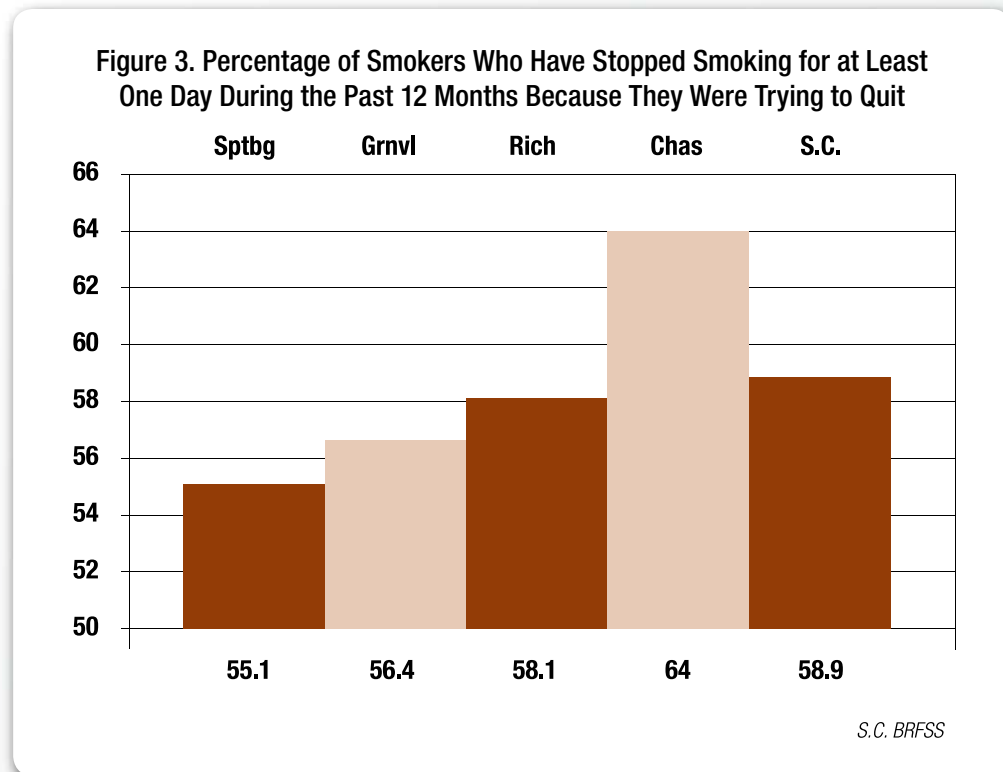
*Healthy People 2010* objectives regarding tobacco use include that, for people over age 18, no more than 12% will be cigarette smokers and no more than 1.2% will be cigar smokers. As of 2001, S.C. BRFSS data showed 26.0% of residents over age 18 were cigarette smokers. S.C. data for cigar smokers is unavailable.

S.C. BRFSS data for 2007 indicate that 21.9% of S.C. adults report that they smoke (have smoked at least 100 cigarettes in their lifetime and currently smoke). This is lower than the 2001 rate of 26%. There is a higher prevalence of smokers in Spartanburg County than in S.C. and than in other peer counties, except Charleston (figure 2).



## Tobacco Use *(cont.)*

Although Spartanburg has the second highest prevalence of smokers among peer counties and S.C., it has the lowest prevalence of smokers who are trying to quit (figure 3).

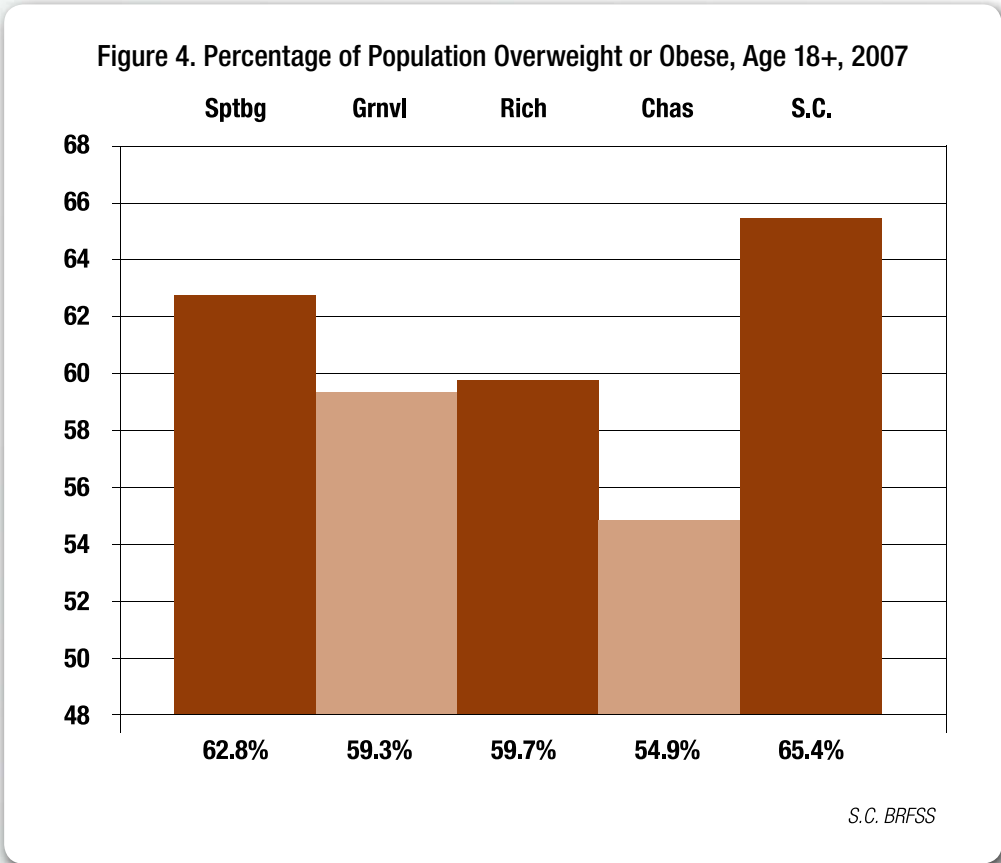


S.C. teens report that they smoke at higher rates than the national average (see Table 25).

# Overweight And Obesity

Healthy People 2010 objectives regarding obesity include that for people over age 20, no more than 15% will be obese (Body Mass Index over 30). As of 2001, S.C. BRFSS data for this objective showed that 23.0% of S.C. residents over age 20 were obese.

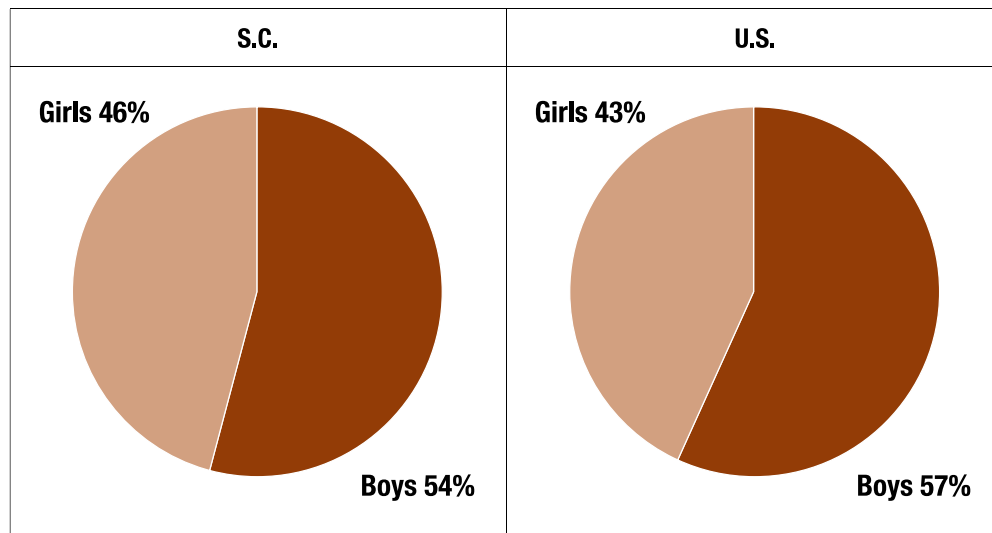
BRFSS data for 2007 indicate that 62.8% of Spartanburg County residents are overweight or obese. This is a higher rate than any peer county but lower than the S.C. prevalence rate of 65.4%. (figure 4).



## Overweight And Obesity *(cont.)*

S.C. Kids Count data for 2003 show that 36% of S.C. children and teens (age 10–17) are overweight or obese. This is higher than the U.S. average of 31%. More boys than girls are overweight or obese (see Figure 5). Subject matter experts have identified obesity as the number one pediatric medical problem in S.C. Obese children use 38% more medical resources and 60% more medications than non-obese children in S.C. The dramatic increase in prevalence in pediatric type II diabetes (heretofore a virtually unknown phenomenon) has resulted in lower life expectation for children born in 2006 than for their parents. No other generation has been characterized by lower life expectation than the generation before it.

**Figure 5. Overweight or Obese Children and Teens by Gender, 2003**



*S.C. Kids Count*

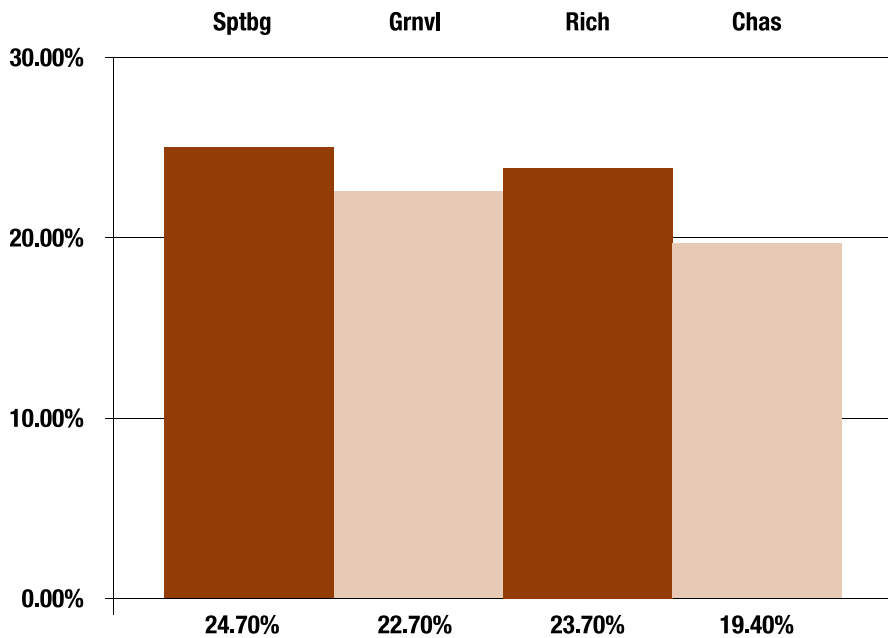
## Physical Activity

*Healthy People 2010* objectives for physical activity include, that for people over age 18, no more than 20% will have no leisure time physical activity, at least 30% will engage in regular moderate physical activity 5 or more days per week for 30 or more minutes, and at least 30% will engage in regular, vigorous physical activity three or more days per week for 20 or more minutes. As of 2001, S.C. BRFSS data showed that 26.4% of S.C. residents over age 18 had no leisure time physical activity, 31.2% engage in regular moderate physical activity 5 or more days per week for 30 or more minutes, and 24.1% engage in regular, vigorous physical activity three or more days per week for 20 or more minutes.

Because exercise behavior is a predictor of weight status, and weight status is a predictor of general health status, exercise is considered to be a valid indicator of health status of a community. There is a direct correlation between increased exercise and decreased incidence of heart disease, stroke, diabetes and certain cancers.

When asked, "during the past month, other than your regular job, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening or walking for exercise?", residents of Spartanburg indicate they are more likely to do so than residents in peer counties (see Figure 6).

**Figure 6. Percentage of Residents 18+ Exercising in the Last Month**



S.C. BRFSS

S.C. Kids Count data for 2003 indicate that 52% of children and teens do not exercise regularly. This matches the U.S. average of 52%.

## Responsible Sexual Behavior

### HIV / AIDS

In 2006, 1.1% of the 2,556 Spartanburg County residents tested for HIV tested positive. This matches the state rate for that year. Comparison data are listed in Table 11.

	<b># Tests</b>	<b># Positive</b>	<b>% Positive</b>
Spartanburg	2,556	27	1.1
Greenville	2,069	57	2.8
Richland	6,541	84	1.3
Charleston	3,977	39	1
S.C. Aggregate	49,012	530	1.1
<i>S.C. DHEC</i>			

By the end of 2005, there were 520 residents of Spartanburg County known to be living with HIV / AIDS. This constitutes a prevalence rate of 199 cases per 100,000 population. Of those infected, by gender most were male, by race most were black, and by age most were between the ages of 40-49. The vast preponderance of infections were contracted through sexual practices, with only four cases contracted through transfusions and only six cases contracted perinatally (Table 12).

	<b>Number</b>	<b>Prevalence Rate per 100,000</b>
<b>Total Cases</b>	<b>520</b>	<b>199</b>
<b>Gender</b>		
Male	389	305.8
Female	131	97.7
<b>Race</b>		
Black	306	494.1
White	200	100.3
Other	14	
<b>Transmission by Risk Group</b>		
Male Sex with Male	194	
Injection Drug Use	58	
Heterosexual Sex	125	
<b>Age Group</b>		
20-29	39	111.2
30-39	130	342.1
40-49	210	535.5
50 and up	130	164.6
<i>S.C. DHEC</i>		

By March 31, 2007, the number of residents of Spartanburg County living with HIV / AIDS had increased to 884, constituting a 70% increase in known cases from 2005. The prevalence rate had increased to 326.1 per 100,000. However, this is the lowest prevalence of peer counties. This increase could be attributable to more widespread testing, decreased mortality rates of those infected, or for other reasons. Table 13 shows incidence, prevalence, and ranking by peer County.

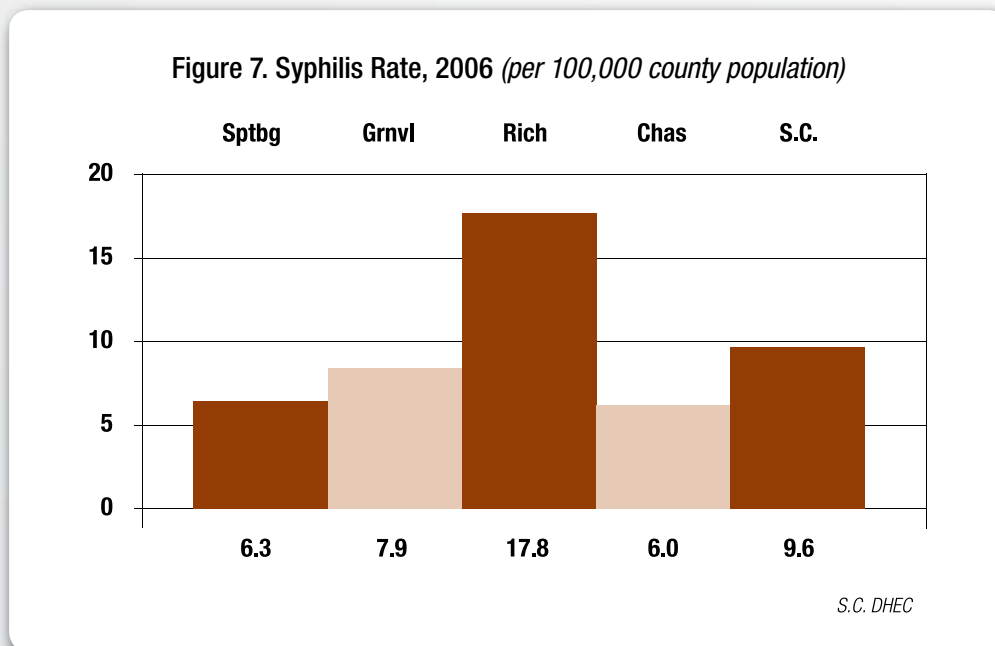
Table 13. HIV/ AIDS Cases Cumulative Through March, 2007			
	# Cases	Rate per 100,000	S.C. County Rank
Spartanburg	884	326.1	30
Greenville	1,640	393.1	26
Richland	4,187	1,202	1
Charleston	2,613	787.2	6
S.C. Aggregate	21,963	508.3	n/a

*S.C. DHEC*

## Other STI's

DHEC data from 2006 indicate that Spartanburg County ranks below the state average for prevalence of syphilis and chlamydia, but ranks above the state average for prevalence of gonorrhea.

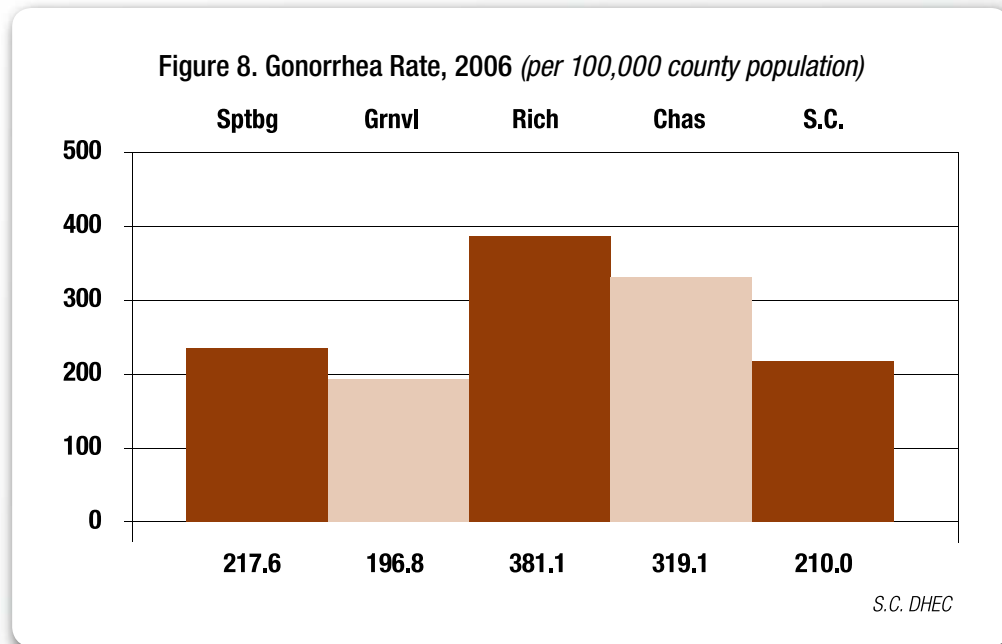
There were 17 cases of syphilis diagnosed in Spartanburg County in 2006. There were three cases diagnosed in the first quarter of 2007.



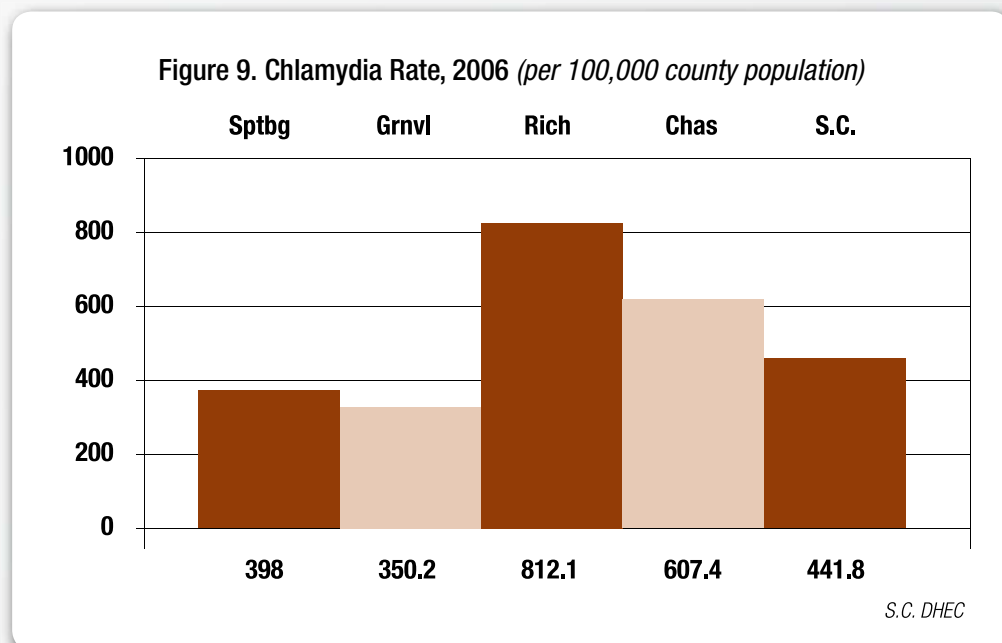
## Responsible Sexual Behavior *(cont.)*

### Other STI's *(cont.)*

There were 590 cases of gonorrhea diagnosed in Spartanburg County in 2006. There were 144 cases diagnosed in the first quarter of 2007.



There were 1,079 cases of chlamydia diagnosed in Spartanburg County in 2006. There were 241 cases diagnosed in the first quarter of 2007.



# Prenatal Care

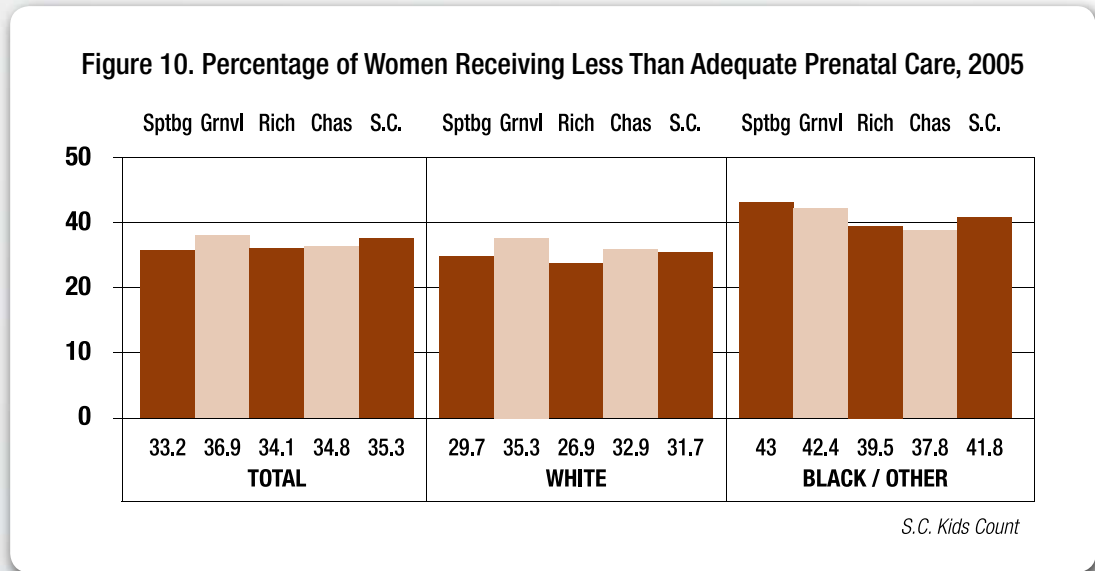
Adequate prenatal care, from early in the pregnancy and continuing throughout, is the primary predictor of the birth of healthy babies. Delayed or insufficient prenatal care is associated with low birthweight and other health-related risk factors for infants. In Spartanburg County in 2005, 33.2% of pregnant women received less than adequate prenatal care, 29.2% received no prenatal care for the first three months of pregnancy, and 28 women who gave birth received no prenatal care at all. Table 14 illustrates that, among peer counties and compared to the state average, generally greater percentages of women in Spartanburg County receive prenatal care.

**Table 14. Prenatal Care by County, 2005**

	No prenatal care at all #	No prenatal care first 3 months	Less than adequate prenatal care
Spartanburg	28 (8.2%)	996 (29.2%)	1,132 (33.2%)
Greenville	100 (1.7%)	1,826 (31.1%)	2,171 (36.9%)
Richland	66 (1.4%)	1,540 (32.1%)	1,633 (34.1%)
Charleston	49 (1.0%)	1,268 (26.4%)	1,671 (34.8%)
S.C. Aggregate	765 (1.3%)	17,038 (29.6%)	20,291 (35.3%)

*S.C. Kids Count*

Figure 10 shows a significant difference by race in prenatal care, with the greatest disparity (13.3%) between whites and blacks / others occurring in Spartanburg.



Primary variables that impact prenatal care include maternal age and payer source. Other variables include geography and maternal access to a “medical home”. The impact of these variables on prenatal care in Spartanburg County is beyond the scope of this report, but is worthy of further study.

## Birth Weight

Low birthweight of less than 5.5 pounds and very low birthweight of less than 3.3 pounds is associated with health risks in the newborn and developmental delays and continuing health problems as the child ages. Low birthweight typically results from preterm birth and is associated with teenage mothers and mothers in their forties. Low birthweight is also associated with multiple births, low education, single motherhood, maternal smoking and maternal stress or abuse. Nationally, the percentage of infants born with low birthweight increased from 7.0% in 1990 to 8.1% in 2004 and 8.2% in 2005.

Concurrently, the national preterm birth rate increased 20% between 1990 and 2000 and by 9% between 2000 and 2005. By 2005, preterm birth characterized 12.7% of all U.S. births. Preterm birth rates have increased among Hispanics, whites and blacks. Multiple births have contributed to the rise in preterm births; however, single births have also shown an increased rate. Concurrent rates of low birthweight have also continued to rise, increasing 17% between 1990 and 2000 and an additional 8% between 2000 and 2005. In 2006, the percentage of black, non-Hispanic infants born with low birthweight continued to be higher than that of any other reported racial or ethnic group, even when maternal age was taken into account. The teen birth rate, associated with low birthweight and preterm birth, increased in 2006 for the first time since 1991.

The average hospitalization charges for each low birthweight newborn in Spartanburg County in 2003-2005 was \$32,051 and was \$215,644 for each very low birthweight newborn, compared to \$3,853 for newborns of normal weight. From 2003 – 2005, this equated to additional charges above those of normal birthweight newborns of \$16,883,585.

From the data reported in Table 15, it is evident that Spartanburg, as compared to peer counties, does not have a high percentage of low birthweight and very low birthweight babies. However, there is a higher percentage of low birthweight babies born to black / other race mothers in Spartanburg, higher also than the S.C. rate.

Low birthweight rates for all peer counties and for S.C. were above the national low birthweight rate of 8.2% in 2005.

**Table 15. Birthweight by County as Percentage of All Births, 2005**

	Low Birthweight, 2005			Very Low Birthweight 2003-2005		
	Total	White	Black/Other	Total	White	Black/Other
Spartanburg	9.9% (n=336)	7.7%	16.0%	1.8% (n=184)	1.4%	3.0%
Greenville	8.8% (n=520)	7.3%	13.5%	1.6% (n=276)	1.3%	2.7%
Richland	10.3% (n=493)	7.0%	12.7%	2.2% (n=303)	1.1%	3.0%
Charleston	10.0% (n=480)	6.8%	14.6%	2.5% (n=354)	1.4%	4.1%
S.C. Aggregate	10.2% (n=5,895)	7.7%	14.7%	2.1% (n=3,543)	1.4%	3.4%

*S.C. Kids Count*

## Infant Mortality

Infant mortality is strongly associated with low birthweight. Very low birthweight and premature babies often die soon after birth: 57% of infant deaths occur in the first week of life, and 70% occur within the first 28 days after birth. The statewide infant mortality rate for S.C. has risen for reporting periods since 2002 as multiple births and births to older women have risen. Disaggregated data by peer county can be found in Table 16.

**Table 16. Infant Mortality Rates per 1,000 Live Births, 2005, 2003-2005, 2000-2002**

	2005		2003-2005		2000-2003	
	Number	Rate	Number	Rate	Number	Rate
Spartanburg	129	8.5	104	10.1	75	7.3
Greenville	144	7.5	113	6.6	95	5.8
Richland	148	10	122	8.8	108	8.3
Charleston	158	12.1	149	10.5	135	9.9
S.C. Aggregate	1,549	9.5	1,536	9.1	1,491	9

*S.C. DHEC*

During the decade since 1992-1994, the overall infant mortality rate for Spartanburg County increased by 26.8%. For whites, the rate increased by 18.7%, while for blacks and others, the rate increased by 50.8%.

Among all S.C. counties in 2004, Spartanburg County had the 9th highest infant mortality rate. Peer counties fared much better with Charleston ranking 17th, Richland ranking 25th, and Greenville ranking 34th.

National perinatal death rate data for 2004 indicate that, among U.S. states, S.C. has the third highest death rate for infants of less than 28 days of age and fetal deaths of 20 weeks or more gestation (perinatal definition I), as well as the third highest death rate for infant deaths of less than 28 days of age and fetal deaths of 20 weeks or more gestation (perinatal definition II). The S.C. perinatal death rate for definition I is 9.24 per 1,000 live births, and for definition II is 14.77 per 1,000 live births. Wyoming and Mississippi have higher perinatal death rates for definition I and definition II.

## Hospitalizations

The preponderance of inpatient hospitalizations in S.C. are for childbirth. The average length of stay for inpatient hospitalizations is 4.1 days, and the average charge is \$19,396. Utilization rates by S.C. county of residence (regardless of where treatment was provided) are reported in Table 17.

Table 17. Hospital Utilization by County of Residence, 2006						
	Diagnosis by Rank			Inpatient Discharges		
	#1	#2	#3	#	Average Stay	Average Charge
Spartanburg	vaginal delivery	psychosis	major joint replacement or reattachment of lower extremity	34,747	4.4 days	\$23,806
Greenville	vaginal delivery	Cesarean section	major joint replacement or reattachment of lower extremity	47,311	4.5 days	\$21,205
Richland	vaginal delivery	psychosis	Cesarean section	40,168	4.4 days	\$20,215
Charleston	vaginal delivery	psychosis	Cesarean section	43,696	4.1 days	\$18,367
S.C. Aggregate	vaginal delivery	heart failure & shock	Cesarean section	564,000	4.1 days	\$19,396

*S.C. Office of Research and Statistics*

The average charge for inpatient hospitalization, as well as the average length of stay, is higher than the state average for all peer counties except Charleston. The most comparable counties are Charleston and Richland; although they share the top three diagnoses, the average charge and length of stay is markedly greater in Richland. Of all peer counties, Spartanburg has the highest average charge, but the lowest number of inpatients. Disaggregations of the data by diagnosis, and consideration of a number of other variables, will likely explain this finding; however, such in-depth study of the data is beyond the scope of this report. When disaggregated by age, Spartanburg County hospitalization data show that the top three diagnostic categories differ by age group (see Table 18).

Table 18. Spartanburg County Hospitalizations by Age Group and Top Three Diagnostic Categories, 2006			
	#1	#2	#3
Ages 5-12	Bronchitis and Asthma	Simple pneumonia & pleurisy	Nutritional & misc metabolic disorders
Ages 13-17	Vaginal delivery w/o complication	Vaginal delivery w/ complication	Cesarean section w/o complication
Ages 18-44	Vaginal delivery w/o complication	Cesarean section w/o complication	Uterine & adnexa proc for non-malignancy
Ages 45-64	Chronic obstructive pulmonary disease	Major joint replacement or reattachment of lower extremity	psychoses
Ages 65-74	Major joint replacement or reattachment of lower extremity	Chronic obstructive pulmonary disease	Simple pneumonia & pleurisy
Ages 75+	Heart failure & shock	Simple pneumonia & pleurisy	Major joint replacement or reattachment of lower extremity

*S.C. Office of Research and Statistics*

**Hospital utilization data for Mary Black Memorial Hospital and Spartanburg Regional Medical Center indicate that, in 2006, there were:**

- 4,750 obstetric discharges
- 16,141 surgical procedure discharges
- 879 pediatric discharges
- 1,295 psychiatric discharges
- 11,207 diagnostic discharges

Breakdowns of the data by hospital follow in Table 19. Based on calculated market share for S.C., the total population served by Mary Black Hospital = 58,448 and the total population served by SRMC = 210,188.

<b>Table 19. Discharge Data by Spartanburg Hospital, 2006</b>						
	<b>Number Discharges</b>		<b>Average Length of Stay</b>		<b>Use Rate per 1000 population served</b>	
	<b>Mary Black</b>	<b>SRMC</b>	<b>Mary Black</b>	<b>SRMC</b>	<b>Mary Black (58,488)</b>	<b>SRMC (210,188)</b>
Obstetrics	1,437	3,313	2.6	2.6	78.22	78.66
Surgical procedures	3,348	12,793	5.6	6.3	61.48	57.54
Pediatric without procedure	266	613	2.1	2.6	7.94	6.08
Psychiatric	333	962	13	7.1	8.1	5.11
Diagnosis without surgical procedure	2,397	8,810	5.9	4.8	61.29	51.38

*S.C. Office of Research and Statistics*

An analysis of hospital discharge data for 2006 shows that, of peer counties, Spartanburg had the highest average charge for hospitalization, but the lowest number of inpatients. Total charges for inpatient hospitalizations in Spartanburg County were \$1,022,239,573. Comparison data are provided in Table 20.

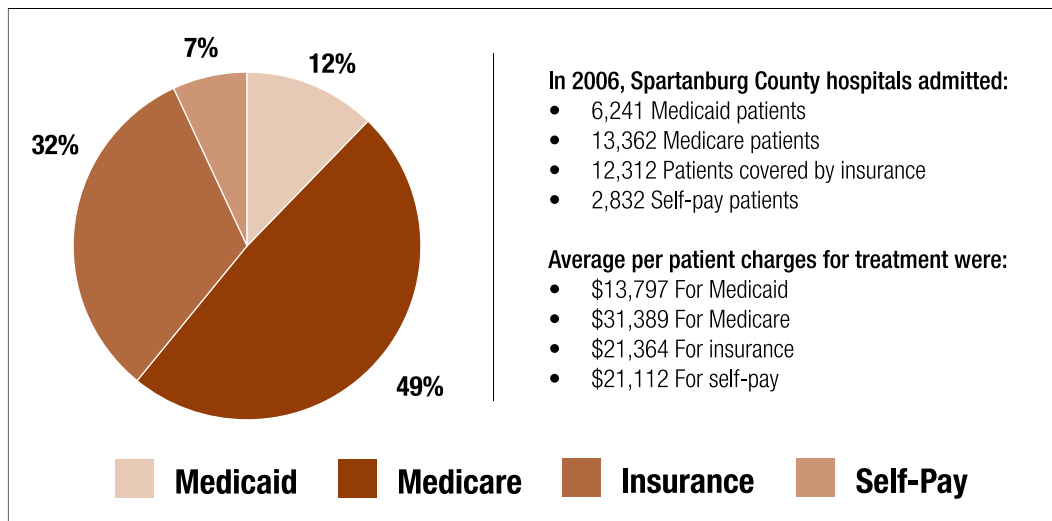
<b>Table 20. Inpatient Discharges by County, 2006</b>				
	<b># Discharges</b>	<b>Average Charge</b>	<b>Total Charges</b>	<b>Average Length of Stay (days)</b>
Spartanburg	34,747	\$23,806	1,022,239,573	4.4
Greenville	47,311	\$21,205	1,238,501,466	4.5
Richland	40,168	\$20,215	1,023,135,486	4.4
Charleston	43,696	\$18,367	988,826,176	4.1
S.C. Aggregate	564,000	\$19,396	13,617,475,989	4.1

*S.C. Office of Research and Statistics*

## Hospitalizations (cont.)

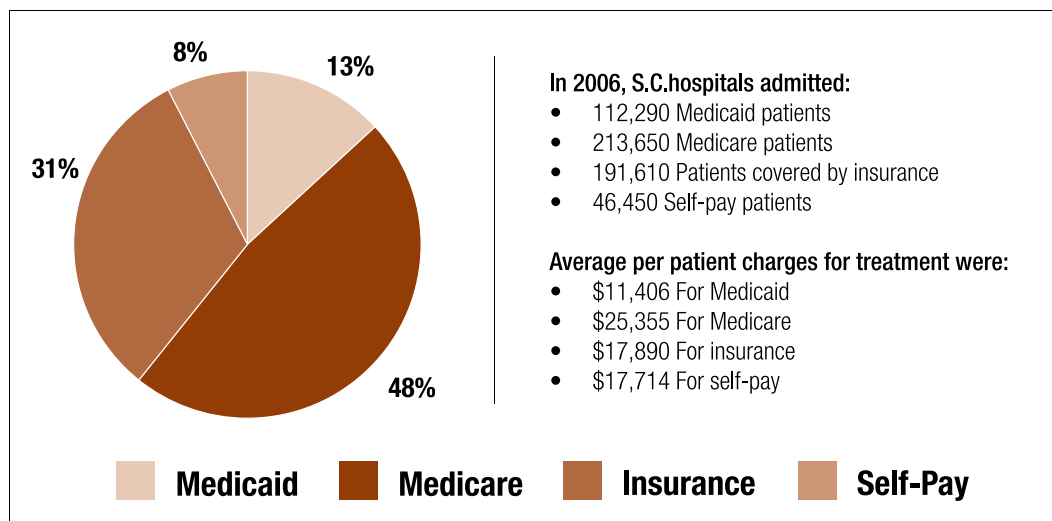
Almost one-half of patients admitted to Spartanburg County hospitals have Medicare as their primary source of health coverage (figure 11). Spartanburg health coverage data closely mirrors S.C. composite health coverage data (figure 12).

**Figure 11. Sources of Inpatient Funding, Spartanburg County, 2006**



*S.C. Office of Research and Statistics*

**Figure 12. Sources of Inpatient Funding, S.C. 2006**



*S.C. Office of Research and Statistics*

# Mortality

## The leading 10 causes of death (2005) in Spartanburg County for all ages are:

1. Cancer.....	22.6%
2. Heart Disease.....	22.1%
3. Accidents.....	6.6%
4. Stroke.....	6.3%
5. Chronic Lower Respiratory Disease.....	5.9%
6. Alzheimer's Disease.....	3.6%
7. Diabetes.....	2.8%
8. Influenza and Pneumonia.....	2.2%
9. Septicemia.....	1.7%
10. Chronic Liver Disease.....	1.6%

## The leading 10 causes of death (2005) in S.C. for all ages are:

1. Heart disease.....	24.2%
2. Malignant Neoplasms (cancer).....	22.3%
3. Cerebrovascular Disease (stroke).....	6.3%
4. Accidents.....	5.8%
5. Chronic Lower Respiratory Disease.....	5.1%
6. Alzheimer's Disease.....	3.4%
7. Diabetes Mellitus.....	3.1%
8. Nephritis, Nephrotic Syndrome, Nephrosis (kidney disease).....	2.1%
9. Influenza and Pneumonia.....	2.0%
10. Septicemia.....	1.6%

## These closely mirror national data for 2005 where the leading 10 causes of death for all ages are:

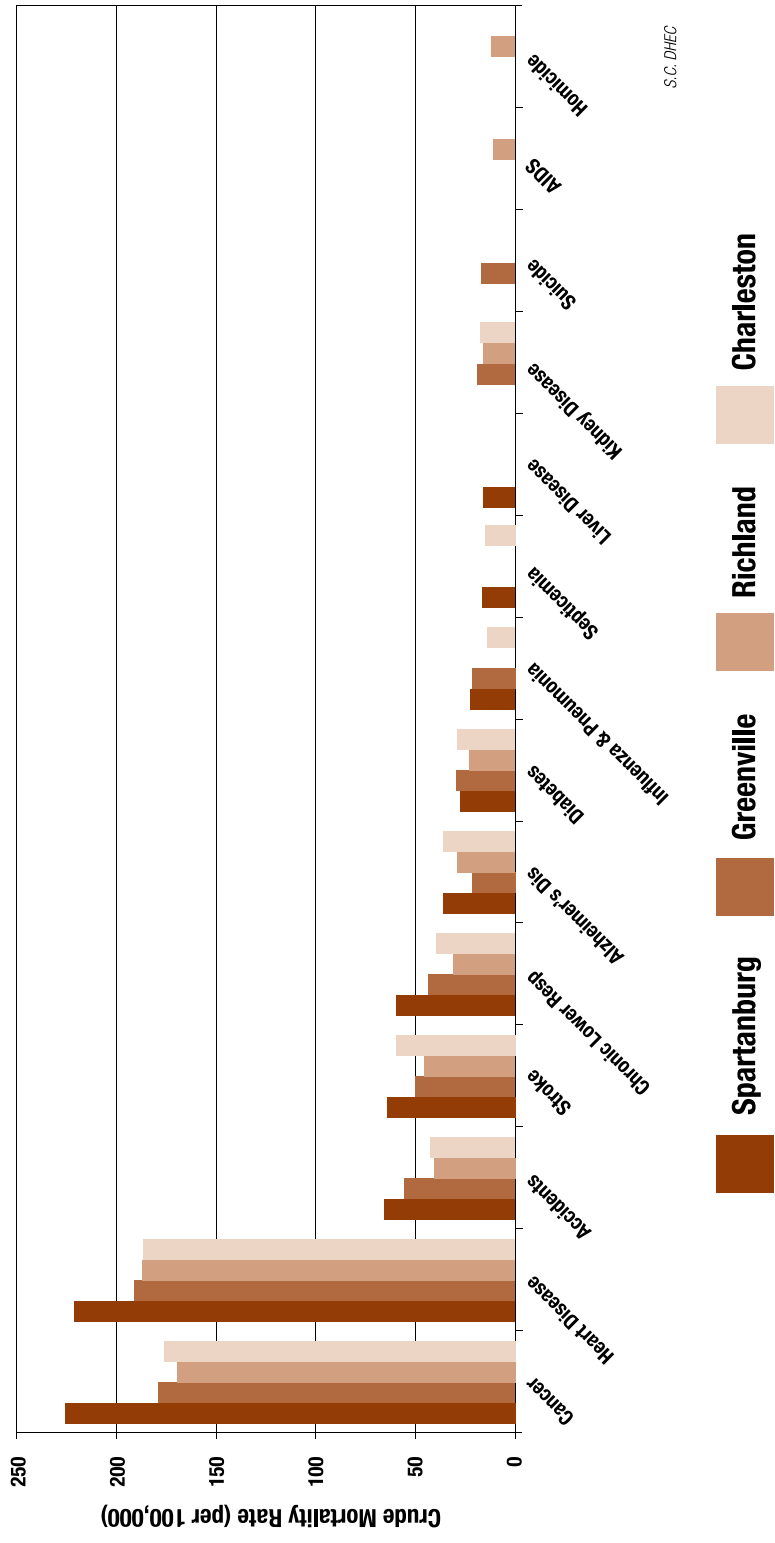
1. Heart disease.....	26.6%
2. Malignant Neoplasms (cancer).....	22.8%
3. Cerebrovascular Disease (stroke).....	5.9%
4. Chronic Lower Respiratory Disease.....	5.3%
5. Accidents.....	4.8%
6. Diabetes Mellitus.....	3.1%
7. Alzheimer's Disease.....	2.9%
8. Influenza and Pneumonia.....	2.6%
9. Nephritis, Nephrotic Syndrome, Nephrosis (kidney disease).....	1.8%
10. Septicemia.....	1.4%

## **Mortality** *(cont.)*

In 2004, Spartanburg County ranked 23rd of all S.C. counties for death rate. Peer counties had lower death rates with Richland ranking 44th, Greenville ranking 39th, and Charleston ranking 37th.

Causes of death differ significantly by age and differ somewhat by sex and race; however, crude mortality by peer county for 2005 (figure 13) indicates that heart disease is the leading cause of death in all peer counties except Spartanburg County, where cancer is the leading cause. All counties have the same top five leading causes of death, although they rank somewhat differently. Richland County includes AIDS and homicide in its 10 leading causes of death, Greenville includes suicide, and Spartanburg includes chronic liver disease.

Figure 13. Mortality Rates by Leading Causes, 2005



## Risk Factors For Chronic Health Conditions

Approximately 80% of medical expenditures are related to chronic disease. In 2005, the leading causes of death among South Carolinians were heart disease, cancer, stroke, accidents, chronic lower respiratory disease, Alzheimer's disease, diabetes, kidney disease, pneumonia and influenza, and septicemia. Most of these primary causes of mortality are related to chronic health conditions. Further, the Centers for Disease Control and Prevention have determined that 50% of an individual's health status is determined by behaviors, 20% is determined by genetics, 20% is determined by environment and 10% is determined by access to health care.

Almost one-fifth of residents of Spartanburg County report that their health is "fair or poor." Residents of peer counties report better health status (see Table 21).

<b>County</b>	<b>Respondents indicating their health is "fair or poor"</b>
Spartanburg	19.8%
Greenville	14.8%
Richland	15.5%
Charleston	9.4%

*S.C. BRFSS*

Primary and secondary prevention efforts target reduction of risk factors (primarily behavioral) that contribute to poor health, chronic health conditions, and death. Primarily, these risk factors are smoking, sedentary lifestyle, obesity and high cholesterol. Prevalence of these risk factors for Spartanburg County residents, compared with residents of peer counties and the state composite, is illustrated in Table 22.

	<b>Current Smoking</b>		<b>Sedentary Lifestyle</b>		<b>Overweight</b>		<b>High Cholesterol</b>	
	2005	2007	2005	2007	2005	2007	2005	2007
Spartanburg	23	22	28	26	64	65	39	39
Greenville	21	22	23	23	58	62	35	41
Richland	19	19	21	26	60	64	38	34
Charleston	20	23	25	20	59	61	38	39
S.C. Aggregate	22	22	26	25	65	65	37	39

*S.C. BRFSS*

In 2005, Spartanburg County residents had greater risk for chronic disease than residents of peer counties on every primary risk factor reported in Table 21. Further, Spartanburg County residents had slightly higher rates than the state rate for all but one (overweight) of the primary risk factors. In 2007, Spartanburg County residents had slightly decreased rates of smoking and sedentary lifestyle, but slightly increased rate of overweight. Although 2007 rates for risk factors were better than 2005 in comparison to peer counties, it can be concluded that Spartanburg County residents have generally greater morbidity and mortality from chronic diseases than most residents of S.C.

Subject matter experts have identified a “health crisis” rather than a “healthcare crisis.” They project that, if individuals increased their health-promoting behaviors, access to care would dramatically increase and cost would dramatically decrease.

Two other primary risk factors for chronic health conditions are especially pertinent to Spartanburg County – educational level and income. Both are strongly positively correlated with health status. That is, the higher the educational level, the better health status. Likewise, the higher the income, the better the health status.

**These factors alone are predictors for poor health status in Spartanburg County given that:**

- Spartanburg County ranks lowest among peer counties and the state and national averages for residents over 25 years of age who are high school graduates and for residents who are college graduates.
- Spartanburg ranks highest among peer counties for residents over 25 years of age with less than 9th grade education.
- Spartanburg County ranks lowest among peer counties for median family income.
- The median household income for Spartanburg County is lower than the state average and lower than all peer counties.
- Spartanburg County has the lowest per capita income of all comparison counties, lower in fact than the S.C. and U.S. averages.
- The percentage of children under 18 living in poverty was higher in Spartanburg County than in peer counties in 2004 and 2005.

## Oral Health

*Healthy People 2010* objectives for oral health include that for people age 35-44, at least 42% will have no permanent teeth extracted due to cavities or periodontal disease. Also, no more than 20% of people over age 65 will have had extraction of all natural teeth. As of 2001, S.C. BRFSS data showed 52.3% of people age 35-44 have had permanent teeth extracted due to cavities or periodontal disease and 25.3% of people over age 65 have had extraction of all natural teeth.

2006 BRFSS data for oral health (Table 23) indicates that respondents in Spartanburg County visited a dentist / dental clinic in the last 12 months at the lowest rate among peer counties. They had the highest rate of visits five years ago or longer. Almost 1% of Spartanburg County residents had never seen a dentist or been to a dental clinic. Respondents in Spartanburg County had lost more teeth to tooth decay than respondents in any of the other peer counties.

Table 23. BRFSS Survey Results for Oral Health, 2006					
How long has it been since you last visited a dentist or a dental clinic for any reason?					
	1-12 months	1-2 years	2-5 years	5+ years	Never
Spartanburg	62.3%	14.3%	11.1%	11.4%	0.9%
Greenville	71.5%	10.4%	8.9%	8.6%	0.7%
Richland	70.9%	14.1%	7.5%	7.1%	0.6%
Charleston	66.4%	13.6%	11.1%	7.8%	1.0%
S.C. Aggregate	64.3%	13.2%	11.2%	10.5%	0.8%
How many of your permanent teeth have been removed because of tooth decay?					
	1-5	6+	All	None	
Spartanburg	29.2%	13.7%	10.3%	46.8%	
Greenville	30.1%	12.4%	7.0%	50.5%	
Richland	28.5%	9.1%	4.1%	58.3%	
Charleston	29.4%	12.9%	4.2%	53.6%	
S.C. Aggregate	31.5%	13.3%	7.1%	48.2%	
S.C. BRFSS					

National data indicate that, in 2006, 76% of children ages 2-17 had a dental visit in the past year. This percentage has remained relatively constant since 1997, ranging from 73% to 76%. Among children living in families with incomes less than 200% of the poverty threshold, 68% had a dental visit in the past year, compared with 82% of children in families with incomes of 200% or more of the poverty threshold.

In 2007, patients sought treatment at the emergency center at Spartanburg Regional Healthcare System 942 times for primary diagnoses of dental disorders. In fact, dental disorders ranked 7th of the top diagnostic categories among self-pay emergency center patients from July 2006 to June 2007. Dental disorders ranked as the 5th largest diagnostic group for self-pay patients with at least 10 visits to the emergency center annually.

Demographically, of the 942 visits to the emergency center for dental disorders, 887 visits were by people 18 years of age or older with 40% being age 20-30. The largest payer group was self-pay patients (68%), indicating that most were not covered by dental insurance. The largest racial group represented was Caucasian (66%). These 942 visits represented \$357,045 in charges.

Subject Matter Experts in Spartanburg County indicate that there is not an identifiable source of dental care, such as a dental clinic, for low income families in Spartanburg County. Initiatives are, reportedly, underway to address this need. During school year 2007-2008, over 7,800 Spartanburg County kindergartners, second graders, and seventh graders were screened for dental problems through the Carol H. Drum Dental Screening Program. Of these children, 14% showed immediate need for dental intervention, 11% showed some suspicious areas, and 75% showed no apparent problems. This dental screening program is no longer operational due to cuts in state funding.

## Health Disparities

The National Institute of Health defines health disparities as “differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups in the United States.” Disparities in health exist when there are unequal burdens of disease among specific population groups, for example by race, gender, socioeconomic status, educational status, or geographic status. Research shows that the burden of disease for various health conditions is not borne equally by all population groups. Disparities are found in access to quality health care services, in the burden of diseases or complications from disease, and in the number of deaths from disease. Racial and ethnic minorities in S.C. suffer a disproportionate share of illness and early death. In order to improve the health status of all residents of S.C., health disparities must be reduced.

### In South Carolina:

- Hispanic women have the highest incidence of cervical cancer, although black women are more likely to die of the disease.
- Black men are more than twice as likely to die of heart disease as white men.
- Black women have 50% more strokes than white women.
- Black women have twice the chance of dying from cervical cancer than white women.
- Three times more black men than white men die of prostate cancer.
- Racial and ethnic minorities are more than two times more likely to experience diabetes than are white persons and are three times more likely to die from the disease.
- Racial and ethnic minority infants in S.C. are more than twice as likely to die before their first birthday as white babies.
- In the year 2000, blacks were over nine times more likely to be reported as having HIV/AIDS than were whites.
- Minority women, in particular black women, are nearly twice as likely to die of breast cancer, although the incidence is higher for white women.

## Health Disparities (cont.)

The following health conditions have been chosen as national targets, and have been adopted by S.C., for elimination of disparities by the year 2010 due to their long-standing differences in morbidity and mortality by race and ethnicity:

- Infant Mortality
- Cancer Screening and Management
- Cardiovascular Disease
- Diabetes
- HIV Infection/AIDS
- Immunizations

In Spartanburg County, marked health disparities by race are evident. These include:

- Mortality rates for heart disease
- Mortality rates for diabetes
- Infant mortality rates
- HIV / AIDS rates
- Stroke mortality rates
- Breast cancer incidence rates
- Breast cancer mortality rates

Trend data for these conditions are illustrated in figures 14 – 20, indicating that disparity by race is clear for each measure.

Figure 14. Heart Disease Mortality Rates (per 100,000 population), Spartanburg County

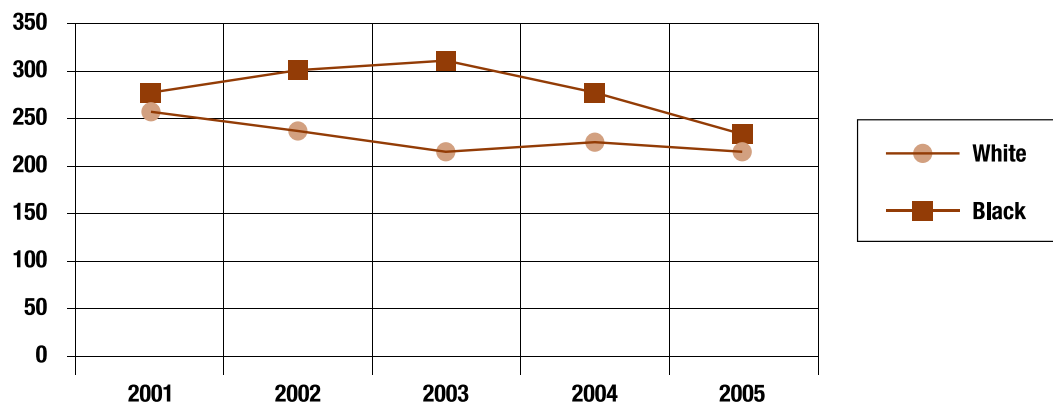


Figure 15. Stroke Mortality Rates (per 100,000 population), Spartanburg County

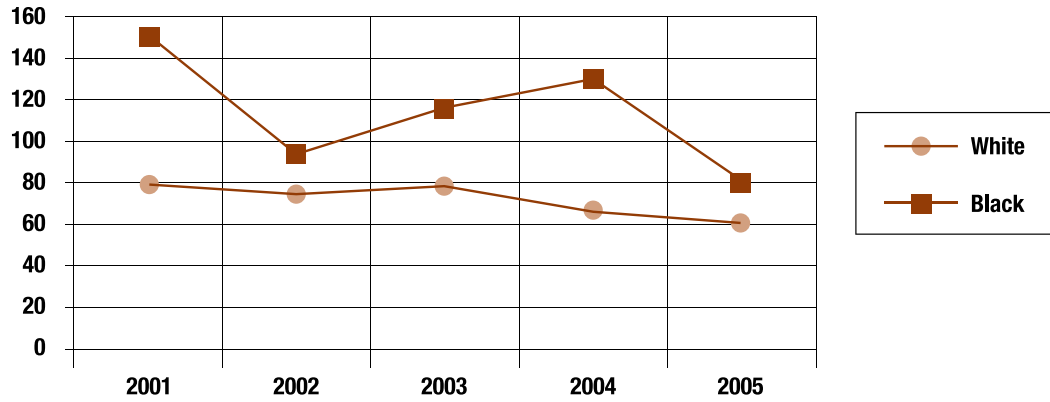


Figure 16. Infant Mortality Rates (per 1,000 population), Spartanburg County

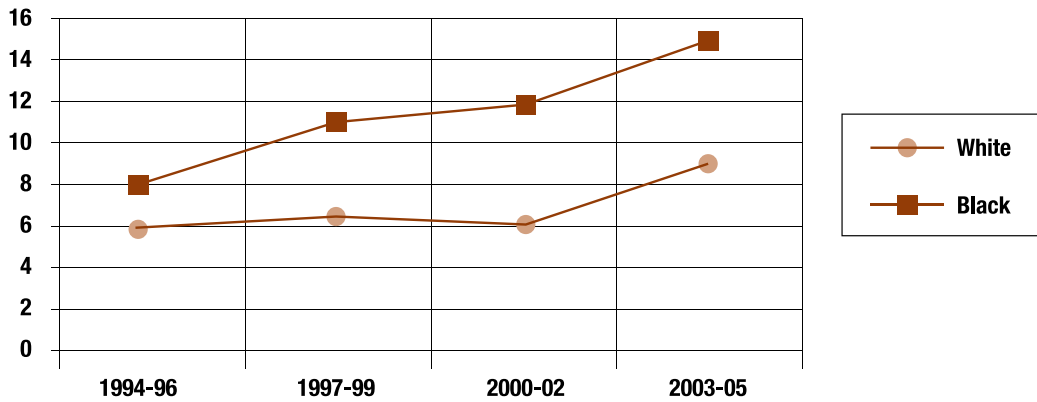
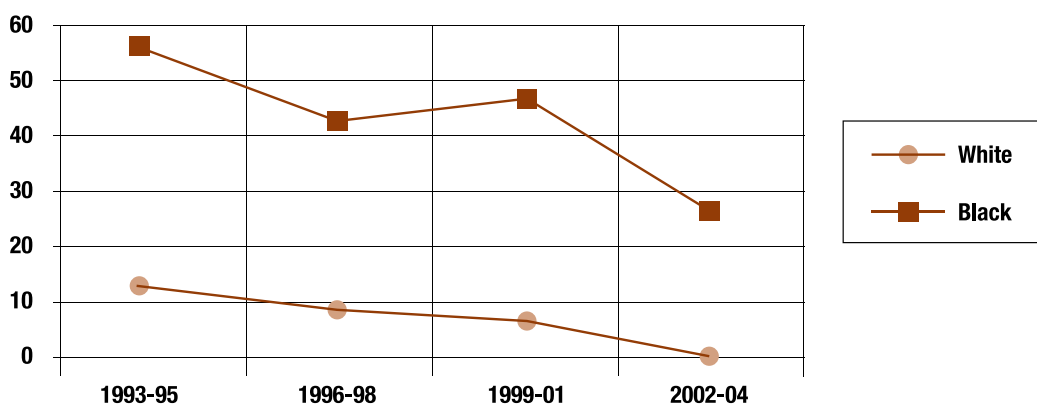


Figure 17. HIV/AIDS Incidence rates (per 100,000 population), Spartanburg



## Health Disparities (cont.)

Figure 18. Breast Cancer Mortality Rates (per 100,000 population), Spartanburg

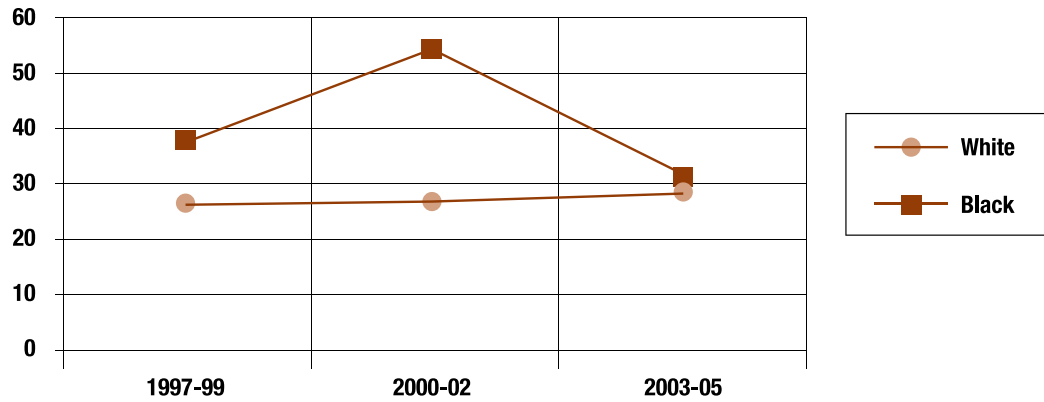


Figure 19. Breast Cancer Incidence Rates (per 100,000 population), Spartanburg

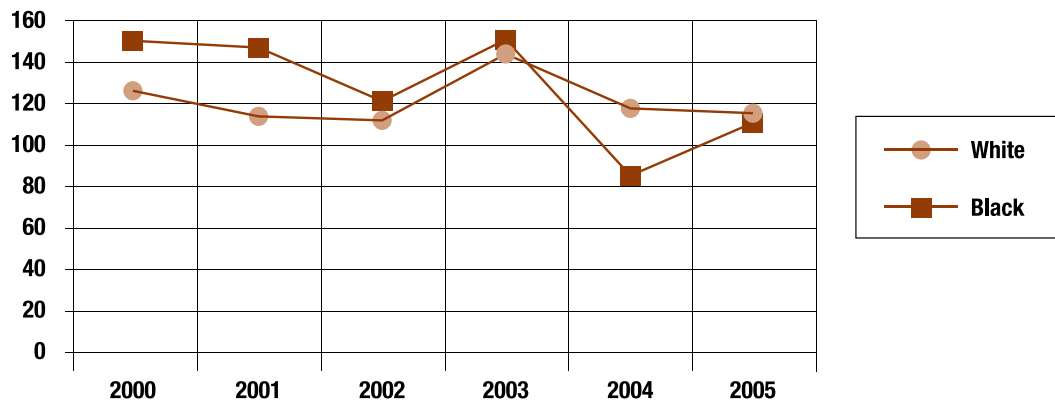
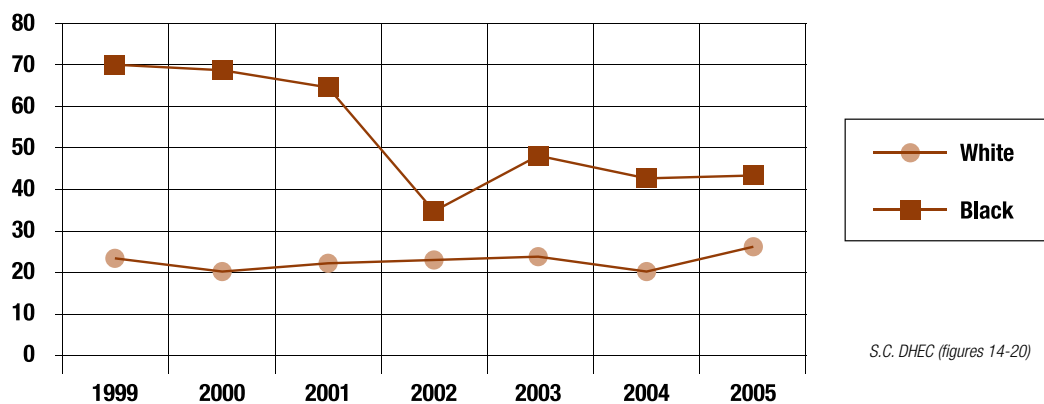


Figure 20. Diabetes Mortality Rates (per 100,000), Spartanburg



S.C. DHEC (figures 14-20)

## Teen Risk Behaviors

Teens in S.C. have a higher rate of death by accident, homicide and suicide, as well as by all causes, than teens nationally. Further, S.C. teens in all racial categories have higher death rates than their national counterparts (Table 24).

Table 24. S.C. Teen Deaths (Rate per 100,000)					
Deaths by Accident, Homicide, and Suicide					
2000	2001	2002	2003	2004	U.S. 2004
66	68	71	59	67	50
Deaths From All Causes					
	2002	2003	2004	2005	U.S. 2005
White			86	76	60
Black			76	86	84
Hispanic				210	67
<b>Total</b>	<b>93</b>	<b>82</b>	<b>86</b>	<b>84</b>	<b>65</b>

*S.C. Kids Count*

S.C. teens generally report high risk substance-related behaviors at rates comparable to those of their national counterparts (Table

Table 25. S.C. Teen Substance-Related Behaviors				
Cigarette Use in the Last Month				
	2002-03	2003-04	2004-05	U.S. 2004-05
Ages 12-17	12%	12%	12%	11%
Ages 18-25	43%	43%	42%	39%
Teen Binge Alcohol Drinking				
Ages 12-17	9%	9%	8%	10%
Ages 18-25	42%	39%	36%	42%
Marijuana Use				
Ages 12-17	7%	7%	6%	7%
Ages 18-25	16%	16%	14%	16%
Illicit Drug Use				
Ages 12-17	5%	5%	5%	5%
Ages 18-25	9%	9%	9%	8%

*S.C. Kids Count*

## Teen Risk Behaviors (cont.)

The Centers for Disease Control and Prevention (CDC) administers the Youth Risk Behavior Surveillance Survey (YRBS) every two years to approximately 14,000 public and private high school students nationwide. The survey monitors priority health risk behaviors that contribute to the leading causes of death, disability and social problems among youth and adults in the U.S. Because Spartanburg County schools have consistently opted not to participate in this survey, no point or trend data are available for the county. Therefore, there is no accurate way to compare risk behaviors of Spartanburg youth to those of youth in peer counties or nationwide. National findings from the 2007 YRBS (see Table 26) indicate no change from 2005 – 2007 in most categories measured.

<b>Table 26. National Trends in the Prevalence of Selected Risk Behaviors for All Students, 1991-2007</b>		
	<b>Changes from 1991-2007</b>	<b>Changes from 2005-2007</b>
<b>Rarely or never wore a seat belt</b> (when riding in a car driven by someone else)	Decreased	No Change
<b>Ride with a driver who had been drinking alcohol</b> (one or more times during 30 days prior to survey)	Decreased	No Change
<b>Carried a weapon</b> (on at least 1 day during 30 days prior to survey)	Decreased '91-'99 No Change '99-'07	No Change
<b>Did not go to school because felt unsafe at school or to or from school</b> (on at least 1 day during 30 days prior to survey)	Increased '93-'07	No Change
<b>Attempted suicide</b> (one or more times during 12 months prior to survey)	No Change '91-'01 Decreased '01-'07	Decreased
<b>Current cigarette use</b> (smoked on at least one day during 30 days prior to survey)	Increased '91-'97 Decreased '97-'07	No Change
<b>Current alcohol use</b> (had at least one drink on at least one day during 30 days prior to survey)	No Change '91-'99 Decreased '99-'07	No Change
<b>Current marijuana use</b> (used one or more times during 30 days prior to survey)	Increased '91-'99 Decreased '99-'07	No Change
<b>Lifetime methamphetamine use</b> (used one or more times during lifetime)	No Change '99-'01 Decreased '01-'07	No Change
<b>Ever had sexual intercourse</b> (in lifetime)	Decreased '91-'07	No Change
<b>Had sexual intercourse with four or more persons during lifetime</b>	Decreased '91-'07	No Change
<b>Used condom during last sexual intercourse</b> (among students currently sexually active)	Increased '91-'03 No change '03-'07	No Change
<b>Ever taught in school about AIDS or HIV infection</b>	Increased '91-'07 Decreased '97-'07	No Change
<b>Attended physical education classes daily</b> (5 days in an average week while in school)	Decreased '91-'07 No Change '95-'07	No Change
<b>Were obese</b> (students greater than or equal to 95th percentile for body mass index)	Increased '99-'07	No Change
YRBSS		

**In almost every category, nationally and by state, males exhibit higher rates of risk behaviors.  
Select indicators for S.C. demonstrate that:**

- The obesity rate among students has climbed annually since 1999 to 12.2% for females and 16.6% for males in 2007
- Percentages of students who are overweight have climbed annually from 1999 to 2007 to 18.9% for females and 15.3% for males
- Percentages of students who were physically active at recommended rates increased between 2005 and 2007 to 38.0% (30.7% for females and 45.1% for males)
- Condom use in students who are currently sexually active has increased annually from 1991 to 2007 to 62.4%
- Percentages of students who have ever had sexual intercourse have fluctuated annually from 1991 to 2007, ranging between 66.2% and 51.5% with a generally declining trend
- Percentages of students who had sexual intercourse for the first time before age 13 have fluctuated annually from 1991 to 2007, ranging between 21.5% and 9.2% with a generally declining trend
- Marijuana use among students has fluctuated annually from 1991 to 2007, ranging between 12.2% and 26.5% and is currently on the decline at 18.6%
- Alcohol use among students from 1991 to 2007 has remained fairly stable; however, there has been a sharp decline from 2005 (43.2%) to 2007 (36.8%)
- Smoking among students has ranged between 18.2% in 1997 to 8.1% in 2007. Since 1991 there has been fluctuation in smoking rates
- Percentages of students who carry weapons have declined annually from 1991 to 2007 from 31.3% to 19.8%
- Percentages of students who carry weapons on school property have also declined annually from 1993 to 2007 from 14.3% to 4.8%
- Percentages of students who have seriously considered attempting suicide have fluctuated between 25.6% to 14.9% from 1991 to 2007 with a generally decreasing trend
- Percentages of students who drink and drive have fluctuated annually from 1991 to 2007 from 17.3% to 9.9% with a generally declining trend
- Percentages of students who ride in a vehicle driven by someone who has been drinking have generally declined from 1991 to 2007 to 26.3%
- The percentage of students who wear seatbelts has increased annually since 1993 with 9.7% reporting that they never wear seat belts when riding in a car driven by someone else
- As of 2007, 17.1% of students report that they eat the recommended number of servings of fruits and vegetables per day

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[www.childstats.gov/americaschildren](http://www.childstats.gov/americaschildren)

### **National Center for Health Statistics**

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[www.cdc.gov/yrbss](http://www.cdc.gov/yrbss)

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# Appendices

## Goal 5 Indicators

Because Spartanburg is a dynamic community, the issues that impact the growth, health and quality of life for its citizens are in flux. Since the 2005 iteration of the *Community Indicators VI: Strategic Spartanburg* report was presented to the community, it has become necessary or beneficial to change a number of the indicators for various goals. The rationale for changes in indicators for Goal 5 of the Community Indicators project is provided below. The Subject Matter Experts who have advised on these changes were Spartanburg County professionals who work in fields directly related to health and health care. A number of indicators were added to provide a more comprehensive picture of the status of health in Spartanburg County. In the current iteration, demographic data by race and gender were included for a number of indicators, and peer county data were provided for comparison for most indicators. Generally, indicators were broadened to include more variables and more data.

Indicators for Goal 5	
Community Indicators VI	Current Iteration
Low Birthweight	Reported under "Birthweight"
Very Low Birthweight	Reported under "Birthweight"
Immunizations (at age 2)	Maintained
Infant Mortality	Maintained
Hospitalization Rates (Heart Disease, Cancer, Stroke, Diabetes)	Maintained and expanded to include costs and length of stay
HIV / AIDS Frequency Rates	Maintained and expanded to include morbidity and mortality data
Sexually Transmitted Infection (STI) Rates	Maintained as "sexually responsible behavior"
Oral Health	Maintained
Drug & Alcohol Admissions	Maintained and expanded as "Substance Abuse"
Teen Risk Behaviors	Maintained
Mental Health	Maintained
Overweight and Obesity	Maintained
	Added: Adult Immunizations
	Added: Prenatal Care
	Added: Access to Health Care
	Added: Physical Activity
	Added: Health Disparities
	Added: Hospitalizations
	Added: Mortality
	Added: Tobacco Use
	Added: Risk Factors for Chronic Health Conditions

## Appendices *(cont.)*

### Subject Matter Experts' Recommendations for Improving Health and Healthcare in Spartanburg County:

#### Mental Health:

- Increase the number of psychiatric beds in the state mental health system, giving special attention to pediatric and geriatric issues
- Address the state's shortage of behavioral health professionals
- Increase access to crisis stabilization services in local communities
- Seek mental health parity
- Improve coordination of services at the local level
- Streamline the process for handling behavioral health patients
- Improve funding of the behavioral health system

#### Other:

- Home health programs should be developed to address the special needs of NICU babies for months to several years

## Acknowledgments

The collaborators of the Spartanburg Community Indicators Project would like to thank the following subject matter experts for their invaluable suggestions, feedback, and help in the collection of data included in this report:

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Sincerely,



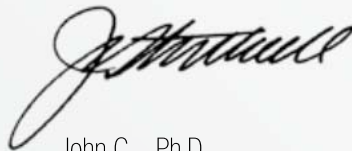
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The University of South Carolina Upstate

Spartanburg Community Indicators Project is a collaboration of The Spartanburg County Foundation, United Way of the Piedmont, Spartanburg County Government, and The University of South Carolina Upstate. It reports on progress of key issues that are the clearest indicators of quality of life in the County of Spartanburg, South Carolina. Its goal is to report on data and community initiatives to inspire dialogue and strategy that leads to change within the community.

[www.StrategicSpartanburg.org](http://www.StrategicSpartanburg.org)