Soin Medical Center
Community Health Needs Assessment

SOIN
Medical Center
KETTERING HEALTH NETWORK

Table of Contents

Figures

Introduction

Soin Medical Center is partnering with member hospitals of the Greater Dayton Area Hospital Association and Wright State University to prepare our Community Health Needs Assessment. Each partner has invested resources and significant time in gathering information to form this Community Health Needs Assessment.

After describing the service area, this report provides a demographic and socioeconomic status analysis as a backdrop for the analysis of community health needs. It concludes with a presentation of priority health concerns. The report also addresses the methodologies used and the data limitations.

A community health needs assessment engages community members and partners to collect and analyze health-related data from many sources. The findings of the assessment inform community decision-making, the prioritization of health problems, and implementation strategies.

How to Read This Report

Data in this report are organized into topical areas, which can be located by referring to the table of contents. The report begins with a description of the Soin Medical Center service area, providing a basic overview of the Hospital's geographic location followed by its socio-economic makeup. The assessment defines the term "health" broadly to include health care access, maternal and infant health, behavioral health, clinical care, diseases, mental and behavioral health, and substance abuse.

This report compiles primary and secondary data in order to paint a detailed picture of the Soin Medical Center Service Area. Primary data are data collected from first-hand experience, commonly through surveys. In this case, we rely upon the Behavioral Risk Factor Surveillance System (BRFSS) survey of 975 Greene County adults. Secondary data is reprocessing and reusing information that has already been collected such as institutional records from sources such as hospitals and the Ohio Department of Health. Aggregate hospital ICD-9 emergency department and hospital inpatient discharge diagnoses data were obtained from the Ohio Hospital Association via the Greater Dayton Area Hospital Association. Cancer data and vital statistics were obtained from the Ohio Department of Health. Other data were obtained from national sources such as the Health Resources and Services Administration (HRSA), the Bureau of the Census, and the Robert Wood Johnson Foundation; and other state sources such as the Ohio Development Services Agency. The framework for the report was based on key areas of need. The report, in some cases, compares the service area's status to state and/or national data where possible, drawing out critical areas of concern. Narrative and graphics are used to highlight key findings. The report culminates in the presentation of priority needs for the hospital's service area.

Definition of the Community Served

The primary service area for Soin Medical Center is defined as Greene County, which is located in West Ohio. The population was 161,573 in 2010 and the population is expected to remain flat to 2040. The largest employer, by far, in this County is the government sector (with 27,254 jobs) due to Wright-Patterson Air Force Base (AFB), whose employment is primarily attributed to Greene County even though the base extends into Montgomery and Greene counties essentially. Wright-Patterson AFB hosts its own Medical Center. Wright-Patterson Medical Center is a Joint Commission on Accreditation of Healthcare Organizations accredited 301-bed, multispecialty facility. It is designated the lead agent medical treatment facility for TRICARE Region North.

Another major industry in the County is the education industry. While secondary sources point to private educational services jobs of 3,500, there are thousands more public education jobs in the County due to the presence of Antioch College & Antioch University Midwest, Cedarville University, Central State University, Wilberforce University, and Wright State University, along with Clark State Community College. While the employment in this sector is sizable, the number of students hosted is quite large with 17,600 students at Wright State University alone in 2013.

The next two largest sectors are the retail and professional/scientific and technical services industries with 12,051 and 10,179 jobs, respectively.

The characteristics of the County are generally a younger population (the median age in Greene County is 36.9 likely impacted by the large college student body), and a slightly more racially diverse county than many in West Ohio. Seven percent (7%) of the population is African American, 3% percent is Asian and another nearly 5% is other minority populations.
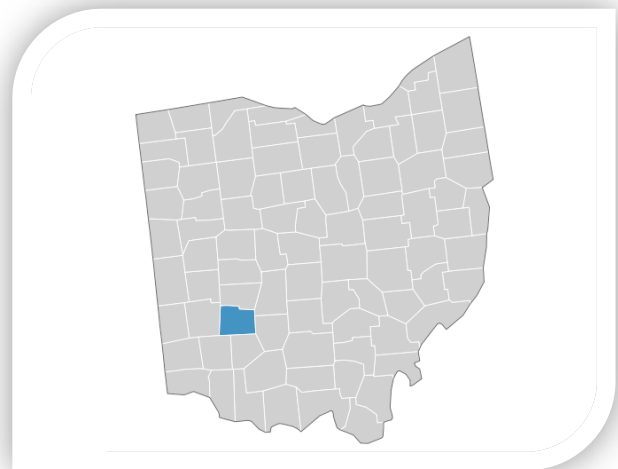
Consulting Persons and Organizations

Partners in the data review process and in the process for identifying and prioritizing community health needs and services are the Board of Trustees and executive leadership of Soin Medical Center, community health collaboratives featuring community, health, and business stakeholders/advocates organized by both Soin Medical Center, and the Greater Dayton Area Hospital Association with its member hospitals.

Demographics of the Community

Characteristics of the Population

Figure 1: Population Trends, 2010-2040
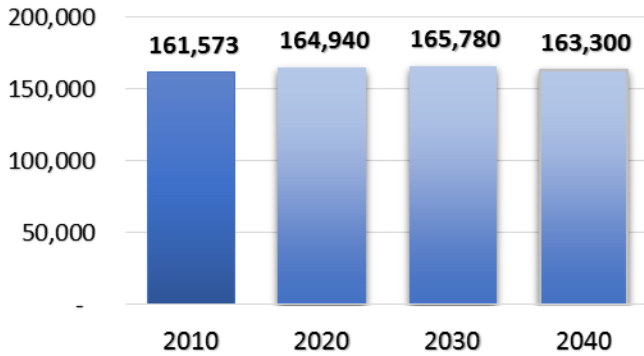
Figure 2: Age, 2011
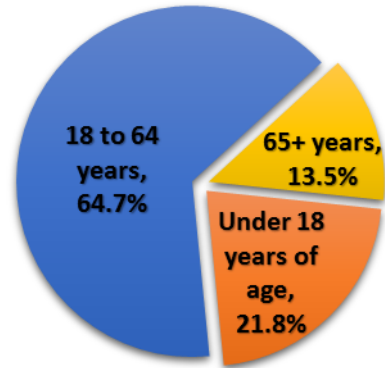
Figure 3: Race, 2011
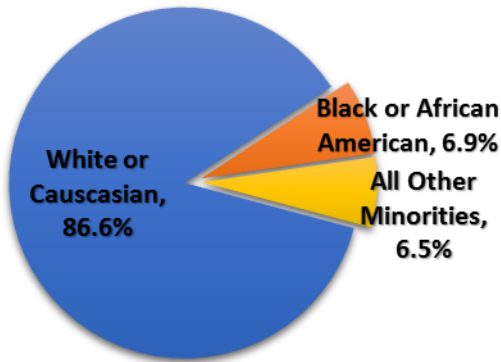
The population of Greene County is expected to remain relatively stable through the year 2040, increasing approximately 1%. The racial composition of the county is mainly White or Caucasian, with African Americans comprising 6.9% and other minorities comprising 6.5%. The senior population (adults age 65+) is expected to increase from 13.5% in 2010 to 21% by 2030. Approximately 10% of households are children living with a single parent; however the majority of households are without children. More than two-thirds of occupied housing units are owned.

Source: U.S. Census Bureau, 2007-2011 American Community Survey

Figure 4: Household Type
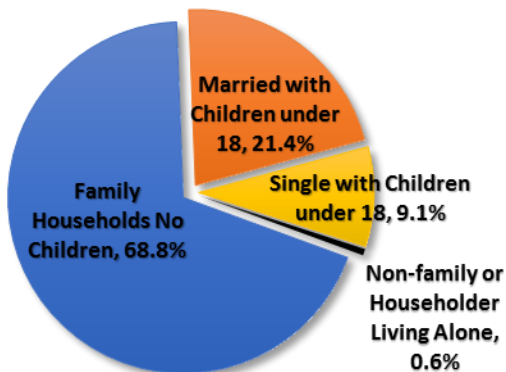
Figure 5: Senior Population Projections
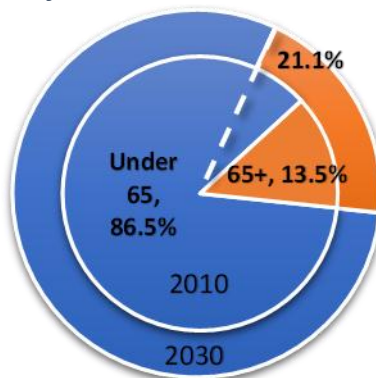
Figure 6: Occupied Housing Units
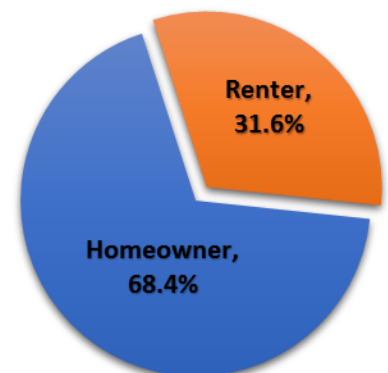
Figure 7: Educational Attainment for the Population 25 Years of Age & Older, 2011
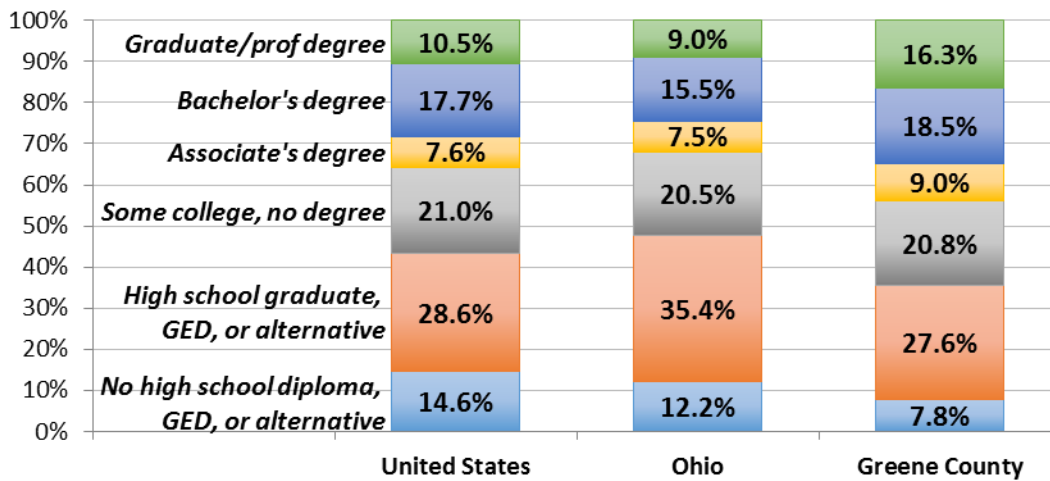
Figure 8: Median & Per Capita Income, 2011
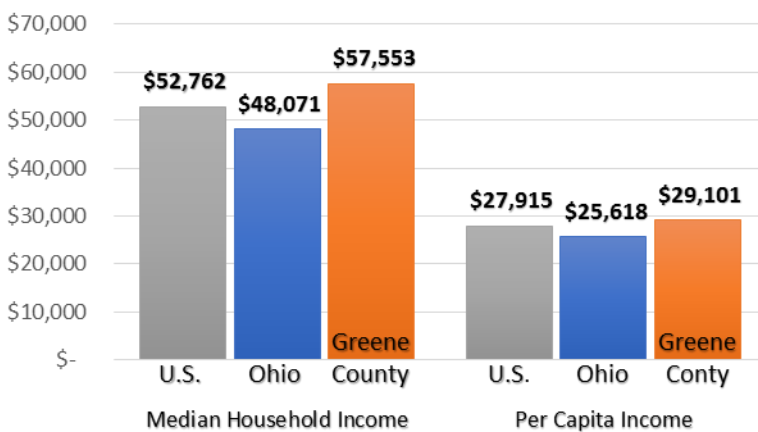
A higher percentage of adults in this region have a higher education degree when compared to the State or the U.S. (43.8% versus 32% or 35.8%, respectively). Median household income is higher in Greene County compared to the State or the U.S. The percentage of the population below the poverty level is lower than the State percentage for all age cohorts.

Source: U.S. Census Bureau, 2007-2011 American Community Survey

Figure 9: Percentage of the Population below the Poverty, 2011
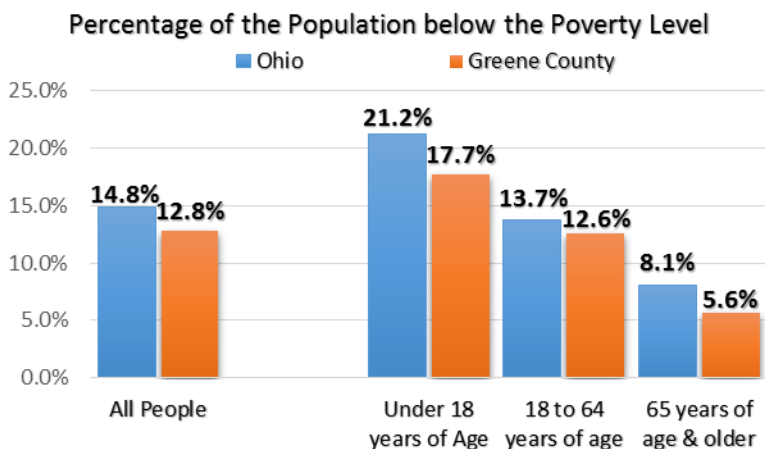
Health Care Facilities and Resources within the Community

This service area's health care infrastructure is comprised of 2 hospitals and both are short-term general hospitals, 11 state licensed nursing homes, seven state licensed residential care facilities, two hospice centers, three state licensed ambulatory surgery facilities, and three state licensed dialysis centers, and one birthing center, per the Ohio Department of Health. The public health agency—the Greene County Combined Health District—offers many services such as environmental health services, community health services (addressing such health concerns as diabetes, STDs, and tuberculosis control), child and maternal health services (such as the WIC program), among other services. The chart below presents information about the health care and hospital capacity from the Health Resources and Services Administration and the Ohio Department of Health.

Primary Care Physicians	137
PCP Physician/100K Pop	84.1
General/Family Practice	74
General/Family/100K Pop	45.4
Internal Medicine	43
Internal Medicine/100K Pop	26.4
Pediatricians	20
Pediatricians/100K Pop	46.9

Obstetricians/Gynecologists	10
OB/GYN /100K Pop	12

General Surgeons	17
General Surgeons/100K Pop	10.4

Source: Health Resources and Services Administration, Health Resources Comparison Tool, http://arf.hrsa.gov/arfdashboard/HRCT.aspx, last accessed 11/12/2013 (except where noted)

Psychiatrists	14
Psychiatrists/100K Pop	8.6

Dentists	103
Dentist/100K Pop	63.7

Hospitals	
Total Hospitals	2
Total Hospital Beds	170
Short-Term General Hospitals	2
STG Beds	170

*Source: Ohio Department of Health, Health Care Provider Report & Information Extract, last accessed 1/12/2013

Health Centers	
Community Health Centers	0
Federally Qualified Health Centers	0

Short-term Acute Care General Hospitals		
	Registered Beds	Soin Medical Center
Special Care	20	12
Medical /Surgical-General	133	71
Psychiatric		
Physical Rehabilitation		
OB Level I	16	16
Subtotal	169	99
Neo Level I		
Neo level II	28	28
Subtotal	28	28
Total	197	127

Source: Ohio Department of Health, Health Care Provider Report & Information Extract, http://publicapps.odh.ohio.gov/eid/reports/EID_Report_Criteria.aspx, last accessed 11/12/2013.

Hospital

The Indu and Raj Soin Medical Center opened in 2012 in Beavercreek as part of the Kettering Health Network. It originally opened with 100 beds, and in 2013 completed its fourth floor and added 31 additional beds. A medical office building (MOB) opened in late 2012, and, recently, the hospital's cancer center opened in the MOB as well. The hospital's expansion comes amid growth in demand, particularly for its surgical services and its emergency treatment center.

Soin's current services also include emergency and trauma (Level III) treatment, a birthing center and mother-baby care, heart and vascular care (an accredited Chest Pain Center), surgery (including robotic), intensive care, and a full array of medical imaging and outpatient services.

The medical center is accredited by the American Osteopathic Association's Healthcare Facilities Accreditation Program.

Clinics

Greene County has no HRSA defined community health centers. The Greene County Combined Health District does offer a child and adolescent health clinic, dental clinic, flu clinic, immunizations, prenatal clinic, and a reproductive health and wellness clinic.

Child and Adolescent Health Clinic offers physical exams, nutrition assessment and counseling, psycho/social assessment and counseling, parenting guidance, developmental screening, childhood immunizations, vision/hearing/speech screening, lab screenings. All charges are subject to a sliding fee scale based on income and family size. No one will be denied service due to inability to pay. Medicaid is accepted.

Community Dental Program provides clinical and preventive services for low income adults and children residing in Greene County. Basic dental services provided include exams, x-rays, cleanings, fillings, extractions (pulling teeth), and some root canals. Fees are determined by a sliding-fee, which is determined by family size and income. Medicaid and private insurance are also accepted.

Specialty Flu Clinics

Immunizations are offered to adults and children on Tuesdays and selected Thursdays.

Prenatal Clinic offers comprehensive prenatal and postpartum care

Reproductive Health and Wellness Clinic offers walk-in pregnancy tests, counseling and referrals; comprehensive physical exam that includes a PAP, pelvic, clinical breast exam and appropriate vaccinations; education and counseling to determine appropriate birth control method; and sexually transmitted infection (STI) & HIV/Aids testing and counseling.

Mental Health Care Capacity

Greene County is part of a three-county board - the Mental Health & Recovery Board of Clark, Greene and Madison Counties (MHRB)[1]. In Greene County, MHRB provided service to more than 3,588 individuals, to date, at a system-wide cost of $4 million in fiscal year 2013.

In 1988 Ohio passed the "Mental Health Act" which stressed the importance of community treatment rather than institutionalization. Community Mental Health Boards received even more authority to plan and develop local systems of care.

In 1989, Ohio recognized that a cabinet level department and local community control could best serve the recovery needs of Ohioans with alcohol and/or other drug addictions. Counties throughout Ohio reengineered their existing Community Mental Health Boards to also plan and oversee alcohol and other drug services.

Through a network of 21 agencies, MHRB provides mental health and recovery support to families, adults and children. The member agencies provided mental health services to about 2,500 Clark, Greene and Madison County adults and children in 2011 which was an average number for each of the years 2009, 2010, and 2011. State funding for mental health services has declined since 2009 and today local levies provide about 70% of the Board's revenue. While billings for mental health services declined 6.8% from 2009 to 2011, the number of people receiving mental health services increased 2.9%. In Greene County, MHRB provided mental health services to 2,174 individuals, to date, at a system-wide cost of $2.3 million in fiscal year 2013.Other services provided include the availability of transportation, housing, child-care, education and employment training that help to ensure both accessibility to treatment and support in achieving and maintaining recovery and improved quality-of-life.

Regarding alcohol and drug abuse services, prevention of substance abuse is also a high priority for MHRB. Services are targeted at youth from preschool to 20 years of age, and for adults that are identified through courts, agencies and other resources. About 91% of clients served are adults and 9% are youth. From 2009-2011, billings increased 29.9% due to the State establishing fee schedules and the local providers having charged substantially lower fees than the State mandated fee amounts. The number of clients served from 2009 to 2011 declined by 11.7%, which underscores the cost pressures on this system. In Greene County, MHRB provided alcohol and other drug services to 1,414 individuals, to date, at a system-wide cost of $1.8 million in fiscal year 2013.

The chart below presents the general trend of Greene County residents (unduplicated clients) seeking treatment from MHRB for alcohol and other drug dependence. The number of individuals seeking treatment for marijuana and alcohol dependence has declined from 2009-2013 (19.0% and 39.7%, respectively), while the number of individuals seeking treatment for opioid dependency over the 4-year period has increased 19% (2013 data is only a partial year).

---

[1] Note: These MHRB statistics do not include private service providers or those who use self-pay.

Unduplicated Clients by Substance, 2009-2013
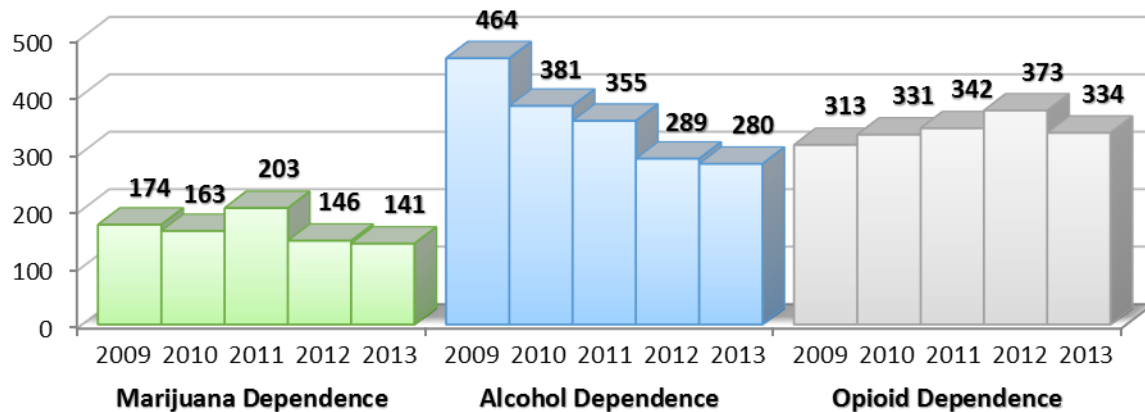
Source: MHRB of Clark, Greene, and Madison Counties

Access to Care

The distribution of health insurance coverage in the service area has some differences when compared to the State and the nation (see the figure below). At the local, state and national levels, a higher percentage of adults are covered by employer-based or TRICARE health insurance. Wright-Patterson Air Force Base, located in Southwest Ohio, is one of the largest bases in the Air Force; TRICARE® is the health care program serving Uniformed Service members, retirees and their families. In Greene County, there is a higher proportion of combinations of coverage than at the State or national levels. The service area has a lower percentage of adults with no health coverage as compared to the State and nation.

Figure 10: Medical Insurance Coverage for the Population 18 Years of Age and Older, 2009-2011

Medical Insurance Coverage for the Population over the Age of 18, 2009-2011
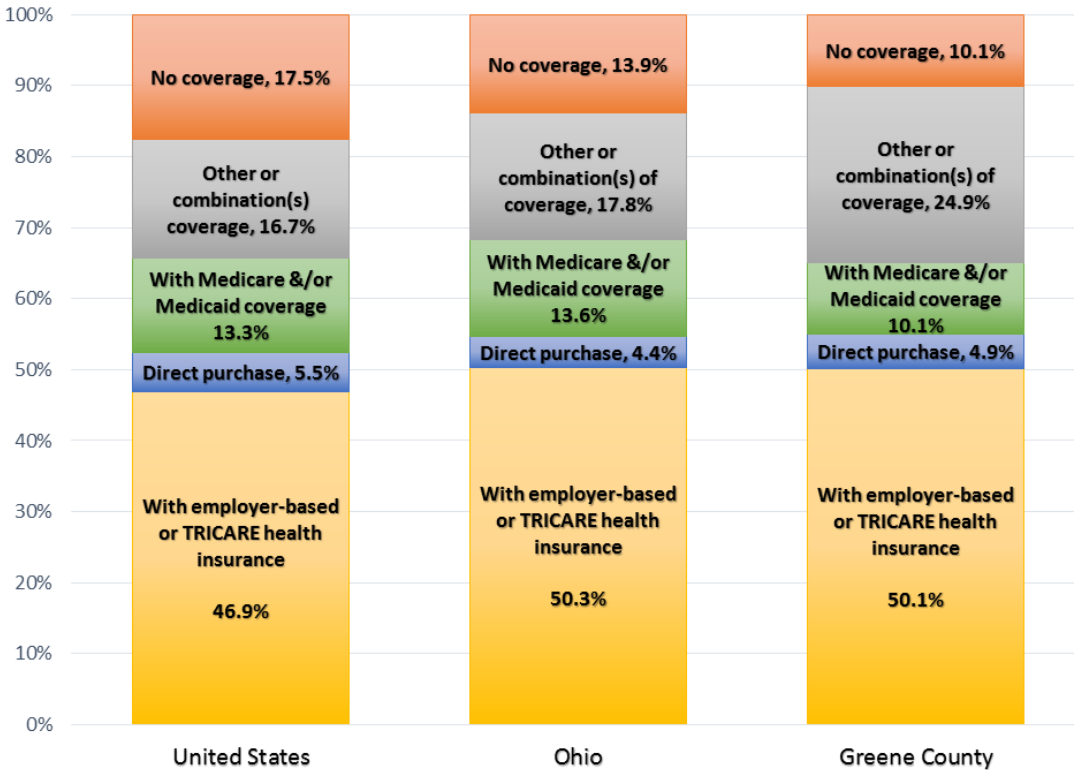
Source: US Census American Community Survey, 2009-2011

The figure below presents the distribution of health care coverage across different age cohorts. About 16% of the service area's young adult population (18-34 years old) has no health insurance coverage.

Figure 11: Comparison of Insurance Coverage for Adults (18 Years of Age or Older) by Age Cohort, 2009-2011

Insurance Coverage by Age for Greene County Adults, 2009-2011
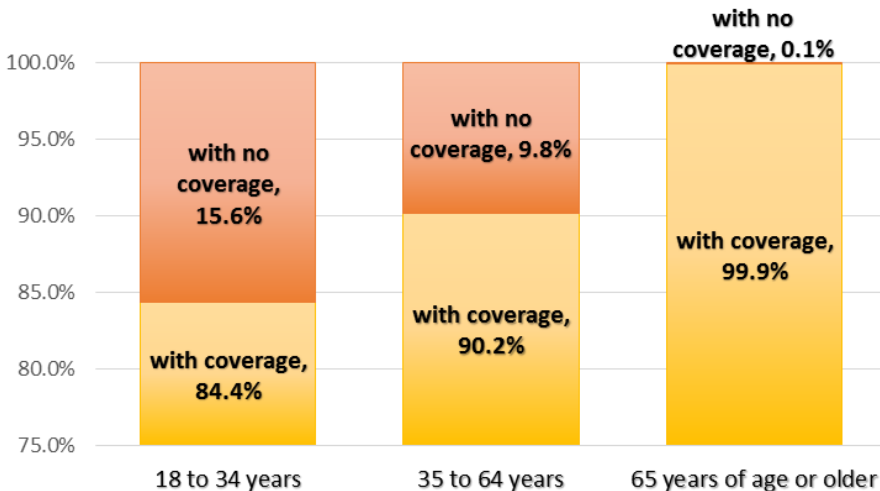
Source: US Census American Community Survey, 2009-2011

Health Needs of the Community

County Health Rankings

	Greene County	Ohio	National Benchmark	National Median	Rank of 88
HEALTH OUTCOMES					14
Maternal and Infant Health					
Teen Pregnancy (per 1,000)	19	38	21		
Low Birth Weight	8.1%	8.6%	6.0%		
Percentage of pregnant mothers who smoked	14.7%	17.8%	1.4%		
Percent of Mothers without 1st trimester care	46.0%	43.6%	22.1%		
Behavioral Risk Factors					8
Adult smoking	17%	22%	13%		
Adult overweight/obesity*	70.3%	65.7%		64.5%	
Physical inactivity	23%	27%	21%		
Excessive drinking	13%	18%	7%		
Motor vehicle crash death rate	9	11	10		
Chlamydia Rate	297.7	461.7	10% reduction		
Gonorrhea Rate	69.3	143.5	10% reduction		
Clinical Care					9
Uninsured	12%	14%	11%		
Primary care physicians	1,243:1	1,348:1	1,067:1		
Dentists	1,420:1	1,928:1	1,516:1		
Mental health providers	1,539:1	2,553:1	Not available		
Preventable hospital stays	51	79	47		
Diabetic screening	77%	83%	90%		
Mammography screening	56%	63%	73%		
Disease					12
Poor or fair health	12%	15%	10%		
Poor physical health days	2.6	3.6	2.6		
High blood pressure*	32.9%	31.7%		28.7%	
Blood cholesterol*	40.1%	33.9%		37.5%	
Heart Attack (myocardial infarction)*	5.5%	4.3%		4.2%	
Coronary heart disease*	7.6%	4.3%		4.1%	
Leading Causes of Death					21
Premature Death	317	430	378		

Source: Robert Wood Johnson Foundation; ◊ Different data than is presented on ODH website
* Greene County Community Health Assessment, conducted by Wright State University, 2008 and 2012

Maternal and Infant Health

Teen Birth Rates

Consistent with the State's trend, Greene County's teen birth rate is on the decline and remains lower than the State.

Figure 12: Teen Birth Rate
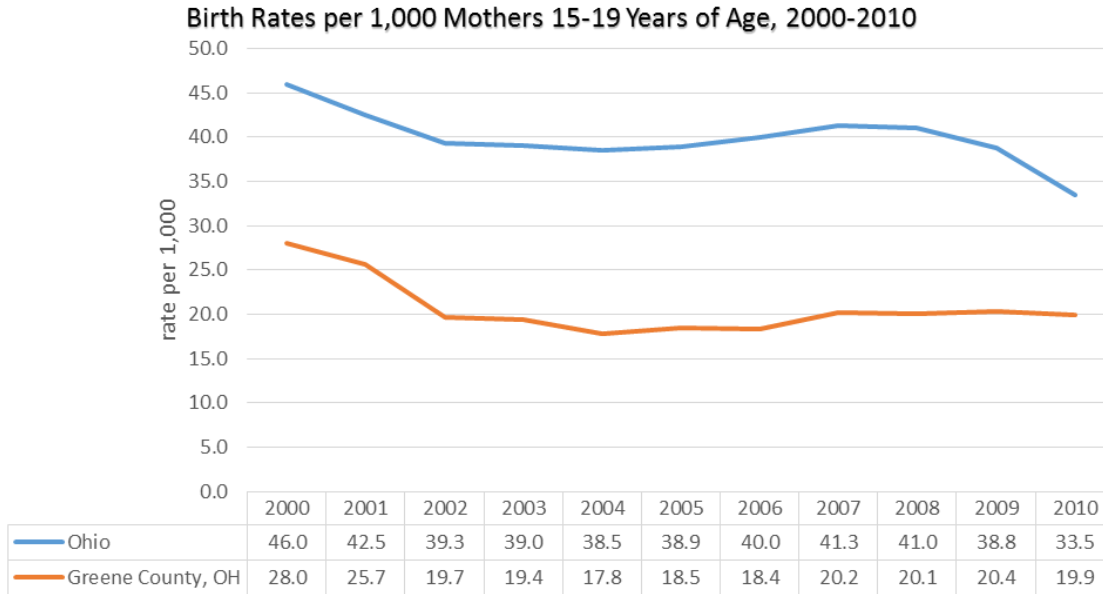
Birth Rates per 1,000 Mothers 15-19 Years of Age, 2000-2010

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Ohio	46.0	42.5	39.3	39.0	38.5	38.9	40.0	41.3	41.0	38.8	33.5
Greene County, OH	28.0	25.7	19.7	19.4	17.8	18.5	18.4	20.2	20.1	20.4	19.9

Source: 2000-2010, Ohio Department of Health, Vital statistics annual birth summaries. Last updated 05/24/2013.

Births to Unwed Mothers

In Greene County, the percentage of births to unwed mothers also follows the State trend and has risen over the past ten years. However, Greene County's percentage still remains lower than that of the State.

Figure 13: Births to Unwed Mothers

Percentage Unwed Mothers, 2000-2010

Ohio: 34.6%, 35.1%, 35.3%, 36.2%, 37.3%, 38.9%, 40.4%, 42.0%, 43.2%, 44.0%, 43.2%

Greene County: 28.9%, 27.7%, 27.1%, 29.2%, 28.5%, 29.0%, 31.6%, 31.5%, 34.5%, 36.4%, 34.7%

Source: 2000-2010, Ohio Department of Health, Vital statistics annual birth summaries. Last updated 05/24/2013.

First Trimester Prenatal Care

The percentage of mothers not receiving prenatal care during the first trimester remained relatively low and steady through 2007, when it sharply increased and remains higher than the State.

Figure 14: Percent of Mothers Not Receiving First Trimester Prenatal Care

Percentage without First Trimester Care, 2006-2010

Source: 2000-2010, Ohio Department of Health, Vital statistics annual birth summaries. Last updated 05/24/2013.

Births to Mothers Who Smoke

The percentage of mothers who smoked while pregnant was lower or relatively consistent with that of the State through 2005, when the percentage of mothers who smoked increased rapidly nearly equaling the rate the State, but also sharply declined by 2007 remaining consistently lower than the State through the remainder of the study period. The Healthy People 2020 goal is to reduce the percentage to 1.4%.

Figure 15: Births to Mothers Who Smoke

Percentage of Births to Mothers Who Smoked, 2000-2010

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Ohio	18.9%	19.0%	17.8%	17.0%	17.5%	17.4%	18.7%	19.1%	19.1%	19.1%	17.8%
Greene County	18.6%	18.5%	16.3%	14.9%	14.0%	12.9%	17.7%	14.9%	15.0%	15.0%	14.7%

Source: 2000-2010, Ohio Department of Health, Vital statistics annual birth summaries. Last updated 05/24/2013.

Low Birth Weight Rate

Smoking during pregnancy causes low birth-weight in at least 1 in 5 infants, and in recent years Greene County's percentage of low birth weight babies (8.1%) shows a marked increase, with the rate approaching that of the State (8.5%). The national rate is 8.2% with a national target for reduction to 7.8%.

Figure 16: Percentage of Low Birth Weight Babies

Percentage Low Birth Weight, 2000-2010

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Ohio	7.9%	8.0%	8.3%	8.3%	8.5%	8.7%	8.8%	8.7%	8.6%	8.5%	8.5%
Greene County	7.5%	6.9%	8.5%	6.3%	6.9%	6.8%	6.7%	7.7%	7.4%	7.9%	8.1%

Source: 2000-2010, Ohio Department of Health, Vital statistics annual birth summaries. Last updated 05/24/2013.

Infant Mortality Rate

The chart below presents the general trend of infant mortality in the Greene County service area and the State using a three-year rolling average. The rate of infant deaths remained lower in the service area over the entire study period. However in 2007, the rate began to increase, climbing nearly to the State's rate by 2011.

Figure 17: Infant Mortality Rate

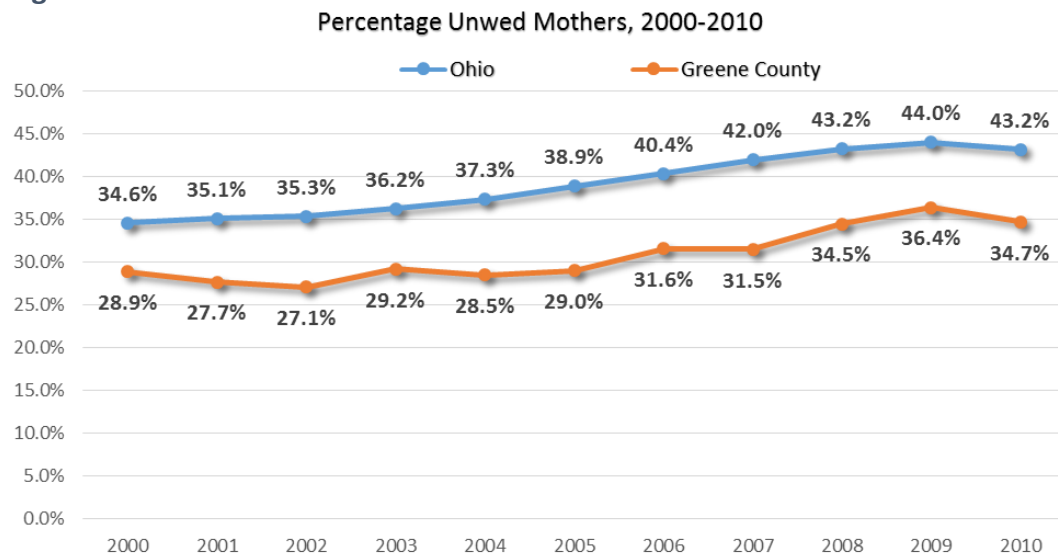Infant Mortality Rate (3-year average per 1,000 live births), 2000-2011
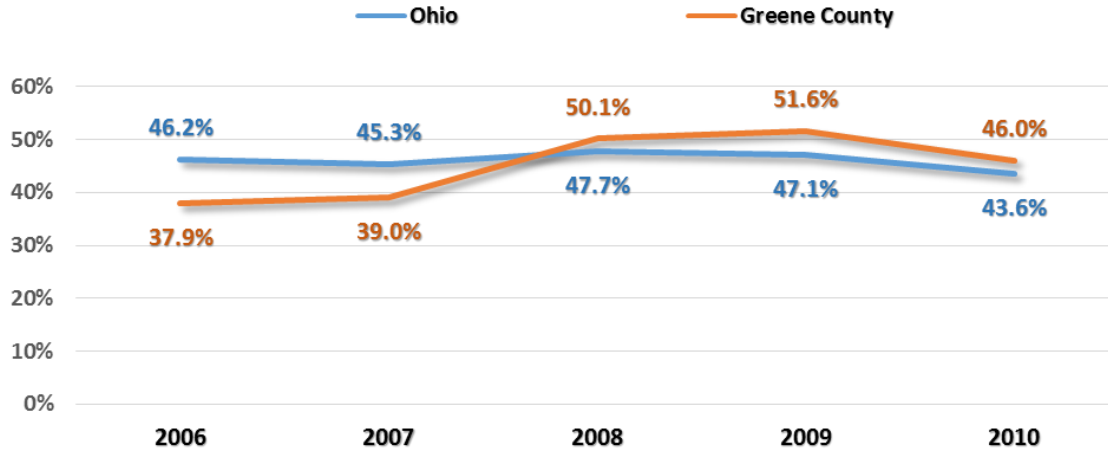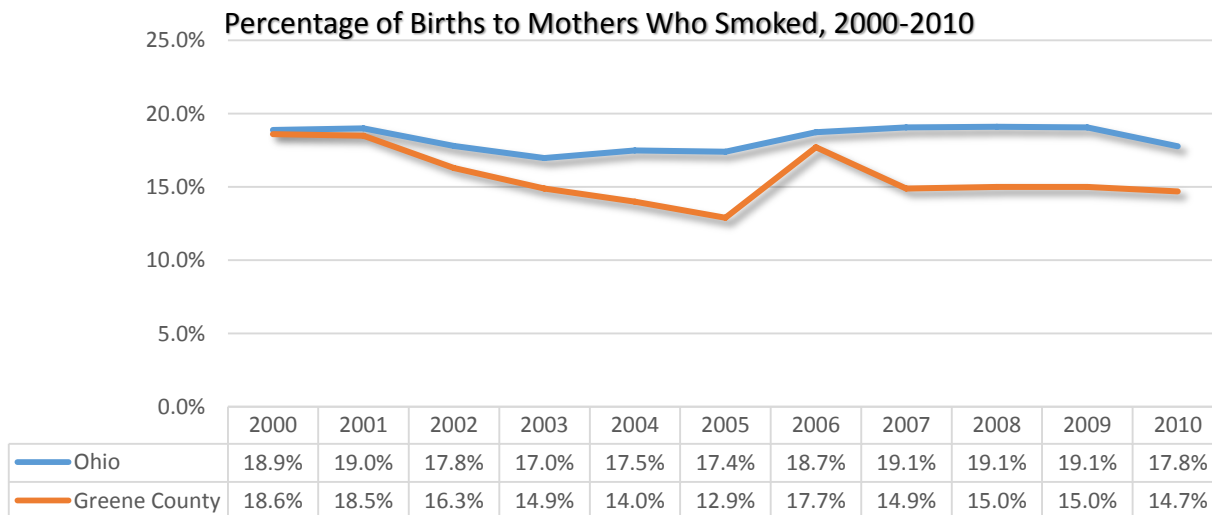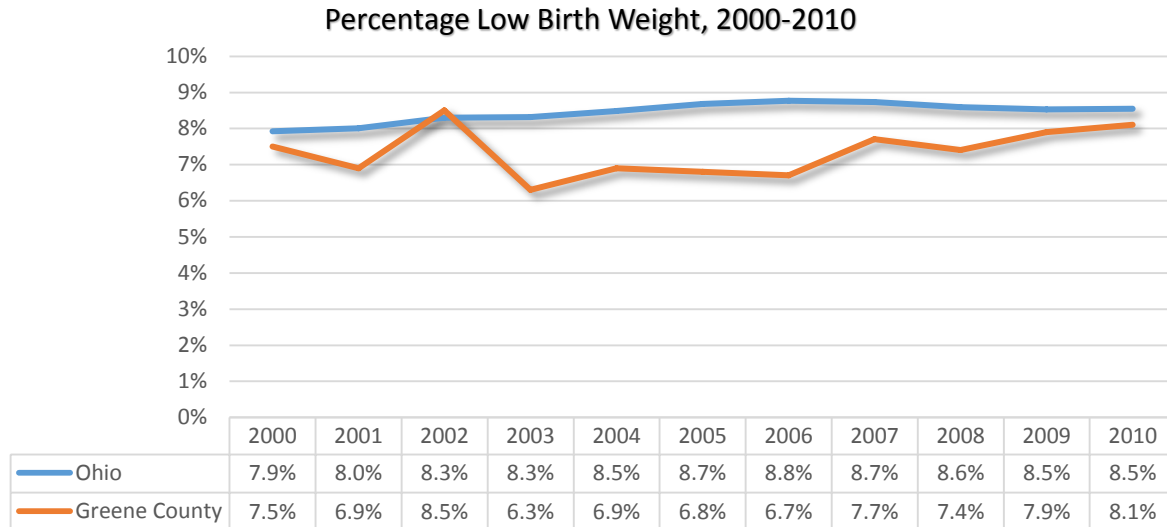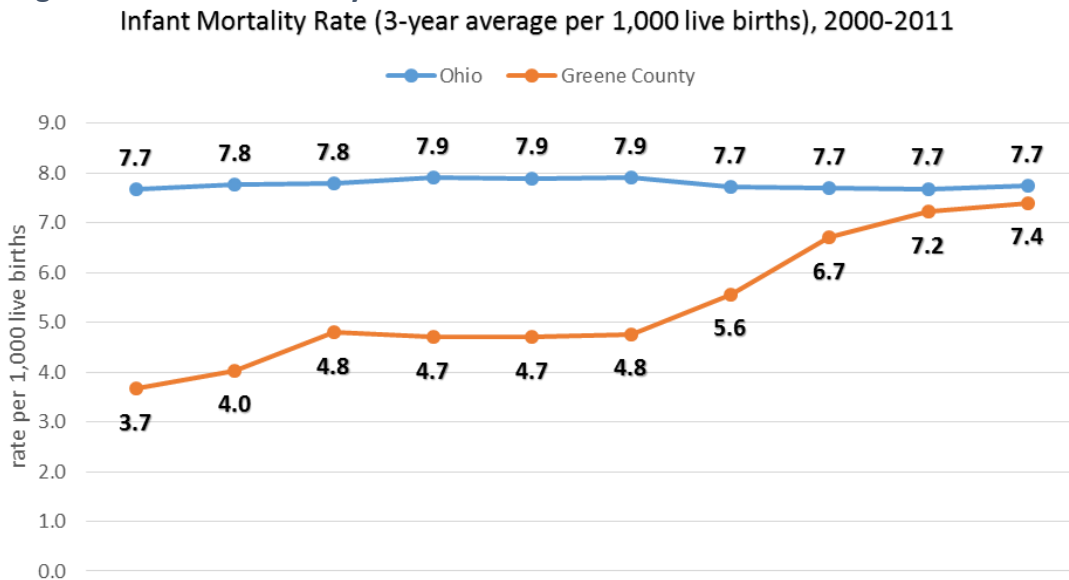
Source: 2000-2010, Ohio Department of Health, Vital statistics annual birth summaries. Last updated 05/24/2013.
Note: Small numbers are unstable and should be interpreted with caution.

Behavioral Risk Factors

In 2012, the Greene County Combined Health District (GCCHD) contracted with the Center for Urban and Public Affairs (CUPA) at Wright State University (WSU) to conduct the fifth in a series of health needs assessments. The first four needs assessments were conducted in 1995, 1999, 2004, and 2008 and all five were based on the Behavioral Risk Factor Surveillance System (BRFSS) conducted by the Centers for Disease Control and Prevention (CDC). The purpose of the health needs assessment is to assess the distribution of disease and behavioral risk factors, assess broad community health issues and to shape a broader definition of community health, monitor the impact of community health action plans and trends in behavioral risk modifications and provide a vehicle to discuss ways to improve community health. Data for this section is based on a survey conducted by the Center for Urban and Public Affairs and are representative of the total non-institutionalized population over 18 years of age living in households with a landline telephone. According to the County Health Rankings for behavioral risk factors, Greene County is ranked favorably as 8th of 88 counties in Ohio.

Adult smoking

According to the Journal of the American Medical Association, tobacco use is the leading cause of preventable death in the United States. According to the Greene County 2012 BRFSS, forty-two percent (41.9 percent) of adults in Greene County have been a smoker (defined as smoking at least 100 cigarettes), and 19.5 percent currently smoke every day or some days. The percentage of current smokers has dropped since 1999 (22.9 percent), but rose almost three percent since 2008 and is significantly lower than the State (22.5 percent) and significantly higher than the nation (17.3 percent).

Physical Activity & Obesity

According to BRFSS data, 23% of Greene County adults lead a sedentary life style. Lack of physical activity and poor diet contribute to overweight and obesity, which are prevalent in the service area. Greene County 2012 BRFSS data show that over two-thirds of Greene County adults are overweight (35.7 percent) or obese (34.6 percent), a significant increase in from 2004, when 54.1 percent were overweight or obese. Overweight and obesity contribute to approximately 400,000 of the 2 million annual deaths in the U.S. (Dietary Guidelines for Americans, 2005). Additionally being overweight or obese increases the risk of heart disease, diabetes, cancer, high blood pressure, high total cholesterol, stroke, liver disease, sleep apnea, respiratory problems, and osteoarthritis (Centers for Disease Control and Prevention).

Excessive drinking

Excessive drinking can take three forms: chronic drinking, heavy drinking or binge drinking. One-fifth (20.4 percent) of Greene County adults *who drink* are binge drinkers, consuming five or more drinks on any one occasion. The percentage of binge drinkers has decreased significantly from 2004 (31.5 percent) and 2008 (25.3 percent).

Motor vehicle crash death rate

For Ohioans of all ages, the leading causes of injury-related death include unintentional motor vehicle traffic crashes, suicide, unintentional poisonings, unintentional falls and homicides. In the County Health Rankings data, the motor vehicle crash death rate was 9 for Greene County versus 11 for Ohio overall.

An average of 60 Greene County residents died annually from 2004-2006 as a result of unintentional injuries 15 of which were due to motor vehicle traffic crashes. In Greene County, motor vehicle accident (MVA) injury rates have increased by 33.1% from 2011 to 2012.

Sexually Transmitted Infections

Data from the Ohio Department of Health show that the incidence of Chlamydia has been generally increasing in the State and in Greene County since the year 2000. The service area's rate has remained consistently below the State rate throughout the study period, but has increased almost 100% from 2000 to 2012. Conversely, the Gonorrhea rate has been declining at the State level but has remained fairly stable in the service area.

Figure 18: Chlamydia Cases, 2000-2012
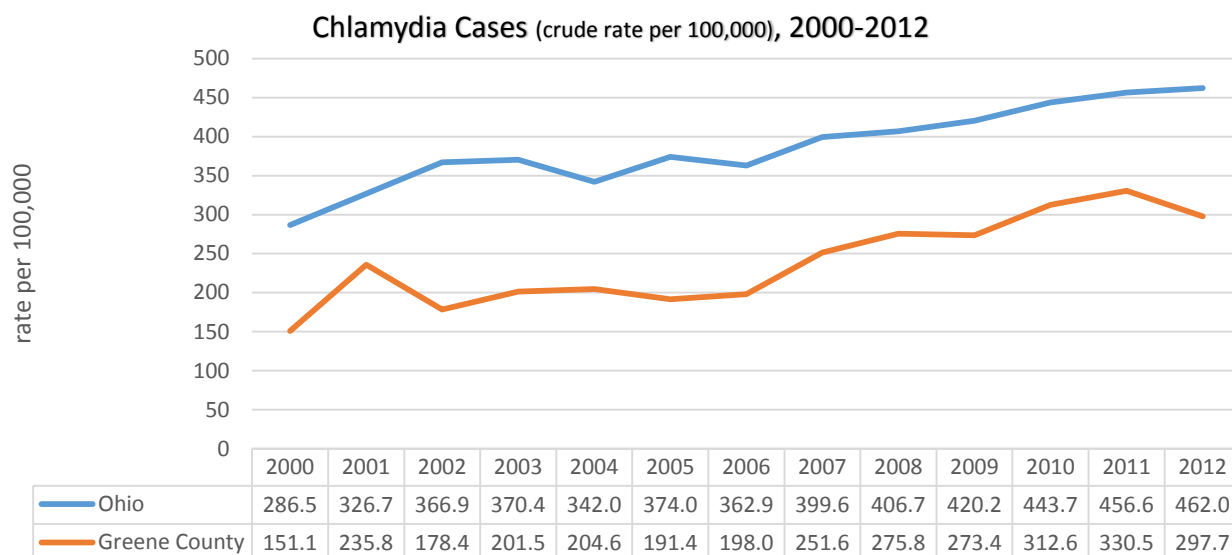
Chlamydia Cases (crude rate per 100,000), 2000-2012

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Ohio	286.5	326.7	366.9	370.4	342.0	374.0	362.9	399.6	406.7	420.2	443.7	456.6	462.0
Greene County	151.1	235.8	178.4	201.5	204.6	191.4	198.0	251.6	275.8	273.4	312.6	330.5	297.7

Source: Ohio Department of Health, 2008-2012 Ohio Infectious Disease Status Report: Chlamydia, last accessed 11/13/2013
Ohio Department of Health, 2006-2010 Ohio Infectious Disease Status Report: Chlamydia, last accessed 11/13/2013
Ohio Department of Health Information Warehouse, 2000-2005 Chlamydia Surveillance Report, last accessed 11/13/2013

Figure 19: Gonorrhea Cases, 2000-2012
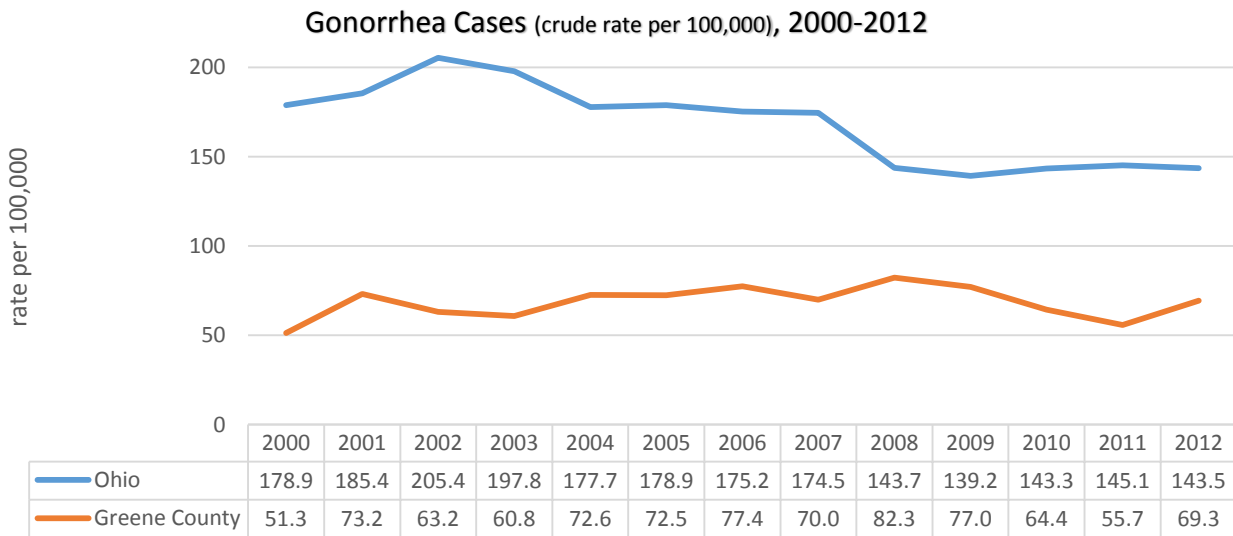
Gonorrhea Cases (crude rate per 100,000), 2000-2012

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Ohio	178.9	185.4	205.4	197.8	177.7	178.9	175.2	174.5	143.7	139.2	143.3	145.1	143.5
Greene County	51.3	73.2	63.2	60.8	72.6	72.5	77.4	70.0	82.3	77.0	64.4	55.7	69.3

Source: Ohio Department of Health, 2008-2012 Ohio Infectious Disease Status Report: Gonorrhea, last accessed 11/13/2013
    Ohio Department of Health, 2006-2010 Ohio Infectious Disease Status Report: Gonorrhea, last accessed 11/13/2013
    Ohio Department of Health Information Warehouse, 2000-2005 Gonorrhea Surveillance Report, last accessed 11/13/2013

Mental Health and Wellness

The County Health Rankings provides a ratio of the county population to the number of mental health providers including child psychiatrists, psychiatrists, and psychologists active in patient care. The service area's mental health provider ratios are favorable when compared to the State's ratio—1,539:1 (Greene) versus 2,553:1 for the State.

Poor mental health days

In Greene County, 31% of adults reported that they had some days in the previous 30 days with poor mental health. This is a marked increase from 2008 when 24% of respondents reported days with poor mental health. When asked if poor physical or mental health kept them from doing any activities, such as self-care, work or recreation, 23.6% of all BRFSS survey respondents indicated they had at least one day in the past month in which they had limitations. The percentages for Ohio (21.8%) and the nation (21.2%) were lower.

Hospitalization due to Poor Mental Health

The following two figures present Emergency Department and Hospital inpatient diagnoses for mental disorders among Greene County residents. The rate of emergency department and inpatient diagnoses is increasing rapidly for neurotic and other primary onset mental disorders from 2004 to 2012. The rate for adult personality disorders has remained flat.

Figure 20: Mental Disorders - Primary/Secondary Emergency Discharge Diagnoses for the Adult Population, 2004-2012

Mental Disorders - Primary/Secondary Emergency Discharge Diagnoses for the Adult Population, 2004-2012
(crude rate per 1,000)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Adult Neurotic	6.1	7.2	8.6	9.4	10.5	14.1	14.4	14.4	17.1
Adult Other Primary Onset Mental Disorders	6.2	7.1	8.6	8.0	8.0	11.4	15.3	18.4	14.3
Adult Personality	0.1	0.2	0.2	0.2	0.2	0.4	0.2	0.2	0.2
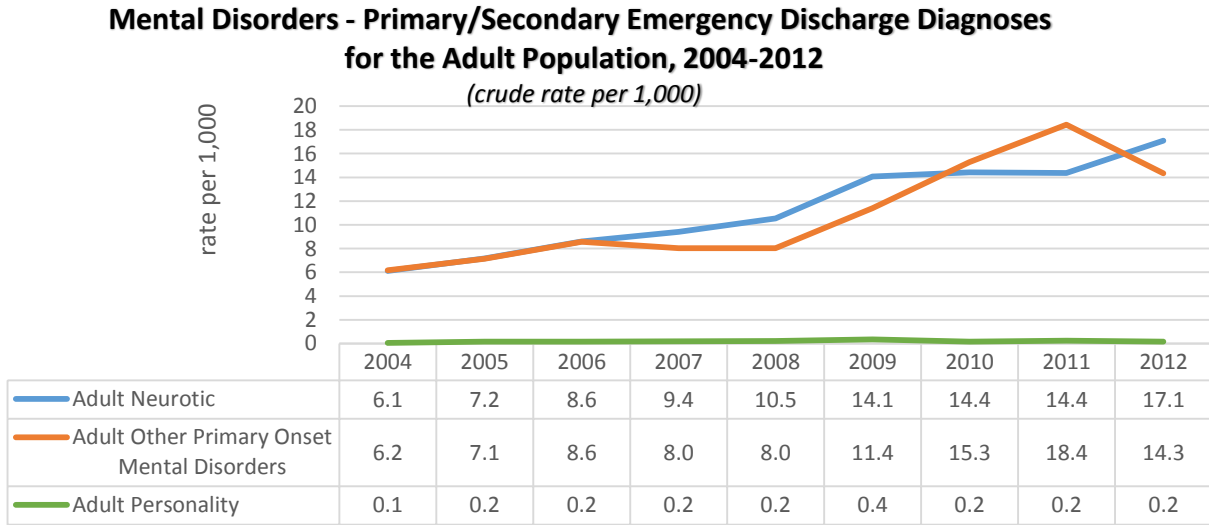
Source: Ohio Hospital Association and Greater Dayton Area Hospital Association

Figure 21: Mental Disorders - Primary & Secondary Inpatient Discharge Diagnoses for the Adult Population, 2004-2012

Mental Disorders - Primary & Secondary Inpatient Discharge Diagnoses for the Adult Population, 2004-2012
(crude rate per 1,000)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Adult Neurotic	6.9	8.2	10.0	10.7	12.6	12.0	13.3	13.1	17.7
Adult Other Primary Onset Mental Disorders	7.5	9.3	12.3	12.1	11.8	11.6	13.0	13.0	18.7
Adult Personality	0.7	1.3	1.3	1.1	1.3	1.4	1.2	1.0	1.0
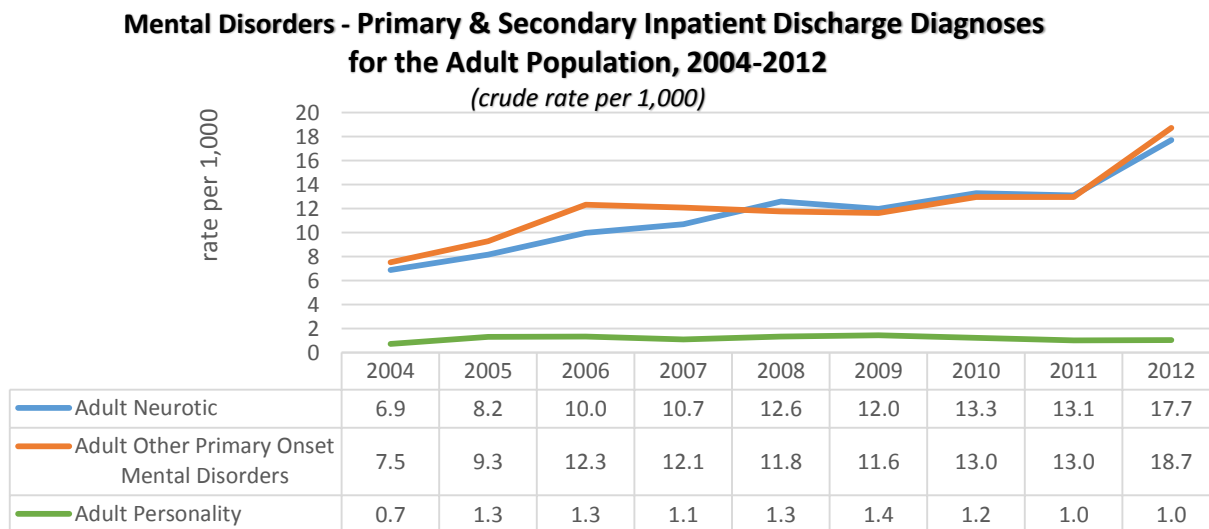
Source: Ohio Hospital Association and Greater Dayton Area Hospital Association

Clinical & Preventative Services

According to County Health Rankings, Greene County is ranked 9th of 88 counties in terms of residents obtaining appropriate clinical care. Health insurance is one measure of access to health care.

Uninsured

According to American Community Survey data, Greene County has among the lowest percentage of persons who are uninsured in the state — 10.1%. Over three-quarters of the insured population carry private health insurance. However, 15.6% of residents between the ages of 18 and 34 have no medical insurance. Health insurance coverage, like poverty, is also disproportionate by race and ethnicity. Caucasians fare better than do African Americans or the Hispanic population – 9.2% of adult white residents are uninsured while 12.8% of adult African Americans and 30.6% of Hispanics are uninsured.

Primary care physicians

The service area's ratio of population to primary care physicians is favorable when compared to the State's ratio—1,243:1 (Greene) versus 1,348:1 for the State. However, even though ratios indicate a sufficient number of physicians, not everyone can access them. While 76.1% of Greene County adults have a primary care physician or health care provider, 19% said they do not (and 4.9% said they have more than one provider). Also, 16.4% of Greene County residents said they have gone to the emergency room for medical care because they did not have a regular doctor (Wright State University Greene BRFSS, 2012).

Dentists

Good oral health is important to one's overall health and well-being. Oral disease, particularly periodontal disease, is associated with other health issues such as problems controlling diabetes, heart disease, and premature birth (PHDMC Montgomery County Community Health Assessment, 2010).

The service area's ratio of population to dentists are favorable when compared to the State ratio (1,420:1 in Greene; and 1,928:1 in the State). In Greene County, more than three-fourths of adults (76.6 percent) reported having visited a dentist or dental clinic in the past year.

Mental health providers

The service area's ratio of population to mental health providers (1,539:1) is favorable when compared to the State ratio (2,553:1).

Preventable hospital stays

Since 1996, the Dartmouth Atlas of Health Care has examined patterns of health care delivery and practice across the U.S., and evaluated the quality of health care Americans receive. Preventable hospital stays is measured as the hospital discharge rate for ambulatory care-sensitive conditions per 1,000 Medicare enrollees. Preventable hospital stays in Greene County are 51 and in the State are 79, and the national goal is 47.

Diabetic screening

Diabetic screening percentages are also provided by the Dartmouth Atlas and are calculated as the percent of diabetic Medicare patients whose blood sugar control was screened in the past year using a test of their glycated hemoglobin (HbA1c) levels. The percentage for Greene County is well below the State percent (77% versus 83%). These percentages fall below the Healthy People 2020 goal of 90%.

According to the 2012 Greene County BRFSS, 9% of adults have been told by a health professional that they have diabetes. This percentage may be compared to 2010 findings of 10.1% for the State and 8.7% for the U.S. The death rate per 100,000 due to diabetes for Greene County was 32.7 in 2004-2006 versus 28.6 for Ohio and 22.5 for the U.S.

Mammography screening

The American Cancer Society (ACS) makes specific recommendations about how often and at what age women should have a mammogram screening. The ACS recommends that women 40 or older have a mammogram annually; however, women who have a family history of breast cancer should consult their doctor as to how often they should receive a mammogram. Sixty-four percent (63.7 percent) of all women responding to the Greene County 2012 health assessment reported that they have had a mammogram, a decrease from 73.9 percent in 2004.

Mammography screening, calculated in the Dartmouth Atlas, is a measure that represents the percent of female Medicare enrollees age 67-69 that had at least one mammogram over a two-year period. The percentages for Greene County, the State, and the U.S. benchmark are 56%, 63%, and 73%, respectively.

Disease

According to County Health Rankings, Greene County is ranked 12th of 88 counties in terms of disease prevalence.

Poor or fair health

Self-reported health status is a general measure of health-related quality of life. This measure is based on BRFSS responses to the question: "In general, would you say that your health is excellent, very good, good, fair, or poor?" The value reported in the County Health Rankings is the percent of adult respondents who rate their health "fair" or "poor." In Greene County, the percentage of adults reporting "poor or fair" health status was 12% and for Ohio it was 15%.

Poor physical health days

The BRFSS also asks, "Thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?" The number of poor physical health days reported for Greene County adults was 2.6 and for Ohio was 3.6.

High blood pressure

High blood pressure is also queried in the BRFSS where adults are asked if they have ever been told by a health professional that they have high blood pressure. In this case, the estimates come from more current BRFSS data. The Greene County BRFSS in 2012 found that 32.9% of adults have this disease compared to the State's 31.7% and 28.7% for the U.S.

Blood cholesterol

Blood cholesterol is another question in the BRFSS which was asked in the Greene County 2008 BRFSS. The percentage for Greene County was 40.1% versus 33.9% and 28.4% in Ohio and the U.S., respectively.

Heart Attack (myocardial infarction)

The BRFSS asks: Has a doctor, nurse, or other health professional EVER told you that you had a heart attack also called a myocardial infarction. The following percentages apply to Greene County, Ohio, and the U.S., respectively: 5.5%, 4.3%, and 4.2%.

Coronary heart disease

Similarly, the BRFSS asks adult survey respondents if they have ever been told that they have coronary heart disease. The following percentages apply to Greene County, Ohio, and the U.S., respectively: 7.6%, 4.3%, and 4.1%.

Cancer

Breast cancer rates, the most prevalent of all cancers in the service area but appear to be decreasing since 2006. Prostate and colon & rectum cancer rates have declined, while there is an increase in rates for melanoma of the skin over the study period.
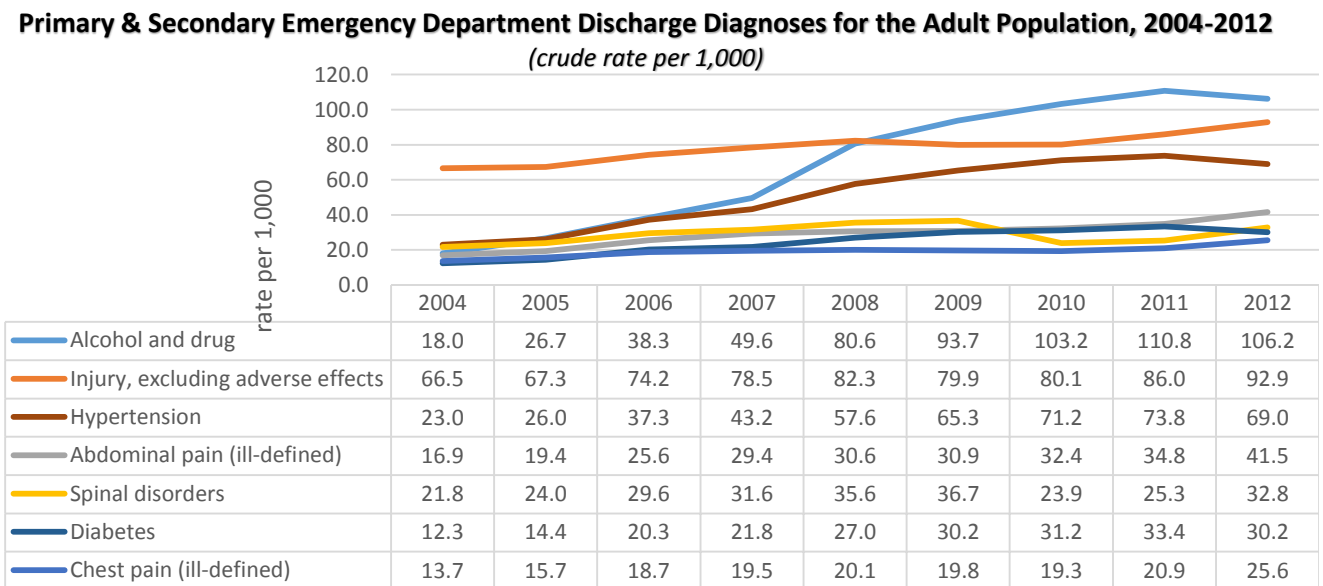
Figure 22: Cancer Rates, 2000-2011

Cancer Rate Trends (crude per 100,000), Top Six - 2000-2011

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Breast	264.3	241.2	230.8	206.3	238.6	195.6	246.7	270.3	202.4	248.7	236.8	212.2
Prostate	185.5	122.8	166.0	170.6	169.2	166.3	186.0	183.9	180.8	173.1	145.4	133.4
Lung & Bronchus	92.1	85.8	76.7	95.9	82.6	97.8	82.6	89.0	86.0	100.6	82.9	68.4
Colon & Rectum	65.5	77.0	83.6	73.8	82.6	72.1	76.1	80.9	65.1	57.5	53.7	44.3
Melanoma of Skin	25.7	42.0	40.5	39.0	40.9	57.2	67.1	51.8	49.0	71.9	60.0	63.7
Uterus	20.3	23.5	37.9	19.5	25.6	44.5	39.3	40.4	37.1	35.3	41.3	31.6

Source: Ohio Department of Health Ohio Cancer Incidence Surveillance System

Hospital Discharge Diagnoses

The top seven emergency department (ED) and inpatient discharge diagnoses are presented in the figures below. Hypertension is the most common hospital inpatient discharge diagnosis and presents an increasing rate over time. It is the third most common ED discharge diagnoses, but injury and alcohol and drug dependence syndrome rates far surpass it. Alcohol/drug discharge diagnoses have more than doubled since 2007 in Greene County.

Figure 23: Primary & Secondary Emergency Department Discharge Diagnoses for the Adult Population, 2004-2012

Primary & Secondary Emergency Department Discharge Diagnoses for the Adult Population, 2004-2012
(crude rate per 1,000)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Alcohol and drug	18.0	26.7	38.3	49.6	80.6	93.7	103.2	110.8	106.2
Injury, excluding adverse effects	66.5	67.3	74.2	78.5	82.3	79.9	80.1	86.0	92.9
Hypertension	23.0	26.0	37.3	43.2	57.6	65.3	71.2	73.8	69.0
Abdominal pain (ill-defined)	16.9	19.4	25.6	29.4	30.6	30.9	32.4	34.8	41.5
Spinal disorders	21.8	24.0	29.6	31.6	35.6	36.7	23.9	25.3	32.8
Diabetes	12.3	14.4	20.3	21.8	27.0	30.2	31.2	33.4	30.2
Chest pain (ill-defined)	13.7	15.7	18.7	19.5	20.1	19.8	19.3	20.9	25.6

Source: Ohio Hospital Association and Greater Dayton Area Hospital Association

Figure 24: Primary & Secondary Hospital Inpatient Discharge Diagnoses for the Adult population, 2004-2012

Top Seven Inpatient Primary Discharge Diagnoses for the Adult Population, 2004-2012
(crude rate per 1,000)
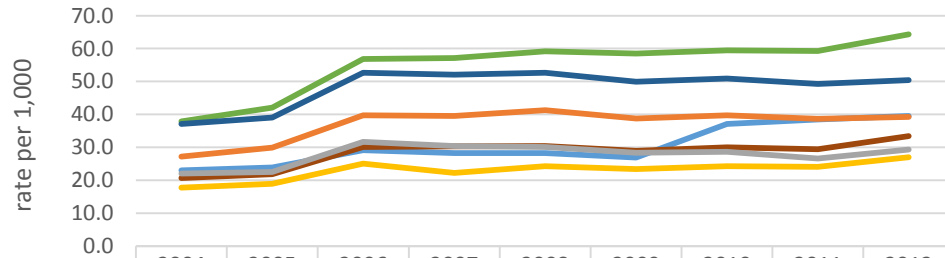
	2004	2005	2006	2007	2008	2009	2010	2011	2012
Hypertension	37.9	42.0	56.8	57.2	59.2	58.5	59.5	59.3	64.3
Heart attack/other ischemic heart disease	37.1	39.1	52.7	52.1	52.6	50.0	50.9	49.3	50.5
Complications of pregnancy and childbirth	23.0	23.9	29.2	28.3	28.3	26.9	37.1	38.4	39.6
Homicide/Assault	27.2	29.9	39.7	39.5	41.3	38.7	39.7	38.7	39.2
Diabetes	20.7	21.9	30.1	30.3	30.4	29.0	30.1	29.5	33.4
Heart disease	22.1	22.6	31.7	30.4	30.1	28.4	28.7	26.6	29.4
Alcohol and drug	17.8	19.0	25.0	22.3	24.3	23.4	24.3	24.1	27.0

Source: Ohio Hospital Association and Greater Dayton Area Hospital Association

Leading Causes of Death

According to County Health Rankings, Greene County is ranked 21st of 88 counties in terms of premature death. Premature age-adjusted mortality is a common population health outcome measure. The age-adjusted mortality rate of residents under the age of 75 in Greene County is lower than that for the State (317 compared to 378 for Ohio).

The figure below presents the six top leading causes of death in the service area. Diseases of the heart top the list, but the mortality rate for diseases of the heart has declined substantially since 2000. Mortality rates that are increasing include accidents and "other and unspecified" reasons.

Figure 25: Top Six Leading Causes of Death, 2000-2012

Top Six Leading Causes of Death for the Adult Population, 2000-2012 *(crude rate per 100,000)*

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Diseases of heart	310.9	288.0	274.8	252.1	236.3	271.9	210.2	236.2	241.0	233.2	242.4	237.1	261.7
Malignant neoplasms	257.7	210.9	250.7	226.6	243.8	225.5	235.5	223.2	243.4	264.3	234.5	218.4	225.4
Other and unspecified	114.2	103.3	119.7	114.6	107.7	160.0	136.6	155.3	138.2	136.5	145.3	173.4	155.2
Accidents (unintentional injuries)	37.2	29.8	49.1	45.0	47.6	49.7	48.3	50.1	63.5	51.9	49.0	49.0	61.8
Chronic lower respiratory diseases	71.7	50.8	52.5	50.9	48.4	60.5	56.4	55.0	57.8	71.9	75.8	55.2	57.9
Cerebrovascular diseases	59.3	73.5	71.5	84.0	65.1	59.7	53.2	56.6	58.7	51.9	49.0	56.7	46.3

Source: Ohio Hospital Association and Greater Dayton Area Hospital Association

Process for Identifying and Prioritizing Community Health Needs

The identification of priority health needs began with a comprehensive review of all primary and secondary data. Next, criteria were applied to aid in the selection of cross-cutting issues that are not trending in a favorable way. The criteria used were:

- Prevalence
- Seriousness (hospitalization and/or death)
- Impacts on other health issues
- Urgency—what are the consequences of not addressing this issue?
- Prevention—is the strategy preventative in nature?
- Economics — is the strategy financially feasible? Does it make economic sense to apply this strategy?
- Acceptability – Will the stakeholders and the community accept the strategy?
- Resources — is funding likely to be available to apply this strategy? Are organizations able to offer personnel time and expertise or space needed to implement this strategy?

Priorities Identified by Researchers

By applying these criteria, researchers identified priority areas for consideration by the Hospital and its community group. These priority areas are not presented in a ranked order.

Maternal and Infant Priorities:

1. First Trimester Prenatal Care – The percentage of mothers not receiving first trimester prenatal care in the service area is greater than the State percentage beginning in 2008.
2. Low Birth Weight—The service area's rate is increasing and is approaching the State's rate (8.1% versus 8.5% in 2010).
3. Infant Mortality Rate—The service area's infant mortality rate has increased 200% over the study period. It is still lower than the State rate but climbing (7.4% versus 7.7%).

Primary and Chronic Diseases:

1. Breast cancer—The breast cancer rate is 212.2 per 100,000, and the rate is not dropping like other historically prevalent cancers. Furthermore, the percentage of women on Medicare ages 67-69 obtaining mammography screenings is substantially lower than the State (56% versus 63% for Ohio).
2. Health Screenings—besides lower mammography screening rates, the service area has a lower screening rate for diabetes too (77% versus 83%).
3. Alcohol and drug dependence—From 2004 to 2012, the rate of Emergency Department discharge diagnosis for alcohol and drug dependence syndrome increased from 18.0 to 106.2 per 1,000 and from 17.8 to 27.0 per 1,000 for inpatient discharge diagnosis. At the same time, the number of individuals seeking treatment for opioid drug use increased 19% just since 2009.

Methodology

The spine of this analysis is hospital and public health data. Hospital data is provided in the form of ICD-9 codes. The International Classification of Diseases (also known by the abbreviation ICD) is the United Nations-sponsored World Health Organization's "standard diagnostic tool for epidemiology, health management and clinical purposes."[2] The ICD is designed as a health care classification system, providing a system of diagnostic codes for classifying diseases, including nuanced classifications of a wide variety of signs, symptoms, abnormal findings, complaints, social circumstances, and external causes of injury or disease.[3]

For this Community Health Needs Assessment, primary and secondary diagnoses were provided for selected ICD-9 codes. Researchers listed 26 codes for adults, five of which had subcategories. An example of a category is "injury" which is subcategorized into unintentional injury (with another subcategory of *fractures*), homicides, and suicides. For this analysis, the top codes were selected for presentation based on natural breaks in the data.

Public health data are provided by the Ohio Department of Health (ODH) for Southwest Ohio. Maternal and infant health data as well as mortality data (including infant mortality) were directly downloaded from the ODH website. Cancer registry data were provided to Wright State University for rate calculations. Data are suppressed whenever there are fewer than 10 cases in a cell.

Besides hospital and public health data, other critical primary and secondary data sources included:

- U.S. Bureau of the Census American Community Survey
- The Ohio Development Services Agency population forecasts and county descriptions
- Economic Modeling Specialists, Intl industry and occupational data
- Hoover's (a subsidiary of Dun & Bradstreet) company records
- The Greene County BRFSS, 2008 and 2012
- Robert Wood Johnson Foundation County Health Rankings
- Centers for Disease Control and Prevention
- Health Resources and Services Administration (HRSA) HPSA and health resources data

Limitations and Gaps in the Data

Information gaps that limit the ability to assess the community's health needs include:
- No service/usage data are included from hospital clinics and private clinics.
- Secondary aggregate data on mental health users, services, and costs is difficult to obtain for Medicaid patients and basically impossible to obtain from private sector providers.
- The most recent data from the Ohio Department of Health for some data is 2010.
- Some ICD-9 data had to be suppressed due to anomalies.
- The health data presented in this report are not exhaustive.
- A longitude for First Trimester Prenatal Care has a baseline of 2006, because the method for data presentation changed in that year.

---

[2] http://www.who.int/classifications/icd/en/
[3] http://www.rtmedibus.com/educationclinicalcontent/conditions-and-diseases