



THE ECONOMIC IMPACT

OF POOR HEALTH ON OUR WNY COMMUNITY

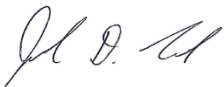
OUR COMMUNITY PARTNERS

Buffalo and Western New York are experiencing an exciting period of renewal. We have reason to be optimistic, and so many of us feel that we are a more vibrant community than we were just a few years ago – these are exciting times.

Unfortunately, the benefits of our rebirth have not been evenly distributed. Two important collective impact efforts have gained momentum to address racial equity and improve the skills and prospects for the region's working poor. These are crucial, and we need to support those efforts while we address other community concerns.

One of our most pressing concerns is the fact that we are recognized as the least healthy region of New York State, and our health outcomes and prevalence of chronic disease takes a human and financial toll. The financial impacts are highlighted on the following pages. Our health outcomes will continue to impede our economic development and the cities we compete with for economic and community development have an advantage over us as long as their workforces are healthier than ours.

Our remarkable growth and energy provide us with the opportunity to tackle these issues, and we invite stakeholders and leaders to join us to create the sense of urgency we need to become a healthier community.



John D. Craik, JD
Executive Director
Population Health Collaborative

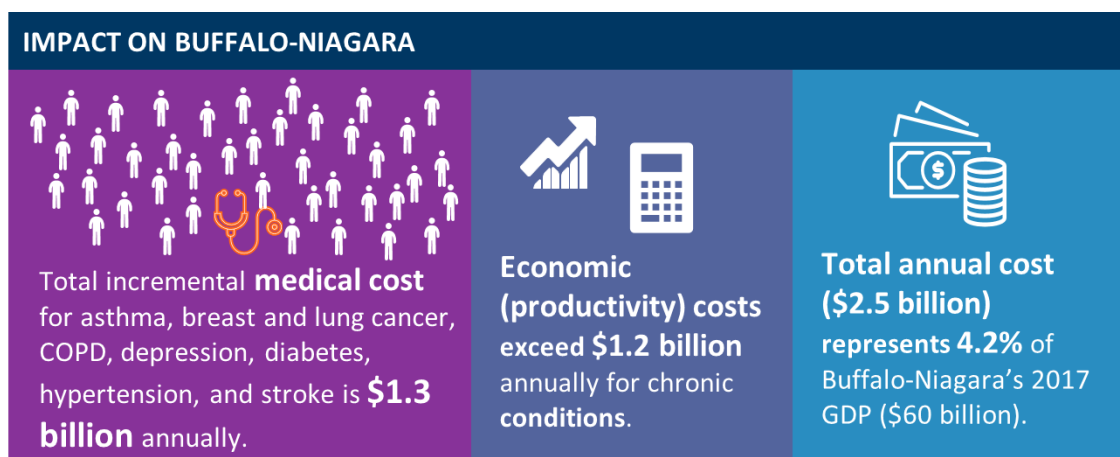


EXECUTIVE SUMMARY

Health represents a vital asset for a community. Business leaders, healthcare providers, and community stakeholders increasingly focus on the **economic and health impact** of chronic conditions whose prevalence and associated healthcare service needs lead to higher costs and broader economic impact on a community, its workforce and residents.¹ Health scorecards and rankings provide strong signals about issues facing a community yet often lack locally relevant metrics and actionable data. Community leaders need these locally relevant data to be able to understand the economic implications of key drivers and opportunities for action to improve workforce health and well-being.

Employers and communities face increasing costs from chronic health conditions and adverse health behaviors among their employees and residents. **Direct medical costs**, incurred by patients and employers paying for medical services, come from hospitalizations, outpatient visits, and pharmaceutical costs. **Productivity costs** come from time away from work (**absenteeism**) and reduced productivity due to effects of illness while at work (**presenteeism**). Productivity costs can match and even exceed direct medical costs in a community for many chronic health conditions.

The Population Health Collaborative commissioned FTI Consulting, Inc.'s Center for Healthcare Economics and Policy to develop foundational data and analytics of the economic impact of poor health on the Buffalo-Niagara workforce and the broader Buffalo-Niagara community. This report uses the Center's proven methodology and core metrics, along with extensive public and private data, to assess health, access, and costs to provide stakeholders with critical baseline information.



This report presents results of a unique and in-depth examination of the impact of chronic conditions on the Buffalo-Niagara workforce. It uses extensive commercial claims data and academic research of specific health conditions with high prevalence in the Buffalo-Niagara area to estimate locally relevant economic costs of poor health, and to compare the area to nine peer cities. FTI estimates the total incremental medical cost for eight chronic conditions to be **\$1.3 billion** annually with an additional **\$1.2 billion** of productivity costs incurred each year due to poor health in the workforce.

¹ For further information on collaborative activities, see Action Collaborative on Business Engagement in Building Health Communities, <https://www.nationalacademies.org/hmd/Activities/PublicHealth/PopulationHealthImprovementRT/Business-Collaborative.aspx>.

COMPARATIVE ANALYTICS: BUFFALO-NIAGARA & ITS PEERS

FTI benchmarks the Buffalo-Niagara region to nine **peer metro areas** and the nation across **core metrics**.

Designated peer areas chosen by stakeholders include three communities in New York (**Albany, Rochester, and Syracuse**) and six other areas (**Cincinnati, Cleveland, Columbus, Indianapolis, Louisville, and Pittsburgh**). FTI uses Metropolitan Statistical Areas

DESIGNATED PEER METRO AREAS			
ALBANY	ALB	INDIANAPOLIS	IND
BUFFALO-NIAGARA	BUF	LOUISVILLE	LOU
CINCINNATI	CIN	PITTSBURGH	PIT
CLEVELAND	CLE	ROCHESTER	ROC
COLUMBUS	COL	SYRACUSE	SYR

(MSAs) as a proxy for the broader Buffalo-Niagara community and its peer cities to develop core metrics.² The Buffalo-Niagara MSA includes the counties of Erie and Niagara, which represent nearly three-quarters of the population of the broader Buffalo-Niagara community. Economic ties between a MSA and its neighboring counties inextricably link the impact of disease and health behaviors across a region. By using a consistent geographic unit (MSA) for peer analyses, FTI ensures core metrics, benchmarks and rankings are appropriately defined.

Core metrics are developed from public and proprietary data for the Buffalo-Niagara MSA and its peers. Core metrics include: key **demographic** characteristics; **prevalence** of 12 chronic conditions and health behaviors; **medical costs and productivity costs**; outcomes (**life expectancy**) and **access** (physicians).³ There is significant economic and demographic diversity for measurable characteristics such as income, population size, and educational attainment. Peer communities are well chosen for Buffalo-Niagara—with comparable ranges between them for key **demographic** characteristics. Benchmarks against these comparator cities are well-founded and meaningful.

The peer group of ten metro areas is measurably similar on demographic and socioeconomic factors. Buffalo-Niagara has a comparable mix of diversity to its peers with a mix of 78% non-Hispanic white and 12% black residents. The population of the peer cities ranges from just over 650 thousand to 2.3 million with Buffalo-Niagara in between with a population of 1.1 million.

MSA	Population*	Total Households	Female (%)	Age Under 18 (%)	Age 18-64 (%)	Median Income	Bachelor's Degree, Age 25+ (%)	Non-Hispanic White (%)	Black (%)	Hispanic (%)	Married (%)
National	307,406,801	118,825,920	51%	23%	62%	\$ 57,652	31%	61%	12%	18%	48%
Albany	886,188	349,325	51%	20%	64%	\$ 62,293	36%	80%	7%	5%	45%
Buffalo-Niagara	1,136,856	474,349	52%	21%	62%	\$ 52,831	31%	78%	12%	5%	42%
Cincinnati	2,179,082	838,070	51%	24%	62%	\$ 57,208	32%	80%	12%	3%	48%
Cleveland	2,058,844	853,766	52%	22%	61%	\$ 61,137	30%	70%	20%	5%	43%
Columbus	2,078,725	775,065	51%	24%	64%	\$ 60,031	35%	74%	15%	4%	47%
Indianapolis	2,028,614	759,549	51%	25%	62%	\$ 60,317	33%	73%	15%	7%	47%
Louisville	1,293,953	498,979	51%	23%	62%	\$ 53,366	28%	77%	14%	4%	46%
Pittsburgh	2,333,367	1,000,493	51%	19%	62%	\$ 56,333	33%	86%	8%	2%	47%
Rochester	1,077,948	431,327	51%	21%	63%	\$ 53,674	33%	77%	11%	7%	45%
Syracuse	654,841	258,028	51%	21%	63%	\$ 57,271	31%	82%	8%	4%	45%

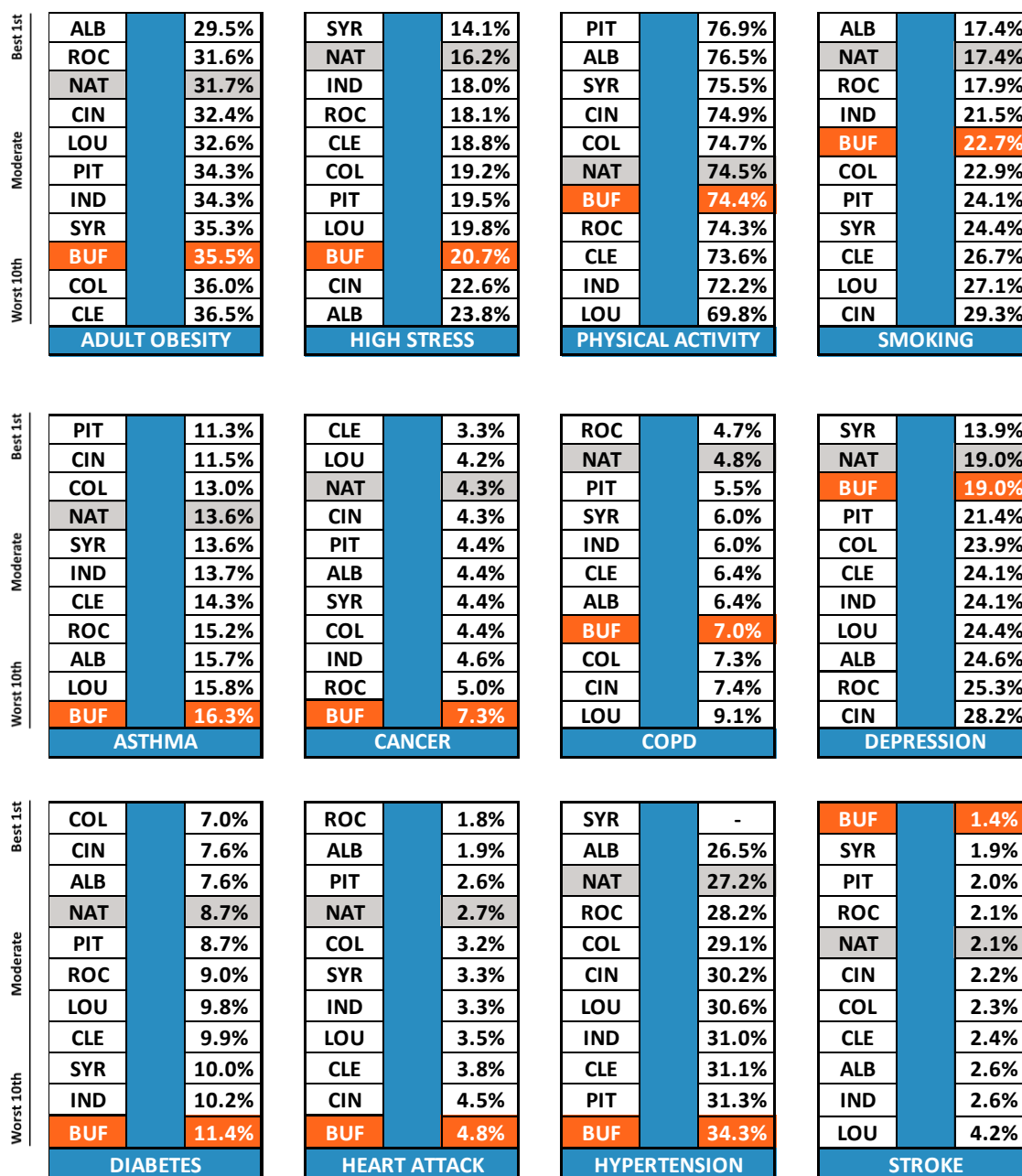
Source: U.S. Census Bureau, American Community Survey (ACS) Five-Year Estimates (2013-17). *Population is derived from U.S. Census Bureau 2017 estimates.

² FTI uses MSAs as a proxy in its proven methodology given data availability limitations for county level data. The Buffalo-Niagara MSA includes two counties: Erie and Niagara Counties. County definitions for the Buffalo-Niagara MSA and peer MSAs are consistent across the 2013, 2015, and 2017 Census delineations.

³ Core metrics are estimated using U.S. Census, IHME, NPI, IBM MarketScan® Research Databases, CDC BRFSS SMART, literature, and authors' calculations.

COMPARATIVE HEALTH RANKINGS FOR BUFFALO-NIAGARA AND PEERS

Chronic conditions and health behaviors potentially involve significant healthcare utilization and expenditure for inpatient, outpatient, and prescription drug care for the workforce. Comparative data provide Buffalo-Niagara with key health metrics.⁴ The area ranks below the national average (and most peers) for 10 out of 12 chronic conditions and health behaviors: hypertension, asthma, chronic obstructive pulmonary disease (COPD), diabetes, non-skin cancers, heart attacks, adult obesity, high stress, physical activity, and smoking.⁵ Buffalo-Niagara ranks well and has relatively low stroke and depression prevalence.



Source: CDC BRFSS SMART, 2017. BRFSS SMART, 2016.

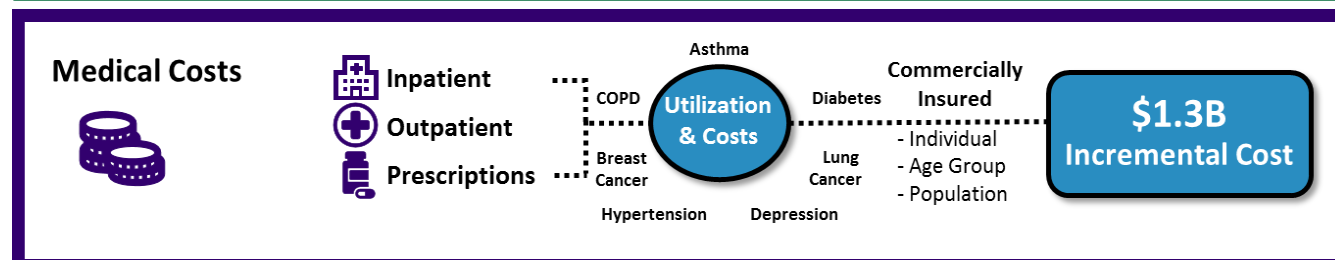
⁴ Syracuse prevalence are reported from CDC BRFSS SMART 2016 because the city is not in 2017 BRFSS data. National prevalence (NAT) shaded in grey.

⁵ The distinction between health behaviors and chronic conditions is variable. Here chronic conditions refer to asthma, cancer, COPD, depression, diabetes, heart attack, hypertension, and stroke, while health behaviors refer to adult obesity, high stress, physical activity, and smoking.

MEDICAL COSTS OF CHRONIC CONDITIONS

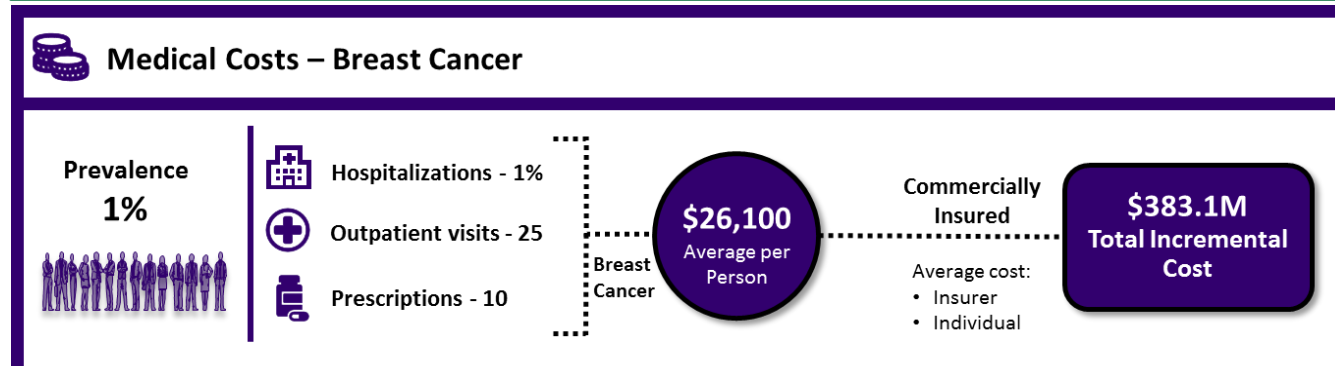
Incremental Medical Costs of Chronic Conditions in Buffalo-Niagara

The total incremental medical costs (the cost of patient care and medications due to disease) incurred by the workforce population in Buffalo-Niagara across eight chronic conditions (breast cancer, asthma, hypertension, diabetes, depression, lung cancer, COPD, and stroke) amounts to an estimated \$1.3 billion.

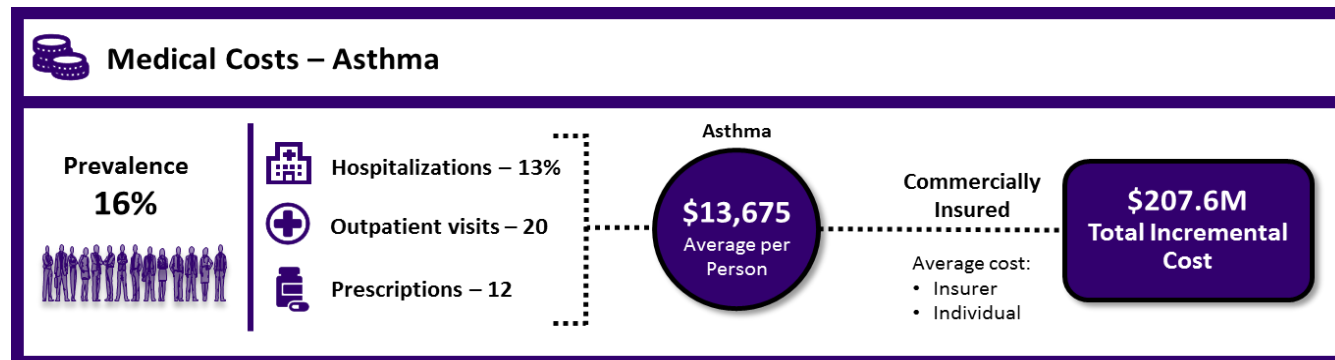


Detailed Breakdown of Medical Costs by Condition in Buffalo-Niagara⁶

Buffalo-Niagara residents with breast cancer average 25 outpatient visits and 10 prescriptions annually, though they are rarely hospitalized. On average, a person with breast cancer generates \$26,100 of overall medical spending. Buffalo-Niagara's total incremental costs from breast cancer is \$383.1 million per year.



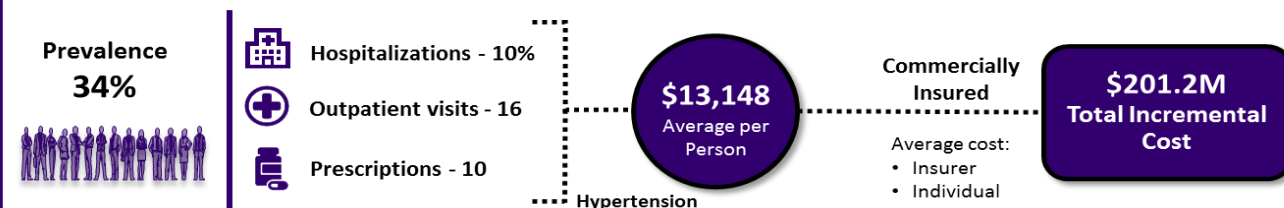
Buffalo-Niagara residents with asthma have a 13% hospitalization rate, average 20 outpatient visits, and manage an average of 12 prescriptions annually. On average, a person with asthma has \$13,675 of total medical spending. Buffalo-Niagara's total incremental costs from asthma is \$207.6 million per year.



⁶ Prevalence & utilization: workforce population (25-64); Average cost per person: workforce population (ages 25-64); Total incremental cost: employed population (18+)

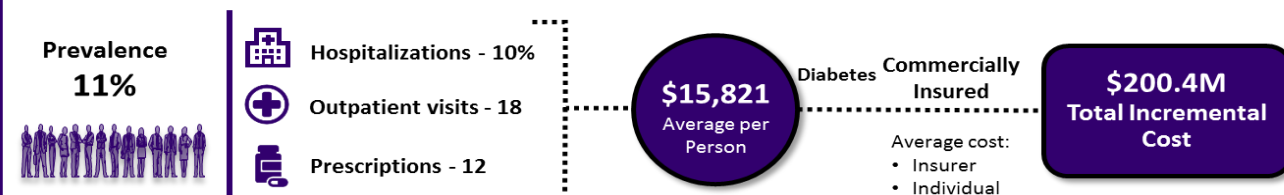
Hypertension is the most prevalent of the eight chronic conditions in Buffalo-Niagara. On average, a hypertensive individual in the area generates \$13,148 of medical spending. Buffalo-Niagara's total incremental medical costs from hypertension is \$201.2 million per year.

Medical Costs – Hypertension



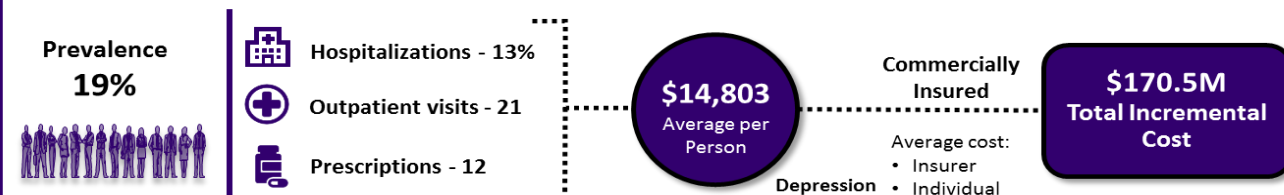
Almost 11% of Buffalo-Niagara residents have **diabetes**. Of these, 10% have a hospitalization in a year. On average, a person with diabetes has \$15,821 of medical spending. Buffalo-Niagara's total incremental medical costs from diabetes is \$200.4 million per year.

Medical Costs – Diabetes



Buffalo-Niagara residents have a 13% hospitalization rate, 21 outpatient visits, and 12 prescriptions on average annually. A person with **depression** in Buffalo-Niagara generates \$14,803 of medical spending. Buffalo-Niagara's total incremental medical costs from depression is \$170.5 million per year.

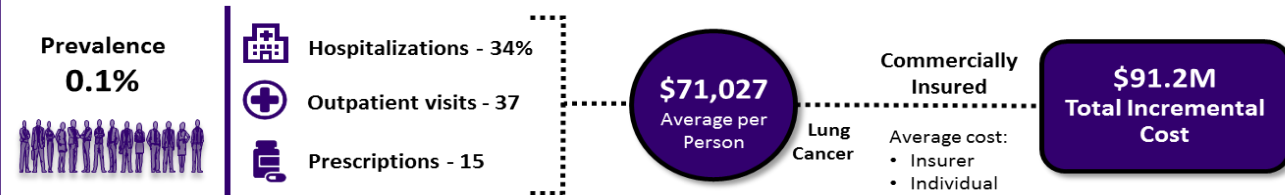
Medical Costs – Depression



Buffalo-Niagara residents with lung cancer average a 34% hospitalization rate, 37 outpatient visits, and 15 prescriptions annually. The average patient with lung cancer generates \$71,027 of medical spending. Buffalo-Niagara's total incremental medical cost from lung cancer is \$91.2 million per year.



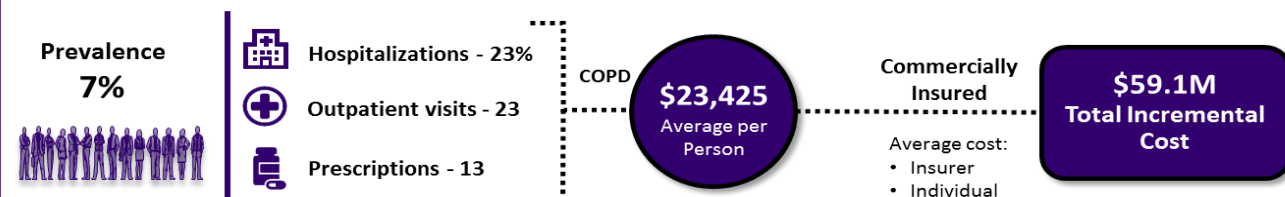
Medical Costs – Lung Cancer



The total incremental costs associated with COPD for Buffalo-Niagara residents is estimated to be \$59.1 million per year. This low medical cost is due to a low prevalence rate, but COPD patients have a relatively high hospitalization rate compared to other conditions at 23%.



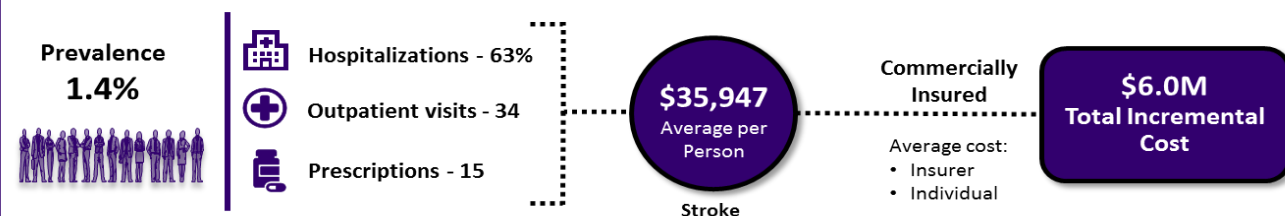
Medical Costs – COPD



Buffalo-Niagara residents who have had a stroke have a high rate of hospitalization (63%). On average, a person with stroke generates \$35,947 of medical spending, but Buffalo-Niagara's incremental medical cost per year is only \$6.0 million due to stroke's low prevalence (1.4%).



Medical Costs – Stroke



Source: IBM® MarketScan® Research Databases, CDC BRFSS Smart 2017, academic literature, and authors' calculations.

Calculations and methodologies are based on Center for Healthcare Economics and Policy's data and related proprietary work product. (Not to be reproduced without permission).

PRODUCTIVITY COSTS OF CHRONIC CONDITIONS

Employers play a special role in driving positive change for their employees and communities. They need actionable data and analytics on chronic conditions beyond medical costs. Productivity costs of diseases such as obesity, diabetes, COPD, and depression are profound at the national level, yet business leaders and local stakeholders need more precise information about local impact.

Presenteeism and **absenteeism** are the key drivers of productivity costs for disease conditions. Presenteeism is the economic cost of reduced productivity at work due to illness, and absenteeism is the cost of time away from work due to disease. Obesity, for example, may account for a full additional day of worked missed each year.⁷



FTI combines local prevalence data with a customized model of workforce productivity built on a proprietary commercial claims database, current academic research on chronic conditions and worker productivity, and locally relevant wage information to estimate absenteeism and presenteeism costs in the Buffalo-Niagara region.

The productivity costs of poor health in Buffalo-Niagara are dramatic. Depression leads to hundreds of millions of dollars each year from both presenteeism and absenteeism. Obesity leads to more than \$150 million in losses each year. The presenteeism costs of asthma alone exceeds \$180 million.

FTI estimates the total productivity losses associated with obesity, diabetes, hypertension, depression, asthma, and COPD at over \$1.2 billion for Buffalo-Niagara, roughly 2% of GDP.

Detailed Breakdown of Productivity Costs by Chronic Condition

FTI estimated productivity costs by condition annually for Buffalo-Niagara, with separate estimates for presenteeism and absenteeism. Depression is estimated to have the highest productivity costs at \$416 million.

	Obesity	Diabetes	Hypertension	Depression	Asthma	COPD
 Presenteeism	\$125.3 M	\$130.0 M	\$67.5 M	\$281.2 M	\$181.2 M	\$164.7 M
+						
 Absenteeism	\$27.2 M	\$27.8 M	\$53.0 M	\$134.4 M	\$41.0 M	\$16.2 M
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Total Annual Costs	\$152.5 M	\$157.8 M	\$120.5 M	\$415.7 M	\$222.2 M	\$180.9 M

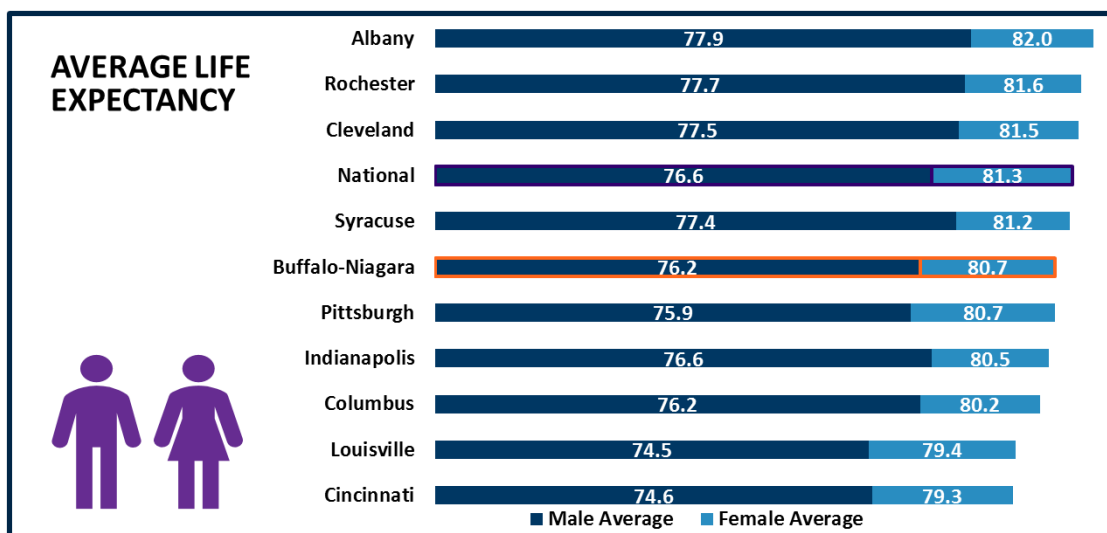
Source: CDC BRFSS SMART 2017 (Employed, ages 25-64), literature, and authors' calculations.

⁷ Garrett R. Beeler Assay, et al., "Absenteeism and Employer Costs Associated with Chronic Diseases and Health Risk Factors in the US Workforce," *Preventing Chronic Disease* (2016); 13:150503, <http://dx.doi.org/10.5888/pcd13.150503>.

LIFE EXPECTANCY & ACCESS TO CARE

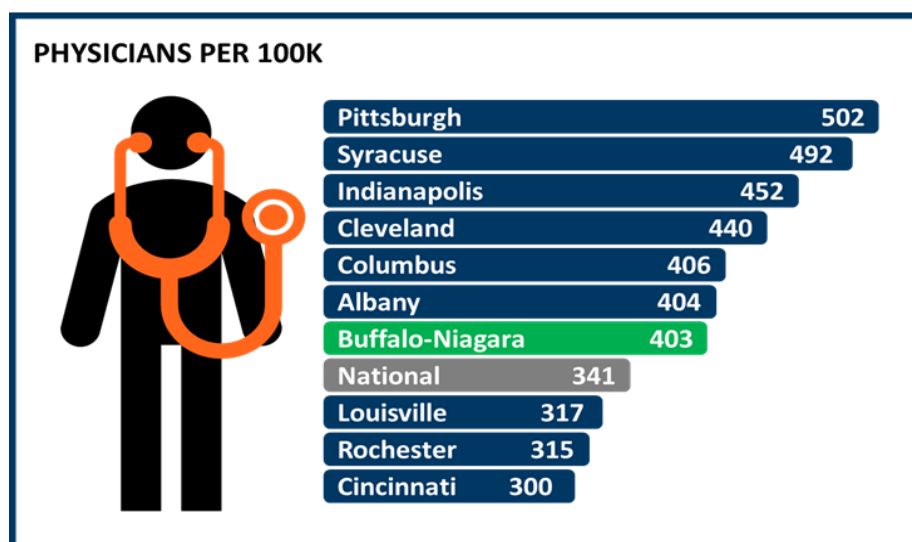
The Institute of Medicine (IOM) identified several core metrics for tracking efforts to improve population health and its impact; including access as well as life expectancy as an outcome metric.⁸ FTI provides comparative life expectancy metrics and physician availability as a core access metric.

Buffalo-Niagara ranks below the national average for male and female life expectancy. However, it ranks in the middle (fifth of ten) among its group of peer communities.



Source: Life expectancy – Institute for Health Metrics and Evaluation (IHME), US County Profiles. Seattle, WA: IHME, 2016.

Buffalo-Niagara residents have access to a relatively large physician base with 403 physicians per 100,000 residents, 18% more than the national average. However, when compared to its peers, Buffalo-Niagara ranks in the lower half of the group.



Source: Physicians per 100K – Center for Medicare & Medicaid Services, NPI (2018).

⁸ IOM, "Vital Signs: Core metrics for health and health care progress," *National Academies Press* (2015). The IHME methodology used in calculating life expectancy is sensitive to the effects of migration. Life expectancy estimates in areas with low overall migration may be more reliable than in areas with high migration.

CONCLUSIONS AND KEY TAKEAWAYS

This report uses locally relevant data to document Buffalo-Niagara's relative ranking on twelve chronic conditions and health behaviors compared to peer communities and quantifies the substantial incremental medical costs and productivity costs of these chronic conditions.

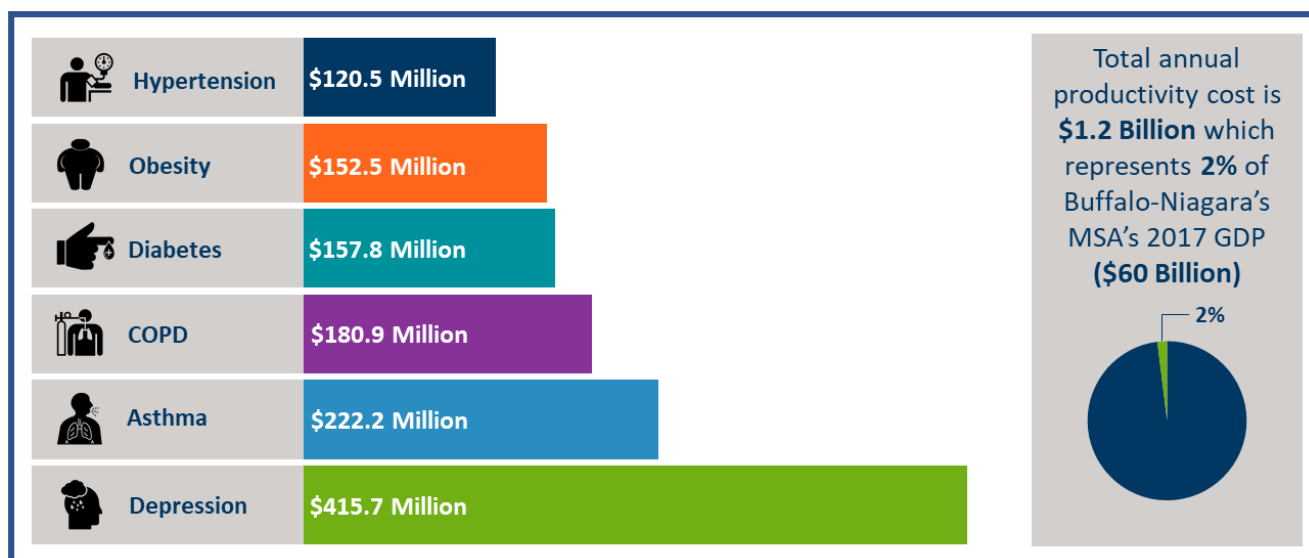
Buffalo-Niagara has low prevalence of stroke and depression relative to peer communities and the national average. However, across ten other conditions, Buffalo-Niagara lags comparator cities. In particular, it ranks last for prevalence of asthma, non-skin cancers, diabetes, and heart attacks.

The higher prevalence of some major chronic conditions leads to high medical and productivity costs for Buffalo-Niagara residents and employers. Medical costs for breast cancer, asthma, hypertension, and diabetes each surpass \$200 million annually. Across eight conditions, the total incremental **medical spending is in excess of \$1.3 billion annually**.

The lost productivity of the workforce for poor health is also costly for the Buffalo-Niagara community. Depression costs employers in the community more than \$400 million in lost workforce output each year. Similarly, obesity and diabetes each cost the community more than \$150 million annually. This report quantifies more than **\$1.2 billion in lost economic activity** due to absenteeism and presenteeism from six chronic diseases.

Healthier residents are better able to participate in and contribute to the economic prosperity of their community. This report outlines areas of relative strength, including physician access, and opportunities for growth in the health, happiness, and prosperity of the Buffalo-Niagara region.

Summary of Productivity Costs by Chronic Condition in Buffalo-Niagara

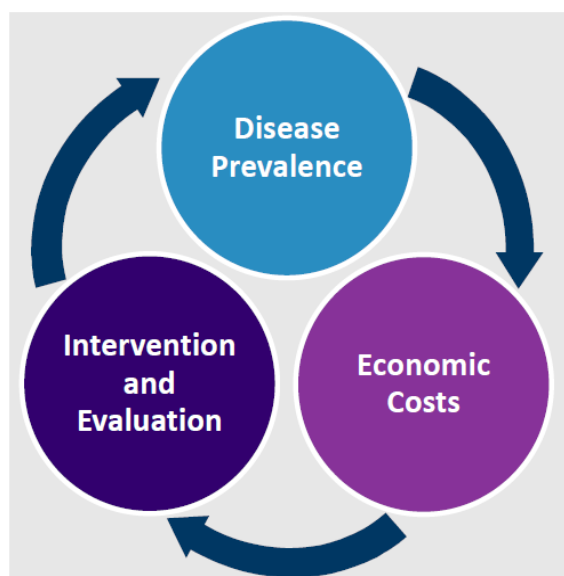


Source: <https://fred.stlouisfed.org/series/NGMP15380>

OUR APPROACH AND DATA SOURCES

- Results in “Comparative Analytics: Buffalo-Niagara & Its Peers” section use proprietary analytics and U.S. Census Bureau’s American Community Survey (ACS) and Institute of Health Metrics and Evaluation (IHME).
- Results in “Comparative Health Rankings for Buffalo-Niagara and Peers” section use Centers for Disease Control and Prevention Behavioral Risk Factor Surveillance System’s data for the Selected Metropolitan/Micropolitan Area Risk Trends (BRFSS SMART 2017).
- Results in “Medical Costs of Chronic Conditions” section use proprietary analytics, IBM MarketScan® Research Databases and BRFSS SMART 2017.
- Results in “Productivity Costs of Chronic Conditions” section use proprietary analytics and CDC BRFSS SMART 2017.

Center for Healthcare Economics and Policy’s Economic Impact of Disease and Chronic Health Conditions Methodology



Disease Prevalence

FTI leverages its extensive demographic and prevalence data to provide deep, comparative health status analytics across diseases and chronic conditions for local areas against peer metropolitan areas.

Economic Costs

With commercial claims data and unique evidence-based proprietary models, FTI evaluates workforce healthcare utilization costs and quantifies economic costs from lost workplace productivity.

Intervention and Evaluation

FTI’s team of experienced professionals combine data science with customizable scenario modeling and informatics analysis to evaluate the effects of care delivery and payment model interventions.

FTI Consulting’s **Center for Healthcare Economics and Policy** leverages cutting-edge methodologies, actionable metrics and economic analytics to facilitate organizational and community-based healthcare transformation strategies and initiatives. Our experts include PhD economists and experienced healthcare professionals with extensive knowledge of healthcare economics, disease conditions, and state-of-the-art modeling. The Center helps clients including employers, providers, governments and community organizations design and achieve implementable solutions grounded in robust data analysis to improve healthcare delivery.

<https://www.fticonsulting.com/industries/healthcare-and-life-sciences/economics-and-policy>

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