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Introduction

Good Samaritan Hospital 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 Good Samaritan Hospital service area, providing a basic overview of the Hospital's geographic location as well as 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 secondary data from multiple sources to paint a detailed picture of the Good Samaritan Hospital Service Area. 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. The report presents previously gathered survey data from the Montgomery County Behavioral Risk Factor Surveillance System (BRFSS) as presented in the Community Health Assessment prepared by Public Health-Dayton & Montgomery County. 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 Good Samaritan Hospital is defined as Montgomery County located in West Central Ohio. The population of the service area is about 535,000 people. There are 304,100 jobs in the area and 20,400 unemployed persons. Job growth in the area is forecasted to be 2.9% from the base year of 2013 to the year 2023, according to Economic Modeling Specialists, Inc. This percentage compares to a 9.2% job growth rate for the State and a 13.1% job growth rate for the U.S.

Even by the year 2023, forecasts indicate that Montgomery County will not recover its 2006 jobs number. Economic restructuring of the County occurred when General Motors shut down operations in the late 2000's displacing thousands of workers. The Dayton area was second only to Detroit in the number of GM workers, and these job losses affected the economy in many ways including a substantial decline in the proportion of the population covered by employer-based insurance plans. Today, the industries with the highest number of workers are colloquially referred to as *Eds, Meds, and Feds*. With the

strong health care system in the community, Wright-Patterson Air Force Base (the largest single site employer in Ohio), and four public institutions of higher education, these industries employ one-third of this region's workforce. The health care industry in the County is forecasted to grow 21% from 2013 to 2023, making it the largest contributor of jobs among all industries.
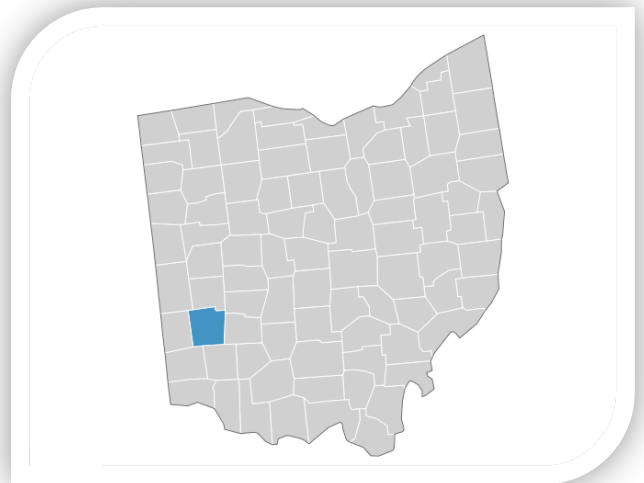
Consulting Persons and Organizations

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 Good Samaritan Hospital, community health collaboratives featuring community, health, and business stakeholders/advocates organized by both Good Samaritan Hospital, 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

Year	Population
2010	535,153
2020	513,830
2030	496,650
2040	489,390

Figure 2: Age, 2011

18 to 64 years, 61.8%
65+ years, 15.1%
Under 18 years of age, 23.1%

Figure 3: Race, 2011
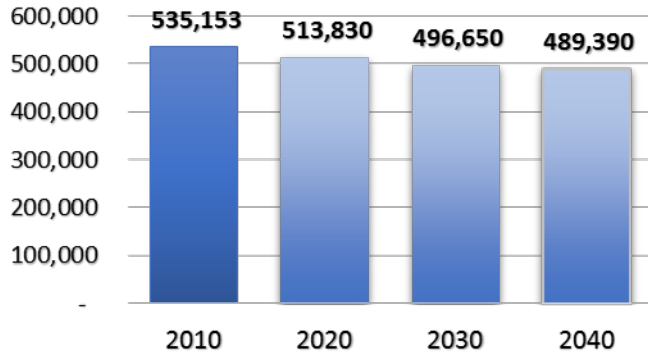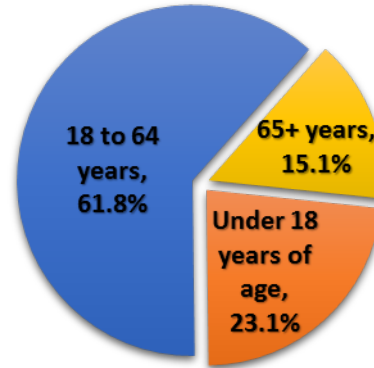
White or Causcasian, 74.2%
Black or African American, 20.8%
All Other Minorities, 5.1%
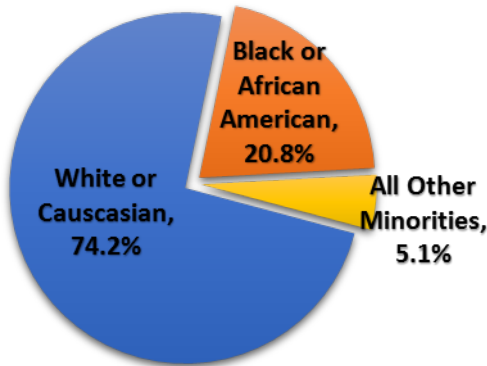
The service area has a population of 535,153 people, which is expected to decline by 8.6% to the year 2040. However, the proportion of the population that is 65 years of age and older is forecasted to increase to 22% of the population by 2030. The racial composition of the community is 74% White or Caucasian, about 21% African American and 5% all other Minorities. According to the Census, nearly 12,000 people with Hispanic or Latino ethnicity live in this region.

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

Figure 4: Household Type

Married with Children under 18, 22.8%
Single with Children under 18, 9.4%
Family Households No Children, 67.7%
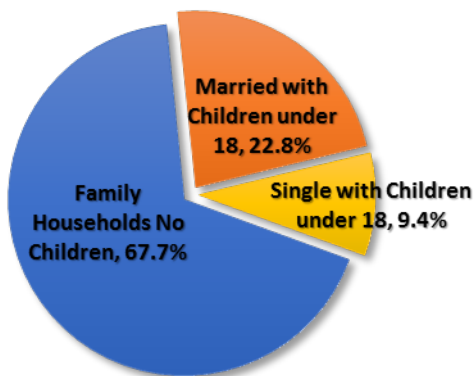
Figure 5: Senior Population Projections

21.9%
Under 65, 84.9%
65+, 15.1%
2010
2030
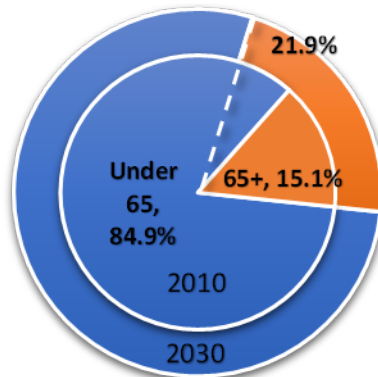
Figure 6: Occupied Housing Units

Renter, 36.0%
Homeowner, 64.0%
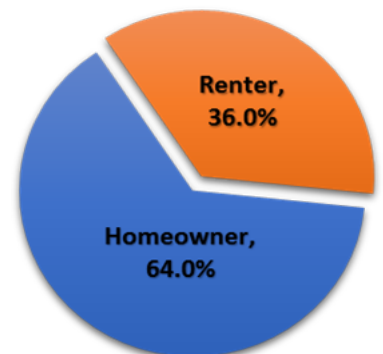
Figure 7: Educational Attainment for the Population 25 Years of Age & Older, 2011
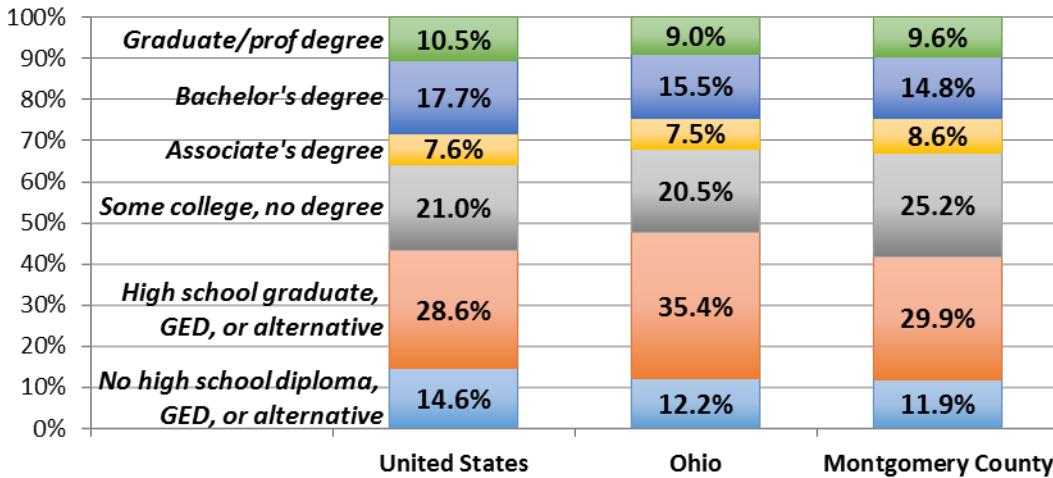
Figure 8: Median & Per Capita Income, 2011
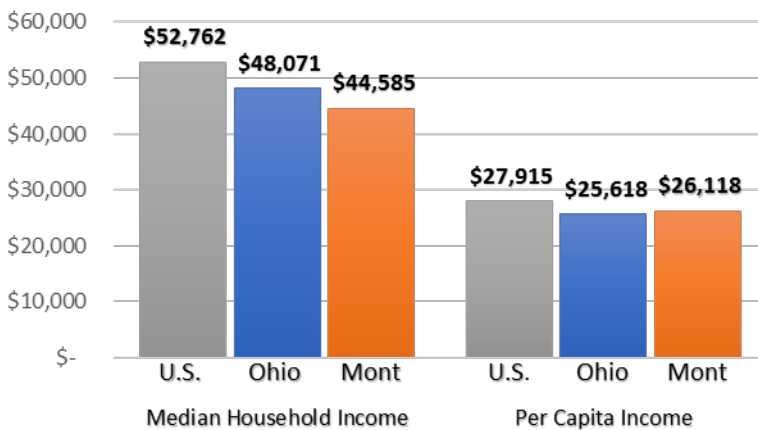
Figure 9: Percentage of the Population below the Poverty, 2011
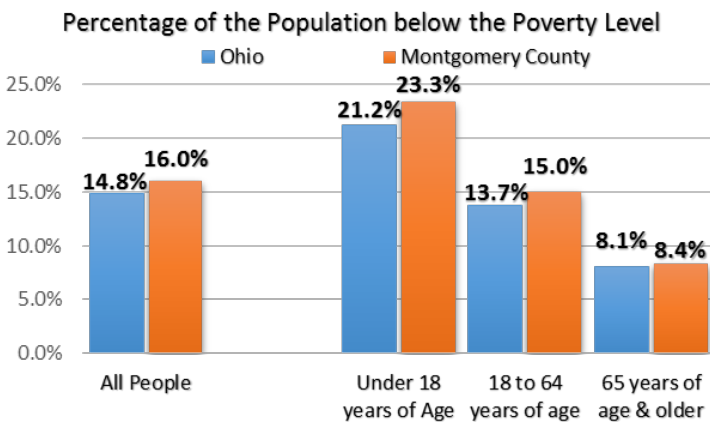
This page presents socioeconomic status (SES) variables of education, income, and poverty. Montgomery County's educational attainment is slightly higher than the State average, but almost 3% lower than the U.S. average. CEO for Cities calculates that every 1% increase in college education attainment equates to a "talent dividend" of $1 billion a year. SES variables are correlated with better health status. For example, the proportion of Montgomery County adults at the lowest income level who report that their health is fair or poor is 47% (BRFSS). That percentage is 6 times higher than those in the highest income level (7%). Poverty is more prevalent in Montgomery County than for the State overall.

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

Health Care Facilities and Resources within the Community

This service area's health care infrastructure is comprised of 13 hospitals of which 10 are short-term general hospitals, 39 state licensed nursing homes, 31 state licensed residential care facilities, four hospice centers, four HMOs, 14 state licensed ambulatory surgery facilities, and 12 state licensed dialysis centers, per the Ohio Department of Health. The public health agency—Public Health-Dayton & Montgomery County—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 per the Health Resources and Services Administration and the Ohio Department of Health.

Primary Care Physicians	490
PCP Physician/100K Pop	91.1
General Family Practice	223
General Family/100K Pop	41.5
Internal Medicine	194
Internal Medicine/100K Pop	36.1
Pediatricians	73
Pediatricians/100K Pop	53.6

Obstetricians/Gynecologists	83
OB/GYN /100K Pop	29.7

General Surgeons	65
General Surgeons/100K Pop	12.1

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	44
Psychiatrists/100K Pop	8.2

Dentists	263
Dentist/100K Pop	49.1

Hospitals	
Total Hospitals	10
Total Hospital Beds	2,815
Short-Term General Hospitals (including Riverview Health Institute & Medical Center at Elizabeth Place)	10
STG Beds	2,481

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

Health Centers	
Community Health Centers	6
Federally Qualified Health Centers	5

Montgomery County has Health Professional Shortages in primary medical care and mental health care, at the Samaritan Homeless Clinic, at the Community Health Centers of Greater Dayton (CHCGD), and in Five Rivers Health Centers.

Dental Health Professional Shortage Areas are in several low income areas in West Dayton and Central Dayton, as well as in the Homeless Clinic, CHCGD, and at Five Rivers.

Source: Health Resources and Services Administration Data Warehouse

Hospital

This service area is served by 13 hospitals, of which 10 are short-term acute care hospitals, two are psychiatric hospitals, and one is a youth-focused psychiatric hospital. Two major health systems serve this one County. Good Samaritan Hospital is a member of the Premier Health Partners network and the vast majority of the patients it serves are Montgomery County residents. The chart below presents the total number of registered beds by care category for all short-term acute care hospitals in Montgomery County and for Good Samaritan Hospital. Good Samaritan Hospital accounts for 21% of all registered beds in the County. Good Samaritan Hospital is renowned for its cardiac/cardiology services, pulmonary services, and critical care, highlighted below the chart. (The complete list of Good Samaritan Hospital services is available at: http://www.goodsamdayton.org/).

Short-term Care		
	Registered Beds	**Good Samaritan Hospital**
Special Care (ICU/CCU)	186	32
Medical/Surgical-General	1,524	394
Burn Unit	10	
Psychiatric	131	29
Physical rehabilitation	69	
Obstetrics Level I	0	
Obstetrics Level II	54	26
Obstetrics Level III	101	
Subtotal	*2,075*	*481*
Newborn Care		
Newborn Care Level I	144	24
Newborn Care Level II	21	15
Newborn Care Level III	127	
Pediatrics-General	98	
Pediatrics-ICU	16	
Subtotal	*406*	*39*
Total	**2,481**	**520**

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.

Cardiac—Dayton Heart & Vascular Hospital at Good Samaritan combines an efficient hospital design, advanced equipment, and proven clinical processes to streamline the time from diagnosis to treatment for all heart and vascular patients. Services include heart Saver CT, "Her Heart," wound care, cardiac rehab, vascular treatments and procedures, diagnostic services, cardiovascular treatments and procedures, and heart education and screenings.

- Ranked Among the Top 10% in the Nation for Cardiology Services, 2013
- Ranked #10 in Ohio for Overall Cardiac Services, 2013
- Ranked #8 in Ohio for Cardiology Services, 2013
- Ranked Among the Top 10 in Ohio for Overall Cardiac Services, 2013 (Ranked 10 in 2013)
- Ranked Among the Top 10 in Ohio for Cardiology Services for 2 Years in a Row (2012-2013) (Ranked 8 in 2013)
- Five-Star Recipient for Cardiology Services for 2 Years in a Row (2012-2013)
- Five-Star Recipient for Coronary Interventional Procedures, 2013
- Five-Star Recipient for Treatment of Heart Attack 4 Years in a Row (2010-2013)
- Five-Star Recipient for Treatment of Heart Failure for 5 Years in a Row (2009-2013)

Pulmonary Rehabilitation—Patients with pulmonary problems, including chronic obstructive pulmonary disease (COPD), can experience improved quality of life and return to higher levels of functioning through this outpatient therapy program. The program combines exercise, education, and breathing and relaxation techniques. Family physicians, medical directors, nurses, exercise physiologists, and respiratory therapists work together with you and your family. In fact, family participation is encouraged in planning sessions.

- Recipient of the HealthGrades Pulmonary Care Excellence Award ™, 2013
- Ranked Among the Top 10% in the Nation for Overall Pulmonary Services, 2013
- Five-Star Recipient for Overall Pulmonary Services, 2013
- Five-Star Recipient for Treatment of Pneumonia for 9 years in a row (2005-2013)

Critical Care—Providing acute care and treatment to patients after a major surgery or other serious illness or injury, the Intensive Care Unit (ICU) at Good Samaritan Hospital (GSH) offers comprehensive care.

- Five-Star Recipient for Treatment of Sepsis for 7 Years in a Row (2007-2013)

Clinics

In Montgomery County, Community Health Centers of Greater Dayton (CHCGD) is a nonprofit organization founded in 2007 through collaboration between local hospital systems and Public Health-Dayton & Montgomery County. CHCGD was formed to improve access to affordable primary health care in the region. CHCGD operates out of six locations: Alex Central, Charles Drew, Corwin Nixon, East Dayton, Southview, and Victor Cassano Health Centers. All of these are in Montgomery County.

Background

In December of 2006, Public Health-Dayton & Montgomery County began collaborative efforts with Kettering Health Network and Premier Health Partners to establish a Federally Qualified Health Center (FQHC) in Dayton, Ohio. At that time, Dayton was Ohio's only metropolitan area whose general population lacked such a facility.

The group pooled their resources and reviewed the services offered by Public Health, Kettering, and Premier Health Partners for serving the health needs of low income populations. Fourteen current health centers were analyzed, and three—Charles Drew, Corwin Nixon, and East Dayton—were selected to be transferred into a new non-profit corporation called Community Health Centers of Greater Dayton (CHCGD). The new corporation submitted an application for FQHC status in December 2007; on July 7, 2008, CHCGD took over operation of the three sites.

Community Health Centers of Greater Dayton (CHCGD) was awarded Federally Qualified Health Center status in March, 2009. This FQHC recognition stems, in part, from President Obama's stimulus package which provided funding for 126 health center New Access Points (NAPs). Moreover, the additional Federal funding, plus the ongoing financial support from community partners, allows CHCGD to better fulfill its mission.

On June, 6, 2011, CHCGD expanded its operations to include the primary care portion of Victor Cassano Health Center. Cassano was previously operated by Grandview Medical Center and has been dedicated to the idea that everyone deserves quality medical care, regardless of their ability to pay. This focus on underserved patients made the Victor Cassano Health Center a good fit for Community Health Centers of Greater Dayton.

Mental Health Care Capacity

In addition to 131 psychiatric registered hospital beds at short-term acute care hospitals, 142 adult registered beds at psychiatric hospitals, and 60 youth psychiatric beds, those in need of mental health services receive services via the Alcohol, Drug Addiction and Mental Health Services (ADAMHS) Board for Montgomery County. And crisis care needs are also served by CrisisCare by Samaritan Behavioral Health.

In Montgomery County, ADAMHS administrates the planning, development, funding, and evaluation of behavioral health services delivered by a network of nearly thirty (30) community-based organizations. In fiscal year 2010, this network provided service to more than 20,647 individuals at a system-wide cost of $64,008,719 million.

Crisis care is provided by Samaritan Behavioral Health. CrisisCare is a county-wide crisis and assessment service for people with mental health or drug and alcohol needs. Available 24 hours a day, seven days a week, CrisisCare services any adult or youth in Montgomery County who needs crisis services or evaluation for hospitalization. Access for Severe Mental Health and Alcohol/Drug Diagnostic Assessments is available Monday through Friday.

Emergency intervention and assessment services include:
- Hotline – 24-hour suicide prevention and crisis counseling telephone line.
- Warmline – 24-hour supportive telephone counseling service.
- Screening & Triage – Evaluation of crisis needs with follow-up recommendations for service.
- Emergency Walk-ins – Face-to-face crisis intervention.
- Pre-Hospital Screening – Health officials evaluate whether a consumer needs to be hospitalized due to life threatening circumstances.
- Mobile Crisis Services – Crisis intervention services provided at residences and/or in the community for those who are at risk of harm to themselves or others.
- Crisis Counseling – Provides individual counseling up to a maximum of three sessions for acute stabilization. Also provides ongoing support of clients who are in the process of being linked to community treatment agencies.

In addition, CrisisCare provides:
- Emergency Psychiatric/Medication Services – Psychiatric nurses are on site from 7 am to 7 pm Monday through Saturday. A psychiatrist is on site from 9 am to 7 pm Monday through Friday, and Saturday mornings. A psychiatrist is available varied hours Monday through Saturday and is available for consult 24/7.
- Alcohol/Drug Assessments – Diagnostic assessments for Montgomery County residents who are using drugs and/or alcohol.
- Severely Mentally Disabled (SMD) Assessments – Diagnostic assessments for those with severe, enduring and disabling mental disorders, and linkage to services in Montgomery County for ongoing treatment and monitoring.
- Care Coordination – Coordinates and links all referrals for CrisisCare clients to treatment agencies; insures clients have adequate resources to access services and monitors follow-through with CrisisCare referrals and recommendations.

- Samaritan Behavioral Health also provides trauma intervention, forensic services, and pharmacological management.

General Statistics for Samaritan Behavioral Health for FY 2011:
- Diagnostic Assessments 7,498
- Psychiatric/Medical Services 2,264
- Crisis Intervention Services Main Campus 2,283
- Walk-in Interventions 637
- Hospitalization and Probate Evaluations 967

Access to Care

The distribution of health insurance coverage in the service area is similar 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 West Central 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. A similar percentage of the population is covered by Medicare and/or Medicaid coverage at every geographic level. The service area has a higher percentage of adults with no health coverage as compared to the State and a lower proportion than the 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

United States
- No coverage, 17.5%
- Other or combination(s) coverage, 16.7%
- With Medicare &/or Medicaid coverage 13.3%
- Direct purchase, 5.5%
- With employer-based or TRICARE health insurance 46.9%

Ohio
- No coverage, 13.9%
- Other or combination(s) of coverage, 17.8%
- With Medicare &/or Medicaid coverage 13.6%
- Direct purchase, 4.4%
- With employer-based or TRICARE health insurance 50.3%

Montgomery County
- No coverage, 14.4%
- Other or combination(s) of coverage, 19.0%
- With Medicare &/or Medicaid coverage 14.7%
- Direct purchase, 4.1%
- With employer-based or TRICARE health insurance 47.7%

Source: American Community Survey, 2009-2011

The figure below presents the distribution of health care coverage across different age cohorts for the service area. Over 23% 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
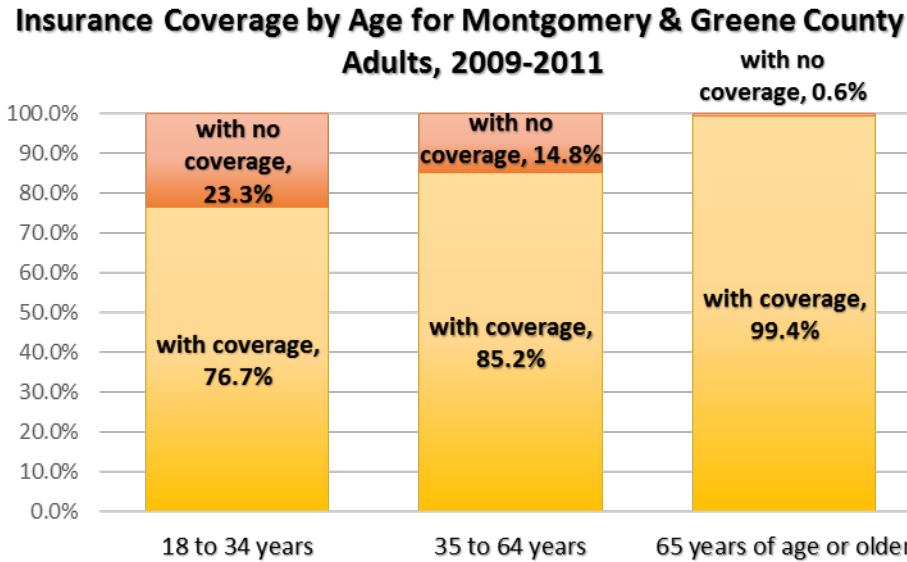
Source: American Community Survey, 2009-2011

Health Needs of the Community

County Health Rankings

	Mont-gomery County	Ohio	National Benchmark	National Median	Rank of 88, Mont-gomery
Health Outcomes					**74**
Maternal and Infant Health					
Teen Pregnancy, 15-19 per 1000	45	38	21		
Low Birth Weight	9.1%◊	8.6%	6.0%		
Percentage of pregnant mothers who smoked	16.6%	17.8%	1.4%		
Percent of Mothers without 1st trimester care, 2010	50.2%	43.6%	22.1%		
Behavioral Risk Factors					33
Adult smoking	21%	22%	13%		
Adult overweight/obesity[M]	68%	65.7%		64.5%	
Physical inactivity	26%	27%	21%		
Excessive drinking	14%	18%	7%		
Motor vehicle crash death rate	10	11	10		
Chlamydia Rate, 2012	546	461.7	10% reduction		
Gonorrhea Rate, 2012	212.3	143.5	10% reduction		
Clinical Care					15
Uninsured	15%	14%	11%		
Primary care physicians	1,089:1	1,348:1	1,067:1		
Dentists	1,839:1	1,928:1	1,516:1		
Mental health providers	2,300:1	2,553:1	Not available		
Preventable hospital stays	58	79	47		
Diabetic screening	82%	83%	90%		
Mammography screening	62%	63%	73%		
Disease					62
Poor or fair health	16%	15%	10%		
Poor physical health days	3.9	3.6	2.6		
High blood pressure[M]	35.5%	31.7%		28.7%	
Heart Attack (myocardial infarction)[M]	6.3%	4.3%		4.2%	
Coronary heart disease[M]	5.2%	4.3%		4.1%	
Leading Causes of Death					75
Age-adjusted mortality rate for those <75	430	378			

Source: Robert Wood Johnson Foundation; ◊ Different data than is presented on ODH website
M: Montgomery County Community Health Assessment, conducted by PHDMC, 2010

Maternal and Infant Health

Teen Birth Rates

Consistent with the State's trend, Montgomery County's teen birth rate is on the decline but is higher than the State's rate. The teen birth rate for African American women is almost 3 times higher than for Whites.

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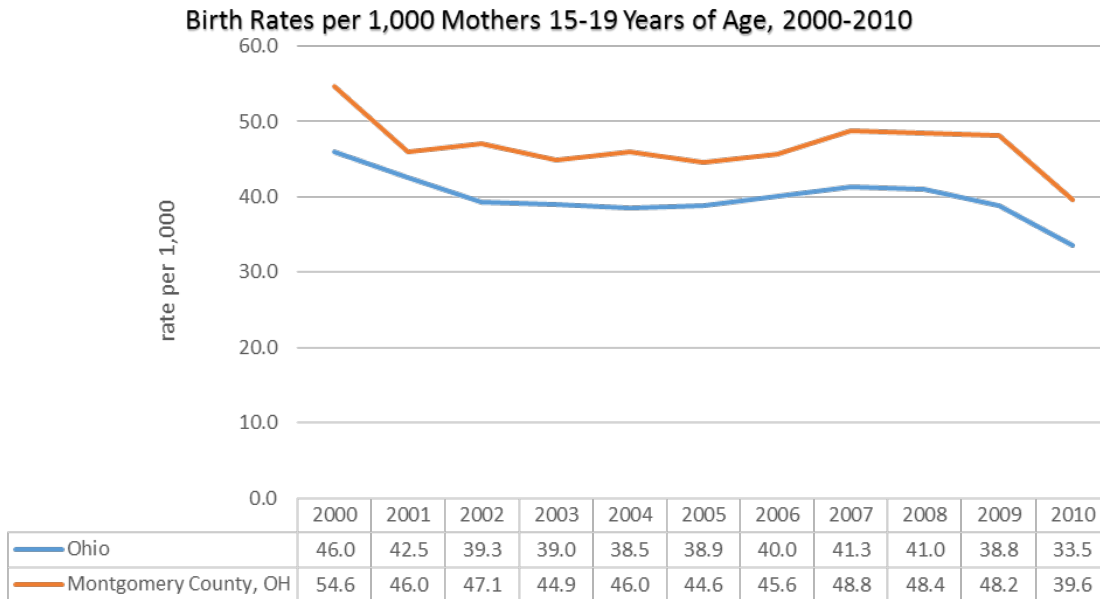
Birth Rates per 1,000 Mothers 15-19 Years of Age, 2000-2010

	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
Montgomery County, OH	54.6	46.0	47.1	44.9	46.0	44.6	45.6	48.8	48.4	48.2	39.6

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

Births to Unwed Mothers

In Montgomery County, the percentage of births to unwed mothers also follows the State trend. While 61% of White women giving birth are married, 19% of African American women are.

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%

Montgomery County: 40.6%, 42.5%, 43.0%, 42.6%, 45.0%, 46.7%, 47.7%, 49.5%, 50.6%, 51.0%, 50.0%

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

First Trimester Prenatal Care

The percentage of Montgomery County mothers not receiving prenatal care during the first trimester had been declining until an increase in 2010. Due to a modification in birth certificates, the trend for this variable can only be compared since 2006.

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

Percentage without First Trimester Care, 2006-2010

Ohio — Montgomery County

	2006	2007	2008	2009	2010
Montgomery County	59.0%	51.3%	47.8%	44.9%	50.2%
Ohio	46.2%	45.3%	47.7%	47.1%	43.6%

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 over 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%
Montgomery County	20.1%	20.9%	17.9%	16.5%	16.4%	16.8%	17.5%	17.8%	18.5%	18.5%	16.6%

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 Montgomery County's percentage of low birth weight babies (9.8% in 2009 and 9.5% in 2010) shows a marked increase. 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%
Montgomery County	9.3%	9.2%	8.4%	8.7%	9.1%	8.7%	8.9%	8.7%	8.7%	9.8%	9.5%

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 Montgomery County and the State using a three-year rolling average. The rate had been below or equivalent to the State rate until recently.

Figure 17: Infant Mortality Rate

Infant Mortality Rate (per 1,000 live births), 2000-2011

Ohio — Montgomery County

Montgomery County: 8.2, 8.0, 7.8, 7.9, 7.9, 7.9, 7.7, 7.7, 7.7, 8.0
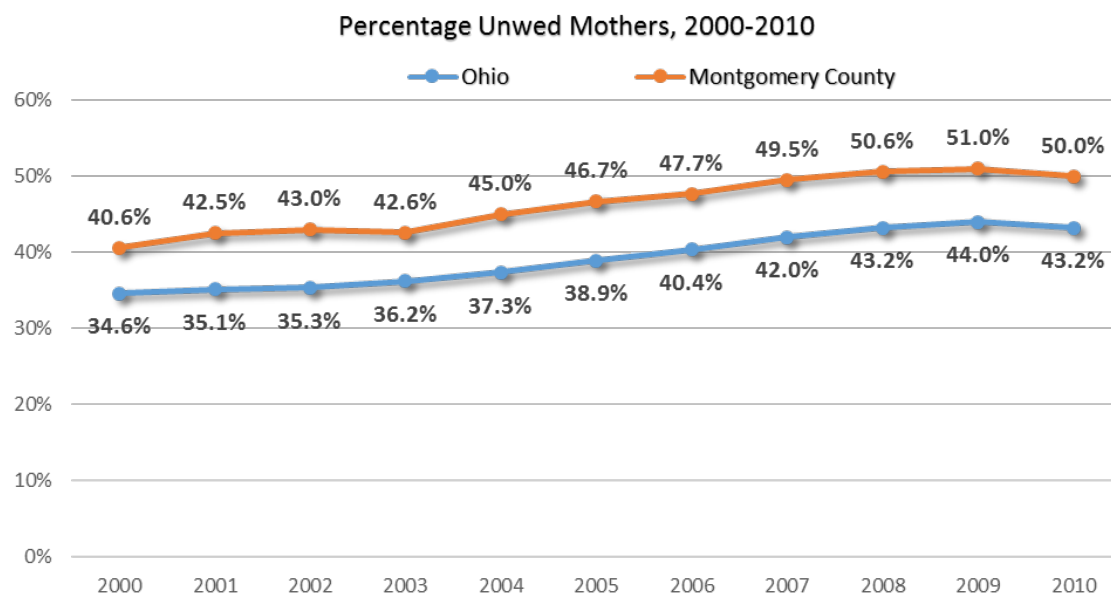
Ohio: 7.7, 7.8, 7.5, 7.3, 7.3, 7.4, 7.5, 7.7, 7.7, 7.7
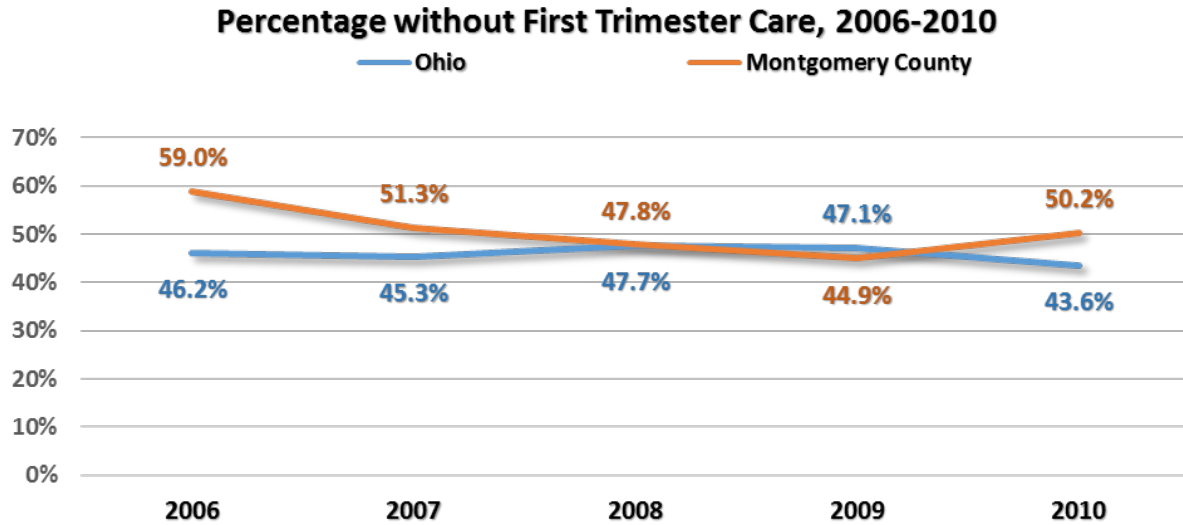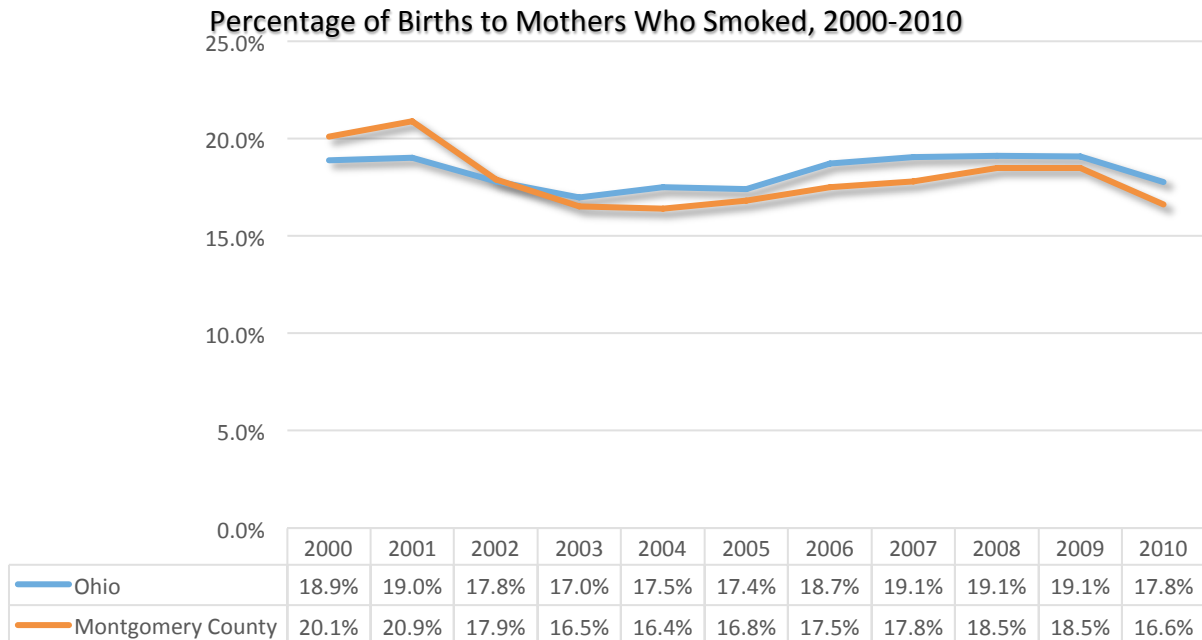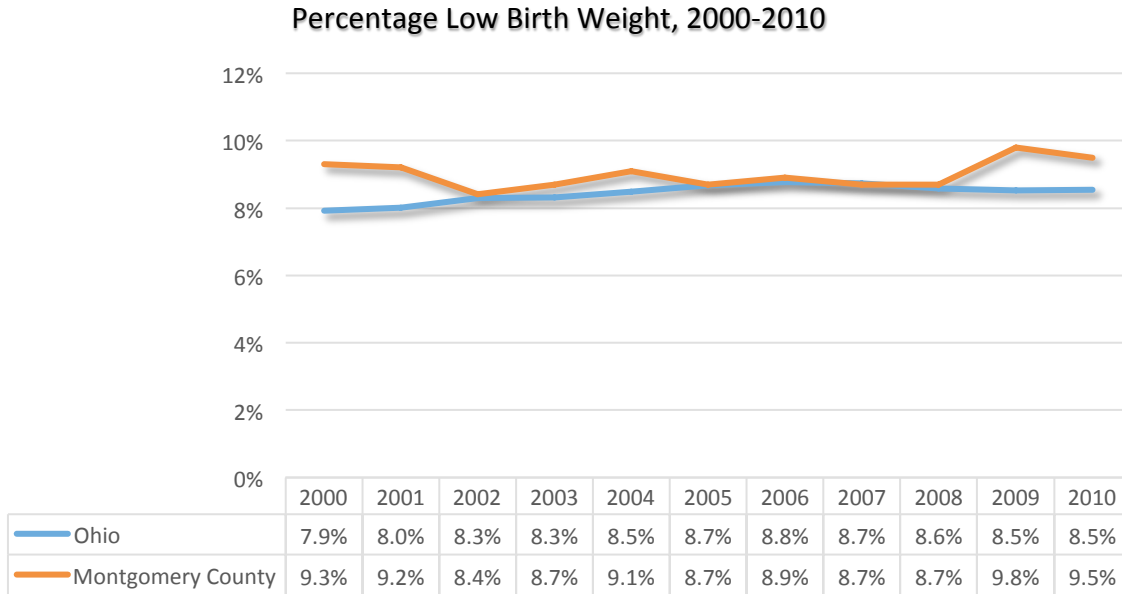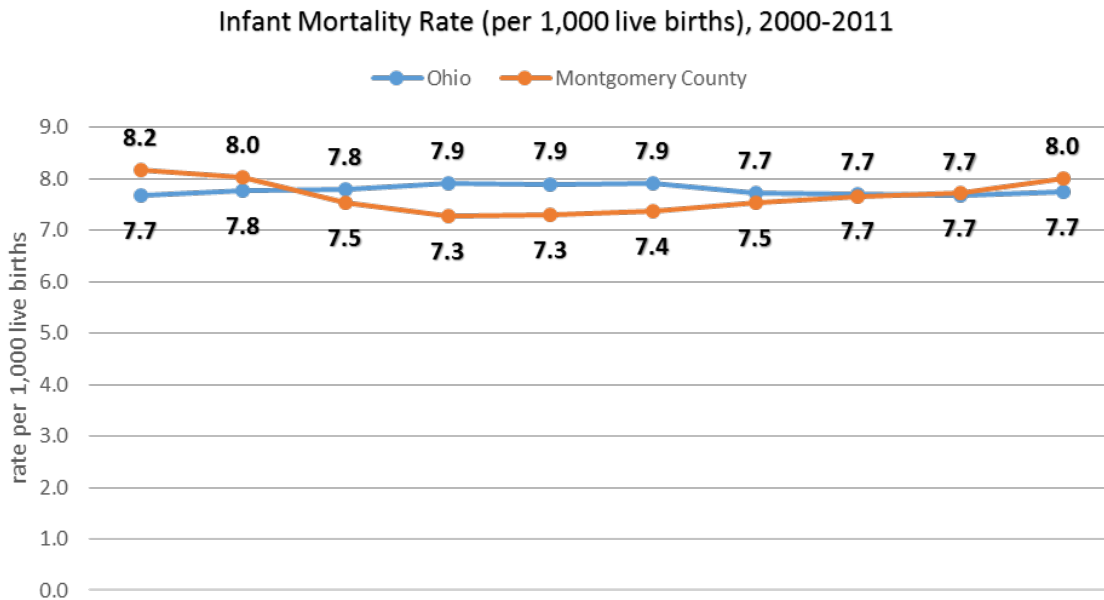
Source: 2000-2010, Ohio Department of Health, Vital statistics annual birth summaries. Last updated 05/24/2013.
Note: Small numbers are unstable and should be interpreted with caution.

Behavioral Risk Factors

Data for this section is based on the Behavioral Risk Factor Surveillance System (BRFSS), except where noted. The BRFSS is a national random digit dial (RDD) telephone survey. Data obtained from the BRFSS are representative of the total non-institutionalized population over 18 years of age living in households with a land line telephone. According to the County Health Rankings for behavioral risk factors, Montgomery County is ranked 33rd 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 U.S. The percentage of adults who smoke is 21% in Montgomery County versus 22% for the State according to County Health Rankings data.

Physical Activity & Obesity

According to BRFSS data, 26% of Montgomery 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. Sixty-eight percent (68%) of Montgomery County adults self-report a height and weight (without shoes) that constitutes overweight (BMI ≥25 and≤29.9) or obesity (BMI ≥30). Overweight and obesity contribute to approximately 400,000 of the 2 million annual deaths in the U.S. (Dietary Guidelines for Americans, 2005 cited in Montgomery County's Community Health Assessment). 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. Adult BRFSS data from the County Health Rankings shows that 14% of Montgomery County adults were binge drinkers, on average, having consumed five or more drinks on any one occasion within the month prior to the survey. This compares to a State average of 18%.

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 10 for Montgomery County, versus 11 for Ohio overall. An average of 61 Montgomery County died annually from 2004-2006 as a result of a motor vehicle traffic crash.

Sexually Transmitted Infections

Data from the Ohio Department of Health show that the incidence of Chlamydia has been generally increasing in the State since the year 2000. Montgomery County's rate has remained consistently above the State rate throughout the study period. Conversely, the Gonorrhea rate has been declining in the County and in the State. Again, the service area's rate exceeds the State rate.

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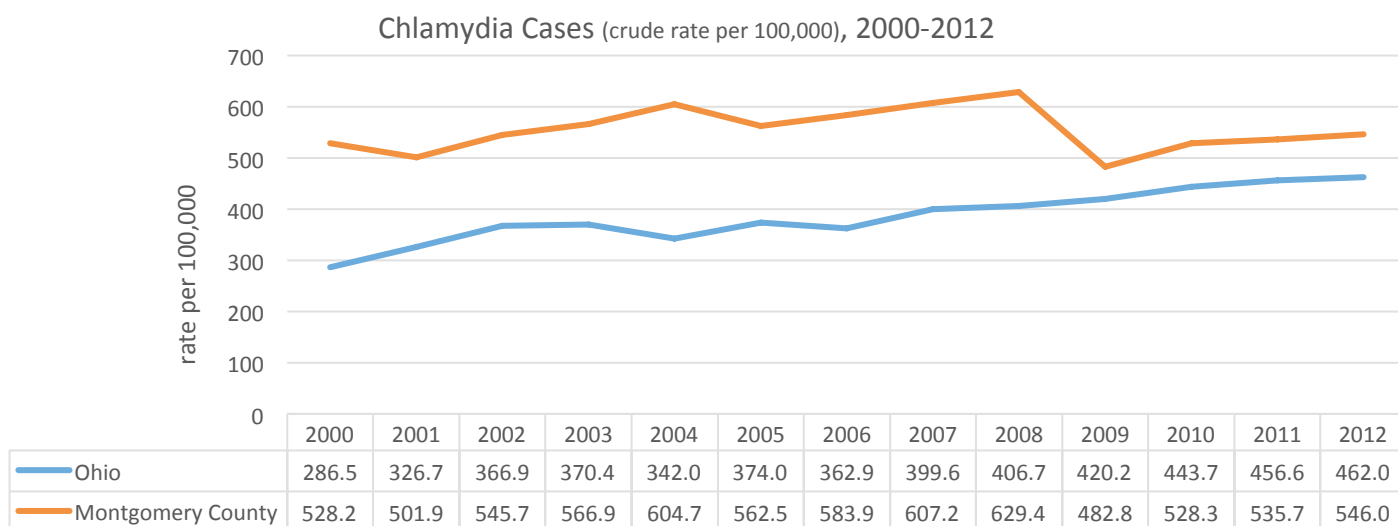
Chlamydia Cases (crude rate per 100,000), 2000-2012

	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
Montgomery County	528.2	501.9	545.7	566.9	604.7	562.5	583.9	607.2	629.4	482.8	528.3	535.7	546.0

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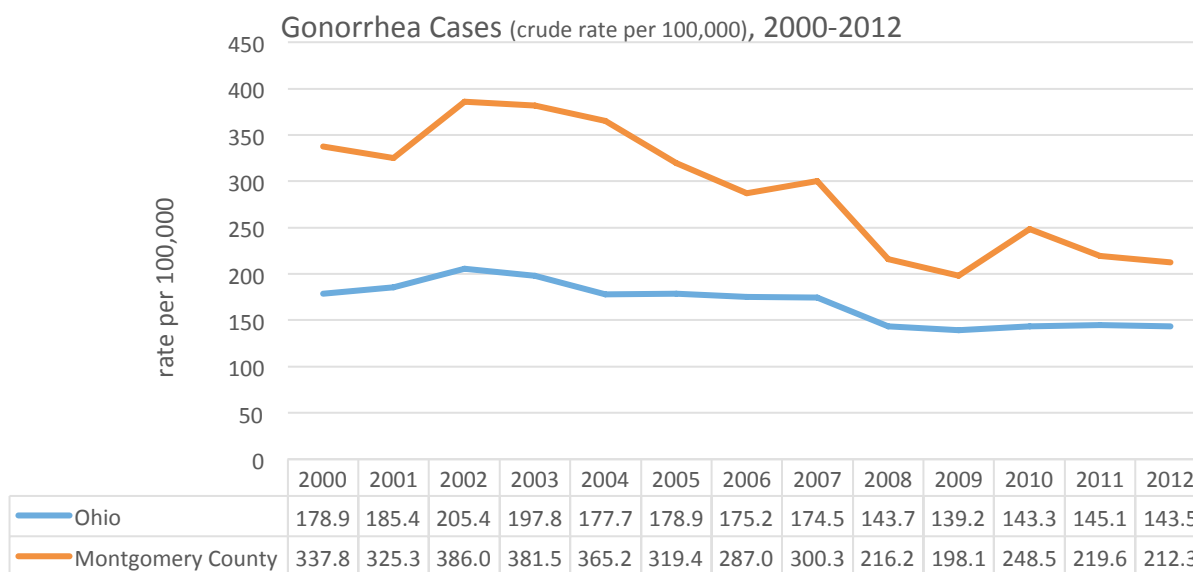
Gonorrhea Cases (crude rate per 100,000), 2000-2012

	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
Montgomery County	337.8	325.3	386.0	381.5	365.2	319.4	287.0	300.3	216.2	198.1	248.5	219.6	212.3

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

According to the Ohio Department of Health "Registered Hospitals Directory," four short-term acute care hospitals in the service area have psychiatric units for a total of 131 psychiatric registered beds. Hospital inpatient psychiatric units provide their own behavioral health crisis assessments and provide patients with access to specialty services. As mentioned earlier, CrisisCare also addresses mental health crisis needs. 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— 2,300:1 in Montgomery County versus 2,553:1 for the State.

Poor mental health days

Montgomery County adults report 3.8 days out of 30 where their mental health was not good, matching the State average of 3.8 days. The national Healthy People 2020 goal is 2.3 days.

Hospitalization due to Poor Mental Health

The following figures present emergency department and inpatient diagnoses for mental disorders. The rate of ED and inpatient diagnoses is increasing for neurotic and other primary onset mental disorders from 2004 to 2012.

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	11.1	13.2	13.5	15.3	15.5	16.3	14.3	15.2	18.8
Adult Other Primary Onset Mental Disorders	12.3	15.3	15.4	15.1	13.6	13.3	11.7	13.0	15.7
Adult Personality	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.4

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	9.3	10.1	11.9	13.5	15.9	17.7	18.8	16.2	21.0
Adult Other Primary Onset Mental Disorders	12.7	13.6	14.0	15.2	15.4	15.7	14.6	13.5	22.5
Adult Personality	2.7	3.2	2.9	3.0	3.5	3.6	3.4	2.5	2.1
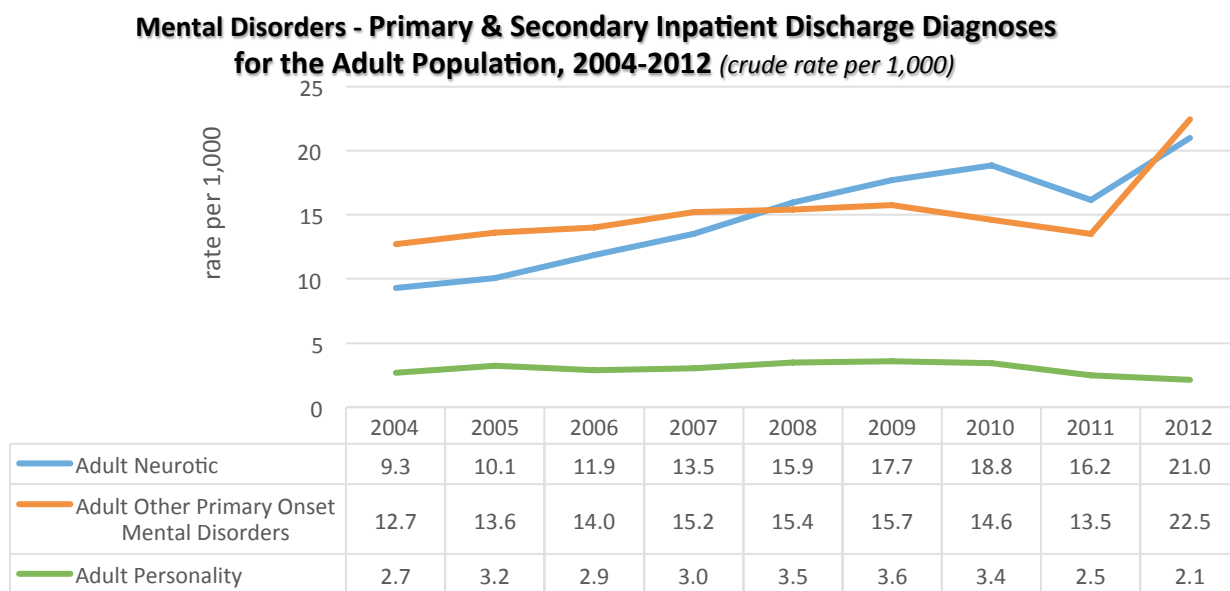
Source: Ohio Hospital Association and Greater Dayton Area Hospital Association

Clinical & Preventative Services

According to County Health Rankings, Montgomery County is ranked 15th of 88 counties in terms of residents obtaining appropriate clinical care.

Uninsured

According to American Community Survey data, 14.4% of the service area's adult population (ages 18+) has no health care coverage. The service area has a higher percentage of adults with no health coverage as compared to the State (13.9%) and a lower proportion than the nation (17.5%). Data show that adults ages 18-34 in the County are less likely to have coverage compared to adults ages 35-64 and 65+ (23.3%, 13.7%, and 0.5%, respectively).

Primary care physicians

The service area's ratios of population to primary care physicians are favorable when compared to the State's ratio— 1,089:1 in Montgomery County versus 1,348:1 for the State. However, even though ratios indicate a sufficient number of physicians, not everyone can access them. In Montgomery County, 12% of adults have no usual source of care and about 13% could not see a doctor due to cost (Montgomery County BRFSS, 2007-2008).

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 ratios of population to dentists are favorable when compared to the State ratio (1,839:1 in Montgomery; and 1,928:1 in the State). In Montgomery County, 72% of adults visited a dentist in the past year.

Mental health providers

The service area's ratios of population to mental health providers are favorable when compared to the State ratio (2,300:1 in Montgomery County versus 2,553:1 for the State).
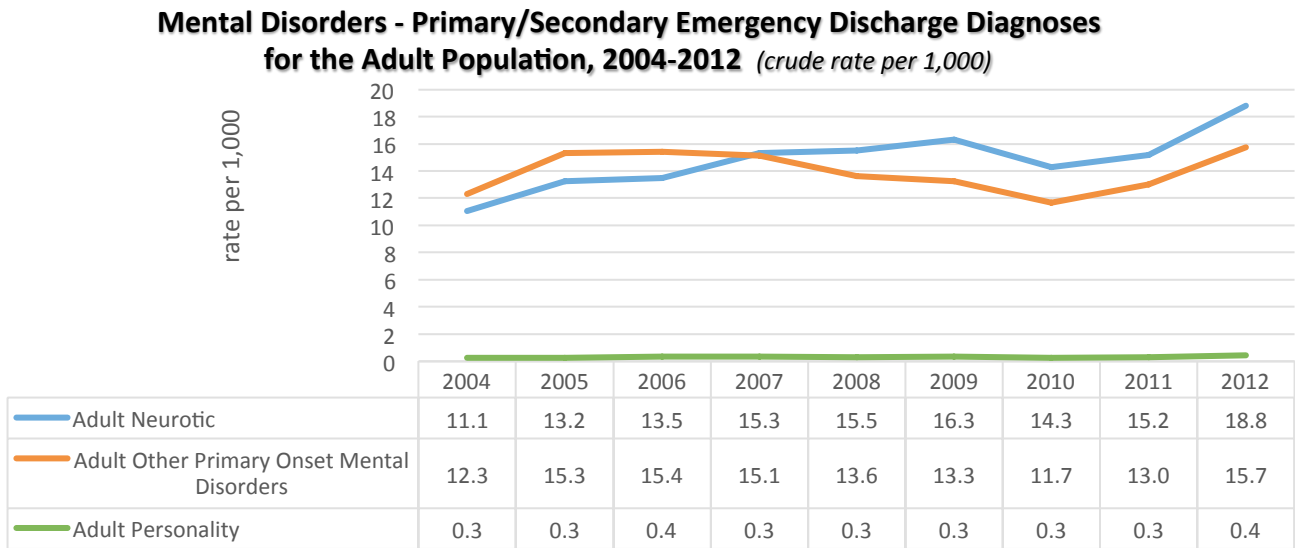
Preventable hospital stays

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 Montgomery County are 58, 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 Montgomery County's is nearly the same as the State rate (82% versus 83%). These percentages fall below the Healthy People 2020 goal of 90%.

Over 13% of Montgomery County adults have diabetes, per the Montgomery County BRFSS (2007-2008). 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 for Montgomery County was 34.0 in 2006-2008 versus 28.6 for Ohio and 22.5 for the U.S.

Mammography screening

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 Montgomery County, the State, and the U.S. benchmark are 62%, 63%, and 73%, respectively.

Disease

According to County Health Rankings, Montgomery County is ranked 62nd 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 Montgomery County, the percentage of adults reporting "poor or fair" health status was 16% 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 Montgomery County adults was 3.9 and for Ohio the number 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 Montgomery County BRFSS found that 35.5% of adults have high blood pressure. This percentage can be compared to the State percentage of 31.7% and 28.7% for the U.S.

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 Montgomery County, Ohio, and the U.S., respectively: 6.3%, 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 Montgomery County, Ohio, and the U.S., respectively: 5.2%, 4.3%, and 4.1%.

Cancer

The breast cancer rate, the most prevalent of all cancers in the service area, remained relatively flat from 2000-2006 but increased beginning in 2007 and again sharply in 2011. The lung and bronchus cancer rate has also increased. 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	171.2	182.4	186.1	192.0	183.9	191.2	164.4	180.1	182.2	194.2	180.1	195.3
Prostate	149.0	142.0	154.4	143.6	153.3	158.9	182.4	182.0	166.6	151.5	132.1	129.5
Lung & Bronchus	80.7	92.6	97.6	93.2	90.7	86.8	105.7	94.7	97.4	91.2	91.5	88.4
Colon & Rectum	56.4	64.7	61.6	53.4	62.0	65.0	56.3	63.2	52.8	54.1	45.2	43.6
Melanoma of Skin	24.2	23.8	25.7	26.9	21.6	33.9	38.8	36.2	32.5	42.9	41.9	41.3
Uterus	29.8	24.1	26.2	24.4	25.8	28.3	34.7	28.7	26.6	35.4	32.8	27.7

Source: Ohio Department of Health Ohio Cancer Incidence Surveillance System

Hospital Discharge Diagnoses

The top seven emergency department (ED) discharge diagnoses are presented in the figure below. Trends indicate a concerning pattern for alcohol and drug dependence syndrome and hypertension until 2012 when rates declined, while the rate for injuries increased in 2012.

Figure 23: 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
Injury, excluding adverse effects	100.9	105.5	99.3	102.2	101.6	98.9	99.6	102.3	110.9
Alcohol and drug	46.3	75.9	90.8	95.6	102.2	122.2	131.3	134.0	96.8
Hypertension	53.2	66.9	69.1	71.8	85.4	95.4	95.8	95.6	65.5
Abdominal pain (ill-defined)	32.9	36.3	39.3	44.7	49.2	46.5	45.8	46.1	48.1
Spinal disorders	47.6	54.9	54.4	60.8	67.9	65.4	42.7	45.3	43.5
Chest pain (ill-defined)	26.1	29.1	28.3	31.0	32.2	29.5	27.0	29.6	31.2
Diabetes	27.9	33.6	35.9	35.5	38.7	41.7	41.1	40.9	28.7
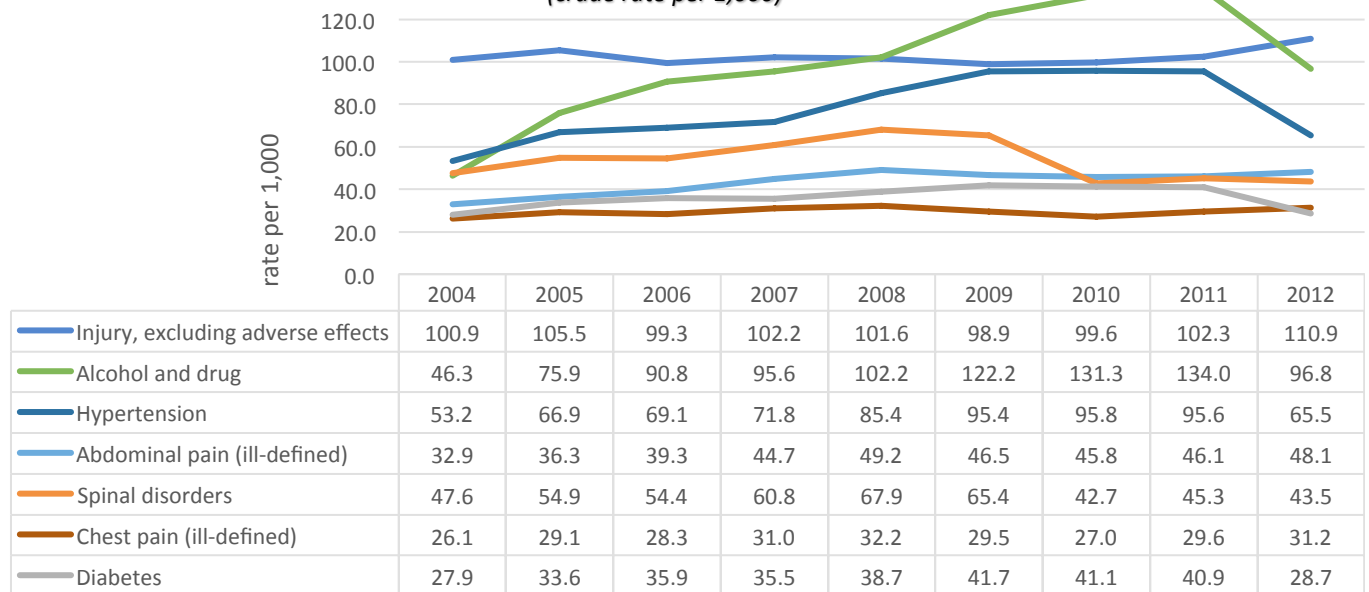
Source: Ohio Hospital Association and Greater Dayton Area Hospital Association

The top seven hospital inpatient discharge diagnoses are presented in the figure below. The rate for hypertension increased substantially in 2012 as did the rate for diabetes and for alcohol and drug dependency syndrome in terms of inpatient discharge diagnoses. The rate for chronic obstructive pulmonary disease has increased even more dramatically, with about a threefold increase from 2004 to 2012.

Figure 24:   Inpatient Discharge Diagnoses for the Adult population, 2004-2011

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
Hypertension	66.3	69.8	76.6	79.3	81.7	78.9	77.7	78.8	84.7
Non-ischemic heart disease	42.4	43.5	48.5	50.0	51.1	50.0	48.0	46.9	47.9
Diabetes	33.5	35.6	37.5	40.1	41.2	40.2	38.8	39.4	42.5
Alcohol and drug	30.9	32.5	35.1	34.7	34.5	34.7	35.2	33.6	37.2
Heart attack/oth ischemic heart disease	31.8	31.3	35.6	36.3	37.5	35.9	34.4	32.3	34.4
Complications of pregnancy and childbirth	33.1	33.2	32.8	33.0	32.3	31.9	30.6	30.2	31.5
Chronic obstructive pulmonary disease	9.2	9.9	9.6	9.7	10.9	10.7	24.9	25.9	26.2

Source: Ohio Hospital Association and Greater Dayton Area Hospital Association
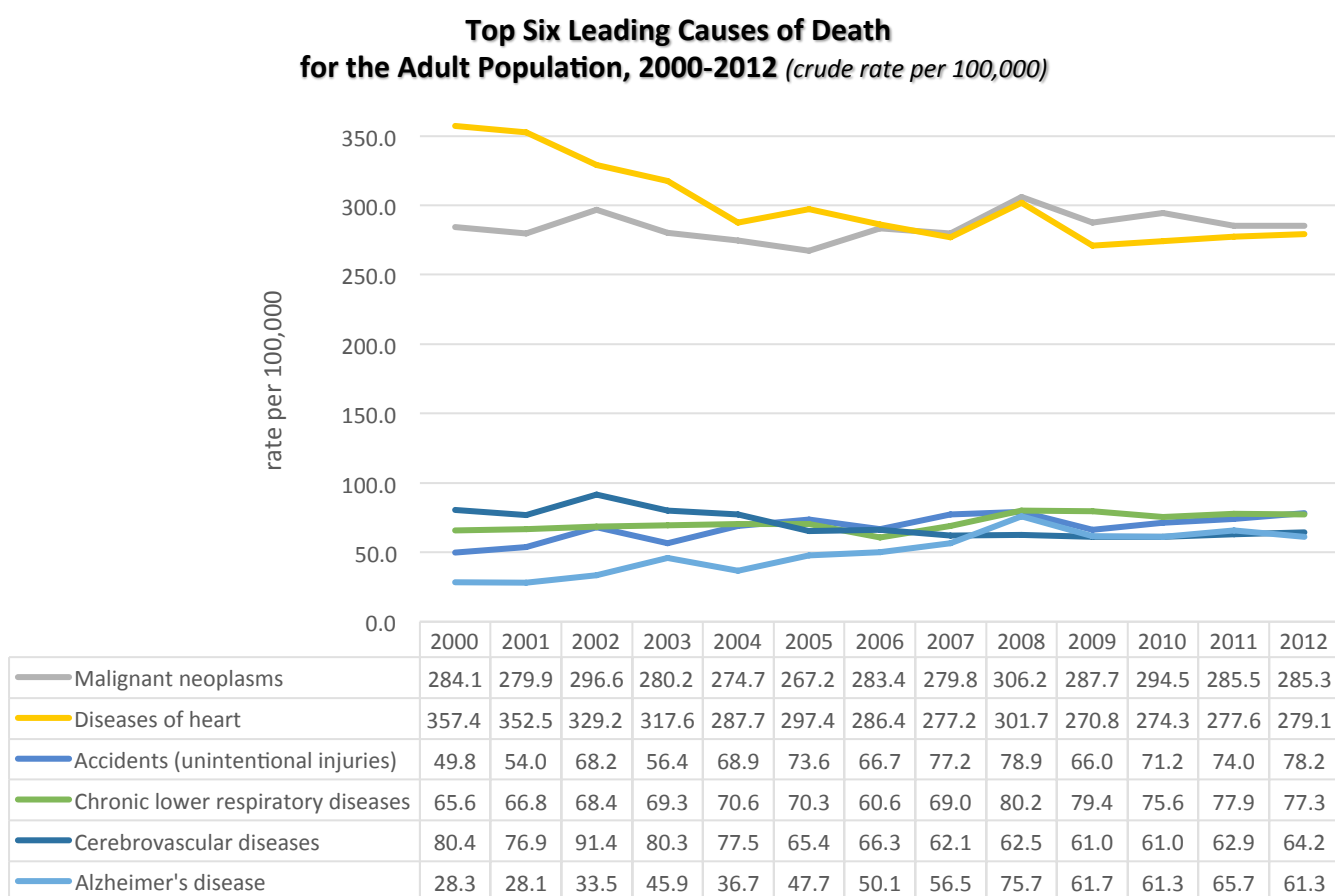
Leading Causes of Death

According to County Health Rankings, Montgomery County is ranked 75th 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 Montgomery County is substantially higher than that for the State (430 compared to 378 for Ohio).

The figure below presents the six top leading causes of death in the service area. Cancer and diseases of the heart top the list, but the mortality rate for diseases of the heart has declined substantially since 2000. The mortality rate for cerebrovascular diseases has also declined over time. Mortality rates that are increasing include Chronic Lower Respiratory Diseases, accidents, and Alzheimer's disease.

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
Malignant neoplasms	284.1	279.9	296.6	280.2	274.7	267.2	283.4	279.8	306.2	287.7	294.5	285.5	285.3
Diseases of heart	357.4	352.5	329.2	317.6	287.7	297.4	286.4	277.2	301.7	270.8	274.3	277.6	279.1
Accidents (unintentional injuries)	49.8	54.0	68.2	56.4	68.9	73.6	66.7	77.2	78.9	66.0	71.2	74.0	78.2
Chronic lower respiratory diseases	65.6	66.8	68.4	69.3	70.6	70.3	60.6	69.0	80.2	79.4	75.6	77.9	77.3
Cerebrovascular diseases	80.4	76.9	91.4	80.3	77.5	65.4	66.3	62.1	62.5	61.0	61.0	62.9	64.2
Alzheimer's disease	28.3	28.1	33.5	45.9	36.7	47.7	50.1	56.5	75.7	61.7	61.3	65.7	61.3

Source: 2000-2012, Ohio Department of Health Vital Statistics

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 increased since 2006. According to the Montgomery County Community Health Assessment for 2010, 79% of White women receive prenatal care in the first trimester while 66% of African American women do.
2. Low birth weight—The rate in the service area in the most recent years is 9.8% and 9.5% in 2009 and 2010 versus 8.5% for the State.
3. Infant mortality rate—The service area rate is increasing and is above the State rate in 2011.

Primary and Chronic Diseases:
1. Hypertension—Hypertension rates are higher in the service area than in the State and nation. It is the leading inpatient discharge diagnosis and the 3rd leading ED discharge diagnosis.
2. Breast cancer—The breast cancer rate is 195.3 per 100,000, and the rate is increasing as opposed to other historically prevalent cancers.
3. Diabetes—Wide spread behavioral risk factors such as obesity and physical inactivity and the increasing rate of hospital inpatient diabetes diagnosis are cause for concern.
4. Alcohol and drug dependence discharge diagnosis—From 2004 to 2012, the rate of Emergency Department discharge diagnosis for alcohol and drug dependence syndrome increased from 46.3 to 96.8 per 1,000 and from 30.9 to 37.2 per 1,000 for inpatient discharge diagnosis.
5. Mental health disorders—The inpatient discharge diagnosis for adult neurotic disorder and "other primary onset mental disorders" increased by two times from 2004 to 2012. According to the National Survey on Drug Use and Health, 13% of Montgomery County adults experience serious psychological stress annually, and 9% in 2008-2010 have at least one major depressive episode lasting at least two weeks out of the year.

Methodology and Information Gaps

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."[1] 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.[2]

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 West Central 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, Inc. industry and occupational data
- Hoover's (a subsidiary of Dun & Bradstreet) company records
- The Montgomery County BRFSS, 2007-2008
- Robert Wood Johnson Foundation County Health Rankings
- The 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.

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