

**Wheeling-Ohio County
Health Department**



Public Health
Prevent. Promote. Protect.

***Wheeling-Ohio County Health Department
2005 Community Needs Assessment***

*Ohio County, West Virginia
Conducted by: Michael Jubinville, California College for Health Sciences*

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- Joyce Zambito, Wheeling Health Right
- Greater Wheeling Coalition for the Homeless
- Members of PATCH (Planned Approach to Community Health)
- Ohio County and Wheeling City employees
- The Key Informants (names listed in Social Assessment)
- Wheeling-Ohio County Health Department staff

Executive Summary

Community health is always changing. It is important for individuals to have resources available to them whether they need them or not. Most citizens do not know the value of health efforts in their area. Modern health education programs are centered on prevention rather than cure. In Ohio County, cardiovascular disease is the number one killer, followed by cancer. Because the way one lives plays a large role in the risk of disease, community education is based on altering one's lifestyle. Smoking habits, dietary habits, and lack of physical activity represent three of the ten Leading Indicators targeted for improvement in the federal government's Healthy People 2010 campaign. Other health problems such as stroke, diabetes, mental illness, and Alzheimer's disease burden the health care system and shorten the lives of West Virginia residents. This assessment allows county officials to prioritize health issues and create a plan of action to combat the risk factors that will improve the health of its residents. The county has several local organizations and health providers at its disposal to carry its messages through the most effective means.

Introduction

In January of 2005, the Wheeling-Ohio County Health Department began the process of putting together a Community Needs Assessment. The department administrator, Alcinda Shockey, and the project manager, Larry Lewis, met with intern Michael Jubinville (California College for Health Sciences) and graduate students Betsey Kennedy, Janine Dzuba and Valerie Ogilbee (West Virginia University) and outlined the course of action. Lawrence Green's PRECEDE-PROCEED model, along with the West Virginia Department of Health and Human Services guided the process of the assessment. Information from statistical data, along with validated survey results from key informants

and county residents will lead to the implementation of programs designed to target health improvement. Ohio County is 108.9 square miles in the northern panhandle of West Virginia. Bordered by the Ohio River to the west and Pennsylvania to the east, it is located in the foothills of the Appalachian Mountains 57 miles from Pittsburgh, PA, 130 miles from Columbus, OH, and 136 miles from Cleveland, OH.

Social Assessment

Methodology

Large amounts of secondary data were researched for information involving, but not limited to: demographics; vital statistics; morbidity and mortality; poverty and income; education; crime; and quality of life. Key Informant and public surveys were used to gather primary information. The results of the surveys follow.

Key Informant Surveys

A total of seven key informants were interviewed by Betsey Kennedy, Janine Dzuba and Valerie Ogilbee from West Virginia University. The respondents represent the following agencies in Ohio County:

- Mary Palma, Teacher, Ohio County Schools
- Terry Sterling, Director, Wheeling Area Chamber of Commerce
- Jeanne Wagner, Registered Nurse, Youth Services System
- Mary Velez, Ohio Valley Medical Center
- Martha Hon, Easter Seals Rehabilitation Center
- Ted Rouse, Owner, WVTX-TV
- Anita Carenbauer, dental hygienist, member of Ohio County Planned Approach to Community Health (PATCH)

The data were analyzed by looking for trends in the responses to each question. Each question is listed below, with the most common responses:

1. What are some accomplishments that you have seen/witnessed in Ohio County in the last three years? Why did these succeed?
 - A new Cabela's store recently opened in the area, helping to spur economic development in Ohio County. More retail stores are planned near Cabela's.
 - Healthcare services are already good and continue to improve.
 - Ohio County is currently attempting to become smoke-free. That would be a big accomplishment for public health, but some area businesses are afraid that this could damage their business.
2. What are some positive things about Ohio County—from either their personal or agency's perspective?
 - Great schools, including public, private, and parochial.
 - Ohio County is a safe area with a low crime rate.
 - Ohio County is a nice place to raise a family.
 - It is close to major metropolitan areas like Pittsburgh and Columbus.
 - There are great hospitals/healthcare systems in the area.
 - The symphony, minor league hockey, and parks offer residents things to do.

- People tend to rally around each other in times of trouble. The recent flooding is a good example.
3. What are some negative things about Ohio County—from either their personal or agency’s perspective?
- Unemployment is major in Ohio County.
 - Wheeling city taxes are hard on both individuals and small businesses.
 - The downtown area of Wheeling needs to be redeveloped.
 - People tend to be resistant to change.
 - Flooding has been a major problem recently.
 - There is a high incidence of cancer in the area.
4. What are the health programs that are presently in place, and are improving the community’s health in Ohio County? What population is the target of these programs and what population is not being served?
- The Tobacco Coalition offers smoking cessation programs to smokers.
 - There is an attempt by the health department to make the entire county smoke-free, which will benefit everyone’s health.
 - Physical fitness is promoted at facilities like the Howard Long Wellness Center and CentreTown Fitness however, these programs are not always free.
 - The hospitals provide free wellness programs.
 - There are lots of events in Ohio County, like Heart Walks and Blood Donation Days.
 - Wellness programs, dental screenings, and physicals benefit children.
5. From your perspective at your agency, what do you think are the main problems facing community health in Ohio County? What makes that a large problem?
- Sometimes problems stem from a lack of prevention. People wait until something is really wrong to go to their doctor.
 - There is a lack of funding for many programs.
 - Overall, there is a lack of health behavior education for adults and children.
 - Obesity, heart disease, and diabetes have become major problems due to poor diet, smoking, and lack of exercise.
 - There are high cancer rates in the area.
 - Insurance has become too costly.
 - There are problems with sexually transmitted diseases and drug addiction. More education is needed for youth.
 - Occupational related illnesses are prevalent.
6. What do you think are some barriers to achieving community health in Ohio County? What are some barriers that your agency has come up against in trying to implement some community health initiatives?
- There are no good forums for health education in Ohio County, especially for children’s health.
 - Overall, there is a lack of financial resources in the community, since there is a lack of good paying jobs.
 - High insurance costs prevent people from visiting their doctors.
 - People do not like to change, and some people just do not care.
7. What are the community health changes you would like to see in Ohio County within the next 10 years?
- More campaigns for overall wellness, eating habits, sex education, and STD prevention.
 - More economic development is needed to help children stay in the area.

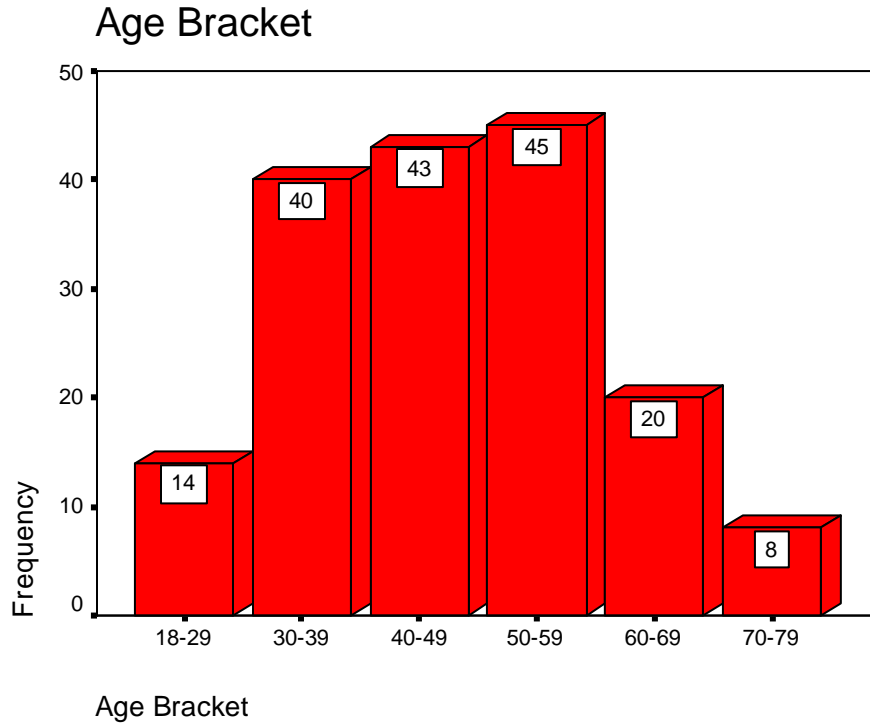
- More physical fitness and use of the walking trails.
 - Less consumption of fast food.
 - 100% smoking ban in Ohio County public places.
8. How would you rate the following in Ohio County? (Answer low quality, adequate, or high quality)

Ratings of Ohio County Services by Key Informants

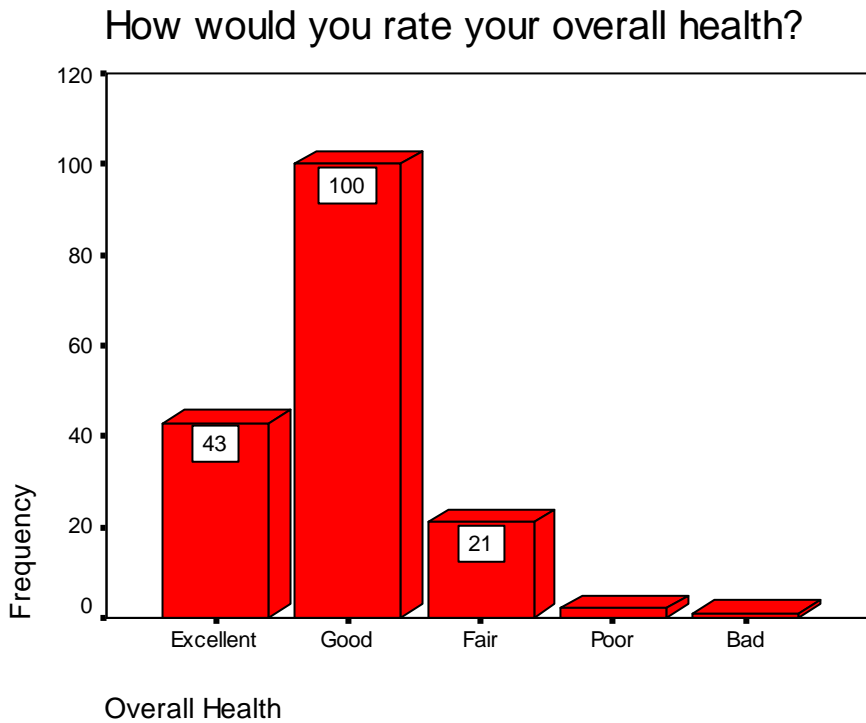
Service	Low	Adequate	High
Local Hospitals	0.00%	28.57%	71.43%
Local Health Departments	0.00%	14.29%	85.71%
Healthcare for Children	0.00%	14.29%	85.71%
Healthcare for Adults	14.29%	0.00%	85.71%
Healthcare for Elderly	14.29%	28.57%	57.14%
Public School System	0.00%	28.57%	71.43%
General Safety in the Community	14.29%	42.86%	42.86%
Emergency Response	0.00%	14.29%	85.71%

Public Opinion Surveys

The following information was the result of public opinion surveys that were administered to Ohio County residents. The method of survey taking was done in different ways. The students from West Virginia University interviewed residents at two central locations at two different times. Their efforts yielded 60 surveys. The intern collected a handful of surveys by random phone call, but found greater response in distributing the surveys to various community agencies throughout Ohio County. A total of 216 surveys were turned in (108 male and 108 female). The ages of the residents are depicted below. Most people ranged between the ages of 30 and 60 (59%).



Although some residents are dealing with one or more health issues, the vast majority rated their health as “good” (46%).



The following frequencies were calculated for responses to questions regarding disease morbidity (in numbers):

- Allergies 56
- High Cholesterol 55

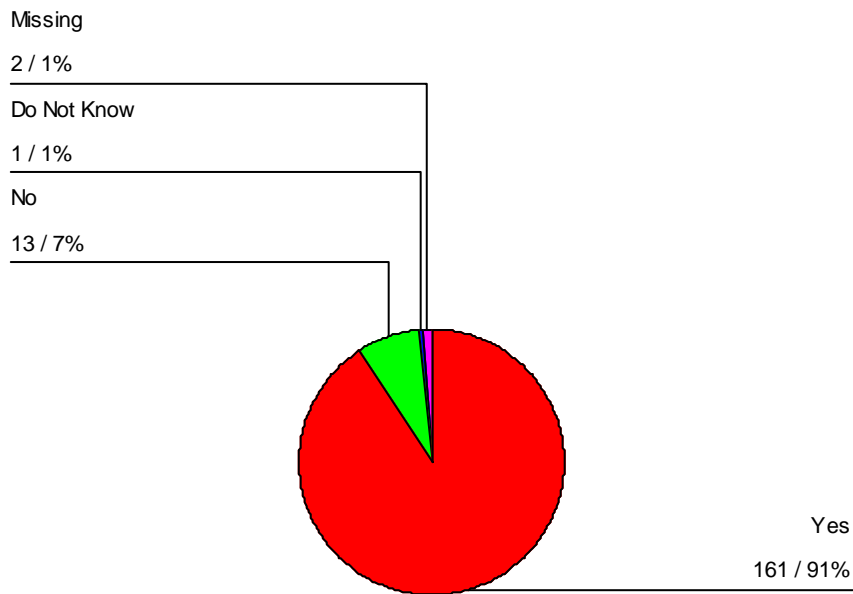
- High Blood Pressure 54
- Arthritis 48
- Asthma 22
- Thyroid Disorder 19
- Cancer 16
- Diabetes 12
- Heart Disease 10

Depression had the biggest “write in” diagnosis with 4 of 25 responses. Sixteen people stated they had cancer and fourteen identified the site:

- Breast 6 cases
- Cervix 4 cases
- Skin (various) 3 cases
- Kidney 1 case

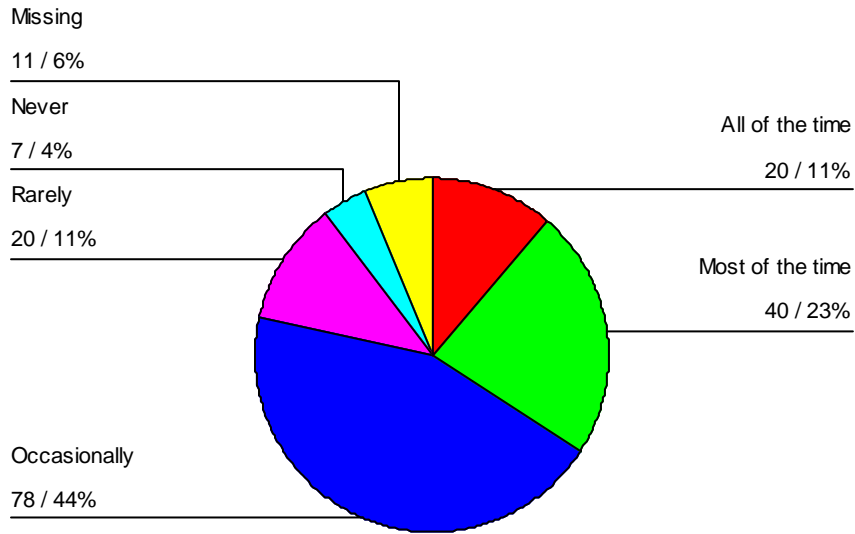
When questioned about health insurance, 91% responded they had coverage. This is higher than the state average of 83.4% (United States Census Bureau).

Do you have health insurance?



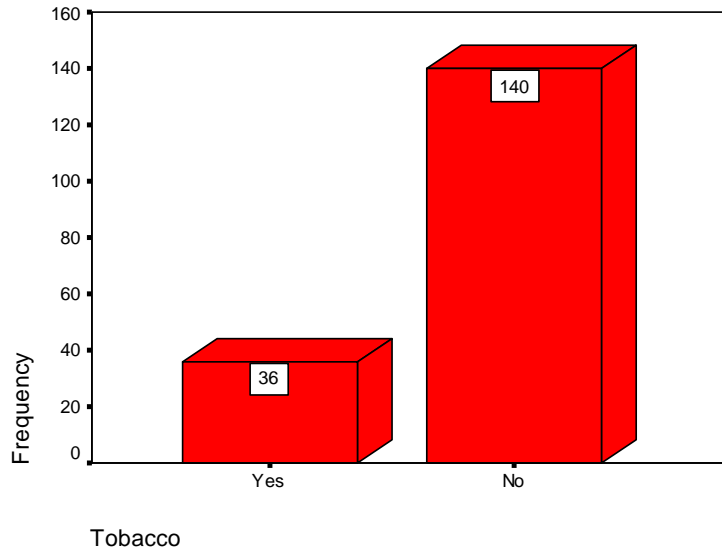
Stress is a condition in and of itself. It also serves as a risk factor for several other conditions. Cardiovascular disease, stroke, depression, sleep deprivation, hypertension, and ulcers are examples of other issues that can arise as a result of stress. Although the majority felt stress occasionally (44%), nearly a quarter of residents (23%) felt it most of the time. Stress levels also contribute to overall quality of life.

Do you feel you have a high level of stress?



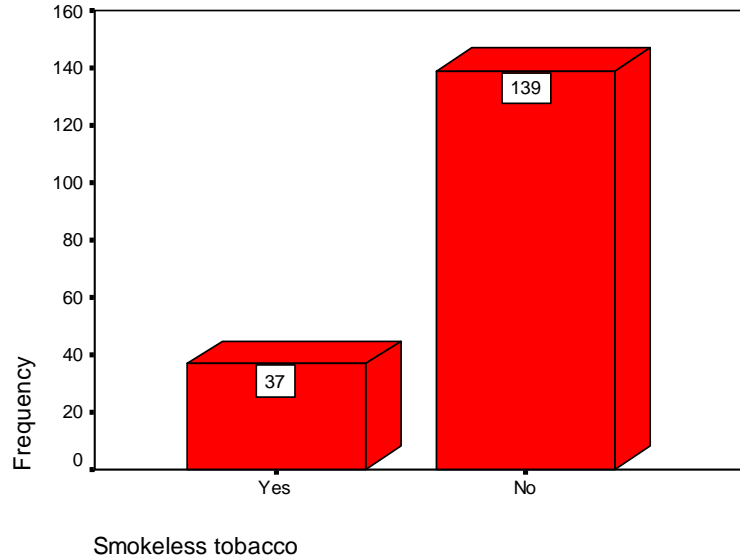
Other negative contributors to health are tobacco use, physical inactivity, diet, and weight. The data below breaks down the habits of Ohio County residents. The graph shows that 80% of Ohio County residents do not smoke. The remaining 20% falls below the state average of 27% and the national average of 23%.

Do you smoke now?



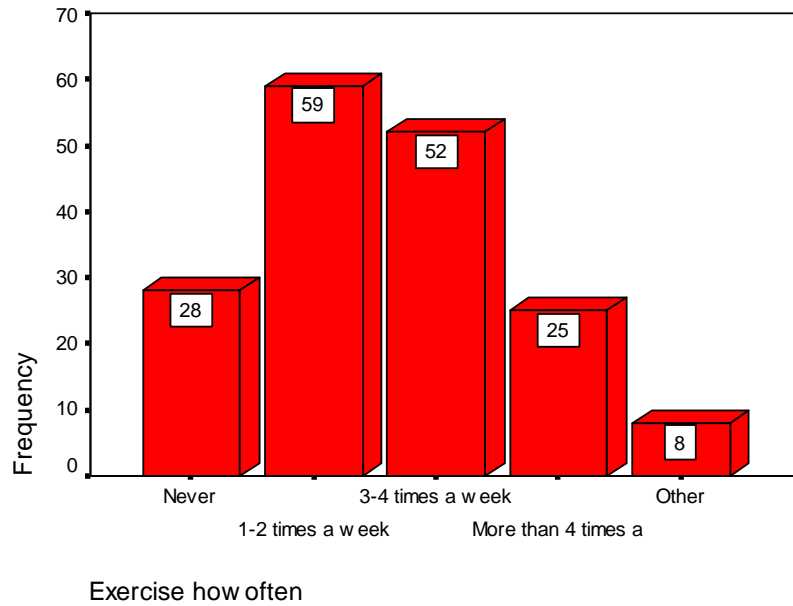
Data on smokeless tobacco was included because usage among males in West Virginia is double the national average. The data below reflects that 21% of males use smokeless tobacco.

Do you use smokeless tobacco?



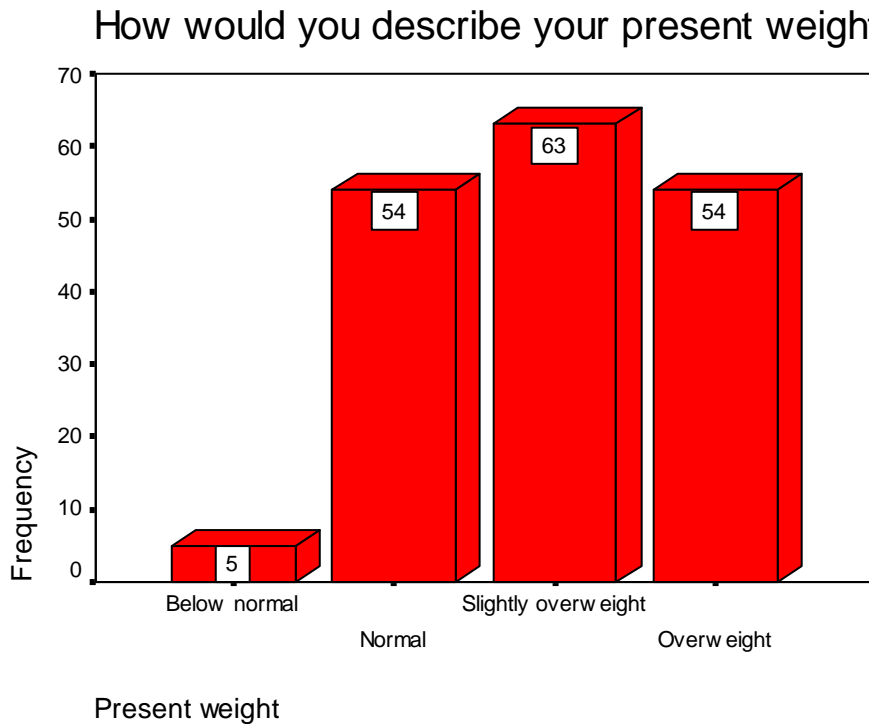
Most survey takers exercise at least one or two times a week and try to eat in a healthy way. Data collected on exercise and dietary habits are graphed below:

How often do you exercise?



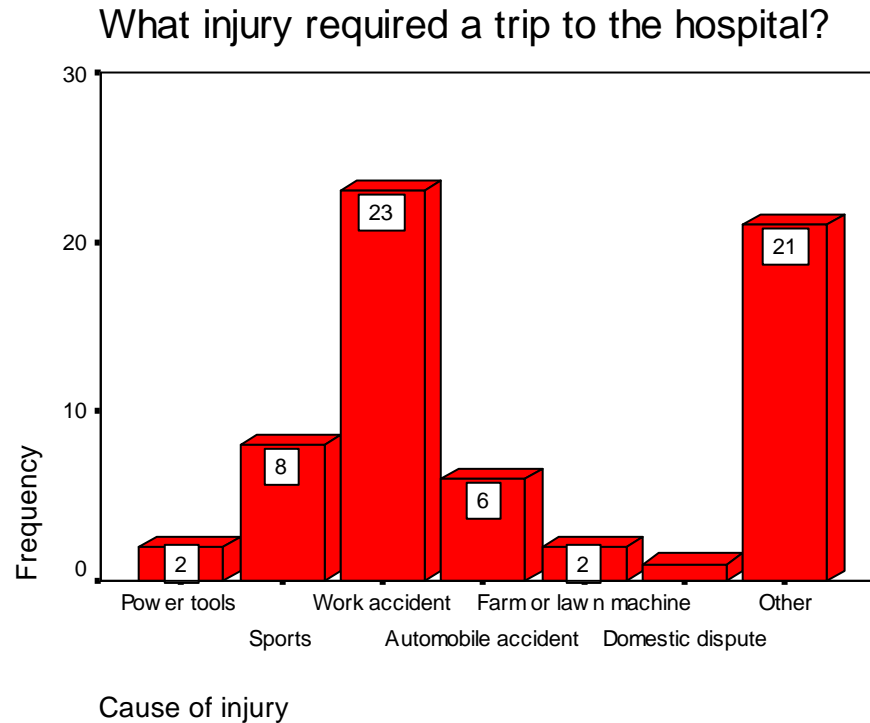


When asked to describe their current weight status, the majority answered “slightly overweight.”



One local issue is the lack of specialists due to high malpractice insurance. Twenty respondents answered they seek medical service outside of Ohio County. The biggest reason cited was lack of quality of care or lack of doctor (20%). Another 15% indicated insurance as the reason for going outside the county. The areas people travel to for medical care are: Ohio (41%); Pittsburgh (15%); Morgantown (8%); West Virginia, other than Ohio County and Morgantown (26%); and Pennsylvania, other than Pittsburgh (10%). Trips to the emergency room put a burden on the

healthcare system. The graph below illustrates the reasons residents needed hospital emergency rooms.



The “other” category yielded these results:

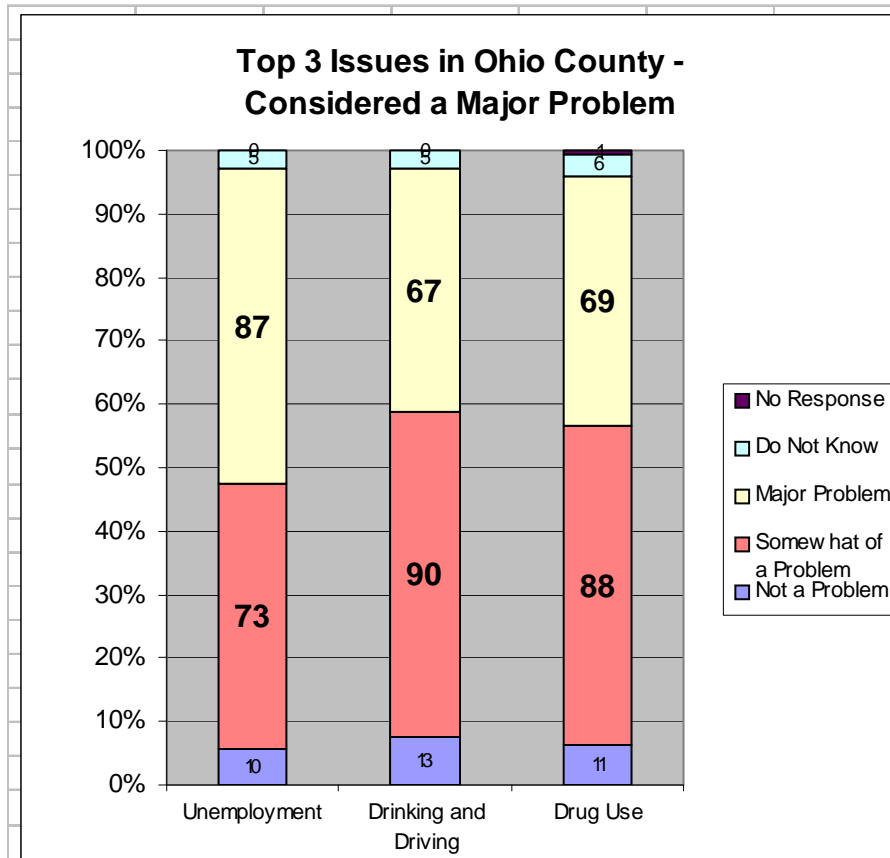
- Falls 13
- Cuts 3
- Motorcycle Accident 2
- Broken Bones 2
- Infection 1

Some visits were for more than one reason.

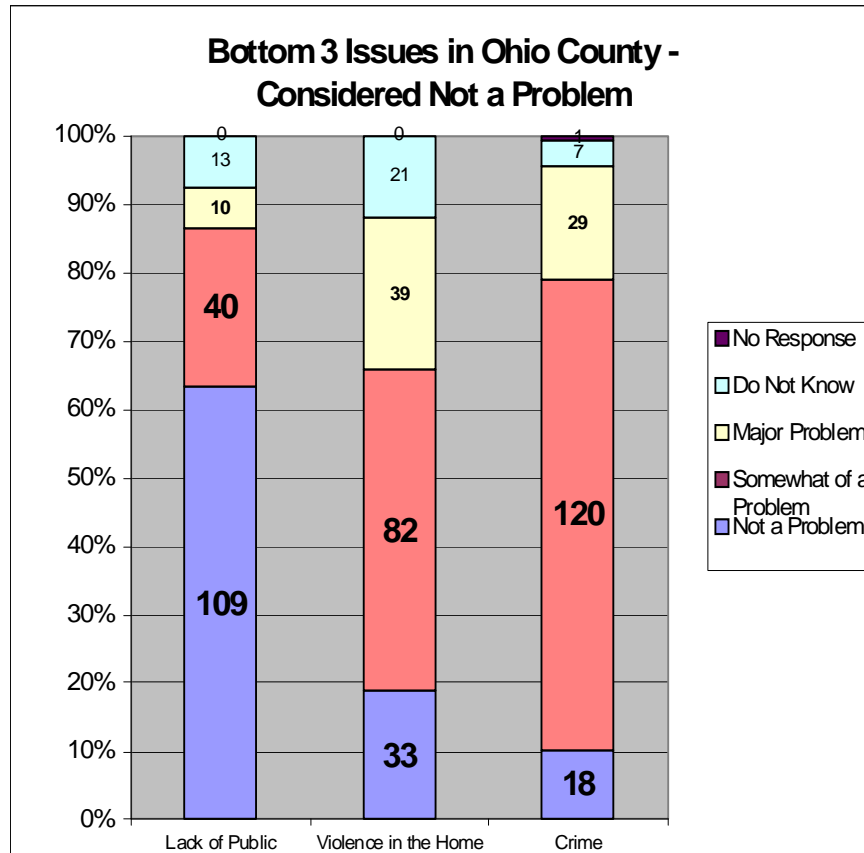
Another section of the survey addressed the perception of community problems. Residents were asked to rank the following issues as “Not a Problem”, “Somewhat of a Problem”, “Major Problem”, or “Do Not Know”:

- Water Pollution
- Air Pollution
- Lack of Public Transportation
- Unemployment
- Violence in the Home
- Child Abuse
- Crime
- Illiteracy
- Poverty
- Juvenile Delinquency
- Drug Use
- Drinking and Driving
- Underage Drinking

The following graphs display the top and bottom three issues considered to be problems in Ohio County. Unemployment, drinking and driving, and drug use were the three most prevalent issues in the Ohio County area, according to the respondents of the survey.



The issues that ranked as not very problematic are shown below:



Most people interviewed think public transportation is not lacking in Ohio County. Also, the interviewees considered violence in the home and crime not to be problematic. This questionnaire provided respondents with the topics to rate, so the interviewees did not have to think about what they felt were and were not the most important problems. Some open ended questions on the survey required a written statement. Below are the top five results for two of the questions:

1. What is your biggest health concern? (126 responses)
 - Cancer 24%
 - Weight 21%
 - Heart Disease 13%
 - Diabetes 7%
 - Cholesterol 5%

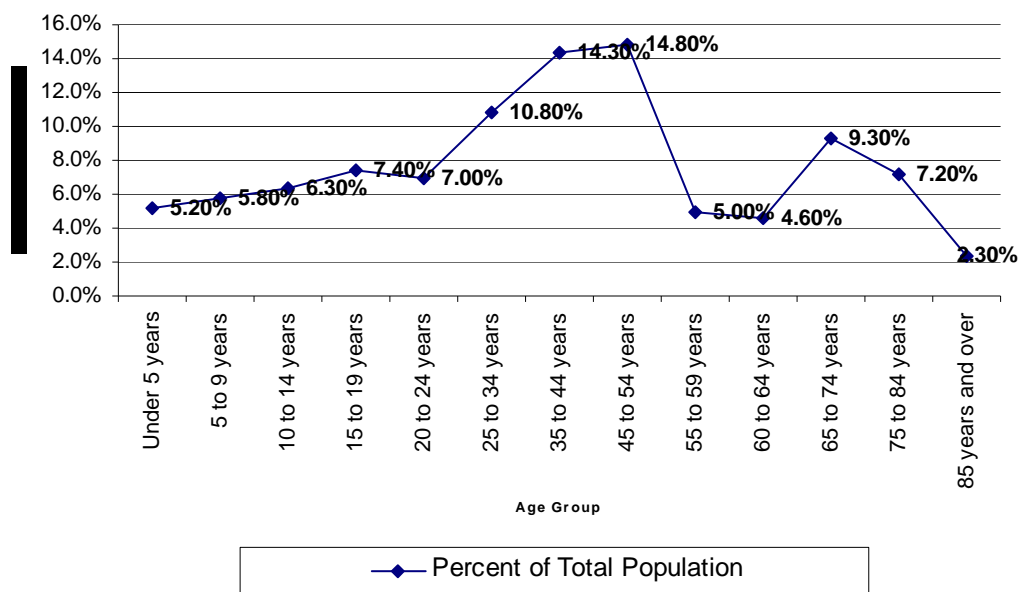
2. What is the big health concern of this community? (169 responses)
 - Cancer 14%
 - Obesity 13%
 - Cost of health care 12%
 - Lack of insurance 8%
 - Heart Disease 6%

Epidemiological Assessment

Demographics

Ohio County population by age (2000):

Figure 1. Percent of Total Population by Age Group



Ohio County population by race (2000):

Population by Race	Number	Percent
One race	47,427	99.1%
White	44,820	94.5%
Black or African American	1,691	3.6%
American Indian and Alaska Native	42	1.0%
Asian	369	0.8%
Asian Indian	151	0.3%
Chinese	62	0.1%
Filipino	55	0.1%
Japanese	30	0.1%
Vietnamese	16	0.0%
Other Asian 1	35	0.1%
Native Hawaiian and Other Pacific Islander	14	0.0%
Native Hawaiian	6	0.0%
Guamanian or Chamorro	1	0.0%
Samoan	3	0.0%
Other Pacific Islander 2	4	0.0%
Some other race	61	0.1%
Two or more races	430	0.9%

Broken down by gender, Ohio County is comprised of 22,177 (46.8%) males and 25,250 (53.2%) females (United States Census Bureau).

Deaths

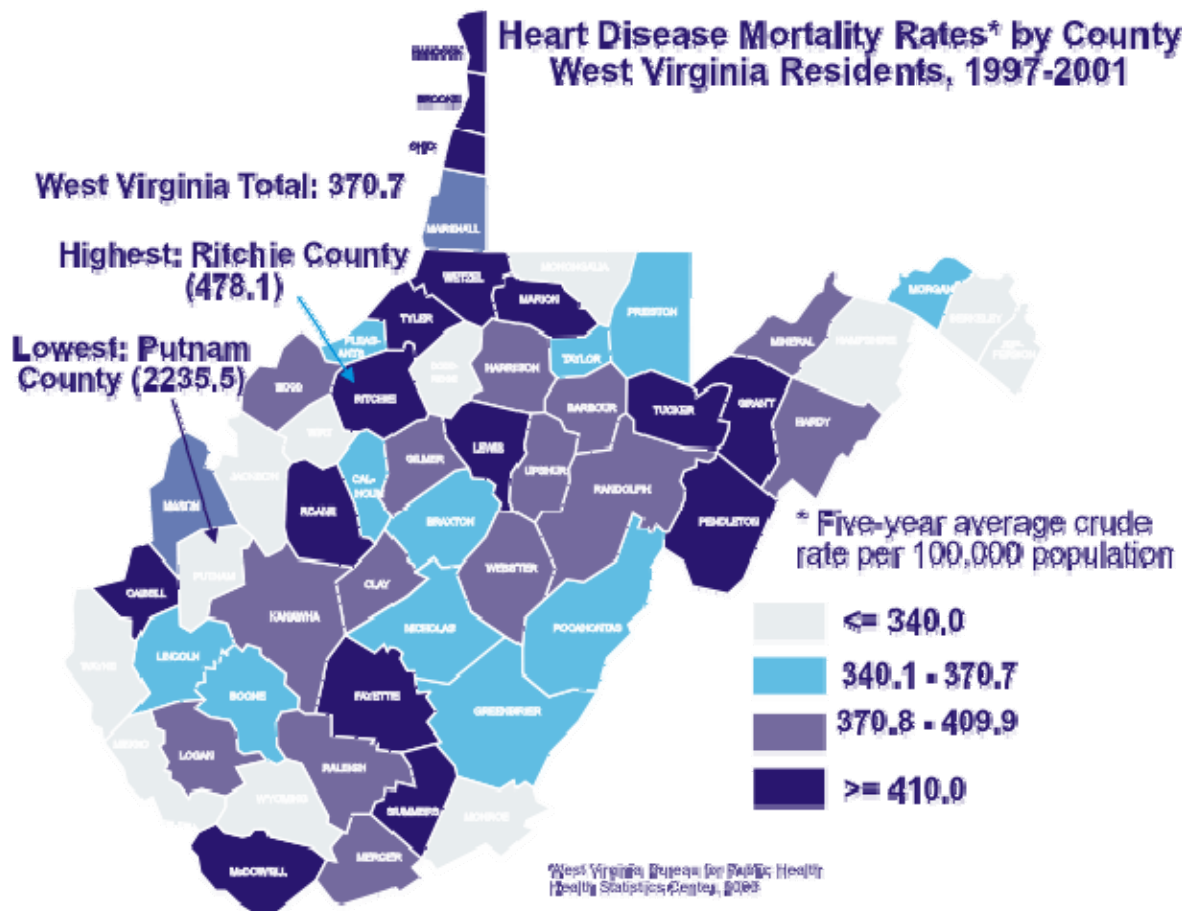
Heart disease and malignant neoplasms (cancer) were the two biggest killers in Ohio County. This trend mirrors both state and national data. In 2002, the total number of deaths in the county numbered 580 (West Virginia Vital Statistics). Of that, heart disease was responsible for 218 deaths, and cancer was responsible for 141 deaths (62% combined).

Selected Causes of Resident Deaths: Number and Rate* Ohio County, 2002

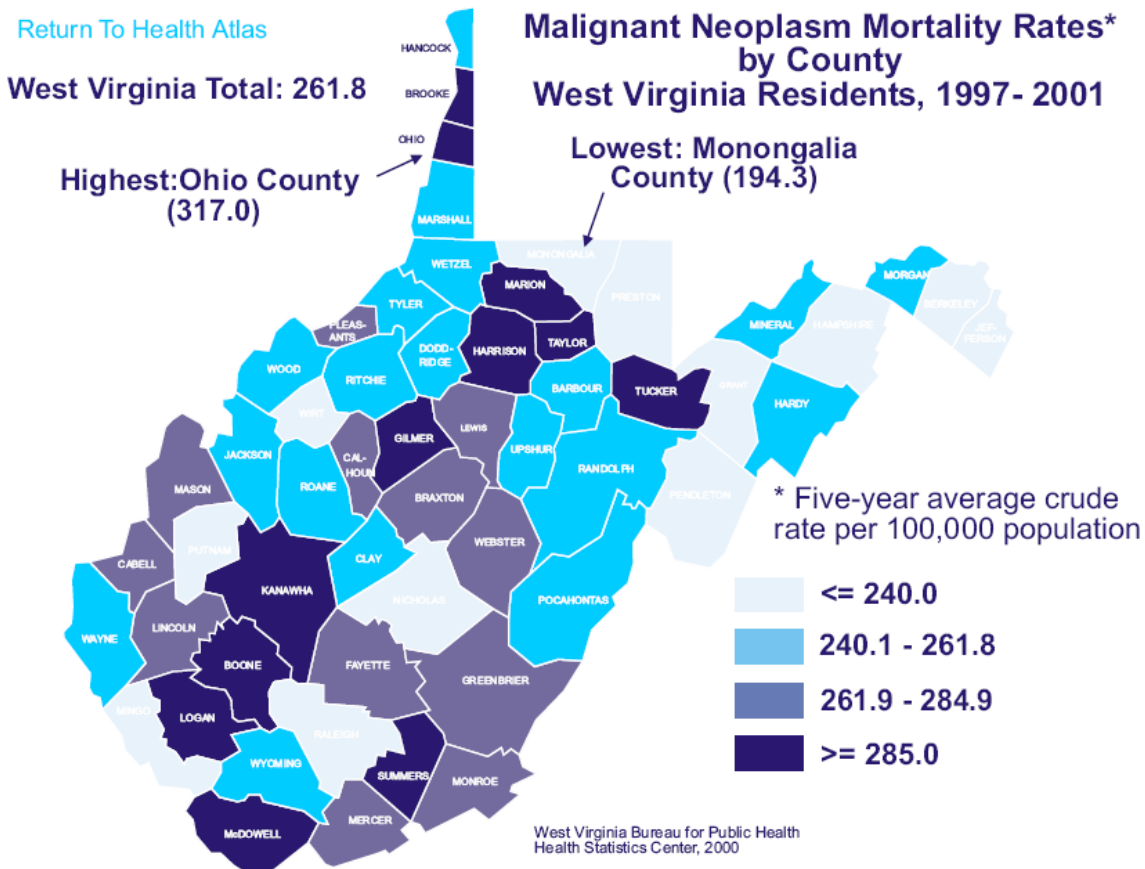
Selected Causes of Death	Number	Rate
Fetal Deaths	3	6.9
Total Deaths, All Causes	580	12.6
Deaths under 1 Year	6	13.8
Deaths under 28 Days	3	6.9
Tuberculosis	0	0.0
Septicemia	6	13.0
Human Immunodeficiency Virus Infection	0	0.0
Malignant Neoplasms	141	305.7
of Digestive Organs	25	54.2
Colon	11	23.8
Pancreas	7	15.2
of Respiratory and Intrathoracic Organs	48	104.1
Trachea, Bronchus, and Lung	48	104.1
of Breast	8	17.3
of Genitourinary Organs	17	36.9
Cervix Uteri	1	2.2
Ovary	2	4.3
Prostate	7	15.2
Bladder	5	10.8
All Other (Malignant Neoplasms)	43	93.2
Benign neoplasms, carcinoma in situ, & unspecified neoplasms	1	2.2

Diabetes Mellitus	36	78.0
Alzheimer's Disease	10	21.7
Major Cardiovascular Disease	218	472.6
Diseases of the Heart	165	357.7
Ischemic Heart Disease	128	277.5
Essential Hypertension and Hypertensive Renal Disease	7	15.2
Cerebrovascular Diseases	38	82.4
Atherosclerosis	4	8.7
Other Diseases of Arteries, Arterioles, and Capillaries	4	8.7
Influenza and Pneumonia	10	21.7
Influenza	0	0.0
Pneumonia	10	21.7
Chronic Lower Respiratory Diseases	27	58.5
Lung Diseases due to External Agents	4	8.7
Coal worker's Pneumoconiosis	0	0.0
Chronic Liver Disease and Cirrhosis	4	8.7
Nephritis, Nephrotic Syndrome, and Nephrosis	4	8.7
Congenital Anomalies	1	2.2
Ill-Defined and Unknown Causes of Death	3	6.5
Accidents	12	26.0
Motor Vehicle Injuries	4	8.7
Falls	3	6.5
Smoke, Fires, and Flames	0	0.0
Drownings	0	0.0
Poisonings	2	4.3
Other Accidents	3	6.5
Intentional Self-Harm	5	10.8
Assault	0	0.0
All Other Causes (Residual)	98	212.5

Over a five year period from 1997-2001, Ohio County averaged over 410 deaths per 100,000, placing it among the highest in the state and well over the state average of 370.7 per 100,000 (West Virginia Bureau for Public Health).



Mortality rates for malignant neoplasms in Ohio County are the highest in the state. Cancer was responsible for 141 of the 580 county deaths in 2002 (West Virginia Vital Statistics). Data from a five year period (1997-2001) showed Ohio County with 317 deaths per 100,000. West Virginia's average is 261.8 per 100,000 (West Virginia Bureau for Public Health).



For both men and women, lung cancer had the highest mortality rate statewide. The top three cancers for women are breast, lung & bronchus, and colorectal. Breast cancer rates in Ohio County are the highest in the state. The top three cancers for men are prostate, lung & bronchus, and colorectal (West Virginia Cancer Registry). If present trends continue, cancer will become the leading cause of death in the state by 2026 (West Virginia Cancer Control Program). Years of Potential Life Lost (YPLL) indicates the number of years lost due to premature death. It is another method of calculating the effects of mortality on the county population relative to the state.

Ohio County
Selected Causes of Deaths, 1992 - 2001
Years of Potential Life Lost (YPLL) Before Age 75

Selected Causes of Death	1992-2001 YPLL	1992-2001 County Crude Rate	1992-2001 County Adjusted Rate***	Percent Difference From U.S	SI*	County Rank
Total Deaths, All Causes	33,783	7,664.7	8,118.3	67.5	*	44
Malignant Neoplasms	7,649	1,735.4	1,710.2	113.6	*	13
Diseases of the Heart	6,102	1,384.4	1,348.8	120.3	*	33
Motor Vehicle Injuries	1,691	383.5	410.7	-7.2	*	51
Non Motor Vehicle Injuries	1,275	289.3	310.3	-2.4		48

Suicide	1,530	347.1	370.0	38.4	*	44
Congenital Anomalies	1,120	254.1	332.0	64.2	*	23
Homicide and Legal Intervention	828	187.7	214.0	-31.4	*	28
Sudden Inf. Death	671	152.1	210.9	129.8	*	10
Cerebrovascular Disease	636	144.3	139.2	31.2	*	41
Chronic Liver Disease and Cirrhosis	484	109.8	114.8	21.7	*	32
Diabetes Mellitus	756	171.5	169.1	134.8	*	28
Prematurity	969	219.7	304.8	131.8	*	6
COPD	920	208.7	194.0	208.9	*	15
HIV	590	133.9	148.5	-63.2	*	7

An asterisk (*) indicates a statistically significant difference from the U.S. rate.

** Number is too small for a valid comparison.

*** Adjusted rates are adjusted by age to the 2000 U.S. standard million.

Note: All rates are per 100,000 population.

Births

The number of births in Ohio County for 2002 was 799, with 434 to county residents (West Virginia Vital Statistics). Low birth weight babies and infant mortality are another determinant of health. Although the total population declined between 1990 and 2001 by 8.4%, the percentage of low birth weight babies and infant mortality increased. Ohio County showed an increase of 31.7% in low birth weight babies and a 39.1% increase in infant mortality. These figures exceed both state and national averages (Kids Count Data Book). In contrast, Ohio County saw an improvement in: child death rate (-31.5%); teen birth rate (-31.8%); teen death rate (-41.7%); and births to unmarried teens (-19.2). In all improvement areas, Ohio County exceeded the state rate (Kids Count Data Book).

Ohio County 1997 - 2001 Selected Birth Statistics

Age Group	1997-2001 Number of Births	Percent of Total Births**				
		1997-2001 County	1997 U.S.	% Difference from U.S	SI*	County Rank
Low-Birth Weight	189	7.3	7.6	-3.3		42
Unwed Mothers	914	35.6	33.0	7.8	*	5
Prenatal Care (1 st Tri)	2,152	84.2	83.2	1.2		23
No Prenatal Care	61	2.4	3.8	-37.2	*	24

Mother Used Tobacco	637	24.8	12.6	97.0	*	33
Mother's Education <12 Years	372	14.5	20.4	-28.8	*	48

Significance Indicator. An asterisk (*) indicates a statistically significant difference from the U.S. rate.

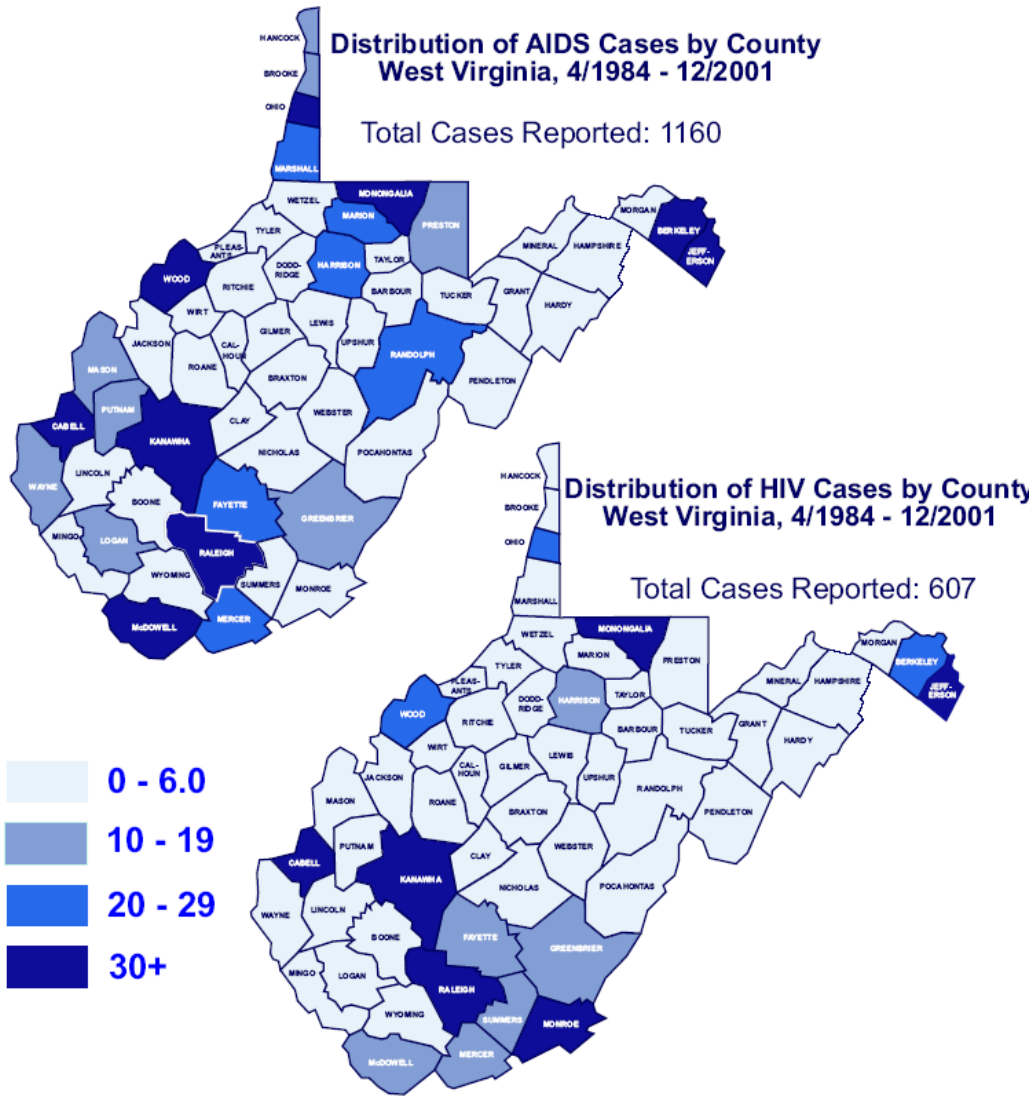
** Percent of total births excluding 'unknowns' for each specific category.

TS = Number is too small for a valid comparison

Communicable Diseases

Communicable diseases, by law, must be reported to the state. They are reported from laboratories, medical providers, facilities, and health departments. Reporting reflects trends that can be isolated if necessary. Compared to other counties, Ohio County has a low incidence of communicable disease. The 2004 year-to-date total as of November 30 numbered 71 cases (West Virginia Department of Epidemiology and Health Promotion). The lower numbers may be due to underreporting. The numbers of AIDS/HIV cases, however tell a different story. Ohio County has over 30 of the 1160 reported AIDS cases (1984-2001). Of the 607 reported HIV cases for the same period, Ohio County had 20-29 cases. These figures are among the highest in West Virginia (West Virginia Bureau for Public Health).

**Distribution of AIDS/HIV Cases by County
West Virginia, 4/1984 - 12/2001**



Ohio County reported the following sexually transmitted disease cases for 2004 (West Virginia Department of Epidemiology and Health Promotion):

- 58 Chlamydia (2742 statewide)
- 15 gonorrhea (567 statewide)
- 1 syphilis (17 statewide)
- Statewide, 39 new HIV cases were reported.

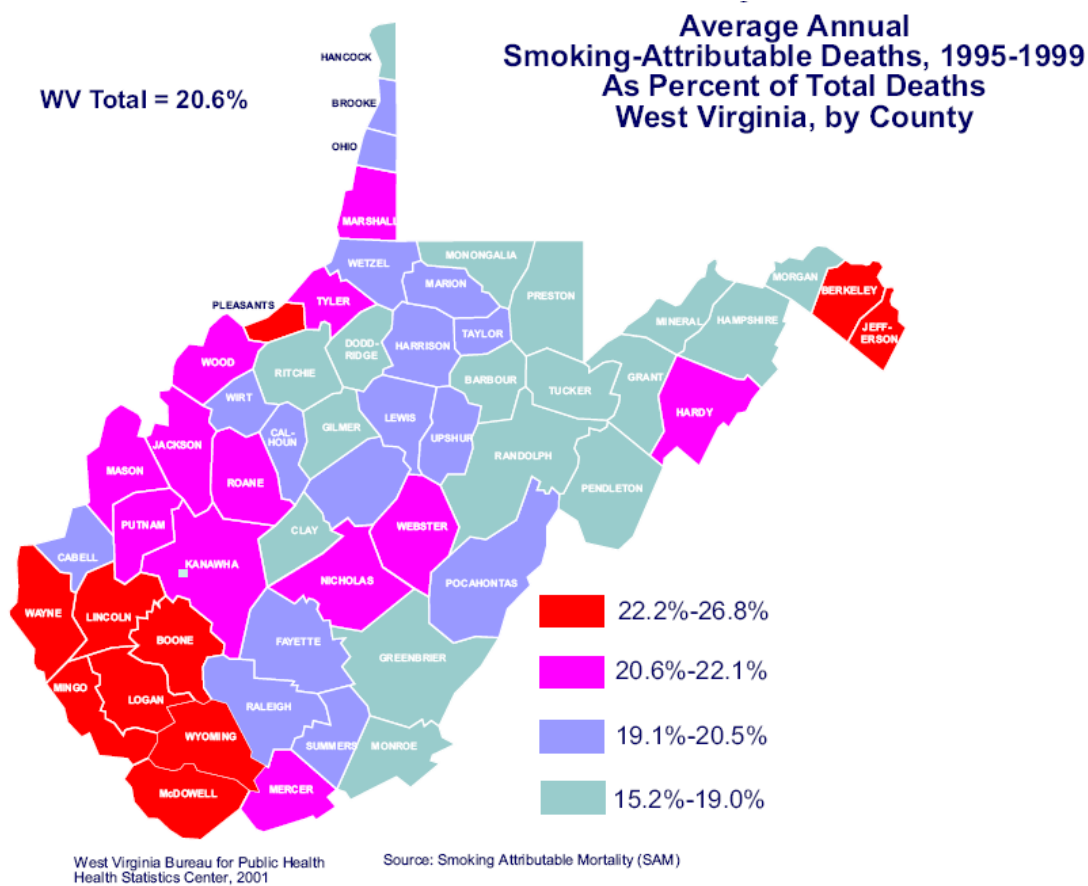
Behavioral Assessment

Behaviors are a large part of disease process. They are everyday actions that we do to promote the risk of someday contracting a disease. There are biological factors as well, but health promotion is driven on preventive mechanisms such as behavior modification. Behavior modification involves psychological, sociological, and ecological influences. Ohio County shares its two top killers, cardiovascular disease and cancer, with the state and nation. Lifestyle changes are the most effective

way to reduce the risk of getting heart disease and cancer (as well as other chronic diseases). The focus of lifestyle changes addresses smoking cessation, obesity, and lack of physical activity.

Tobacco

The biggest contributor to heart disease is tobacco use. Smoking prevalence in West Virginia is 27%, which is higher than the national average of 23%. Over 20% of the state's deaths are smoking related. Smoking is responsible for over 30% of the US heart disease deaths per year and is the single most preventable cause. Although average smoking rates are lower in Ohio County than in West Virginia, smoking was attributed to 135 deaths (20.5%) for the period 1995-1999 (West Virginia Bureau for Public Health).

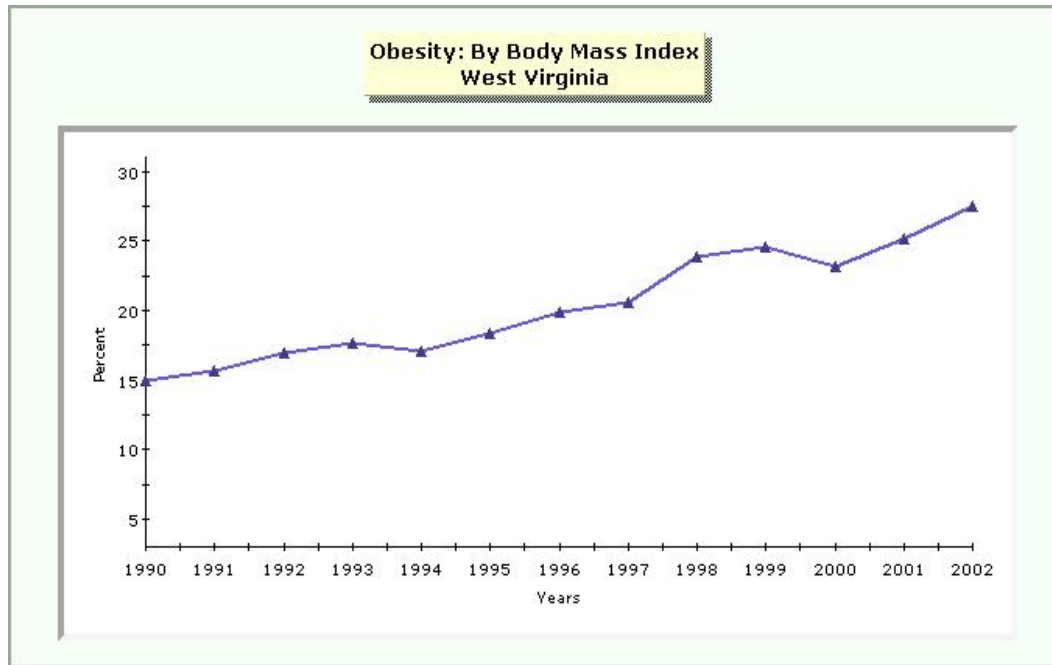


Smokeless tobacco prevalence in males in West Virginia is 17.7% (1995-1999), more than double the national average of 8.3% (West Virginia Bureau for Public Health). Smoking also has effects on cancer rates. Usage accounts for 87% of lung cancers and is associated with cancers of the larynx, oral cavity and pharynx, esophagus, bladder, kidney and renal pelvis, cervix, pancreas, and certain leukemias (West Virginia Cancer Registry).

Diet

Obesity has taken over headlines in the last few years. Rates for overweight and obese individuals, especially among children, are increasing dramatically. The Behavioral Risk Factor Surveillance Survey (BRFSS) is an ongoing, state based telephone survey of the civilian, non-institutionalized population aged 18 and over. It includes all 50 states, the District of Columbia, and the Commonwealth of Puerto Rico (Centers for Disease Control and Prevention). In West Virginia,

both male and female rates for obesity (measured by body mass index) climbed to over 25%. Since 1990, there has been an increase of over 10% in 12 years.



The prevalence of obesity in the state jumped from 16.9% (1990-1994) to 21.4% (1995-1999) (Centers for Disease Control and Prevention). Diet contributes to the development of atherosclerosis, high blood pressure, high cholesterol, and diabetes among others. It is also a factor in cancers of the breast, colon and rectum, uterus, and prostate (West Virginia Bureau for Public Health). The United States Department of Agriculture (USDA) recommends maintaining weight in a healthy range balancing intake of calories from food and beverages with calories expended.

- **Fats:** total fat intake between 20-35% of calories with sources from fish, nuts, and vegetable oil.
- **Carbohydrates:** fiber rich fruits, vegetables and whole grains. Avoid added sugars or caloric sweeteners, as well as foods high in sugar or starch.
- **Alcohol:** Moderate consumption of alcohol, defined as one daily drink for women and two for men, are recommended.
- **Encourage:** food from fruits and vegetables from a variety of sources in all subgroups.

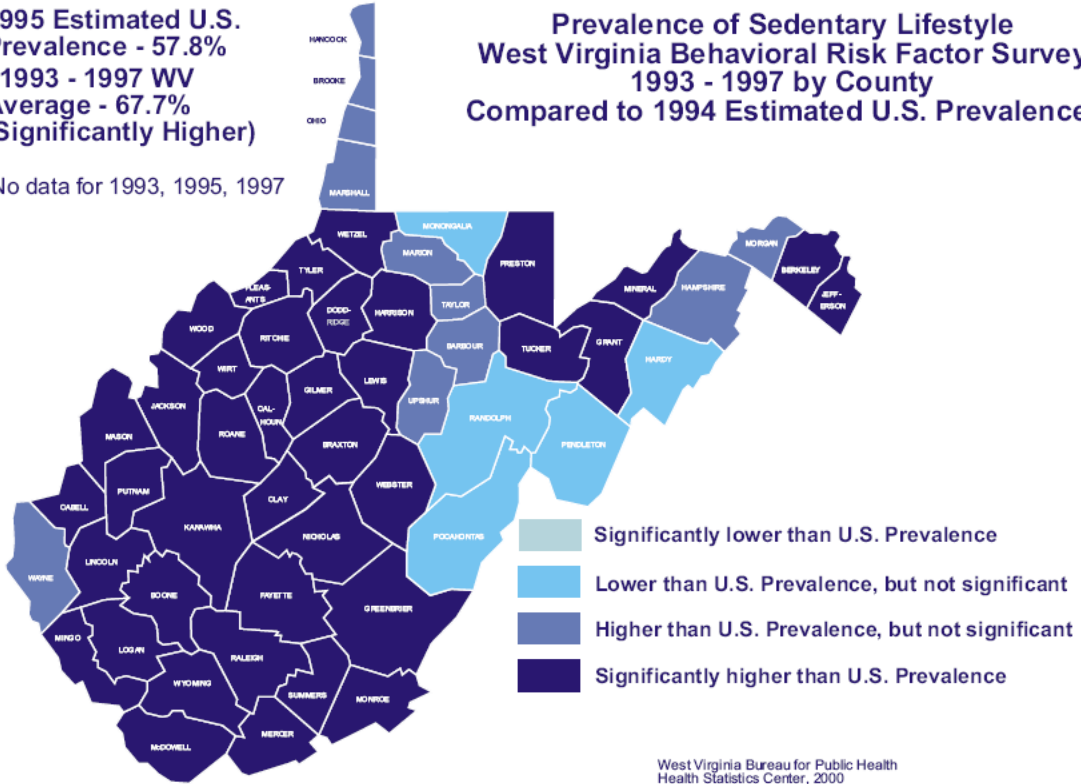
Physical Inactivity

Diet and exercise are closely linked. The lack of physical activity, or sedentary lifestyle, is the third major player among disease risk factors. According to the BRFSS, the prevalence of sedentary lifestyle was in 1997 was 67.7%, which was significantly higher than the US average of 57.8%. West Virginia ranked 4th worst among reporting BRFSS locations. National data suggests that physical inactivity accounts for nearly 25% of all deaths from chronic diseases in the US (West Virginia Bureau for Public Health).

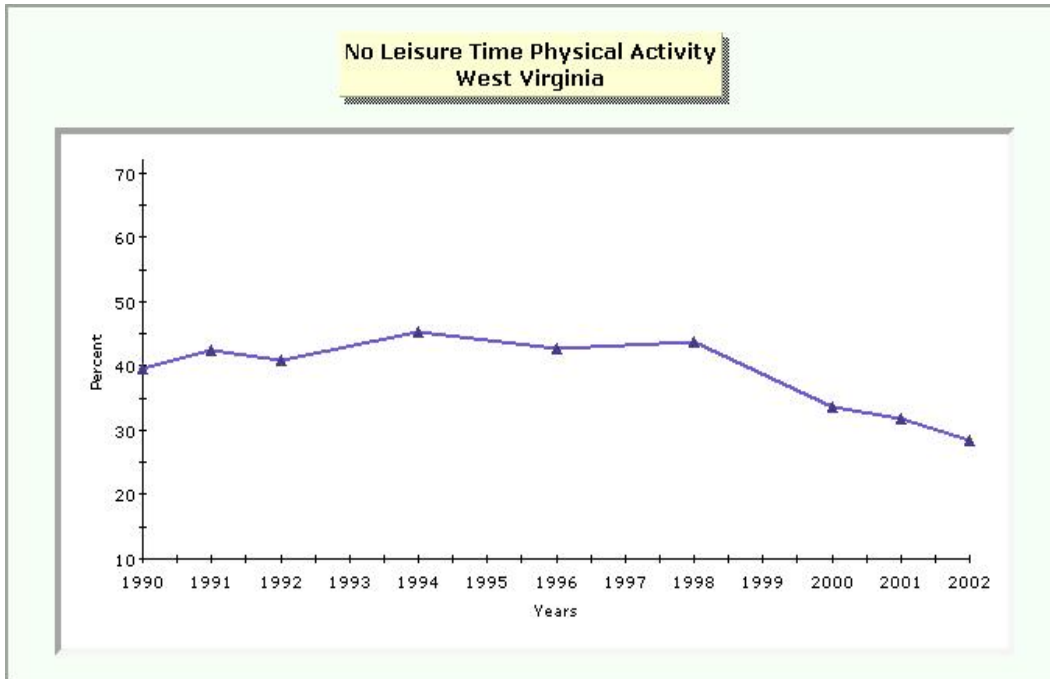
Return To Health Atlas
 1995 Estimated U.S. Prevalence - 57.8%
 11993 - 1997 WV Average - 67.7%
 (Significantly Higher)

**Prevalence of Sedentary Lifestyle
 West Virginia Behavioral Risk Factor Survey
 1993 - 1997 by County
 Compared to 1994 Estimated U.S. Prevalence***

*No data for 1993, 1995, 1997



West Virginia Bureau for Public Health
 Health Statistics Center, 2000



Physical inactivity increases the risk of cardiovascular disease mortality in general and coronary heart disease mortality in particular. Regular physical activity prevents or delays the development of high blood pressure, lowers blood cholesterol levels, controls weight, controls blood glucose levels, improves circulation and oxygen use, and promotes physical well being (West Virginia Bureau for Public Health). Exercise also reduces the risk of breast, colon, and prostate cancers (West Virginia Bureau for Public Health). The USDA recommends individuals engage in at least 30 minutes

of moderate intensity physical activity on most days of the week. Greater health benefits can be obtained by participation in more vigorous activity or activity longer in duration. Physical fitness includes cardiovascular conditioning, stretching (flexibility), resistance exercises, and weight training for muscle strength and endurance.

Environmental Assessment

Both indoor and outdoor environment can have an impact on our health. Cancer risk increases when exposure to chemicals and pollutants occur over time.

Ohio County Overview

Ohio County is located on the Ohio River between Ohio and Pennsylvania. Elevations range from 687 feet in downtown Wheeling to 1,300 feet in some residential areas. Ohio County's 2003 estimated population is 45,828. Wheeling is the county seat and largest city with a population of 31,419. The temperature averages 50.5 degrees and precipitation averages 37 inches (Wheeling Area Chamber of Commerce). The utility companies that serve the area are: Allegheny Power (gas); American Electric Power (electricity); Verizon (phone); and Comcast (cable). Water, sewage, and garbage are provided by the City of Wheeling (Wheeling Area Chamber of Commerce). Communication is provided by all network television stations, two daily newspapers, and several local and regional radio stations. There are over 20 financial institutions in the area, along with over 100 places of worship (Wheeling Area Chamber of Commerce).

Environmental Exposure

Cancer is the second leading cause of death in the US, West Virginia, and Ohio County. Everyday exposure to various chemicals and agents increases the risk of cancer. Some behaviors are individual while others are societal. Environmental issues are sometimes beyond our control. Legislation takes care of many environmental ills, but it cannot control all of them. Exposure can be measured in concentration, intensity, and time. It is difficult to determine how much exposure can be harmful, but there are guidelines that can be followed.

Environmental Tobacco Smoke

Environmental tobacco smoke (ETS), more commonly known as secondhand smoke, is one exposure that can be controlled by law. Nationally, antismoking legislation has been passed by localities or states in order to reduce the public's exposure to this common pollutant. ETS is the third leading preventable cause of death in the US killing 38,000-65,000 nonsmokers every year. It is the largest contributor to nonsmoker lung cancer and is responsible for increases in other types of cancer and heart disease. ETS also exacerbates preexisting health conditions such as allergies, asthma, bronchitis, and other respiratory ailments. Cigarette smoke contains over 4,700 chemicals, over 200 poisons, and over 50 human carcinogens. The carcinogen NNK has been found in nonsmokers who have been exposed to secondhand smoke (American Cancer Society). Ohio County joined a growing list of areas that have enacted public antismoking legislation. The ban went into effect on May 27, 2005.

Radiation

Radon gas, a natural decay product of uranium found in most soils, is believed to cause several thousand cases of lung cancer annually in nonsmokers. West Virginia is a radon hot spot and as such, is proactive in radon testing. The Healthy People 2010 goal is to have a minimum of 40% of homes tested for radon concentrations in order to reduce the incidence of lung cancer (West Virginia Bureau

for Public Health). The only types of radiation proven to cause cancer are ionizing radiation and ultraviolet (UV) radiation. Although levels of exposure to radiotherapy, diagnostic, and medical x-rays are set to the lowest dose level possible, repeated exposure increases the risk of cancer (American Cancer Society). UV radiation from sunlight causes almost all cases of basal and squamous cell skin cancer and is a major cause of skin melanoma. Levels of UV radiation are at risk of rising as the atmospheric ozone layer is disrupted by pollution (American Cancer Society). Exposures from non-ionizing radiation include radio waves, microwaves, and electromagnetic fields. This has not been proven to cause cancer, although some studies suggest its association (American Cancer Society).

Chemicals

Benzene and asbestos have been proven to cause cancer in humans. DDT, formaldehyde, and PCBs have also been linked to cancer by research. Chemicals include pesticides which are widely used in agriculture. Pesticides do show cancer risk, but the risks are overshadowed by the variety of foods that we are able to consume because of it (American Cancer Society).

Air

The Air Quality Index is based on data gathered from the Environmental Protection Agency (EPA), United States Geological Survey (USGS), and local authorities. The agencies monitor six major air pollutants: carbon monoxide; lead; nitrogen dioxide; ozone; particulate; and sulfur dioxide (ERsys.com). Ground level ozone is formed in a complex series of sunlight driven reactions involving nitrogen oxides and a class of compounds called volatile organic compounds (VOC). Sources of VOCs include vehicular traffic and industrial plants. Ozone is the main ingredient in smog. Ozone levels vary, but are generally worse during the day. Wheeling's biggest pollution problem is attributable to ozone (West Virginia Department of Environmental Protection). The northern panhandle of West Virginia pays a price for its upwind location in the Ohio Valley. A Pennsylvania advocacy group, PennEnvironment, reported in 2004 that more than a dozen coal burning power plants could be linked to heart attacks and premature deaths. Older coal-fired plants are exempt from controls enacted after they were built and produce as much as 10 times the pollutants of new power plants. Wheeling had the highest per capita mortality rate attributable to power plant pollutants with 38.2 per 100,000 adults annually. In addition, the state of West Virginia had the highest mortality rate with 399 per 100,000 adults. The power plants emit carbon dioxide, nitrogen oxides, sulfur dioxides, mercury, and tiny airborne soot particles that are unhealthy to breathe (Hopey, 2004).

Water

Wheeling has been operating water pumping and distribution systems for over 160 years. The system includes over 189 miles of pipeline, 10 booster stations, and 20 storage facilities. The purification section provides oversight and monitoring of the water treatment plant and laboratory facilities (City of Wheeling). Ohio County's water is provided by municipal systems or public service districts. The United States Census Bureaus' last report for water sources and sewage disposal was in 1990 because the data is no longer collected. Other sources are available, but for much larger metropolitan areas. The following data was obtained from the Census Bureau website:

Sources of Water in Ohio County

- | | |
|------------------------------------|--------|
| • Public system or private company | 22,207 |
| • Individual drilled well | 624 |
| • Individual dug well | 69 |
| • Other sources | 329 |

Sewage Disposal in Ohio County

• Public Sewer	20,704
• Septic tank or cesspool	2,359
• Other means	166

The City of Wheeling's wastewater treatment plant serves nearly all of Ohio County. Regionally, it serves the Village of Clearview, the City of Bethlehem, the Town of Triadelphia, the Ohio County Public Service District, and a small portion of the Marshall County Public Service District (City of Wheeling). There are nearly 400 miles of pipe throughout the city with a monitoring system to keep the flow moving to the plant. Maintenance of the treatment plant, sewer lines, separate sanitary sewer lines, along with manholes and plant holes, protect the public from disease causing bacteria and viruses. It also maintains the water quality of streams and rivers that allow for recreation (City of Wheeling).

Toxic and Hazardous Waste

The West Virginia Department of Environmental Protection (DEP), along with the US EPA maintains a database of Toxic Release Inventory (TRI). The TRI tracks the releases of over 650 chemicals into the air, water, and soil. Toxic chemicals are those that pose a threat to human health or the environment. In 2002, total releases into the air in West Virginia amounted to 70 million pounds. Of that, 1.2 million pounds were total carcinogens. This was an increase over the releases in 2001. Toxic releases to water in 2002 totaled 4.3 million pounds. Of that, .05 million pounds were total carcinogens. The total released was higher than 2001, but lower for total carcinogens (West Virginia Department of Environmental Protection). In Wheeling, the TRI tracked five companies that released emissions in 2002 (United States Department of Environmental Protection). Hazardous waste may be classified as such if it exhibits certain characteristics (ignitable, corrosive, reactive, or toxic). They may also be solid, semisolid, liquid, or gas. The total quantity of hazardous waste generated statewide in 2001 was 98,951 tons by 131 sources (West Virginia Department of Environmental Protection). The EPA's Superfund database named seven sites in Ohio County, none of which were on the National Priority List. Statewide there are 159 Superfund sites with eight listed on the National Priority List (United States Department of Environmental Protection).

Emergency Management Coordination

The Wheeling-Ohio County Health Department (WOCHD) is currently participating in the Centers for Disease Control's Threat Preparedness Grant Initiative to develop and maintain mitigation, preparedness, response, and recovery plans in the event of an all hazards disaster in the Wheeling and Ohio County geographic area. In addition, the WOCHD currently assumes an active and innovative role in the Northern Panhandle Regional Threat Preparedness program covering the West Virginia counties of Brooke, Hancock, Marshall, Ohio, Wetzell, and Tyler. Following the tragic events of September 11, 2001, the federal government has been instrumental in leading the efforts of state and local governments to develop and maintain plans and resources to meet disaster events that may occur on the county and/or state level. These disaster events may include manmade or natural occurrences such as: chemical; biological; radiological; nuclear; explosive; terrorist; floods; hurricanes; severe storms; wildfires; and earthquakes. In West Virginia, each county's local health department, under the direction of the Bureau for Public Health, is responsible for risk analysis, vulnerability assessments, and mitigation planning to meet the effects of the described all hazard events (Wheeling-Ohio County Health Department, 2005). WOCHD has adopted and implemented the National Incident Management System (NIMS) into the Threat Preparedness Response Plan, as well as the overall effort of the Health Department. NIMS was developed by the Secretary of Homeland Security at the request of the

President in Homeland Security Presidential Directive #5. NIMS integrates practices in emergency preparedness and response into a comprehensive national framework for incident management. NIMS standardizes: organizational structures and procedures; planning, training and exercising, and personnel qualification standards; equipment acquisition and certification; communication systems; information management systems; and supporting technologies such as data communications and data display systems (National Incident Management System, 2005). WOCHD continues its effort to reinforce and expand the collaborative relationship that has occurred with the Wheeling-Ohio County Emergency Management Agency. The citizens of Ohio County recognize and expect that both the Wheeling-Ohio County Health Department and the Wheeling-Ohio Emergency Management Agency will be available and prepared to meet all hazard disaster events that may affect them (Wheeling-Ohio County Health Department, 2005).

Poverty and Income

The poverty threshold for a family of four is \$19,350 (United States Department of Health and Human Services). Poverty rates in West Virginia are among the highest in the nation. In 2001, 22% of children lived in poverty compared to the US average of 16%. In Ohio County 1,409 families were living below poverty level. Individual numbers jump to 7,093 (Kids Count Data Book). Ohio County's per capita income in 1999 was \$17,734 compared to the state average of \$16,477. Median household income stood at \$30,836, which was also higher than the state average of \$29,696 (United States Census Bureau).

Income Data for Ohio County, 1999 (US Census Bureau)					
Geographic area	Median income (1999) in U.S. Dollars		Per capita income (1999) in U.S. Dollars	Median earnings of full-time, year-round workers (1999) in U.S. Dollars	
	Households	Families		Male	Female
United States	41,994	50,046	21,587	37,057	27,194
West Virginia	29,696	36,484	16,477	31,299	21,154
Ohio County	30,836	41,261	17,734	31,132	21,978

The unemployment rate for Ohio County in 2003 was 4.2%.

Wheeling Hospital is the county's largest employer. None of the top ten employers are in mining or manufacturing, which represents a major shift from industry to service (United States Census Bureau).

Unemployment Rate 2000-2003				
Year	2000	2001	2002	2003
Ohio County	3.7%	3.4%	4.2%	4.2%
West Virginia	5.5%	4.8%	6.1%	6.1%
United States	5.7%	6.8%	8.4%	8.8%

Education

Ohio County education has achieved the following rankings:

- Second in West Virginia for the lowest percent of people achieving less than 9th grade.
- Third in the state for the lowest percent of people without a high school diploma.
- Second in the state for the highest percentage of people with college degrees.

- Second in the West Virginia for the highest percentage of people with graduate or professional degrees.

Educational Attainment	Number	Percent
Population 25 years and over	32,263	100.0%
Less than 9th grade	1,944	6.0%
9th to 12th grade, no diploma	3,534	11.0%
High school graduate (includes equivalency)	11,654	36.1%
Some college, no degree	6,032	18.7%
Associate degree	1,656	5.1%
Bachelor's degree	4,295	13.3%
Graduate or professional degree	3,148	9.8%

Housing and Homelessness

The 2000 census placed a total of 22,166 housing units in Ohio County. The majority of homes, 41.3%, were built prior to 1939. Some of the information breaks down as follows: 19,733 units are occupied; 6,126 units are rented; and 1,023 units are mobile homes. The median housing price was \$71,400 while the average rent paid was \$374.00 (United States Census Bureau). The Greater Wheeling Coalition for the Homeless served 316 clients from Ohio County in 2004. The following outlines more specific data received from the organization:

Homeless Statistics for Ohio County 2004

218 Adults 98 Children

Races:

- 250 (79%) were Caucasian
- 44 (14%) were African-American
- 20 (6%) were bi-racial
- 1 (.5%) was Middle Eastern
- 1 (.5%) was Hispanic

Adult Education Level:

- 86 (39%) were high school graduates
- 35 (16%) had GEDs
- 5 (3%) were college graduates

Other data:

- 8 (3%) were veterans
- 12 (4%) were domestic violence victims
- 121 (38%) experienced mental health problems
- 1 (.03%) HIV/AIDS
- 33 (10%) reported addiction issues
- 13 (4%) physically disabled
- 168 (53%) of all clients reported having a disability

Public Transportation

Ohio County has a developed transportation network. Interstates 70 and 470 carry road traffic on an east-west route, while West Virginia Route 2 and US Route 250 handle north-south traffic. The Ohio Valley Regional Transit Authority operates within the city limits and along the I-70 and WV Route 2 corridors. The majority of the county is without bus service, so those requiring transportation have difficulty getting around (ERsys.com). The nearest commercial airport is in Pittsburgh, 57 miles away. The Wheeling-Ohio County Airport can accommodate charter, corporate, and private aircraft.

Crime and Domestic Violence

The Family Violence Protection Program at the YWCA provides support, shelter, and counseling for victims of domestic violence. In 2004, there were 1245 clients served by the staff. Of those, 33 were Ohio County residents. Of the 33 served, 22 were adults and 11 were children. The program is regional in scope and has clients in neighboring counties as well as nearby states (YWCA). Crime trends from 1998-2001 have dropped along with the estimated population. Ohio County has relatively low crime rates compared to other areas its size. The data collected are from the Wheeling Police Department. Not all crimes and not all months are reported, so some of the data is incomplete. It was last updated on October 13, 2004.

Year Reported	Months Reported	Population Coverage	Total Offenses	Total Violent Crime	Total Property Crime
1998	12	32,934	1,282	137	1,145
1999	11	32,465	807	80	727
2000	12	31,419	1,074	89	985
2001	5	31,307	365	25	340

Violent Crime Rates

Year Reported	Murder and Non-Negligent Homicide	Forcible Rape	Robbery	Aggravated Assault
1998	1	10	28	98
1999	1	18	19	42
2000	0	22	26	41
2001	0	3	10	12

1999, 2001: incomplete months reported

Property Crime Rates

Year Reported	Burglary	Larceny Theft	Motor Vehicle Theft
1998	323	759	63
1999	154	517	56
2000	177	720	88
2001	151	270	19

1999, 2001: incomplete months reported

Quality of Life

There are two large parks within Ohio County, Wheeling Park and Oglebay Park. The Oglebay Institute is the largest nonprofit arts organization in West Virginia. Oglebay Park serves as a resort

with a pool, golf course, ski slope, museum, and glass shop. The park offers miles of walking trails around bodies of water and flower beds. It is also a stop for large bus tours during the annual Festival of Lights over the holiday season. Wheeling is home to professional hockey (Wheeling Nailers), indoor football (Ohio Valley Greyhounds), and the Wheeling Symphony. Ohio County has two libraries with over 108,000 volumes. Wheeling has over 20 miles of paved trails for walking, biking, and inline skating. The Capitol Music Hall hosts the second oldest country music program (second to the Grand Ole Opry) in the nation. Every Saturday night since 1933, country music fans enjoy live shows in person or on the air on WWVA. The Capitol Music hall is also the oldest in West Virginia and is one of the best examples of its kind of architecture in the nation. The Wheeling Island Racetrack and Gaming Center has a hotel with slot machines, greyhound racing, and several restaurants in a resort style setting. Ohio County is better than the state average in unemployment, education attainment, and income. That combined with the low cost of living, the low cost of housing, and other amenities, gives the Wheeling-Ohio County region high marks for quality of life.

Educational and Ecological Assessment

Determinants of Behavior

The PRECEDE-PROCEED Model illustrates one aspect of behavior change. The following behaviors selected can be subjected to further analysis for assessment of their causes. The following sets of factors should be considered as causes of each behavior:

- **Predisposing factors:** Knowledge, attitudes, beliefs, and values that motivate people to take appropriate health actions.
- **Enabling factors:** Skills and the accessibility of resources that make it possible for a motivated person to take action.
- **Reinforcing factors:** The attitudes and climate of support from providers of services, families, and community groups that reinforce the health behavior of an individual who is motivated and able to adopt the behavior, but who will discontinue the behavior if it is not rewarded.

These factors combine with one another to determine the probability of behavior change. The dimensions of health behavior include: time or promptness of the behavior; frequency of the behavior; quality of the behavior; range of health behaviors; and persistence of follow through with health behavior (Green & Ottoson, 1999). All these combinations also need to take into account local issues in order to best suit the needs of Ohio County residents.

Access to Care

Between the two hospitals, Wheeling Hospital and Ohio Valley Medical Center, there are over 700 beds. Ohio County also has four licensed nursing homes with over 480 beds. There are also 260 doctors and 39 dentists serving the area. Health services are also provided by the Wheeling-Ohio County Health Department which is located downtown. It accessible by public transportation and offers a wide variety of services ranging from immunization to prevention programs to constant public health monitoring (Wheeling Area Chamber of Commerce).

Health Insurance

According to the United States Census Bureau, the number of people covered with health insurance increased in 2003 to 243,300,000 or 84.4% of the population. There was also an increase in the amount of uninsured people. There are 45 million (15.6%) uninsured, up from 43.6 million (15.2%) in 2002. Statewide, uninsured numbers increased as well. In West Virginia, there was an increase of 1.7% to 15.6% from 13.9%.

Conclusion

It may seem as though there are major differences from region to region, but Ohio County is very much like other areas of the country. The same diseases, problems, and issues occur right here. Many of the programs designed to educate the public on health prevention are based on the federal government's Healthy People 2010 campaign. Healthy People 2010 outlines ten Leading Health Indicators that reflect the major health concerns in the US at the beginning of the 21st century. They were selected on the basis of their ability to motivate action, the availability of data to measure progress, and their importance as public health issues. The Leading Health Indicators are: physical activity; overweight and obesity; tobacco use; substance abuse; responsible sexual behavior; mental health; injury and violence; environmental quality; immunization; and access to healthcare (United States Department of Health and Human Services, 2005). These programs are then tailored down to fit local needs. Behavioral aspects are similar as well. Our motivations are human and it is difficult to narrow behavior down to one or two elements. This assessment highlights health related problems affecting Ohio County residents. From this and other sources, education and prevention programs will be developed to help Ohio County become a healthier place to live.

Community Resources

The following is a list of health related resources available to Ohio County residents. Many places offer multiple services that may not be included:

Alcohol Abuse

Addiction Center for Treatment, Crossroads Counseling Services, Hillcrest Outpatient, Olympic Center (Adolescent Treatment), Street Consulting

Child Care

There are several (approximately 15) day care facilities listed for the Wheeling area.

Clinics

Doctors Urgent Care, Wheeling Clinic, Wheeling-Ohio County Health Department

Drug Abuse

Hillcrest Outpatient

Fitness

CentreTown Fitness, Curves for Women, Fitness Connection, Fitness on the Run, Howard Long Fitness Center, Try Fitness for Women, Wheeling Walks, YMCA of Wheeling

Gambling Abuse

Footsteps Christian Counseling, Problem Gamblers Help Network of West Virginia

Health Food

Health Nuts, General Nutrition Centers (GNC), which can also be found at Rite Aid Pharmacies

Hospice Care

Tender Loving Care Home Care and Hospice, Valley Hospice

Hospitals

Ohio Valley Medical Center, Wheeling Hospital

Human Services

Altenheim Resource Center, Community At Large, Family Resource Network (coordinated with the West Virginia Governor's Cabinet on Children and Families), Family Service of Upper Ohio Valley, Greater Wheeling Coalition for the Homeless, Veteran's Outreach Center, Wheeling Health Right, Wheeling Housing Authority, Wheeling-Ohio County Health Department, Youth Service System, YWCA Family Violence Prevention Program

Nursing Homes

Bishop Hodges Continuous Care Center, Good Shepard Nursing Home, Wheeling Hospitals of VNA Medical Park

Occupational Therapy

Bishop Hodges Continuous Care Center, Easter Seals, Wheeling Hospital

Physical Therapy/Rehabilitation Services

Continuous Care Center, Easter Seals, Mason Rehabilitation Center, Ohio Valley Medical Center, Peterson Rehabilitation Hospital, Spirit House, Wheeling Hospital

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