Health & Health Care Issues in the Finger Lakes Region

A Chart Book
Vital Statistics

Each Day in 2011:
The Finger Lakes Region

Marriages: 21

Divorces: 11

Population: 1,281,241

Deaths: 32

- Heart Disease: 8
- COPD: 17
- Pneumonia: 1
- Alzheimer’s Disease: 0.8
- HIV / AIDS: 0.1

- Cerebrovascular Disease: 1
- Unintentional Injury: 1

Cancers: 7

- Suicide: 0.3

Suicide: 0.3

Pregnancies: 50

- Births: 58
- Teen Pregnancies: 5.4
- Induced Abortions: 10
- Spontaneous Fetal Deaths: 1


*2009-2011 3 year average
Health Care Utilization

Each Day in 2011:
The Finger Lakes Region

POPULATION
(1,281,241)

BIRTHS

ED

PHYSICIAN
OFFICE

SNF

HOSPITAL INPATIENTS
(588)

HOME HEALTH

LAW ENFORCEMENT

CUSTODIAL CARE

EXPRED

INPATIENT
PSYCHIATRIC CARE

HOSPICE

HOME

FACILITY

INPT PSYCH

ALC/SA REHAB

Source: NYS SPARCS DATA, SNF Cost Report Data,
Multiple Payer Claims Database.
# Table of Contents

<table>
<thead>
<tr>
<th>Page #</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>v</td>
<td>Table of Contents</td>
</tr>
<tr>
<td>ix</td>
<td>Executive Summary</td>
</tr>
<tr>
<td>1</td>
<td>Introduction</td>
</tr>
<tr>
<td>5</td>
<td>Demographics – Influences in Health Care Analysis</td>
</tr>
<tr>
<td></td>
<td>• Population, Population Trends</td>
</tr>
<tr>
<td></td>
<td>• Changes in Population by Race/Ethnicity</td>
</tr>
<tr>
<td></td>
<td>• Birth Trend Line</td>
</tr>
<tr>
<td></td>
<td>• Population Pyramids – boomers</td>
</tr>
<tr>
<td></td>
<td>• Household Structure/Single Parents and Single Seniors</td>
</tr>
<tr>
<td></td>
<td>• Lost Males</td>
</tr>
<tr>
<td></td>
<td>• Poverty</td>
</tr>
<tr>
<td></td>
<td>• Personal Income Decline</td>
</tr>
<tr>
<td></td>
<td>• English as Second Language</td>
</tr>
<tr>
<td></td>
<td>• SES</td>
</tr>
<tr>
<td></td>
<td>• SES by Race/Ethnicity</td>
</tr>
<tr>
<td>23</td>
<td>Health of the Population</td>
</tr>
<tr>
<td>25</td>
<td>County Health Priorities</td>
</tr>
<tr>
<td></td>
<td>Behaviors</td>
</tr>
<tr>
<td></td>
<td>• Obesity</td>
</tr>
<tr>
<td></td>
<td>• Smoking</td>
</tr>
<tr>
<td></td>
<td>Disparities</td>
</tr>
<tr>
<td></td>
<td>• Disparities - Race/Ethnicity and Race/Ethnicity &amp; SES</td>
</tr>
<tr>
<td></td>
<td>• Disparities – Geography</td>
</tr>
<tr>
<td></td>
<td>• Disparities – SES</td>
</tr>
<tr>
<td></td>
<td>• Disparities – Male/Female</td>
</tr>
<tr>
<td>37</td>
<td>Mortality/Morbidity</td>
</tr>
<tr>
<td></td>
<td>• Major Causes of Mortality</td>
</tr>
<tr>
<td></td>
<td>• Mortality Trends</td>
</tr>
<tr>
<td></td>
<td>• Mortality Cause by Age</td>
</tr>
<tr>
<td></td>
<td>• Mortality by Underlying Causes</td>
</tr>
<tr>
<td></td>
<td>• Years of Potential Life Lost</td>
</tr>
<tr>
<td></td>
<td>• Cancer vs. Heart</td>
</tr>
<tr>
<td></td>
<td>• Cancer Incidence vs. Mortality</td>
</tr>
<tr>
<td></td>
<td>• Heart/Metabolic Syndrome</td>
</tr>
<tr>
<td></td>
<td>• Hypertension</td>
</tr>
<tr>
<td></td>
<td>• Respiratory Diseases</td>
</tr>
<tr>
<td></td>
<td>• Respiratory Disease Prevention and Immunization</td>
</tr>
<tr>
<td>Page #</td>
<td>Topic</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td></td>
<td><strong>Mortality/Morbidity (continued)</strong></td>
</tr>
<tr>
<td></td>
<td>• Injury</td>
</tr>
<tr>
<td></td>
<td>• Diabetes</td>
</tr>
<tr>
<td></td>
<td><strong>Mental Behavioral Health</strong></td>
</tr>
<tr>
<td></td>
<td>• Mental Health</td>
</tr>
<tr>
<td></td>
<td>• Mental Health as co-morbidity</td>
</tr>
<tr>
<td></td>
<td>• Alzheimer’s Disease &amp; Dementia</td>
</tr>
<tr>
<td></td>
<td>• Substance Abuse</td>
</tr>
<tr>
<td>57</td>
<td><strong>Maternal &amp; Child Health</strong></td>
</tr>
<tr>
<td></td>
<td>• Pregnancies</td>
</tr>
<tr>
<td></td>
<td>• Outcome of Pregnancy</td>
</tr>
<tr>
<td></td>
<td>• Pregnancies by Age</td>
</tr>
<tr>
<td></td>
<td>• Teen Pregnancies</td>
</tr>
<tr>
<td></td>
<td>• Pregnancies Rate by Race/Ethnicity &amp; SES</td>
</tr>
<tr>
<td></td>
<td>• Maternal Statistics Issue</td>
</tr>
<tr>
<td>65</td>
<td><strong>Dental Health</strong></td>
</tr>
<tr>
<td></td>
<td>Oral Health</td>
</tr>
<tr>
<td>73</td>
<td><strong>Patient Experience</strong></td>
</tr>
<tr>
<td></td>
<td>• Primary Care Shortage/Access</td>
</tr>
<tr>
<td></td>
<td>• Medicaid Access</td>
</tr>
<tr>
<td></td>
<td>• Mental Health Shortage/Access</td>
</tr>
<tr>
<td></td>
<td>• Dental Shortage/Access</td>
</tr>
<tr>
<td></td>
<td>• Access to Dental Care</td>
</tr>
<tr>
<td></td>
<td>• Fluoridation</td>
</tr>
<tr>
<td></td>
<td>• Early Prenatal Care and Adequacy of Prenatal Care</td>
</tr>
<tr>
<td></td>
<td>• Vaginal Birth After Caesarian (VBAC)</td>
</tr>
<tr>
<td></td>
<td>• Low Birth Weight</td>
</tr>
<tr>
<td></td>
<td>• Infant Mortality</td>
</tr>
<tr>
<td></td>
<td>• Life Course</td>
</tr>
<tr>
<td>77</td>
<td><strong>The Cost of Health Care</strong></td>
</tr>
<tr>
<td></td>
<td>• Cost of Care</td>
</tr>
<tr>
<td></td>
<td>• Federal Employee Health Benefits Program as Premiums</td>
</tr>
<tr>
<td></td>
<td>• Hospital Utilization</td>
</tr>
<tr>
<td></td>
<td>• Major Causes of Hospitalization</td>
</tr>
<tr>
<td></td>
<td>• Signatures</td>
</tr>
<tr>
<td></td>
<td>• Hospital Use</td>
</tr>
<tr>
<td></td>
<td>• Prevention Quality Indicators (PQIs)</td>
</tr>
<tr>
<td></td>
<td>• PQI by Race/Ethnicity and SES</td>
</tr>
<tr>
<td></td>
<td>• Cost of PQIs</td>
</tr>
<tr>
<td></td>
<td>• Re-Admissions</td>
</tr>
<tr>
<td></td>
<td>• “Frequent Fliers”</td>
</tr>
<tr>
<td></td>
<td>• Emergency Department Use Rate &amp; Trend</td>
</tr>
<tr>
<td></td>
<td>• Physician Use</td>
</tr>
<tr>
<td>Page #</td>
<td>Topic</td>
</tr>
<tr>
<td>-------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>111</td>
<td>Health Care Resource Issues</td>
</tr>
<tr>
<td></td>
<td>• Physician Supply</td>
</tr>
<tr>
<td></td>
<td>• Acute Hospital Bed Resources</td>
</tr>
<tr>
<td></td>
<td>• Mental Health Service Resources</td>
</tr>
<tr>
<td></td>
<td>• Long Term Care Resources</td>
</tr>
<tr>
<td>119</td>
<td>Conclusion</td>
</tr>
<tr>
<td>121</td>
<td>References</td>
</tr>
<tr>
<td>124</td>
<td>Regional Profile</td>
</tr>
<tr>
<td>125</td>
<td>APPENDIX</td>
</tr>
<tr>
<td></td>
<td>Age Adjustment</td>
</tr>
<tr>
<td></td>
<td>Hypertension Measurement</td>
</tr>
<tr>
<td></td>
<td>Special Populations</td>
</tr>
<tr>
<td></td>
<td>Life Course Framework</td>
</tr>
<tr>
<td></td>
<td>Triple Aim</td>
</tr>
<tr>
<td></td>
<td>• What Is It?</td>
</tr>
<tr>
<td></td>
<td>• Measures of Population Health</td>
</tr>
<tr>
<td></td>
<td>• Measures of Cost</td>
</tr>
<tr>
<td></td>
<td>• Measures of Patient Experience</td>
</tr>
<tr>
<td></td>
<td>• Determinants of Health</td>
</tr>
<tr>
<td></td>
<td>• Determinants – Medical</td>
</tr>
<tr>
<td></td>
<td>• Determinants – Environment</td>
</tr>
<tr>
<td></td>
<td>• Determinants – Social</td>
</tr>
<tr>
<td></td>
<td>• Determinants – Behavior</td>
</tr>
<tr>
<td></td>
<td>• Determinants – Genetics</td>
</tr>
</tbody>
</table>
Executive Summary

Finger Lakes Health Systems Agency is a convener of regional stakeholders seeking to improve the health of residents of the Finger Lakes region and is a recognized provider of objective health-related data from which such stakeholders can analyze health problems and design interventions. This Chartbook provides foundational data and analytics. In contrast to prior data scans, however, this Chartbook does not seek to describe the health status and health system of the region. Rather, it illustrates issues and concerns about the region’s health and healthcare.

The chart book is organized to focus on the Triple Aim of simultaneously:
• Improving population health
• Improving the patient experience of care, and
• Reducing per capita cost.

It also seeks to provide information not just on health and healthcare, but also on the Determinants of Health that include behaviors, physical and social environment and genetics in addition to medical care.

Demographic Context

Although there are sections of this region that are still growing, overall the Finger Lakes region is experiencing a declining population. That population is also aging, and is becoming more diverse throughout the region.

These trends have substantial implications for planning and delivering medical care. The aging population will inevitably require more health services. The projected amount of growth in service demand due to aging will not, however, allow the region to avoid shrinkage of our existing institutionally-focused service system. There will be need to transform the care delivery system toward an ambulatory service-based system, coordinated with community support services and agencies.
• At the same time as demand grows due to an aging population, the availability of working-age caregivers is declining.

There are residents living in poverty and near poverty throughout the region; but especially in Rochester, in much of the Southern subarea and in eastern Wayne and southern Livingston counties.
• While more than half of Rochester residents live in or near poverty, they represent less than one-third of the region’s residents in poverty or near-poverty.
• Socio-economic differences are associated with disparities in access to care and health outcomes.
• There is an overlap between low socio-economic status and race/ethnicity but there still is an independent disparity rising from one’s racial/ethnic heritage.
• Compared to the national average, the region’s wealth is declining and poverty is increasing.
As the region’s population becomes more diverse, communication between health providers and patient becomes more complex. Nearly 10% of the population speak other than English as their primary tongue. Almost 17% of the population are of African American or Latino cultures; while English-speaking, they still may have different cultural perspectives on their healthcare interventions, as may many non-Latino whites.

- *As communication is critically important to delivery of quality healthcare, providers must have mechanisms to communicate reliability with their patients in confidential and professional manner.*

### Health Issues

Heart disease and cancer are the two dominant health problems, accounting for nearly 50% of deaths and 14% of inpatient hospitalizations. These diseases are on very different trajectories, however; heart disease has been declining for 40 years, while cancer has increased over that time, perhaps only recently peaking. Cancer has recently overtaken heart disease as the #1 cause of death.

Heart disease, along with stroke, hypertension and diabetes, are associated with a set of conditions known as the metabolic syndrome. Many of the conditions in the metabolic syndrome are controllable, sure as high blood lipid levels (e.g., high cholesterol).

- **Hypertension (high blood pressure), a component of the syndrome, is the target of a health improvement initiative in Monroe County. There is a need and desire to expand that initiative to the balance of the region.**
- **There is a need to expand screening for cancer. A primary barrier to increased screening may be lack of access to primary care.**

Injuries are the predominant reason patients go to the Emergency Department. Substantial strides have been made in reducing injuries due to motor vehicle accidents.

- **There is need for programs to reduce slip and falls.**

Respiratory illnesses, including COPD, flu and pneumonia and lung cancer, are the next most prevalent cause of ED visits. Many areas of the region, but particularly the Southern subarea counties, exhibit excessive respiratory problems but adverse behaviors such as high smoking rates and low rates of influenza and pneumonia vaccination.

- **Tobacco control programs and encouragement of vaccination for preventable diseases are needed.**

Behavioral Health problems (mental health, alcohol and substance abuse) combined are also potent causes of inpatient and ED use, and are contributing causes of many other conditions. Alzheimer’s and other dementias are the sixth leading cause of hospitalization. Almost 18% of admissions for a physical ailment also have a mental health co-morbidity, and 20% of mental health and substance abuse hospitalizations overlap. There are substantial disparities in services used by socioeconomic status level.

- **There is substantial need for better coordination of physical health and behavioral health treatment services.**
- **It would be valuable to co-locate behavioral health and physical health services.**
The region is experiencing a declining pregnancy rate, especially among young women. Both teens and women in their 20s are reducing their pregnancies or delaying them into their 30s. For all areas in the region, the portion of pregnancies seen by physicians in the first trimester and receiving optimal prenatal care over the course of the pregnancy are less than national goals. Births by caesarian section are rising.

Studies show that care of mothers before and between pregnancies (pre- and intra-conceptual care) and parenting skills training pay dividends in the health of both the mother, the infant, and eventual chronic disease incidence of the infant as an adult.

- Supportive parenting programs such as Nurse Home Visitation should be encouraged.
- Professional discussion and consensus on appropriate use of c-section for delivery is needed.
- Health practitioners should encourage all pregnant mothers to attend prenatal care throughout their pregnancy.

Many children in the region experience cavities before age 10. Of those aged 65 and older, 20—25% have no natural teeth remaining. Yet only 75% of adults have seen a dentist within the past year.

Few private dentists see patients with Medicaid due to the low Medicaid fee schedule; only public settings like community health centers and hospitals see appreciable numbers of Medicaid oral health clients. Additionally, about 10% of the Finger Lakes are classified as dental personnel shortage areas. There remain areas without fluoridated water supplies.

- New York State should increase the Medicaid dental fee schedule to open access to private dental practitioners, particularly within dental shortage areas.

Health System Issues

About one-third of the region’s population live in a Primary Care Health Professional Shortage Area. Further, the incidence of Prevention Quality Indicator (PQI) hospital and emergency room admissions is a strong indicator of a under-use of primary care. PQIs also consume nearly $200 million and over 250 filled hospital beds per year—a potentially avoidable expenditure. Readmissions to the hospitals and the number of multi-use patients (“frequent fliers”) suggest the need for better primary care and community supportive services connections for those discharged from hospitals.

- The region should continue to recruit primary care physicians.

Occupancy rates below 45% indicate there are too many acute hospital beds in the region, particularly outside of Monroe County. While empty beds may not generate substantial staffing costs, nonetheless, there is overhead cost of such built capacity that can threaten the fiscal viability of low-occupancy hospitals and with that the hospitals’ ability to provide needed services. Closure of a community hospital can result in loss of access to medical services in rural areas and expense to build new capacity in urban facilities.
• Continue to encourage affiliation of regional hospitals with referral centers to ensure access to care where the population lives and works.
• There is substantial need for better coordination and integration of physical health and behavioral health services.

The population, as it ages, is indicating its desire to “age in place” in the community rather than in an institutional setting such as a nursing home. Further, with the impending wave of aged “baby boomers” the present long-term care system based in nursing homes is financially unsustainable.
• Funding mechanisms must be developed to support the transition of long-term care services from an institutional to a community-based focus.
• Training and funding must evolve to support expansion of home health and other geriatric care staff.

The Finger Lakes regional health care system exhibits low costs compared to other areas in the state and nation. However, there are potentially avoidable expenditures that can be reduced
• Re-admissions to hospitals
• Low-acuity Emergency Department visits
• “Frequent flier” inpatient and Emergency Department use.
Introduction

The Finger Lakes Health Systems Agency (FLHSA) is a convener of regional stakeholders seeking to improve the health of residents of the Finger Lakes Region and is a recognized provider of objective health-related data for use by such stakeholders. In concert with the accompanying Regional Profile, this Chartbook provides foundational data and analytics from which the community can analyze the health and health care needs of the region and its communities and design interventions.

In contrast to prior health scans, this document does not seek to describe the health status and health system of the Region. Rather, it illustrates issues and concerns about regional health and healthcare to provide a context for analysis of how to improve the region’s health. Further, it provides a baseline of information from which stakeholder groups including the FLHSA-convened Regional Commission on Community Health Improvement can prioritize their efforts.

In the pages to follow, this Chartbook:

• Examines population demographics that influence health care needs.
• Examines health behaviors, perhaps the most important influence on an individual’s health.
• Raises the important issue of disparities in health, noting that disparities occur not only between race/ethnic populations but also by geography, socio-economic status and gender.
• Provides information on major health issues, including maternal and infant health, oral health and mental health.
• Notes the important issue of the overlap between physical and mental health issues and the need for integration of services.
• Provides information on the patient experience of care, including quality of care and access to care.
• Lays out statistics on the cost of care in this region.
• Discusses health care resource issues.
The Triple Aim

This document is organized to focus on the Triple Aim of simultaneously

- Improving population health
- Improving the patient experience of care, and
- Reducing per capita cost.

Developed by the Institute for Healthcare Improvement (IHI), the Triple AIM has been adopted by many organizations around the world. It has also been adopted by FLHSA as its organizing framework for reporting community health measures and metrics.

A set of health indicators is essential to this work. As the community identifies priority areas for improving health and health care, metrics will be developed to measure our progress as a community in achieving the Triple Aim.

See the Appendix for additional discussion about measurement of population health, experience of care and per capita cost.
Determinants of Health

Critical to success in achieving the Triple Aim is recognition that increases and improvements in medical care by themselves will not result in the improvement in the health of the residents of the Finger Lakes Region. In studies by physician and epidemiologist J Michael McGinnis and colleagues, medical care is estimated to have a relatively small impact (10%) on the overall health of the population. Rather, health behaviors such as smoking, along with genetics, environment and social circumstances, are more important determinants of health.

McGinnis argued that more important than these factors alone are the influences in play when the domains intersect. Whether a gene is expressed can be determined by environmental exposures or behaviors. The nature and consequences of behavioral choices are affected by our social circumstances. Our genetic predispositions affect the health care we need, and our social circumstances affect the health care we receive (McGinnis, Williams-Russo, Knickman, 2002).

See the Appendix for additional discussion about the determinants of health.
Demographics

Demographics set the stage for issues in health and healthcare delivery. The size of the population, its age structure, and changes in population over time affect how much health care capacity is needed. Unfortunately, socio-economic status, race/ethnicity and poverty generate disparities in access to care and along with language can affect the quality of care received.
The Finger Lakes region has a population of 1,275,000 persons. Approximately 745,000 (60%) reside in Monroe County, 325,000 (25%) in the Central Subarea and 205,000 (15%) in the Southern Subarea.
Monroe County population increased between 2000 and 2010 but is projected to decline below the 1990 level by 2040. The Central Subarea is projected to grow into 2020 and then decline to the 2000 level by 2040. The Southern Subarea has shown and is projected to continue to show a decline throughout the 1990 – 2040 period.

<table>
<thead>
<tr>
<th></th>
<th>Census</th>
<th>Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1990</td>
<td>2000</td>
</tr>
<tr>
<td>Central Subarea</td>
<td>303,089</td>
<td>316,280</td>
</tr>
<tr>
<td>Monroe County</td>
<td>713,968</td>
<td>735,343</td>
</tr>
<tr>
<td>Southern Subarea</td>
<td>212,945</td>
<td>209,020</td>
</tr>
<tr>
<td>Finger Lakes Region</td>
<td>1,230,002</td>
<td>1,260,643</td>
</tr>
</tbody>
</table>

Data Sources: U.S. Census Bureau, Decennial Censuses; Cornell University, Program on Applied Demographics, Population Projections
In the past decade, there has been a decline in the White population in much of the region and a growth of racial/ethnic minority populations in all areas, representing about a 30% increase in racial/ethnic population over the decade 2000 to 2010.
Increasing Cultural Diversity

Population groups other than White, non-Latino comprise over 53% of the city of Rochester population, but only about 5% to 10% in other parts of the region. The region has a lower level of diversity than Upstate New York or the nation as a whole.

Source: U.S Census Bureau, 2010 Decennial Census (SF1, SF2)
**Age Structure**

Generational fluctuations in the number of births have a major impact on the age distribution of the population. This, in turn, may impact the populations' need for a variety of healthcare. The “baby bust” generation of the WWI era and the Depression are now in their 80s and older, an age at which long term care services are demanded; thus the current demand for these services is relatively modest. Beginning in 2025, the surge in population that is the post WWII “baby boom” will reach the age of 80. Thus, we have only about a decade to prepare for a possible explosion in demand for elder-care services. At the same time, the number of individuals in their 20s and 30s, who might provide their care, will be relatively low due to a drop in number of births in the 1990 and 2000 decades.

The Finger Lakes Region mirrors many of the national trends, but has the additional effect of out-migration of many working-age persons.

![Births in the US & Finger Lakes, Actual & Projected](chart.png)

*Data Source: U.S. Census Bureau, Cornell University Population Projections*
The ratio of the number of people younger and older than working age (18–64) compared to those of working age -- the dependency ratio -- is increasing, with implications for the demand for healthcare services as well as our capacity to deliver these services. In 2010 there were 23 senior citizens per 100 working age adults, but by 2040 that ratio will reach 35.

The inverse of the dependency ratio in 2010 shows that there were 4.3 working age individuals per senior but by 2040 there will only be 2.8 adults 18 to 64 years old per senior if trends continue.
There is near-parity in the number of males and females among younger individuals. Over time, more males die than females, therefore the ratio of females to males increases as the population ages.

Of continuing concern, there is a particular deficit of young adult males – an increase in the female to male ratio - in the African American community, thought to be due to disproportionate homicides and incarceration. This deficit increases the number of single-parent households, and decreases male role models.

Source: US Census Bureau; calculated by FLHSA
Population in Group Quarters by Age and Race

There are fewer young adult males per females in the African American community (household population) compared to other races/ethnicities. Many more Black males than Black females reside in group quarters, a Census designation for institutional (eg prison) and non-institutional (eg college dormitory) locations not in the general household population.

Almost 4% of the African American male population reside in college dormitories, similar to the portion of African American females. As much as 20% of African American males, however, resided in correctional facilities in 2010, compared to less than 1% of African American females.
Household Composition

The “traditional” family of a husband-wife couple with their children living with them is a small part of households in all areas – less than one in ten households in the city of Rochester in 2010, and one-fifth or less of the households in the rest of the region.

In the city of Rochester more than half (56.8%) of the households in 2010 were either single parent households or persons living alone.

As we plan healthcare services, we need to be aware of the changing nature of patients’ personal support networks and how that impacts access to care and the demand for community based services.

### Household Structure 2000 and 2010

<table>
<thead>
<tr>
<th>Household Type</th>
<th>Rochester</th>
<th>Balance of Monroe</th>
<th>Central Subarea</th>
<th>Southern Subarea</th>
<th>Finger Lakes Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Husband-wife families with own children 2000</td>
<td>12.3</td>
<td>26.6</td>
<td>23.1</td>
<td>22.0</td>
<td>22.8</td>
</tr>
<tr>
<td>Husband-wife families with own children 2010</td>
<td>8.0</td>
<td>20.9</td>
<td>18.0</td>
<td>16.8</td>
<td>17.8</td>
</tr>
<tr>
<td>Husband-wife families, no own children (2000)</td>
<td>13.5</td>
<td>31.7</td>
<td>30.7</td>
<td>29.9</td>
<td>27.8</td>
</tr>
<tr>
<td>Husband-wife families, no own children (2010)</td>
<td>12.8</td>
<td>31.3</td>
<td>32.4</td>
<td>30.2</td>
<td>28.3</td>
</tr>
<tr>
<td>Single parent families with own children (2000)</td>
<td>18.6</td>
<td>6.5</td>
<td>9.3</td>
<td>10.1</td>
<td>10.0</td>
</tr>
<tr>
<td>Single parent families with own children (2010)</td>
<td>18.3</td>
<td>7.4</td>
<td>9.0</td>
<td>10.2</td>
<td>10.1</td>
</tr>
<tr>
<td>Other families, no own children (2000)</td>
<td>9.2</td>
<td>5.1</td>
<td>5.0</td>
<td>5.4</td>
<td>5.9</td>
</tr>
<tr>
<td>Other families, no own children (2010)</td>
<td>11.1</td>
<td>6.3</td>
<td>6.3</td>
<td>6.9</td>
<td>7.2</td>
</tr>
<tr>
<td>Living alone younger than 65 (2000)</td>
<td>27.5</td>
<td>14.4</td>
<td>13.6</td>
<td>15.2</td>
<td>16.7</td>
</tr>
<tr>
<td>Living alone younger than 65 (2010)</td>
<td>30.5</td>
<td>15.8</td>
<td>15.5</td>
<td>17.5</td>
<td>18.5</td>
</tr>
<tr>
<td>Living alone 65 &amp; older (2000)</td>
<td>9.5</td>
<td>10.4</td>
<td>10.2</td>
<td>12.0</td>
<td>10.4</td>
</tr>
<tr>
<td>Living alone 65 &amp; older (2010)</td>
<td>8.0</td>
<td>11.5</td>
<td>10.6</td>
<td>11.7</td>
<td>10.7</td>
</tr>
<tr>
<td>Other households (2000)</td>
<td>9.5</td>
<td>5.3</td>
<td>6.2</td>
<td>5.4</td>
<td>6.3</td>
</tr>
<tr>
<td>Other households (2010)</td>
<td>11.3</td>
<td>6.9</td>
<td>7.1</td>
<td>6.6</td>
<td>7.6</td>
</tr>
</tbody>
</table>

Data Source: U.S. Census Bureau, 2000 and 2010 Decennial Censuses
Often, living alone and/or being a single parent (and probably also the single wage earner in the household) puts a household at a disadvantage economically and sometimes socially.

Households Living in Poverty by Family Composition
Monroe County, 2010

Data Source: US Census 2010

Finger Lakes Health Systems Agency
Poverty

Having an inadequate income affects many aspects of health: access to care, ability to buy and eat a healthy diet, adequacy of housing. The number and proportion of the population living below the federally defined poverty threshold\(^1\) has increased in the past decade. Poverty rates are highest in the city of Rochester but poor and near-poor\(^2\) live in all areas of the region. While more than half of Rochester residents live in or near poverty, they represent less than one-third of the region’s residents in poverty or near-poverty.

### Households in or Near Poverty (2011 Five Year Estimate)

<table>
<thead>
<tr>
<th>Area</th>
<th>In Poverty</th>
<th>Near Poverty*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rochester</td>
<td>54,713</td>
<td>49,366</td>
</tr>
<tr>
<td>Balance of Monroe</td>
<td>24,598</td>
<td>47,879</td>
</tr>
<tr>
<td>Central Subarea</td>
<td>27,762</td>
<td>50,556</td>
</tr>
<tr>
<td>Southern Subarea</td>
<td>26,073</td>
<td>39,524</td>
</tr>
<tr>
<td>Finger Lakes Region</td>
<td>133,146</td>
<td>187,343</td>
</tr>
</tbody>
</table>

*Income between 100% and 200% of Federal Poverty Level

Data Source: U.S. Census Bureau, 2000 Census, American Community Survey, Five Year Estimate 2007-2011

### Poverty/Changes in Poverty

<table>
<thead>
<tr>
<th>Area</th>
<th>2000 In Poverty</th>
<th>Near Poverty*</th>
<th>2011 Five Year Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>City of Rochester</td>
<td>54,713</td>
<td>25.9</td>
<td>49,366</td>
</tr>
<tr>
<td>Balance of Monroe</td>
<td>24,598</td>
<td>4.9</td>
<td>47,879</td>
</tr>
<tr>
<td>Central Subarea</td>
<td>27,762</td>
<td>9.2</td>
<td>50,556</td>
</tr>
<tr>
<td>Southern Subarea</td>
<td>26,073</td>
<td>13.0</td>
<td>39,524</td>
</tr>
<tr>
<td>Finger Lakes Region</td>
<td>133,146</td>
<td>11.0</td>
<td>187,343</td>
</tr>
</tbody>
</table>

*Income between 100% and 200% of Federal Poverty Level

Data Source: U.S. Census Bureau, 2000 Census, American Community Survey, Five Year Estimate 2007-2011

Racial and ethnic populations in Rochester are especially affected by poverty. Almost two-thirds (65%) of African Americans and 69% of Latinos in Rochester live in households with incomes below 200% of the poverty threshold. Over three-quarters (76%) of all children ages six and under in Rochester live in or near poverty.

\(^1\) About $22,113 in 2010 for a family of two adults and two children.
\(^2\) Having income between 100% and 200% of the poverty income.
The Finger Lakes region is gradually getting poorer in terms of per capita net earnings, compared to national averages. As the population ages and fewer people are employed, wages become a smaller portion of income and transfer payments (pensions, social security, government funds) become a larger portion. To the extent that transfer payments are fixed or at most indexed to the cost of living they will not increase the wealth of the community or individuals.

**Local Per Capita Personal Income as % of National Per Capita Personal Income**

Data Source: U.S Bureau of Economic Analysis table CA1-3 Personal Income Summary.
Calculations by FLHSA

**Finger Lakes Region Personal Income Distribution by Source, 1970 - 2011**

Data Source: U.S Bureau of Economic Analysis table CA1-3 Personal Income Summary.
Calculations by FLHSA
Regional Variations in Income

Monroe County, with its relatively strong manufacturing base, has a higher per capita and per family income than the other two subareas in the region. The Southern subarea experiences substantially lower income than the other parts of the region.

<table>
<thead>
<tr>
<th></th>
<th>Median Family Income</th>
<th>Per Capita Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Subarea*</td>
<td>$63,621</td>
<td>$25,130</td>
</tr>
<tr>
<td>Monroe County</td>
<td>$65,240</td>
<td>$26,999</td>
</tr>
<tr>
<td>Southern Subarea*</td>
<td>$54,890</td>
<td>$23,252</td>
</tr>
<tr>
<td>Finger Lakes Region*</td>
<td>$63,222</td>
<td>$25,813</td>
</tr>
<tr>
<td>United States</td>
<td>$62,982</td>
<td>$27,334</td>
</tr>
</tbody>
</table>

Data Source: U.S. Census Bureau, American Community Survey, 2006-2010 Five Year Estimates
A Socio-Economic Status (SES) Index developed by Finger Lakes Health Systems Agency shows areas of both high and low status throughout the region. In general, SES is lower in Rochester, in eastern Wayne County, Seneca County, southern Livingston county and in much of the Southern Subarea.

The SES measure based on all Upstate New York zip codes includes average income, average level of education, occupation composition, average value of the housing stock, age of the housing stock, a measure of population crowding, percentage of renter-occupied housing, percent of persons paying more than 35% of their income on housing, and percent of children living in single parent households. Each ZIP code in Upstate New York (New York State less New York City and the surrounding suburbs) is then ordered on this number, and an SES score is assigned based on the following thresholds: The lowest and highest SES score each contain 15% of the upstate population, SES scores 2 and 4 each contain 20% of the population, and the middle score represents 30% of the population.
SES and Health Outcomes

There is strong correlation between the SES Index in this region and overall mortality rates. It also reduces observed disparities in mortality by race/ethnicity. However, it does not eliminate those differences. Race/ethnicity exhibits an independent effect on health in this region, even after controlling for this composite measure of income, education, employment and other factors.

Overall Mortality Rate by Socio-Economic Status
Finger Lakes Region, 2009 – 2011
All Races/Ethnicities

Age-sex adjusted to 2000 U.S. population distribution
Data Source: NYS Vital Statistics; calculations by Finger Lakes Health Systems Agency

Overall Mortality Rate by Socio-Economic Status and Race Ethnicity
Finger Lakes Region, 2009 - 2011

Age-sex adjusted to 2000 U.S. population distribution
Data Source: NYS Vital Statistics; calculations by Finger Lakes Health Systems Agency
Language Barriers

Approximately one in ten residents of the region speaks a language other than English at home. Spanish is the largest language group and is the primary language for about 4% of the region’s population. The next largest cohort (close to 4%) is a variety Indo-European languages.

As communication is critically important to delivery of quality health care, it is important that healthcare providers have mechanisms to communicate reliably with their patients in a confidential and professional manner.

<table>
<thead>
<tr>
<th>Other Than English Spoken At Home</th>
<th>2000</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rochester</td>
<td>17.8%</td>
<td>18.0%</td>
</tr>
<tr>
<td>Balance of Monroe County</td>
<td>9.8%</td>
<td>10.3%</td>
</tr>
<tr>
<td>Central Subarea</td>
<td>5.1%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Southern Subarea</td>
<td>4.1%</td>
<td>4.6%</td>
</tr>
<tr>
<td>Finger Lakes Region</td>
<td>9.0%</td>
<td>9.5%</td>
</tr>
</tbody>
</table>

Data Sources: U.S. Census Bureau, 2000 Decennial Census, American Community Survey, Five Year Estimate 2006-2010

<table>
<thead>
<tr>
<th>Other Languages Spoken</th>
<th>Percent Who Speak Language Other Than English</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish</td>
<td>3.8%</td>
</tr>
<tr>
<td>Other Indo-European*</td>
<td>3.6%</td>
</tr>
<tr>
<td>Asian-Pacific Island</td>
<td>1.6%</td>
</tr>
<tr>
<td>Other</td>
<td>.5%</td>
</tr>
</tbody>
</table>

*Indo-European includes French, Italian, Portuguese, German and others.
Health of the Population

Improving the health of the population is the first leg of the Triple Aim.

The counties in the Finger Lakes Region have recently analyzed the health and healthcare needs of their communities and the health priorities highlighted by the individual counties begins this section.

There continue to be numerous disparities in the health status of different populations. Disparities are not limited to racial or ethnic groups, but include disparities characterized by socio-economics, geography, and gender. Examples are given.

Data are presented on the major causes of mortality and morbidity. In addition to “physical health” such as heart disease, topics include mental health, alcohol and substance abuse, maternal and infant health, and oral/dental health. Underlying causes will be considered, as they often point to potential interventions to improve the population health.

Alternate ways to measure mortality, such as Years of Potential Life Lost, are also considered.

All rates provided are adjusted to a common population age structure. See the Appendix for a discussion of the importance of age adjustment in comparing two or more populations.
Health Priorities by County

As part of the Governor’s Prevention Agenda, the region’s public health departments, in concert with hospitals, health centers and community leaders, have compiled health statistics and solicited public opinion on the health concerns of each county. This process has led to the identification of health priorities for the counties for the 2013 – 2017 time period.

These local priorities will be incorporated into the New York State Health Improvement Plan. They will also serve to determine regional priorities for health improvement initiatives.

The chart below lists the chosen priorities for each county, including one priority specifically aimed at reducing health disparities. Note the unanimous identification of reduction in obesity as the top priority.

<table>
<thead>
<tr>
<th>County</th>
<th>Issue #1</th>
<th>Issue #2</th>
<th>Disparity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemung</td>
<td>Reduce Obesity in Children and Adults</td>
<td>Reduce Tobacco Use</td>
<td>Reduce tobacco use of low income populations including those with mental health and substance abuse issues.</td>
</tr>
<tr>
<td>Livingston</td>
<td>Prevent Chronic Disease: Obesity/Diabetes</td>
<td>Promote Mental Health, Prevent Substance Abuse</td>
<td>Decrease Obesity in low income populations.</td>
</tr>
<tr>
<td>Monroe</td>
<td>Reduce Obesity</td>
<td>Reduce Illness, Disability and Death Related to Tobacco Use and Secondhand Smoke Exposure.</td>
<td>Increase access to high-quality chronic disease preventive care and management in clinical and community setting.</td>
</tr>
<tr>
<td>Ontario</td>
<td>Reduce the Rate of Obesity in Children and Adults</td>
<td>Reduce the Rate of Hypertension</td>
<td>Reducing Obesity among the low-income population.</td>
</tr>
<tr>
<td>Schuyler</td>
<td>Reduce Obesity in Children and Adults</td>
<td>Reduce Illness, Disability and Death Related to Diabetes</td>
<td>Screen for Diabetes risk 10% of the county’s 20-49 year old population, as many do not have Primary Care Physician nor health insurance coverage. Once screened they would be referred to a Primary Care Physician and a Navigator to be screened for health insurance eligibility.</td>
</tr>
<tr>
<td>Seneca</td>
<td>Reduce Obesity in Children and Adults</td>
<td>Prevent Substance Abuse and Other Mental, Emotional, and Behavioral Health Disorders</td>
<td>Tobacco use among those with poor Mental Health</td>
</tr>
<tr>
<td>Steuben</td>
<td>Reduce Obesity in Children and Adults</td>
<td>Reduce Heart Disease and Hypertension</td>
<td>Promote Tobacco Cessation, especially among low SES population and those with Mental Health Illness.</td>
</tr>
<tr>
<td>Wayne</td>
<td>Reduce Obesity</td>
<td>Reduce Heart Disease</td>
<td>Reduce Obesity among low-income population.</td>
</tr>
<tr>
<td>Yates</td>
<td>Prevent Obesity</td>
<td>Prevent Hypertension</td>
<td>Access to Specialty Care for the low income population.</td>
</tr>
</tbody>
</table>
Overweight and Obesity

The majority of Americans – 68.5% in the period 2007 – 2010 – were either overweight or obese. This represents a dramatic increase in the past 50 years. On average, obese individuals die up to ten years sooner than healthy-weight individuals. Studies have shown a 60% to 250% greater risk of developing hypertension, heart disease, stroke, diabetes, gallstones, and arthritis. (McTigue et al, 2003)

Epidemiologists are concerned that the present generation may be the first to have a reduced life expectancy compared to their parents due to the growing obesity epidemic.
Overweight and Obesity

In 2007-2010 U.S. data showed high overweight and obese levels in nearly all adult age groups and both sexes. For 35-44 year old males, the overweight or obese proportion reached 80% in 2007-2010.

Overweight/Obesity is measured differently for children, using 95th percentile age/sex specific weight-for-height growth charts. As with adults, national trends show increasing levels of obesity among children.
Overweight and Obesity

New York State data indicate that the Finger Lakes region also experienced this epidemic, with obesity increasing 5 or more percentage points just between 2003 and 2007.

All counties in the region except Ontario experienced overweight or obese rates above 60% of the adult population in 2008. All counties have rated obesity reduction as their first priority health issue.

Overweight or Obesity, Finger Lakes Region Counties, 2008


Obesity is increasing due to lower levels of physical activity and less than ideal diets, among other factors. About 20% of adults report no leisure time activity in the past month. Only about 25% of adults report consumption of five or more servings of fruits and vegetable per day.

Physical Activity/Nutrition Indicators, Finger Lakes Region Counties, 2009

Source: Expanded Behavioral Risk Factor Surveillance Survey, NYS 2009
Smoking

Smoking tobacco is implicated in 25,500 annual deaths in New York State caused by increased risk for cancers, cardiovascular disease and respiratory diseases (excludes burns and second-hand smoke deaths). There are 389,000 youth in NYS currently aged 1 – 17 projected to die from smoking in their lifetime. The portion of adults smoking regularly has declined in recent years, but still represents one adult in six. Among high school students, use has declined also but still is one in seven. The state goal is to decrease prevalence of smoking to 10% among adults and 8% among students. (NYS Department of Health, Leading the Way 2010 – 2013)

Smoking rates within the region tend to be higher in the Southern counties of Chemung, Schuyler and Steuben.

Source: Expanded Behavioral Risk Factor Surveillance Survey, 2009
There are many observed disparities in health outcomes among racial/ethnic groups in the region. The heart disease mortality rate data above illustrate one.

Sometimes, “race” is really a proxy for low socio-economic status. But race, in and of itself, may play an important role in shaping one’s social circumstances. Prior work has demonstrated a link between poor health and the challenges of facing segregation (Williams & Collins, 2001) and implicit racism (Paradies, 2006). At a local level, work by Dr. Amina Alio and colleagues provides clear evidence that racial discrimination exists in the city of Rochester (Alio et al, 2013). Through the use of surveys, they found that 76% of African American respondents reported experiencing any form of racial discrimination in their lifetime. As a result of this discrimination, 47% of Rochester African Americans described their lives as moderately or very stressful, while 83% stated that discrimination had made their life at least somewhat harder. Facing these types of biases may contribute to the disparities in health status by creating a more stressful living environment that can deplete an individual’s health over time (Juster, McEwen and Lupien, 2010).
Faced with stress due to racism (Alio et al, 2013), there is evidence that race is closely associated with worse health, even after controlling for socio-economic status. The graph below, for instance, shows that African Americans in the Finger Lakes region have the highest heart disease mortality rate at all levels of SES and that these elevated rates persist even among Blacks who are living in ZIP codes with the highest SES scores.

Although difficult to prove, there are anecdotes suggesting that, if one grows up in an environment of poverty but subsequently “succeeds” in life and moves out of low-income areas, there may still be health behaviors and risk factors for chronic disease that persist among adults and result in disparities.
Disparities - Geography

In population health, “place” often matters. As illustrated below, there are measures that demonstrate a sharp disparity in health outcomes, health care access, or health care utilization for geographic parts of the Finger Lakes region.

### Emergency Room Treat & Release Visit Rate 2009 – 2011, Three Year Average

- **Central Subarea**: 10,000
- **Rochester City**: 30,000
- **Monroe Suburb**: 20,000
- **Southern Subarea**: 40,000

Data Source: NYS Department of Health SPARCS database; calculation by FLHSA. Data shown above represent rates per 100,000 population, age-sex adjusted.

### Births Receiving Adequate or Intense Prenatal Care, 2009 - 2011

- **FLHSA Region**: 60%
- **Central**: 50%
- **Monroe**: 40%
- **Southern**: 80%

Data Source: NYS Department of Health Birth Files, based on Kotelchuk Index.

Within the Central subarea, Wayne County’s mortality rate is substantially higher that the other counties. Within Wayne, however, there are high rates in the more rural and impoverished eastern half of the county and the western half has rates similar to the balance of the subarea.

### All Causes Mortality Rates - 2010

- **FLHSA Region**: 600 deaths/100,000 population
- **Central**: 700 deaths/100,000 population
- **Eastern Wayne**: 500 deaths/100,000 population
- **Western Wayne**: 700 deaths/100,000 population

Data Source: NYS Vital Statistics; calculations by FLHSA. Data above represent rates per 100,000 per population, age-sex adjusted.

* Rochester City is defined as City of Rochester, NY as aggregation of ZIP Codes 14604, 14605, 14606, 14607, 14608, 14609, 14610, 14611, 14612, 14613, 14614, 14615, 14619, 14620, 14621.

** Eastern Wayne is defined as aggregation of ZIP codes 13143, 13146, 14433, 14489, 14516, 14551, 14555, 14590.

*** Western Wayne is defined as an aggregation of ZIP codes 14502, 14505, 14513, 14519, 14522, 14568, 14589,
Disparities – Socio-Economic Status

Whether from lifestyle (behaviors), disadvantages from where one lives (social circumstances and environment) or disadvantages in access to medical care, residents of areas of lower socio-economic status tend to have less favorable measures of health compared to those living in higher SES areas.

**Cancer Mortality by SES**

3 Year Average (2009 – 2011), Finger Lakes Region

Data Source: NYS Vital Statistics; calculations by FLHSA
Rates are age/sex adjusted to 2000 U.S. population

**ED Visits from Unintentional Injury by SES**

3 Year Average (2009 – 2011), Finger Lakes Region

Data Source: NYS Department of Health SPARCS database; calculations by FLHSA
Rates are age/sex adjusted to 2000 U.S. population

**Diabetes Mortality by SES**

3 Year Average (2009 – 2011), Finger Lakes Region

Data Source: NYS Vital Statistics; calculations by FLHSA
Rates are age/sex adjusted to 2000 U.S. population
Disparities – Socio-Economic Status

The city has a concentration of poverty, also a concentration of African-American and Latino populations, presenting difficulties in discerning the underlying cause of observed disparities. Is the observed diabetes disparity in the city, for instance, a result of SES or Race/Ethnicity?

Diabetes mortality by race shows continued disparity even within the more impoverished parts of the city. In other words, even in the areas with lowest socioeconomic status (SES1), Whites have less than one-half the mortality rate of Blacks or one-third the mortality rate of Latinos.
Far from being the “weaker sex,” females tend to have better health and longevity than males from conception to old age. By age 65, women outnumber men by substantial ratios.

The graph above, for instance, shows that females have lower mortality rates than males for heart disease, kidney disease, and suicide.¹

¹There are always questions of measurement. In the suicide example above, for instance, women tend to attempt to harm themselves more often (leading to approximately 50% higher rates of ED and inpatient use for self-inflicted injury). Men, however, are more “successful”, leading to higher suicide mortality rates.
Mortality / Morbidity
Major Causes of Mortality

Cancer and heart disease continue to be the most frequent causes of death in the region’s population, accounting for nearly 50% of all deaths.

Following cancer and heart disease are respiratory-related diseases including COPD and pneumonia, then stroke, unintended injury and Alzheimer’s disease.

See tables in the accompanying *Regional Profile* for more information on leading causes of mortality, by age, gender, and race/ethnicity.

### Causes of Mortality
#### Finger Lakes Region 2009 - 2011

Data Source: NYS Vital Statistics; calculations by FLHSA
Rates are age/sex adjusted
Causes of Mortality by Race/Ethnicity

There are differences in the mix of causes of mortality among race and ethnicity groups, perhaps reflecting life experiences of the different groups. Cancer, heart disease and stroke are at or near the top of the list for each group. But the next most frequent cause varies: homicide among African American non-Latinos, unintentional injury among Latinos, and COPD among White non-Latinos. Conditions arising in the perinatal period are prominent among Latinos while diabetes and kidney disease disproportionally affect African Americans and Alzheimer’s disease affects Whites.

### Percent of Deaths by Cause and Race/Ethnicity, 2009 – 2011

#### Finger Lakes Region

<table>
<thead>
<tr>
<th>Cause</th>
<th>African American Non-Latino</th>
<th>Latino</th>
<th>White Non-Latino</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer</td>
<td>25%</td>
<td>Cancer</td>
<td>21%</td>
</tr>
<tr>
<td>Heart</td>
<td>20%</td>
<td>Heart</td>
<td>21%</td>
</tr>
<tr>
<td>Stroke</td>
<td>4.8%</td>
<td>Stroke</td>
<td>5.6%</td>
</tr>
<tr>
<td>Homicide</td>
<td>3.3%</td>
<td>Unintentional injury(^1)</td>
<td>4.2%</td>
</tr>
<tr>
<td>Unintentional injury(^1)</td>
<td>3.3%</td>
<td>Perinatal(^2)</td>
<td>3.4%</td>
</tr>
<tr>
<td>Kidney disease</td>
<td>3.3%</td>
<td>Diabetes</td>
<td>3.0%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>3.1%</td>
<td>Kidney disease</td>
<td>2.4%</td>
</tr>
<tr>
<td>CLRD/COPD</td>
<td>2.3%</td>
<td>Flu &amp; Pneumonia</td>
<td>2.2%</td>
</tr>
<tr>
<td>Flu &amp; Pneumonia</td>
<td>2.3%</td>
<td>Homicide</td>
<td>2.2%</td>
</tr>
<tr>
<td>Perinatal(^2)</td>
<td>2.2%</td>
<td>CLRD/COPD</td>
<td>2.0%</td>
</tr>
<tr>
<td>Alzheimer’s</td>
<td>2.2%</td>
<td>Suicide</td>
<td>1.9%</td>
</tr>
<tr>
<td>HIV</td>
<td>1.2%</td>
<td>Alzheimer’s</td>
<td>1.9%</td>
</tr>
<tr>
<td>Suicide</td>
<td>0.8%</td>
<td>Substance abuse</td>
<td>1.5%</td>
</tr>
</tbody>
</table>

Data Source: NYS Vital Statistics; calculations by FLHSA

\(^1\) Unintentional injury (formerly “Accidents”) include causes such as motor vehicle accidents, slips and falls, and fires.

\(^2\) Conditions arising in the Perinatal Period include complications in labor and delivery by exclude fetal conditions such as congenital malformations.
Trends in Mortality

Overall mortality rate is declining, due to both improvements in health care and improvements in health behaviors such as reducing smoking and eating healthfully. Concern is expressed among many epidemiologists, however, that the present obesity epidemic may result in the reversal of that decline.

Data Source: New York State Vital Statistics; Calculations by FLHSA

Rates are Age-Sex Adjusted to 2000 U.S. population distribution.

Overall mortality rate is declining, due to both improvements in health care and improvements in health behaviors such as reducing smoking and eating healthfully. Concern is expressed among many epidemiologists, however, that the present obesity epidemic may result in the reversal of that decline.
Mortality by Underlying Causes

While the “major causes of death” listings are based on the primary cause of death, from a health intervention perspective there are a number of prominent underlying causes. For instance, heart disease and stroke are linked, often causally, to high blood pressure, obesity and high cholesterol levels. COPD and lung cancer and sometimes pneumonia are frequently tied to smoking behaviors. Mortality and morbidity from motor vehicle accidents are linked to seat belt use.

Mokdad et al (2004), and many others, have tied deaths in the United States to the following underlying causes: tobacco smoking, overweight and obesity, alcohol, infectious disease, toxins, motor vehicle collisions, firearms, sexually transmitted infections, and drug abuse.

The Mokdad data, from 2000, have been revised by subsequent reports and some of those revisions are incorporated into the graph below. Danaei et al (2009) expanded on the factor of obesity to consider specifically high blood glucose, high LDL cholesterol, high dietary trans-fatty acids, high dietary salt, low dietary polyunsaturated fatty acids, and low dietary omega-3 fatty acids. Nearly two and a half million potentially preventable deaths per year were attributed to these underlying factors.

Source of data except for obesity, medical errors and firearms: Ali H. Mokdad, PhD; James S. Marks, MD, MPH; Donna F. Stroup, PhD, MSc; Julie L. Gerberding, MD, MPH JAMA. 2004;291(10):1238-1245.


*** The numbers for firearms reports in [http://www.cdc.gov/nchs/data/nvsr/nvsr61_06.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr61_06.pdf)
The primary causes of mortality vary by age. For infants, congenital disorders and perinatal conditions are primary, while for youth, teens, and young adults unintentional and intentional injuries are the leading causes. As populations age, cancers rise in prominence then decline somewhat. Among seniors, heart disease and stroke become dominant.

Data Source: New York State Vital Statistics; Calculations by FLHSA
Years of Potential Life Lost (YPLL)

While mortality rates count all deaths equally, there may be a different emotional and economic response to a person dying at age 25 compared to one dying at age 75. There might also be a different perception of a health care system that resulted in a death at 65 compared to a death at age 75.

**Years of Potential Life Lost** (YPLL) is calculated as the years between when a person dies and a benchmark year (previously age 65, now most often and in this report age 75). Those dying after the benchmark are recorded as zero potential years lost. Summing across all deaths produces a total number of potential years lost, or rate of years lost per population. YPLL is more sensitive to the economic and social impact of a death than is conventional mortality rate.

In 2009 to 2011, residents of the Finger Lakes region lost a total of 216,601 years of potential life; this is equal to 5,259 years per 100,000 population or, stated another way, over six years for each person who died.

Because of the number of deaths attributed to heart disease and cancer, those causes generate the most years of potential life lost. Cancer, however, produces nearly 25% more years of potential life lost than heart disease because cancer deaths occur at a younger age. Also because they occur among younger population, unintentional injury, perinatal causes, suicide, and homicide contribute the next highest numbers of YPLL even though they cause relatively few deaths.

There are variations in causes of YPLL among the racial and ethnic groups in the region.

<table>
<thead>
<tr>
<th>Sum of Years of Potential Life Lost</th>
<th>Finger Lakes Region, 2009-2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>African-American non-Latino</td>
</tr>
<tr>
<td>All causes</td>
<td>35,966</td>
</tr>
<tr>
<td>Cancer</td>
<td>18%</td>
</tr>
<tr>
<td>Heart</td>
<td>14%</td>
</tr>
<tr>
<td>Perinatal</td>
<td>11%</td>
</tr>
<tr>
<td>Homicide</td>
<td>10%</td>
</tr>
<tr>
<td>Unintentional injury</td>
<td>8%</td>
</tr>
<tr>
<td>Stroke</td>
<td>3%</td>
</tr>
<tr>
<td>Kidney</td>
<td>2%</td>
</tr>
<tr>
<td>Congenital</td>
<td>2%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>2%</td>
</tr>
<tr>
<td>Suicide</td>
<td>2%</td>
</tr>
</tbody>
</table>

Data Source: Vital Statistics; calculation by FLHSA
Cancer vs. Heart Disease

Cancer mortality numbers are steady (or just beginning to decline). Heart disease mortality numbers, on the other hand, have been declining for the past thirty years. Among all populations in the region, cancer has now passed heart disease as the number one cause of death. Likewise, the cancer mortality rate is now higher than heart disease mortality rate.

Data Source: NYS Department of Health, Vital Statistics files. Populations from U.S. Census Bureau. Calculations by FLHSA. Numbers are 3-year average around the central year.
Cancer Screening

Interestingly, cancer incidence is not necessarily a predictor of cancer mortality by geography. Some counties in the region with the highest cancer incidence have the lowest mortality rates, and the opposite is also true.

Yet a substantial effort is made to screen for those cancers that have relatively safe, convenient and economical tests for detection. Screening provides the opportunity to find cancers in early stages of development, when treatment is most effective. Breast cancer and cervical cancer among women, and colorectal cancer among men and women have such screening tests. Physicians encourage use of these screening tests and insurance companies pay for their administration. The state’s Cancer Services Program covers the cost of those screenings for low income individuals without insurance coverage.

The table below provides data on the effectiveness of those efforts to utilize cancer screening and locate cancers early: Breast cancer screening (mammography and clinical breast exam) results in 65% to 75% of women being diagnosed at an early stage (the NYS goal is 80%); cervical cancer screening (PAP Smear) results in early diagnosis rates lower than the state goal of 65% currently, but results vary due to small numbers; colorectal cancer screening (colonoscopy and occult blood detection) results in most of the region’s counties meeting the NYS goal of 50% early detection.

<table>
<thead>
<tr>
<th>Early Stage Diagnosis (Percent of New Cases)</th>
<th>Monroe</th>
<th>Livingston</th>
<th>Ontario</th>
<th>Seneca</th>
<th>Yates</th>
<th>Wayne</th>
<th>Chemung</th>
<th>Schuyler</th>
<th>Steuben</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast</td>
<td>68.3</td>
<td>68.8</td>
<td>67.2</td>
<td>72.6</td>
<td>72.2</td>
<td>65.1</td>
<td>62.5</td>
<td>71.8</td>
<td>62.6</td>
<td>80.0</td>
</tr>
<tr>
<td>Cervix</td>
<td>41.6</td>
<td>44.4</td>
<td>37.5</td>
<td>*</td>
<td>*</td>
<td>45.5</td>
<td>12.5</td>
<td>100.0</td>
<td>36.4</td>
<td>65.0</td>
</tr>
<tr>
<td>Rectal</td>
<td>57.2</td>
<td>45.7</td>
<td>47.5</td>
<td>57.7</td>
<td>38.9</td>
<td>50.0</td>
<td>50.0</td>
<td>51.3</td>
<td>50.3</td>
<td>50.0</td>
</tr>
</tbody>
</table>

* Insufficient number of cases to calculate rate.

Data Source: NYS Cancer Registry

Early stage cancers are those that are confined to the organ of origin at diagnosis.
Over time, screening may have contributed to increased case finding and declining mortality.

Data on above graphs represents incidence and mortality rates per 100,000 population.

Although there are financial means to assure that individuals can be screened, there still may be barriers to receipt of this care, such as lack of a primary care practitioner to encourage testing (NYS Department of Health). Such barriers may explain why there continue to be disparities in mortality rates for potentially detectable cancers: African-Americans, for instance, have 50% higher mortality from colorectal cancer as do White residents.

Incidence of colorectal cancer is declining. According to the American Cancer Society, this may be due to control of lifestyle risk factors, such as reduction in smoking rates, but also may be due to prevention of cancers through screening tests such as colonoscopy that remove pre-cancerous growths from the colon.
The decline in heart disease over the past two decades represents a public health success. Studies have determined that about one-half of the observed decline can be attributed to improved medical care (eg, coronary care units, heart surgery, statin drugs to reduce risk from elevated cholesterol). The other half, however, can be attributed to changes in lifestyles (decreased smoking, increased exercise, improved diet, control of blood pressure) that reduce an individual’s risk (Ford et al). The increase in obesity in the region and the nation puts such progress in jeopardy.

Heart disease is one of a cluster of diseases related to what is termed the “metabolic syndrome.” Other disease states that tend to be affected by the syndrome include stroke, diabetes, and perhaps gout. The syndrome includes high blood pressure, elevated blood lipids (eg, cholesterol), obesity, raised fasting blood sugar levels or insulin resistance, sedentary lifestyle and stress as risk factors. While there is likely some genetic component, many of these risk factors are controllable with lifestyle change and medical care.
Hypertension

Few individuals are hospitalized or die with a primary diagnosis listed of high blood pressure – hypertension – yet high blood pressure is an important risk factor for heart disease, stroke, and kidney failure. The Rochester Business Alliance (RBA) in concert with Finger Lakes Health Systems Agency (FLHSA) has chosen hypertension as its primary target for improved health and reduced cost of care through the RBA/FLHSA Community Hypertension Collaboration.

Four of eight regional counties outside Monroe list hypertension control as a priority health concern. The Collaborative is in beginning stages of expansion to the other counties in the region, beginning with recruitment of physician practices to the high blood pressure registry.

The Collaborative, currently focused in Monroe County, seeks to increase the number of individuals with their hypertension “under control” (blood pressure lower than 140/90). The Collaborative does this by counseling physician practices in managing their high blood pressure patients and by coaching community individuals in adjusting their lifestyles to reduce risk of high blood pressure. The Collaborative has a goal of having 85% of all persons with hypertension achieving blood pressure control.

Using national data, the Collaborative estimates that 30% of the adult population (178,000 in Monroe County) has hypertension, defined as pre-treatment blood pressure over 140/90. A community-wide registry of persons with hypertension – unique in New York if not the nation – in June 2013 included 103,201 hypertensive patients. Of those patients, 70.8% have their blood pressure under control (reduced to less than 140/90). That control rate has improved from 62.7% in December 2010 and continues to increase toward the Collaborative’s goal.

Percent of HBP Patients with BP Controlled
Dec 2010, Dec 2012, and June 2013 Registries

Data Source: Physician practices participating in Hypertension Registry; Calculations by FLHSA

Rates are age-sex adjusted to the age-sex distribution of the December 2012 Registry Control rate is calculated for patients with a BP reading within the past 13 months.
Community Hypertension Collaborative Goals

The Hypertension Collaborative demonstrates the conceptual power of the Triple Aim to guide health care improvement projects. The following figure illustrates.

1 PIC = Practice Improvement Coordination
Respiratory Illness - Mortality

Respiratory diseases – both acute and chronic – are a leading cause of both mortality and morbidity. The major respiratory conditions include influenza and pneumonia, emphysema and chronic bronchitis, asthma, and lung cancer. Many of these same conditions are largely preventable.

Chronic Obstructive Pulmonary Disease (COPD), now called Chronic Lower Respiratory Disease (CLRD), is the fourth-leading cause of death, following heart disease, cancer and stroke. Pneumonia and influenza combined are the sixth-leading cause of mortality. Lung cancer, if listed by itself, would be the third-leading cause of death. These four causes – lung cancer, COPD, flu and pneumonia – accounted for over 1,600 deaths annually in the Finger Lakes region in the 2009 – 2011 period, or about one-sixth of all deaths.

Regional COPD mortality rates rose through the 1990s and early 2000s, but have declined during the recent decade. Lung cancer mortality rates have exhibited a steady decline, while flu and pneumonia dropped substantially in the late 1990s, with modest decline since.

Data Source: NYS Vital Statistics; calculations by FLHSA
Rates are age/sex adjusted to the 2000 U.S. population
Respiratory Illness - Prevention

Respiratory diseases are also a major cause of hospitalization. About 4,000 inpatient admissions per year in the region are due to COPD and a like number are admitted for treatment of flu and pneumonia. About 10,000 Emergency Department visits per year are due to COPD and 3,500 to 4,000 due to flu and pneumonia. Over 5,000 annual ED visits are due to asthma.

Many of these conditions can be prevented.

- COPD is smoking-related.
- Flu is immunization-preventable.
- Bacterial pneumonia is immunization-preventable.
- Asthma is treatable and may have environmental triggers.
- Lung cancer is smoking-related.

Much has been done to reduce these conditions, and these efforts may be an underlying cause of recent declines in respiratory disease mortality. Smoking rates have declined from about 40% of the adult population twenty years ago to about 20% now, but it appears to take 20 to 30 years to see the impact of changes in smoking prevalence, both increases and decreases (NYS Department of Health). Our region has made a substantial effort to promote flu and pneumonia immunization, such as the Monroe County Medical Society-led READII project\(^1\) and has one of the highest proportions of population covered in the country, yet only about 48% get annual flu shots (83% of those 65 and older) and about 74% of 65 year-olds have received pneumonia vaccination, so there remains room for continued progress\(^2\).

![Percent of Population Immunized, 2008 – 2009 and 2011](image)

---

A 4:3:1:3:1:4 Immunization series includes 4DTAP, 3 Polio, 1 MMR, 3 HepB, 3 Hib, 1 Varicella, 4 Pev13


\(^{8}\) HPV immunization for adolescent females aged 13-17 years. Source: NYS immunization information system (NYS IIS), 2011 data as of Nov. 2012.

\(^{8}\) flu immunization among adults ages 65 and older. Source 2008 – 2009 NYS Expanded Behavioral Risk Factor Surveillance Survey (EBRFSS)

\(^{1}\) Racial and Ethnic Adult Disparities in Immunization (READII)

Respiratory Illness - Disparities

There are substantial disparities in use of health care services due to respiratory diseases within the region. Among the region’s subareas, the Southern subarea exhibits much higher respiratory PQIs (potentially avoidable asthma, pneumonia and COPD hospital admissions) than Monroe County or the Central subarea. Within Monroe, Rochester city residents have over three times the rate of inpatient PQI discharges as do those living in the suburbs. A similar pattern is seen in respiratory PQI emergency room discharges.

Disparities are also exhibited between racial/ethnic groups, with African Americans experiencing three to four times as many PQI admissions as White, non-Latino populations. There are also notable differences by socio-economic status.

*Includes PQI’s for adult asthma, bacterial pneumonia and COPD inpatient discharges.

**Rochester is defined as an aggregation of ZIP Codes 14604, 14605, 14606, 14607, 14608, 14609, 14610, 14611, 14612, 14613, 14614, 14615, 14619, 14620, 14621.
Unintentional injuries, “accidents” in plain parlance, are the fifth leading cause of deaths (446 in 2011) but the leading cause of visits to the Emergency Department, and generate $200 million in inpatient charges per year in the Finger Lakes region.

Motor vehicle accidents are a prominent cause of unintentional injury. However, falls represent 31% of ED visits for injuries. Other causes of concern include fire, drowning, and poisoning.

“Intended injuries,” if resulting in death, are called homicide (if done by others) and suicide (if done by oneself).

Note, these data do not include “medical misadventures” that are coded as unintended injury. While these medical mishaps may represent quality of care concerns and are substantial in number, they are not included in order to be consistent with other data sources.
Diabetes

Diabetes incidence and impact increases are occurring at the same time as increases in overweight and obesity. Being overweight puts added pressure on the body’s ability to control blood sugar using insulin and therefore increases the risk of developing diabetes. As a primary diagnosis, diabetes generates around 2,000 ED visits and 2,000 inpatient discharges per year; those figures have increased about 30% in the past decade. As a secondary or contributing diagnosis, diabetes impact is even greater: Over 20,000 visits and nearly 30,000 inpatient discharges list diabetes as a co-morbid condition.

Most of those admissions or visits are considered potentially avoidable with better primary care. About 2,000 inpatient discharges/year (up from 1,500 in 2001) are classified by the federal Prevention Quality Indicators (PQI conditions) as potentially preventable; about 100 per year of those are for “uncontrolled” diabetes.

Diabetes PQI Rollup*

Finger Lakes Region

Data Source: NYS Department of Health, SPARCS Statistics files. Populations from U.S. Census Bureau. Calculations by FLHSA.

* Sum of PQI 01 – Diabetes Short Term Complications, PQI 03 – Diabetes Long Term Complications, PQI 14 – Diabetes Uncontrolled and PQI 16 – Lower Extremity Amputation Among Patients with Diabetes

Diabetes is implicated in many instances of kidney failure. Kidney disease results in about 1,500 inpatient discharges and about 230 deaths per year. Diabetes is also frequently found in persons with high blood pressure and/or heart disease.

Diabetes disproportionately affects African Americans. For instance in 2010 – 2012, the region’s African Americans experienced about 3,000 ED visits per 100,000 population, while White non-Latinos had about 1,100 diabetes ED visits per 100,000. In a perhaps related relationship, African Americans in the region die of kidney disease over twice as often as do White non-Latinos (30 deaths/100,000 vs. 13/100,000).
Mental/Behavioral Health
Mental Health

Mental conditions are believed to affect a substantial portion of the population including caregivers and persons disrupted by the patient as well as the patient. Yet there is no easy mechanism to count those with mental disorders.

While the NYS Office of Mental Health (OMH) has an excellent database, it only accounts for those cared for by the public mental health services providers. Many individuals, perhaps due to the perceived continuing stigma attached to mental illness, seek private care; an unknown portion pay cash and are not recorded in insurance company files as receiving services. Unfortunately, African Americans and Latinos may have difficulty accessing private services, so any statistics on utilization by rate/ethnicity are likely distorted.

OMH statistics show that 10,500 adults and about 3,100 youth in the Finger Lakes region received mental health services in the public system of care. Of the adults, about 7,980 exhibited severe mental illness.

Additionally, over 24,000 visits were made to the region’s Emergency Department for mental illness and over 4,000 of those visits resulted in a hospital admission.

There were sharp disparities in ED use by geographies.

Data Source: NYS Department of Health, SPARCS dataset; calculations by FLHSA. Rates are age-sex adjusted to 2000 U.S. population.

*Rochester is defined as an aggregation of ZIP Codes 14604, 14605, 14606, 14607, 14608, 14609, 14610, 14611, 14612, 14613, 14614, 14615, 14619, 14620, 14621.
Mental Health as co-Morbidity

There continue to be divisions in services for those with mental or behavioral illness and those with physical ailments.

In New York, there are separate agencies for mental health (The Office of Mental Health, (OMH), alcohol and substance abuse (Office of Alcoholism and Substance Abuse Services (OASAS), and physical health (Department of Health (DOH)). Each has its own set of regulations governing providers, sometimes contradictory, often tending to work contrary to integration of services.

Yet few patients have solely physical, mental or behavioral problems. For instance, as seen in the diagram below, of approximately 80,000 acute hospital admissions with a diagnosis of mental illness, fully 20% also have alcohol/substance diagnosis. Of 35,000 admissions for alcohol/substance abuse, 40% also have mental illness diagnosis. Further, of 400,000 admissions for a physical ailment (excluding obstetrics), almost 72,000 (18%) have a mental or behavioral health co-morbidity.

The Public Health and Health Planning Council (PHHPC), advisor to the Department of Health, has made a series of recommendations to reduce DOH regulatory barriers to integration of physical health and mental and behavioral health care. Much more needs to be done at the local, regional and state levels, however, to make these services seamless to the patient and his/her support systems.
“Dementia” is a term that refers to the loss of cognitive function including memory, thinking, language, judgment and behavior. While there are several types of dementing illness, 50-80% of individuals with dementia have Alzheimer’s disease (Alzheimer’s Association 2013). The prevalence of dementia is of particular concern because with the decline in cognitive function there is an associated loss of independence which impacts the individual, their family, and the health care system use.

The U.S. currently has an estimated 5.2 million people living with Alzheimer’s of whom less than half are aware they have the disease. Of Americans with the disease, 96% are over the age of 65. However, there are individuals who have early onset Alzheimer’s disease between 30 and 50 years of age. This group is estimated to be about 200,000 individuals in the U.S. (Alzheimer’s Association 2013).

Plassman’s 2007 nationally representative study estimated the prevalence of Alzheimer’s disease and other dementias in the U.S. population. The Aging, Demographics, and Memory Study (ADAMS) found that in 2002 13.9% of those 71 and older had dementia in the U.S. and Alzheimer’s disease accounted for 69.9% of those with dementia. The study also found that dementia increased with age from 5% of those 71-79 to 37.4% for those 90 and older.

The Alzheimer’s Association 2013 Report indicates that 11% of the population 65 and over have Alzheimer’s disease. Assuming a similar proportion of persons with Alzheimer’s and other dementias in this region, and the growing population of people who are aging, the number of persons with dementia in this region could be expected to increase 42% from 20,352 in 2010 to 27,039 in 2040.
Despite the fact that the aging of the population will drive the absolute number of cases, studies are beginning to emerge which suggest that the age-specific incidence rates are beginning to decline. This decline is attributed to higher educational levels, reductions in vascular risk factors, and healthier lifestyles. The increases in racial and ethnic diversity of the population may also lead to increases as African Americans and Hispanic populations have increased risk for vascular disease (Alzheimer’s Association 2013).

The 2013 Alzheimer’s Association report identifies Alzheimer’s as the 5th leading cause of death of those 65 and over in the US, and the 6th leading cause of death overall (Alzheimer’s Association, 2013). In the Finger Lakes Region, Alzheimer’s is the 6th leading cause of death of those 65 and over and the 8th for people of all ages. For the period 2009-2011, 827 people a year in the Finger Lakes Region had Alzheimer’s as their reported cause of death.

Reported prevalence and mortality rates for Alzheimer’s in NYS may not be an accurate representation of actual figures due to the lack of early diagnosis and under-reporting on death certificates (NYS Alzheimer’s Council, 2013). Many individuals with dementia develop pneumonia or other conditions as a result of the disease, and the cause of death is listed as one of those conditions. Whether or not it is a cause of death, “Medicare data indicate that one third of people who die in a given year have been previously diagnosed with Alzheimer’s or another dementia.” If we apply Medicare data to this regions’ deaths for those 65 and over, nearly 8,800 of the seniors who die each year may have lived with some form of dementia. This is more than ten times the number who were reported to have died from Alzheimer’s and has serious implications for health and social service needs for both those living with the disease and their caregivers. (NYS Alzheimer’s Council).
Relatively few individuals actually are recorded as dying due to substance abuse – an average of around 45 per year in the Finger Lakes region, although in 2006 – 2008 the average number swelled to 75 – but the number affected by substance use is many times higher.

Nearly one-third of the adult population uses alcohol or other substances. About 6.4% of the region’s adults – over 60,000 individuals – are heavy drinkers, defined as averaging more than two alcoholic drinks per day for men and more than one drink per day for women.¹ About 18% of the region’s adults have engaged in binge drinking (5 or more drinks on one occasion) within the past month (Expanded BRFF).

Residents access the Emergency Department for substance abuse crisis around 7,000 times per year in the Finger Lakes region, a rate of nearly 500 visits per 100,000 population. But there are substantial disparities in ED visit rates, with twice the rate of visits among Rochester residents compared to the regional average.

*Data Source: NYS Department of Health SPARCS dataset; calculations by FLHSA

¹ NYS Expanded Behavioral Risk Factor Surveillance Survey data from July 2008 to June 2009
Substance Abuse

The rate of ED visits where substance abuse is a contributing factor, such as accidents while under the influence, is ten times that of substance abuse as primary diagnosis.

Nearly 25,000 inpatient hospitalizations occur annually in the 2010 – 2012 period with substance abuse as primary or contributing cause.

The region’s African-American populations are hospitalized at about twice the rate of White non-Latino or Latino populations. There is a strong gradient in ED and inpatient hospital use from poorer to more affluent populations.

Hospitalization Rate for Primary or Secondary Substance Abuse by Socio-Economic Status, 2012, Finger Lakes Region

Data source: New York Department of Health SPARCS dataset; calculations by FLHSA
Maternal and Infant Health
Maternal & Infant Health

The regional number of pregnancies declined by about 7% over the period 2007 to 2011. The decline has been sharper in Monroe County (12% from a peak in 2008) and less steep in the other subareas.

Number of Pregnancies
(Live Births + Spontaneous Fetal Deaths + Induced Abortions By County and Region)

Data source: NYS DOH Vital Statistics data pulled from Table 26 of County Health Assessment Indicators
Outcome of Pregnancy

All outcomes of pregnancies – live births, spontaneous fetal deaths, induced fetal deaths (abortions) – declined numerically. All outcomes declined in all subareas, except abortions increased in the Southern subarea.

The portion of pregnancies ending in induced abortions increased to 25% in the middle of the decade, but retreated to the historic level of 20% of pregnancies by 2011.

Source: NYS Department of Health, Vital Statistics files
The declining trend in numbers of pregnancies held true among all mothers except those aged 30 to 34. The largest numeric drop occurred among women ages 18 – 24; the largest percentage decline was among those under age 18.

The drop in numbers of pregnancies is generally reflected by a drop in pregnancy rates; in other words, the decline in pregnancies is not just due to a decline in the number of women of childbearing age.

Data Source: NYS Department of Health, Vital Statistics files, special tabulations
Teen Pregnancies

Because of social disruption – for example not finishing schooling with resultant reduction in income potential – and stress on relatively immature bodies, pregnancies among teen women are a continuing concern.

In 2010 – 2011, nearly 2,000 teens were pregnant per year. Approximately two-thirds of those were among 18 – 19 year old women. Yet this figure is only 80% of the average annual number of teen pregnancies during the period from 2007 – 2009. Similar percent reductions in numbers of births were observed among 10 – 17 year old women, while those age 18 – 19 had 16% fewer pregnancies as in prior years.

Reductions in rates occurred between the two periods for most ages and subareas except the Southern subarea.

| Source: NYS Department of Health, Vital Statistics files, special tabulations and Annual Reports. |
Differences in Birth Rates by Race/Ethnicity and by SES

African-American women and Latinas historically have had a higher birth rate than White non-Latina women.

There was also a higher birth rate among lower SES women compared to more affluent women. Due to state data restrictions, FLHSA has not been able to track this measure since 2007.

Source: NYS Department of Health, Vital Statistics files, special tabulations and Annual Reports.

Data for Birth Rate by SES not available after 2006.
Maternal and Infant Statistics

In 2004, NYS DOH staff made administrative changes to its interpretational of state law and regulations, with the effect for the public health community that most records having to do with maternal and infant health were no longer accessible.

FLHSA, which previously had had access to record-level de-identified data since 1980 without any breach in confidentiality, lost access past the 2003 records. State staff provided some special runs in 2008 but failed to respond to similar requests in 2013.

Without such detailed tables, there are a number of data measures that are no longer available:

- Teen birth rates – have higher births rates among inner city women persisted? Groups seeking to improve outcomes such as the Monroe County Perinatal Network cannot judge need or outcomes of their programs.
- Induced low birth weight – has a trend persisted of women and their obstetricians inducing early labor, perhaps for convenience, with subsequent low birth weight? Detailed data are required to ensure that low birth weight is not the result of multiple births (twins, etc.) or early spontaneous delivery.
- Proportion of women who used tobacco or illegal drugs during pregnancy or gain too much or too little weight during pregnancy, needed for program planning, is not available.
- Fertility rate, used to help project future birth trends, can only be calculated with detailed data now lacking.
- Rates by SES, valuable in discovering the effects of economic access and environment on pregnancy outcomes, cannot be calculated with only the county level of detail available in state published data.
Dental/Oral Health
Dental Health
Oral Health

There are substantial variations in the Finger Lakes region in measures of dental health. The portion of 3rd graders who already had experienced tooth decay (dental caries) varied by more than two-fold, from 60% in Chemung County to 23% in neighboring Steuben. The portion of the population aged 65 and older who had lost all of their natural teeth (edentulous) varied from 8% in Monroe County to 25% in Schuyler County.


Data Source: New York State Department of Health, Expanded Behavioral Risk Factor Surveillance Survey (EBA FSS)
Oral Health

Oral cancers, while infrequent (about 160 cases per year in the region) are particularly tragic in that they largely are preventable. Risk factors for development of oral cancer include:

- Smoking
- Use of smokeless tobacco
- Excessive alcohol use
- Excessive sun exposure

However, 25% of oral cancers occur in people who do not smoke or use alcohol excessively (Oral Cancer Foundation).

Incidence of oral and pharynx cancer varies among the region’s counties.

**Oral/Pharynx Cancer Rate 2007 - 2009**

Data Source: New York State Vital Statistics; calculations by FLHSA.

* Fewer than 10 events in the numerator, therefore the rate is unstable.
The second leg of the “Triple Aim” is measuring and seeking improvement to the patients’ experience of care. Subsumed in the concept of patient experience, in addition to patient satisfaction, are elements of quality of care and access to care. The following pages summarize patterns of patient experience in the Finger Lakes Region.

Regarding patient satisfaction, current direct measurement is limited to the federally-sponsored Consumer Assessment of Healthcare Providers and Systems (CAHPS) and Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS), that do not report out on small geographic areas. There presently is no local survey, although one is being considered if funding can be arranged. Alternate proxy measures must be used at this time.
Access to Primary Care

Perhaps the single most important person in gaining access to health and medical care is the primary care practitioner (PCP). PCPs provide medical care for undifferentiated patients, make referrals to specialty care and act as coordinator of complex care services; the vast majority of patient concerns and needs are cared for in the primary care practice itself (American Academy of Family Physicians, 2014). The PCP also can provide a medical “home” – a first point of entry and the continuing focal point of all needed health care services -- and there are programs around the region and nation seeking to encourage and enhance development of “patient centered medical homes”.

There is substantial variation in the availability of PCPs within the region, with some areas exhibiting shortages in capacity leading to access problems.

Health Professional Shortage Areas (HPSAs) are federal designations that qualify an area for federal assistance, including placement of physicians and other practitioners obligated to practice in shortage areas in return for medical school tuition assistance, and enhanced reimbursement for Medicare services. Qualification for HPSA status generally includes having no more than one physician per 3,000 population. Over 435,000 residents of the region or about one-third of the region’s residents live in designated HPSA areas. (Martiniano et al, Center for Health Workforce Studies, 2013)
Closed Physician Practices

As many as one-third of physicians – urban and rural – indicated in a 2009 FLHSA survey that they are not taking new patients into their practice. This has the potential to constrain access to care, including for patients newly insured under the Accountable Care Act.

Physicians With Closed Practices
Physician Survey 2009

Q.3b.-what is the average wait time for an appointment to see you (response "not accepting"). Q.4(6) To what extent do you have restrictions on accepting new patients (response "not accepting new patients"/specify practice is full)

Finger Lakes Health Systems Agency, survey of physicians from “Availability of Physicians Services in the Rochester Area, 2009” FLHSA.
Access to Physician Services for Persons with Medicaid

Practitioners may not accept all commercial insurances – but most accept the prevalent products in their area.

To date, most physicians will accept Medicare payment. Because of low reimbursement rates, however, a substantial portion of physicians will not accept Medicaid patients’ insurance. The map below estimates in each of the region’s counties, the number of Medicaid recipients per primary care physician who accepts Medicaid. This ratio understates the access problem in that most physicians dedicate only a portion of their practice to Medicaid clients.

Some counties have community health centers – Federally Qualified Health Centers (FQHCs) – financially assisted by the federal government to provide comprehensive health care in shortage areas and other areas of need. All FQHC practitioners accept Medicaid insurance.
About one adult in eight in the Finger Lakes region reported in 2008 - 2009 that they had experienced poor mental health on 14 or more days during the past month (Expanded BRFSS, 2009, NYSDOH). Yet many (141,000 in the region) may have difficulty accessing care because they reside in federally designated areas with inadequate mental health services providers.
Access to Dental Care

A large portion of the population does not access dental care on at least an annual basis. Information from the state-administered Behavior Risk Factor Surveillance Survey in 2008 - 2009 found that only 76% of adults in the Finger Lakes region had seen a dentist in the past year (78% of Monroe residents, 75% of Central residents and 68% of Southern residents).

Some individuals who did not access dental care did not believe they needed or were afraid of that service. Many others, though, did not see the dentist because of a lack of dentists or because they could not afford dental care (Woolfolk MW, et al, 1999).

About 111,000 of the region’s residents (9% of the population) live in federally-designated Dental Health Professional Shortage Areas (Dental HPSAs). Some of those areas are designated as having a shortage of dentists open to treatment of patients covered by Medicaid.
Access to dental services is constrained by financing difficulties, such as lack of dental insurance, and relative lack of dentists taking Medicaid clients. Due to reimbursement levels, the majority of private dentists do not accept Medicaid patients; rather, dental care of Medicaid clients is generally provided in institutional settings such as community health centers and hospitals.

**Source of Dental Care, NYS, 2007 - 2012**

Source: Center for Health Workforce Studies, SUNY Albany
Access to Dental Care

Per survey data, about 75% of adults have at least one dental visit in the past year, and about 85% of 3rd graders accessed dental services at least once in the past year.

**Adults Who Had a Dental Visit in Past Year, 2009 - 2011**

<table>
<thead>
<tr>
<th>County</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livingston</td>
<td>80%</td>
</tr>
<tr>
<td>Ontario</td>
<td>80%</td>
</tr>
<tr>
<td>Seneca</td>
<td>80%</td>
</tr>
<tr>
<td>Wayne</td>
<td>80%</td>
</tr>
<tr>
<td>Yates</td>
<td>80%</td>
</tr>
<tr>
<td>Monroe</td>
<td>80%</td>
</tr>
<tr>
<td>Chemung</td>
<td>80%</td>
</tr>
<tr>
<td>Schuyler</td>
<td>80%</td>
</tr>
<tr>
<td>Steuben</td>
<td>80%</td>
</tr>
</tbody>
</table>

Source: Behavioral Risk Factor Surveillance Survey

**3rd Graders With Dental Visit in Past Year, 2009 - 2011**

<table>
<thead>
<tr>
<th>County</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Livingston</td>
<td>80%</td>
</tr>
<tr>
<td>Ontario</td>
<td>80%</td>
</tr>
<tr>
<td>Seneca</td>
<td>80%</td>
</tr>
<tr>
<td>Wayne</td>
<td>80%</td>
</tr>
<tr>
<td>Yates</td>
<td>80%</td>
</tr>
<tr>
<td>Monroe</td>
<td>80%</td>
</tr>
<tr>
<td>Chemung</td>
<td>80%</td>
</tr>
<tr>
<td>Schuyler</td>
<td>80%</td>
</tr>
<tr>
<td>Steuben</td>
<td>80%</td>
</tr>
</tbody>
</table>

Source: NYSDOH, Oral Health Survey of 3rd Grade Children
Fluoridation

Having an optimal level of the mineral Fluoride in the water supply has been shown to be one of the most effective public health measures available related to oral health (Healthy People 2020; Community Preventative Services Task Force 2013). Yet some object to the addition of chemicals into drinking water or to the cost of fluoride supplementation, so there are still community water systems in the region that do not provide fluoridated water. There are also residents who have wells or other private water sources that are not fluoridated.

Some children attend schools that provide supplemental fluoridation, often with mouth rinse programs.

Population With Optimally Fluoridated Water

Source: CDC, 2006
Maternal and Infant Care Experience

Access to Early Prenatal Care and Adequacy Index
Gaining access to prenatal care early in one’s pregnancy is thought to be important in obtaining a good outcome – such as full term development and normal birth weight – for both mother and infant. Research has shown that such good outcomes are important, not just to the period of infancy, but for a whole lifetime (Halfron and Hochstein, 2002). Early prenatal care is defined as having a first pregnancy-related visit within the first trimester (3 months) of pregnancy.

The Adequacy of Prenatal Care Utilization Index, also called the Kotelchuk Index, looks at both timing of first prenatal visit and how many total visits are received. Adequacy is graded as inadequate, intermediate, adequate and intensive prenatal care. Thus a woman having one early prenatal visit, for instance to confirm the pregnancy, but then not being seen again until delivery would be recorded as receiving early prenatal care but would have received inadequate care per the Adequacy Index.

The national goal is for 90% of women to receive early prenatal care (Healthy People, 2010). No population group or geography within the region met that goal through the 2009 – 2011 period.

Vaginal Births, VBAC, and C–Sections

In the past fifteen years there has been a substantial “medicalization” of newborn delivery, with the portion of normal vaginal deliveries in hospitals declining from approximately 80% in 1995 to approximately 70% in 2010; concomitantly, the portion delivered by Cesarean section has risen from less than 20% to more than 30%.

Decades ago, C-section delivery replaced other delivery interventions that had higher complication rates. But current C-section levels are not always governed solely by medical considerations and may include elements of convenience and are of suspect necessity.

Challenging the older guideline that women who had previously had a C-section needed a C-section for all subsequent deliveries, in the 1990s women with a prior C-section were encouraged to deliver vaginally on subsequent pregnancies if not otherwise contra-indicated. In 1995, of all potential subsequent C-section candidates, over one-third successfully delivered vaginally (vaginal birth after C-section or VBAC). In the last decade this trend has reversed and the VBAC rate has declined to near 10%.
Low Birth Weight

Low birth weight (less than 2,500 grams or about 5.5 pounds) is linked with increased infant morbidity and mortality, sometime health problems late in life, and increased medical expense (Barker, 1990).

In this region, about 7.5% of all births in 2009 – 2011 were of low birth weight.

Risk factors for low birth weight include being from a multiple birth (e.g. twins) and less than 37 weeks gestation (“premature” or less than full term). As those risk factors are eliminated, the low birth weight rate declines.

Percent of Births with Low Birth Weight
Finger Lakes Region, 2009 - 2011

Data Source: New York State Department of Health Vital Records provided by New York State Department of Health staff. Calculations by FLHSA

Premature = less than 37 weeks gestation
Perinatal mortality – fetal deaths at 20 or more weeks gestation plus neonatal deaths in the first month of life – is thought to be a reflection of the adequacy of health and medical care obtained by the mother and infant. Post-neonatal mortality – deaths of infants from age 1 month to age 12 months – is thought to be more heavily influenced by economic and environmental factors than medical care (Child Health, USA 2011).

There has been little improvement in perinatal mortality rates in the past fifteen years. There are few differences in perinatal mortality rates among the region’s subareas. Historically, there were substantial disparities in rates among racial and ethnic groups, however; more recent data are not available.

Likewise, there have been few changes in infant mortality (infant deaths in the first year of life) over time, but there have been substantial and persistent disparities of outcome by race/ethnicity.

Numbers in the above graphs represent a three year average based on the central year. Mortality rates by race are not available after 2005.

Data Source: New York State Vital Statistics
Life Course Health Development

The perinatal community has embraced the Life Course Health Development framework to explain how health develops over an individual’s lifetime and how that knowledge can shape policy and health intervention. This framework suggests, for instance, that optimal birth outcomes are the result of more than just prenatal care – care during the pregnancy period – but also are affected by care between pregnancies to optimize the health of the mother. Further, these interventions can affect not just the birth outcome, but the health of the individual as late as decades later.

For instance, studies have demonstrated that low birth weight can lead to increased cardiovascular disease among seniors (Barker, 1990). The mediating effect may be maternal malnutrition, which is best influenced during the interceptional and pre-conception periods.

The timing and sequence of biologic, psychological, cultural and historical events and experiences influence the health and development of both individuals and populations. There appear to be a number of periods in early life when individuals are sensitive to environmental factors, and that suggests opportunities for intervention to steer the individual into a healthier health trajectory or life course.

This concept was used, for instance, in the well-known Elmira, New York Nurse Home Visitation Study. These studies showed that when children and families at risk receive comprehensive interventions that transform basic contexts and relationships by means of, for instance, parenting education and enriched preschool environment, their developmental trajectory can be significantly altered (Karoly et al, 1997 and Olds et al, 1997 cited in N. Halfron and M. Hochstein, 2002).

Halfron and Hochstein provide a diagram of the Life Course Framework in the Appendix.
The Cost of Health Care

Cost, the third leg of the Triple Aim, is often difficult to measure. Alternative measures look at utilization, especially utilization thought to be potentially avoidable. The Triple Aim ideal is to improve population health while reducing cost. But it is also acceptable to improve health but at an increased cost, if there is an increase in value (health divided by cost) in the exchange.
**Cost of Care**

It is difficult to measure the total amount expended locally on health care. Such a measurement was last undertaken by the NYS Department of Health in 1994 with the support of a Robert Wood Johnson Foundation grant.

Some cost items, such as the total cost of area hospitals, are readily available. Some of that cost, however, is most properly allocated to patients from outside the region. Cost of physician care and medication costs are difficult to tally. Personal expenditures on over-the-counter medications or eyeglasses have no local data source.

There are indirect indicators of the local cost of health care relative to other areas. A study of insurance costs per recipient, by Acumen and by the Harvard University Group for the Institute of Medicine, indicate the Rochester market costs 18% less per Medicare enrollee than the national average and 22% less per commercially insured individual (Institute of Medicine Report, 2013). The Medicare rate was lowest in the nation.

**Total PMPM Adjusted Differences from the National Mean of Spending Across HRRs**

(Medicare Population)

- **National Mean= $949**
- **1. Rochester, NY; -$165**

Data Source: Medicare Claims
Analyses performed by Acumen for IOM
Multivariate model adjusts for population demographics and Medicare specific variables

**Total PMPM Adjusted Differences from the National Mean of Spending Across HRR’s**

(Commercially Insured Population)

- **National Average= $336**
- **4. Rochester, NY; -$73**

Data Source: MarketScan
Analyses performed by Harvard University Group for IOM
Multivariate model adjusts for population demographics, race, income, health status, employer/insurance predictors, and market-level predictors
PMPM = Per Member Per Month Cost
HRR = Hospital Referral Region

Source for both graphs: Institute of Medicine Report, 2013
Cost of Care – Health Insurance Premiums

Another relative comparison is available from the Federal Employees Health Benefit Program. Insurance plans throughout the nation submit bids to provide a uniform set of health care benefits to federal workers in local markets. While co-payments and deductibles may vary from plan to plan, one can compare premiums from place to place to get a sense of relative cost. As the graph below indicates, the Rochester area generally has had FEHBP premiums lower than the program average with the exception of Blue Choice in the last three years (FEHBP annual Consumers Manual); rates in the Southern subarea are somewhat above the national average (not shown).

While it appears local health care costs, as reflected in insurance premiums, are lower than many other parts of the country, nonetheless the percent increase is more than other economic sectors, consuming an increasing portion of the national or local wealth. Health care uses 17.9% of the national “gross domestic product\(^1\). Locally, the premium for a family health insurance policy has risen from $500 to $1,200 in the past 13 years\(^2\) or about 7% per year. In comparison, the national inflation measure (e.g. CPI) has increased “only” 2.5% per year\(^3\).

---

1 CDC: Health, U.S. 2012, table 111
2 – as measured by Rochester FEHBP premiums; does not account for increasing co-payments and deductibles nor any other changes in insurance product over time.
3 U.S Department of Labor, Consumer Price Index – All Urban Consumers
Cost of Care – Use of Services

One likely reason local health care costs are low is that our use of expensive inpatient hospital care is relatively low. The hospital discharge rate (discharges per population) is lower than comparison areas.

TRENDS IN HOSPITAL DISCHARGES
FL Region and Comparisons, 1990 - 2010

There are differences in hospital use within the region, however, suggesting the opportunity to reduce hospital utilization further.

TRENDS IN HOSPITAL DISCHARGES
Finger Lakes Region, 1990 - 2010

Data Source: New York State Department of Health SPARCS; American Hospital Association Hospital Statistics
The most common reason for hospital admission is for heart disease, followed by delivery of newborns. Beyond that, injury and respiratory issues dominate, followed by cancer, mental illness and substance abuse, and stroke.
Compared to Upstate NY, Central subarea hospitals and attending physicians exhibit a pattern across most medical specialties of conservative use of inpatient care; the pattern in Monroe County is similar. The following graphs compare inpatient discharge rates for major diagnostic categories to the Upstate average. Residents in the Southern subarea use hospitals in a pattern more likely to exceed the average. Some specialties, such as Pulmonology (Respiratory Diseases) and mental health and alcohol/substance services, use hospital care substantially more often than average.

Central Subarea, 2009 - 2011

Southern Subarea, 2009 - 2011

Data Source: New York Department of Health SPARCS dataset; calculation by FLHSA
See next page for list of Major Diagnostic Categories
MDC CATEGORY DESCRIPTIONS

1. Diseases and Disorders of the Nervous System
2. Diseases and Disorders of the Eye
3. Ear, Nose, Mouth, Throat, and Craniofacial Diseases and Disorders
4. Diseases and Disorders of the Respiratory System
5. Diseases and Disorders of the Circulatory System
6. Diseases and Disorders of the Digestive System
7. Diseases and Disorders of the Hepatobiliary System and Pancreas
8. Diseases and Disorders of the Musculoskeletal System and Connective Tissue
9. Diseases and Disorders of the Skin, Subcutaneous Tissue and Breast
10. Endocrine, Nutritional and Metabolic Diseases and Disorders
11. Diseases and Disorders of the Kidney and Urinary Tract
12. Diseases and Disorders of the Male Reproductive System
13. Diseases and Disorders of the Female Reproductive System
14. Pregnancy, Childbirth and the Puerperium
15. Newborns and Other Neonates with Conditions Originating in the Perinatal Period
16. diseases and Disorders of Blood, Blood Forming Organs and Immunological Disorders
17. Lymphatic, Hematopoietic, Other Malignancies, Chemotherapy and Radiotherapy
18. Infectious and Parasitic Diseases, Systemic or Unspecified Sites
19. Mental Diseases and Disorders
20. Alcohol/Drug Use and Alcohol/Drug Induced Organic Mental Disorders
21. Poisonings, Toxic Effects, Other Injuries and Other Complications of Treatment
22. Burns
23. Rehabilitation, Aftercare, Other Factors Influencing Health Status and Other Health Service Contacts
24. Human Immunodeficiency Virus (HIV) Infections
25. Multiple Significant Trauma
Prevention Quality Indicators (PQIs)

The Federal Agency for Health Research and Quality has developed a set of Prevention Quality Indicators (PQIs) using inpatient admissions to identify quality of care for ambulatory care–sensitive conditions. These conditions are ones for which good outpatient care can potentially prevent the need for inpatient care. Even though these indications are based on hospital inpatient data, they provide insight into the quality of (and use of) the health care system outside the hospital setting.

For instance, a hospital admission for an asthma crisis might be appropriate, but it could potentially have been avoided if the patient had received better outpatient or primary care on ways to control his/her asthma and how to respond to an asthma crisis.

Higher PQI rates can thus be an indication of inadequate primary/ambulatory care utilization.

The Finger Lakes region generally has lower PQI rates than New York State or Upstate New York. Variation within the region, however, suggests areas with less adequate primary care access or utilization. Generally, the Southern Tier has higher PQI rates than Monroe or the Central subarea. Rochester has rates much higher than the surrounding Monroe suburbs, and Elmira rates are higher than its surrounding areas.
There are PQIs related to cardiac conditions, respiratory conditions, diabetes related conditions and miscellaneous acute conditions. The graph below shows the PQI rates for areas within the region. Note that for most conditions:

- The Southern subarea rates are above those of Monroe County and Central subarea.
- Rochester City rates are well above the rest of Monroe County.

**PQI Discharges by Type and Geography**

**Finger Lakes Region, 2010 - 2012**

Data Source: New York State Department of Health SPARCS dataset; calculations by FLHSA.

Rates are age-sex adjusted to the 2000 U.S. population.
There are disparities in rates of PQI admissions, among the racial/ethnic populations and as measured by socio-economic status, suggesting disparities in utilization of primary care services. African Americans have rates much higher than White non-Latinos, often with Latinos between.

### All PQI Discharge Rate by Race/Ethnicity and SES, 2009 - 2011

<table>
<thead>
<tr>
<th></th>
<th>Central Subarea</th>
<th>Rochester</th>
<th>Other Monroe</th>
<th>Southern Subarea</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>2,134</td>
<td>2,907</td>
<td>1,691</td>
<td>2,716</td>
</tr>
<tr>
<td>(non Hispanic)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Latino</td>
<td>1,121</td>
<td>2,434</td>
<td>686</td>
<td>653</td>
</tr>
<tr>
<td>White</td>
<td>1,244</td>
<td>1,425</td>
<td>901</td>
<td>1,602</td>
</tr>
<tr>
<td>(non Latino)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SES 1 (Low)</td>
<td>1,885</td>
<td>2,275</td>
<td>0</td>
<td>2,368</td>
</tr>
<tr>
<td>SES 2</td>
<td>1,434</td>
<td>1,814</td>
<td>1,171</td>
<td>1,362</td>
</tr>
<tr>
<td>SES 3</td>
<td>1,051</td>
<td>1,280</td>
<td>1,190</td>
<td>1,466</td>
</tr>
<tr>
<td>SES 4</td>
<td>1,088</td>
<td>766</td>
<td>1,057</td>
<td>1,513</td>
</tr>
<tr>
<td>SES 5 (High)</td>
<td>853</td>
<td>0</td>
<td>747</td>
<td>1,519</td>
</tr>
</tbody>
</table>

Rates are PQI discharges per 100,000 population, age-sex adjusted.

Data Source: New York State Department of Health SPARCS dataset; calculations by FLHSA.

The patterns above are also seen for the components of cardiac, respiratory, diabetes, and acute PQIs, although the disparities are most acute for diabetes-related conditions. The patterns are also observed when looking at PQI conditions presenting in the Emergency Department.
Economic Impact of PQIs

PQI admissions consume substantial amounts of inpatient hospital resources.

Each year in the 2010 to 2012 period, potentially preventable hospitalizations of Finger Lakes residents filled 259 beds and generated nearly $200 million in hospital charges.

Prevention Quality Indicators
All PQI Hospitalizations, Finger Lakes (Adult) Residents
2010-2012 Average

- **PQI Discharges**: 15,022
  - 10.4% of all discharges

- **75,747 Patient Days**
  - 10.3% of days

- **259 beds**

- **Charges (not costs)**: $199,528,803
  - 8% of charges

Data Source: New York State Department of Health SPARCS dataset; calculations by FLHSA.
Hospital Readmissions

Not all hospital readmissions are avoidable, but many are and readmissions often represent a breakdown in quality of medical care (Mathematica, 2009; Dartmouth Atlas Project 2013). Studies have shown, for instance, that many who are readmitted never saw their primary care practitioners following the initial admission and thus never were given instructions in how to prevent their health problem from deteriorating to the point where a readmission is required. Readmissions are of such concern that the federal Medicare program is financially penalizing hospitals with above average rates of readmissions (CMS 2013).

Readmission happens at an alarming rate: Over 16% of hospital discharges (about one out of six) result in a subsequent admission within 30 days, and nearly one out of four discharges (22.65%) are followed by a readmission within 60 days\(^1\).

Readmission rates increase with increasing age, perhaps reflecting greater frailty of seniors.

---

\(^{1}\)Readmission rates are for any cause, except obstetric and newborn, transfers and trauma admissions are excluded. Index visits that result in deaths are excluded from the denominator.
Disparities in Hospital Readmissions

Readmissions appear to be strongly linked to access to care (Mathematica, 2009; Dartmouth Atlas Project, 2013). Populations with lesser access to care, perhaps especially primary care, or with financial constraints, exhibit higher rates of readmission. Thus, those on Medicaid, or Medicare and Medicaid, and those residing in lower socio-economic areas have higher rates.

The largest number of readmissions occurs among White patients and Medicare patients, so efforts to reduce the readmission rate in the region cannot be focused solely on the highest rate population. Rather, reductions require system-wide improvements affecting all patient population groups. Such system-wide efforts are underway in this region, including hospital-based projects and a major project facilitated by FLHSA and funded by the federal Center for Medicare and Medicaid Innovation (CMMI).
“Frequent Fliers”

Only about 8% of individual Finger Lakes region residents are admitted to a New York hospital in a year. Of those, about 79% are admitted only once. But 21% of residents who had a hospitalization had more than one hospitalization, and 913 residents in 2011 had more than five hospitalizations.

Likewise, about 21% of residents experienced an Emergency Department visit in 2011, but 11% of those who went to the Emergency Department had more than three ED visits, and 265 individuals had more than twenty visits in a year. The highest 11% of ED visitors used over 35% of all ED visits.

Data Source: NYS Department of Health SPARCS dataset; calculations by FLHSA

Percent of ED Visitors with Multiple ED Visits
Finger Lakes Region, 2011

Data Source: NYS Department of Health SPARCS dataset; calculations by FLHSA
Cost of Care – Use of Emergency Department Services

While the region’s use of inpatient hospital care is less than other areas of the country, its use of Emergency Department services tends to be higher than Upstate New York, but may be less than the National average*, and is rising over time.

This use pattern is partially a reflection of less than optimal access to primary care services. It may also reflect lower use of urgent care than in some other areas within and outside NYS.

*Some national ED utilization includes urgent care center visits. These are not included in the NYS data; thus it is uncertain if the national ED rates are truly higher or not than regionally.
There does not appear to be good data on physician utilization at a local level. A recent Institute for Healthcare Improvement (IHI) report (Milliman 2010) comparing U.S. patterns for selected cities from commercial insurance claims provides an indication that this region’s physicians are conservative in their utilization. Cases and costs for “evaluation and management” were near the rate of 33 selected hospital referral regions, but total physician services costs (which includes visits, for instance, for treatments, procedures and surgeries) were only 85% of the average. Cases and costs for Emergency Department services were two-thirds (67%) of the average.

Data Source: Milliman, Inc. 2010
Health Care Resource Issues

While there are many imbalances between health care needs and health care resources, this section shines a spotlight on three issues of import to the region:

• Shortages of primary care
• Surplus of acute care beds
• Need for transition of long term care from institutional to community focus.
Few resources are as important to accessing health care services as having an adequate supply of physicians, especially primary care physicians. As seen earlier (page 79), there are large areas in the region, both urban and rural, that are federally designated as primary care shortage areas. The region’s rural counties have far fewer physician resources than do the urban counties.

The region has more physicians per person than the U.S. average but substantially fewer than the NYS or Middle Atlantic states average.

Source: Center for Health Workforce Studies, SUNY Albany

The region has more physicians per person than the U.S. average but substantially fewer than the NYS or Middle Atlantic states average.
Aging of Physicians

Of concern also is the aging of the physician workforce, particularly in rural counties. A FLHSA study in 2009 indicated that a larger portion of Rochester region physicians were approaching the age of retirement in 2009 than in 2004.

**Physician Age Distribution**

Rochester Region, 2004 and 2009

Acute Bed Supply

In recent decades, medical technology has facilitated a shift in care from inpatient to outpatient settings, and inpatients have needed shorter stays than in prior years. The result has been an ongoing decline in inpatient utilization. In Rochester, the closing or reconfiguration of two hospitals have left the remaining facilities with high occupancy and a shortage of beds; those problems are being addressed by the addition of beds. Outside Monroe County, however, most hospitals have empty beds and low occupancy of built capacity. Conversion of hospital physical space from inpatient to more ambulatory orientation will require substantial capital funds. For many hospitals, such funds are difficult to procure.

Data Source: Hospital Patients Statistics submitted to FLHSA by hospitals

Rochester Area = Livingston, Monroe, Ontario, Seneca, Wayne, and Yates counties
Mental Health Services Resources

In the 1950s before effective drug treatment, there were nearly 100,000 people with mental illness housed in the NYS Office of Mental Health state psychiatric centers; additional numbers of patients were served in community hospital psychiatric beds. By 1995, there was a 9,500 person average daily psychiatric center census and 4,500 community hospital average psychiatric census. Presently the state psychiatric centers care for 3,900 patients (NYS OMH).

Concomitantly, community capacity was developed in the community to care for patients in non-institutional programs. OMH has closed many psychiatric centers and has plans for further closures, with reinvestment in the community services planned.

Arguably, there has not been sufficient community capacity developed, and many would argue the county jails are defacto inpatient settings but without adequate care resources. While it is possible to enumerate capacity of the publicly supported mental health systems, it is difficult to describe the private care system – psychiatrists, psychologists, social workers – that comprise a large part of the mental health treatment system. The mix of patients cared for by each OMH certified setting demonstrates the present emphasis on community settings:

### Mental Health Services Use - Finger Lakes Region 2011

<table>
<thead>
<tr>
<th>Adults Age 18+</th>
<th>Children Age 0 - 17</th>
</tr>
</thead>
</table>

- **Emergency**
- **Inpatient**
- **Outpatient**
- **Residential**
- **Support**

Data Source: NYS Office of Mental Health

In the alcoholism and substance abuse treatment field, there has also been a movement away from inpatient care settings and toward emergency or short-term community services. This is reflected in the mix of treatment services used in the region:

### Alcoholism & Substance Abuse – Finger Lakes Region 2008

- **Inpatient Beds**
- **Residential Beds**
- **ED Treat & Release**
- **MMTP*”

Data Source: NYS Office of Alcoholism and Substance Abuse Services

* Methadone Maintenance Treatment Program
Long Term Care Resources

Declining nursing home use rates and occupancies are prime evidence that the current and upcoming generations of users of long-term care want to stay in their home or in the community rather than be placed in a nursing home. Further, with an avalanche of seniors (the “baby boomers”) approaching an age when long term care services are used, the present nursing home-oriented system will not be financially sustainable. To aid in a transition from an institution-oriented to a community-oriented long term care system, FLHSA facilitated a multi-stakeholder group entitled SAGE to develop a vision of a future long term (LTC) system.

Central to the SAGE plan is a reduction in nursing homes from a current 52 per 1,000 seniors (ages 65+) to 30/1,000 by 2025. This will be accomplished by development of licensed and unlicensed assisted living beds and a sharp increase in home health visits and other supportive services to keep seniors in the community.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Skilled Nursing Beds</td>
<td>9,077</td>
<td>8,771</td>
<td>8,370</td>
<td>7,680</td>
<td>7,105</td>
<td>-21.7%</td>
</tr>
<tr>
<td>Licensed Adult Care/Assisted Living Beds</td>
<td>3,967</td>
<td>4,304</td>
<td>4,427</td>
<td>4,337</td>
<td>4,353</td>
<td>9.7%</td>
</tr>
<tr>
<td>Adult Day Health Care Slots</td>
<td>461</td>
<td>554</td>
<td>688</td>
<td>825</td>
<td>973</td>
<td>1.11%</td>
</tr>
<tr>
<td>Medicare Skilled Visits</td>
<td>225,000</td>
<td>230,000</td>
<td>247,000</td>
<td>268,000</td>
<td>290,000</td>
<td>28.9%</td>
</tr>
<tr>
<td>State and County Paid Home Care Visits</td>
<td>541,000</td>
<td>680,000</td>
<td>972,000</td>
<td>1,264,000</td>
<td>1,582,000</td>
<td>1.92%</td>
</tr>
<tr>
<td>Public $ Per Capita 85+</td>
<td>4,690</td>
<td></td>
<td></td>
<td></td>
<td>4,638</td>
<td>-10%</td>
</tr>
</tbody>
</table>

Data Source: FLHSA SAGE Plan, 2011
Conclusions

• Priority should be given to health-promoting programs that seek to:
  o Reduce obesity in children and adults
  o Reduce use of tobacco
  o Control hypertension

• There are shortages of primary care practitioners in many parts of the region.

• There is continued need for development of advanced primary care (patient-centered medical home) practices.

• There are surplus acute care beds, especially outside Monroe County. The empty beds can threaten the financial viability of facilities needed to provide access to all health services.

• The current physical health/mental health dichotomy is false. There is substantial need to better coordinate and integrate physical health and behavioral health services.

• Many women in this region do not receive early and adequate prenatal care, believed to promote good birth outcomes.

• Parenting and early childhood development programs, such as the Nurse Home Visitation program, have demonstrated they pay dividends and should be promoted.

• Pre-conceptual and inter-conceptual programs supporting mothers’ health have demonstrated short and long-term benefits to mother and infant.

• To support elders’ preferences and to avoid unsustainable long-term care costs due to the aging of the “baby boomers,” support should be given to development of community alternatives to nursing home care.

• While the Finger Lakes region health care system is low-cost compared to other areas in the nation, continued emphasis on reduction of potentially avoidable inpatient and emergency department visits (through improved connection to primary care and community support services) is appropriate.
References


American Academy of Family Physicians, “Primary Care”, April 2014.

American Hospital Association, AHA Hospital Statistics, published annually.


Center for Disease Control, 2006. My Water Fluoride accessed at apps.nccd.cdc.gov/mwf/  


CMS 2013, U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, Readmissions Reduction Program accessed at www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/Readmissions-Reduction-Program.html


References (continued)


How’s Your Health. Available at http://www.howsyourhealth.org/


References (continued)

Milliman, Inc., Pyenson B, Goldberg S, Berrios M, _Commercial Cost Variation by Hospital Referral Region_, NY, August, 2010


New York State Department of Health, 2011, Vital Statistics and SPARCS dataset


Obesity Society, 2014; Eckel RH etal, 2011)


Need more information? See the accompanying *Regional Profile* document.
APPENDIX
Age Adjustment

Especially for causes of mortality that occur more frequently at older ages, the number of deaths may increase just because the population is aging rather than because there are changes in underlying mortality rates. For instance, the number of cancer deaths in the Finger Lakes region has largely risen over the past 20 years. The “crude” rate, unadjusted for aging of the population, has tracked that rise and is just beginning to hint of a decline. The age-adjusted rate, however, has definitely peaked and begun to drop. It is important to “adjust” for the aging of a population over time, or for differences in age structure when two or more populations are being compared.

Cancer Mortality, Finger Lakes Region
Crude Rate vs. Age/Sex Adjusted

Data Source: New York State Vital Statistics; calculation by FLHSA
Hypertension Measurement

The following figure shows the importance of measurement in health/health care improvement projects. The Hypertension Collaborative high blood pressure registry provides data that focus on project success (increased populations with blood pressure in control), medical care improvement opportunity, community efforts successes and challenges, and need for sources for new data to evaluate the project.

Through June 30, 2013
Some areas of the region have populations that use health care differently than a general population, affecting health care statistics. For instance, in Geneseo (Livingston County), location of SUNY Geneseo, 50% of the population is aged 18 - 24, compared to 10% in the rest of the region. Further, some of those students live in the community and some live in dormitories (group quarters). Finally, students get some care from local resources and some from resources in their home communities. For all of these reasons, health statistics must be considered carefully for areas affected by such “special populations.” Other special situations include prisons and nursing homes. Border areas such as the Southern Tier may also be problematic; as some Southern Tier residents obtain hospital care in Pennsylvania, but such use is not captured in the New York State Department of Health’s SPARCS hospital data set.
In 2008, researchers first described a Triple Aim of simultaneously

- Improving population health
- Improving the patient experience of care, and
- Reducing per capita cost.

The Institute for Healthcare Improvement (IHI) further developed the concept. It has since become the organizing framework for the U.S. National Quality Strategy (federal Agency for Healthcare Research and Quality) and has been adopted by many organizations around the world.

It has also been adopted by FLHSA as its organizing framework for reporting community health measures and metrics. The Triple Aim concept is the framework around which this Regional Profile is organized.

A useful set of measurement metrics is essential to this work. This community has not yet defined a comprehensive measurement system for the Triple Aim, but there are examples available how measurement can support and encourage simultaneous improvement of the three facets of the Triple Aim. (Stiefel, 2012)
Measures of Population Health

In measuring the health of the population and its change over time, it is valuable to distinguish between process measures and outcome measures. Some high-level outcomes, though, may be difficult to measure or will not change substantially in the short term, and process measures may need to be substituted in local consideration.

Mortality is perhaps the ultimate outcome, but Triple Aim projects often use more nuanced measures: age-adjusted mortality; years of potential life lost; life expectancy. Health status and/or functional status are sometimes measured by a single-question or multi-domain assessment. Life expectancy can add the element of healthy life expectancy, combining life expectancy and health status into one measure.

Disease burden may be an outcome measure, looking at either incidence and/or prevalence of major chronic conditions.

Behavioral and physiologic factors, thought to be precursors of health status outcomes, may be measured to look at activities such as smoking, alcohol consumption, physical activity and diet, blood pressure, body mass index, cholesterol and blood glucose; some projects develop composite measures of health risk.

Cost Measures

Total cost as expenditure on health care services is of concern to all, both consumers and payors. While reduction of cost is an objective, a prime concept is “value”, i.e. cost for outcome.

Components of cost include supply costs, such as inpatient volume times unit cost, overhead of providers and overhead of intermediaries, consumer out of pocket cost, public health expenditures, and indirect cost such as absenteeism. Some cost components are difficult to measure. For instance, physician “charges” (price) are available while physician costs are often not. Out of pocket costs are sometimes captured by data systems, such as co-payments for medications, but many other out of pocket costs are not. Indirect costs, while real, are fraught with measurement obstacles.

In the absence of complete cost data, communities may look to intermediate metrics. Because of its impact on total costs, for example, a community may look to reduce inappropriate or unnecessary inpatient and emergency room use. Improving transitions of care from hospital to community has been shown to reduce re-admissions to the hospital and associated costs.

Health insurance premiums are also an indirect measure of health care. Comparison between communities must be done carefully, however, to assure an appropriate comparison.
The overall experience of care is best assessed by patients who receive the care. Often this is done by survey, either by commercial (e.g. Press-Ganey) or public entities.

The Consumer Assessment of Healthcare Providers and Systems (CAHPS) family of surveys, sponsored by the federal Agency for Healthcare Research and Quality (AHRQ), includes a global question on the overall experience of healthcare such as:

“Using any number from 0 to 10 where 0 is the worst health care possible and 10 is the best health care possible, what number would you use to rate all your health care in the past 12 months?.”
(CAHPS Pocket Reference for Adult Surveys)

How’s Your Health, another widely utilized tool for consumers to assess their overall experience of care, includes the following question:

“When you think about your healthcare, how much do you agree or disagree with this statement: ‘I received exactly what I want and need exactly when and how I want and need it’? (How’s Your Health)

Some health systems use an overall “likelihood to recommend” as an indirect measure of quality of care.

The Institute of Medicine has articulated six determinants of care experience: safe; effective; timely; patient-centered; equitable; and efficient. The Institute recommends that organizations use the six aims as their framework for care delivery (Committee on Quality of Health Care in America).
Determinants of Health— the McGinnis Model
(McGinnis, Williams-Russo & Knickman, 2002)

Per studies of physician and epidemiologist J. Michael McGinnis and colleagues, medical care has a relatively small impact (10%) on the overall health of the population. Rather, health behaviors, such as smoking, along with genetics, environment and social circumstances, are more important determinants of health.

McGinnis argued, though, that more important than these factors alone are the influences in play when the domains intersect. Whether a gene is expressed can be determined by environmental exposures or behaviors. The nature and consequences of behavioral choices are affected by our social circumstances. Our genetic predispositions affect the health care we need, and our social circumstances affect the health care we receive (McGinnis, Williams-Russo, Knickman, 2002).
Medical Care

Medical care, while playing a minor role in overall population health, is nonetheless important for individuals when they become sick. McGinnis defines optimal medical care as that which is timely and error-free (2002). Therefore, it is important to examine both access (care that is timely) and quality (care that is error free) when evaluating the health care system as a health determinant.

In the United States, access to health care is largely driven by having either publicly or privately financed health insurance, a primary rationale for the federal Affordable Care Act. Numerous studies have shown having insurance greatly improves access and affordability of medical care (Baicker et al., 2013; Buchmueller, Grumbach, Kronick, & Kahn, 2005). Greater access may increase the use of preventive services, which can improve one’s current health status and halt the development of future chronic conditions. Consistent use of screening tests facilitates early disease detection and can improve treatment outcomes.

In addition to shortfalls in insurance coverage, supply-side factors may limit a particular population’s access to medical care services. For example, a lack of primary care physicians in the inner-city or in rural regions can place considerable barriers to adequate care that cannot be addressed solely by health insurance coverage.

Measuring the quality of care delivered is challenging given the datasets available. However, an examination of the types of preventive and screening services received, as well as a review of the adequacy of primary care management of more complex conditions, provides some description of the quality of health care services encountered by various populations (Committee on Quality of Health Care, 2001).

Environment

Environmental exposures play a substantial role in determining the health of individuals and communities. For instance, living in or near environmental toxins can have substantial negative affects on one’s health (Vrijheid M, 2000). Living near a toxic waste site, even if nominally cleaned up (“brownfields”), can increase the risk of cancer. A similar cancer effect, as well as respiratory illness, may occur with air pollution. Many houses built before 1978 may pose risks of lead poisoning, especially for toddlers, leading to physical and mental disorders.

In rural areas, issues such as lack of sidewalks, accidents from farm equipment and use of agricultural chemicals are often features with direct links to health outcomes.
There are other less obvious but influential factors in creating or inhibiting an environment conducive to good health. Living in an area with a concentration of alcohol outlets may lead to excess use of alcohol. Living with crime may reduce one’s likelihood of exercise. If local stores do not stock healthful foods, such as fresh fruits, multi-grain breads or skim milk, it becomes difficult for residents to “eat right.”

On the other hand, some environmental characteristics have a positive effect on health. Having a source of optimally-fluoridated water, for instance, has been shown to reduce dental decay (cavities).

**Social Circumstances**

“Social Circumstances” describe the social environment in which one lives that has an impact on individual and community health.

These circumstances include the stress created by living with low incomes, urban crowding, and crime or fear of crime; they also include being subjected to racism. Social circumstances also include children being raised by a single parent or a grandparent, young boys without adult male role models, and/or communities missing substantial numbers of young men to the criminal justice system.

These types of social environmental influences may be measured by persons admitting to Frequent Mental Distress or by the internalized stress that results in higher allostatic loads (the body’s physiologic response to periods of high stress), which contribute to greater “wear and tear” on the body and depletion of one’s physical health (Juster, McEwen, & Lupien, 2010). They also can be exhibited more generally as lower self-assessment of overall health.

Social circumstances can also be positive, such as living in cultures with the supportive influence of spiritualism.

**Health Behaviors**

Per McGinnis (McGinnis, Williams-Russo, Knickman, 2002), health behaviors have the single largest effect – both positively and negatively – on an individuals’ health. Smoking tobacco, for instance, is implicated in cancer, heart disease and stroke, pneumonia and chronic lower respiratory diseases. Excessive use of alcohol likewise can be a detriment to health (although moderate use of alcohol may actually have a positive effect).
Being over-weight or obese increases cardiovascular problems and increases the occurrence of some cancers.

Seeing a health practitioner for certain “preventive” services, on the other hand, may improve health. Getting recommended immunizations, controlling blood lipids such as cholesterol, getting screening tests for diseases such as breast cancer and colon cancer, are all “healthful” behaviors. Routinely wearing a seat belt can reduce trauma in motor vehicle accidents.

The California-based Milkin Institute estimated that a “modest” but “optimistic” improvement of specific prevention and health-related behaviors would reduce the incidence of seven major chronic diseases in the United States by 40 million cases (from 230 million to 190 million) between 2003 and 2023 compared to present trends (DeVol et al., 2007).

Much of health is self-managed, whether it involves deciding if an illness or injury requires professional medical care or deciding to undertake a physical activity rather than watching TV. Many behaviors that put health at risk are also self-managed. It would be a mistake, however, to conclude that individuals are solely responsible for their own bad health through their risky behaviors. As previously noted, the determinants of health often have their effect where they intersect, such as genetics and behaviors, making it difficult to ascertain direct causal pathways between one’s behavior and health outcomes.

Genetics

Genetic predispositions have a strong influence on health. Much of that influence is modulated by environment and behaviors.

Yet, it may be that genetics play a relatively small role in health disparities between racial or ethnic groups. “Race” is largely a social construct; with a few exceptions it does not genetically distinguish among persons. One notable exception is sickle-cell anemia: After centuries of genetic pressure from malaria in Africa, most African Americans have a two-times higher genetic disposition to suffering from sickle cell disease than do Whites. However, relatively few diseases demonstrate that level of racial/ethnic disparity, and genetics alone do not explain broader racial/ethnic disparities observed.

Even diseases known to have a genetic component may have other causes as well. The BRCA1 and BRCA2 genes, known to predispose women to breast cancer, are only present in about 10% of breast cancer cases.
About Finger Lakes Health Systems Agency
FLHSA (flhsa.org) is an independent health planning organization working collaboratively with multi-stakeholder groups to improve health quality and access, and to eliminate health care disparities in Rochester and the Finger Lakes region. The agency analyzes community needs, brings together organizations to solve health problems, and measures results. FLHSA serves the nine counties of Chemung, Livingston, Monroe, Ontario, Schuyler, Seneca, Steuben, Wayne and Yates.