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<td>Stroke Mortality</td>
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<td>Diabetes</td>
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<td>4.6.2</td>
<td>Years of Potential Life Lost Due to Heart Disease Deaths</td>
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<td>Community Care System Assessment (CCSA)</td>
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<td>Forces of Change Assessment</td>
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<td>Community Health Status Assessment</td>
</tr>
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</table>

**COMMUNITY THEMES AND STRENGTHS**

**ASSESSMENT**

Public Safety

Services to the Underserved

Environment

Community Activities

Youth Issues

Substance Abuse Awareness

Employment

Wellness

Elderly Services

Information and Referral for Community Services

Summary of Community Themes and Strengths

**COMMUNITY CARE SYSTEM ASSESSMENT**

Results

Community Services Provided in Warren County

Network of Community Care System

Conclusion and Recommendations

**FORCES OF CHANGE ASSESSMENT**

Politics of Health Care

Legislative Issues/Advocacy

Family Socioeconomic Dynamics

Infrastructure / Facilities and Services / Access to Needed Services

Technology/ Communication

Population Issues / Increased Demand for Services

Generational Issues / Millennial Workforce

Collaborative Initiatives with Legal System

Decreased Funding / Financial Collaboration
Mobilization for Action through Planning and Partnership

The Warren County Community Health Assessment uses a process called Mobilization for Action through Planning and Partnership\(^1\). MAPP is a community-driven strategic planning process for improving community health. The MAPP framework is facilitated by community leaders and helps communities apply strategic thinking to prioritize public health issues and identify resources to address the issues. MAPP is an interactive process that can improve the efficiency, effectiveness, and ultimately the performance of local public health systems. The MAPP process has six phases. The first two phases created a MAPP Committee of people who represent communities and organizations throughout Warren County and established the objectives of the community assessment. The MAPP Committee created four committees to help with the four assessments in phase three of the MAPP process. The four assessments are:

- **The Community Themes and Strengths Assessment** provides a deep understanding of the issues residents feel are important by answering the questions: "What is important to our community?" "How is quality of life perceived in our community?" and "What assets do we have that can be used to improve community health?"

- The **Local Community Care System Assessment** focuses on the organizations and entities in Warren County that contribute to community health. The community care system assessment answers the questions: "What are the components, activities, competencies, and capacities of our local community care system?" and "How are the Essential Services of public health being provided to our community?"

- The **Community Health Status Assessment** identifies priority community health and quality of life issues. Questions answered include: "How healthy are our residents?" and "What does the health status of our community look like?"

- The **Forces of Change Assessment** focuses on identifying forces such as legislation, technology, and other impending changes that affect the context in which the community and its public health system operate. This answers the questions: "What is occurring or might occur that affects the health of our community or the local community care system?" and "What specific threats or opportunities are generated by these occurrences?"

The methods section at the end of this report has information about how the four assessments were conducted.\(^2\)
The Determinants of Health

The Warren County Community Health Assessment is guided by the determinants of health model. The model defines health broadly, as the consequence of several domains, social and physical environments, genetics, and individual behavior choices. It provides a framework for interpreting the outcome data collected by the assessment that encourages the reader to ask such questions as “To what extent is the relatively high rate of infant mortality in this sector of the city the consequence of the social context of the neighborhood?” Furthermore, the model suggests individual level behavior choices are themselves in large part the consequence of social environments. For example, social contexts of stress can lead to individual choices that increase the risk of poor health outcomes, e.g., smoking, alcohol, substance abuse. Each health topic section of the assessment reports will link outcomes of that section to domains of the model.

Healthy People in Healthy Communities: A Systematic Approach to Community Health Improvement

Health can be described as a “state of well-being and the capacity to function in the face of changing circumstances.” The model emphasizes the interaction between individuals and the social and environmental circumstances in which we live that influence health. In this way the model functions to emphasize that the health of the individual is interconnected with the
“health” of the community. Social factors such as how much education a person has, their income, occupational status, and the strength of their connection to the community will have an impact on their health. The physical environment also plays a role in health; aspects such as the quality of the air we breathe and the water we drink, contribute to health in the community. Other features of the community such as access to places to make a living wage, places to exercise (sidewalks, parks, and recreation facilities), places to learn (schools, colleges and universities, libraries) and relax (theatres, and cultural events) create the social environment in which we live and contribute to a healthy community.

The interactive aspect of the model emphasizes individual behavior choices are made in the context of the social and physical environment. The stresses which are created by the inequities found in the environment often result in individual behaviors that lead to poor health, behaviors such as smoking, excessive alcohol consumption, and obesity.

Community health is also influenced by social policy. Policies about funding for education, how environmental contaminants are managed, whether employers provide health insurance and a living wage contribute to a healthy community. Interventions which influence the quality of life in the community include training programs to enhance or learn new job skills, public funding for services and healthcare for children and the elderly Access to quality health care also contributes to health status. Access to healthcare facilities and providers with knowledge and skill to address mental and physical dysfunctions influences our ability to maintain health. However, the health system affects a small portion of overall health of the individual.

To know whether we are making progress in improving community health, it is necessary to go beyond measures of individual health. Individual health issues are usually monitored by the medical care system. Community influence on care provided by the healthcare system is minimal. To have a good understanding on the community’s impact on health, it is important to include measures of the vitality of the community.

Community interest demonstrated through interaction in the community and participation in community projects can help increase the vitality of the community. This assessment is based on the premise that statistical indicators provide information about the magnitude and severity of community health problems.

Yet statistical indicators are only a metric to monitor status. To improve the health of the community it is necessary that we establish clear goals of what we want to achieve and objectives to set a course to reach those goals. In setting goals and objectives for community health, it is crucial that community members participate in the process of community assessment to create more of a complete understanding of community health concerns. The knowledge and values of the community should lead the establishment of goals and objectives for creating a healthier community. Participation will give ownership of the process and can help build a sense of trust and social cohesion. It is through this process we can attack the root causes of poor health in Warren County.
Root Cause Analysis

A root cause is a cause that is at a root of an effect. An effect can have more than one root. Thus a given effect can have, and usually does have, more than one root cause. For example, people die as a result of complications of diabetes. However, scientific research indicates obesity is a risk factor for diabetes, and lack of exercise is a risk factor for obesity. Factors that influence obesity may be lack of education about appropriate eating choices and/or lack of resources to buy healthy foods. Living in a community that does not provide access to locations to exercise may limit one’s ability or willingness to exercise.
National standards such as Healthy People 2020 are useful when comparing Warren County to the nation as a whole. However, this does not take into considerations differences from state to state. Comparing Warren County to other counties in Ohio is important to analyze the health of Warren County by choosing counties that are similar in socioeconomic status and other demographics. By using these metrics and subject matter experts, Delaware County and Medina County were used as comparison counties to Warren County throughout the Community Health assessment. Both Delaware and Medina Counties are rapidly growing, suburban counties located adjacent to large metropolitan counties.

<table>
<thead>
<tr>
<th>Community Indicator</th>
<th>Ohio</th>
<th>Delaware County</th>
<th>Medina County</th>
<th>Warren County</th>
</tr>
</thead>
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<tr>
<td>Population</td>
<td>11,549,590</td>
<td>178,139</td>
<td>173,252</td>
<td>215,274</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>83%</td>
<td>90%</td>
<td>96%</td>
<td>91%</td>
</tr>
<tr>
<td>AA</td>
<td>12.1%</td>
<td>3.6%</td>
<td>1.4%</td>
<td>3.4%</td>
</tr>
<tr>
<td>Asian</td>
<td>1.7%</td>
<td>4.5%</td>
<td>1%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Other</td>
<td>3.3%</td>
<td>2.3%</td>
<td>1.8%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Median Family Income</td>
<td>61,371</td>
<td>103,564</td>
<td>77,729</td>
<td>85,636</td>
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<td>Less than 185% of Poverty</td>
<td>24.6</td>
<td>9.8</td>
<td>13.9</td>
<td>12.2</td>
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<tr>
<td>Median age</td>
<td>39</td>
<td>37.5</td>
<td>40.9</td>
<td>37.9</td>
</tr>
<tr>
<td>Percent Homeowners</td>
<td>69.5</td>
<td>83.4</td>
<td>82.8</td>
<td>80.4</td>
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<tr>
<td>High School or more</td>
<td>88.5</td>
<td>96.0</td>
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<td>92.0</td>
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<tr>
<td>Bachelors or Higher degree</td>
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<td>55.3</td>
<td>63</td>
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<td>Senior Households</td>
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<td>5.9</td>
<td>8.8</td>
<td>7.4</td>
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<td>Seniors w/ Disability</td>
<td>35.9</td>
<td>29.4</td>
<td>30.4</td>
<td>32.4</td>
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<tr>
<td>Relative Socioeconomic Group</td>
<td>Middle</td>
<td>High</td>
<td>Middle</td>
<td>High</td>
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<td>Community Indicator</td>
<td>Carlisle Area</td>
<td>Franklin Area</td>
<td>East Rural Area</td>
<td>Lebanon Area</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>---------------</td>
<td>---------------</td>
<td>-----------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Population</td>
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<td>10,434</td>
<td>25,015</td>
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<tr>
<td>Race</td>
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<td>96% White</td>
<td>98% White</td>
<td>86% White</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12% AA</td>
</tr>
<tr>
<td>Median Family Income</td>
<td>$50,969</td>
<td>$69,065</td>
<td>$78,587</td>
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<td>Less than 185% of Poverty</td>
<td>23%</td>
<td>10%</td>
<td>9%</td>
<td>20%</td>
</tr>
<tr>
<td>Median age</td>
<td>41.3</td>
<td>39</td>
<td>38.5</td>
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<tr>
<td>Homeowners</td>
<td>66%</td>
<td>76%</td>
<td>85%</td>
<td>62%</td>
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<tr>
<td>High School or more</td>
<td>83%</td>
<td>90%</td>
<td>92%</td>
<td>85%</td>
</tr>
<tr>
<td>Bachelors or Higher degree</td>
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<tr>
<td>Households w/ children &lt; 18</td>
<td>34%</td>
<td>28%</td>
<td>37%</td>
<td>34%</td>
</tr>
<tr>
<td>Female head HH w/ children &lt; 18</td>
<td>61%</td>
<td>51%</td>
<td>69%</td>
<td>61%</td>
</tr>
<tr>
<td>Senior Households</td>
<td>8.9%</td>
<td>8.1%</td>
<td>5.8%</td>
<td>11.5%</td>
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<tr>
<td>Seniors w/ Disability</td>
<td>42%</td>
<td>45%</td>
<td>29%</td>
<td>42%</td>
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<tr>
<td>Relative Socioeconomic Group</td>
<td>Low</td>
<td>Middle</td>
<td>Middle</td>
<td>Low</td>
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<table>
<thead>
<tr>
<th>Community Indicator</th>
<th>West Mason Area</th>
<th>Springboro Area</th>
<th>S. Lebanon Area</th>
<th>Mason Area</th>
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<tbody>
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<td>33,646</td>
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<tr>
<td>Race</td>
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<td>97% White</td>
<td>65% White</td>
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<tr>
<td></td>
<td>13.5% Asian</td>
<td>4.4% Asian</td>
<td></td>
<td>9.6% Asian</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4% AA</td>
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<tr>
<td>Median Family Income</td>
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<td>$93,671</td>
<td>$79,338</td>
<td>$89,146</td>
</tr>
<tr>
<td>Less than 185% of Poverty</td>
<td>7%</td>
<td>8%</td>
<td>11%</td>
<td>7%</td>
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<tr>
<td>Median age</td>
<td>38.4</td>
<td>35.6</td>
<td>38.5</td>
<td>35.7</td>
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<tr>
<td>Homeowners</td>
<td>87%</td>
<td>85%</td>
<td>84%</td>
<td>71%</td>
</tr>
<tr>
<td>High School or more</td>
<td>96%</td>
<td>93%</td>
<td>88%</td>
<td>96%</td>
</tr>
<tr>
<td>Bachelors or Higher degree</td>
<td>51%</td>
<td>36%</td>
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<td>53%</td>
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<tr>
<td>Households w/ children &lt; 18</td>
<td>49%</td>
<td>45%</td>
<td>37%</td>
<td>37%</td>
</tr>
<tr>
<td>Female head HH w/ children &lt; 18</td>
<td>61%</td>
<td>73%</td>
<td>69%</td>
<td>63%</td>
</tr>
<tr>
<td>Senior Households</td>
<td>7.3%</td>
<td>6.8%</td>
<td>6.8%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Seniors w/ Disability</td>
<td>29%</td>
<td>21%</td>
<td>30%</td>
<td>31%</td>
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<tr>
<td>Socioeconomic Group</td>
<td>High</td>
<td>High</td>
<td>Mid</td>
<td>High</td>
</tr>
</tbody>
</table>
1 Community Characteristics

1.1 Median Family Income

Median income is the amount that divides the income distribution into equal amounts. Half of all incomes are below the median, and half are above the median. Median family income is the income of the householder and all other individuals older than 15 who are related to the householder. Median family income is usually higher than median household income because many households consist of only one person. Median family income is an indicator of the general socioeconomic status of a community.

Warren County’s median family income in 2013 ($85,632) was 38% higher in 2013 than the state median family income ($65,371). Warren County was similar to Medina County ($77,729), but about $20,000 lower than Delaware County ($103,564) in 2013. Median family income increased slightly between 2009 and 2013 (Figure 1.1).

See Table 1.1 in the appendix for details of median family income, Table 1.2 provides information about median household income. Households include non-related individuals who live together. Sometimes people who choose to live together to share expenses have lower incomes. As a result household incomes are often lower than family incomes.

Figure 1.2 shows the distribution of median family income across Warren County areas. The highest median income, in West Mason ($108,892), is more than twice that in Carlisle ($50,969). It is nearly double that of Lebanon ($58,414).

1.2 Educational Attainment

Higher educational attainment is associated with better health outcomes. Education impacts health literacy, knowledge, and behaviors, improves income and work conditions, and contributes to social support and a sense of control.5

Over 92% of Warren County residents have a high school education or more. This is slightly higher than the rate for Ohio (88%), about the same as Medina County (93%), and slightly lower than Delaware County (96%) (Figure 1.3). In 2013 there were an estimated 11,000 adults in Warren County with less than a 12th grade education.

Community Characteristics
Appendix Tables 1.3, 1.4, 1.5 and 1.6 have more details about educational attainment by level of education completed.

All areas of Warren County had a high percent of residents with at least a high school education (Figure 1.4). Mason had the highest percent (96%, 2013), and the lowest percent was in Carlisle (83%). Carlisle was 10% lower than Warren County (92%).

In 2013, 38% of Warren County residents had a bachelor’s degree or higher, this is substantially higher than Ohio (25%) or Medina County (30%), and nearly 25% lower than Delaware County’s (50%). The percent of the population with a bachelor’s degree or higher increased between 2009 and 2013 (Figure 1.5).

In 2013, Mason (54%) and West Mason (51%) had the highest percent of residents with at least a bachelor’s degree. The Carlisle Area had by far the lowest percent both in 2009 (7%) and 2013 (9%). Percent with at least a bachelor’s degree remained stable or rose slightly between 2009 and 2013 (Figure 1.6).

1.3 Median Age

Median age increased in Ohio and Warren, Delaware, and Medina Counties from 2009 to 2013, indicating the population is aging. The median age in Warren County in 2013 (37.9) was essentially the same as Ohio (39) and Delaware County (37.5).

The median age in Warren County was 7% lower than median age in Medina County (40.9) (Figure 1.7)

Median age increased in all Warren County areas except in Lebanon and Mason from 2009 to 2013 (Figure 1.8). In 2013 the highest median age was in the East Rural Area (41.9); this was 10% higher than Warren County. The lowest median age in 2013 was in Mason (35.6).
1.4 Home Ownership

People who own their own home are more likely to be in a stable housing arrangement. Home ownership is associated with educational achievement, civic participation, greater levels of well-being, and less likelihood of being a victim of crime.\(^6\)

The percent of home ownership in Warren County (78%) is higher than in Ohio as a whole (68%). It is comparable to the percent in both Delaware (82%) and Medina Counties (80%) (Figure 1.9). There are over 59,000 households in Warren County who are homeowners (2013 data), compared to about 17,000 who are renters.

Appendix Tables 1.7 and 1.8 have more detail about the proportions and numbers of households that rent or own their homes for 2009 and 2013.

In 2013, 78% of Warren County households were homeowners. Springboro (88%), East Rural (85%), West Mason (85%) and South Lebanon (84%) all exceed the Warren County percent of home ownership. Home ownership in East Rural Area (62%) is 43% lower than in Springboro (Figure 1.10).

1.5 Race

The population of Warren County in 2013 was 90% White, compared to 83% in Ohio. The proportion of the population who are African American/Black did not change between 2009 and 2013 (3.1% in 2009, 3.3% in 2013). This is much lower than the Ohio proportion of 12%. The percent of Other Races (including Asian) in Ohio had little change in the five-year period (4.6% to 5.0%).

Asians are the second largest population group in Warren County. In 2013 Asian represented only 4.2% of the population. There are significant clusters of Asians in West Mason (13.5%) and Mason (9.6%). There has been a 50% increase in Asians in these areas.

Appendix Tables 1.9 and 1.10 provide more information about race for the study areas.
The distribution of African American/Black in Warren County areas is shown in Figure 1.12. Only three percent of the county is African American; in the Lebanon Area they are 12% of the population. There has been a 20% increase in the proportion of African Americans living in the Lebanon Area since 2009.

The Hispanic population in Warren County is small but growing. There is a more equal distribution of Hispanics across the county. Hispanics living in the Franklin Area increased by over 300% from 2009 (1% to 3.8%, Figure 1.13).

1.6 Families with Incomes Below 185% of the Federal Poverty Level

The income to poverty ratio is the proportion of people and families whose incomes fall below a poverty threshold, adjusted for family size. If income is half of the threshold, the family is at 50% poverty. Poverty is one of the social determinants of health and interacts with health in a number of ways. A community’s income to poverty ratio is one way to assess its overall level of health.

In both 2009 and 2013, the percent of families under 185% poverty level in Warren County was less than half the percent for the state of Ohio (11% vs. 22% in 2009; 12% vs. 25% in 2013). The percent was similar to Medina (14%) and Delaware County (10%) in 2013 (Figure 1.14). The percent rose very slightly from 2009 to 2013 in Ohio and all three counties. In 2013 approximately 7,100 families in Warren County had incomes less than 185% poverty.

Appendix Tables 1.11 and 1.12 have more detail for the proportion and number of families with incomes based in Federal Poverty Guideline categories for 2009 and 2013.

The Carlisle (26%) and Lebanon (22%) areas had a higher percent of families living on incomes below 185% poverty than Warren County. This is about 50% higher than the county. Springboro (8%), Mason (7%), and West Mason (7%) were below the Warren County (12%) percent of families living below 185% poverty (Figure 1.15).

The Warren County percent of single women with children under age 18 with income less than 185% poverty was lower than the percent in Ohio for both 2009 and 2013. It was slightly higher than Delaware County, and slightly below Medina County. The Warren County percent of single female head families...
with children living below 185% poverty decreased 20% between 2009 (50%) and 2013 (40%) (Figure 1.16).

Appendix Tables 1.13 and 1.14 have more detail for the proportion and number of families with incomes based in Federal Poverty Guideline categories for 2009 and 2013.

In 2013 the Carlisle (63%) and Lebanon (57%) areas had the highest percent of families with female-heads living in poverty; the lowest percent was in the Mason Area (22%). Rates fell slightly in 2013 from the 2009 rates in all areas except for the East Rural Area.

1.7 Disability

<table>
<thead>
<tr>
<th>Percent Disability by Age</th>
<th>Ohio</th>
<th>Warren County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 5 years old</td>
<td>0.8</td>
<td>0.1</td>
</tr>
<tr>
<td>5 to 17 years old</td>
<td>6.3</td>
<td>4.1</td>
</tr>
<tr>
<td>18 to 64 years old</td>
<td>11.5</td>
<td>7.9</td>
</tr>
<tr>
<td>65 or more</td>
<td>35.9</td>
<td>32.4</td>
</tr>
</tbody>
</table>

Disability status is tracked by the American Community Survey (ACS) of the U.S. Census Bureau. The questions cover six disability types: difficulty with hearing, vision, cognitive function, walking, self-care, and/or independent living. Respondents who report difficulty in any of the six areas are considered to have a disability.8

People with disabilities can suffer health disparities compared with the population without disabilities. Communities can address the needs of their disabled population by improving the conditions of daily life, by making distribution of resources more equitable, and by raising awareness of the determinants of health for people with disabilities.9

Disability is measured across the life span. The U.S. census provides statistics for disability in the under 5 years old, 5 to 17 years old, 17 to 64 years old and 65 and older populations.

Tables for which information is provided are: Hearing Difficulty, Vision Difficulty, Self-care Difficulty, and Independent Living Difficulty. Appendix Tables for disability for have much more information about types of disabilities and the sex of people with disabilities for all geographic areas. Table 1.19 – 1.26 have percent and estimates for Disability Type by Age Group, Sex, Under 5 to 17 years, 18 to 64 years, 65 years and over.

Disability rates for people younger than 65 are quite low, however, information about the numbers of people in these categories are helpful in planning services for those who need them.

As age increases, so do disabilities. For the population over age 65 the disability rates include: hearing, vision, cognitive, ambulatory, self-care independent, and living difficulties. About one-third of the senior population reports having a
disability (Figure 1.18). In Warren County the senior disability rate is 32%, marginally lower than Ohio (36%). Delaware County (29%) has the lowest rate of the comparison counties, with Medina County (30%) in between. Approximately 70% of disabilities among seniors are hearing and independent living difficulties.

The disabilities are fairly evenly distributed between these two difficulties. In Warren County 28% of seniors have one of these disabilities, compared to 30% seniors in Ohio.

Figure 1.19 shows the percent of people 65 and older with a disability is highest in the Franklin (45%), Carlisle (42%), and Lebanon (42%) areas. The rates are higher than the Warren County (32%) rate. These areas are about twice the percent with a disability in Springboro (21%)

1.8 Households by Types

The percent of households in 2013 with children under 18 years old in Warren County (36%) was higher than the state (28%) and Medina County (32%), but lower than Delaware County (40%). There were small decreases in the number families with minor children across Ohio and the comparison counties. In Warren County, the percent of households with children under 18 years old decreased 3.5% between 2009 and 2013 (Figure 1.20).

Appendix Tables 1.15 and 1.16 have details about the proportion and numbers of households with children under 18 years old by family type for 2009 and 2013. Appendix Table 1.18 2009 & 2013 have details about average household and family size.

Figure 1.21 shows that in Warren County, the West Mason (49%) area had the highest percent of families with children under 18 in 2013. The percent of families with children in West Mason in 2013 was 35% higher than in Warren County (36%). Franklin (30%) and Carlisle (30%) had the lowest percent of families with children under 18 in 2013. All other county areas were similar to Warren County.

1.8.1 Households with Female Heads with children under 18

Well over half of all households with female heads contain minor children. The percent of households with female heads that have children under 18 years in Warren County (63%) was slightly higher than both Ohio (59%) and Medina County (55%), and lower than Delaware County (68%). Percent of female headed households with children
decreased between 2009 and 2013 in Ohio and all three counties (Figure 1.22).

The percent of female-headed households with children under 18 in West Mason (71%), Springboro (70%), and South Lebanon (66%) are higher than Warren County (63%). The percent in Carlisle (50%) is about 27% less than in Warren County fairly similar across Warren County areas (Figure 1.22).

1.8.2 Senior Households

In 2013 the percent of senior households (individuals or couples 65 and older living alone) was 7% in Warren County. This was lower than the percent in Ohio (11%) and Medina County (9%) and higher than Delaware County (6%). The percent of this household type rose between 2009 and 2013 (Figure 1.23).

Appendix Table 1.17 2009 & 2013 have details about the proportion and numbers of householders living alone - 65 years and over

The highest percent of senior households in Warren County was in the Lebanon Area (11.5%). This is almost twice the percent of senior households in the East Rural Area (5.8%). The percent of senior households increased across all areas of Warren County from 2009 to 2013.

1.9 Employment

1.9.1 Major businesses and sources of employment

According to the 2015 Warren County Annual Information Statement, there are more than 6,000 firms in Warren County employing approximately 110,800 persons. In 2014 there were 2,138 jobs created and 2,137 jobs retained.

Agriculture, industry, and tourism provide many jobs in Warren County. Agriculture remains an important part of the economy, especially in the northern, northeastern and southeastern parts of the County. The six leading agricultural products are soybeans, corn, other miscellaneous crops, horses, cattle, and hay.

Warren County has benefited from the northerly expansion of Metropolitan Cincinnati into Warren County, and from Greater Dayton’s southerly expansion. Businesses that have announced expansions or plans to expand include UGN, Inc. (a world-class provider of acoustical solutions to the auto industry), mattress manufacturer Serta Simmons Bedding, AK Steel, and INX International Ink Co. Another
business, Parallon Business Solutions, LLC, also recently announced its relocation to Warren County. Other major industrial facilities located in the County include L-3 Communications, Cintas Corporation, Leggett & Platt, Luxottica Retail, Mitsubishi Electric Automotive, Portion Pac, Inc., Rheinstahl, HTNA, ADVICS Manufacturing Ohio, Pioneer Industrial Components, Makino Incorporated and Cengage Learning, Inc. Several major service facilities have located within Warren County in the last several years, including Anthem & Anthem Prescription, Macy’s Credit Services, Proctor & Gamble Health Care Research Center, and Siemens Business Service, Inc.

Tourism also plays a leading role in the Warren County economy, accounting for nearly 13% of jobs. Attractions include Kings Island, Great Wolf Lodge, Little Miami Scenic River and Bike Trail, Caesar Creek State Park, the Western & Southern Financial Masters & Women’s Open Tennis, Miami Valley Gaming, Fort Ancient, and the antique shops in Waynesville.

### 1.9.2 Unemployment Rate

The civilian unemployment rate reflects the number of the unemployed civilian, non-institutionalized population over 16 years of age as a percent of the labor force. The Bureau of Labor Statistics defines unemployment as people who do not have a job, have actively looked for work in the prior four weeks, are currently available for work, and people not working and waiting to be recalled to a job from which they were temporarily laid off.

Unemployment rates in Ohio and the suburban counties have decreased since 2010 (Figure 1.25). In 2009 and 2010, the unemployment rate for Ohio was 10.3%. Warren County’s rate for those years (9.0%) was 10% lower than the state, and around 10% higher than Medina (7.7%) and Delaware (7.2%) Counties. In 2014, Warren County’s rate (4.8%) had dropped 47% since 2010, about the same percent as Ohio and Delaware County rates. Medina County’s unemployment rate in 2014 was 30% lower than in 2010.

Appendix Tables 1.27 and 1.28 have information about the total number of workers and the civilian unemployment rate for the study areas.

### 1.10 Voter Participation

Voter participation can be seen as a measure of civic engagement and participation in the democratic process. The percent of those voting in Warren County exceeded the percent voting in Ohio as a whole for each year except 2014. Warren County was similar to Medina and Delaware Counties in percent voting (Figure 1.26). As might be expected, voting in the presidential election year increases significantly. In 2012 voting exceeded 70% in Ohio and the comparison counties. In 2012, over three fourths (76%) of Warren county voters went to the
polls. There is no meaningful difference in voting behavior across the geographic areas.

Appendix Table 1.29 has detailed information about voter participation, including the proportion and number of votes casted and the total number of registered voters for the study areas.

1.11 Environmental Health

1.11.1 Air Quality Index Days

Figure 1.27 shows that the number of Good Air Quality Index Day in Warren and the comparison suburban counties. There is a moderate trend toward more good air quality index days in Warren and the comparison counties.

Environmental health specialists warn that typically there is only one air quality monitoring station in a county, air quality can differ across the county. The placement of the monitoring station can have an impact on measurements.

Appendix Tables 1.30 – 1.32 have percent and the number of Good Air Quality Index Days for Delaware County, Medina County, and Warren County.

1.11.2 Water Quality

The Warren County Water and Sewer Department operates two producing water treatment plants and one major sewage treatment facility. Water resources are under direct County control and the County pumps, treats, and distribute the water via county-owned networks. The water treatment plant output is measured in gallons-per-day (gpd). The Environmental Protection Agency (EPA) rating of the County’s two water treatment plants is a total of 15 million gpd. (EPA rating means total plant output with the largest well out of service). The County also has six water booster stations that stabilize area water pressure. The major sewage treatment plant was expanded and upgraded in 2011 to accommodate up to 12 million gallons of raw sewage per day. There are also two smaller sewage treatment plants with a service range of 15,000 to 80,000 gallons per day.

1.12 Emergency Response and Preparedness

Several entities in Warren County are responsible for emergency and disaster preparedness and response. The Warren County Emergency Management Agency (WCEMA) develops county-wide plans to include all four phases of emergency management: risk mitigation, preparedness, emergency response, and recovery. The Local Emergency Planning Committee is a group of Warren County organizations, both public and private, who work together to ensure that Warren County is prepared for all hazards it may face. The LEPC is administered by WCEMA.

The Warren County Combined Health District (WCCHD) is responsible for preparing for and responding to public health emergencies. WCCHD is continually preparing and modifying its emergency response plans in an effort to be capable of addressing the needs of the growing population in Warren County and
to respond to emerging public health threats. As part of a nationwide initiative, the Warren County Unit of the Tristate Medical Reserve Corps (MRC) is recruiting medical professionals including physicians, nurses, paramedics and mental health professionals, as well as citizens with non-medical backgrounds, to volunteer in the community during public health emergencies that require a widespread medical or public health response.

1.12.1 Electricity Dependent Seniors

Figure 1.31 shows the rate of people who are Medicare beneficiaries who are dependent on electricity for medical and assistive equipment including ventilators and wheelchairs\(^{12}\). In times when electric power is at risk (severe weather and disasters) it is important the emergency responders know where to find this population to ensure that they are not at risk. Warren (41.7 per 1,000) and Delaware (43.7 per 1,000) have similar rates. All the suburban comparison counties have rates lower than the Ohio rate of 57 per 1,000 beneficiaries.

Appendix Table 1.33 has the rate and numbers of Electricity-Dependent Seniors.
2 Safe Communities

In Warren County, fire protection and emergency medical services are provided by fire departments in four cities, nine townships, one joint fire district, and one joint EMS district. There are also areas of Warren County within the service areas of two city fire departments, one joint fire district and one private fire district predominantly located in other counties. All of these fire departments have mutual aid response agreements within the County and other nearby municipalities. For police protection, there are the Sheriff’s Office, the Ohio State Highway Patrol, five city police departments, four village police departments, the Ohio Department of Natural Resources, and two township police departments.\(^\text{13}\)

2.1 Public Safety

2.1.1 Property Crime

Crime and violence are aspects of the neighborhood and built environments that impact overall health. A sense of security and well-being is an important social determinant of health.\(^\text{14}\)

Property crime includes household burglary, motor vehicle and property theft.\(^\text{15}\) Figure 2.1 shows property crime rates (crimes per 10,000 people) in Warren County 2009-2013 were about half the rate in the state of Ohio (156 per 10,000 in Warren County compared to 288 per 10,000 in Ohio in 2014). The 2014 rates in Warren County were very similar to rates in Delaware County (148 per 10,000), but were 60% higher than the rate in Medina County (97 per 10,000). Property crime rates statewide and in the suburban counties remained relatively stable from 2009 through 2013.

Appendix Tables 2.1 and 2.2 have information about property and violent crime rates per 10,000 people and the number of crimes reported.

Figure 2.2 illustrates the rate of property crime in Warren County for each of the years 2009 – 2013. While there is some variation from year to year, there appears to be no notable upward or downward trend in property crime.

2.1.2 Violent Crime

Violent crime involves force or the threat of force and includes murder, rape and sexual assault, robbery, and aggravated assault.\(^\text{16}\) Beyond the damage caused by the crime itself, violent crime has a strong socio-emotional impact on victims and survivors.\(^\text{17}\)
Compared to the state of Ohio, Warren County’s rate of violent crime is only about 25% that of the state (6.3 in Warren County; 27.8 in Ohio in 2013). Warren County’s rate is very similar to the rates in Delaware and Medina Counties. While violent crime rates in Ohio seem to be showing a gradual decrease from 2009 to 2013, rates have remained stable in the suburban counties (Figure 2.3).

Between 130 and 175 individuals each year are victims of violent crime in Warren County. There were 6.3 violent crimes per 10,000 people in Warren County in 2013. The rate has remained fairly stable over a five-year period hovering around 7.0 per 10,000.

### 2.1.3 Domestic Violence

The information about domestic violence comes from the Supreme Court of Ohio database. Domestic violence in Ohio is defined as the occurrence of one or more of the following acts against a family or household member: attempting to cause or causing bodily injury, placing another person in fear of serious harm by threat of force, abusing a child, or committing a sexually oriented offense.

Figure 2.4 tracks rate of domestic violence per 100,000 people. It shows the rate in Warren County as fairly stable between 2009 and 2013. The rate of domestic violence in Warren County is shown as much higher than the state of Ohio and comparison counties. However, because counties in Ohio report domestic violence cases differently, rates of domestic violence are not directly comparable across counties.

Appendix Table 2.3 has detailed information about the rates per 100,000 people and the number of domestic violence cases reported for Warren and the comparison suburban counties.

### 2.2 School Safety

The Student Drug Use Survey asks students how often they were afraid of being hurt by another student while at school. Most students do not report feeling unsafe at school. Figure 2.5 shows 84% of students in Warren County schools report “never” being afraid of being hurt at school. This is a somewhat higher rate than either Butler or Clermont Counties. Fewer than 10% of students report feeling afraid of being hurt at school two or more times in the last year. This proportion of student is too high, efforts to ensure students feel safe at school need to continue and new methods
to combat bullying and other activities that threaten youth at school should be sought out.

Appendix Tables 2.4 has more detailed information about the proportion of students who felt unsafe at school for Warren, Butler, and Clermont Counties.

The Student Drug Use Survey also asked students whether they have ever thought about committing suicide. Students can indicate if they have thought about committing suicide: never, seldom, sometimes, often, or a lot. Figure 2.6 shows 7.1% of Warren County schools students responded that they thought about committing suicide often or a lot. This is lower than Butler (10.2%) and Clermont (8.5%) counties’ schools. It is important that parent, friends, teachers, and other school personnel be aware of signs that may suggest youth are in distress and need support.

2.3 Transportation

Warren County is located adjacent to Interstates I-71 and I-75, which provide access to three other major interstates (I-275, I-74 and I-70) within a driving time of 30 minutes. Other major road arteries traversing the County are U.S. Routes 22 and 42, and State Routes 28, 48, 63, 73 and 123. There are approximately 290 miles of County roads and 366 bridges.¹⁹

2.3.1 Vehicles Available

Living in Suburban County with rural areas with limited public transportation options and having access to no or only one vehicle available may limit the ability to get community services and health care. In 2013, 14% of Warren County households had access to no or only one vehicle. This is a lower than the Ohio rate and is similar to Delaware and Medina Counties. The number of vehicles available did not change much between 2009 and 2013 (Figure 2.7).

Appendix Tables 2.6 and 2.7 have detailed information about the proportion and number of households that have no, one, two, or three or more vehicles available in 200 and 2013 for the study areas.

In 2013, the Mason (23%), Carlisle (20%), and Lebanon (20%) areas had the highest percentage of households with no or only one vehicle. The East Rural (8.8%) area had the lowest percentage of no or one vehicles (Figure 2.8). There is no discernable difference in the number of vehicles available from 2009 to 2013.
2.3.2 Mean Travel Time to Work

Travel time to work refers to the number of minutes it usually takes a person to get from home to work. Information about commuting allows planning for transportation and infrastructure needs. Planners and policy makers can use this data in decisions about how to allocate resources for transportation. Figure 2.9 shows mean travel time in 2013. There is no meaningful difference in the amount of time spent getting to work between Ohio, Warren, Delaware, and Medina Counties.

![Figure 2.9](image)

There were no meaningful differences in travel time to work from 2009 to 2013.

Appendix Table 2.8 has mean travel time to work in minutes for 2009 and 2013. Tables 2.9 and 2.10 have travel time to work in intervals of minutes in 2009 and 2014 for the study areas.

There is minimal difference in drive time for the areas in Warren County (Figure 2.10). Those in the East Rural Area spend about five minutes more getting to work than those in the county as a whole. It might be expected that people who live in the rural area in the county would drive longer.

2.3.3 Motor Vehicle Crashes

Motor vehicle crashes are a leading cause of injury and death, and are costly in terms of medical costs, lost productivity, legal and court costs, emergency services, and property damage. Healthy People 2020 Injury and Violence Prevention objectives IVP-13 and IVP-14 address decreasing fatalities and non-fatal injuries related to motor vehicle crashes.

Brianne Hetzel, a Transportation Engineer for ODOT District 8 Planning Department, states that crash data is used to help concentrate efforts on reducing and preventing crashes based on the most dangerous and most common crash types. It is also used to identify hot spot crash locations and intersections. Local agencies such as the Ohio Department of Transportation and the Warren County Engineer’s Office use the information to help reduce crashes through targeted education, enforcements, and engineering strategies. ODOT and other local agencies have the opportunity to apply for Highway Safety Improvement funds to make engineering improvements to those hot spot crash locations.
Figure 2.11 shows a gradual downward trend in the motor vehicle crash rate in Ohio, Warren and Delaware Counties between 2010 and 2014. In 2014, the comparison counties were marginally lower than Ohio rate. In 2014, the motor vehicle crash rate in Warren County was 223 per 10,000 people, versus 244 per 10,000 people for the state of Ohio.

Appendix: Table 2.11 has detailed information about the crash rate per 10,000 people and the number of crashes by year for the study areas.

The National Highway Safety Administration reports nationally alcohol involvement in fatal motor vehicle crashes declined from 60% 1982 to about 40% in 2011. Much of the decline occurred between 1982 and the early 1990s. There has been almost no change in the amount of alcohol involvement in fatal vehicle crashes since the mid-1990s. Alcohol consumption remains a major factor in vehicular crashes.

Alcohol-related motor vehicle crashes in Warren County over the period 2010 – 2014 show a slight downward trend, from 10.9 per 10,000 in 2010 to 8.8 per 10,000 in 2014 (Appendix Table 3.3.2). The rate in Medina County also trended downward slightly from 2010 to 2014. In Delaware County and the state of Ohio the rate of alcohol related motor vehicle crashes remained relatively stable (Figure 2.12).

Appendix: Table 2.12 has detailed information about the alcohol-related crash rate per 10,000 people and the number of crashes by year for the study areas.

2.3.4 Motor Vehicle Crash Fatalities

Healthy People 2020 objective IVP-14 is to reduce the rate of motor vehicle crash fatalities.

The HP2020 target is for there to be no more than 12.4 fatalities per 100,000 people.

Figure 2.13 shows motor vehicle fatality rates in Ohio in 2014 (9 per 100,000 people), Warren County (7 per 100,000 people), Delaware (7 per 100,000 people) and Medina (6 per 100,000 people) Counties were well below this target in 2014.

Appendix: Table 2.13 has detailed information about the motor vehicle crash fatality rate per 10,000 people and the number of motor vehicle crashes by year for the study areas.

The motor vehicle crash mortality rate in Franklin (18 per 100,000 people) is more than twice the Warren County rate. The mortality rate in the East Rural Area (12 per 100,000 people) is 70% higher than the county. The lowest vehicle mortality rate occurred in the West Mason Area (2 per 100,000 people) (Figure 2.14).
3 Access to Services

3.1 General Health

The Behavioral Risk Factor Surveillance System (BRFSS) is an annual survey conducted by the Ohio Department of Health under contract with the Centers of Disease Control and Prevention (CDC). The sample size in any single year is too small to make reliable estimates of prevalence rates for Warren, Delaware, and Medina Counties. Combining the samples for 2007 to 2010 and 2011 to 2013 provides a large enough sample to make county level estimates for many BRFSS measures for the time periods (2007-2010 and 2011-2013). The survey uses complex sampling strategy. Analysis provides the number in the sample, estimates of percent and the total number of respondents in the population, and confidence intervals to allow statistical comparisons between counties and time periods.

3.1.1 Adults with good or better health Status

Self-reported health status has been shown to correlate well with health outcomes and is a good predictor of future disability and mortality. The BRFSS includes a question that asks respondents to rate their own health status as excellent, very good, good, fair, or poor. Figure 3.1 shows percent of adults who rated their health as good, very good, or excellent.

Warren County residents self-rate their health status highly, with only 11-14% rating their health as fair or poor. Health status ratings in Warren County were slightly higher than ratings in Ohio and Delaware County and slightly lower than Medina County ratings. However, these differences are not statistically significant.

Appendix Tables 3.1 and 3.2 have details about the estimated percent and number of adults with good or better health in the time periods (2007-2010 and 2011-2013)

3.1.2 Exercise

The 2008 Physical Activity Guidelines for Americans recommends all Americans get regular physical activity to improve overall health and prevent many adverse health outcomes. The optimal amount of moderate physical activity is 150 minutes (2 hours and 30 minutes) per week. Healthy People 2020 objectives PA-1 and PA-2.1 – 2.4 address the need for adults and children to be more physically active.

The BRFSS asks adults if they participated in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise within the past month. Figure 3.2 shows responses. About 80% of Warren County residents reported they had engaged in some exercise in both 2007-10 and 2011-13. This is very close to the percent reporting exercise in Delaware (76%) and Medina (80%) Counties. It is slightly higher than Ohio (74%).
3.2 Health Insurance Coverage

3.2.1 Health Insurance Coverage by Type

Access to health care coverage is impacted by medical insurance coverage. Lack of insurance can lead to not getting needed preventive care, or not seeking care in a timely manner. Healthy People 2020 objective AHS-1 calls for 100% health care coverage.  

Health insurance may be public or private. Private insurance is often offered through an employer, or since passage of the Affordable Care Act, through insurance exchanges set up by states or the federal government. Public insurance is offered through the federal and/or state governments and includes Medicaid, Medicare, and the Veteran’s Health Administration.

Figure 3.3 shows that in Warren County in 2013, 83% of the civilian population was covered by private insurance. This is higher than the Ohio percent of 70% but similar to Delaware (87%) and Medina (81%) Counties. In Warren County, about 20% of the population relies on public insurance (Figure 3.3, also see Appendix Table 4.4.1). Totals add up to more than 100% because some people have both private and public insurance.

Appendix Table 3.3 has information about the percent and number of people with insurance coverage by Type (private or public) in 2013 for the study areas.

Figure 3.4 shows private vs. public insurance by Warren County area. The Carlisle Area (66%) has the lowest percent of population with private insurance and highest (3.4%) with public insurance. West Mason (90%) and Mason (89%) have highest rates of private insurance and lowest public insurance rates.

3.2.2 Public Insurance by Insurance Type

Public insurance is offered through different programs. Medicaid is a joint federal and state program that helps low income people with medical costs. In 2014, Ohio extended Medicaid coverage to adults between 19 and 64 years of age with below 138% of the Federal Poverty Level. Medicare is a federal health insurance program for people 65 years and older. Some younger people with disabilities, and people with end-stage renal disease are also eligible for Medicare. Active military and individuals separated from the service (except dishonorable discharge) receive health care coverage through the U.S. Department of Veterans Affairs (VA).
Residents of Warren County with public insurance are mostly covered by Medicare (12%) and/or Medicaid (7.6%). This is the case in Delaware and Medina Counties, as well.

The Medicaid (16%) and Medicare (16%) coverage rates for Ohio are the same. VA insurance covers between one and two percent of the population in Ohio, Warren, and comparison counties (Figure 3.5).

Appendix Tables 3.4 and 3.5 have information about the percent and number of people with public insurance coverage by Type (Medicare, Medicaid, Veterans Administration,) in 2013 for the study areas.

Figure 3.6 shows, in Warren County, the Carlisle Area (17%, 18%) has the highest public insurance Medicare and Medicaid coverage rates. In the Lebanon Area (14%, 14%), the coverage by each system is the same. For all other areas in the county, Medicare provides more public coverage to residents than the Medicaid program. The Medicaid coverage rate in Carlisle (17%) is almost six times higher than in Mason (3.5%) and West Mason (3.5%).

3.2.3 Uninsured

The proportion of the noninstitutionalized population in Warren County not covered by health insurance is 7.0%, compared to 11.6% for Ohio, 5.3% in Delaware County, and 8.2% in Medina County. The population between 19 and 64 years of age is at the greatest risk of not having health insurance coverage. Most people in this age group have incomes high enough to make them ineligible for public insurance programs. Figure 3.7 shows the uninsured rates for 16 to 64 year olds is 9.9% in Warren County, 16% in Ohio, 11.5% in Medina County, and 8.5% in Delaware County.

Appendix Tables 3.5 has information about the percent and number of people who were uninsured in 2013.

Figure 3.8 shows the distribution of uninsured rates within Warren County in 2013. The proportion uninsured in the Carlisle Area (18%) is nearly twice that of Warren County (9.9%). This rate is over three times higher than the lowest uninsured rate in the county (Springboro Area; 6%).
3.3 Population to Provider Ratios

Figure 3.9 shows the number of people who rely on one primary care provider in each of the study areas. In 2013 in Warren County there are 1,087 people for each primary care provider, this is just over 200 fewer people than the state average of 1,297. In Medina County the population to primary care provider ratio (1,575) is substantially higher than Ohio and almost 50% higher than Warren County. Delaware County (758) has 30% better access to primary care providers and Warren County. Access to primary care physicians has increased slowly across the study areas since 2009. The Warren County health care market has benefited by being nestled between the healthcare systems available in Cincinnati and Dayton.

Information about the availability of private practice dentists is not as easily accessible as information about physicians. In 2013 there were 2,218 people for each private practice dentist in Warren County. Access to dental providers is 16% lower in Warren County than in Ohio (1,912). The population to dentist ratio in Medina County is very similar to that of Ohio. Access to dentist in Delaware County is 50% better than in Warren County.

Appendix Table 3.7 has ratios and the number of primary care physician providers for each of the study areas by year.

Appendix Table 3.8 has ratios and the number of private practice dentist for 2009, 2010 and 2013 for the study areas.

3.4 Oral Health

In 2012 68% of Ohio adults reported having visited a dentist or dental clinic with the past year the decrease from 70% in 2010 is not statistically different. The BRFSS samples in in these years is too small to make estimates for Warren or the comparison counties. For many of the health indicators measured by the BRFSS Warren County and the comparison counties were better than the Ohio rates.

Oral health reports for Ohio counties are available from the Ohio Oral Health Surveillance System (http://publicapps.odh.ohio.gov/oralhealth/default.asp)
The report indicates 92% of Warren County’s population is served by optimally fluoridated water, up from 78% in 2009.

The 2012 report, based on information from the 2008 Ohio Family Health Survey, shows 79% of children under 18 years, 70% of adults aged 18-64, and 65% of adults older than 65 had visited a dentist in the past year. Ohio Family Health Survey also reported 4% of children under 18, 11% of adults (18-64 year olds), and 1% of seniors 65 and older reported they were unable to receive needed dental care.

The oral health report shows 19% of children in the third grade had untreated tooth decay. Only 1.6% of third graders in Warren County had untreated tooth decay. Eleven percent of Ohio third grade students had experienced a toothache compared to 6.5% in Warren County. Sealants to protect teeth had been applied for 81% of third grade students’ in Warren County compared to only 50% of Ohio, 71% of Delaware County, and 52% of Medina County third graders.

Figure 3.12 shows the proportion of the Medicaid population by age category had a dental visit in 2012. Warren and Delaware Counties have similar rates in all age groups. Rates in Medina County rates are somewhat lower. In the less than two year age groups 8% to 10% of children had dental visits. In the three to 18 year age group 41% to 45% of children had dental visits. In the adult ages only 26% to 30% had a visit with a dentist. Of the 65 and older people who receive Medicaid 20% to 26% had a dental visit.

Appendix Table 3.11 has more detail about the 2012 visits for Medicaid for age categories.

### 3.5 Access to Preventive Services

A healthy community focuses on wellness and prevention, not only sickness and disease. Many diseases can be prevented by adopting healthier behaviors. Infectious diseases that can be transmitted from person to person by direct contact with an affected individual or the individual’s discharges or by indirect means are referred to as communicable diseases.

Many of communicable diseases can be can be prevented by receiving immunizations in the recommended doses. Other diseases are not preventable, but if detected early, can be successfully treated. Access to healthcare services usually included receiving preventive services. The Affordable Care Act requires preventive services be included without coinsurance charges. Availability and use of preventive health services is one measure of a community’s health.

The following measures are about people’s use of preventive services are from the Behavioral Risk Factor Surveillance System. The BRFSS is an annual survey conducted by the Ohio Department of Health under contract with the Centers of Disease Control and Prevention (CDC). The sample size in any single year is too small to make reliable estimates of prevalence rates for Warren, Delaware, and Medina Counties. Combining the samples for 2007 to 2010 and 2011 to 2013 provides a large enough sample to make county level estimates for many BRFSS measures for the time periods (2007-2010 and 2011-2013). The survey uses complex sampling strategy. Analysis provides the number in the sample, estimates of
percent and the total number of respondents in the population, and confidence intervals to allow statistical comparisons between counties and time periods.

3.5.1 Adult Immunization

3.5.1.1 Adult Flu Shot

Use of immunizations demonstrates access to and commitment to preventive care. Influenza can be serious and lead to hospitalization and death. In recent flu seasons, between 80% and 90% of flu-related deaths occurred in people older than age 65.\(^{31}\)

Routine annual influenza immunization is recommended for all persons older than 6 months of age who do not have contraindications.\(^{32}\) The Behavioral Risk Factor Surveillance system (BRFSS) surveys the adult population in all states in the Country. Respondents are asked whether they have received a flu immunization in the past year.

Healthy People 2020 objective IID-12.12 I is to increase the percentage of adults aged 18 and older who are vaccinated annually against seasonal influenza. The target is for 70% of adults over 18 to be immunized annually.\(^{33}\)

Figure 3.13 shows, in the 2011-2013 time period, 65% of Warren County adults reported having received a flu shot in the past year. This is down from 76% in the 2007-2010 interval. The Warren County rates are similar to the Ohio (62%, 69%) and Medina County (74%, 73%) rates in the same time periods. Delaware County (68%, 55%) shows a decline in flu immunization rates in the 2010-2013 time interval similar to Warren County. Differences in rates may be due to sampling error.

Healthy People objective IID-12 is to increase the percentage of children and adults who are vaccinated annually against seasonal influenza.

The 2020 target for 18 to 64 year olds receiving seasonal influenza vaccines is 80%.

The Warren County 2011-2013 flu shot rate is below the HP2020 goal. In the 2007-2010 time period, the rate was 10% higher. It appears that with promotion campaigns, it is possible the flu immunization rate can achieve the Healthy People goal by 2020.

See Appendix Table 3.13 and 3.14 for estimates of percent and numbers of people who received Flu Shot in the 2007 – 2010 and 2011 – 2013 time periods.

3.5.1.2 Pneumonia Vaccination

Pneumonia caused by the organism streptococcus pneumoniae is a leading cause of hospitalization and death among adults 65 years and older. The Advisory Committee on Immunization Practices (ACIP) recommends all adults in this age group receive two types of vaccination to prevent pneumococcal infection. These vaccines only need to be
Healthy People 2020 objective IID-13.1 is to increase the percentage of noninstitutionalized adults aged 65 years and older who are vaccinated against pneumococcal disease.

The target is for 90% of adults aged 65 years and older to be vaccinated.35

Figure 3.14 shows 74% of Warren County adults 65 years old or older reported having received a pneumonia vaccination in the 2011-2013 time period. This is not statistically different than Ohio (70%) or Medina County (79%) but is significantly higher than the Delaware County (64%) rate.

Although there are fluctuations, the vaccination rates have remained fairly stable across time periods. In all of the geographic areas, the vaccination rate is below the Healthy People 2020 90% target. It appears a considerable amount of work will be required to achieve the Healthy People goal by 2020.

Appendix Tables 3.15 and 3.16 have estimates of the pneumonia vaccination rates and numbers for the 2007-2010 and 2011-2013 time periods.

3.5.2 Women’s Preventive Health Care

3.5.2.1 Mammography - Breast Cancer Screening

Breast cancer is the second leading cause of death in women in the United States, and is most frequently diagnosed in women between the ages of 55 and 64.36 The U.S. Preventive Service Task Force (USPSTF) has found adequate evidence that mammography screening reduces mortality from breast cancer for women between the ages of 40 and 74, with benefits increasing with age. The USPSTF currently recommends women between the ages of 50 and 74 receive a mammogram every two years.37 Other national cancer organizations have different recommendations for mammograms. Women should work with their primary care provider to determine the best time to go for a mammogram.

The Healthy People 2020 Objective C-17 is to increase the proportion of women who receive a breast cancer screening based on the most recent guidelines. The 2020 target is 81.1% of females aged 50 to 74 years to receive a breast cancer screening based on the most recent guidelines.

The Healthy People 2020 Objective C-18.1 is to increase the proportion of women who were counseled by their providers about mammograms. The target is for 76.8 percent of females aged 50 to 74 years to be counseled by their providers about mammograms.

Figure 3.15 shows 63% of adult women in Warren County reported receiving a mammogram in the 2011-2013 time period. This was an 18% increase from the 2007-2010 interval. This is somewhat lower than the rate for the state (69%) and Medina County (72). The 2011-2013 Delaware County rate is unusually low, this rate may be a statistical anomaly.

The mammography rates for all geographic areas falls short of the HP2020 C-17 target of 81%.38 A considerable amount of work will be required to achieve the healthy people mammography exam goal by 2020.

Appendix Tables 3.19 and 3.20 have estimated percent and numbers of women who have had a mammogram in the 2007 – 2010 and 2011 – 2013 time intervals.
### 3.5.2.2 Pap test - Cervical Cancer Screening

The incidence of cervical cancer has decreased markedly in the United States since cervical cancer screening was introduced. Screening for cervical cancer through cytology (Pap test) can detect pre-cancerous cervical lesions and cervical cancer at a stage when it can be successfully treated. The USPSTF recommends women between the ages of 21 and 65 receive screening for cervical cancer every three years.

HP2020 objective C-15 is to increase the proportion of women who receive a cervical cancer screening based on the most recent guidelines. The target is for 93% of females aged 21 to 65 years received a cervical cancer screening based on the most recent guidelines.

Figure 3.16 shows, in Warren County, 95% of respondents in 2007-2011 and 84% in 2011-2013 reported ever having a Pap test. The percent who reported receiving a pap test in Ohio (93%) and Medina Counties (100%) is very high. Both Warren and Delaware Counties show a decline from the 2007-2010 time period to the 2011-2013 interval.

In the 2007-2010 time interval the Warren County rate was 95%. This suggests, with coordinated effort, it is possible for community health providers in Warren County to collaborate to achieve the Pap test 2020 goal.

Appendix Tables 3.21 and 3.22 have estimated percent and numbers of women who had a pap test in the 2007 – 2010 and 2011 – 2013 time intervals.

### 3.5.3 Colorectal Cancer Screening

Colorectal cancer is the third most frequently occurring cancer among both men and women in the United States, but levels of screening for this disease are lower than for other effective cancer screening tests. The USPSTF recommends adults, beginning at age 50 and continuing until age 75, receive screening for colorectal cancer using fecal occult blood testing, sigmoidoscopy, or colonoscopy. While the UTSPSTF does not recommend an interval between screenings, in 2008 the American Cancer Society Colorectal Cancer Advisory Group recommended colonoscopy be performed every 10 years.

The Healthy People 2020 objective C-16 is to increase the proportion of adults who receive a colorectal cancer screening based on the most recent guidelines.

The HP2020 target is for 70.5% of adults aged 50 to 75 years to receive colorectal cancer screening.

Figure 3.17 shows 69% of Warren County residents between 50 and 75 years old report having sigmoidoscopy/colonoscopy exams. This is somewhat higher than the Ohio and Delaware rates of 65% in the 2011-2013 interval. The Medina County rate fell between the 2007-2010 interval and the 2011-2013 time period.
The rate of colorectal screening remained stable over the two time periods. The HP2020 target for sigmoidoscopy/colonoscopy exams appears within reach. It is worth the effort for community health providers to educate people to have sigmoidoscopy/colonoscopy exams and achieve the target.

Appendix Tables 3.21 and 3.22 have estimates of the percent and numbers of people ages 50 to 75 years old who ever had a pap test in the 2007 – 2010 and 2011 and 2013 time periods.

3.6 Access to Food Services

3.6.1 Food Access

Access to and availability of healthy food options can help people follow a healthier diet. Full service grocery stores that carry a variety of fresh and frozen fruits and vegetables, farmers’ markets that offer fresh local produce, and full service restaurants (as opposed to fast food outlets) can all offer a community a variety of healthy food choices.\(^46\)

According to the Ohio City Food Access Database, 33% of the population of Warren County had low access to grocery stores, compared with 26% in Medina County and 27% in Delaware County (Appendix Table 4.9.1). In 2012, there were three Farmers’ Markets in Warren County, none of which reported accepting SNAP or WIC.

In 2011, Warren County had slightly more fast food restaurants than full service restaurants per 1,000 population. There were 0.6 fast food restaurants/1,000 population, and 0.5/1,000 full service restaurants.

Appendix Tables 3.35 to 3.42 have additional information about these measures.

3.6.2 Supplemental Nutrition Assistance Program (SNAP)

The number of households who qualify for and receive the Supplemental Nutrition Assistance Program (SNAP, formerly known as food stamps) is an indirect measure of income. The household’s gross monthly income must be at or below 130% of federal poverty guidelines to qualify for Ohio’s Food Assistance Program. The program is designed to help low income families by improving nutrition.\(^47\)

3.6.2.1 All Households

Five percent of all households in Warren County receive food assistance through SNAP (Figure 3.18). This is one-third the percent receiving SNAP in the state of Ohio (15%) and the same as Delaware County (5%). It is about one-third lower than Medina (7.5) County.

Carlisle (13%) has the highest percent of households receiving SNAP in Warren County, more than double the county rate. The Lebanon (9%) and Franklin (8%) areas are about 30% higher than the county. Mason (3%) and West Mason (2%) have the lowest percent receiving SNAP (Figure 3.19).
Appendix Table 3.28 has percent and the numbers of households that received SNAP in 2013.

3.6.2.2 Households with Children Receiving SNAP

In households with children, a slightly higher percent receive SNAP in Warren County (8%, Figure 3.20) than all households. This is one-third of the percent in Ohio (24%). Medina (12%) and Delaware (7%) are also lower than Ohio.

The Carlisle (23%) and Franklin (20%) areas have the highest proportion of households with children receiving SNAP in Warren County (Figure 3.21). The West Mason Area with only 2% has the lowest percent of households with children receiving SNAP.

Appendix Table 3.29 has percent and the numbers of households by type with children under 18 years old that received food stamps/SNAP in the last 12 month in 2013.

Tables 3.32 and 3.33 have percent and number of households with no children that received food stamps/snap in the past 12 months for the study areas.

3.6.2.3 Female Head Households with Children Receiving SNAP

Twenty-six percent of female head households with children receive SNAP in Warren County. In Ohio, fully half (51%) of female headed households with children receive SNAP. The percent in Warren County is similar to Delaware County (24%) and is 23% lower than Medina (34%) County (Figure 3.22).

Figure 3.23 shows 45% of households with a female head in the Carlisle Area received SNAP in 2013. The households with female heads in the Lebanon (42%), Franklin (41%), Springboro (38%), and South Lebanon (37%) areas receive SNAP at about one and one-half times higher than the Warren County average. There are very few households with a female head receiving SNAP in Mason (5.4%) and West Mason (0.0%).

Appendix Table 3.29 and 3.30 has percent and the numbers of female head households with children under 18 years old that received SNAP in the last 12 month in 2013.
3.7 Strong Safety Net

A strong safety net ensures vulnerable populations receive help and care when unable to provide for themselves. Several safety net organizations and agencies exist to help low-income, veterans, people with disabilities, and other vulnerable populations in Warren County.

3.7.1 Warren County Combined Health District Services

The Warren County Combined Health District provides health services to adults and children on a sliding scale according to household income. Services include clinics for child health, prenatal care, family planning, sexually transmitted diseases, adult health care, immunizations for children and adults, and tuberculosis. Nutritional and social work counseling is also provided. The Health District also offers free Home Health Aide services with a doctor’s referral, and administers the Bureau for Children with Medical Handicaps program. They offer assistance in receiving free eye exams and eye glasses for adults through the Prevent Blindness Program. The Health District is also responsible for investigation, follow-up, epidemiology, and reporting communicable diseases.

In 2014, the Health District reported a total of 8,110 clinic visits, down slightly from the 2013 total of 8,500. It provided 789 screening tests (TB skin test, TB chest x-ray, pregnancy test, HIV test) and 7,640 immunizations and flu shots in 2014, compared with 937 screenings and 8,679 immunizations in 2013.

3.7.2 Job & Family Services

Warren County Job & Family Services (JFS) administers public welfare functions such as Ohio Works First, Medicaid, child care assistance, SNAP, investigation of elder abuse and neglect, and disability assistance.

Figure 3.24 shows the total number of clients served onsite (meaning they came into the agency and submitted documents, applications, had interviews, etc.) by Job and Family Services served between 2009 and 2014. There has been a steady decline in the number served since the National economic crisis in 2008. This may a result of a change in business practice, with the growing caseloads since 2008 the agency is now completing 98% of client interviews via phone. It is not necessary for individuals to visit the agency to complete an interview.

3.7.2.1 Assistance with child care expenses

Warren County JFS works with the Ohio Department of Job and Family Services to offer assistance with child care expenses to eligible parents while they work or engage in approved school or training activities. To be eligible initially, a family’s income must be at or below 130% of the federal poverty level (FPL). This eligibility requirement recently changed. The information in the figures above are based on the previous requirement of 125% of FPL. Families may remain eligible until their income exceeds 300% (just changed but the figures in the graph
do reflect the 200% of the FPL. Figure 4.10-2 shows the number of children served in this way from 2009 to 2014. Numbers of children served have remained fairly stable for most years, with the exception of 2012

3.7.2.2 Disability assistance

Disability assistance is a state and county funded program that provides cash assistance to clients who have applied for Disability Social Security or SSI. The number of recipients of disability assistance from Warren County JFS has decreased every year since 2009, with the total number assisted in 2014 down 50% from 2009 (Figure 3.26)

Warren County Board of Developmental Disabilities ensures programs, services, and support are provided to individuals with developmental disabilities. Programs include early intervention, school to work transition, service coordination, family support services, respite care, supported living, housing, adult services, nursing services, vocational training, supported employment, community employment, and transportation service.

3.7.3 Mental Health Recovery Services

Mental Health Recovery Services (MHRS) of Warren and Clinton Counties is the Alcohol, Drug Addiction, and Mental Health Services Board tasked with planning, funding, monitoring, and evaluating services for mental health and addiction disorders. They partner with provider systems to offer a broad continuum of services, from prevention to treatment to recovery supports, for residents of Warren and Clinton Counties. In fiscal year 2015, provider systems for MHRS received 4,761 service requests, and service was provided to 4,256.

The County Veterans Services Administration provides temporary relief for veterans, advises them about benefits available through the Veterans Administration and assists them to apply for benefits.

In addition to these public agencies, there are many private and not-for-profit agencies and organizations that provide safety net services for Warren County residents, including food, clothing and housing assistance, help with utilities, and mental health and substance abuse treatment and counseling.
4 Health and Wellness

4.1 Health Risk Factors

A health risk factor is anything that increases a person’s chances of getting a disease or condition. Some risk factors, such as gender, age, or race and ethnicity cannot be changed. Other risk factors, such as smoking, obesity, alcohol consumption, and lack of sufficient fruits and vegetables in the diet have the potential to be modified or eliminated. These are of more interest from a community health perspective.

The following measures are about health risk are from the Behavioral Risk Factor Surveillance System. The BRFSS is an annual survey conducted by the Ohio Department of Health under contract with the Centers of Disease Control and Prevention (CDC). The sample size in any single year is too small to make reliable estimates of prevalence rates for Warren, Delaware, and Medina Counties. Combining the samples for 2007 to 2010 and 2011 to 2013 provides a large enough sample to make county level estimates for many BRFSS measures for the time periods (2007-2010 and 2011-2013). The survey uses complex sampling strategy. Analysis provides the number in the sample, estimates of percent and the total number of respondents in the population, and confidence intervals to allow statistical comparisons between counties and time periods.

4.1.1 Overweight and Obesity

Individuals with Body Mass Index (BMI) between 25.0 and 29.9 are considered to be overweight. Those with a BMI greater than 30.0 are considered to be obese. Overweight and obesity are serious public health problems. Obesity is associated with many different serious conditions and diseases, including heart disease, stroke, diabetes, hypertension, breathing problems, and some cancers. Adults at a healthy weight are at less risk for these health problems.

Figure 4.1 shows 66% of Warren County residents were overweight or obese in 2011-13. This results in 34% of adults being at a healthy weight. The proportion of Ohio (65%), and Medina (62%) County residents whose weight status is unhealthy is similar to Warren County. In Delaware County only 53% of adults are overweight or obese.

The Healthy People 2020 objective NWS-8 is to increase the proportion of adults who are at a healthy weight. The HP2020 target is to increase the proportion of adults who have a healthy body weight to 33.9%.

Although all the geographic areas meet the HP2020 target two-thirds of Warren County and Ohio residents are too heavy. Efforts to encourage healthy eating and exercise habits are an important strategy to improving the health of Warren County residents.

Appendix Tables 4.1 and 4.2 have estimated percent and numbers for adults who are overweight or obese in the study areas for the 2007 – 2010 and 2011 – 2013 time periods.
4.1.2 Current smoking status

It has been known for some time that tobacco use is the single most preventable cause of death and disease in the United States, and for every person who dies as a result of tobacco use, 20 more suffer from a tobacco-related illness. The largest amount of smoking-related illness and deaths were attributed to lung cancer, ischemic heart disease, and chronic airways obstruction. These conditions contribute to years of potential life lost (YPLL), and smoking-attributable medical expenditures for adults and infants. These conditions also contribute to loss of productivity for adults.53

The Healthy People 2020 Objective TU-1 is to reduce cigarette smoking by adults. The HP 3030 target is to reduce the smoking rate to 12%.54

Figure 4.2 illustrates the proportion of respondents who reported smoking cigarettes either every day or on some days.

Healthy People Objective TU-1.1 is to reduce cigarette smoking by adults.

The HP2020 target is for no more than 12% of adults to smoke cigarettes

Healthy People Objective TU-2.1 is to reduce use of tobacco products by adolescents (past month).

The percent of current smokers in Warren County (17%) is lower than the Ohio average (24%) in the 2011-2013 time period by 33%. The Medina County (19%) is not statistically different from Warren County. The Delaware County rate (27%) rate is the highest of all the geographic areas. The decrease of current smokers in Warren County from 19% in the 2007-2010 time interval is not statistically significant.

The Warren County smoking rate is four percent higher than the HP2020 target for smoking. More programs to support people in stopping smoking could impact the proportion of smokers.

Appendix Tables 4.3 and 4.4 have estimated percent and numbers for adult current smoker in the study areas for the 2007 – 2010 and 2011 – 2013 time periods.

4.1.3 Binge Drinking

Binge drinking is drinking enough alcohol to raise the blood alcohol concentration to 0.08 – usually 5 or more drinks for men and 4 or more for women.55 While most binge drinkers are not alcohol dependent56, binge drinking is associated with health problems such as intentional and unintentional injuries, sexually transmitted diseases, fetal alcohol syndrome, and liver disease.57

Healthy People 2020 objective SA-14.3 is to decrease proportion of adults who report binge drinking in the past 30 days. The HP2020 target is to reduce binge drinking to 24.4%.58
In the 2011-2013 time period 18% of Warren County report binge drinking. This is the same as the Ohio (18.4%) and Medina County (18.1%) rates; the Delaware County (21.4%) rate is not statically different (Figure 4.3).

Heavy drinkers (adult men who have more than two drinks per day, adult women who have more than one drink per day) are identified from the respondents to the BRFSS. In Warren County, in the 2011-2013 time interval, 5% of men and 5% of women were heavy drinkers (see Appendix Tables 5.1.9 and 5.1.10).

Appendix Tables 4.5 and 4.6 have estimated percent and numbers for adult binge drinking in the study areas for the 2007 – 2010 and 2011 – 2013 time periods.

Appendix Tables 4.7 and 4.8 have estimated percent and numbers for adult men heavy alcohol consumption in the study areas for the 2007 – 2010 and 2011 – 2013 time periods.

Appendix Tables 4.7 and 4.8 have estimated percent and numbers for adult women heavy alcohol consumption in the study areas for the 2007 – 2010 and 2011 – 2013 time periods.

### 4.1.4 Seat Belt Use

The CDC’s National Center for Injury Prevention and Control indicates unintentional injuries are the leading cause of preventable deaths nationally. Of these, motor vehicle accidents accounted for nearly 18,000 deaths in 2013, almost 39% of unintentional injury deaths. Consistent use of seat belts is the most effective way of reducing serious injury and death in motor vehicle accidents.

The Healthy People 2020 objective IVP-15 is to increase use of seat belts for every automobile trip. The HP2020 target is for 92% of drivers and right front seat passengers to use seat belts for every automobile trip.61

Figure 4.4 shows 85% of Warren County residents state they always use seat belts, this is consistent with Medina County. In Ohio (82%) and Delaware County (79%), a somewhat smaller percent report always using seat belts. Ninety-two percent of Warren County residents in the 2010-2013 time period and 97% in the 2007-2010 interval indicate they always or nearly always wear seat belts (Appendix Tables 5.1.11 and 5.1.12).

The proportion of residents of Warren County who always wear their seat belts currently falls short of the HP2020 goal. The number of people who nearly always wear their seat belts presents an opportunity to increase the use of seatbelts to meet the HP2020 goal.

Educational programs could convert drivers and passengers who almost always wear their seat belt to always users.

Appendix Tables 4.13 and 4.14 have estimated percent and numbers for adults who always wear seatbelts in the study areas for the 2007 – 2010 and 2011 – 2013 time periods.

Appendix Tables 4.11 and 4.12 have estimated percent and numbers for adults who always or nearly always wear seatbelts in the study areas for the 2007 – 2010 and 2011 – 2013 time periods.
4.1.5 Youth Tobacco, Alcohol, and Marijuana Use and Risk Perception

The Student Drug Use Survey administered to school children in grades 7 to 12 in Butler, Clermont, and Warren County Schools biannually. The survey has been administered in Southwest Ohio counties since 2008. Since the survey is also administered in Butler and Clermont Counties, these counties are used for comparison. The survey asks about attitudes toward and use of tobacco, alcohol, and marijuana.

Figure 4.5 shows the use and perception of risk for tobacco in Warren County Schools from 2008 to 2014. Students reported a decline in the use of tobacco from 14.0% in 2008 to 8.8% in 2014. Student perception of risk increased from 72% in 2008 to 95% in 2014. Their perception of parental disapproval is fairly stable from 2008 (88%) to 2014 (95%). The perception of peer disapproval of tobacco use follows the same trend but is lower than parental disapproval, ranging from 68% in 2008 to 79% in 2014.

Appendix Table 4.15 has detailed percent of student tobacco use and risk perception in the study area schools for the 2008 – 2014.

4.1.6 Adolescent Tobacco Use

Figure 4.7 shows the tobacco 30 day use comparison between Warren County and Butler and Clermont Counties’ schools. Tobacco use among student in all the county schools has declined since 2008. Students in Butler County schools (18%) had the highest use rates in 2008. In 2014 the use rate in Butler County schools had declined to 14%. In Warren County schools 8.8% of students report 30 day use of tobacco.

The HP2020 Objective TU-2.1 target is for no more than 21.0 percent of adolescents in grades 9 through 12 to use...
cigarettes, chewing tobacco, snuff, or cigars in the past 30 days.

The Healthy People Objective TU-2.2 is to for no more than 16.0 percent of adolescents in grades 9 through 12 use cigarettes by adolescents in the 30 days.

The use of cigarettes by adolescents in Warren County is lower than the HP2020 target.

4.1.7 Adolescent Alcohol Use

Figure 4.8 Shows 30 day use of alcohol. Alcohol use rates are fairly consistent over time. Students in Warren County schools have the lowest alcohol use rates: in 2008, 17.6% of students reported alcohol use and 15.1% reported use in 2014. Butler County students reported 22.8% use in 2008 and 17.3% in 2014. Clermont County School alcohol use rates fall in between Butler and Warren Counties.

The Healthy People Objective SA-2.1 is to increase the proportion of at risk adolescents aged 12 to 17 years who, in the past year, refrained from using alcohol for the first time.

The HP2020 target is for at least 94.2 percent of at risk adolescents aged 12 to 17 years who, in the past year, refrained from using alcohol for the first time.

The use of alcohol by adolescents in Warren County is higher than the HP2020 target. More efforts to support adolescents in not starting to use alcohol may benefit students.

Appendix Table 4.16 has detailed percent of student alcohol use and risk perception in the study area school for the 2008 – 2014.

4.1.8 Adolescent Marijuana Use

Figure 4.9 shows 30 day use rates in schools for marijuana. The rates suggest a minimal but gradual increase in use of marijuana. Warren County schools have the lowest rates of use with 8.9% in 2008 and 9.5% in 2014. Butler County schools have the highest rate with 11.6% of students reporting use of marijuana in the previous 30 days in 2008 and 13.4% in 2014. Marijuana use in Clermont County schools follows the trend of Butler County schools but is lower at 9.6% in 2008 and 12% in 2014. There is evidence that marijuana use during the teenage years has a negative impact on brain development.62

The Healthy People Objective SA-2.2 is to increase the proportion of at risk adolescents aged 12 to 17 years who, in the past year, refrained from using marijuana for the first time.

The HP2020 target: is for at least 96.3 percent of at risk adolescents aged 12 to 17 years who, in the past year, refrained from using marijuana for the first time.
The use of marijuana by adolescents in Warren County is higher than the HP2020 target. More efforts to support adolescents in not starting to use marijuana may benefit students.

Appendix Table 4.17 has detailed percent of student marijuana use and risk perception in the study area school for the 2008 – 2014.

4.2 Chronic Disease

Chronic diseases such as asthma, heart disease, stroke, diabetes and many cancers are common and among the most costly and preventable health problems. In addition to mortality, chronic diseases lead to higher healthcare needs, costs, and reduced quality of life.\(^{63,64}\)

The following measures are about people’s reports of having been told by a doctor or other health professional they have a chronic condition. The estimates are from the Behavioral Risk Factor Surveillance System. The BRFSS is an annual survey conducted by the Ohio Department of Health under contract with the Centers of Disease Control and Prevention (CDC). The sample size in any single year is too small to make reliable estimates of prevalence rates for Warren, Delaware, and Medina Counties. Combining the samples for 2007 to 2010 and 2011 to 2013 provides a large enough sample to make county level estimates for many BRFSS measures for the time periods (2007-2010 and 2011-2013). The survey uses complex sampling strategy. Analysis provides the number in the sample, estimates of percent and the total number of respondents in the population, and confidence intervals to allow statistical comparisons between counties and time periods.

4.2.1 Asthma

Asthma is a chronic disease of the airways that causes breathing problems such as wheezing, chest tightness, and shortness of breath. It is due to inflammation of the airways and can range from mild to life threatening. While no cure exists, preventive therapies can decrease symptoms and attacks and allow those with asthma to lead more active lives.\(^{65}\)

The percent of Warren County residents who have been told by a health professional, at any point in their lives, they have asthma was 11% in 2007-2010 and 14% in 2011-2013. This is comparable to the rate for Ohio and comparison counties.

Appendix Tables 4.24 and 4.25 have estimated percent and numbers for adults in the study areas who have ever been told in their lifetimes by a health professional that they have asthma for the 2007 – 2010 and 2011 – 2013 time periods.

The percent of Ohio, Warren County, and suburban comparison county residents who report having asthma currently is shown in Figure 4.10. Current asthma is a more significant measure than lifetime asthma from a public health standpoint, in that current asthma sufferers are relying on the health care system for care and medication.

The percent of Warren County (9%) residents who report current asthma in the 2011-2013 time period is statistically comparable to Ohio (10%), Delaware (5%) and Medina (8%) Counties. The percent of current of adults who suffer from asthma is stable across time periods, except for the 19% reported for Delaware County in 2007-2010. In that time period, there were fewer respondents in Delaware County.
than in Medina or Warren County (90 vs. 379 and 384, respectively). The small sample size results in the estimate for Delaware County being less reliable. In the 2011-2013 time period sample sizes were more similar among counties. For this time period, the rate for Delaware County was lower and more in line with Ohio and the other counties.

Appendix Tables 4.26 and 4.27 have estimated percent and numbers for adults in the study areas who have ever been told by a health professional that they currently have asthma for the 2007 – 2010 and 2011 – 2013 time periods.

4.2.2 Chronic Obstructive Pulmonary Disease (COPD)

Chronic Obstructive Pulmonary Disease (COPD) is a chronic respiratory disorder characterized by airflow limitation. Airflow limitation is usually progressive and not fully reversible, though treatment can lessen symptoms and improve quality of life. Nearly eight out of ten cases of COPD are caused by exposure to cigarette smoke.66

The percent of Warren County residents who have been told by a doctor they have COPD is 4%, about 50% lower than the percent for Ohio (8%). Percent for Delaware (5%) and Medina (6%) Counties are similar to Warren County, and are also lower than Ohio. Figure 4.11 illustrates rates for Ohio, Warren, and comparison counties.

Appendix Table 4.28 has estimated percent and numbers for adults in the study areas who have ever been told by a health professional that they have COPD for the 2011 – 2013 time period.

4.2.3 Arthritis

Arthritis is a joint condition affecting about one in five Americans and is a leading cause of disability.67 As the population ages, the economic and human costs of arthritis will increase.68 Interventions that can reduce pain and functional interventions include increased physical activity, self-management education, and weight loss for overweight adults.69

HP2020 objective AOCBC-2 is to reduce the proportion of adults with doctor-diagnosed arthritis who experience a limitation in activity due to arthritis or joint symptoms.70

The HP2020 target is 35.5% of adults aged 18 years and older with doctor-diagnosed arthritis will experience a limitation in activity due to arthritis or joint symptoms.

BRFSS respondents are asked if a doctor or other health professional has ever told them they have arthritis. Figure 4.12 shows the percent of people who answered yes in Ohio, Warren, Medina, and Delaware Counties. Twenty-five percent of Warren County residents who have been told they have arthritis, this represents over 30,800 individuals. The Ohio rate is 30%; Delaware (21%) and Medina (23%) Counties are not statistically different.

Appendix Table 4.29 has estimated percent and numbers for adults in the study areas who have ever been told by a health professional that they have Arthritis for the 2011 – 2013 time period.
4.2.4 Mental Health

Depressive disorders, including major depression, dysthymia, and minor depression, can result in loss of productivity, affect relationships and social functioning, and impair an individual’s ability to engage in health promoting behaviors. Therefore, it is important to recognize and treat depressive disorders when they occur. Being told by a health care professional one has a depressive disorder may therefore also be a marker of access to care.

The BRFSS includes an optional module that assesses anxiety and depression. This module was included in Ohio’s BRFSS in the 2011-2013 period. Figure 4.13 illustrates the response to this question. Eighteen percent of adult Warren County residents reported being told by a health professional they had a depressive disorder at some point in their lives, a percent that did not differ significantly from Ohio (19%) or Delaware (14%) and Medina (21%) Counties.

Appendix Table 4.38 has estimated percent and numbers for adults in the study areas who have ever been told by a health professional they have a depressive disorder for the 2011 – 2013 time period.

4.2.5 Cancer Incidence

While cancer incidence and death rates are declining, cancer remains a leading cause of death in the U.S. Reducing behavioral risk factors, such as smoking, poor nutrition and lack of physical activity, and exposure to ultraviolet light can prevent many cancers. Providing recommended screenings like Pap tests, mammograms, and colorectal screening can detect other cancers when they are most treatable. Appendix Tables 5.5.1.1 – 5.5.1.1 provide rates for the 10 leading causes of cancer incidence between 2008 and 2012. Because rates based on small numbers can be unreliable, each table also provides rates for the aggregated new cases for the five-year period.

Appendix Tables 4.40, 4.41, 4.42. 4.43 have incidence rates and the number of new cases for the 10 leading causes of cancer for Ohio, Delaware, Medina, and Warren Counties.

Over the five-year time period from 2008 to 2012, incidence of all cancers show a slow but steady decline in Ohio and the suburban comparison counties (Figure 4.14). All cancer incidence in Warren County in 2012 (435 per 100,000 people) closely matched incidence in Ohio (439 per 100,000 people), Medina (449 per 100,000 people) and Delaware (430 per 100,000 people) Counties. These rates show decreases in Warren (14%) and Delaware (15%) Counties, and 10% in Ohio, and 8% in Medina County.

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1 Cancer incidence reflects the number of new cancer cases per 100,000 people during a defined time period, usually one year.
4.2.6 Breast cancer

Some cancers occur in only one sex; prostate and testis cancer occur exclusively in males; cervix, uterus, and ovary cancers occur exclusively in females. For these cancers rates are usually calculated based in the population affected (male or females). Breast cancer can affect either females or males; however the incidence rate for Ohio males was less than two per 100,000 males in 2012. The breast cancer incidence rate for Ohio females is the leading cancer incidence. In Ohio the 2012 female breast cancer incidence rate was 120 per 100,000 females. Sometimes the breast cancer incidence rate is shown for the total population (65 per 100,000 people in Ohio in 2012); in this report the female breast cancer rate is provided to reflect the incidence rates for the population most affected by this condition.

Figure 4.15 shows there was a two percent decline in female breast cancer incidence from 2008 to 2012 in Ohio (120 per 100,000 women). There were changes in the rates in the comparison counties; it should be noted that fluctuations in rates may be due to the relatively small numbers of new cases in these counties.

In Medina County the female breast cancer incidence (122 per 100,000 people) in 2012 declined by three percent over the five-year period. Delaware County saw a 14% decrease in incidence in the five-year period to 138 per 100,000 women in 2012. In Warren County the female breast cancer incidence increased from 2008 (148 per 100,000 women) to 2012 (157 per 100,000 people). This is a 22% increase. Yet, in 2010 the rate was 112 per 100,000 women falling from 128 per 100,000 women in 2008 and 123 per 100,000 women in 2009. The aggregate female breast cancer incidence rate for the five-year period was 135 per 100,000 women.

4.2.7 Prostate cancer

Prostate cancer occurs only in men and is the most common cause of cancer in men in Ohio. The incidence of prostate cancer has fallen since 2008 in Ohio, Warren, and comparison suburban counties (Figure 4.16). Prostate cancer incidence in Warren County decreased 43% from 2008 (164 per 100,000 men) to 2012 (94 per 100,000 men). This is slightly lower than the Ohio (104 per 100,000 men) and Delaware County (101 per 100,000 men) rates. Medina County is somewhat higher at (110 per 100,000 people) in 2012.
4.2.8 Cancer of the lung and bronchus

In 2012 cancer of the lung and bronchus was the third leading cause of cancer incidence in Ohio (104 per 100,000 people).

Figure 4.17 shows the occurrence of new cases in this cancer decreased between 2008 and 2012 in Ohio, Delaware, and Warren Counties. The incidence rate remained fairly stable in Medina County. In Warren County, the incidence rate for this cancer decreased by 22% (76 per 100,000 to 59 per 100,000 people) compared with a 10% decrease in the state of Ohio (75 per 100,000 to 67 per 100,000 people).

4.2.9 Colon and rectal cancer

Colon and rectal cancer is the fourth leading cause of cancer incidence in Ohio. Figure 4.18 illustrates incidence rates for colon and rectal cancer incidence rates in Ohio, and Medina County declined by 13% to 17% between 2008 and 2012. The rates in Warren and Delaware Counties were unchanged in the time period.

4.3 Sexually Transmitted Diseases

Sexually transmitted diseases (STDs) are caused by infectious organisms that are transmitted through sexual activity. The main STDs tracked by public health departments are chlamydia, syphilis, and gonorrhea. Rates of HIV infection, the organism that causes AIDS, are also tracked.

Despite the fact that STDs are largely preventable, they remain a significant public health problem because of the clinical complications they sometimes cause. These include reproductive health problems, fetal and neonatal problems, and cancer.

4.3.1 All Sexually Transmitted Diseases

The rates per 100,000 people for all STDs in Ohio, Warren, Delaware, and Medina Counties are shown in Figure 4.19. The rates in the comparison counties are about one-third the Ohio rate. In Warren County in 2014, chlamydia is responsible for most of the STD cases (355 per 100,000 people); gonorrhea (27 per 100,000 people) is the next highest STD rate, and syphilis (3.2 per...
100,000 people) is the lowest. The rates over the five-year period are consistent for each of the geographic areas.

Appendix Table 4.4 provides more detail for all individual sexually transmitted disease rates by year, Table 4.45 has details chlamydia cases, Table 4.46 has details for gonorrhea cases, and Table 4.47 has details for syphilis cases. Each table has rates per 100,000 people and the number of reported cases for the study areas.

An increase in chlamydia rates may reflect greater incidence of infection, better screening, and/or use of more sensitive tests, as well as more complete reporting. Decreases in rates may signal decreased incidence or infection or decreased screening. Because of this, Healthy People 2020 has determined case rates are not a good measure of chlamydia burden and are not an appropriate metric for health objectives at this time.

HP2020 objective STD-6.1 is to reduce gonorrhea rates among females aged 15 to 44 years.
The HP2020 target is to have no more than 252 new female gonorrhea cases per 100,000 population.
HP2020 objective STD-6.2 is to reduce gonorrhea rates among males aged 15 to 44 years.
The HP2020 Target: is to have no more than 195 new male gonorrhea cases per 100,000 population.
Although information about rates by gender is not available the Warren County rate meets the 2020 objective.
HP2020 objective 7.1 is to reduce domestic transmission of primary and secondary syphilis among females
The HP2020 Target: is to have no more than 1.3 new female syphilis cases per 100,000 population.
HP2020 objective 7.2 is to reduce domestic transmission of primary and secondary syphilis among males
The HP2020 Target: is to have no more than 6.7 new male syphilis cases per 100,000 population.
Although syphilis is not reported by sex, Warren County’s syphilis rates (3.2 per 100,000 people) in 2014 appear to be well below the target.

4.3.2 HIV and AIDS

The HIV epidemic in the United States continues to be a public health problem. HIV is the virus that can lead to AIDS. More effective treatments mean that deaths from HIV infection have greatly declined and people with HIV are living longer. Effective screening and prevention measures have been proven to reduce HIV transmission.

HP2020 Objective HIV-2 is to reduce the number of new HIV infections among adolescents and adults.
The 2020 target is to have no more than 36,450 people newly infected in the U.S. by 2020. No number is provided for Ohio.

In Ohio as a whole, case rates per 100,000 people were stable between 2010 and 2014, ranging from about 8.0 to 9.0 per 100,000. HIV case rates in Warren County were around 40% of the Ohio rates. A total of 33 persons were diagnosed with HIV over the five-year period. Of these, 9 went on to develop AIDS or had AIDS at first diagnosis.
Appendix Table 4.48 has the rates per 100,000 people and numbers for diagnosis of HIV infection, the table include diagnosis by type: HIV (not AIDS), HIV and later AIDS and AIDS.

4.4 Births

In 2013 there were 2,356 births in Warren County. This is a slight decline from 2,648 births in 2009. In Delaware (2,202) and Medina (1,717) Counties, there were fewer births in 2013. The trend in births since 2009 is similar to Warren County with little change in the number of births.

Appendix Table 4.49 has the total number of births for each of the study areas.

4.4.1 Prenatal Care

Receiving early prenatal care (in the first trimester of pregnancy) is important to ensure babies have a healthy start in life. Prenatal care that starts late in pregnancy or no prenatal care are associated with higher rates of preterm birth and low birth weight. The HP2020 MICH-10.1 is to increase the proportion of pregnant women who receive early and adequate prenatal care.

The 2020 target is to increase the proportion of pregnant women who receive prenatal care in the first trimester to 78%.

In Warren County in 2013, 75% of new mothers received prenatal care starting in the first trimester. This is higher than the Ohio percent of 71%. The percent in Warren County is similar to Medina County (76%) and ten percent lower than the Delaware County percent (82%). Figure 4.20 shows the percent of mothers in Warren County receiving prenatal care in the first trimester has decreased since 2009. Rates in Medina and Delaware Counties were fairly consistent since 2009. In 2013, all the geographic areas had already achieved the HP2020 target for early prenatal care.

Appendix Table 4.50 has the percent and number of mothers who started prenatal care in first trimester for the study areas. The highest rates of mothers starting prenatal care in the first trimester were in the East Rural (86%) and South Lebanon (80%) areas. This is about 14% higher than the Warren County rate and 35% higher than the Mason (69%), Springboro (66%) and Carlisle (63%) areas. (Figure 4.21).

Lori Smyth, Director of Nursing at Warren County Combined Health District, indicates prenatal care statistics are used in grant proposals to describe the need for maternal and child health services. The Health Department also includes birth statistics in reports to support how state grants funds were used.
4.4.2 Low Birth Weight Births

Maternal and child health is an important component in the overall health of the community. The well-being of infants and children affects future generations. Low birth weight (less than 2,500 grams, or about 5.5 pounds) infants are more likely to die within the first year of life than normal birth weight infants. Low birth weight babies are also more likely to experience long-term physical problems and developmental delays.

The HP2020 objective MICH-8.1 is to reduce low birth weight (LBW).

The HP2020 target is no more than 7.2% of births be low birth weight.

The Warren County percent of low birth weight was 7.4% in 2013. This is close to the Medina (7.2%) rate, but somewhat higher than the Delaware (6.7%). The suburban comparison county low birth rates are substantially lower than the Ohio percent of 8.5%.

Over the past five years the low birth weight rate in Warren County has been very close to the HP2020 goal. Figure 4.22 shows the Warren County rate has fluctuated between 7.0% and 7.7% since 2009.

Appendix Table 4.50 has the percent and number of low birth weight births for each of the study areas. Table 4.53 has the percent and number of preterm and low birth weight births.

Within Warren County, the highest percent of low birth weight is in the Carlisle Area (9.1%), the Lebanon rate is 8.0%. These LBW rates are much higher than the county percent of 7.4% and more than 1.5 times higher than percent of low birth weight in the Franklin (6.1%) and West Mason (5.7%) areas. (Figure 4.23).

Health education and community programs to encourage mothers to seek early prenatal care may help reduce low birth weight births.

The Warren County Combined Health District uses low birth weight statistics to describe needed services in grant proposals to increase maternal and child health services. The Health Department also includes birth statistics in reports to support how state grants funds were used.

4.4.3 Maternal, Infant, and Child Health and the Affordable Care Act

The Affordable Care Act has affected the health care of mothers, infants, and children. It has expanded access to key recommended preventive services and benefits for women and children to promote health over the life span. These services are provided without copay or deductible. They include allowing women to get the services they need to maintain healthy pregnancies, and screening services for children that monitor healthy development.
4.4.4 Fertility Rates

Figure 4.24 illustrates fertility rates between 2009 and 2013. In Warren county, the fertility rate decreased by about 11% (66 per 1,000 to 59 per 1,000) during that time period. Rates for Ohio, Medina, and Delaware Counties fluctuated from year to year but remained relatively stable over the five-year period.

Appendix Tables 4.54 – 4.56 has the fertility rate and the number of births for women 15 to 44 years old for each of the study areas.

The highest fertility rates in Warren County were in Franklin (89 per 1,000) and South Lebanon (83 per 1,000). Fertility in the West Mason Area (48 per 1,000) was 23% below the Warren County (62 per 1,000) rate, and 46% lower than the Franklin rate. The areas with the highest fertility rates are also the areas with the lowest early prenatal care rates and the highest low birth weight rates.

4.4.5 Teenage fertility

Teenage fertility rates have dropped over the five-year period from 2009 to 2013 (Figure 4.26). Warren (15 per 1,000, 2013), Medina (13 per 1,000), and Delaware (10 per 1,000) Counties all have teenage fertility rates well below Ohio (27 per 1,000). From 2009 to 2013, Ohio’s teenage fertility rate dropped by nearly one-third. The teenage fertility rate in Warren County decreased by 36%. Teenage fertility dropped by 34% in Delaware County and by 20% in Medina County.

Appendix Table 4.57 – 4.59 has the fertility rate and the number of births for women 15 to 19 years old for each of the study areas.

In Carlisle, the teenage fertility rate of 53 per 1,000 is the highest in Warren County and is three times the rate of the

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2 Fertility rate is the number of live births per 1,000 women between the ages of 15 and 44 in a particular year. Birth rate and fertility rate both use total number of live births, the birth rate is calculated using the total population, while the fertility rate uses only females of reproductive age.

3 Teenage fertility is calculated by number of births per females aged 15 to 19.
county as a whole (17 per 1,000). Teenage fertility in Franklin (38 per 1,000) is more than double the county rate. In Springboro (8 per 1,000) and West Mason (6 per 1,000) teenage fertility rates are less than half those of Warren County.

### 4.4.6 Infant Mortality

Overall infant mortality is deaths occurring between birth and one year of age. Neonatal mortality is deaths occurring within 28 days of birth, and post neonatal mortality is deaths occurring between 28 days and one year of age. Most of these children die because of prematurity and/or low birth weight and its complications, serious birth defects, Sudden Infant Death Syndrome, complications of pregnancy, or injury.\(^4\)

Healthy People 2020 objective MICH-1.3 is to reduce the rate of infant deaths to 6.0.\(^84\) Because there are so few infant deaths the rates for counties by year are unreliable. Data for five years were aggregated to provide large enough numbers to provide usable infant mortality rates. The overall infant mortality rate in Warren County over five years is 6.4. This is below the rate for Ohio (7.7), but higher than either Delaware (5.3) or Medina (3.3) Counties (Figure 4.29).

Appendix Table 4.50 has the infant mortality rate and the number of deaths for infants under one year old for each of the study areas. The East Rural, Lebanon, and South Lebanon Areas have a five-year infant mortality rate greater than 8.0. The Mason Area’s rate was 4.8. The number of infant deaths is too small to provide a rate for the other areas of Warren County (Figure 4.30).

### 4.4.7 Neonatal and Post Neonatal Mortality

The Healthy People indicator MICH-1.4 calls for reducing the rate of neonatal deaths to 4.1.\(^85\) Warren County’s neonatal death rate 2009-2013 is 4.6, representing 57 infant deaths in the first 28 days of life. This is slightly lower than Ohio’s (5.2), similar to Delaware County (4.1), and almost twice Medina County (2.4) (Appendix Table 5.7.2).

The five-year aggregated rate of post neonatal deaths in Warren County is 2.8, compared to 2.4 for Ohio and 1.2 for Delaware County. The number of deaths was too small for a rate to be calculated for Medina County (Appendix Table 5.7.3). Healthy People 2020 MICH-1.5 calls for a post neonatal death rate of 2.0.\(^86\)

Appendix Table 4.61 has the rate and number of neonatal deaths (infants who died in the first 28 days of life), Table 4.62 has the rate and the number of post- neonatal deaths (deaths between one and twelve months of life).

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\(^4\) Infant mortality is reported as a rate per 1,000 live births.
4.5 Age-Adjusted Mortality

Many major decisions about individual and public health are today informed by summary data on population mortality. The family of mortality-based summary measures includes measures that aggregate data over causes or the number of deaths or years of life lost due to different causes (e.g., heart disease or suicide), given suitable data for attributing cause of death.

Both ordinary people and policymakers are deeply interested in extending life. It is important to include mortality data in summary measures of health status to help understand the profiles of disease burden and the information available for assessing needs for preventive, curative, palliative, and rehabilitative services.87

Mortality rates are age-adjusted to control for differences that result from differences in the age composition of different areas. Age-adjusted comparison is free from the confounding effect of changing age distribution and as a result reflects the trend in U.S. mortality.88

The table below shows the five leading causes of death in Ohio, Warren, Delaware and Medina Counties. The Ohio age-adjusted mortality rates are comparable to the National rates. Rates in Medina and Warren for Heart Disease and Cancers are 15% to 20% lower than the Ohio rates.

Information presented in this section is based on data obtained from Ohio Department of Health mortality data files for the years 2009 to 2013. 2013 data were the most current data available at the time the tables were created. Population estimates for the years 2009 to 2013 were obtained from the U.S. Census American Community Survey five-year estimates for each year.

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>U.S.</th>
<th>Ohio</th>
<th>Delaware County</th>
<th>Medina County</th>
<th>Warren County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Disease</td>
<td>193</td>
<td>194</td>
<td>168</td>
<td>162</td>
<td>152</td>
</tr>
<tr>
<td>Cancers</td>
<td>185</td>
<td>183</td>
<td>160</td>
<td>159</td>
<td>152</td>
</tr>
<tr>
<td>Chronic Lower Resp. Disease</td>
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<td>51</td>
<td>44</td>
<td>49</td>
<td>41</td>
</tr>
<tr>
<td>Unintentional Injury Death</td>
<td>41</td>
<td>45</td>
<td>35</td>
<td>29</td>
<td>28</td>
</tr>
<tr>
<td>Stroke</td>
<td>41</td>
<td>41</td>
<td>39</td>
<td>28</td>
<td>38</td>
</tr>
</tbody>
</table>

Appendix Tables 4.65 – 4.68 have age-adjusted mortality rates and number of death for the Leading Causes of Death for Ohio, Delaware County, Medina County, and Warren County for the years 2009 to 2013.

Appendix Tables 4.69 – 4.80 are age-adjusted mortality rates and number of death aggregated over the five-year period 2009-2013. The data are aggregated over the five-year period because the numbers of deaths for some causes and/or geographic area are quite small. Rates calculated based on small numbers tend to be unreliable. Five-year rates per 100,000 people are available for Ohio, Delaware County, Medina County, and Warren County and the eight Warren County areas (Carlisle Area, East Rural Area, Franklin Area, Lebanon Area, Mason Area, South Lebanon, Springboro Area, and West Mason Area).
4.5.1 All-Cause Mortality

In 2013 there were 1,423 deaths from all-causes in Warren County; the age-adjusted mortality rate is 739 deaths per 100,000 people. The Warren County rate is 13% lower than the Ohio rate of 834 deaths per 100,000 people. The all-cause mortality rate in Delaware County (773 per 100,000 people) was somewhat higher than Warren County; the rate in Medina County (709 per 100,000 people) was lower. Figure 4.31 shows the age-adjusted all-cause mortality rates during the five-year period (for the years 2009 to 2013) are relatively stable.

All-cause mortality is highest in the Franklin Area (959 per 100,000 people), about 20% above the County rate, and the South Lebanon Area (890 per 100,000 people) was less than 10% higher. The Carlisle Area (590 per 100,000 people) rate is 27% lower than Warren County. Both the Springboro Area (726 per 100,000 people) and West Mason Area (725 per 100,000 people) rates are slightly below the Warren County rate per 100,000 people (Figure 4.32).

4.5.2 Heart Disease

Heart disease is the leading cause of death in Ohio. In 2013 there were 289 heart disease related deaths in Warren County. The 2013 age-adjusted heart disease mortality rate is 152 deaths per 100,000. This was about 25% lower than the Ohio rate of 194 per 100,000. The Delaware (168 per 100,000 people) and Medina County (159 per 100,000 people) rates are similar to Warren County. Figure 4.33 shows there has been little change in heart disease mortality over the past five years overall in Ohio. But there has been an erratic but steady decline in heart disease mortality in the suburban counties.

The Healthy People 2020 objective HDS-2 is to reduce coronary heart disease deaths. Coronary heart disease is a subset of heart disease deaths. Coronary heart disease accounts for about two-thirds of heart disease mortality. In 2013 the age-adjusted coronary heart disease mortality rate in Ohio was 121 deaths per 100,000. The rate in Warren County was 102 per 100,000. The rate in Medina County (106 per 100,000 people) is the same as Warren County. The Delaware County rate was about 20% below the state rate at 95 per 100,000.
Figure 4.34 a shows in Ohio there has been a gradual decline in coronary heart disease mortality over the past five years. In the suburban counties there has been a steeper decline in the coronary heart disease mortality rate in the past five years.

The HP2020 objective for coronary heart disease is 103 deaths per 100,000 people. Warren County has already reached the HP2020 target in 2013. Heart disease and coronary heart disease mortality rates have declined over the past five years. The five-year aggregate age-adjusted coronary heart disease rate for Warren County is higher than the HP2020 target at 118 per 100,000. This suggests it will be important to continue to promote heart healthy activities and prevention efforts to ensure the rate is maintained to achieve the HP2020 target.

Figure 4.35 shows the heart disease mortality rate in the Warren County areas is highest in the Franklin Area (246 deaths per 100,000 people). The Lebanon, South Lebanon, and Mason Areas all have rates higher than the County average. The lowest rates are in the Carlisle (137 per 100,000 people) and Springboro Areas (141 per 100,000 people).

Coronary heart disease mortality rates for Warren County follow the same pattern as all heart disease mortality, ranging from highs in the Franklin Area (152 per 100,000 people) and Lebanon Area (150 per 100,000 people) to lows in the Carlisle Area (105 per 100,000 people), West Mason Area, and Springboro Area (103 per 100,000 people).

4.5.3 Cancer (Malignant Neoplasms)

Cancers are the second leading cause of death in Ohio. In 2013 in Warren County there were 195 cancer deaths. The 2013 age-adjusted cancer mortality rate is 152 deaths per 100,000 people. This was about 20% lower than the Ohio rate of 183 per 100,000. The Delaware (160 per 100,000) and Medina County (162 per 100,000) rates are slightly higher than the Warren County rate. In Medina County, cancer mortality is higher than heart disease mortality. Figure 4.36 shows there has been a slow steady, decline in Ohio and the suburban counties between 2009 and 2013.

The Healthy People objective C-1 is to reduce the overall cancer death rate. The target is to reduce cancer mortality to 161 deaths per 100,000 people. The Ohio cancer mortality rate is declining and may achieve the HP goal by 2020. The suburban counties effectively achieved or exceeded the target in 2013.

Figure 4.37 shows aggregate age-adjusted cancer mortality rates for the years 2009 to 2013 for the Warren County areas.
The cancer mortality rates are highest in the Lebanon and Franklin Areas (205 per 100,000 people) and lowest in the Carlisle Area (124 per 100,000 people).

4.5.4 **Chronic Lower Respiratory Disease (CLRD) Mortality**

Chronic Lower Respiratory Disease Mortality is the third leading cause of death in the United States and in Ohio. Chronic lower respiratory diseases are diseases that affect the lungs. The most deadly of these is chronic obstructive pulmonary disease (COPD), which makes it hard to breathe. COPD includes two main illnesses: emphysema and chronic bronchitis.

In 2013 in Warren County there were 75 CLRD deaths for an age-adjusted rate of 41 per 100,000 people. In 2013, CLRD dropped to the fourth leading cause after being the third leading cause for the previous four years. The Warren County rate is 20% lower than the Ohio rate of 51 deaths per 100,000 people. The 2013 age-adjusted mortality rate for CLRD in Delaware County (44 per 100,000 people) was similar to Warren County. The Medina County rate (56 per 100,000 people) was slightly higher than the Ohio rate.

Healthy People 2020 addresses specific chronic respiratory conditions. Objective RD-10 targets reducing deaths from chronic obstructive pulmonary disease (COPD) among adults.

Figure 4.39 shows aggregate age-adjusted CLRD mortality rates for the years 2009 to 2013 for the Warren County areas. The CLRD mortality rates are highest in the South Lebanon Area (66 per 100,000 people) and lowest in the Franklin (41 per 100,000 people) and East Rural (38 per 100,000 people) areas.

4.5.5 **Unintentional Injury (Accident) Mortality**

Unintentional Injury (accident) mortality is the fourth leading cause of death in Ohio. In Warren County in 2013, 58 residents died from accidents for an age-adjusted rate of 28 per 100,000 people. This is 62% of the Ohio rate of 45 per 100,000 people. The Medina County rate (29 per 100,000 people) is the same as the Warren County accident rate. The Delaware County rate (35 per 100,000 people) is slightly higher than the other suburban counties.
Motor vehicle crashes (MVC) are included in unintentional injuries. In Ohio 20% to 24% of accident deaths are motor vehicle crash deaths, depending on location. The Ohio MVC age-adjusted mortality rate is 9 deaths per 100,000 people. In Warren and Delaware Counties the rate is 7 per 100,000; the Medina County rate (6 per 100,000 people) is only marginally smaller.

Figure 4.40 shows, from 2009 to 2013, the unintentional mortality rate for Ohio showed a gradual increase. Although the rates in the suburban counties fluctuated, there was no change in the five-year period.

Healthy People 2020 Injury and Violence Prevention objectives address unintentional injuries. Objective IVP-11 is to reduce unintentional injury deaths. The target is to reduce injury deaths to 36 deaths per 100,000 people by 2020. The 2013 Ohio rate of 45 per 100,000 people exceeds the goal by 25%. Warren, Delaware, and Medina Counties were below the target in 2013. All three of the suburban counties had rates lower than the target in several of the years since 2009.

Figure 4.41 shows the aggregate age-adjusted Unintentional Injury (accident) mortality rates for the years 2009 to 2013 for the Warren County areas. The accident mortality rates are highest in the Franklin Area (66 per 100,000 people) and lowest in the West Mason Area (23 per 100,000 people) and Mason Area (18 per 100,000 people).

4.5.6 Stroke Mortality

Stroke mortality is the fifth leading cause of death in the United States and Ohio. In 2013 the Warren County the stroke mortality adjusted rate was 38 per 100,000 people. This is about 10% fewer than the 41 per 100,000 people stroke deaths recorded for Ohio in 2013. The Delaware County rate is almost the same as Warren County (39 per 100,000 people). The Medina County rate (28 per 100,000 people) is 30% lower than the Ohio rate.

The Healthy People 2020 objective HDS-3 is to reduce stroke deaths with a target of 35 deaths per 100,000 people. The stroke mortality rate is declining slowly; it is possible that Ohio and the suburban counties will achieve the HP2020 target.

To help achieve the 2020 goals Healthy People objective HDS-17 targets increasing the proportion of adults aged 20 years and older who are aware of the symptoms of and how to respond to a stroke.

Figure 4.43 shows aggregate age-adjusted stroke mortality rates for the years 2009 to 2013 for the Warren County areas. Stroke mortality rates are highest in the East Rural Area (56 per 100,000 people) and lowest in the Carlisle Area (24 per 100,000 people).
### 4.5.7 Alzheimer’s disease

Alzheimer’s disease is the 6th leading cause of death in the U.S. and Ohio, and the third leading cause of death in Warren County. In 2013 the Warren County age-adjusted rate for Alzheimer’s disease was 46 per 100,000 people. This is about 40% higher than the 27 per 100,000 people recorded for Ohio and the 25 per 100,000 recorded for Delaware County in 2013. The Warren County rate is 150% higher than Medina County’s 18 per 100,000 rate of deaths due to Alzheimer’s disease (Figure 4.44).

Age-adjusted rate of death from Alzheimer’s disease has remained stable in Ohio and Warren County, has increased in Delaware County, and declined in Medina County (Figure 4.44).

Healthy People 2020 has no objective specific to Alzheimer’s disease. Objective OA-5 is to reduce the proportion of older adults who have moderate to severe functional limitations to 26.4%.

Figure 4.45 shows aggregate age-adjusted Alzheimer’s disease mortality rates for the years 2009 to 2013 for the Warren County areas. Alzheimer’s mortality rates are highest in the Lebanon Area (57 per 100,000 people) and lowest in the Carlisle Area (26 per 100,000 people).

### 4.5.8 Diabetes

Diabetes is the 7th leading cause of death in the U.S. and Ohio. In 2013 there were 35 deaths due to diabetes in Warren County, for an age-adjusted rate of 17 per 100,000 people. This is 35% lower than the 26 per 100,000 people deaths due to diabetes for Ohio in 2013. The Warren County rate is similar to Medina County (19 per 100,000 people) and Delaware County (21 per 100,000 people) (Figure 4.46).

Healthy People 2020 Diabetes objectives address diabetes deaths. Objective D-3 is to reduce diabetes deaths to 66.6 per 100,000 people. The Ohio rate of 26 per 100,000 people is 60% below the goal. Warren, Delaware, and Medina Counties were all below the target in the years 2009 – 2013.

Figure 4.47 shows aggregate age-adjusted diabetes mortality rates for the years 2009 to 2013 for the Warren County areas. Diabetes mortality rates are highest in the
Franklin Area (28 per 100,000 people) and lowest in the Carlisle Area (14 per 100,000 people). Mortality rates for all other county areas are similar to the Warren County rate.

4.6 Years of Potential Life Lost (YPLL)

YPLL is a summary measure of premature mortality (early death). It represents the total number of years not lived by people who die before reaching an age limit. This measure is important because it shows the impact of younger persons dying. A younger person loses more years of life and contributes more to the YPLL measure than deaths among older persons. In the United States, the age limit is often placed at 75. People who die before age 75 are defined as having lost some potential years of life. People who die prematurely are not present to make contributions to the community, care for family members, or contribute to the economic well-being of the community. YPLL has declined in the United States over the past decades.

Local prevention programs and access to healthcare services are among the resources available to help reduce premature death.

Years of potential life lost rates are calculated to help make comparisons of the number of years of lost per 100,000 people to allow comparisons across areas with different population sizes.

The table to the right demonstrates the leading causes of death based on YPLL rate are significantly different than the leading causes of death based on age-adjusted rates.

4.6.1 Years of potential life lost due to cancer deaths

People who die prematurely of cancers (malignant neoplasms) lose more years of life than those who die of heart disease (the leading cause of death based on age-adjusted mortality rates). In Ohio in 2013 28% more years of life are lost to cancers than heart disease. In 2013 in Warren County the cancer YPLL rate was 1,491 per 100,000 people. This is 15% lower than the Ohio YPLL rate of 1,678 per 100,000 people. Both the Delaware County (1,206 per 100,000 people) and the Medina County (1,351 per 100,000 people) rates are lower than the Warren County rate.

Healthy People 2020 has 20 objectives targeting cancer. Objective C-1 is to reduce the overall cancer death rate. Objectives C-2 to C-11 target reducing the death rates for 10 cancers:
In addition to reducing death rates, Healthy People objectives C-12 to C-20 address preventive programs and behaviors that would decrease the number of potential years of life lost due to cancer.

Figure 4.48 shows, in 2013, both Delaware (1,079 YPLL per 100,000 people) and Medina (1,145 YPLL per 100,000 people) Counties have lower YPLL rates per 100,000 people than Warren County and Ohio. The comparison counties had a gradual decrease in the YPLL rates for cancer deaths between 2009 and 2013 in Delaware and Medina Counties. There was little change in the Ohio and Warren County YPLL rate in the same time period.

Appendix Table 4.81 has the number of years of potential rates and the number of years of life lost for all cancer sites and types of deaths for Ohio and the study counties for 2009 to 2013 and aggregate rates and YPLL for the five-year period.

Figure 4.49 shows rates based on data aggregated across the five-year period 2009 – 2013 for the Warren County areas. The Franklin Area (1,603 YPLL per 100,000 people) has the highest rate of premature cancer deaths. The West Mason (918 YPLL per 100,000 people) and Mason (910 YPPL per 100,000 people) areas have the lowest rate of premature cancer deaths. The rates for these areas are more than 50% lower than the Franklin Area.

Appendix Table 4.90 has five-year aggregate YPLL rates and number of years of potential life lost for all cancer types and site deaths for Warren County and the eight Warren County areas.

4.6.2 Years of Potential Life Lost Due to Heart Disease Deaths

Heart disease is the cause of death that has the second highest rate of premature mortality. In 2013 residents of Warren County lost 845 YPLL per 100,000 people. This is 30% less than the Ohio rate (1,207 YPLL per 100,000 people). Both Delaware County (557 YPLL per 100,000 people) and Medina County (655 YPLL per 100,000 people) have YPLL rates that are 20% to 35% lower than Ohio.
Appendix Table 4.82 has the number of years of potential rates and the number of years of life lost for heart disease deaths for Ohio and the study counties for 2009 to 2013 and aggregate rates and YPLL for the five-year period.

Figure 4.51 shows the rates based on data aggregated across the years 2009 to 2013 for the Warren County areas. The Lebanon Area (1,094 YPLL per 100,000 people), Carlisle Area (1,089 YPLL per 100,000 people) and Franklin Area (1,020 YPLL per 100,000 people) have the highest YPLL rates in Warren County. The Mason Area (574 YPLL per 100,000 people), Springboro Area (567 YPLL per 100,000 people), and West Mason Area (521 YPLL per 100,000 people) all have YPLL rates than are 50% lower than the low income areas in Warren County.

Appendix Table 4.90 has five-year aggregate YPLL rates and number of years of potential life lost for heart disease deaths for Warren County and the eight Warren County areas.

4.6.3 **Years of Potential Life Lost Due to Unintentional Injury Deaths**

Unintentional Injury (accidents) rises to the third leading cause of death based on YPLL from being the fourth leading cause of death based on age-adjusted mortality rates. In Ohio this rate reflects that more young people die in accidents and lose more years of life than older people. In 2013 the Warren County YPLL rate due to unintentional injury deaths was 1,030 per 100,000 people. This is only slightly lower than the Ohio rate (1,095 per 100,000 people). In the other suburban counties the unintentional YPLL rate is much lower. The Medina rate (643 per 100,000 people) is about 70% and the Delaware County rate (569 per 100,000 people) is one-half the Ohio YPLL rate. Motor vehicle crashes account for about one-fourth of the years of potential life lost due to unintentional injury. In Ohio 50% of years of potential life lost due to accidents is the result of motor vehicle crashes among young people 5 to 24 years old.

The Healthy People 2020 Injury and Violence Prevention objectives address unintentional injuries. Objective IVP-11 is to reduce unintentional injury deaths, objective IVP-12 emphasizes reduction of nonfatal unintentional injuries, and objective IVP-13 focuses on reducing motor vehicle crash-related deaths. These behaviors and prevention programs would decrease the number of potential years of life lost due to unintentional injury.

Figure 4.52 indicates there was a gradual increase in the Ohio unintentional injury death YPLL rate between 2009 and 2013. In the suburban counties, the accident YPLL rate is somewhat erratic but is mostly unchanged over the same time period. In 2013 the Warren County unintentional injury YPLL rate was 1,030 per 100,000 people.
Appendix Table 4.83 has the number of years of potential rates and the number of years of life lost for unintentional injury deaths for Ohio and the study counties for 2009 to 2013 and aggregate rates and YPLL for the five-year period.

Figure 4.53 shows YPLL rates based on data aggregated across the years 2009 to 2013 for the Warren County areas. The Lebanon (1,458 per 100,000 people) and Franklin (1,365 per 100,000 people) Areas have the highest unintentional injury death YPLL rates in Warren County. The lowest accidental death YPLL rates are in the West Mason (490 per 100,000 people) and Mason (421 per 100,000 people) Areas.

Appendix Table 4.91 has five-year aggregate YPLL rates and number of years of potential life lost for unintentional injury deaths for Warren County and the eight Warren County areas.

4.6.4 Years of Potential Life Lost Due to Suicide Death

Suicide death is the fourth leading cause of years of potential life lost, up from the position of ninth leading cause of death based on age-adjusted mortality rates. This indicates more years of life are lost than might be anticipated based on age-adjusted rates. This is to say people who die from suicide tend to be younger.

In 2013 residents of Warren County lost 342 years of life per 100,000 people as a result of suicide; this is about 15% lower than the Ohio YPLL rate of 388 per 100,000 people. In Medina County (295 per 100,000 people) the suicide YPLL rate is 75% of the Ohio Rate. In Delaware County the YPLL rate (211 per 100,000 people) is almost one-half the Ohio rate.

Healthy People 2020 Mental Health and Mental Disorders objectives address suicide deaths. Objective MHMD-1 is to reduce the suicide rate. HP2020 Objective MHMD-2 is to reduce suicide attempts by adolescents. These actions would decrease the number of potential years of life lost due to suicide.

Appendix Table 4.84 has the number of years of potential rates and the number of years of life lost for suicide deaths for Ohio and the study counties for 2009 to 2013 and aggregate rates and YPLL for the five-year period.
Figure 4.55 shows the suicide YPLL rates based on data aggregated across the years 2009 to 2013 for the Warren County areas. The Franklin Area has the highest rate with 629 YPLL per 100,000. The Franklin rate is 13 times higher than the Carlisle Area rate of 49 YPLL per 100,000 residents and three times higher than East Rural and South Lebanon Area rates.

Appendix Table 4.93 has five-year aggregate YPLL rates and number of years of potential life lost for suicide deaths for Warren County and the eight Warren County areas.

### 4.6.5 Years of Potential Life Lost Due to Chronic Lower Respiratory Disease Death

Chronic lower respiratory disease (CLRD) is the fifth leading cause of years of potential life lost, down from being the third leading cause of death based on age-adjusted mortality rates. This indicates fewer years of life are lost than might be anticipated based on age-adjusted rates. In different language, people who die from CLRD tend to be older.

In 2013 residents of Warren County lost 106 years of life per 100,000 people as a result of CLRD deaths; this is 41% of the Ohio YPLL rate of 266 per 100,000 people. In Medina County (119 per 100,000 people) the CLRD YPLL rate is 45% of the Ohio Rate. In Delaware County the YPLL rate (74 per 100,000 people) is less than 30% the Ohio rate.

Healthy People 2020 has several objectives that address specific respiratory diseases (RD). Objective RD-9 – 13 focuses on Chronic Obstructive Pulmonary Disease (COPD). Prevention programs have the potential to greatly reduce the years of potential life lost due to CLRD.

Figure 4.56 shows the YPLL rates based on data aggregated across the years 2009 to 2013. The Lebanon Area has the highest CLRD rate with 265 YPLL per 100,000 people this is almost ten times more years of potential life lost than the West Mason Area which has the lowest rate with 28 YPLL per 100,000 people residents.

Appendix Table 4.85 has the number of years of potential rates and the number of years of life lost for COPD deaths for Ohio and the study counties for 2009 to 2013 and aggregate rates and YPLL for the five-year period.

Appendix Table 4.94 has five-year aggregate YPLL rates and number of years of potential life lost from COPD deaths for Warren County and the eight Warren County areas.
4.6.6 Years of Potential Life Lost Due to Diabetes Death

In Ohio, diabetes death is the sixth leading cause of years of potential life lost in Ohio, up from being the seventh leading cause of death based on age-adjusted mortality rates. This suggests more years of life are lost than might be anticipated based on age-adjusted rates. That is to say, people who die from diabetes tend to be somewhat younger.

Figure 4.57 shows the diabetes death YPLL rate for Ohio (237 YPLL per 100,000 people in 2013) is fairly consistent across the five-year period (2009 to 2013). In 2013 residents of Warren County lost 135 years of life per 100,000 people as a result of diabetes; this is 67% lower than the Ohio YPLL rate of 237 YPLL per 100,000 people. The Medina County rate (107 per 100,000 people) is 20% lower the Warren County rate. The Delaware County YPLL rate (158 per 100,000 people) is 20% higher than the Warren County rates but 33% lower than the Ohio rate. The Warren and Medina County YPLL rates are erratic but seem to be declining in this time period.

There are 16 Healthy People 2020 objectives that target diabetes. Objective D-2.1 is to reduce the rate of all-cause mortality among persons with diabetes. Most of the other diabetes objectives target behaviors and preventive care that would reduce the years of potential life lost due to diabetes deaths.

The YPLL rates in Delaware County increased from a very low rate in 2009 to 158 YPLL per 100,000 people in 2013.

Figure 4.58 shows the diabetes death YPLL rates based on data aggregated across the years 2009 to 2013. The Franklin Area has the highest diabetes YPLL rate with 239 YPLL per 100,000. The West Mason Area has the lowest rate with 23 YPLL per 100,000 residents.

Appendix Table 4.97 has five-year aggregate YPLL rates and number of years of potential life lost for diabetes deaths for Warren County and the eight Warren County areas.

4.6.7 Years of Potential Life Lost Due to Stroke

In Ohio, stroke death is the seventh leading cause of years of potential life lost, down from being the fifth leading cause of death based on age-adjusted mortality rates. This suggests fewer years of life are lost than might be anticipated based on age-adjusted rates. That is to say, people who die from stroke tend to be somewhat older.

Figure 4.59 shows the stroke death YPLL rates for Ohio (170 YPLL per 100,000 people in 2013) is fairly consistent across the five-year period (2009 to 2013). The Franklin Area has the highest stroke YPLL rate with 225 YPLL per 100,000. The West Mason Area has the lowest rate with 21 YPLL per 100,000 residents.

Appendix Table 4.97 has five-year aggregate YPLL rates and number of years of potential life lost for stroke deaths for Warren County and the eight Warren County areas.
In 2013 residents of Warren County lost 220 years of life per 100,000 people as a result of stroke deaths; this is 16% higher than the Ohio YPLL rate of 189 YPLL per 100,000 people. In Medina County (182 per 100,000 people) the YPLL rate is the same as Ohio rate. The Delaware County YPLL rate (119 per 100,000 people) is about two-thirds of the Ohio rate.

The Healthy People 2020 heart disease and stroke objectives address issues related to cerebrovascular disease (stroke). Objective HDS-3 is to reduce stroke deaths. HDS-17 addresses awareness of stroke symptoms and rapid access to medical care for potential stroke victims. Objectives HDS-19 to HDS-24 target programs and preventive services to assist those at risk or survivors of strokes.

Figure 4.59 shows the Ohio years of potential life lost due to stroke death has remained stable between 2009 and 2013. The numbers of years of potential life lost in the suburban counties are relatively small, resulting in erratic rates.

Appendix Table 4.87 has the number of years of potential rates and the number of years of life lost for stroke deaths for Ohio and the study counties for 2009 to 2013 and aggregate rates and YPLL for the five-year period.

Figure 4.60 shows the stroke YPLL rates based on data aggregated across the years 2009 to 2013 for the Warren County areas. The Franklin Area has the highest stroke YPLL rate with 250 YPLL per 100,000. The Springboro Area has the lowest rate with 69 YPLL per 100,000 residents. The YPLL rates in the low income areas are three or more time higher than the rates in the highest income areas.

Appendix Table 4.88 has five-year aggregate YPLL rates and number of years of potential life lost for stroke deaths for Warren County and the eight Warren County areas.

4.6.8 Years of Potential Life Lost Due to Breast Cancer Death

Female breast cancer has the highest incidence rate of all cancers in Ohio, it is the eighth leading cause of death based on age-adjusted mortality rates and the eight leading cause of years of potential life lost in Ohio. Figure 4.61 shows that in 2013 there were 143 YPLL per 100,000 women due to breast cancer mortality, this is the same as the Ohio rates. The Medina County rate was 59 YPLL per 100,000 women and the Delaware rate was 115 YPLL per 100,000 women. The Ohio rate was fairly consistent through the 2009 to 2013 time period. The fluctuation of rates due to small numbers in that time period, make it difficult to determine whether there has been a change in YPLL due to breast cancer mortality in the comparison counties.

Appendix Table 4.88 has the number of years of potential rates and the number of years of life lost for stroke deaths for Ohio and the study counties for 2009 to 2013 and aggregate rates and YPLL for
the five-year period.

Three Healthy People objectives focus on breast cancer.

- C-3 is to reduce the female breast cancer death rate
- C-11 is to reduce late-stage female breast cancer
- C-17 is to increase the proportion of women who receive a breast cancer screening based on the most recent guidelines

Regular physician visits and preventive screening following recommended guidelines can help achieve these goals.

Figure 4.62 shows the years of potential life lost due to breast cancer mortality is highest in the Carlisle Areas (163 YPLL per 100,000 women) followed by the East Rural and West Mason Areas. The Lebanon and Franklin Areas have the lowest YPLL rates for breast cancer the YPLL rates in these areas are one-third to one-quarter the highest rates.

Appendix Table 4.96 has five-year aggregate YPLL rates and number of years of potential life lost for breast cancer deaths for Warren County and the eight Warren County areas.
Community Themes and Strengths Assessment

The Warren County Community Themes and Strengths Assessment was one of the four assessments used in the MAPP process. This is an assessment about topics and resources that residents of Warren County community identify as important to the health and well-being of their communities. The Community Themes and Strengths Assessment was conducted by a subcommittee of the MAPP Committee called the Community Partnership Committee. This committee had representatives from several Warren County community services and agencies.

A collaborative group process called Community Conversations uses a story boarding methodology to engage groups of 10 to 15 people in collecting information from participants about what they think will make Warren County a safer, healthier place to live, work, and play. Group members first work in small teams of three or four to develop ideas about the topic. Then all the teams work together to group the ideas into categories.

The assessment began by convening seven groups of individuals to provide information about their communities. Three groups were with teenagers, and four groups were with adults of ages from the twenties through the eighties. All groups included both females and males. More than 60 people joined in to provide input. Information from the seven groups was combined for analysis. A review of the information revealed that there were considerable similarities in the topics offered by the groups. Eight categories or themes about how to make Warren County a safer, healthier place to live emerged from the process. The Community Conversations themes are:

- **Public Safety.** This category includes: Police presence; Neighborhood watch; Driving safety
- **Services for Underserved Populations.** This category includes: Affordable housing for the elderly; Vision, hearing and dental services for the needy
- **Environmental.** This category includes: Recycling; roads; and sidewalks
- **Community Activities.** This category includes: Recreational facilities; Activities/events for children and teens
- **Youth Issues.** This category includes: bullying prevention; Drug education and treatment; Community centers for children and teens.
- **Substance Abuse Awareness.** This category includes: Drug awareness and education; Drug and alcohol free environment.
- **Employment.** This category includes: More full time; Quality jobs; Child care at a reasonable cost.
- **Transportation.** This category includes: Transportation services for the elderly; Public transportation

To get input from a broader community perspective and supplement the information collected in the Community Conversations groups a short questionnaire was designed based on the information collected in the seven Community Conversations meetings. The questionnaire used open-ended questions to ask respondents to provide responses about themes identified by the Community Conversations groups. Questions asked about: community health resources, classes/education programs, economic resources, safety/environmental resources, and other issues or services to make your community a healthier, better place to live. The questionnaire also asked respondents to provide their age range, gender, and educational attainment.
The survey was distributed at several points of contact around the county including community services and agencies. At these sites surveys were completed by both clients using services and some staff members. The largest distribution of the survey was at the Warren County Fair. Over 200 individuals completed questionnaires.

The Community Partnerships Committee reviewed the responses from the survey and collaborated in grouping the responses to the survey. They learned that the eight categories identified by the Community Conversations groups were sufficient for categorizing the survey responses. Additional themes that emerged from the survey responses include:

- Wellness
- Elderly Services (As a specific category, elderly services are included in some community conversations categories)
- Information and Referral for community services

**Public Safety**

Participants in Community Conversations prioritized *Safer Neighborhoods*. Topics identified include: Organizing neighborhood watches; Having greater police presence; Speed bumps in residential neighborhoods; and Stopping texting while driving.

Responses from the survey agreed with the Community Conversations Public Safety categories. *Law enforcement.* Grouped response include: More officers; More visibility; and Stricter enforcement of laws as key factors that impact public safety (38 responses); *Safety while driving.* Grouped responses include: Pedestrian awareness; Attention to and education about distracted driving; and seat belt enforcement (19 responses). In total there were 127 responses from the survey that related to public safety. Other suggestions and comments included:

- **Public amenities.** Topics include: Good sidewalks; Well-marked crosswalks; More traffic lights (16 responses).
- **Classes to help residents.** Topics include: Firearm safety; Hunting safety; Self-defense; Disaster preparedness; Water safety classes (26 responses).
- **Child Car Seats.** Car seat education; Car seat enforcement; Free car seats. (6 responses)

Other public safety topics that received only a few responses include: Domestic violence and abuse services; local disaster shelters; and restaurant inspections.

**Services to the Underserved**

The *Services to the underserved* category was identified by Community Conversation groups. The *Improving services to elderly citizens of Warren County* category includes: Affordable home care for the elderly; More exercise programs; and Safe walking and bike paths. The *Services for the Needy* category includes: Dental and vision services for the needy; and Easier for adults and children to get benefits.

Survey respondents were also concerned with *poor and underserved residents* of Warren County. There were 174 responses related to services for the underserved, these include:
• **Assistance to the homeless.** Topics include: Helping them find housing; Better and more low income housing (27 responses).

• **Assistance with material needs for low income populations.** Topics include: Food pantries; Soup kitchens; Diapers and paper goods; Assistance with rent and utilities; A pet food pantry (33 responses).

• **More services available to the disabled and families of disabled children** (9 responses).

• **Greater access to health care and health insurance** (16 responses).

• **Mental health services** (16 responses).

• **Education for financial literacy.** Topics include: Budgeting; Saving; Responsible use of credit cards (21 responses).

Other services for the underserved topics that received only a few responses include: Emergency veterinarian services; Help with chores; Subsidized child care; Lower taxes; and Helping the indigent obtain vital records like birth certificates.

**Environment**

A theme common Community Conversations meetings was the **Physical Environment of Warren County.** Topics include: More recycling; Better roads; Better sidewalks; More bike paths; A place to take large amounts of yard waste, old appliances, and furniture.

The **physical environment** theme was continued by survey respondents who provided 153 responses suggesting improvements to Warren County’s physical environment. These responses were similar to the Community Conversations groups.

Topics include:

• **Physical Environment.** Better roads; Safer sidewalks; Bike paths (32 response).

• **Clean communities.** Topics: Control of trash and litter, community clean-up activities, and encouragement of recycling efforts. (53 responses).

• **Pollution prevention and mitigation for better quality air and water** (20 responses).

Other suggestions that received only a few responses include: More education about how to recycle; How to recognize poor sewage performance; How to decrease pollution; Finding alternative energy sources; Planting more trees; and Mosquito control.

**Community Activities**

**Community activities** was a category that the most of Community Conversation groups identified. This suggests a strong interest in community activities. The topics include: Free events for families, kids, and teenagers; Community get-togethers; Support groups for families; Bowling allies; Skating rinks; Parks, Pools; and Community centers.

Survey Responses also showed a strong interest in community activities, with 116 responses grouped in this area.

Topics include:
• **Opportunities for physical activity**: More green space and playgrounds in residential areas; Free or low cost exercise classes; and More public land (50 responses)

• **Community sponsored classes**: Art; Gardening; Sewing; Cooking, Landscaping; CPR (17 responses.)

Other suggestions that received only a few responses include: Community gardens; Rent-a-bike services; More opportunities for community service; More activities that bring families and neighborhoods together; and Family friendly restaurants.

**Youth Issues**

*Youth issues* was a topic common across the Community Conversations. Topics include: Bullying prevention; Drug education and treatment; Teen-police interaction; and Activities for children and teens. These topics were of particular interest in the three meetings with young people.

From the survey, there were 67 responses regarding youth issues. Similar to the topic identified in the Community Conversations survey responses reiterating the need for more the following suggestions were made:

• **Activities for young people**: Summer camps; Summer activities; More opportunity to participate in organized sports; Activity centers; Youth opportunities (10 responses).

• **Out-of-school activities**: Pre-school and afterschool programs; More involvement of young people in FFA and 4H (21 responses).

• **Classes targeted to young people**: Healthier lifestyles; Drugs and alcohol; Financial management; Sex education to prevent pregnancies and STDs; How to be a responsible adult; and The political system (15 responses).

Other suggestions that received only a few responses include: More jobs for teens; Mentoring; Tutoring; Driving safety; More support for troubled youth; and Parenting support.

**Substance Abuse Awareness**

*Substance abuse and substance abuse awareness* was a Community Conversations theme. The topics include: Drug education; Community awareness about drug use; Support for rehabilitation; Decrease in tobacco use; and Decrease in alcohol use.

Surveys responses provided 86 comments about substance abuse and awareness. Many of the comments focused on the need for education and community health services.

The suggestions received include:

• **Prevention**: Drug awareness education, Drug and substance awareness programs (29 responses).

• **Intervention**: Better interventions; Better treatment options (27 responses).

• **A drug free and a smoke free community** (29 responses)
Employment

*Employment* was a theme offered by Community Conversation participants. Topics include: More full time, higher quality jobs; More job education/training opportunities; More job opportunities for young people; and More jobs for prisoners re-entering the community.

The survey provided 65 responses relating to employment. Suggestions made included:

- **Jobs**: More jobs; and Better ways to find what jobs are available (20 responses).
- **Education**: More education; and More technical education that leads to employment (21 responses).

Other suggestions which received only a few responses include: GED classes; Money management help; English as a Second Language classes; A better business climate; and Economic development.

Transportation

*Transportation* was a need identified by participants in Community Conversations. Topics include: Transportation services to medical appointments; Transportation for the elderly; More streetlights; Better roads.

Survey responses provided 57 suggestions about transportation. Topics include:

- **Better public transportation** in Warren County (36 responses).
- **Alternative transportation**. Topics include: Taxis, Biking, Walking (13 responses).

Other suggestions which received only a few responses include: More free parking; Lower gasoline prices, and More low cost driver education.

Wellness

“*Wellness*” was a strong theme identifies from survey responses. Topics from this subcategory were mentioned in other categories from Community Conversations groups. There were 291 comments that related to wellness. Survey comments identified wellness as encompassing education, prevention, nutrition, and health care services. Topics include:

- **Healthy eating**. Topics include: Healthier eating behaviors; and Education about nutrition (62 responses).
- **Physical exercise**. Topics include: More opportunities for physical exercise; and Affordable exercise classes and gyms (23 responses).
- **Access to adequate nutrition**. Topics: Food pantries; food subsidies (17 responses).
- **Expanded access to health care**: Extended medical office hours; Urgent care; and Telemedicine (15 responses).
- **Additional health care resources** including: Flu shots available in more places; Free mammography; Free blood pressure screenings; Free clinics; and Blood drives (20 responses).
- **Disease prevention education**. Topics included: Handwashing; Communicable diseases; Diabetes; Smoking cessation; STD prevention; and Drug Abuse Prevention (22 responses).
- **CPR and first aid** (12 responses).
• **Parenting classes** (14 responses).
• **Family planning/sex education classes** (6 responses).

Additional suggestions receiving only a few responses were Need for adequate numbers of doctors, hospitals, and health care settings; Need for health insurance; and Doctors and dentists who will accept Medicaid.

**Elderly Services**

Elder services topics were included in Community Conversations categories. Survey respondents provided 30 comments related specifically to services for the elderly. Topics were:

• **Assistance with independent living.** Topics included: Assistance with home maintenance; Meal service; Reliable transportation; Long term housing; Services for homebound seniors (11 responses).
• **Activities for elderly.** Topics included: Senior centers; Free classes for elderly; Shelter pets in nursing homes (6 responses)
• **Outreach to elderly and caregivers.** Topics include: More participation at nursing homes; Education about how to meet elderly’s needs; closer monitoring of persons with dementia (4 responses).

Other suggestions receiving only a few responses were: More senior care; and Services for the elderly.

**Information and Referral for Community Services**

Thirty seven responses on the surveys suggested that better **Information and Referral Service** would help make Warren County a healthier, safer place to live and work.

Topics include:

• **Information about available programs and services available.** Topics include: More information about programs and services generally; Information about specific programs and topics (21 responses).
• **Linkage to care.** Topics included: Promote Job and Family Services; Referral services; Phone numbers easier to find; Free advice (6 responses)
• **Alternative communication strategies.** These included: Social media, Welcome Wagon for new residents in low income areas, Door to door promotion of programs, and Pamphlets (5 responses)

Other suggestions with only a few responses were: Screening in communities; and General education on public awareness topics.

**Summary of Community Themes and Strengths**

Through the Community Conversations and the survey, the MAPP process was able to identify what Warren County residents see as important contributions to a healthier, safer place to live, work, and
play. The theme of “wellness” emerged strongly, with survey respondents indicating that they viewed wellness broadly, encompassing not only health care but opportunities to be active, to enjoy good nutrition, and to learn more about how to promote health and prevent disease. A strength of Warren County is that there are many parks and bike and walking paths, giving residents opportunities for physical activity. The survey and community conversations suggest that promoting and maintaining these facilities will encourage greater use.

Warren County residents also care about services to the underserved, including the elderly, homeless, and low income residents. In addition to better access to health care services, residents emphasized the need to provide support in other areas, including housing, food, and material assistance, to improve health and wellness in the county. A strength of Warren County is the safety net services already in place, through Job and Family Services, the Combined Health District, Mental Health Recovery Services, and many other public and private agencies.

Environmental aspects of Warren County were important to Warren County residents, a theme which emerged in the Community Conversations and through the survey. Residents were concerned both with the built environment (i.e., maintenance of roads, sidewalks, parks, and greenspaces) and the

Attention to public safety also emerged as a theme, with crime prevention (through police presence, neighborhood watches) and road safety (car seat use, seatbelt use, elimination of distracted driving) as priorities. Survey respondents also suggested education about various hazards (firearm safety, self-defense, disaster preparedness) as a way to make Warren County a safer, healthier place to live.

Having places and events where Warren County residents can come together for activities was another theme emerging from the assessment. Both Community Conversation and survey participants saw community activities as important. There was particular emphasis on activities for children and youth, especially during out of school time. There was also an emphasis on activities that provide opportunity for physical activity.

Substance abuse, employment, and transportation were mentioned as factors that affect making Warren County a healthier, safer place to live in both Community Conversations and the survey. These areas received fewer comments from the survey than the themes discussed above. Residents felt that substance abuse prevention and treatment remain important, as does access to good jobs. The need for better public transportation and alternate means of transportation were suggestions emerging from both the Community Conversations and the survey.

Finally, a need for better information and referral mechanisms for community services and activities was suggested by survey respondents. This recognizes that there is already a lot going on in Warren County that residents can benefit from, and suggests that services and activities could be better utilized by residents through increasing available information.
Community Care System Assessment

The concept of a public health system is often broad, large, and difficult to understand. For the purposes of this assessment a more specific phrasing – Community Care System – was used to ensure that community partners knew that the system includes them in addition to the public health department instead of utilizing the phrase “Local Public Health System Assessment” that is indicated in the MAPP process.

The Community Care System Assessment is one of four MAPP assessments that inform the development of a strategic community health improvement plan. The assessment was modified from the model instrument to fit the needs of Warren County, but it still assesses the amount of collaboration in the county to provide the ten essential public health services.

The Community Care System Assessment was assessed by sending out a survey through Qualtrics that tried to answer the following questions:

What are the services provided to members of our community?
Who provides services in our community?
How are essential services being provided to our community?

Results

The results of the assessment of how the essential services are being provided are in Appendix A. Figure 1 below demonstrates the level of collaboration according to the survey. The level of collaboration is based on the following four point scale:
1. Little or No Collaboration
2. Minimal Collaboration
3. Reasonable Collaboration
4. Optimal Collaboration

Overall, the level of collaboration is 2.9. This means the overall level of collaboration for all ten Essential Services is between Minimal and Reasonable. Table 2 provides the average level of collaboration by essential service

Community Services Provided in Warren County

One of the other questions to be answered by the survey is what services are organizations in the community care system providing. Table 3 shows the categories of services provided to Warren County by organizations that responded to the survey.

In addition, there were some services provided designated “Other” that are listed in Table 4.

<table>
<thead>
<tr>
<th>Table 2. Average Level of Collaboration by Essential Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential Service</td>
</tr>
<tr>
<td>Monitor health status</td>
</tr>
<tr>
<td>Diagnose and investigate health problems</td>
</tr>
<tr>
<td>Inform, educate, and empower</td>
</tr>
<tr>
<td>Mobilize community partnerships</td>
</tr>
<tr>
<td>Develop policies and plans</td>
</tr>
<tr>
<td>Enforce laws and regulations</td>
</tr>
<tr>
<td>Link people to needed personal health services</td>
</tr>
<tr>
<td>Assure competent workforce</td>
</tr>
<tr>
<td>Evaluate health services</td>
</tr>
<tr>
<td>Research for new insights</td>
</tr>
</tbody>
</table>

Table 3. Number of Warren County Organizations providing select services that responded to CCSA survey

<table>
<thead>
<tr>
<th>Service Category</th>
<th>Number of Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholism &amp; Substance Abuse</td>
<td>0</td>
</tr>
<tr>
<td>Blind</td>
<td>2</td>
</tr>
<tr>
<td>Childcare</td>
<td>4</td>
</tr>
<tr>
<td>Clothing</td>
<td>1</td>
</tr>
<tr>
<td>Counseling</td>
<td>3</td>
</tr>
<tr>
<td>County Govt.</td>
<td>3</td>
</tr>
<tr>
<td>Disability</td>
<td>2</td>
</tr>
<tr>
<td>Driver’s License</td>
<td>0</td>
</tr>
<tr>
<td>Education</td>
<td>10</td>
</tr>
<tr>
<td>Emergency</td>
<td>13</td>
</tr>
<tr>
<td>Employment Services</td>
<td>5</td>
</tr>
<tr>
<td>Food Pantries</td>
<td>4</td>
</tr>
<tr>
<td>Financial Assistance</td>
<td>5</td>
</tr>
<tr>
<td>Food and Meal Assistance (WIC, Food Stamps, etc.)</td>
<td>5</td>
</tr>
<tr>
<td>Health Services</td>
<td>10</td>
</tr>
<tr>
<td>Hearing Impaired</td>
<td>0</td>
</tr>
<tr>
<td>Home Ownership</td>
<td>1</td>
</tr>
<tr>
<td>Home Energy Assistance Program, Wellness programs for seniors, Medicare &amp; Insurance Counseling, Low income senior and family housing, Elderly Services Care management &amp; Intake</td>
<td>3</td>
</tr>
<tr>
<td>Long term care for seniors and short term rehabilitation</td>
<td>3</td>
</tr>
<tr>
<td>Specialized services to help those who are visually impaired be independent</td>
<td>3</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>4</td>
</tr>
<tr>
<td>Monitor and enforce financial and health insurance orders to promote family stability</td>
<td>4</td>
</tr>
<tr>
<td>Law enforcement services</td>
<td>1</td>
</tr>
</tbody>
</table>

In addition, there were some services provided designated “Other” that are listed in Table 4.
Overall, the most popular services provided were in the “Emergency” category. This is likely due to the close relationship the health district has with first responder agencies in the county who were more than willing to support our efforts when possible. In future assessments, delineating what qualifies as an “emergency” service between public safety and public assistance programs may show a different outcome. The second highest number of organizations providing services was a tie between Education, Health Services, and Senior Services. This further supports that the survey was completed by a wide range of community partners, resulting in a survey of the community care system that encompasses the sectors most directly involved in maintaining and stimulating a healthy populous.

Network of Community Care System

The community partners responding to the Community Care System Assessment were asked what organizations they work with on at least a monthly basis. From these data, a network map was developed giving an overview of some of the central organizations in the county.

From these data, Table 4 demonstrates the Warren County Organizations that were collaborated with at least once per month.

### Table 4. Count of Warren County Organizations Collaborated With

<table>
<thead>
<tr>
<th>Organization</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warren County Department of Job and Family Services</td>
<td>58</td>
</tr>
<tr>
<td>Warren County Community Services, Inc.</td>
<td>51</td>
</tr>
<tr>
<td>Warren County Educational Service Center</td>
<td>38</td>
</tr>
<tr>
<td>Warren County Combined Health District</td>
<td>34</td>
</tr>
<tr>
<td>Warren County Elderly Services Program</td>
<td>33</td>
</tr>
<tr>
<td>Abuse &amp; Rape Crisis Shelter of Warren County</td>
<td>31</td>
</tr>
<tr>
<td>Warren County Career Center</td>
<td>25</td>
</tr>
<tr>
<td>Council on Aging of Southwestern Ohio</td>
<td>22</td>
</tr>
<tr>
<td>Warren County Transit Service</td>
<td>22</td>
</tr>
<tr>
<td>Atrium Medical Center</td>
<td>21</td>
</tr>
</tbody>
</table>

Conclusion and Recommendations

Collaboration in the Warren County Community Care System has an overall average of 2.9. This means that the level of collaboration is minimal, but is reaching a reasonable amount of collaboration. Moving forward, the Warren County Community Care System may decide to focus on the following essential services that are below the average:

- **Monitor Health Status**
- **Inform, Educate, and Empower**
- **Mobilize Community Partnerships**
- **Develop Policies and Plans**
- **Research for New Insights**

By focusing on these core areas, the WC Community Care System can increase the collaboration between the organizations in the county.

None of the respondents to the survey represented Substance and Alcohol Abuse, Mental Health, or Libraries in the survey. Future initiatives to map the Community Care System in Warren County should focus on these areas to improve collaboration and resource identification in the county.

The organizations identified in Table 5 should continue to strengthen the collaboration between their organizations and work together to address gaps in the essential services being provided in the community. These organizations can work to ensure that the organizations in the Community Care System collaborate with one another. As Figure 3 illustrates, the connection between various agencies in Warren County is present, however, a concerted effort must be made to ensure that not only are the Essential Services being provided within the county, but that all agencies present within the community care system know and understand where to turn when trying to connect with the appropriate healthcare entity or service provider.
Forces of Change Assessment

The Warren County Forces of Change Assessment is based on information collected in three meetings of community leaders held in Lebanon and Mason. A story boarding methodology called Community Conversations was used to collect information from participants about the topics and issues they believe will impact the future of community health in Warren County over the next three to five years. The groups worked together in small teams to identify common topics. Next, all participants in the meeting collaboratively grouped the topics into categories. Eleven categories of forces of change were identified.

- Politics of Health Care
- Legislative Issues/Advocacy
- Family Socioeconomic Dynamics
- Infrastructure / Facilities and Services / Access to Needed Services
- Technology/ Communication
- Population Issues / Increased Demand for Services
- Generational Issues / Millennial Workforce
- Collaborative Initiatives with Legal System
- Decreased Funding / Financial Collaboration
- Health and Education Collaboration
- Environmental Factors

Politics of Health Care

Perhaps the largest issue that will bring about change in community health in the near future will be the continued implementation of the Affordable Care Act (ACA), which will impact funding and the provision of personal and community health services in Warren County. The topics identified in this category are:

- Change in health care system (i.e. reimbursement)
- Changes in state funding
- Change in political scene of healthcare
- Payment reform for reimbursement
- More competitive environment for physicians

Funding changes will occur as a necessary result of the Affordable Care Act. How those changes will occur will be a political process occurring at the local, state and national levels. Elections at all levels will influence the political climate for the provision and funding of healthcare services. There is anticipation that “pay for performance” reimbursement processes being discussed may have unintended ramifications on local healthcare systems. Ohio is working to integrate behavioral healthcare and physical healthcare and it is likely that Affordable Care Act funding changes will play a role in these decisions. Some Warren County agencies are funded by levies. The local political climate will determine whether upcoming levies pass. Another change noted is the push for local Federally Qualified Health Centers (FQHCs) to hire on behavioral health professionals (instead of one psychiatrist) to augment current staffing to provide services outside the existing scope of practice. These efforts promote a team approach to community health services that has not previously been widely used in many healthcare settings.

Legislative Issues/Advocacy

The political climate can be influenced by the advocacy of individuals and groups. Local voters must receive good information about benefits the community receives from levies to promote passage of levies to help fund local agencies. Warren County has been one of the fastest growing counties in Ohio.
over the past several years. Consequently, changing population demographics may significantly affect the potential for the passing of levies in the future. Topics identified in this category are:

- Affordable Care Act implementation & Medicaid expansion
- Expansion of healthcare systems into Warren County
- Federally Qualified Health Centers opening
- Reduced access to Medicaid for prenatal clients
- Mental Health First Aid training for service providers
- Same sex marriage legislation
- Legalization of marijuana

Services provided to the people of Warren County have increased through various hospital networks and FQHCs.

Collaborative efforts are ongoing between some agencies that provide county services to ensure that clients have transportation and other support to get all the care they need. It is possible that these and other agencies could also collaborate on efforts to combine agency-based levies. This would reduce the financial burden of campaigns on single agencies for levy-based funding.

In this and other categories, concerns about substance abuse in the county were prominent. The Screening, Brief Intervention, and Referral to Treatment (SBIRT) is an approach to the delivery of early intervention and treatment to people with substance use disorders and those at risk of developing these disorders. This strategy is a way for healthcare providers to help identify, reduce, and prevent use and abuse of alcohol and illicit drugs. SBIRT is being utilized to assist healthcare professionals in a variety of areas to be cognizant of potential signs and symptoms associated with substance abuse.

Family Socioeconomic Dynamics

As with most communities, support for families that need community services is an important concern for community leaders in Warren County. The aging of the Baby Boomer Generation will have an impact on how services are offered in Warren County. Topics identified in this category are:

- Early learning school readiness
- Need for better education about nutrition & fitness
- Changes in family structure
- Grandparents raising grandchildren – family dynamics
- People living longer – to older ages

Schools are assessing knowledge of students at early stages for school readiness. While important, this practice may be catching some parents off-guard as they may not be prepared for early testing. Warren County is increasing the emphasis on early learning. Mental Health Recovery Services and other organizations are engaged in activities to help with early education. The financial burden of childcare and providing adequate access to early learning services for children can be a strain for young families. The number of single parent households also has a bearing on the demand for community services. The number of grandparents raising grandchildren has increased over the past several years. It is not uncommon that parents involved in the drug and opioid epidemic are unable to adequately care for their children or go to jail. Often their children are placed in custody of the grandparents.
Infrastructure / Facilities and Services / Access to Needed Services

The status of the county infrastructure was a common topic of concern that will impact the future of Warren County. Transportation has been a recurring topic at several meetings throughout the community assessment. Topics identified in this category are:

- Lack of accessible transportation
- Transportation
- One-stop shop for community care
- Pooling resources for transportation
- Infrastructure and lack of communication
- Infrastructure and lack of planning
- Does the local health department provide the adequate services to meet the needs of community?
- Decreased access to physicians due to centralization of health systems
- Better jobs equal better health
- Contracting out for transportation services
- Escalating levels of STDs

Several local agencies have initiated a transportation committee. This group is developing ideas to take to the county commissioners. The objective for this committee was to collaborate in meeting transportation needs of the elderly, clients of Warren County Developmental Disabilities, and help individuals without access to cars get services they need.

Participants at the meetings discussed issues related to the lack of communication within county agencies and the lack of adequate planning. The issue isn’t finding organizations that are willing to collaborate; there is a lack of consistent follow-through from those who have investments in improving outcomes. Often there are external forces that inhibit agencies from actually sharing resources. The parameters set forth in many types of funding contracts negate or limit the ability of agencies to effectively reallocate funds or share resources with other agencies to achieve desired goals. The best opportunity to most effectively address the needs of the community may result from the flexibility of local levy funding.

Most agencies in the county don’t have the resources for facilities to ensure that all areas of the county have access to their services. There is potential for agencies to collaborate by providing resources and space in their facilities to other agencies that provide tangential services. This would improve the ability of agencies to expand access for their clients. The FQHCs are working to reduce wait lists in an effort to provide services to clients quicker.

The state of Ohio requires health departments to provide a continuum of care to ensure that clients not only are treated while in clinics, but also are provided with information in different areas of their lives. Provision of comprehensive care will continue to increase over the next three to five years.

The expansion of the Kettering and Premier Health Networks into Warren County also has an impact on how Warren County citizens receive services.

Technology/ Communication

Technology is increasingly part of the lives of residents of Warren County. Local county agencies, non-profits, and private organizations that provide community health services strive to stay abreast of technological advances to ensure their clients receive the best possible services.

Topics identified in this category are:
• Growing use of social media
• Increased ability to self-manage medical aspects of life with technology
• Increased ability to shop for prices and quality of healthcare using internet technology
• More sophisticated medical technology in general

The integration of technology in healthcare is having a big impact on how healthcare and community services are provided. Health Information Exchanges can have large impact on healthcare by improving the sharing of health information. An example of improvements supported by the use of technology is the tracking and monitoring of personal health (vaccine records, wearable technologies, etc.). An important consequence of healthcare technology is that it allows providers to increase the variety and depth of education that can be provided to consumers.

Population Issues / Increased Demand for Services

For the past several years Warren County has been one of the fastest growing counties in Ohio. As the population grows it will put more strain on healthcare and community health providers’ ability to provide services.

Topics identified in this category are:

• Aging population increasingly in need of services
• County population growth
• Heroin Epidemic
• Heroin/drug epidemics and related crimes
• In-home access to care for the aging population & being able to stay in their homes / Protection of the aging population (physical, mental, financial, environmental, etc.)
• Child neglect (lack of preventive care leads to need for more healthcare)
• Epidemic fears: H1N1, Ebola
• Increasing numbers of minority and ESL populations in Warren County

Chronic conditions such as cancer and cardiovascular disease are major health issues in Warren County and Ohio. These conditions become more prevalent as people age. As a result, community agencies will need to increase services to the elderly.

In each of the Forces of Change meetings concern was expressed about the increase of deaths due to heroin overdoses. The problems with heroin impact the community in a number of ways. Drug overdoses result in increased demand for services both for those who overdose and their families. Too often an overdose death results in grandparents raising grandchildren. The Ohio Department of Health recently released information about drug overdose and death resulting from the use of the drug fentanyl. The severity of the heroin epidemic is high, but the overall magnitude (incidence) is rather limited.

Generational Issues / Millennial Workforce

With population growth there is an increase in qualified, young professionals with different work ethics and career expectations. The expectations of this new workforce for their work life appear to be more focused on meeting the demands of family, leisure time, and other concerns that are different from those of older generations. Topics identified in this category are:

• Inadequate qualified labor force
• Standards of living for younger generations not expected to exceed their parents
• Frequency of mobility of younger generation
• Changing work ethic in younger workforce
• Incentives for attempting wellness/motivation for wellness
Some participants expressed concern about young people moving out of the county to look for work. It is important that jobs that would attract qualified professionals to the county be available. There were concerns that in some instances highly technical jobs have been available but there were not enough qualified candidates to fill the positions. On other occasions, low-skill positions were open but there were insufficient applicants interested in filling the positions. Increases in the number of people who gained insurance through the Affordable Care Act have decreased the number of individuals who use the health department for health services.

Collaborative Initiatives with Legal System

Drug courts have been introduced in Warren County to help combat issues related to heroin. These courts are utilized to find alternative solutions for individuals arrested for drug related offenses to keep them out of jail. Topics identified in this category are:

- More drug courts
- Behavioral health screenings in jails

Participants discussed the importance of reducing the criminalizing of the population. Jails have become places that serve as de facto mental health providers. Efforts are being made to do behavioral health screenings in jails.

Decreased Funding / Financial Collaboration

Funding of community health services is a perennial concern. Topics identified in this category are:

- Reduction to local government funding and community development block grant funds
- Sharing financial resources
- Creative allocation of funding
- Need for transitional care

Innovative efforts are being developed to support agencies in collaborating to pool existing financial resources to improve services in the community. The community will benefit if county agencies continue efforts to collaborate on funding local services. Agencies may need to work with local state legislators to change funding laws to permit more flexibility in the use of state funds at the local level.

Health and Education Collaboration

There was a general consensus that in the next three to five years there will be more use of healthcare teams. Collaboration across agencies will improve the provision of services to patients. Topics identified in this category are:

- Lack of providers for the newly insured
- Physician education and monitoring of patients
- Training of other healthcare professionals to help with care for drug addicts
- Collaboration with other agencies
- Comprehensive care across agencies
- Effective referral process
- Health Care Teams
- Pain management practices

The recent ODH report about fentanyl indicates that providers are increasingly registering for the Ohio Automated Rx Reporting System (OARRS) to help reduce the number of people who “doctor shop” to get prescriptions for pain medication prescriptions.

The definition of collaboration will be important. Public agencies may collaborate more across agencies while private healthcare systems will work across departments and with other professionals in their respective system “silos.” There were concerns that there may be better team care, but it may be
limited to specific healthcare systems as opposed to allowing patients to seek services across healthcare networks.

Environmental Factors

There is a lot of interest in improving the number of people who exercise and in the development of resources to expand access to exercise facilities. Topics identified in this category are:

- Popularity of biking and walking trails
- Walkable communities
- Changes to onsite waste water treatment technology
- Worldwide water rights/control

There was a consensus that interest in walkable communities and the popularity of biking and walking trails will continue to increase. It is likely that planners will work to ensure that walkability is a consideration in the development of new subdivisions. The county will need to improve the capacity of the sanitary sewers to keep up with population growth. There will continue to be a need to plan for residential areas to be developed and not adversely impact the environment.

The group discussed the Opportunities and Threats that may come with each category, they are as follows:

<table>
<thead>
<tr>
<th>Force of Change</th>
<th>Opportunity</th>
<th>Threat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Politics of Health Care</td>
<td>• Shannon Jones is a strong voice</td>
<td>• Little control outside of Warren County</td>
</tr>
<tr>
<td></td>
<td>• The affluence of Warren County provides more options</td>
<td></td>
</tr>
<tr>
<td>Family Socioeconomic Dynamics</td>
<td>• Enroll need of all kids under 5 years</td>
<td>• Lack of discipline and structure</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>• Fifty percent undeveloped land</td>
<td>• Poor planning of communities</td>
</tr>
<tr>
<td></td>
<td>• Historical perspective to allow for learning from past mistakes</td>
<td>• Preservation of farmland</td>
</tr>
<tr>
<td>Technology</td>
<td>• Ability to reach isolated populations</td>
<td>• Expensive, potentially scary, and complicated</td>
</tr>
<tr>
<td>Population Issues</td>
<td>• Trying to stop drug cycle (Vivitrol)</td>
<td>• Easier to save people from dying who then continue taking drugs</td>
</tr>
<tr>
<td>Millennial Workforce</td>
<td>• Early learning leads to better education</td>
<td>• College debt</td>
</tr>
<tr>
<td></td>
<td>• Not everyone needs college</td>
<td>• Not as dedicated to work or employer</td>
</tr>
<tr>
<td></td>
<td>• Sinclair and Warren County Career Center in county</td>
<td></td>
</tr>
</tbody>
</table>
Methods

The Ohio Department of Health requires all the health departments in the state to apply for accreditation by 2018. Accreditation is a national process designed to evaluate health departments’ processes and services, their outcomes, and progress toward specific goals and objectives. The Public Health Accreditation Board (PHAB) is an organization established to oversee the accreditation process nationally. There are three prerequisites for applying for accreditation. Before applying for accreditation, health departments must 1) conduct a community health assessment (CHA); 2) create a community health improvement plan (CHIP) based on the findings of the community assessment; and 3) develop a strategic plan that documents the actions (measurable goals and objectives) that will be followed to implement the community health improvement plan. PHAB has developed an extensive set of Standards and Measures to guide health departments through the processes and steps needed to become accredited.

The PHAB standards and measures require the community assessment conducted by health departments be a collaborative process that engages the community to identify community health and quality of life issues.

The Warren County Combined Health District created a planning committee to direct the community assessment. The planning committee consists of Duane Stansbury, Health Commissioner; Chris Balster, Director of Environmental Health; Lori Smyth, Director of Nursing; and Dustin Ratliff, Emergency Response Coordinator. The planning committee selected the Mobilization for Action through Planning and Partnership (MAPP) process as the framework for the Warren County Community Health Assessment. The MAPP is a process designed to assess the health of a community by working through a broad collaboration of residents and representatives of community-based organizations. MAPP was developed through collaboration between the National Organization of City and County Health Officials and the Centers for Disease Control and Prevention.

The MAPP process has six phases: organizing, visioning, assessments, strategic issues, goals and strategies, and an action cycle. In the planning phase the planning committee contracted with a consultant, Community Health Associates, to facilitate the MAPP process. Next, a steering committee of community leaders was invited to monitor the community assessment progress.

The steering committee members are: Stephen Barr, Warren County Board of Health; Tony Brigano, Juvenile Court System; Jerri Langworthy, United Way; Brent Lawyer, Mental Health Recovery Services of Warren & Clinton Counties; Kathy Michelich, Ohio State University Extension Services; Tom Isaacs, Warren County Education Service Center. The planning committee members and Community Health Associates representatives Bill Spears and Carla Clasen also participate in the steering committee.

The planning committee, with help from the steering committee, compiled a list of individuals from around Warren County who know the communities, issues, and the concerns of clients and residents, as well as the social and political climate of Warren County. Effort was made to ensure broad representation of various constituencies from across the county. This group was invited to become members of the MAPP Committee.

The steering committee completed phase two of the MAPP process by establishing a mission and vision for the community assessment.
The mission of the Warren County Community Health Assessment is:
Creating a healthy community by promoting collaboration between community stakeholders.

The vision statement to guide the community assessment is:
Working together for a healthy tomorrow.

**The MAPP Committee**

The first MAPP Committee meeting was held February 12, 2015 to introduce the MAPP Committee to the Mobilization for Action through Planning and Partnerships process. Thirty-six people from a variety of different organizations attended the meeting. Participants were invited to engage in the MAPP process by joining one of four subcommittees to guide the four component assessments of the process:

The Community Partnerships Subcommittee guided the *Community Themes and Strengths Assessment*. This assessment is designed to provide a deep understanding of the issues that residents of Warren County feel are important.

Members: Sub-committee Chair: Lori Smyth, WCCHD; Vicki Cook, WCCHD; Megan Crouch, ARCS-Violence Free Coalition of Warren County; Madelyn Coons, Family Rep FCFC; Casey Hippenhammer, Solutions CCRC; Sharon Moeller, Warren County Career Center; Mary Scherle, Kings Local Food Pantry; Sandy Smoot, Family and Children First Council; Stan Williams-WC Regional Planning Commission; Carla Clasen, Community Health Associates.

The Community Resources Subcommittee guided the *Community Care System Assessment* (CCSA). This assessment focuses on all of the organizations and entities that contribute to community health in Warren County.

Members: Sub-committee Co-Chairs: Chris Balster and Dustin Ratliff, Warren County Combined Health District; Terri Elam, Warren County Educational Service Center; Daniel Geroni, Warren County Regional Planning Commission; Jane Groh, Solutions Community Counseling and Recovery Center; Janet Hoffman, Abuse and Rape Crisis Center; Jerri Langworthy, United Way of Warren County; Stefanie Post, Help Me Grow; Sandy Smoot, Warren County FCFC; Stan Williams, Warren County Regional Planning Commission; Carla Clasen, Community Health Associates.

The Data Subcommittee guided the *Community Health Status Assessment*. This assessment is a statistical report that identifies priority community health and quality of life issues. The subcommittee agreed to meet as needed, approximately once a month.

Members: Subcommittee Chair: Bill Spears, Community Health Associates, Alaina Bidlack, Child Support Enforcement Agency; Caitlin Botschner, Warren County Soil and Water Conservation District; Lauren Cavanaugh, Warren County Human Services; Dianna Glenn, Warren County Combined Health District; Tommy Koopman, Mental Health Recovery Services of Warren and Clinton Counties; Matt Obringer, Warren County Regional Planning Commission; Kathy Michelich, Ohio State University Extension Services; Lori Smyth, Warren County Combined Health District; and Shaun Stevens, Warren County Soil and Water Conservation District. Members of the Planning Committee often attended Data Subcommittee meetings.
The Steering Committee guided the Forces of Change Assessment. This assessment focused on identifying forces such as legislation, technology, and other impending changes that affect the context in which the community and its community health system operate.

Members: Subcommittee Chair: Duane Stansbury, Warren County Combined Health District, Chris Balster, Warren County Combined Health District, Stephen Barr, Warren County Board of Health, Carla Clasen, Community Health Associates, Tammy Cranmer, Warren County Combined Health District, Tom Isaacs, Warren County Education Service Center, Kathy Michelich, Ohio State University Extension Services, Lori Smyth, Warren County Combined Health District, Bill Spears, Community Health Associates

MAPP Committee Priorities for the Community Assessment

The second meeting of the MAPP Committee was held on March 20, 2015. The purpose of the meeting was to identify important topics and issues to direct the focus of the community health assessment. A brief presentation about the Determinants of Health Model was given to help emphasize that the goal of the community assessment is to use a broad definition of health that includes social and environmental determinants of health when identifying community health topics and issues.

A qualitative data collection process called Community Conversations was used to support collaborative identification of ideas and topics. Community Conversations is a facilitated story-boarding process that uses a “sticky wall” (a sheet of parachute cloth coated with adhesive) in a group process to promote group collaboration to reach consensus on ideas.

The MAPP Committee was divided into five small teams of four people each. Teams were asked to collaborate on topics and issues that the team agreed should be an important focus on for the community health assessment. The teams were given five cards each on which they were asked to write individual issues or topics on which they believed should be included in the assessment. Next, a member from each team was invited, one at a time, to place one of their ideas on the sticky wall. As the cards were placed on the sticky wall the facilitator asked all members present to determine whether the cards were similar to other ideas and should be grouped together in a “category.” Individual teams were then invited to place a second topic or issue on the sticky wall, and again the large group placed new ideas into existing or new categories. New categories were started as needed. The process continued until all ideas were on the wall and grouped into categories. At the end of this step, eight categories of issues and topics for the Community Health Status Assessment were on the sticky wall.

Next, the facilitator worked with the large group to reach consensus on a name for each of the eight categories. After the categories were named, teams were assigned one or more categories and asked to rank the cards on the sticky wall in priority from most important to least important. Then the facilitator worked with the large group to review each category ranking. This was accomplished by discussing the topics to come to a consensus about the priorities for each category. The final step in the process was for each member of the large group to use five sticky dots to vote on the topics they deemed most important.

The eight categories and the topics within each category are listed below. The numbers in parenthesis are the numbers of votes given each topic.

Category: Safe Communities. Topics: Safe Communities – crime; Awareness and safety for victims/survivors of abuse and sexual assault (2); Safe schools; Elder abuse awareness, services (2).
**Category: Access to Services.** **Topics:** Access to health care (general) for certain populations (3); Access to quality physical, mental health care (1); Access to and utilization of preventative care (3); Access to food systems (4); Capturing access for functional needs population; Access to education for all populations; Strong safety net

**Category: Health and Wellness.** **Topics:** Thriving healthy families (2); Mental/behavioral health services (3); Drug and alcohol abuse/misuse (6); Responsive, supportive, non-judgmental community (2); Community wellness infrastructure (2); Knowledge of healthy food.

**Category: Transportation.** **Topics:** Transportation (5); Access to readily available, affordable, and reliable transportation (1); Transportation to services/obligations

**Category: Resource Identification and Collaboration.** **Topics:** Identifying community resources (5); Resources for older adults and families; Method to link community resources 24/7 (3); Warren Co. app for resource identification; Coordination of support and health services (1); Interconnectivity of network resources (1).

**Category: Employment.** **Topics:** Employment opportunities across the life span (1); Career opportunities (1); Long work commutes

**Category: Environmental Health and Design.** **Topics:** Environmental health (air quality, physical design, parks, clean water (7); Good and safe air quality (2); Community design to accommodate elderly and disabled (2); Community preparedness for all hazards (1); Safe environment/ Environmental hazards.

**Category: Funding.** **Topics:** Funding for services (3); Finding funding for new infrastructure (3)

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**Community Themes and Strengths Assessment**

The Community Partnerships Subcommittee guided the **Community Themes and Strengths Assessment.** This assessment is designed to provide a deep understanding of the issues that residents of Warren County feel are important.

The Community Partnerships Subcommittee held monthly meetings with additional meetings as needed starting in April, 2015 with the purpose of developing strategies to collect information about community themes and strengths. The subcommittee agreed that using the community conversations method used in the MAPP committee meeting would be a good way to learn what residents of Warren County believe are important topics and issues that form the themes and strengths of their communities. The subcommittee agreed that asking “What would make your community a better healthier place to live” is a general question that would allow participants freedom to think broadly about the resources they would like to see and what is good about Warren County.

Subcommittee members first discussed what types of groups would provide a broad cross-section of residents of Warren County. After groups were suggested members were asked to commit to organizing one or more meetings with the groups identified. A session was organized to teach the subcommittee members how to facilitate the Community Conversations process. Members were encouraged to work in teams of two to provide both support in conducting the Community Conversation process and to have a note-taker available to record pertinent information.

Making arrangements with the identified groups for Community Themes and Strengths meetings proved more challenging than originally anticipated but subcommittee members were able to set up several...
meetings. Seven groups met to provide information. Three groups were with teenagers. Four groups were with adults ages twenty through the eighties. All groups included both females and males. More than 60 people participated to provide input. The groups represented a reasonable cross-section of people from across Warren County. However, the subcommittee was not satisfied with the number of meetings they had been able to organize but members were finding it difficult to find other groups willing to set aside an hour and a half to provide information for the community assessment.

The subcommittee decided to design a questionnaire based on the information collected in the seven Community Conversation meetings. The questionnaire was designed and pre-tested by the subcommittee members. After minor revisions, members of the subcommittee distributed the questionnaire at several points of service around the county. The Warren County Fair was held in September, 2015, and representatives from both Warren County Combined Health Department and Solutions distributed questionnaires from their booths at the fair. A total of 200 questionnaires were completed. Analysis of the demographic characteristics of the individuals who completed the questionnaire suggest that the respondents represent all age groups, both sexes, and education groups in Warren County.

**Community Care System Assessment (CCSA)**

The Community Resources Subcommittee guided the Community Care System Assessment (CCSA). This assessment focused on all of the organizations and entities that contribute to community health in Warren County. This Assessment is called the Local Public Health System Assessment in the MAPP documentation. The name was changed to the Community Care System Assessment to relate better to the organizations in Warren County that provide community health services that may not identify their work as public health.

The committee members reviewed the National Public Health Performance Standard Assessment Instrument developed by the Association of State and Territorial Health Officials (ASTHO) for guidelines for this assessment. After reviewing the instrument the perception of members of the committee was that many people who work in local agencies that provide community health services do not think of their organization as part of a county-wide system and may not have knowledge of the Ten Essential Services of Public Health. Ultimately, it was decided that the best way to assess the Community Care System would be to conduct an abbreviated survey to collect information from agency personnel about the services their agency offers and ask them to assess how well the Ten Essential Public Health Services are met in Warren County. The tool was pretested and modified to be easily completed by the intended respondents.

Warren County United Way previously maintained a list of organizations called First Call for Help. This list includes 151 agencies that are grouped into 32 categories. The committee decided that this list would be a good way to identify a pool of respondents for the survey. The list was reviewed by committee members and a few additional organizations were added.
The survey was entered into Qualtrics on-line survey software system. An email was sent to all the agencies in the updated First Call for Help list that included a link to the survey. A follow-up request was sent two weeks and four weeks after the initial request in an attempt to improve the response rate.

**Forces of Change Assessment**

The steering committee guided the Forces of Change Assessment. This assessment focused on identifying forces such as legislation, technology, and other impending changes that affect the context in which the community and its community health system operate. The steering committee met on March 11, 2015 to discuss the Forces of Change Assessment. The group agreed that if possible it would be beneficial to get as many heads of agencies, elected officials, and other community leaders to offer their opinions for the Forces of Change Assessment. Mr. Stansbury indicated that he had e-mail lists of groups that were appropriate for this assessment. To optimize the targeted population’s time it was suggested that the county be divided into four areas and one Forces of Change meeting be held in each area. Mr. Stansbury offered to make contact with community leaders he is familiar with in each area to find sites for the meetings.

The subcommittee decided to use the Community Conversation qualitative data collection process to obtain information about the forces of change in Warren County. The meetings would be conducted in June. Locations were identified and scheduled in Lebanon at Warren County Combined Health Department on June 2nd, Mason Municipal Center on June 4th, Harlan Township Fire Department on June 9th, and Franklin Fire Department on June 11th. The turnout for the meetings varied, nine people participated in the June 2nd meeting in Lebanon, four people participated at the June 4th meeting in Mason, and one person came to the June 9th meeting in Harlan Township. No one came to the June 11th meeting in Franklin. The last Forces of Change meeting was a combined meeting of members of the Warren County Board of Health and the MAPP Steering Committee on August 30th. Eight people participated in this meeting.

**Community Health Status Assessment**

The Community Health Status Assessment was guided by the data subcommittee. This subcommittee reviewed the list of categories and topics from the MAPP Community meeting. The group discussed potential sources of data to address the topics on the list.
The subcommittee discussed the need for data to show changes in trends for community health indicators over time. There was a consensus that a five year period would be sufficient to demonstrate recent changes in measure, and that data older than five years would no longer be relevant. In February 2015 the most current data available in most cases was 2013. The subcommittee decided to use the years 2009 to 2013 as the principle study period. When 2014 data were available it would be included in the report.

The Planning Committee worked with Community Health Associates to determine which county or counties would be the best comparison for Warren County. Data for several community characteristics were obtained from the 2013 American Community Survey, five year estimate. The measures included total population for 2000, 2010 and 2013, median family income, high school and college graduation rate, race composition statistics, the ratio of income to poverty, median age data, and number of female single head of household. Inspection of this data for counties of similar size determined that Delaware and Medina counties are most similar to Warren County. Both counties are suburban counties; Delaware County is conterminous just north of Franklin County, and Medina County is adjacent to Akron County on the West.

Warren County Combined Health District has access to the Ohio Department of Health Gateway that provides access to vital statistics, cancer incidence, and Behavioral Risk Factor Surveillance System data sets.

In 2013 the population of Warren County was 215,274. With 91% of the population White there are no large minority groups. To learn if there are social and health disparities within the county it was decided to create eight areas within the county by aggregating groups of the 33 census tracts to create eight areas that are geographically and socioeconomically similar.

_Mortality and birth files_ for the years 2009 to 2015 were obtained from Ohio Department of Health. The IBM SPSS Statistical Package Version 21 was used to create tables for health measures for Ohio, Delaware, Medina, and Warren Counties, and the eight Warren County areas. When appropriate these data were combined with population data to create rates. Age adjusted cause specific mortality rates were calculated using the 2000 standard population.

The _Behavioral Risk Factor Surveillance System (BRFSS)_ provides estimates of health risk factors, prevalence rates for health conditions, and use of prevention services. The sample size is large enough to make these estimates for the state and large counties. Warren, Medina and Delaware Counties do not have populations large enough to warrant a sample size large enough to make estimates for their populations. By combining multiple years of data the sample size can be increased to allow estimates for many measures. The Centers for Disease Control and Prevention survey statisticians provide instruction on how to combine multiple years of data.\textsuperscript{91} For this community assessment, data for 2007 to 2010 and 2011 to 2013 were combined to provide county level estimates.

The IBM SPSS Statistical Software, Version 21 includes a complex samples module to use for analysis of complex probability samples using sample weights with stratum and primary sampling unit variables. Output from the complex samples module provides the estimated percent and number of each response, the unweighted sample count, and confidence intervals to be used of statistical comparisons.
Most of the community characteristics data for this community health assessment were obtained from the U. S. Census website (www.census.gov). The American Fact Finder application was used to retrieve data collected as part of the ongoing American Community Survey for the years 2009 and 2013. To get the most reliable estimates five year estimates were used. Data were retrieved for Ohio, Delaware, Medina, and Warren Counties, and all 33 Warren County census tracts. Data for the 33 Warren County census tracts were aggregated to create estimates for the eight Warren County areas. All tables based on American Community Survey data contain margins of error statistics to allow users to determine the reliability of the estimates.

Several of the topics on the list have been covered in the Warren County Family and Children First County (FCFC) Reports over the past several years. Kathy Michelich with assistance from other county agency representatives on this or other subcommittees helped produce the reports. In most cases, including information in the Community Health status assessment that had been covered in FCFC reports would not be duplication because the data would be updated from the last time it was presented in the FCFC report. Kathy provide a spread sheet with a large number of tables and links to data sources to assist in finding data for safe communities, transportation, access to services, and other indicators. Other data sources were identified for some measures, e.g. numbers of healthcare providers and numbers and rates for sexually transmitted diseases. These sources provided aggregate data by year.
References

12. Electricity Dependent Senior information source is: http://www.phype.org/empowermp/Pages/default.aspx.
18. The Student Drug Use Survey: is administered biannually by the Coalition for a Drug Free Greater Cincinnati biannually to school children in grades 7 through 12. The survey has been administered in Warren County since 2008. The survey was also administered to students in Butler and Clermont Counties, and these counties are used as a comparison to Warren County.

In 2008, 7,600 Warren County students participated in the survey, 3,000 in 2010, 6,200 participated in 2012, and in 2014, 14,600 students participated (Table 2.3.8, appendix). In addition to attitudes toward and use of substances like alcohol, tobacco, and marijuana, the survey asks about feeling safe at school.

32. Lisa A. Grohskopf, MD; Leslie Z. Sokolow, MSc, MPH; Sonja J. Olsen, PhD; Joseph S. Bresee, MD; Karen R. Broder, MD; Ruth A. K
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