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The Economic Impact of MetroHealth System

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MetroHealth System

THE ECONOMIC IMPACT OF METROHEALTH SYSTEM

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EXECUTIVE SUMMARY

For 175 years, MetroHealth System ("MHS") has provided quality health care to the residents of the city of Cleveland and Cuyahoga County, Ohio, regardless of their ability to pay. Today, MHS is the third-largest health care system in Cuyahoga County. From its headquarters on the near west side of Cleveland, MHS continues to successfully operate within a hyper-competitive health care market, a result of its ability to adapt to fundamental changes in the health care industry, declining revenues and public subsidies, and rising medical costs. Moreover, MHS has managed to operate both effectively and efficiently while persistently striving as an institution to provide quality care to its patients.

This report presents the findings of a research study assessing the contributions of MHS to the economy and community of Cleveland and Cuyahoga County. The study was conducted by the Center for Economic Development at Cleveland State University's Maxine Goodman Levin College of Urban Affairs. The impact of MHS is described here both in terms of traditional economic impact measures and in terms of contributions made through community engagement. A variety of qualitative and quantitative data sources are used. The quantitative analyses focus primarily on the year 2011, though historical data back to 2007 are used on occasion to show changes and trends over time.

THE MISSION AND FUNCTIONS OF METROHEALTH SYSTEM

The mission statement of MHS today reads: *"MetroHealth is an Academic Health Care System committed to Our Communities by Saving Lives, Restoring Health, Promoting Wellness, and providing Outstanding Life-long Care Accessible to All."*

The mission is a carefully crafted statement that reveals much about the hospital system's structure, operation, and motivation. For instance, the mission reaffirms MHS' dedication to serving the health and wellness of the community by always striving to provide outstanding care. The mission of MHS has permeated the hospital's organizational culture and is consistently relied upon to guide what actions are taken, what decisions are made, and what services are offered. In other words, MHS is driven primarily by the needs of the community, rather than by the need to generate profit.

Perhaps the most prominent piece of MHS' mission is its devotion to providing quality health care to all Cuyahoga County residents, regardless of their ability to pay. In that vein, MHS has become a major provider in the county of charity care, or free medical care provided to patients unable to pay. The uninsured patient population regularly makes up a disproportionately large share of MHS' patient base when compared to other local hospitals, and the demand for charity care is continuing to rise. MHS experienced a 30.6% increase in uninsured patient visits between 2007 and 2011. Although the charity care rendered by MHS is partially subsidized by public funds from multiple levels of government, a substantial share of costs is paid directly out of MHS' annual revenue. Approximately 30% of Cuyahoga County subsidy covers uncompensated care costs at MHS.

The functions of MHS can be operationalized as three distinct, yet overlapping components: clinical care, academics, and research. In terms of clinical care, MHS provides nationally-recognized services at a level of quality that evidence suggests is as good as or better than local competitors. Patients benefit from MHS' educated and experienced staff; many physicians at MHS are board certified in a particular medical specialty or sub-specialty and MHS' nursing staff has twice achieved Magnet status, the gold standard of excellence for nursing that fewer than 3% of hospitals nationwide have earned. In addition, MHS operates a number of highly reputable services and programs, many that are unique to the institution, including a Level I Trauma Center, a Comprehensive Burn Care Center, the Rehabilitation Institute of Ohio, Metro Life Flight, and a fully-integrated electronic health records system. Many of these services and programs are negative margin generators, yet are still provided because they are considered by MHS leadership to be essential public services depended on by the community.

The second function of MHS is its dedication to academics. Each year, MHS trains thousands of students at different points on their educational path, providing them with the skills necessary for a future career in medicine. During the 2011-2012 academic years, a total of 2,411 students were trained at MHS. MHS offers its medical students access to accredited residency programs in over 20 unique fields of medicine. In addition, MHS offers a variety of fellowships for post-residency physicians interested in obtaining additional training in a sub-specialty. MHS is affiliated with the Case Western Reserve University School of Medicine ("CWRU"), a nationally-ranked research medical school in Cleveland. The longstanding arrangement between MHS and CWRU is mutually-beneficial and allows, among other provisions, for the exchange of equipment, research capacity, and staff. Perhaps the most striking aspect of the MHS-CWRU affiliation arrangement is that all MHS physicians are appointed to the faculty at CWRU.[1] A dedication to academics is an important tool hospitals use to attract doctors and other staff, students, and patients.

The third function of MHS is a commitment to performing research capable of improving the health of patients and the quality of care they receive. The Rammelkamp Center for Education and Research, located at MetroHealth Medical Center, houses a number of specialized research centers that work in tandem to create interdisciplinary solutions to medical challenges. Operating a large-scale research program is difficult for public hospitals, which generally possess limited resources and, by extension, constrained capacity. Fortunately, MHS has been able to obtain millions of dollars in research grants each year to fund discoveries in medical care and technology that will improve MHS' quality of care and competitiveness in the local health care market. Through cooperation with external entities, MHS earned $180.2 million in research grants between 2007 and 2011; $35.1 million alone in 2011. In addition, MHS has derived substantial benefits from a longstanding affiliation agreement with the Case Western Reserve University School of Medicine. The provisions of the agreement cover a range of subject matters such as sharing equipment, staff, and financial resources.

[1] During the hiring process, the qualifications of new MHS physicians are submitted to CWRU for consideration for faculty appointments. There is no guarantee that an MHS physician will receive a faculty appointment at CWRU; however, physicians are only hired if they meet the requirements of CWRU and rejection of an application is unusual.

METROHEALTH SYSTEM BY THE NUMBERS

An overview of MHS based primarily on quantitative methods offers insight into its structure and operation without partiality or judgment. In 2011, MHS clocked 847,015 outpatient visits system-wide and 135,157 inpatient days at its main campus. Of those patients who utilized MHS for medical care in 2011, the majority self-identified as either *White* (44%) or *Black* (37%). Those who self-identified as *Hispanic* made up 9% of patients. Approximately 69% fell between the ages of 18 and 64 and nearly two-thirds (63%) were female. Regarding payor mix, which refers to the blend of patients with commercial insurance, government insurance, or who self-pay,[2] MHS had disproportionately high shares of Medicaid (35%) and self-paying patients (21%) when compared to the average for all Northeast Ohio hospitals.[3] This can harm MHS' long-term financial viability as Medicaid and self-paying individuals traditionally constitute the lowest rates of reimbursement for services rendered.

MHS operated 17 facilities in Cuyahoga County as of 2011. The largest of the facilities is MetroHealth Medical Center, MHS' headquarters located on the near west side of Cleveland. The other 16 facilities are outpatient centers, each of which offers a comprehensive assortment of patient services. Ten of the outpatient centers are located in the city of Cleveland, and six are located in the suburbs along the periphery of Cuyahoga County. These locations will be an asset to MHS as they undertake their strategy of expanding access to services throughout the county.

MHS is the largest employer on the west side of Cleveland. In 2011, MHS employed 6,015 workers, the majority of whom were *White* (70.5%) and female (73.7%). Measured in terms of full-time equivalents (FTEs), MHS employed 5,231 employees in 2011.[4] The largest occupational group in 2011 was the clinical group, which includes all the physicians, specialists (e.g., physical therapists, pharmacists), nurses, and medical students employed at MHS. Analyzed by place of residence, just over three quarters (77.5%) of all MHS employees lived in Cuyahoga County in 2011. Of those employees, 29.2% lived in the city of Cleveland and 70.8% lived in one of its surrounding suburbs.

Examined in nominal dollars, MHS earned $783.7 million in total revenue in 2011. This represents an increase of 24.3% from 2007 to 2011. During each of those years, approximately 89% of MHS' net revenue came from patient services; the additional 11% came from a myriad of other revenue sources, including a public subsidy allocated to MHS by the Cuyahoga County government. The value of MHS' county subsidy was approximately $36 million in 2011.

[2] Self-pay is a term that refers to people who lack health insurance and pay for medical services out of pocket. This category includes MHS' large uninsured patient population.
[3] See Table 5 for a glimpse of this comparative data.
[4] Calculating an organization's FTE count is done by adding together its number of full-time employees and its number of part-time employees converted to a full-time basis. For example, four half-time employees would be the equivalent of two FTEs.

The county subsidy, which has decreased in value 10% since 2007, is provided to help offset MHS' cost of uncompensated care.[5] The cost of uncompensated care increased $20.3 million, or 20.1%, between 2007 and 2011 to a total of $121.5 million in 2011, though the majority of growth took place post-recession between 2009 and 2011. Anecdotal evidence provided by MHS leadership suggests that uncompensated care costs will continue to increase in 2012. To further offset the cost of uncompensated care, MHS receives an additional infusion of public dollars through the state of Ohio's Hospital Care Assurance Program, which provides compensation to hospitals providing a disproportionate share of care to uninsured patients. Whatever percent of uncompensated care is not reimbursed through public subsidy is deducted directly from MHS' operating budget. Therefore, as public funds become scarcer, MHS will be forced to cover an increasingly larger share of the uncompensated care it provides.

Each year, MHS spends hundreds of millions of dollars on goods and services. In nominal dollars, MHS' total expenditures reached $780.4 million in 2011, a 20.5% increase since 2007. Total expenditures increased each year between 2007 and 2011. MHS' largest expense, which accounted for approximately 65% of total expenditures in 2011, is consistently spent on the compensation (salaries and fringe benefits) of its employees. MHS spent $507.5 million on employee compensation in 2011, an increase of 15% in nominal dollars between 2007 and 2011.

Operating income, calculated by subtracting total expenditures from total revenue, is a telling indicator of MHS' success. Historically, MHS has struggled to breakeven in terms of matching its revenue and expenditures. However, between 2007 and 2009, MHS' operating income increased from -$17.3 million to $37.7 million, an increase of $55 million in 2 years. Since 2009, operating income has decreased annually; however, as of 2011, MHS was continuing to operate in the black, which is when total revenue for the year exceeds total expenditures. Operating in the black for the past several years is a point of pride among MHS leadership and shows that MHS has learned to spend within its means.

Income taxes paid by MHS employees serve as a valuable source of revenue for the federal, state, and local governments. The amount of income taxes paid by MHS on an annual basis is derived from the total payroll of employees whose workplaces are located at MHS' main campus and its 16 outpatient facilities. In 2011, MHS paid $74.7 million in income taxes on behalf of its employees. In nominal dollars, this represented a net increase of 21.6% between 2007 and 2011. The federal government is by far the largest beneficiary of income tax dollars on a consistent basis. In 2011, the federal government received $54.2 million from MHS employees, or 72.6% of all income taxes paid that year. The state of Ohio received $12.5 million (16.7%) in 2011 while the city of Cleveland received $7.9 million (10.5%).

[5] Uncompensated care is defined as the summation of the cost of charity care and bad debt, which are charges for services rendered to insured patients that MHS must write off because patients are unable to pay. Uncompensated care is used here for analysis (as opposed to just charity care) because bad debt represents an additional expense for MHS to provide medical care to Cuyahoga County residents who cannot afford the cost. In addition, using uncompensated care is an industry standard operating procedure.

ECONOMIC IMPACT OF OPERATING EXPENDITURES

Economic impact is a method of quantifying how MHS' spending ripples through the local economy and creates additional expenditures and jobs. Economic impact analysis takes into account inter-industry relationships within an economy; that is, the buy-sell relationships among industries, which estimate how an economy responds to changes in economic activity. Input-output models, like the IMPLAN model used in this study, estimate inter-industry relationships in a city, county, region, state, or country by measuring the industrial distribution of inputs purchased and outputs sold by each industry and the household sector.

The economic impact of MHS' payroll and operating expenses in 2011 was estimated in the following areas: the city of Cleveland, Cuyahoga County, and the Cleveland-Elyria-Mentor Metropolitan Statistical Area (MSA).[6] Economic impact is measured in terms of employment, labor income, value added, output, and taxes.

The total economic impact of MHS' operating expenditures in the city of Cleveland was as follows:

- Total Employment Impact: 6,764 jobs
- Total Labor Income Impact: $543.77 million
- Total Value Added Impact: $562.42 million
- Total Output Impact: $793.69 million
- Tax Impact: $9.5 million

The total economic impact of MHS' operating expenditures in Cuyahoga County (including the city of Cleveland) was as follows:

- Total Employment Impact: 9,234 jobs
- Total Labor Income Impact: $655.09 million
- Total Value Added Impact: $747.07 million
- Total Output Impact: $1.08 billion
- Tax Impact: $50.5 million

The total economic impact of MHS' operating expenditures in the Cleveland-Elyria-Mentor MSA (including Cuyahoga County) was as follows:

- Total Employment Impact: 10,092 jobs
- Total Labor Income Impact: $680.17 million
- Total Value Added Impact: $797.91 million
- Total Output Impact: $1.17 billion
- Tax Impact: $65.2 million

[6] The Cleveland-Elyria-Mentor MSA is comprised of the following five counties: Cuyahoga, Geauga, Lake, Lorain, and Medina.

ECONOMIC IMPACT OF CAPITAL EXPENDITURES

In 2012, the MHS Board of Trustees endorsed a multi-year, capital project that will result in new system-wide infrastructure, increased access for patients across Cuyahoga County, and expanded capabilities that will allow MHS to accommodate higher levels of outpatient services. In the first six years MHS is projecting to spend $631.9 million. As with MHS' payroll and operating expenses, the expenditures MHS commits in pursuit of this major capital overhaul will produce an economic impact in the city of Cleveland, Cuyahoga County, and the Cleveland-Elyria-Mentor MSA. Once again, the economic impact is measured in terms of employment, labor income, output, value added, and taxes. The impact measured here is from 2012 to 2017. The impacts are presented in 2012 dollars.

The total economic impact of MHS' capital expenditures in the city of Cleveland was as follows:

- Total Employment Impact: 2,561 jobs
- Total Labor Income Impact: $137.10 million
- Total Value Added Impact: $176.43 million
- Total Output Impact: $352.16 million
- Total Tax Impact: $27.4 million

The total economic impact of MHS' capital expenditures in Cuyahoga County (including the city of Cleveland) was as follows:

- Total Employment Impact: 4,452 jobs
- Total Labor Income Impact: $235.70 million
- Total Value Added Impact: $318.22 million
- Total Output Impact: $599.19 million
- Total Tax Impact: $61.4 million

The total economic impact of MHS' capital expenditures in the Cleveland-Elyria-Mentor MSA (including Cuyahoga County) was as follows:

- Total Employment Impact: 5,309 jobs
- Total Labor Income Impact: $249.39 million
- Total Value Added Impact: $349.12 million
- Total Output Impact: $679.67 million
- Total Tax Impact: $64.6 million

ADDITIONAL CONTRIBUTIONS TO THE COMMUNITY

To get a true sense of how MHS' presence in Cleveland influences the residents of the city and Cuyahoga County, attention must also be paid to how MHS uses its programming to engage, empower, and better the community at the grassroots level. Brief case studies are used to showcase programs MHS has implemented or become involved with to further its agenda of community engagement. Each of these case studies shows how MHS has expanded its role as caregiver to Cuyahoga County residents beyond being only a provider of medical care. A total of four programs are discussed: Partners in Care, the BREAST Program, the West 25th Street Corridor Initiative, and MHS' emergency preparedness efforts.

In 2009, MHS piloted a new program called Partners in Care, which sought to change in a fundamental way how the hospital system cares for and interacts with its patients. The program is MHS' version of a patient-centered medical treatment, an increasingly popular team-based approach to medical care. Upon being enrolled in the program, patients are assigned a team of medical professionals and physician extenders with whom they are affiliated so long as they receive care from MHS. Patients are educated on their diseases and treatment options, thus empowering them to take an active role in their care. The outcomes include fewer hospital and clinic visits, better communication between the patient and the doctor, and a better understanding by patients of their medications. This allows MHS to operate in a more clinically- and cost-effective manner by mitigating the volume and, by extension, cost of patients who use the emergency room for non-emergencies or are hospitalized due to unmanaged chronic diseases.

The BRinging Education, Advocacy, and Support Together (BREAST) Program was created in 2005 after the discovery of a disparity in late-stage breast cancer between minority and non-minority women. The BREAST Program is a community outreach program affiliated with MHS that is designed to educate and empower women to improve their breast health. The program is targeted specifically at low-income Cuyahoga County residents who are uninsured or underinsured and over the age of 35. Those eligible obtain access to free medical services and are taught proper screening methods as a means of facilitating early cancer detection. The BREAST Program also features an educational outreach component targeted specifically at Latinas called Amigas Unidas (Friends United).

The West 25th Street Corridor Initiative ("Initiative") is a community collaboration started in 2010 by MHS and Neighborhood Progress Inc. that is geared toward revitalizing Cleveland's West 25th Street Corridor; specifically, a 4-mile length of West 25th Street that stretches from the historic West Side Market in Ohio City to the Metroparks Zoo in Old Brooklyn. Currently in its early stages, the intent of the Initiative is to coordinate a clear and specific vision and action plan for redevelopment, empower and expand economic drivers, and increase transportation connectivity along the corridor. The Initiative brings together stakeholders from the public, private, and non-profit sectors. As the largest employer on the west side of Cleveland and one of the major anchor institutions along West 25th Street, MHS is intimately involved in nearly every aspect of the Initiative in some capacity; in fact, MHS has gone beyond the expected role of the institution. In addition to co-leading the Initiative, MHS has provided its

time, talents, and financial resources while also working diligently to integrate its own capital improvement plan into the larger vision of the Initiative.

Emergency preparedness—planning for all elements of a disaster—is an important consideration for all aspects of society, including government, the private sector, and the citizens, but is an absolutely essential point of focus for hospitals, which are viewed as the epicenter of care, shelter, and aid during emergencies. MHS takes to heart this responsibility of caring for the community at critical times. Through education and training programs, MHS has built up its capacity and capability to lead in a disaster situation. In addition, MHS has taken an active role in regional emergency planning by having representatives serve on a number of regional bodies. MHS also participates informally in grassroots efforts to inform the citizenry that preparing plans for emergencies is pivotal, and could mean the difference between survival and death for a large number of people.

LOOKING TOWARD THE FUTURE

It is important for an organization to plan ahead and strategize as a means of sustaining its long-term viability. For their part, the leadership of MHS has kept one eye firmly focused on the future. For example, MHS is planning to undertake a multi-million dollar capital project to renew its main campus and expand its outpatient centers as a way of providing better access for and meeting the demand of Cuyahoga County residents. In addition, MHS has pledged its continued dedication to providing quality services, including the use of patient centered medical care, a growing and increasingly popular approach to practicing medicine.

A strategic plan is necessary in order to adapt to changes that inevitably transpire. Perhaps the biggest source of impending change is the implementation of the Patient Protection and Affordable Care Act ("PPACA"). The PPACA is a comprehensive and controversial piece of federal legislation designed to overhaul the nation's health care industry. The general belief of those interviewed for this report is that MHS is in a good place to successfully adapt to the PPACA. Explanations included MHS' low-cost structure being suited to adjust to reductions in Medicare and Medicaid reimbursements, and MHS' integrated model of delivering care being in line with the approach the PPACA is designed to facilitate nationwide.

Despite optimism regarding MHS' capacity to adapt to the PPACA, concerns do exist. For instance, as a means of financing the PPACA, the federal government is intending in 2014 to begin significantly reducing its Disproportionate Share Hospital ("DSH") payments. These payments are allocated to help alleviate the financial burden of hospitals like MHS that care for a disproportionate share of the uninsured. DSH payments are a valuable revenue stream for MHS. While the reduction in DSH payments was initially offset by a mandatory expansion of state Medicaid programs, the U.S. Supreme Court's 2012 judgment that Medicaid expansion could not be forced on the states has thrown this balance into disarray. The state of Ohio has yet to decide whether it will voluntarily expand its Medicaid program; however, not doing so could result in severe financial troubles for MHS, which traditionally operates on

a tight operating margin.

The leadership of MHS must also consider the potential impact of the PPACA providing newly-insured patients the ability to choose their health care provider. It is possible that a portion of MHS' traditional patient base will opt to receive medical care from a local competitor once they obtain medical coverage. After all, hospitals like the Cleveland Clinic and University Hospitals have strong market penetration, stellar reputations, and substantial marketing expenditures. However, it is also possible that the efficiencies and quality of care offered by MHS will make them competitive in the commercial health insurance market. In 2008, MHS launched MetroHealth Select, a commercial health insurance plan. Anecdotal evidence suggests MetroHealth Select has been successful in promoting cost savings without compromising quality of care, though it is unknown whether the plan will yield long-term success for MHS. The final outcome of the PPACA remains purely hypothetical; however, data suggest that MHS' strong connections with its patients and the community will produce a sense of loyalty capable of preventing a mass patient exodus.

Regardless of which alternative materializes, MHS cannot be complacent. Changes are coming, the effects of which can only be speculated. MHS must prepare itself as best it can given the existing level of uncertainty. Fortunately, several interviewees both inside and outside MHS are confident that the institution is capable of weathering the coming storm.

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ABOUT THIS STUDY

This study was commissioned by MetroHealth System ("MHS") and conducted by the Center for Economic Development ("Center"), located in the Maxine Goodman Levin College of Urban Affairs at Cleveland State University. This report is the product of the Center's research and is intended to both analyze MHS and present an assessment of its impact on the economy and community of the city of Cleveland and Cuyahoga County.

This report is comprised of six sections. Part 1 identifies and discusses the mission statement of MHS and uses it as a framework to elaborate upon MHS' portfolio of functions and services. Part 2 includes a quantitative analysis of MHS designed to provide an economic snapshot of the organization. This analysis emphasizes the year 2011, but historical data are provided at times for the 5-year time period 2007 to 2011. Together, these two parts provide background information on MHS and offer readers a better understanding of what MHS is, how it is structured, and how it operates.

Part 3 estimates the economic impact of MHS' operating expenditures for the year 2011. Part 4 estimates the economic impact of MHS' projected capital expenditures for the years 2012 to 2017. These two parts work in tandem to show how the initial spending of MHS ripples through the local and regional economies and effects employment, labor income, output, value added (a portion of output), and taxes.

Part 5 illustrates some ways in which MHS engages with and serves the community. MHS reaches out to the community through service, educational programming, and cultural offerings. Brief case studies, supported by data from interviews conducted with MHS staff members and external partners, are used to demonstrate the impact of these programs. This section is intended to serve as a sample of the community-based programs and activities in which MHS is involved, not as a comprehensive overview.

Part 6 contains concluding comments. It focuses upon the future of MHS and the possible impact of the federal Patient Protection and Affordable Care Act ("PPACA"). This section blends quantitative and qualitative research to address issues such as how the state of Ohio's decision to expand or not expand its Medicaid program will affect MHS' financial viability and how newly-insured patients may react to their newfound ability to choose their health care provider.

For the quantitative analysis in this study, MHS provided the Center with data for several measures including employment and employee demographics, students, payroll, patient demographics, revenue, external research funding, income taxes paid, operating expenditures, and capital expenditures. Supplemental data were gathered by the Center from a variety of sources, including The Center for Health Affairs in Cleveland; the National Association of Public Hospitals and Health Systems; the U.S. Department of Health and Human Services; news outlets *The Plain Dealer, Crain's Cleveland Business*, and *U.S. News & World Report*; and several medical and academic journals.

To gain a comprehensive overview of MHS, the quantitative analysis was reinforced with qualitative information gathered about MHS and its activities. Interviews were conducted with approximately two dozen individuals; some were affiliated with MHS, some were not.[7] Interviewees included executive-level members of the MHS staff, practitioners in the local health care market, and academics well-versed in health care administration and finance. The foci of the interviews were multi-faceted; attention was paid to learning about MHS, its place in the local health care market, and how its status quo will be impact by variables like the PPACA. Additional interviews were conducted for each of the case studies in Part 5. The content of these interviews was devoted exclusively to each respective case study topic.

[7] Appendix A contains a complete list of individuals interviewed for this study.

PART 1: THE MISSION AND FUNCTIONS OF METROHEALTH SYSTEM

When MetroHealth System ("MHS") opened its doors as City Hospital in 1837, it became the city of Cleveland's first public hospital. Created in response to Clevelanders' inability to afford basic medical care, the mission of City Hospital as a public hospital was to act as a safety net for Cleveland residents and provide quality healthcare to all, regardless of their ability to pay.

In the 175 years since its founding, MHS has undergone changes at many levels. For example, its service area and mandate grew to encompass all of Cuyahoga County,[8] its physical infrastructure expanded from a single hospital to a health system with a large main campus and 16 outpatient facilities, and it has continually been forced to adapt to stay competitive in a local market housing two world-renowned medical systems. Despite these changes, one thing has remained the same: the mission. The phrasing of MHS' mission statement may be different now, but the essence of that mission—caring for all, regardless of their ability to pay—has persevered.

MISSION DRIVEN

The mission statement of MHS today reads: *"MetroHealth is an Academic Health Care System committed to Our Communities by Saving Lives, Restoring Health, Promoting Wellness, and providing Outstanding Life-long Care Accessible to All."*

The carefully crafted terminology of the mission statement touches upon a number of important aspects of MHS. First, it reaffirms MHS' dedication to serving the health and wellness of the community. Second, it calls for MHS to always strive to provide *outstanding* care, which Dr. Alfred Connors, Chief Medical Officer at MHS, defines as being in the top 10 percent of all American hospitals when ranked. Third, the mission calls for MHS to promote wellness, a concept which complements the patient centered and community medical programs MHS has implemented to increase the health and knowledge of county residents outside the hospital walls.[9] Fourth, the mission highlights MHS' commitment to being a successful academic hospital, both in terms of teaching and research.

The most prominent piece of MHS' mission is its devotion to providing quality health care to all county residents, regardless of their ability to pay. Although this last component is not explicitly stated in the mission statement, as a public hospital, acting as a safety net for the local indigent and uninsured is implicitly assumed. The staff of MHS has taken this responsibility to heart and has integrated charity care, or free medical care provided to patients unable to pay, into the hospital system both operationally and institutionally. From an operational standpoint, MHS serves as a primary provider of charity care in Cuyahoga County; that is, the uninsured patient population regularly makes up a

[8] In 1958, management of MHS (existing under a different moniker at the time) was transferred from the city of Cleveland to Cuyahoga County. This transition expanded the hospital's service area to include the entirety of Cuyahoga County.

[9] See the community engagement section of this report (Part 5) for specific examples of patient centered medical programs and community programs.

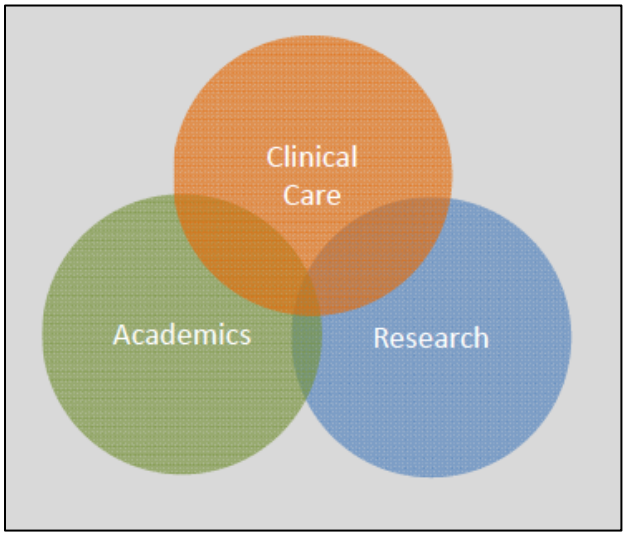
disproportionately large share of MHS' patient base when compared to other local hospitals.[10] To the staff of MHS, they are not just a hospital, but a community health resource in place to serve and assist those without the means to help themselves.

Overall, the mission of MHS has permeated the hospital's very culture. "People [at MetroHealth] are living the mission all the time," said Phyllis Marino, Vice President of Marketing and Communications for MHS. "I've worked at other health systems and while they have clear missions, stakeholders do not discuss them to the same extent that MetroHealth's mission is discussed." According to Bill Ryan, President and Chief Executive Officer of The Center for Health Affairs, this dedication to mission has perpetuated a belief among MHS employees that MHS is not a traditional business (as other local hospitals consider themselves to be), but a community asset. By this, Ryan meant that MHS relies on its mission to guide what actions are taken, what decisions are made, and what services are offered. In other words, MHS is motivated and driven primarily by the needs of the community, rather than by the need to generate profit.

DELVING INTO THE DETAILS

The mission of MHS provides a framework for offering an in-depth look into how MHS operates and how it is structured. As Figure 1 shows, the mission of MHS can be represented as a Venn diagram with three distinct, yet overlapping components: clinical care, academics, and research. The following subsections discuss these three components in detail.

Figure 1: The Mission of MetroHealth System



Source: MetroHealth System

[10] See Table 5 for supporting data.

Clinical Care

One of the most unique aspects of MHS is its integrated approach to delivering care. MHS offers its patients an interconnected web of services—from primary care to specialty care to hospital care and beyond—that allows patients to transition seamlessly and conveniently through the hospital system. Moreover, by offering such a range of services, MHS is highly connected to its patients and is better able to build and reinforce relationships. In turn, these relationships promote loyalty from patients. "Because of this integrated model of delivering care, people who go to MetroHealth wouldn't go anywhere else," Ryan said. "This is not because they have to stay, but because they want to stay." The integrated approach to care is a strength of MHS; one for which MHS is ahead of its competitors. According to Ryan, "Other health care providers are trying to figure out how to build capacity at the front door, to build connections with patients. MHS figured this out years ago."

MHS and its patients benefit not only from the array of services MHS offers, but from the quality of those services. One of MHS' greatest strengths in this regard is its well-experienced and well-educated staff. Many physicians at MHS are board certified a designation that demonstrates a physician's outstanding expertise in a particular medical specialty or sub-specialty. In addition, all physicians serve on the faculty of the Case Western Reserve University School of Medicine, a nationally-ranked research medical school.

The nursing staff at MHS achieved Magnet status in 2005, the gold standard of excellence for nursing bestowed by the American Nurses Credentialing Center. MHS was the second hospital in Cuyahoga County to receive Magnet recognition (after the Cleveland Clinic in 2003), and is the second public hospital in America to be so honored. MHS' Magnet status was renewed for another 4 years in 2010. Overall, fewer than 3% of hospitals nationwide have earned Magnet status.

MHS has received national recognition for the care and services it provides. According to *U.S. News & World Report*, which measures and ranks hospitals nationally on a biennial basis, MHS was ranked 41st for pulmonary care in its 2012-2013 rankings. Nine specialties at MHS were also classified as high-performing, including cardiology and heart surgery; ear, nose, and throat; geriatrics; nephrology; urology; diabetes and endocrinology; gynecology; orthopedics; and gastroenterology.[11]

Additional quality of care data from the U.S. Department of Health and Human Services ("HHS") provides evidence that MHS' quality of care is comparable to its larger competitors. Based on a comparison of 61 quality indicators gathered from HHS' Hospital Compare database, MHS (specifically its main campus, MetroHealth Medical Center) was found to offer quality as good as or better than the Cleveland Clinic Main Campus on 62% of indicators, and quality as good as or better than University

[11] *U.S. News & World Report* ranks hospitals nationally based on data for 16 medical specialties. A hospital that scores well in a particular specialty, but falls outside the top 50 hospitals, is considered a "high-performing" hospital in that specialty. For more information on the methodology used by *U.S. News & World Report*, see the following website: http://health.usnews.com/best-hospitals

Hospitals Case Medical Center on 51% of indicators.[12] According to Dr. J.B. Silvers, Interim Dean and John R. Mannix Medical Mutual of Ohio Professor of Health Care Finance at Case Western Reserve University's Weatherhead School of Management and MetroHealth System Board of Trustee Member, "Given the statistical variation involved in these measures, it is a very defensible statement that MetroHealth is of comparable quality to these other two institutions."

Table 1 specifically targets one of the 61 quality indicators used above and expands the comparison to include all hospitals in Cuyahoga County and a number of public hospitals nationwide. The indicator in question looks at overall patient satisfaction and is derived from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) Survey.[13] Table 1 shows that, when compared to both local hospitals and other public hospitals across the country, MHS' patient satisfaction is comparable to the other institutions. In fact, MHS is at, or slightly above, the average percentage of satisfaction for both sets of comparison.

While the aforementioned rankings are a good indicator of MHS' quality of care, they fail to acknowledge a number of other highly reputable services and programs MHS offers. The subsections below include descriptions of such programs, many of which are unique to MHS in the local health care market. The examples are intended to serve as a sample of the services MHS offers, not as a comprehensive overview.

Level I Trauma Center

MHS is the only hospital in Cuyahoga County verified by the American College of Surgeons as an adult Level I Trauma Center. Level I is a designation given to hospitals that have the capacity to provide the highest level of surgical care to trauma patients. The designation reflects highly on the level of skill and specialization possessed by the MHS medical staff.

As a Level I Trauma Center, MHS is required to have adequate staff in every specialization on-site at all times. This is a benefit to the thousands of trauma-related admissions MHS sees each year as it mandates that MHS has the resources on-hand to deal with a range of trauma cases, the most common to the most complicated.

[12] The 61 indicators used here were those for which data were available for MHS, Cleveland Clinic Main Campus, and University Hospitals Case Medical Center. The indicators covered a range of subject matter, including patient surveys, heart attack care, pneumonia care, surgical care, children's asthma care, readmissions, serious complications, infections, and more. The data collection period varied by indicator, but each factor in some way factored in part of 2011. This analysis was conducted by Professor J.B. Silvers at Case Western Reserve University. For more information on HHS' Hospital Compare database, see the following website: http://www.hospitalcompare.hhs.gov/

[13] The HCAHPS Survey was developed by the Centers for Medicare & Medicaid Services and the Agency for Healthcare Research to provide a standardized survey instrument and data collection methodology for measuring patients' views of hospital care. The data collection period for the survey used here was October 2010 through September 2011. View the following website for additional information: http://www.hospitalcompare.hhs.gov/Data/PatientSurvey/Overview.aspx

Table 1: Patient Satisfaction Rating by Hospital, 2010-2011

Hospital	% of Patients Highly Satisfied
Cuyahoga County	
Cleveland Clinic Main Campus	79%
St. Vincent Charity Hospital	72%
Fairview Hospital	71%
University Hospitals Case Medical Center	70%
Southwest General Health Center	67%
St. John Medical Center	67%
MetroHealth Medical Center	**64%**
Lakewood Hospital	64%
Euclid Hospital	64%
University Hospitals Richmond Heights Hospital	62%
South Pointe Hospital	61%
Parma Community General Hospital	60%
Hillcrest Hospital	59%
University Hospitals Bedford Medical Center	58%
Marymount Hospital	57%
Lutheran Hospital	56%
Public Hospitals	
Denver Health Medical Center (Denver, CO)	68%
Harborview Medical Center (Seattle, WA)	66%
MetroHealth Medical Center	**64%**
Jackson Memorial Hospital (Miami, FL)	61%
Hennepin County Medical Center (Minneapolis, MN)	60%
San Francisco General Hospital (San Francisco, CA)	60%
Grady Memorial Hospital (Atlanta, GA)	57%

Note: Overall patient ratings were done on a 0-10 Likert scale. "Highly satisfied" is defined here as the percentage of respondents that gave their hospital a rating of 9 or 10. Data for this measure were collected between October 2010 and September 2011.
Source: Hospital Compare, U.S. Department of Health and Human Services

A number of interviewees proclaimed MHS' trauma center to be one of the busiest in the United States. In 2011, nearly 5,600 patients were examined for traumatic injuries, 2,000 of which were admitted to the surgical intensive care unit. This represents a 17% increase in inpatient trauma admissions since 2010.

Comprehensive Burn Care Center

MHS is well-known for its specialization in and ability to care for victims of chemical, electrical contact, smoke inhalation, and thermal burns. In 2011, the Comprehensive Burn Care Center at MHS evaluated

and treated approximately 5,300 inpatient and outpatient burn injuries on patients of all ages, many of whom are referred to MHS by other local and regional hospitals. The notoriety of MHS' burn center stems from the fact that its survival rate is 97% for the last 25 years.[14]

The success of the burn center is partially attributed to MHS' approach of staffing each burn case with a multidisciplinary team of professionals. Further, unlike most departments, a burn victim at MHS is assigned the same medical team for the duration of their stay, from admission to discharge. These dual standard operating procedures provide burn victims both with broad, wholesome care and a level of familiarity as they undergo a lengthy and arduous recovery. The burn center at MHS was established in 1970, renamed the John A. Gannon Center for Burns and Trauma in 1987, and verified by the American Burn Association as a Comprehensive Burn Care Center in 1995. This verification identifies MHS' burn center as one of only 58 such centers in the nation that achieved this status.

Rehabilitation Institute of Ohio

The Rehabilitation Institute of Ohio at MHS ("Institute"), founded in 1953, is the largest hospital-based rehabilitation program in the state of Ohio. Accredited by the Commission on the Accreditation of Rehabilitation Facilities (CARF), the Institute offers a bevy of inpatient and outpatient services for patients recovering from brain injuries, spinal cord injuries, strokes, burns, neurologic disorders, and myriad other types of conditions. The Institute and its patients benefit from the Institute's access to MHS resources such as the Level I Trauma Center, Metro Life Flight, a highly accredited and experienced staff, and research and educational opportunities spurred by MHS' affiliation with the Case Western Reserve University School of Medicine. The Institute is dedicated to using medical research and education to improve the lives of its patients; it has attracted $13 million in funding over time for clinical research and built one of the largest resident training programs for rehabilitation in the United States.

The preceding examples have two important points in common. First, they highlight areas of clinical expertise—trauma, burn care, and rehabilitation—for which MHS is highly recognized. Moreover, medical services in these areas either do not exist or are not as specialized at other local hospitals. As a result, when asked what the hypothetical impact would be if MHS were to close, Ryan identified these areas of clinical expertise. "The biggest impact will be based on where the service gaps exist in the local health care market," he said. "If MHS no longer provided these services, other hospitals would be forced to pick up the slack, largely at their own expense."

This would be particularly unfavorable to other local hospitals given the second commonality that exists among these areas of expertise: they are traditionally negative margin generators. Trauma and burn care in particular are programs notorious for being operated at a financial loss; that is, the cost of maintaining these programs is greater than the reimbursement received for services rendered. Despite the cost factor, these types of medical care are essential public services depended on by the community.

[14] *Source:* http://www.metrohealth.org/body.cfm?id=1107

Other Clinical Programs

The MHS Heart and Vascular Center is both patient and research focused. The Center itself is ranked as high performing center by U.S. News & World Report[15] and it offers treatment for patients with cardiac and vascular conditions. This center received two awards. It was given the 2012 Platinum Performance Achievement Award for Excellence in the Treatment of Acute Myocardial Infarction from the American College of Cardiology/American Heart Association Clinical Guidelines. It also received the 2013 Get with the Guidelines - Heart Failure Gold Plus Quality Achievement Award by the American Heart Association and the American Stroke Association. In addition, the Center is also home to the Heart and Vascular Research Center which conducts clinical trials and it is affiliated with various academic departments at CWRU.

The Stroke and Cerebrovascular Center at MHS looks to prevent strokes, minimize the disability of stroke survivors, and offer the best possible outcomes for patients following a stroke by offering diagnosis and medical, endovascular and surgical management of all cerebrovascular conditions. The center was designated by the Joint Commission[16] as a Primary Stroke Center, and in 2012 the center obtained the Commission's Gold Seal of Approval. Moreover, this center received the American Heart Association/American Stroke Association's Get With The Guidelines - Stroke Gold Plus Quality Achievement Award in 2011; and it was the only Cleveland hospital to be named to the 2012 association's Target: Stroke Honor Roll (the Stroke and Cerebrovascular Center also received the distinction in 2011).[17]

In regards to Obstetrics and Gynecological ("OB/GYN") services, MHS in conjunction with CWRU, is one of only 14 centers in the country selected to participate in the Eunice Kennedy Shriver National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network[18] that examines clinical questions in maternal-fetal medicine, obstetrics, and pre-term birth. In addition, there are currently over 100 institutional review board approved studies within the department of OB/GYN.

The uniqueness of MHS does not stem exclusively from its clinical expertise. There are, in fact, a number of aspects of MHS' operations that set the hospital system apart from its competitors. Three examples are discussed below.

[15] For more information see U.S. News & World Report MetroHealth Medical Center Rankings http://health.usnews.com/best-hospitals/area/oh/metro-health-medical-center-6410655

[16] The Joint Commission is a non-profit organization that accredits and certifies health care organizations in the United States. For more information see ttp://www.qualitycheck.org/consumer/searchQCR.aspx

[17] For more information on the American Heart Association/American Stroke Association 2012 Target: Stroke Honor Roll List See: http://www.strokeassociation.org/STROKEORG/Professionals/Target-Stroke-Honor-Roll-Sites_UCM_318484_Article.jsp

[18] For more information on the Eunice Kennedy Shriver National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network see https://portal.bsc.gwu.edu/web/mfmu/welcome

Charity Care

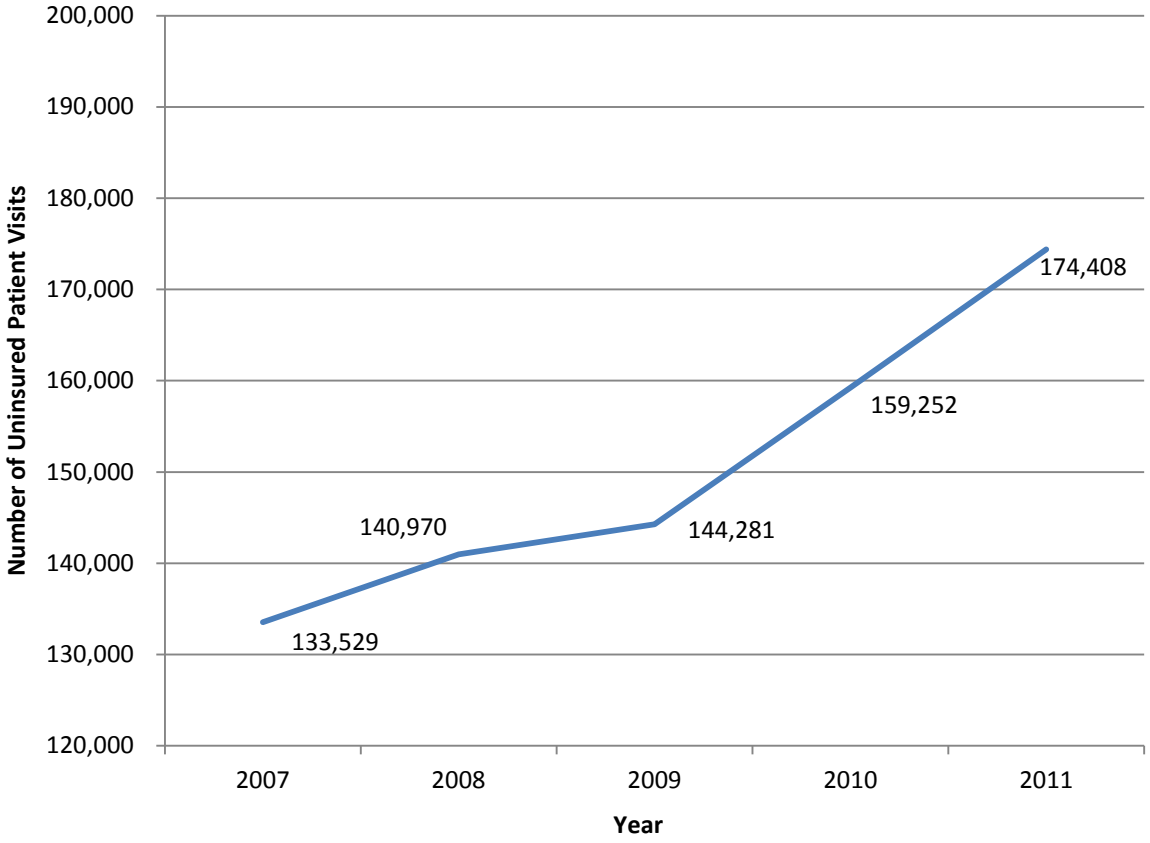
As a public hospital, MHS mission is providing medical care to all Cuyahoga County residents, including the indigent and uninsured that are unable to afford such care. Like MHS' trauma and burn centers, providing charity care generates a negative margin. Although MHS has access to public funds that subsidize the cost of charity care, those extra funds are not nearly enough to offset these costs.[19]

The demand for charity care has been on the rise the last several years. MHS experienced 174,408 uninsured patient visits in 2011, a total increase of 30.6% since 2007. When examined on an annual basis (Figure 2), it can be seen that MHS' number of uninsured patient visits increased each year between 2007 and 2011. Moreover, not only did uninsured visits increase, but the rate of growth generally got faster each year. The largest percent change in uninsured visits was from 2009 to 2010 when visits grew 10.4% in a single year. The likely explanation for the increasing growth rate of uninsured visits was the recent economic recession. As people lost their jobs and health insurance, more and more turned to MHS for medical care.

The uninsured patient population consistently made up a disproportionately large share of MHS' patient base between 2007 and 2011. The number of uninsured, referred to as self-paying individuals in the health care industry, accounted for 21% of MHS' patients in 2011, a small but meaningful increase from 18% in 2007. The significance of this percentage is best seen by comparing MHS to all other hospitals in the Northeast Ohio region, whose patient bases collectively averaged 5% uninsured patients in 2011. This data shows that on a relative basis, MHS' patient base included four times as many uninsured patients as other hospitals in the surrounding region. Moreover, the distribution of the uninsured across the county is changing; it is estimated that the number of self-paying patients increased 13% over the year in the city of Cleveland and 21% in the suburbs of Cuyahoga County, showing that sizable growth of the uninsured is not from the urban core, but from suburban areas. Anecdotal evidence provided by MHS leadership suggests that the trend of increasing charity care will not stop in the near future.

[19] See Part 2 of this report for details on these public subsidies.

Figure 2: Number of Uninsured Patient Visits at MHS, 2007-2011



Source: MetroHealth System

Metro Life Flight

Metro Life Flight is an internationally recognized critical care transport service established in 1982. Operated by Metro Aviation, Inc., a national FAA-certified air medical transportation company, Metro Life Flight conducts approximately 2,200 transports each year across Northeast Ohio and beyond. The helicopter fleet for Metro Life Flight is comprised of three EC145 aircrafts that feature state-of-the-art equipment like advanced terrain and weather detection equipment. For optimum service capacity and regional accessibility, the helicopters are housed at three regional airports located in Lorain, Portage, and Wayne Counties. Each transport is staffed by a team of four: two critical care specialists (i.e., physicians and nurses) and two Instrument Flight Rules ("IFR") certified pilots, many of whom have military flight experience and are trained in emergency medical services. The Metro Life Flight program has been accredited by the Commission on Accreditation of Medical Transport Services since 1994.

Electronic Health Records

In 1999, MHS became the first public hospital in the United States to implement the use of the Epic electronic health record system ("EHR"). MHS was also the first hospital to use EHRs regionally and is in

the top 25% of healthcare systems nationally in terms of the completeness of it EHR implementation.[20] The use of MHS' EHR system began exclusively in its outpatient facilities, but has since expanded throughout the entire health system. The easy accessibility of patient data offered by EHRs has aided the MHS staff in managing quality, reducing costs, reducing errors and risk, and improving efficiency, and overall the care of patients. A 2011 study published in *The New England Journal of Medicine* by a team including Dr. Randy Cebul of MHS found that 51% of diabetic patients with EHRs met four national standards for quality care, compared to only 7% of patients without EHRs, regardless of insurance type.[21]

There are benefits to using EHRs aside from improvements to patients' health and well-being. For instance, EHRs help cut down on the number of unnecessary or duplicate tests ordered by physicians. It is estimated that 14% of lab and imaging tests performed annually are duplicates; this equates to approximately $20 billion annually.[22] Through access to medical information from other healthcare institutions, MHS could save the time and money of both patients and health insurance companies.

Early adoption of the EHR has already enabled MHS to leverage EHR for academic research purposes and to participate in federal EHR incentive programs. Since 1999, MHS has been successful at leveraging its EHR system to receive approximately $15 million in external research grant funding. MHS also receives annually a blend of federal and state funds for having and demonstrating the meaningful use of EHRs.[23] According to Dr. David Kaelber, Chief Medical Informatics Officer at MHS, MHS received approximately $10 million in meaningful use payments in 2011, and gained approximately $9 million in 2012.

Over time, MHS has expanded the ways in which it uses EHRs. In 2010, MHS became only the second hospital in the United States to link its EHRs with a state department of health, an attempt to more quickly report cases of infectious diseases. Also in 2010, MHS joined a national collaborative program and began sharing EHRs data with healthcare systems nationwide to improve the safety, security, and health of patients. Called Care Everywhere, the program allows doctors that have received patient permission to access patient data from over 1,500 healthcare institutions throughout the U.S. in real time.[24] Although the program now involves multiple local partners, including the Cleveland Clinic and Kaiser Permanente, as of the summer of 2012 MHS has initiated more queries within the Care

[20] HIMSS Analytics Electronic Medical Record Adoption Model (EMRAM) Survey

[21] Cebul, R. D., Love, T. E., Jain, A. K., & Hebert, C. J. (2011). Electronic health records and quality of diabetes care. *The New England Journal of Medicine*, *365*(9), 1533-4406.

[22] MetroHealth System. (n.d.). MetroHealth is a national leader in sharing electronic health records [Press release]. Retrieved September 3, 2012, from http://www.metrohealth.org/body.cfm?id=3903

[23] "Meaningful use" is defined by the Centers for Medicare & Medicaid Services as using EHR technology to "improve quality, safety, efficiency, and reduce health disparities; engage patients and family; improve care coordination, and population and public health; and maintain privacy and security of patient health information." Definition retrieved fromhttp://www.healthit.gov/providers-professionals/meaningful-use-definition-objectives

[24] The name Care Everywhere is derived from a medical software package created by Epic Systems Corporation. Care Everywhere promotes the interoperability of hospitals by allowing for easy electronic exchange of patient data. When physicians have complete data on a patient, it allows them to create more informed diagnoses and treatment plans, avoid duplicative tests, and generally provide better, more cost-effective care.

Everywhere system than any other local institution in Northeast Ohio.[25] According to Dr. Kaelber, MHS has conducted over 20,000 queries.

In September 2011, MHS piloted a personal health record program entitled MyChart. MyChart allows patients to access their health information through the internet, communicate via e-mail with their health care team, request medication refills, set up appointments, and more. The intent is for MyChart to empower patients by engaging them in their personal care. After the pilot, MyChart was deployed throughout MHS in December 2011. Conceptually, MyChart is designed to decrease the costs and improve the quality of health care at MHS; however, due to the short time frame that has passed since MyChart went active, supporting data is not yet available. Since then, MyChart had over 20,000 patients (more than 10% of all patients seen in 2012) enrolled in the program.

Finally, in June 2011, MHS expanded its electronic capabilities by allowing for the electronic submission of prescriptions to local pharmacies. According to MHS leadership, e-prescriptions have improved the ease and timeliness with which patients fill prescriptions. MHS has submitted more than one million e-prescriptions.

Academics

If a Cuyahoga County resident were asked what he or she knew about MHS, there is a good chance most responses would reference at least one of the clinical care services identified above. While those services are integral to the operation and reputation of MHS as an institution, they represent only a portion of what MHS has to offer both the local community and the larger healthcare industry. Those select services, for example, fail to recognize the academic component of MHS' mission statement.

MHS was one of Cuyahoga County's first teaching hospitals. Each year, MHS trains thousands of students at different points on their educational path, providing them with the skills necessary for a future career in medicine. During the 2011-2012 academic year, 2,411 students were trained at MHS (Table 2). The largest portion of these students was comprised of traditional nursing students (48%), followed by medical students (30%).

Through MHS, these students have access to accredited residency programs in over 20 different fields of medicine; over 30 if counting the subfields and specializations in medical fields like Internal Medicine. In addition, MHS offers a variety of fellowships for post-residency physicians interested in obtaining additional training in a sub-specialty.[26] As an example, there is a fellowship offered in the field of maternal-fetal medicine that prepares physicians specifically for managing high-risk pregnancies.

[25] As it currently stands, to be a participant in Care Everywhere, an institution must possess the Epic Health Information Management software. This software is used widely through the United States. According to Dr. Kaelber, approximately 30 million people in the United States today have data recorded in Epic software.

[26] For additional information on the residency and fellowship programs offered by MHS, see the following website: http://www.metrohealth.org/body.cfm?id=1084

Table 2: Number of Students Trained at MHS, 2011-2012 Academic Year

Student Type	# of Students
Nursing Students [1]	1,177
Medical Students	726
Residents	328
Advanced Practice Nurses	66
Fellows	58
Dental Students	35
Undergraduate Students	21
Total	**2,411**

Note: [1] The total number of nursing students trained is an approximate number. According to MHS staff, roughly 2/3 of nursing students are new each semester. The 1,177 statistic was derived by summing the number of nursing students in the Fall 2011 semester with 2/3 of the nursing students in the Spring 2012 semester.
Source: MetroHealth System

MHS is affiliated with the Case Western Reserve University School of Medicine ("CWRU"), located in the University Circle neighborhood of Cleveland. CWRU is a nationally-ranked research medical school with myriad relationships throughout the local healthcare market.[27] The longstanding arrangement between MHS and CWRU, formally in place since 1914, is both comprehensive and mutually-beneficial. On the one hand, MHS has access to CWRU's state-of-the-art equipment and research capacity to augment its quality of patient care. On the other hand, CWRU uses MHS' experienced and board-certified staff to serve as teachers and mentors for its student body. The affiliation agreement in place covers a wide variety of subject matters, including research funding, which will be discussed in-depth in the next subsection.

Perhaps the most striking aspect of the MHS-CWRU affiliation arrangement is that all MHS physicians are appointed to the faculty at CWRU.[28] A large segment of MHS physicians work with and teach residents on-site at MHS while a smaller segment travels to the CWRU campus and teaches in the classroom. During the hiring process, the qualifications of new MHS physicians are submitted to CWRU for consideration for faculty appointment. There is no guarantee that an MHS physician will receive a faculty appointment at CWRU; however, physicians are only hired if they meet the requirements of CWRU and rejection of an application is unusual. "New hires at MHS need to be acceptable as CWRU faculty," said Dr. Connors. "If a physician loses their faculty status at CWRU, they would lose their faculty status at MHS."

[27] In 2012, *U.S. News & World Report* ranked the Case Western Reserve University School of Medicine as the number 24 research medical school in the United States.
[28] Per the bylaws of MHS, all physicians employed at MHS are required to be faculty at CWRU.

A dedication to academics is an important attraction tool for a hospital or medical system, according to anecdotal evidence. First, a strong academic mission can help attract the best doctors. Working at an academic institution and being appointed to the faculty of CWRU serve as incentives during the recruitment process, Dr. Connors said. He continued, "Our affiliation with CWRU allows us to attract excellent physicians who want to work in an environment of innovation and learning. The best and the brightest have traditionally been attracted to training the next generation of physicians." In addition, as Ryan said, "Physicians tend to locate where they completed their residencies." This means that the more students that are taught at MHS, the greater the possibility that a cross section will remain on-staff after completing their educational requirements. Lastly, notoriety as an academic hospital can attract patients. "An academic mission is an important selling point for individuals who have health insurance and can choose their hospital," said Lewis. In that, Lewis meant that people often perceive they will receive the best healthcare available by visiting an academic hospital for their medical needs.

Research

The third component of MHS' mission is a commitment to performing research capable of improving the health of patients and the quality of care they receive. MHS has consistently been on the cutting edge of research. In fact, MHS doctors have spearheaded a number of discoveries over the last 175 years that have led to such feats as the successful treatment of polio and tuberculosis, the advancement of knowledge regarding the use of penicillin, and the development of a standardized critical care model used in trauma departments nationwide today.

The research arm of MHS is housed within the Charles H. Rammelkamp, Jr., MD, Center for Education and Research, which occupies an 80,000 square foot facility at MetroHealth Medical Center, MHS' main campus. This space is devoted exclusively to research and houses a number of centers of excellence whose purview includes the advancement of clinical treatments in medical fields such as reproductive biology, heart and vascular disease, neurology, kidney disease, and metabolism and nutrition.[29] At MHS, it is common practice for these centers to work in tandem as a means of creating interdisciplinary solutions to medical challenges. This complements the "bench to bedside" approach of MHS' research function, in which staff strives to produce discoveries and results in the laboratory that can then be used directly to benefit patients, their health, and their general well-being.

Operating and supporting a large-scale research program is a difficult undertaking for any hospital or medical system. The level of difficulty is magnified, however, for public hospitals, which generally possess limited resources and, by extension, constrained capacity. This problem is compounded by the fact that hospital administrators frequently call upon doctors to increase their clinical time—a primary revenue generator for hospitals—rather than pursue research. As implicitly asserted by the preceding circumstances, in this time of diminishing resources, the pursuit of external funding as a means of maintaining a research program like MHS' is of vital importance.

[29] For more information on MHS' centers of excellence and the types of research being conducted, view the following website: http://www.metrohealthresearch.org/

Table 3 shows the amount of research funding MHS received annually between 2007 and 2011.[30] The funding is broken down by source and presented in nominal dollars. In 2011, MHS received a total of $35.1 million in research grants. This represents a 6% increase in nominal research funding since 2007, but this statistic is deceiving as it fails to illustrate the volatility of grant funding.[31] A closer look at the annual totals shows that research funding increased a total of 19.2% between 2007 and 2009, when it peaked at $39.5 million.[32] However, decreases in research funding during the two subsequent years resulted in a decline of 11.1%,[33] which accounted for the smaller overall percent change for the entire 5-year period.

Table 3: MHS Research Funding by Source, 2007-2011 (in nominal dollars)

Source	2007	2008	2009	2010	2011
Federal Government	$20.20	$23.09	$26.88	$28.53	$26.58
State/Local Government	$0.34	$0.81	$1.01	$0.20	$0.25
Non-profit/Foundation	$1.69	$2.41	$1.90	$1.27	$1.80
Industry - Clinical Trials	$9.91	$8.04	$9.49	$7.39	$6.03
Industry - Other	$1.02	$0.52	$0.25	$0.13	$0.48
Total	**$33.15**	**$34.85**	**$39.54**	**$37.52**	**$35.14**

Note: Data in millions of dollars.

Analyzing the sources of MHS' research funding provides a more in-depth perspective on the factors influencing the year-to-year changes in total funding. Given the timing, the likely culprit of the major reduction in research funding between 2009 and 2011 is the economic recession. In 2010, revenue decreased from every source except the federal government. Considering that the recession officially ended in June 2009, it is unsurprising that most sectors would choose to hold on to their resources as the economic recovery began. In 2011, funding from state and local governments, non-profits and foundations, and non-clinical-trial industries rebounded, but the increase was too small to offset the losses from the previous year.

During each year examined, the majority of MHS' research revenue came from the federal government. In 2011, the federal government's share of total funding was 76%, up from 61% in 2007; this share increased each year between 2007 and 2011, except for a slight 0.4% decline from 2010 to 2011. Unlike all other revenue sources, the federal government increased the research dollars it awarded MHS between 2009 and 2010. However, its funding was reduced in 2011 by nearly $2 million (6.8%), further

[30] When MHS reports its "research funding base," it counts the current active year awarded of a grant. For example, if MHS received a $1 million grant over 5 years, $200,000 would be counted in the research funding base each year.

[31] Research funding at MHS decreased 2.2% between 2007 and 2011 when adjusted for inflation.

[32] After adjusting for inflation, research funding increased 15.8% from $35.9 million in 2007 to its peak of $41.6 million in 2009.

[33] In real dollars, research funding decreased 15.5% between 2009 and 2011.

pushing down MHS' total amount of research funding. This reduction is especially important to MHS; if it is the beginning of a longer trend, as opposed to an isolated event, MHS may need to consider pursuing other sources for research funding.

An additional source from which MHS is able to derive benefits for its research program is its affiliation with CWRU. The provisions of the affiliation agreement regarding research cover a range of topics. For instance, regarding external funding, the affiliation agreement dictates that all federal grants for research are to be administered by CWRU on behalf of MHS. These grants, which are awarded to CWRU but conducted at MHS, are maintained in CWRU's systems and MHS then invoices CWRU monthly for expenses such as salaries and indirect costs. The affiliation agreement also allows MHS to access valuable resources that CWRU possesses, including equipment and human and intellectual capital.

Beyond the legalities of the affiliation agreement, MHS and CWRU also collaborate to use research as a means of improving the health of the community, particularly disadvantaged populations. This objective is best evidenced by the creation of two jointly-administered research centers housed at MetroHealth Medical Center under the umbrella of the Rammelkamp Center for Education and Research. The first is the Center for Health Care Research and Policy, which conducts multi-disciplinary research on topics such as health care access and delivery, health care policy and practice, and improving the quality of clinical care and services. Although the Center's research does not exclusively target disadvantaged populations, a special emphasis on such populations does exist. The mission of the Center is to use its research as a method of informing and educating the public and the policymaking process.

The second research center is the Center for Reducing Health Disparities, whose purview is researching the differences regionally in health-related outcomes by race, gender, socioeconomic status, and other such classifications. Upon discovering that health disparities are especially salient in the Greater Cleveland area, the Center was created to assist disadvantaged populations. The mission of the Center is to design and promote innovative, replicable interventions capable of achieving measurable reductions in local health disparities. The Center is also focused on expanding beyond MHS and CWRU and becoming a community-wide collaboration; project partnerships have already been implemented with organizations such as the Greater Cleveland Partnership, the Cleveland Metropolitan Housing Authority, and the Legal Aid Society of Cleveland.

The importance of a strong research program to MHS is immeasurable. Beyond its relevance to the mission of MHS, research is a primary means of making discoveries in medical care, medical technology and devices, and service provision that will improve MHS' quality of care and keep the hospital system competitive in the local healthcare market. Moreover, as with academics, a well-known and leading research program can serve as an incentive during recruitment. Whatever the reason—be it a passion for research, a desire to work with thought leaders in a particular field of medicine, or otherwise—research is one key element of creating an environment attractive enough to draw the best doctors, nurses, and ancillary staff to MHS. Finally, from an operational standpoint, research is rewarding in that the overhead charged to grants can be transferred to cover the indirect costs of a hospital's clinical program, thereby making that function more profitable.

PART 2: METROHEALTH SYSTEM BY THE NUMBERS

The objectiveness of numbers can possess a certain appeal, especially when it comes to educating oneself or others. Numbers often have the capacity to offer insight free of judgment; to tell the story of a person or organization in a fair, impartial manner. The following section seeks to do just that, by presenting an overview of MetroHealth System ("MHS") based primarily on quantitative methods.

The analysis below includes information on a number of topics, including patient demographics, payor mix, infrastructure, employment, revenue, expenditures, operating income, and income taxes paid. In most instances, where applicable, data are provided for the years 2007 to 2011; however, the analysis is focused primarily on the year 2011.

PATIENTS

An appropriate place to begin is by analyzing the patients serviced at MHS. After all, the patients are MHS' lifeblood, both in terms of achieving its mission and remaining financially stable. Between its various locations across Cuyahoga County, MHS cared for hundreds of thousands of patients in 2011. Specifically, MHS clocked 847,015 outpatient visits and 135,157 inpatient days at its main campus, in addition to 105,609 visits to its emergency room.

The following two subsections feature more detailed analyses of aggregated patient data for the year 2011. The first subsection looks at patient demographics and shows how MHS' patients compare to the populations of the city of Cleveland and Cuyahoga County. The second subsection considers MHS' payor mix, which is based upon patients' insurance coverage or lack thereof.

Demographics

Table 4 provides aggregated demographic data for MHS patients based on their race and ethnicity, age, and gender. The data are presented as shares of the whole patient population in 2011. For purposes of comparison, the same data points are provided for the populations of the city of Cleveland and Cuyahoga County.

In terms of race and ethnicity, the largest share of MHS' patients in 2011 (44%) identified themselves as *White*.[34] This share was greater than Cleveland's share of *White* residents (33%), but well below Cuyahoga County's share of *White* residents (61%). On the flip side, the share of MHS' patients identified as *Black* (37%) was less than Cleveland's share (53%), but greater than Cuyahoga County's share (29%). MHS' share of *Hispanic* patients was in line with Cleveland's share of *Hispanic* residents, but slightly greater than the county's share. The final two categories—*Asian* and *Other*—each represented small shares for MHS, the city of Cleveland, and Cuyahoga County.

[34] Please note that MHS was unable to classify 7% of its 2011 patients by race and ethnicity. As a result, the percentages cited for specific races may in fact be larger.

Table 4: Aggregated MHS Patient Demographics, 2011

	MetroHealth Patients	City of Cleveland	Cuyahoga County
Race & Ethnicity			
White	44%	33%	61%
Black	37%	53%	29%
Hispanic	9%	10%	5%
Asian	1%	2%	3%
Other	2%	2%	2%
Unknown	7%	NA	NA
Total	**100%**	**100%**	**100%**
Age			
0-17	16%	25%	23%
18-44	32%	37%	34%
45-64	37%	26%	28%
65+	15%	12%	15%
Total	**100%**	**100%**	**100%**
Gender			
Female	63%	52%	53%
Male	37%	48%	47%
Total	**100%**	**100%**	**100%**

Sources: MetroHealth System; U.S. Census Bureau's 2010 Census

As for age, the largest share of MHS patients fell into the 45-64 age bracket (37%). This share was larger than the shares of both Cleveland (26%) and Cuyahoga County (28%) residents in that same age bracket. MHS' shares of patients in the 0-17 and 18-44 age brackets were less than the corresponding shares for Cleveland and Cuyahoga County. This is expected given that younger patients traditionally need less medical services. The share of 65+ patients at MHS was equal to the share for Cuyahoga County and slightly higher than the share for Cleveland.

The gender breakdown was nearly equal with regard to the populations of Cleveland and Cuyahoga County. MHS, cared for a larger proportion of women in 2011. Nearly two-thirds of MHS' patients were female, compared to just over half the populations of Cleveland and Cuyahoga County. The larger share of women is expected in health care systems due to maternity-related services.

Payor Mix

A hospital's payor mix refers to the percentage patient visits or revenue derived from private or commercial insurance, government insurance (Medicare and Medicaid), and from self-paying

individuals.[35] This mix is of particular importance as it influences the percentage of services rendered for which a hospital will receive payment or reimbursement. Practically speaking, a hospital's payor mix can directly impact its long-term financial viability.

When it comes to payor mix, hospitals must consider certain factors. For example, reimbursements provided to hospitals through Medicare and Medicaid are consistently less than the true cost of caring for a patient. In addition, in many instances self-paying individuals, including uninsured, underinsured, and out-of-network patients, are unable to pay their medical bills. This is a growing problem as the number of self-paying patients has increased in recent years due to recession-induced job losses. As a result, it behooves a hospital to seek a well-balanced mix as a means of covering costs and staying financially stable.

Table 5 shows MHS' payor mix in 2011 in terms of patient visits. The largest share of MHS' payor mix was Medicaid, which accounted for just over one third of all patient visits. The remaining payor sources each represented between 20% and 24% of all patient visits. Examined on its own, MHS' payor mix reveals an important fact: over half of MHS' patients were either insured through Medicaid or were self-paying, which are the two lowest categories in terms of receiving payment or reimbursement for services rendered.

Table 5: Payor Mix of MHS and Northeast Ohio, 2011

Payor	MetroHealth System Mix	Northeast Ohio Average Mix
Commercial	24%	35%
Medicare	20%	44%
Medicaid	35%	16%
Self-Pay*	21%	5%

Note: *Includes uncompensated care
Sources: MetroHealth System; The Center for Health Affairs

A very different story is told when comparing the payor mix of MHS to the average mix for all hospitals in Northeast Ohio (Table 5). Overall, MHS deviated largely from Northeast Ohio in 2011. Perhaps most startling was the difference in shares of Medicaid and Self-Pay. Whereas MHS had large shares of Medicaid and Self-Pay patients, these categories represented the two smallest shares for Northeast Ohio. In addition, Northeast Ohio's share of commercial payors, which hospitals traditionally seek to offset the expense of caring for the uninsured and underinsured, exceeded MHS by 11 percentage points. Finally, Northeast Ohio's share of Medicare exceeded MHS' by 24 percentage points.

Despite its variations from the Northeast Ohio average, MHS has managed to operate in the black the last four years, from 2008 to 2011 (see the *Operating Income* subsection below). Although its payor mix

[35] Self-pay is a term that refers to people who lack health insurance and pay for medical services out of pocket. This category includes MHS' large uninsured patient population.

may not be ideal, MHS has adjusted its service and cost structures to become more efficient. MHS is still working to create a more stable payor mix, however. For instance, MHS is planning to expand its outpatient health centers as a means of increasing access across Cuyahoga County and attracting more insured patients from the suburbs of Cleveland.

INFRASTRUCTURE

MHS operated 17 facilities in Cuyahoga County as of 2011. Figure 3 displays the locations of these facilities on a map of the county. The largest of the facilities is MetroHealth Medical Center, MHS' headquarters located on the near west side of Cleveland. This 1.8 million square foot campus encompasses a number of assets such as 583 patient beds; the Critical Care Pavilion, a technologically-advanced center for MHS' emergency medicine, trauma, and surgical care; the Rammelkamp Center for Education and Research, which houses the entirety of MHS' research program; and the Outpatient Plaza, which has space dedicated to specialty areas like cancer care and rehabilitative services.

The remaining 16 facilities are outpatient centers, each of which offers a comprehensive assortment of patient services.[36] Ten of these facilities are located within the city of Cleveland, their locations strategically chosen so as to provide convenient access to residents living on both the city's east and west sides. The other six facilities are located in suburbs along the periphery of Cuyahoga County. These locations are an asset to MHS as they undertake their strategy of expanding access to services throughout the county. In May 2012, MHS broke ground on a seventeenth outpatient center located in the city of Middleburg Heights.

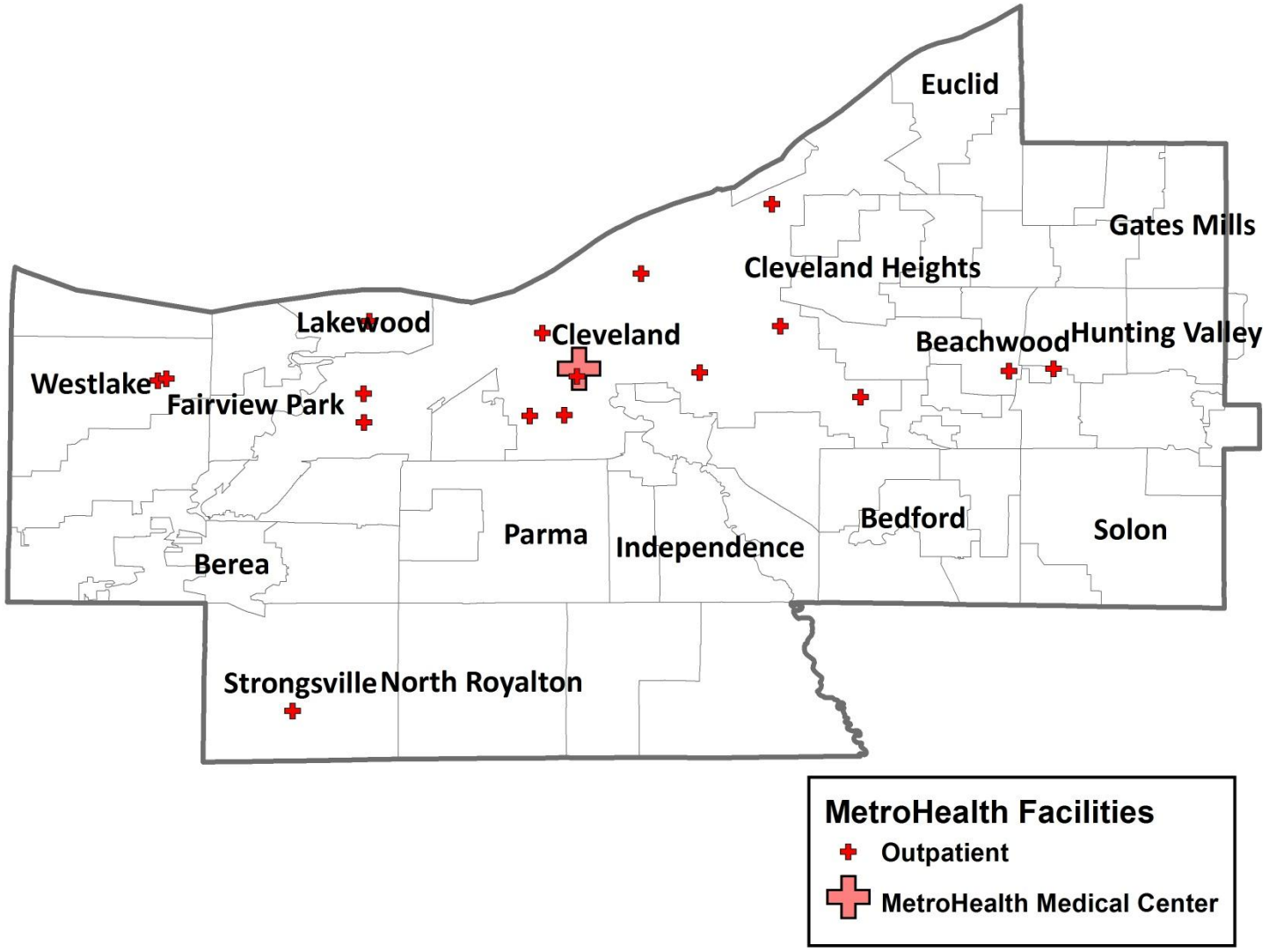
EMPLOYMENT

MHS is the largest employer on the west side of Cleveland and was ranked by *Crain's Cleveland Business* as the fourteenth (14th) largest employer in all of Northeast Ohio as of June 30, 2011. MHS employed a total of 6,015 workers in 2011. This count takes into account all employees, including full-time and part-time workers. Of those employees, three quarters (73.7%) were female and the rest (26.3%) male. Ethnically, 70.5% of MHS employees self-identified as *White*, 19.2% as *African-American*, 5.6% as *Asian*, 4.5% as *Hispanic*, and 0.2% as *American Native*.

The remainder of this employment analysis uses full-time equivalents (FTEs) as the unit of measure. Calculating an organization's FTE count is done by adding together its number of full-time employees and its number of part-time employees converted to a full-time basis. For example, four half-time employees would be the equivalent of two FTEs.

[36] For more on the operations of MHS' outpatient centers, see the following website: http://www.metrohealth.org/body.cfm?id=21

Figure 3: Map of MHS Facilities, 2011



In 2011, MHS employed 5,231 FTEs across a wide range of occupations. This represents a 3.3% decrease in MHS' total employment from 5,408 in 2007. MHS employment in FTE terms decreased each year between 2007 and 2011, except for an isolated 3% increase from 2009 to 2010, immediately following the end of the last economic recession.

The following two subsections provide more in-depth analyses of MHS' FTEs by occupation and place of residence.

Employment by Occupation

Table 6 shows the number of employees (FTEs) MHS employed by occupation category and the share of each of the four occupational groups in 2011. Using MHS' internal job classification system, each individual occupation was categorized into one of five broader occupational groups: clinical, clinical support, administrative support, management, and research. Accounting for over 2,000 employees in 2011, the largest occupation group was the clinical group, which includes all the physicians, specialists (e.g., physical therapists, pharmacists), nurses, and medical students employed at MHS. The clinical support group had the second-largest share of employment with 36%, or 1,883 employees. The research group represented the smallest share of employment, accounting for only 3% of all MHS employees.

Table 6: MHS Employment and Shares by Occupation, 2011

Occupational Group	Employment	Employment Share
Clinical	2,040	39%
Clinical Support	1,883	36%
Administrative Support	785	15%
Management	366	7%
Research	157	3%
Total	**5,231**	**100%**

Employment by Place of Residence

Table 7 provides a geographic breakdown of MHS employment based on employees' place of residence. In 2011, just over three quarters of MHS employees (77.5%) lived in Cuyahoga County. Of all employees, 22.6% lived in the city of Cleveland and 54.9% in one of its surrounding suburbs. Traveling outward, another 17.3% of MHS' FTEs lived within one of the other four counties that comprise the Cleveland-Elyria-Mentor Metropolitan Statistical Area ("Cleveland MSA"): Geauga, Lake, Lorain, and Medina. The largest share of employees lived in Lorain County, followed by Medina County.

Table 7: MHS Employment by Place of Residence, 2011

Area		% of MHS Employees
Cuyahoga County		77.5%
	City of Cleveland	22.6%
	Remainder of County	54.9%
Remainder of Cleveland MSA		17.3%
	Geauga County	1.1%
	Lake County	2.8%
	Lorain County	8.0%
	Medina County	5.4%
Remainder of Ohio		4.9%
	Portage County	0.9%
	Summit County	3.0%
Outside of Ohio		0.2%
Total		**100.0%**

Note: Data were assigned by whole zip codes to an area based on where the largest area of the zip code lies. Only for zip code 44120 was the data allocated based on the proportion of area within the cities of Cleveland and Shaker Heights.

Of the remaining employees, 4.9% lived within the state of Ohio, but outside the Cleveland MSA. The largest share of this group resided in Summit County (3%), which is immediately adjacent to Cuyahoga County and is a part of the Akron MSA. Portage County, the second county in the Akron MSA, housed almost 1% of the MHS employees living outside the Cleveland MSA. Finally, 0.2% of all MHS FTEs resided outside the state of Ohio.

REVENUE

Table 8 shows the total revenue earned by MHS during the years 2007 to 2011, in nominal dollars and broken down by source. "Patient Services" includes all revenue received from both inpatient and outpatient services rendered by MHS. "Cuyahoga County Subsidy" refers to the annual appropriation MHS receives from the county government. "Other Revenue" is a catch-all for miscellaneous sources of revenue including the following: income from outpatient dialysis services provided by the Ohio Renal Care Group, a joint venture of MHS, the Cleveland Clinic Foundation, and Nashville-based Renal Care Group, Inc.;[37] reimbursements from the federal Centers for Medicare and Medicaid Services for demonstrating meaningful use of electronic health records technology;[38] and income from parking and food and beverage sales.

[37] For more information on the Ohio Renal Care Group, see http://www.clevelandclinic.org/nephrology/patient/orcg.htm

[38] For a definition of "meaningful use," see footnote number 24 in this report.

Table 8 also includes a row for funding MHS deducts annually from its patient service revenue to cover financial obligations.[39] Items accounted for in the "Deduction" category include: outstanding patient balances for which MHS is responsible due to insurance claim denials (these amounts are written off the books); the monetary difference between the value of MHS' charges for services rendered and the actual amount of reimbursement received from insurance companies; and the cost of providing charity care to the uninsured in Cuyahoga County.

Table 8: MHS Revenue by Source, 2007-2011 (in nominal dollars)

Revenue Source	2007	2008	2009	2010	2011
Patient Services	$1,559.15	$1,739.29	$1,827.44	$1,917.16	$2,083.00
Cuyahoga County Subsidy	$40.00	$39.77	$39.66	$39.91	$36.03
Other Revenue	$28.44	$29.44	$32.81	$41.60	$42.61
Deductions	($997.14)	($1,122.11)	($1,182.40)	($1,235.29)	($1,377.94)
Total Revenue	**$630.45**	**$686.39**	**$717.51**	**$763.38**	**$783.71**

Note: Data are in millions of dollars.

In 2011, MHS' total revenue was $783.7 million. In nominal dollars, this represents an increase of 24.3% from 2007 to 2011. Looking at annual changes, total revenue increased each year between 2007 and 2011.[40]

For each year observed in Table 8, approximately 89% of MHS' net revenue came from patient services. In 2011, patient service revenues (minus deductions) accounted for $705.1 million or 90% of MHS' total revenue. While revenue from patient services (in nominal dollars) increased annually, so too did MHS' amount of deductions. Fortunately, the growth in patient service revenue outpaced growth in deductions, which resulted in MHS' net patient service income continuously increasing each year between 2007 and 2011.[41]

Half of MHS' remaining revenue, approximately 5% of the total, comes from the miscellaneous sources encompassed under the umbrella of "Other Revenue." In 2011, Other Revenue contributed $42.6 million to the MHS coffers. This amalgamation of funding had an upward trend from 2007 to 2011 and, in nominal dollars, increased by a total of 49.8% over that period of time.[42]

The final 5% that comprises MHS' total revenue comes from a subsidy contributed by the government of Cuyahoga County. Each year, Cuyahoga County provides MHS with a multi-million dollar subsidy to help

[39] These deductions are included in the revenue portion of this analysis because of how MHS accounts for them in their financial statements.
[40] After adjusting for inflation, total revenue increased 14.7% between 2007 and 2011. Revenue increased each year between 2007 and 2010, but decreased 0.5% between 2010 and 2011.
[41] This trend remained consistent when examining MHS' revenue in real dollars.
[42] After adjusting for inflation, Other Revenue increased only 38.2% between 2007 and 2011.

offset the cost of providing care to uninsured county residents. Table 8 above shows the nominal value of the county subsidy for 2007 to 2011. The value of MHS' county subsidy was approximately $36 million in 2011, a decrease of almost $4 million, or 10%, since 2007.[43]

County Subsidy and Uncompensated Care

The Cuyahoga County subsidy is a valuable source of income for MHS, specifically when it comes to providing charity care to uninsured county residents. Unfortunately, between 2007 and 2011, as the cost of charity care increased, the value of the subsidy decreased.

Figure 4 graphs two distinct measures. The bars represent the nominal annual cost of uncompensated care at MHS from 2007 to 2011.[44] Uncompensated care is defined as the summation of charity care cost and bad debt, which are charges for services rendered that MHS must write off because patients are unable to pay.[45] Bad debt is an increasingly prevalent issue, particularly for insured patients who have adopted high deductible health care plans and are unable to afford these deductibles. When written off, bad debt is considered an expense to MHS.

The line in Figure 4 represents the percent of MHS' uncompensated care cost that is covered by the subsidy received from Cuyahoga County.

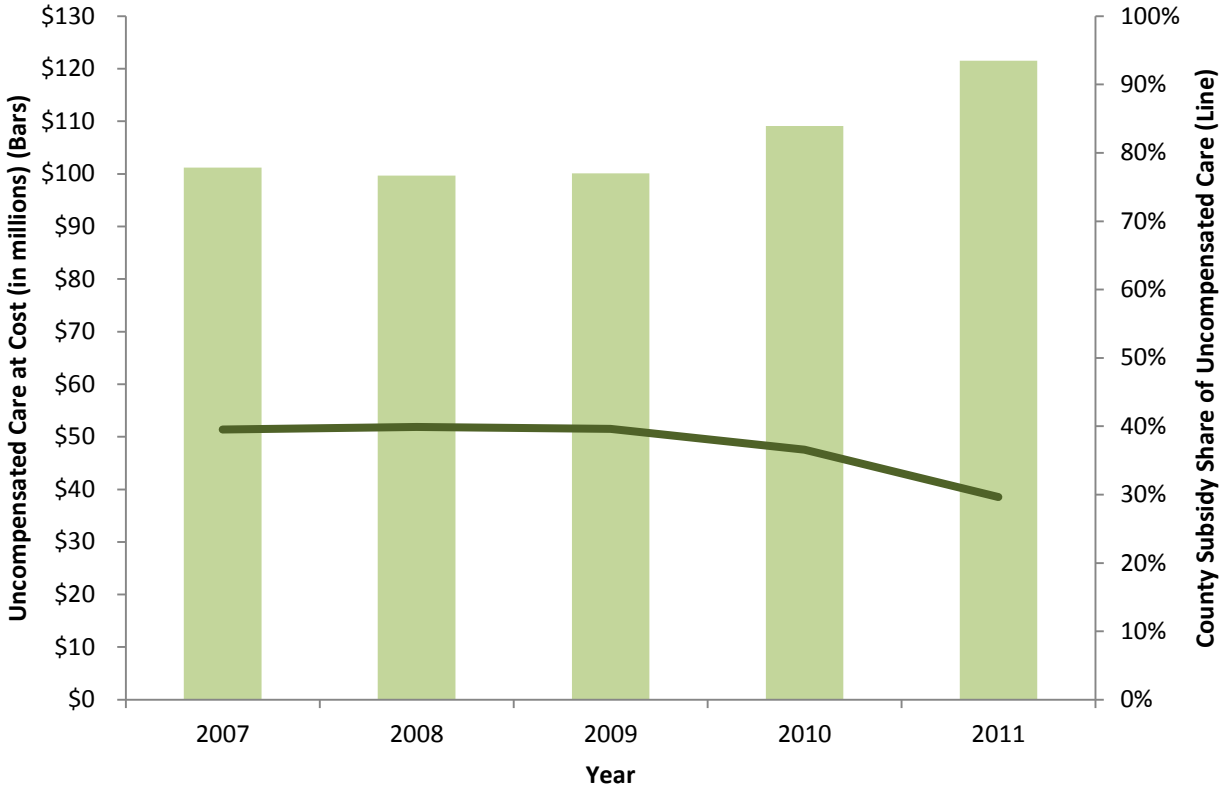
As Figure 4 shows, between 2007 and 2009, MHS' cost of uncompensated care remained fairly stable. Following the formal end of the economic recession in 2009, however, uncompensated care costs began to rise substantially. Overall, between 2007 and 2011, uncompensated care costs increased $20.3 million or 20.1%. Anecdotal evidence provided by MHS leadership suggests that the increase in uncompensated care costs will not abate in 2012. Given mid-year statistics, total uncompensated care cost in 2012 is estimated to be approximately $130 million.

[43] In real dollars, MHS' county subsidy decreased 16.9% from 2007 to 2011.

[44] To calculate uncompensated care, one must first determine a hospital system's cost-to-charge ratio for a given fiscal year by dividing total expenses (costs) by total gross revenue (charges). Next, multiply this ratio by the summation of charity care cost and bad debt. The result is referred to as "uncompensated care at cost."

[45] Uncompensated care is used here for analysis because bad debt, although not technically charity care, represents an additional expense for MHS to provide medical care to Cuyahoga County residents who cannot afford the cost. Moreover, using uncompensated care as a measure as opposed to just charity care is an industry standard operating procedure.

Figure 4: MHS Uncompensated Care at Cost and Share of County Subsidy, 2007-2011



Note: Uncompensated care at cost equals charity care and bad debt
Source: MetroHealth Systems

Figure 4 also shows that as the cost of uncompensated care increased, the share covered by MHS' county subsidy decreased. While uncompensated care cost remained flat from 2007 to 2009, so too did the share covered by the county subsidy, which remained at approximately 39.5%. Between 2007 and 2011, however, that share decreased nearly 10 percentage points from 39.5% to 29.7%. That means that only about 30% of the MHS' cost of uncompensated care is expected to be covered by the county subsidy in 2012.

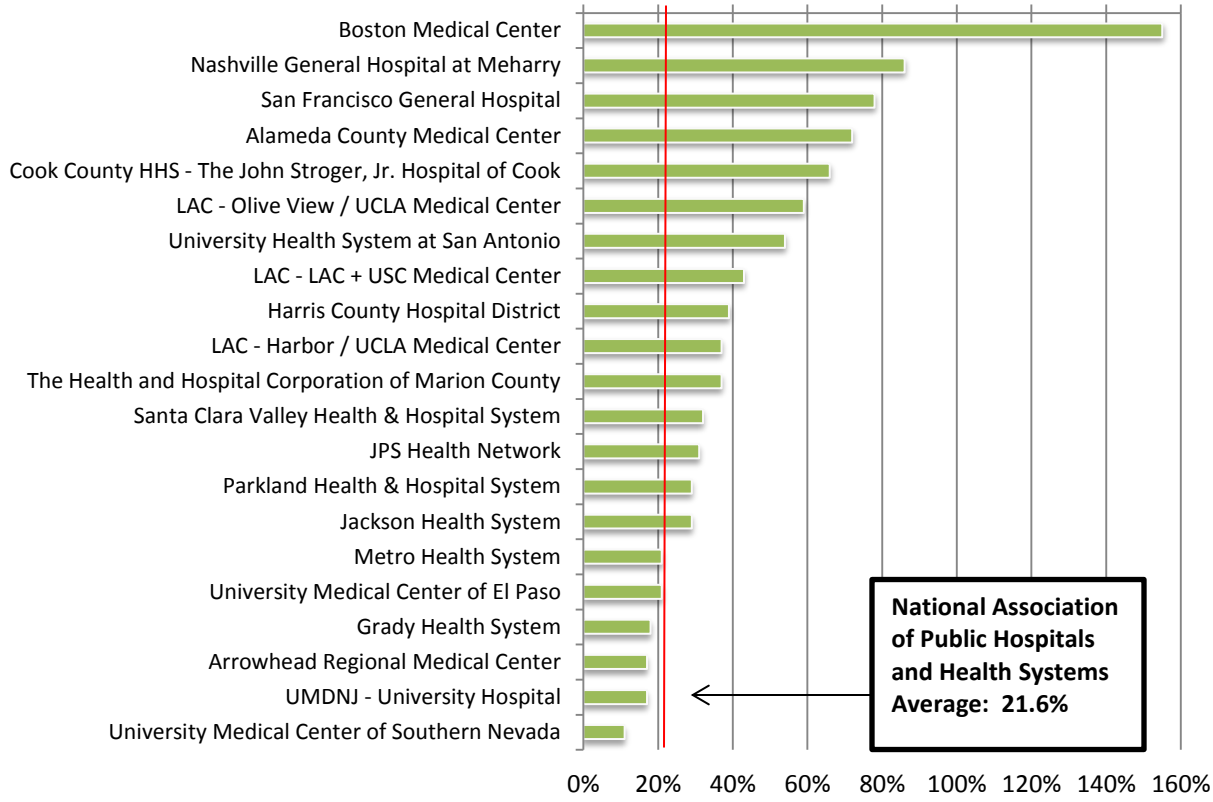
To help offset the remaining cost of uncompensated care, MHS, like other Ohio hospitals, receives an additional infusion of public dollars from the federal and state governments, funneled through the state of Ohio's Hospital Care Assurance Program (HCAP).[46] Whatever percent of uncompensated care is not reimbursed through public subsidy is deducted directly from MHS' operating budget. Therefore, as public funds become scarcer, MHS will be forced to cover an increasingly larger share of the uncompensated care it provides.

[46] HCAP is a state of Ohio program (modeled after the federal government's Disproportionate Share Hospital program) designed to provide compensation to hospitals that provide a disproportionate share of care to uninsured patients. For more information, view The Center for Health Affair's website at the following URL: http://www.chanet.org/en/FinanceAndReimbursement/MedicaidHCAP.aspx.

Comparing Public Hospitals

Receiving a government subsidy is common for a public hospital. However, the level of support received by a public hospital can deviate dramatically by region. Figure 5 compares MHS to other public hospitals nationwide that were identified by MHS leadership as peers or institutions against which MHS is benchmarked. Specifically, Figure 5 shows the share of each hospital's gross charges for uninsured care that were covered by its public subsidy in 2010, the last year for which comparable data were available.[47]

Figure 5: Public Contribution to Uncompensated Care, 2010



Source: National Association of Public Hospitals and Health Systems

MHS' share of 21.2% lies just below the average share (21.6%) calculated for several hundred hospitals that are members of the National Association of Public Hospitals and Hospital Systems. As shown by the range of shares in Figure 5, there are public hospitals across the country, like San Francisco General Hospital (78%) and Stroger Hospital of Cook County (66%) that have the majority of their charity care charges subsidized by public dollars. Moreover, Boston Medical Center receives more money from state

[47] Gross charges are defined by the National Association of Public Hospitals and Health Systems as "[t]he amount hospitals charge for providing services to all patients, irrespective of payments received for services." In the case of Figure 5, only gross charges for uninsured care were analyzed. Gross charges are significantly different from the uncompensated care at cost referred to in the preceding subsection and should not be compared.

and local governments than their uninsured costs. At the same time, there are hospitals like UMDNJ - University Hospital (17%) in New Jersey and University Medical Center of Southern Nevada (11%) that receive little public subsidy.

EXPENDITURES

Each year, MHS spends hundreds of millions of dollars on goods and services such as employee salaries, medical supplies, and operations costs. As shown in Table 9, MHS' expenditures totaled $780.4 million in 2011, a 20.5% increase from 2007 in nominal dollars.[48] Total expenditures have increased every year between 2007 and 2011, the largest jump being an increase of $60 million (8.8%) from 2009 to 2010, immediately following the end of the recent recession.[49]

Table 9 identifies the key groups of goods and services on which MHS spends its funds. As is common in hospitals, MHS' largest expense across all years observed was on the salaries and benefits of its employees. Salaries and benefits accounted for 65% of MHS' expenditures in 2011, a slight reduction from 68% in 2007. This expense will be discussed further in the next subsection.

Table 9: MHS Expenditures by Source, 2007-2011 (in nominal dollars)

Expenditure Source	2007	2008	2009	2010	2011
Salaries & Benefits	$441.41	$456.04	$458.24	$479.36	$507.53
Medical & Other Supplies	$107.58	$121.88	$121.94	$131.29	$150.32
Plant Operations& Insurance	$46.41	$47.36	$47.70	$57.84	$50.33
Debts, Depreciation & Interest	$52.32	$52.44	$51.90	$71.05	$72.18
Total	**$647.72**	**$677.71**	**$679.78**	**$739.54**	**$780.37**

Notes:
Data are in millions of dollars.
The total does not include MHS' cost of providing charity care as this expense is deducted directly from gross revenue.

The second-largest expense of MHS was consistently supplies, both medical and non-medical. MHS' spending on supplies increased each year of the time period studied here; the total expense for supplies was $150.3 million in 2011, an increase in nominal dollars of 39.7% between 2007 and 2011.[50] As a share of total expenditures, the purchase of supplies represented 19.3%, up from 16.6% in 2007.
The remaining two categories of expenditures—Plant Operations, Taxes & Insurance and Debts, Depreciation & Interest—each accounted for between 7% and 10% of MHS' total expenditures annually.

[48] In real dollars, expenditures increased by 11.2% from 2007 to 2011.
[49] After adjusting for inflation, expenditures still grew annually, though the 2009-2010 increase was $48 million or 6.7%.
[50] In real dollars, expenditures on medical and non-medical supplies increased 29% between 2007 and 2011.

Total Compensation

As stated above, salaries and fringe benefits, known collectively hereafter as total compensation, are consistently MHS' largest annual expense. Table 10 shows MHS' annual expenditure on total compensation for the time period of 2007 to 2011, and breaks down the total into its base components: salaries and fringe benefits.

In 2011, MHS spent a total of $507.5 million on compensation for its employees. In nominal dollars, compensation costs grew each year between 2007 and 2011 for a total increase of 15%.[51] Interestingly, the year-to-year changes in compensation did not match the trends in annual employment change. For example, while MHS' compensation costs increased in 2008, 2009, and 2011, the number of FTEs it employed actually decreased. One possible explanation is that at that time, an independent study confirmed that MHS physicians in some specialties were paid under market rates. As such, the physician compensation plan was redesigned and standardized across the system to align with industry benchmarks. The redesign was also aligned with MHS' goals related to productivity, research, quality and administrative effectiveness.

Table 10: MHS Total Compensation, 2007-2011 (in nominal dollars)

Year	Payroll	Fringe Benefits	Total Compensation
2007	$357.61	$83.80	$441.41
2008	$370.13	$85.91	$456.04
2009	$371.34	$86.90	$458.24
2010	$390.21	$89.15	$479.36
2011	$410.68	$96.85	$507.53

Note: Data are in millions of dollars.

The shares of total compensation represented by salaries and fringe benefits remained consistent between 2007 and 2011. Each year, salaries amounted to approximately 81% of total compensation while fringe benefits accounted for the remaining 19%. This finding is unsurprising as many organizations typically use fixed percentages to determine fringe benefit rates for employees. Because fixed percentages are used, a positive relationship exists between salaries and fringe benefits; as salary costs increase or decrease so does the cost of providing employees with fringe benefits.

[51] In real dollars, total compensation costs increased each year, except for 2008, for a total net increase of 6.1% between 2007 and 2011.

OPERATING INCOME

Operating income, or net income, is calculated by subtracting total expenditures from total revenue. Table 11 shows MHS' operating income for 2007 to 2011, complete with a restatement of annual revenue and expenditures. Between 2007 and 2009, MHS' operating income changed from negative to positive, a big accomplishment for MHS; in nominal dollars, MHS' operating income increased from -$17.3 million to $37.7 million, an increase of $55 million in 2 years.[52] Since 2009, operating income has decreased annually; however, as of 2011, MHS is continuing to operate in the black, which is when total revenue for the year exceeds total expenditures.

Table 11: MHS Operating Income, 2007-2011

	2007	2008	2009	2010	2011
Total Revenue	$630.45	$686.39	$717.51	$763.38	$783.71
Total Expenditures	$647.72	$677.71	$679.78	$739.54	$780.37
Operating Income	**($17.28)**	**$8.68**	**$37.73**	**$23.84**	**$3.34**

Note: Data are in millions of dollars.

Historically, MHS has struggled to breakeven in terms of revenue and expenditures. As a result, it is a point of pride among MHS leadership that MHS has been operating in the black for the past several years. As Table 11 shows, MHS operated at a $17.3 million deficit in 2007. However, due to actions taken by its leadership, MHS has succeeded not only in learning to spend within its means, but in being able to carry forward surpluses.

INCOME TAXES

Income taxes paid by MHS employees serve as a valuable source of revenue for the federal, state, and local governments. The amount of income taxes paid by MHS on an annual basis is derived from the total payroll of employees whose workplaces are located at MetroHealth Medical Center and MHS' 16 outpatient facilities. Table 12 shows the amount of income taxes withheld from MHS employee paychecks and sent directly to the federal and state governments, as well as to a myriad of local governments. These amounts include only the income tax paid according to place of work; they exclude the taxes paid by employees based on their place of residence.

[52] In real dollars, MHS' operating income increased from -$18.7 million in 2007 and $39.7 million in 2011, an increase of $58.7 million dollars.

Table 12: Income Taxes Paid by MHS Employees, 2007-2011 (in nominal dollars)

Year	Federal Gov't	State of Ohio	City of Cleveland	Other Local Gov'ts	Total
2007	$43.26	$11.17	$6.64	$0.33	**$61.40**
2008	$45.19	$11.12	$7.02	$0.10	**$63.42**
2009	$43.51	$10.90	$7.14	$0.05	**$61.60**
2010	$47.34	$11.57	$7.45	$0.06	**$66.41**
2011	$54.19	$12.51	$7.89	$0.07	**$74.66**

Note: Data are in millions of dollars.

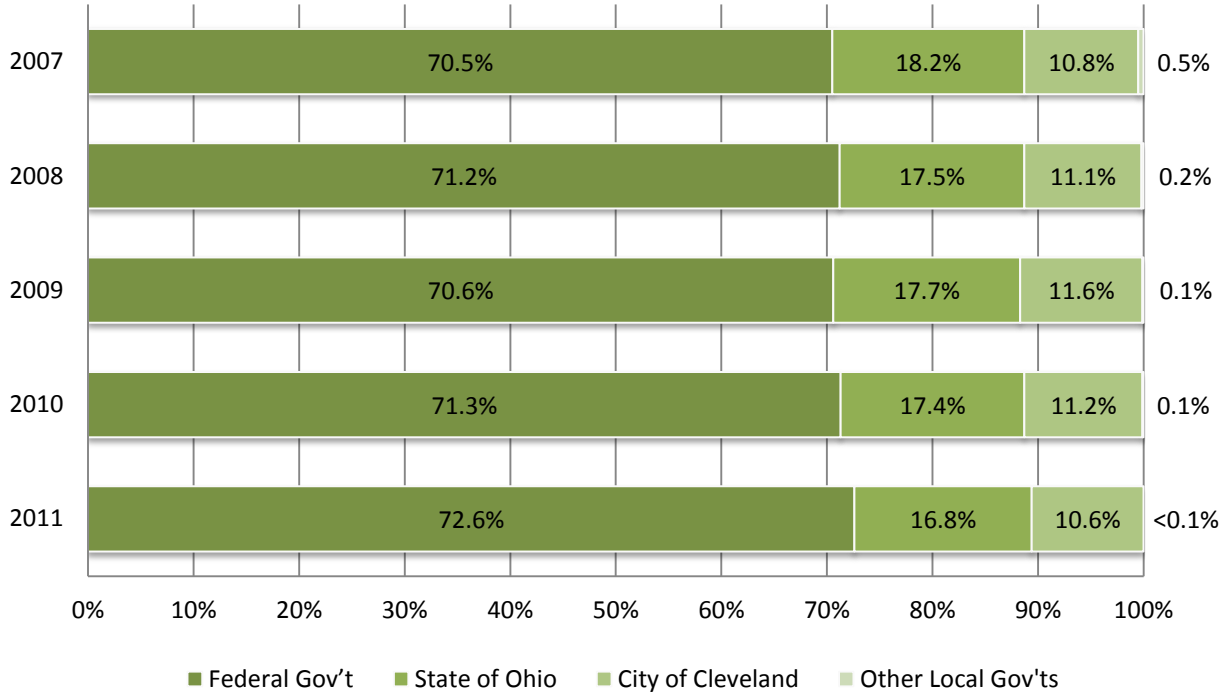
The total amount of income taxes paid by MHS employees in 2011 was $74.7 million. This amount represents a net increase of 21.6% in income taxes paid between 2007 and 2011 (in nominal dollars), which is not surprising given the consistent year-to-year increase in MHS' payroll.[53] Total income taxes paid increased each year, except from 2008 to 2009, which coincided with the recent economic recession and a reduction of MHS' workforce. Going into 2010, however, income taxes paid vis-á-vis employment at MHS rebounded; between 2009 and 2011, the amount of income taxes paid by MHS employees increased 21.2%.[54]

The federal government is by far the largest beneficiary of income tax dollars from MHS employees (Figure 5). In 2011, the federal government received $54.2 million from MHS employees, or 73% of all income taxes paid that year. Although the dollar value of the federal government's share of income taxes varied between 2007 and 2011, the percentage of total income taxes it received remained fairly consistent. On average, the federal government received 71% of the income taxes paid by MHS employees each year between 2007 and 2011.

Of the remaining income tax dollars paid, the state of Ohio received the next largest share. In 2011, Ohio received $12.5 million from MHS employees, or 17% of all income taxes paid. The average percentage of total income taxes received by the state of Ohio from MHS employees between 2007 and 2011 was 17.5%.

[53] After adjusting for inflation, the net increase in income taxes paid between 2007 and 2011 was 12.2%.
[54] In real dollars, income taxes paid by MHS increased 15.2% from 2009 to 2011.

Figure 5: Percent of Total Income Taxes Paid by Recipient, 2007-2011



The final, approximately 11% of income taxes paid by MHS employees each year between 2007 and 2011 were distributed to local municipalities in the region. Nearly the entirety of these tax receipts was collected by the city of Cleveland, which houses MHS' main campus and 10 of 16 outpatient centers. In 2011, the city of Cleveland received $7.9 million in income taxes from MHS employees; this accounted for 99% of the $8 million MHS paid to local governments that year. The remaining income taxes, which annually represent less than a half percent of MHS' total income taxes paid, were paid to a handful of other municipalities like Beachwood and Strongsville where MHS facilities are located.

PART 3: ECONOMIC IMPACT OF OPERATING EXPENDITURES

MetroHealth System ("MHS") plays an integral role in the local community that extends beyond its capacity as a safety net medical provider. As a large institution and one of the biggest employers in Northeast Ohio, MHS has substantial purchasing power, which when directed toward purchasing local goods and services can affect the local economy. Referred to as economic impact, it is possible to quantify how MHS' spending on payroll and operations ripples through the economy. This is done by estimating the level of economic activity in a given year that occurs because of MHS' existence.

The following economic impact analysis looks at the impact of MHS on the city of Cleveland, Cuyahoga County, and the 5-county Cleveland-Elyria-Mentor Metropolitan Statistical Area ("MSA").[55]

METHODOLOGY

Economic impact modeling requires the assumption that MHS came into existence one day and its appearance would stimulate the local economy through increased demand for goods and services. The value of this stimulus is defined as the purchase of labor and goods and services by MHS for final consumption. The effect of this change is then traced through the Northeast Ohio economy using the IMPLAN model.

IMPLAN is an input-output ("I-O") model that captures the buy-sell relationships among all industries and the household sector. These relationships largely determine how an economy responds to changes in economic activity. I-O models estimate inter-industry relationships in a county, region, state, or country by measuring the industrial distribution of inputs purchased and outputs sold by each industry and the household sector. Thus, by using I-O models, it is possible to estimate how the impact of one dollar or one job ripples through the local economy, creating additional expenditures and jobs. The economic multiplier measures the ripple effect that an initial expenditure has on the local economy.[56]

MHS buys goods and services in order to provide services, which, in turn, leads into the three components of economic impact: direct, indirect, and induced effects. *Direct impact* is the initial value of goods and services that MHS purchases in the region. *Indirect impact* measures the jobs and production needed to manufacture goods and services required by the institution through the local supply chain. *Induced impact* is the increase in spending of local households because of income received through their work at MHS and with its suppliers. Since the analysis only looks at the impact on the City of Cleveland,

[55] The Cleveland-Elyria-Mentor MSA is comprised of the following counties: Cuyahoga, Geauga, Lake, Lorain, and Medina.

[56] For example, suppose that Company A reports sales of $10 million to MHS. From the revenues of the company, they pay suppliers and workers, cover production costs, and take a profit. Once the suppliers and employees receive their payments, they will spend a portion of their money in the local economy purchasing goods and services, while another portion of the money will be spent outside the local economy (known as leakage). By evaluating the chain of local purchases that result from the initial infusion of $10 million, it is possible to estimate a regional economic multiplier.

Cuyahoga County, and the Cleveland-Elyria-Mentor MSA, any purchases made outside each region were excluded from that respective model.[57]

This report measures five impacts for each region: employment, output, value added, labor income, and taxes. *Employment* measures the number of jobs that exist due to MHS spending. *Labor income* is payroll paid to employees, plus proprietors' income. *Output* measures the total value of goods and services produced in the region as a result of the spending. *Value added* measures the value of goods and services less the intermediary goods and represents a portion of output. *Taxes* include federal as well as state and local tax revenues.

Employment Impact

The activities of MHS affect job creation in Northeast Ohio through the goods and services that it purchases, beyond the hiring of its own employees. The total employment impact equals the sum of MHS employment (the direct impact), the indirect impact (employment in industries from which MHS purchases goods and services and that sell inputs for the goods and services), and the induced impact (jobs created through the purchases of the employees of MHS and its suppliers).

Labor Income Impact

Labor income impact, or earnings impact, is the estimated total change in money paid to local households due to MHS spending on goods and services from businesses and other entities in the region. In the economic impact, the direct impact represents the total payroll of MHS, including benefits. The indirect impact is estimated by summing the money paid to persons who work for companies from which MHS makes purchases and those that provide inputs to the producers of the goods and services ultimately consumed by MHS. The induced impact represents money paid to workers in all industries who are employed as a result of purchases by households whose income is affected by MHS' demand for products and services.

Output Impact

In order to calculate the output impact, the spending of MHS in the region was categorized into industry classifications based on the IMPLAN 3.0 model. The direct impact here represents the total spending of MHS (excluding payroll and benefits). The indirect effect is the summation of local purchases by individual industries from which MHS makes purchases and that provide inputs to the producers of the goods and services ultimately consumed by MHS. The induced effect is estimated by measuring the spending of workers who are employed as a result of MHS' demand for products and services.

[57] For example, if MHS purchased an item in Cuyahoga County, this purchase was excluded from the impact on the city of Cleveland, but was included in both the impact on the county and the MSA.

Value Added Impact

Value added measures the value of goods and services less the intermediary goods, such as utilities, and represents a portion of output. As with the labor income impact, the direct effect here represents MHS' total payroll and benefits.

ECONOMIC IMPACT OF MHS OPERATIONS

The remainder of this section outlines the 2011 economic impact of MetroHealth System ("MHS") on three regions: the City of Cleveland, Cuyahoga County, and the Cleveland-Elyria-Mentor MSA. The impact is based on two aspects of MHS' spending: total payroll and total operating budget.[58] The impact is measured in terms of employment, labor income, output, value added, and taxes.

Table 13 shows the total spending of MHS by region of study: Cleveland, Cuyahoga County, and the Cleveland-Elyria-Mentor MSA. Almost 16% of MHS' operational expenses were paid to businesses located in Cleveland. Over 21% of operation costs were spent in the county (including the city of Cleveland) and 23.4% was spent in the MSA (including Cuyahoga County). Looking just at payroll shows that over 76% of payroll went to staff living in the county and 93.8% went to staff living in the MSA. Overall, almost 16% of MHS' spending on operations and payroll occurred in Cleveland, 55.9% occurred in the county, and 67.5% occurred in the MSA.[59]

Table 13: Total Investment of MHS in Cleveland, Cuyahoga County, and the Cleveland MSA, 2011

	City of Cleveland	% of Total Spending in City	Cuyahoga County	% of Total Spending in County	Cleveland MSA	% of Total Spending in MSA	Total
Operations	$34.6	15.8%	$47.9	21.9%	$51.1	23.4%	**$218.7**
Payroll	$58.4	15.9%	$279.6	76.1%	$344.4	93.8%	**$367.2**
Total	**$93.0**	**15.9%**	**$327.5**	**55.9%**	**$395.5**	**67.5%**	**$585.9**

Note: Data are in millions of dollars.

[58] The economic impacts contained in this report are based on data provided by MHS. The financial information is taken as datum and no attempt was made to verify or audit financial systems and procedures. This report does not include the economic value of intangible items such as the impact of physical development that affects in the health of residents. Every attempt was made to accurately measure and spatially place the relevant "real" economic impacts.

[59] The numbers for Cuyahoga County include the city of Cleveland and the numbers for the MSA include Cuyahoga County.

Operations Impact in the City of Cleveland

Table 14 shows the total impact of MHS spending in 2011 in the city of Cleveland in terms of employment, labor income, output, and value added. The existence of MHS was responsible for the creation of 6,764 jobs and $543.8 million in labor income. The total value added impact was $562.4 million and the total output impact was $793.7 million. The indirect and induced federal taxes were estimated to be approximately $3.4 million, and indirect and induced state and local taxes were estimated to be over $6.1 million. Together, they produced a tax impact of almost $9.5 million.

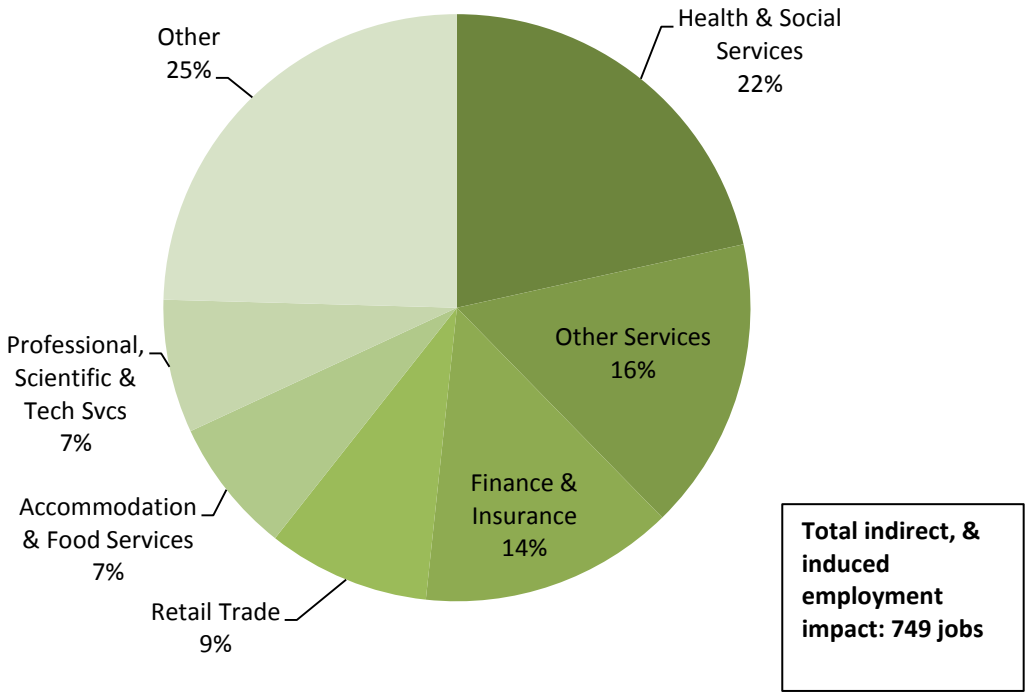
Table 14: City of Cleveland – Economic Impact of MHS Operations, 2011

Impact Type	Employment	Labor Income	Value Added	Output
Direct Impact	6,015	$507.53	$507.53	$708.18
Indirect Impact	369	$20.83	$27.31	$41.78
Induced Impact	380	$15.41	$27.57	$43.73
Total Impact	**6,764**	$543.77	$562.42	$793.69

Note: Data are in millions of dollars.

Each of the three impacts can be analyzed by the major sectors of the economy to shed light on which sector(s) would be most affected by MHS operations. In terms of employment, the largest impact by industry sector, outside of the employment of MHS itself (direct impact of 6,015 jobs), was in *Health & Social Services* (Figure 6). This sector accounted for 161 jobs or 22% of the total employment impact. The second- and third-largest sectors were *Other Services* (121 jobs) and *Finance and Insurance* (105 jobs). Rounding out the top five were *Retail Trade* (67 jobs) and *Accommodation and Food Services* (56 jobs). The largest industry in terms of the direct impact was *Other Services* (79 jobs), which includes population serving establishments like car care, dry cleaning, and religious organizations. The largest sector in terms of indirect impact was *Administrative and Waste Services* (14 jobs), and the largest in terms of induced impact was *Health and Social Services* (100 jobs).

Figure 6: Employment Impact of MHS Operations by Major Sector, City of Cleveland



The largest sector in terms of labor income was also *Health and Social Services* ($8.9 million). The largest sector in terms of output and value added impacts were *Finance and Insurance* ($11.2 million and $17.9 million, respectively). A detailed look at the impact in the city of Cleveland by major sector is located in Appendix B.

Operations Impact in Cuyahoga County

Table 15 shows the total impact of MHS spending in Cuyahoga County in 2011 in terms of employment, labor income, output, and value added.[60] MHS was responsible for creating 9,234 total jobs and $655.1 million in labor income in Cuyahoga County. The total value added impact was $747.1 million and the total output impact was $1.1 billion. The indirect and induced federal taxes were estimated to be approximately $30.1 million, and indirect and induced state and local taxes were estimated to be over $20.4 million. Together, they produced a tax impact of almost $50.5 million.

[60] The impact for Cuyahoga County includes the impact for the city of Cleveland; therefore, the impacts should not be summed.

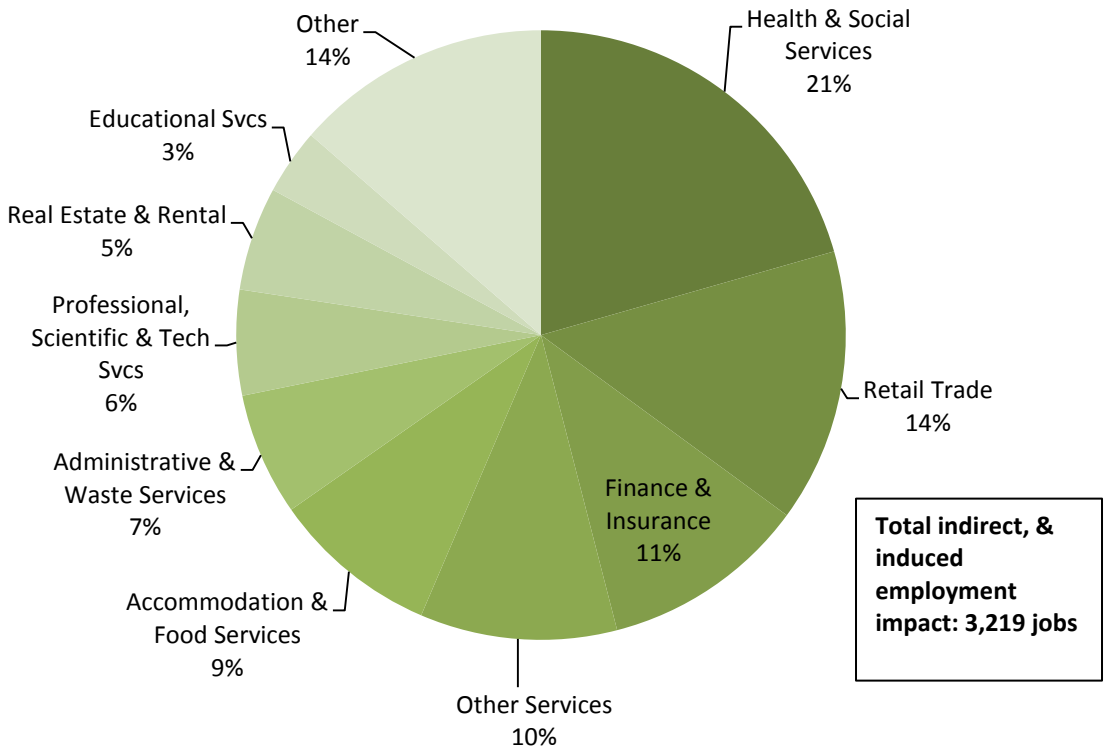
Table 15: Cuyahoga County – Economic Impact of MHS Operations, 2011

Impact Type	Employment	Labor Income	Value Added	Output
Direct Impact	6,015	$507.53	$507.53	$708.18
Indirect Impact	546	$30.11	$40.48	$61.46
Induced Impact	2,673	$117.45	$199.06	$314.54
Total Impact	9,234	$655.09	$747.07	$1,084.18

Note: Data are in millions of dollars.

The largest impact in employment by industry sector, again outside of the employment of MHS itself, was in *Health and Social Services* (Figure 7). This sector accounted for 662 jobs or 21% of the total employment impact. The second-largest sector was *Retail Trade* (467 jobs), followed by *Finance and Insurance* (351 jobs) and *Other Services* (336 jobs). Over 90% of the impact in *Health and Social Services* came through the induced effect, showing what households purchase in general, with only 9% in the direct effect and 1% in the indirect effect.

Figure 7: Employment Impact of MHS Operations by Major Sector, Cuyahoga County



The largest sector in terms of labor income was also *Health and Social Services* ($35.3 million). The largest sector in terms of value added impact was *Real Estate and Rental* ($51.5 million) and the largest in terms of output was *Finance and Insurance* ($67.6 million). A detailed look at the impact in Cuyahoga County by major sector is located in Appendix C.

Operations Impact in the Cleveland-Elyria-Mentor MSA

Table 16 shows the total impact of MHS spending in 2011 in the Cleveland-Elyria-Mentor MSA in terms of employment, labor income, value added and output.[61] MHS was responsible for 10,092 total jobs and $680.2 million in labor income. The total value added impact was $797.9 million and the total output impact was $1.2 billion. The indirect and induced federal taxes were estimated to be approximately $37.7 million and the indirect and induced state and local taxes were estimated to be over $27.5 million. Together, they produced a tax impact of almost $65.2 million.

Table 16: Cleveland MSA – Economic Impact of MHS Operations, 2011

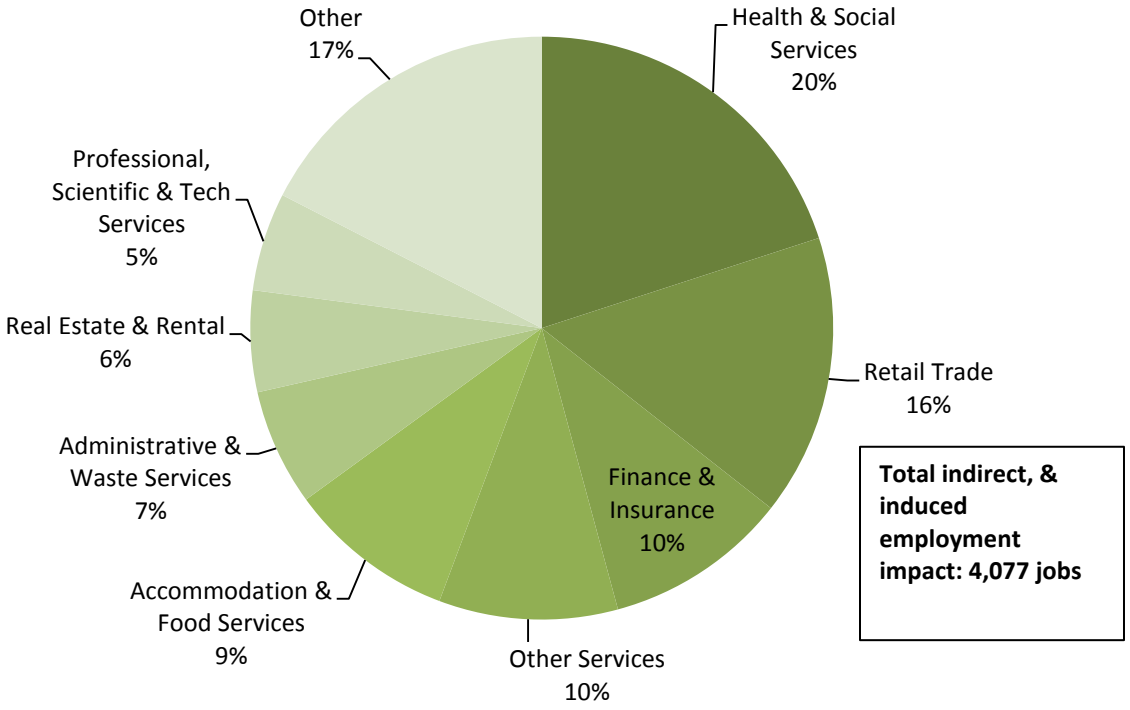
Impact Type	Employment	Labor Income	Value Added	Output
Direct Impact	6,015	$507.53	$507.53	$708.18
Indirect Impact	602	$30.81	$42.64	$66.24
Induced Impact	3,475	$141.83	$247.74	$395.17
Total Impact	10,092	$680.17	$797.91	$1,169.60

Note: Data are in millions of dollars.

As in Cuyahoga County, the largest impact in employment was in *Health and Social Services* (Figure 8). This sector accounted for 815 jobs or 20% of the total employment impact. The second-largest sector was *Retail Trade* (636 jobs), followed by *Finance and Insurance* (415 jobs) and *Other Services* (405 jobs). The majority of the *Health and Social Services* effect (92%) was found in the induced impact. The largest direct impact came from *Other Services* (98 jobs) and the largest indirect impact came from *Administrative and Waste Services* (32 jobs).

[61] The impact for the Cleveland-Elyria-Mentor MSA includes the impact for the city of Cleveland and Cuyahoga County; therefore, the impacts cannot be summed.

Figure 8: Employment Impact of MHS Operations by Major Sector, Cleveland MSA



The largest sector in terms of labor income was also *Health and Social Services* ($41.6 million). The largest sector in terms of value added impact was *Real Estate and Rental* ($45.0 million) and the largest in terms of output was *Finance and Insurance* ($77.0 million). A detailed look at the impact in the Cleveland-Elyria-Mentor MSA by major sector is located in Appendix D.

Summary of Operations Impact on the City of Cleveland, Cuyahoga County, and Cleveland-Elyria-Mentor MSA

Table 17 summarizes the total economic impact of MHS' operational expenditures in 2011 on each of the three studied regions. As expected, the economic impacts were bigger for larger geographies because larger regions capture more of MHS' employees and vendors from which MHS purchases goods and services.

Table 17: Total Economic Impact of MHS Operations by Region, 2011

Region	Employment	Labor Income	Value Added	Output	Taxes
City of Cleveland	6,764	$543.77	$562.42	$793.69	$9.49
Cuyahoga County	9,234	$655.09	$747.07	$1,084.18	$50.52
Cleveland-Elyria-Mentor MSA	10,092	$680.17	$797.91	$1,169.60	$65.24

Note: Data are in millions of dollars.

PART 4: ECONOMIC IMPACT OF CAPITAL EXPENDITURES

In March 2012, The Center for Health Affairs ("Center"), a Cleveland-based advocacy group whose clientele includes Northeast Ohio hospitals, released an issue brief discussing changes occurring in the local healthcare market.[62] Data cited by the Center support corresponding trends resulting from improvements in medical technology and medication: (1) the length of time patients stay in the hospital is continually decreasing and (2) the use of outpatient services is increasing. Advancements in medicine have produced increases in efficiency of care and catalyzed the development of less invasive procedures, which have, in turn, reduced or eliminated the time needed for in-hospital recovery. In addition, the demand for outpatient services is projected to grow further once the provisions of the federal Patient Protection and Affordable Care Act take effect in 2014.

BUILDING ANEW

MetroHealth System ("MHS") has chosen to view the shift in demand of health care services as an opportunity for advancement and expansion. In 2012, the MHS Board of Trustees endorsed a multi-year, $631.9 million capital project that will result in new infrastructure, increased access for patients across Cuyahoga County, and expanded capabilities allowing MHS to accommodate higher levels of outpatient services. The project calls for, among other things, the demolition of nearly 1 million square feet of antiquated facilities, the inclusion of more open space for aesthetic value, and the construction or expansion of several outpatient facilities throughout Cuyahoga County. The first phase of the capital project began in May 2012 with the groundbreaking for a new MHS outpatient facility in Middleburg Heights.

The decision to renew rather than refurbish MHS' main campus was made after countless deliberations and a comprehensive financial analysis. Most public hospitals have a break/fix mentality, according to MHS Vice President of Facilities and Construction Thomas Goins. By this, Goins meant that to cut costs, public hospitals will often postpone capital improvements until absolutely necessary. MHS opted to break this mold after realizing that the money it would spend to repair various aspects of its older facilities could be used to build an almost entirely new campus. Moreover, MHS President and Chief Executive Officer Mark Moran said that the debt service on the project could be funded entirely out of the money MHS would save from a range of operating cost improvements, such as installing energy efficient windows, supply chain practices, efficient staffing of the units, and improvements in facilities maintenance.

[62] The Center for Health Affairs. (2012). Changing environment, changing market: How Northeast Ohio hospitals are evolving to serve their communities. Retrieved July 26, 2012, from http://www.chanet.org/en/TheCenterForHealthAffairs/Media Center/Publications/IssueBriefs/03-12_Hospitals.aspx

ECONOMIC IMPACT OF CAPITAL EXPENDITURES

Table 18 shows the projected annual costs of the capital project, broken down by expenditure source. The dollar amounts listed under "Campus Renewal" are the year-to-year costs of updating MHS' main campus, MetroHealth Medical Center. These expenditures, which total $441.9 million over 6 years, account for 71% of the capital project's $631.9 million price tag. Alternatively, the "Ambulatory Initiatives" row identifies the cost to MHS of constructing and/or expanding its outpatient facilities. This initiative is projected to cost $190 million over six years or 29% of the capital project's total cost.

Table 18: Projected MHS Capital Expenditures by Source, 2012-2017

Expenditure Source	2012	2013	2014	2015	2016	2017	6-Year Total
Ambulatory Initiatives	$25.00	$25.00	$40.00	$40.00	$40.00	$20.00	**$190.00**
Campus Renewal	$5.65	$11.61	$65.60	$159.89	$169.34	$29.76	**$441.85**
Total	**$30.65**	**$36.61**	**$105.60**	**$199.89**	**$209.34**	**$49.76**	**$631.85**

Note: Data are in millions of dollars.

As with MHS' operating and payroll expenses (Part 3 of this report), the capital expenditures MHS commits in pursuit of this major system-wide overhaul will produce an economic impact. The remainder of this section details that impact, focusing on three regions: the city of Cleveland, Cuyahoga County, and the Cleveland-Elyria-Mentor MSA. As in Part 3, the economic impact is measured in terms of employment, labor income, value added, output, and taxes, all of which (except taxes) can be disaggregated into direct, indirect, and induced impacts. Explanations of these concepts are included in the methodology section of the economic impact. All monetary statistics have been inflated to 2011 dollars.

Capital Expenditures Impact on the City of Cleveland

Table 19 summarizes the total economic impact of MHS' capital expenditures on the city of Cleveland. As a result of MHS' capital project, 2,561 jobs will be created in Cleveland, labor income (household earnings) will increase by $137.1 million, value added will increase by $176.4 million, and output (the total value of all goods and services) will increase by $352.2 million. Total federal taxes are estimated to be approximately $20.7 million, and total state and local taxes are estimated to be almost $6.7 million. Together, they will produce a total tax impact of over $27.4 million.

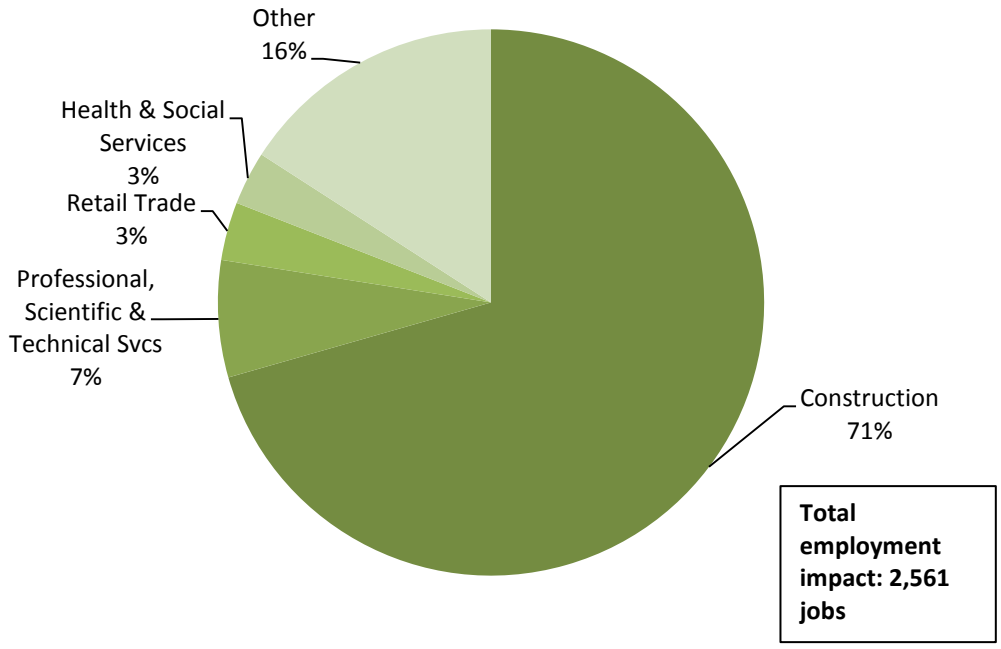
Table 19: City of Cleveland – Economic Impact of Capital Expenditures, 2012-2017

Impact Type	Employment	Labor Income	Value Added	Output
Direct Impact	1,803	$96.63	$115.17	$252.56
Indirect Impact	437	$27.46	$37.82	$62.48
Induced Impact	321	$13.01	$23.44	$37.12
Total Impact	**2,561**	**$137.10**	**$176.43**	**$352.16**

Note: Data are in millions of 2011 dollars.

In terms of employment, the largest impact by industry sector was in *Construction* (Figure 9). This sector accounted for 1,807 jobs or 71% of the total employment impact. The second- and third-largest sectors were *Professional, Scientific, & Technical Services* (177 jobs) and *Retail Trade* (88 jobs). The impact in the *Construction* sector was found almost entirely in the direct spending of MHS. The largest sector in terms of the indirect effect was the *Professional, Scientific, &Technical Services* sector and the largest sector in terms of the induced effect was *Health and Social Services*.

Figure 9: Employment Impact of Capital Expenditures by Major Sector, City of Cleveland



The top two sectors—*Construction* and *Professional, Scientific, & Technical Services*—also had the largest impacts in Cleveland in terms of labor income, value added, and output. A detailed look at the impact results by major sector is located in Appendix E.

Capital Expenditures Impact on Cuyahoga County

Table 20 summarizes the total economic impact of MHS' capital expenditures on Cuyahoga County.[63] An estimated 4,452 jobs will be created in the county due to construction projects. Labor income will increase by $235.7 million, value added will increase by $318.2 million, and output will increase by $599.2 million. The total estimated tax impact of over $61 million is comprised of approximately $42 million to be paid to the federal government and about $19 million to be paid to the state and local governments.

Table 20: Cuyahoga County – Economic Impact of Capital Expenditures, 2012-2017

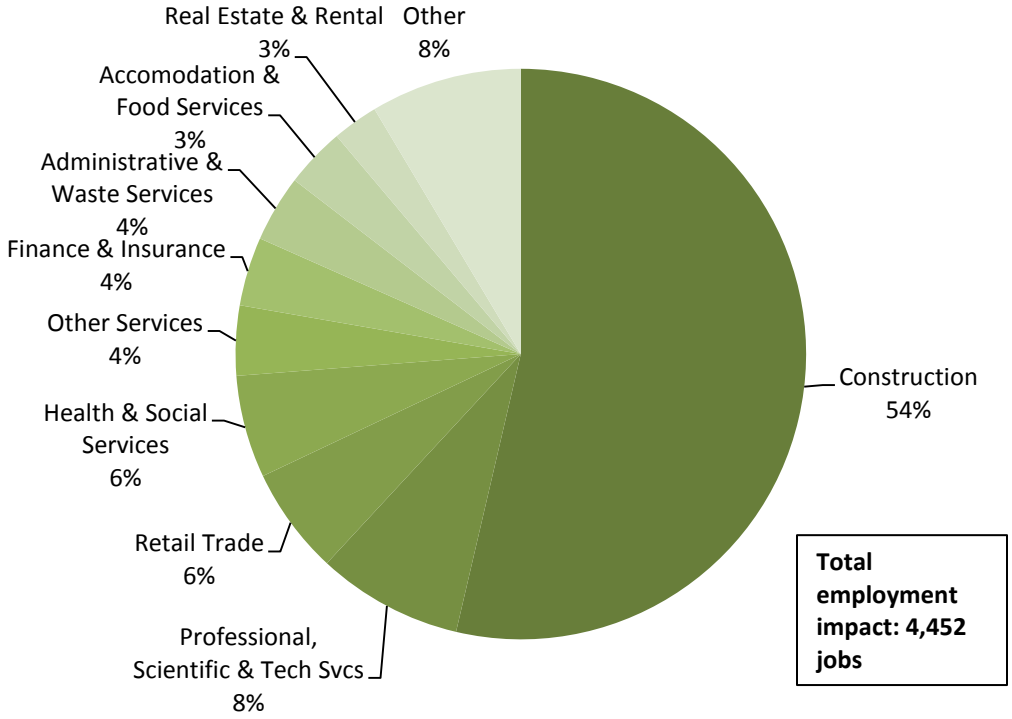
Impact Type	Employment	Labor Income	Value Added	Output
Direct Impact	2,375	$127.27	$151.70	$332.65
Indirect Impact	891	$56.38	$78.00	$126.80
Induced Impact	1,186	$52.05	$88.52	$139.74
Total Impact	**4,452**	**$235.70**	**$318.22**	**$599.19**

Note: Data are in millions of 2011 dollars.

The employment impact in Cuyahoga County followed the same pattern as in the city of Cleveland. For instance, the largest industry sector, accounting for 54% of the employment impact (2,388 jobs), was still *Construction* (Figure 10). This was again followed by *Professional, Scientific, & Technical Services* (367 jobs) and *Retail Trade* (270 jobs). The impact in *Construction* was primarily found once more in the direct impact (99%) of MHS' spending. The top two sectors for employment in Cuyahoga County were the same for labor income, value added, and output. Appendix F provides a detailed look at the Cuyahoga County impact results by major sector.

[63] The results for Cuyahoga County include the results for the city of Cleveland; therefore, the impacts should not be summed.

Figure 10: Employment Impact of Capital Expenditures by Major Sector, Cuyahoga County



Capital Expenditures Impact on the Cleveland-Elyria-Mentor MSA

Table 21 summarizes the total economic impact of MHS' capital expenditures on the Cleveland-Elyria-Mentor MSA for the 6-year period 2012-2017.[64] Over 5,300 jobs will be created in the 5-county region as a result of MHS' capital spending. Labor income will increase by $249.4 million, value added will grow by $349.1 million, and output will amount to almost $679.7 million. Total federal taxes are estimated to be $48 million while total state and local taxes are estimated to be almost $24 million. Together, the total tax impact is projected to be over $72 million.

Table 21: Cleveland-Elyria-Mentor MSA – Economic Impact of Capital Expenditures, 2012-2017

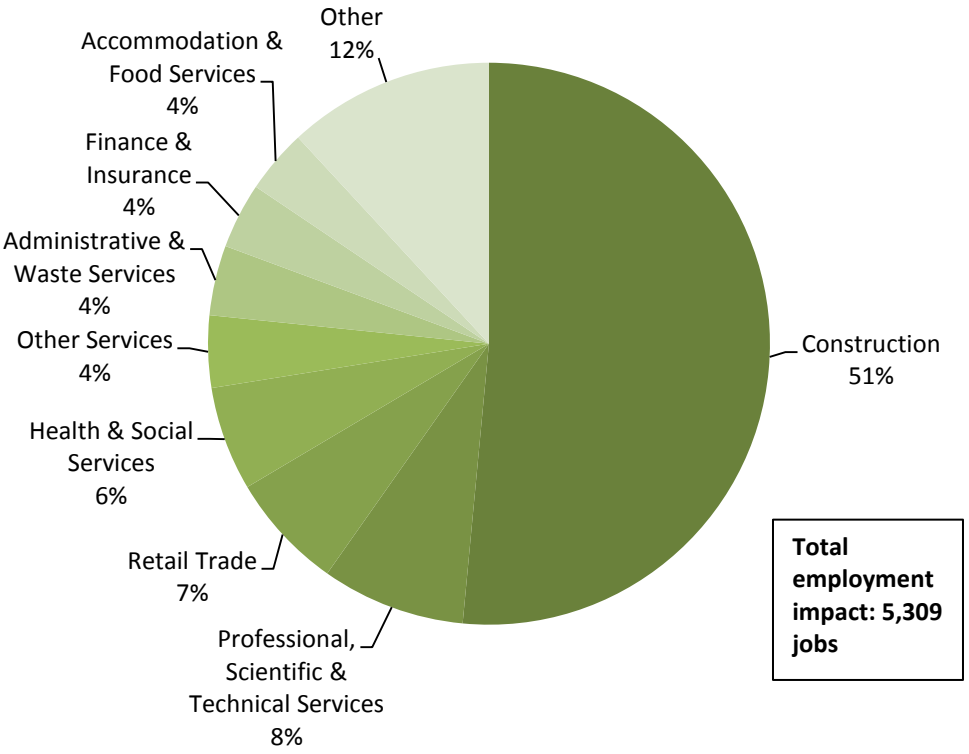
Impact Type	Employment	Labor Income	Value Added	Output
Direct Impact	2,714	$125.19	$153.10	$359.43
Indirect Impact	1,081	$62.52	$87.92	$147.97
Induced Impact	1,514	$61.68	$108.10	$172.27
Total Impact	**5,309**	**$249.39**	**$349.12**	**$679.67**

Note: Data are in millions of 2011 dollars.

[64] The results for the Cleveland-Elyria-Mentor MSA include the results for the city of Cleveland and Cuyahoga County; therefore, the impacts cannot be summed.

Examining the employment impact in detail, Figure 11 shows that *Construction* once again represented the largest share of the total impact. Specifically, with 2,733 jobs, *Construction* accounted for over 51% of the total impact. This sector was followed by *Professional, Scientific, & Technical Services* (439 jobs) and *Retail Trade* (357 jobs). The *Construction* impact was almost entirely in the direct effect of MHS spending (99%). The *Professional, Scientific, &Technical Services* impact was largely in the indirect effect (86%). The *Retail Trade* impact was primarily found in the induced effect (79%). Labor income, value added, and output each had the same top industries as employment. A detailed look at the impact results for the Cleveland-Elyria-Mentor MSA by major sector is located in Appendix G.

Figure 11: Employment Impact of Capital Expenditures by Major Sector, Cleveland-Elyria-Mentor MSA



Summary of Impact from Capital Expenditures on the City of Cleveland, Cuyahoga County, and Cleveland-Elyria-Mentor MSA

Table 22 summarizes the total economic impact of MHS' capital expenditures between 2012 and 2017 on each of the three studied regions. As expected, the economic impacts are bigger for larger geographies because larger regions include more companies from which MHS can buy goods and services for its capital projects.

Table 22: Total Economic Impact of MHS Capital Expenditures by Region, 2012-2017

Region	Employment	Labor Income	Value Added	Output	Taxes
City of Cleveland	2,561	$137.10	$176.43	$352.16	$27.43
Cuyahoga County	4,452	$235.70	$318.22	$599.19	$61.35
Cleveland-Elyria-Mentor MSA	5,309	$249.39	$349.12	$679.67	$64.60

Note: Data are in millions of dollars.

PART 5: ADDITIONAL CONTRIBUTIONS TO THE COMMUNITY

Thus far, this report has discussed two ways MetroHealth System ("MHS") affects the local community: through its medical care and economic impact. These discussions, however, do not tell the complete story. To get a true sense of how MHS' presence in Cleveland influences the residents of the city and Cuyahoga County, attention must also be paid to how MHS uses its programming to engage, empower, and better serve the community at the grassroots level.

This section uses brief case studies to showcase programs MHS has implemented or become involved with to further its agenda of community engagement. It is not intended to serve as a comprehensive overview. Instead, this section utilizes a small selection of programs to provide a glimpse of MHS' activities in the community.

A total of four programs are discussed in this section: Partners in Care, the BREAST (BRinging Education, Advocacy, and Support Together) Program, the West 25th Street Corridor Initiative, and MHS' emergency preparedness efforts. Each of these case studies shows how MHS has expanded its role as caregiver to Cuyahoga County residents beyond only being a provider of medical care.

Two sources of data are used in the case studies: qualitative data from interviews and supplemental information gathered from a variety of print and electronic sources.

PARTNERS IN CARE: EMPOWERING PATIENTS IN HEALTH

In 2009, MetroHealth System ("MHS") piloted a new program called Partners in Care, which sought to change in a fundamental way how the hospital system cares for and interacts with its patients. The traditional model of health care delivery fails to address the unique needs of each patient. "There's always been concern among our doctors and professional staff that patients need more than a 15 or 20 minute physician visit," said Dr. E. Harry Walker, Executive Director of MetroHealth Primary Care Patient Care Unit. "Maybe the challenges patients face require more than just spending a few minutes diagnosing their illness, writing a prescription, and sending them on their way."

Another glaring problem perpetuated by the traditional health care delivery model is patients' lack of ease with their doctor. "When a patient comes into the doctor's office, they want to see their doctor," explained Cathy Smith, a care coordinator for the Partners in Care program. "However, when their doctor is not there, they may be forced to see any of a number of other doctors." This episodic approach often leaves patients feeling uncomfortable and not in control of their health care. Knowing this, MHS looked for an alternate way of treating patients that would provide a setting of familiarity and compassion.

The Partners in Care program addresses these issues at the ground level. The program is MHS' version of a patient-centered medical treatment, an increasingly popular team-based approach to medical care

that the American Academy of Family Physicians calls "an ongoing, active partnership with a personal primary care physician who leads a team of professionals dedicated to providing proactive, preventive, and chronic care management through all stages of life."[65]

Rather than performing episodic care, which can be costly and produce poor outcomes for patients, Partners in Care conducts medical care such that patients remain in constant contact with their health care provider to stay on top of their care. This approach is especially gratifying for people with chronic diseases who require frequent attention and a higher level of care. "Partners in Care is really about the maintenance of health," Dr. Walker said, "which involves more than just your visit to the doctor. It's about lifestyle changes and managing chronic diseases."

Partnership in Action

When a new patient is enrolled in Partners in Care, they are assigned a medical team that assists in managing their care. The patient will remain affiliated with that team for as long as they receive care from MHS. Each team is made up of several medical professionals, including, on average, three doctors, a patient service representative, two medical technical assistants, a licensed practical nurse, and a registered nurse. In addition, each team employs a social worker, a financial counselor, a nutritionist, and a care coordinator to help patients steer the direction of their care. Patients work with their team to understand their disease, its causes and treatments, and how they can incorporate treatment and care into their life.

The care coordinator, who serves as patients' primary contact person in Partners in Care, works collaboratively with patients to guide them through the care process and any hurdles they may face along the way. Cathy Smith, a smiley woman who makes you feel at home the moment you step in her office, is the sole care coordinator at MHS' Buckeye Health Center. Professionally, Smith refers to herself as a navigator. "I assist the patient with navigation through the system as it pertains to their doctor's plan of care," she said, "and I educate the patient on these processes to promote self-reliance to effectively navigate the system on their own."

Smith is one of 10 care coordinators employed by MHS system-wide (one is part-time, the rest full-time) for a program that manages over 13,000 patients.[66] Her caseload of patients numbers upwards of 270, which results in her frequently working nights and weekends. She is happy to do so, however. "I give my patients 110% effort at all times," she said.

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[65] American Academy of Family Physicians.(2012). Patient-centered medical home. Retrieved September 8, 2012, from http://www.aafp.org/online/en/home/policy/policies/p/patientcenteredmedhome.html

[66] Not all patients enrolled in the Partners in Care program are serviced by a care coordinator. For instance, 18% of patients at the MetroHealth Buckeye Health Center are uninsured. It is these patients that care coordinators become involved with on an as-needed basis. The need is known via referral from the doctors or by reports (i.e., diabetic, hypertension, emergency room list, etc.) run by the care coordinators. It is for this reason that 10 care coordinators are sufficient to service a program the size of Partners in Care.

The Partners in Care Program is truly a partnership between patients and their medical team. Care coordinators continually stress the importance of patients becoming owners of their diseases. Smith explained: "If we educate patients to manage their disease set, be it diabetes, high blood pressure, or otherwise, the outcome will be fewer hospital and clinic visits, better communication between the patient and the doctor, and a better understanding of their medications."

Mutually-Beneficial Goals

Consider the case of a diabetic having trouble controlling his or her blood sugar. "I can tell a patient their blood sugar is 200 and that they should take 10 units of insulin," Dr. Walker explained, "but once they go home I have no control. They may eat a bunch of candy, or do the wrong things because they don't understand their disease. They may live in a place where they know the right things to eat but can't afford it, or where they are unable to get to their doctors appointment. In these instances, the possibility of that patient getting better is very low."

Fortunately, Partners in Care is designed for situations like this. The program yields benefits both for MHS and its patients. For patients, it provides an empowering level of comfort in medical care by facilitating an understanding of MHS' health care system and a familiarity with a consistent network of doctors and nurses. It also provides assistance to patients, particularly the uninsured and underinsured, who lack the access and resources to actively manage their care. "A lot of times people feel hopeless," Dr. Walker said. "They want to do the right thing, but there's no one to help them."

To MHS, Partners in Care provides the opportunity for cost savings and improvements in care. Although any patient can be enrolled in Partners for Care, the program is especially geared toward the uninsured and underinsured. This patient population most often drives up costs for MHS either because of visits to the emergency department for non-emergencies or because of frequent hospitalizations for chronic conditions that go unmanaged. By working directly with the uninsured and underinsured to educate them on care management and alternative ways of seeking assistance and resources, MHS hopes to operate a more clinically-effective system in a more cost-effective way.

The Partners in Care staff take a particularly hands-on approach in working with the uninsured and underinsured. For example, the process of introducing a new enrollee to the program differs based on whether or not the patient is insured. "If an insured patient is enrolled in Partners in Care at the Buckeye Health Center, they are greeted by the members of their team and are inducted into the system," Smith explained. "If the patient is uninsured, I handle the matter personally. I introduce myself, provide them with information, I tell them my role in how I participate in their life, and explain how I expect them to participate in their life."

It is the care coordinators who work closest with the uninsured and underinsured patients at each facility. Through that relationship, the uninsured and underinsured gain an advocate within the health care system. "If a person needs a certain test or equipment but can't afford the cost, that's when I advocate on their behalf," Smith said. "My job is to justify the test or equipment and get patients the

medical care they need." This individual approach to care gives patients the motivation to realize they are not alone in their health care management and empowers them to pursue healthy lives.

Outcomes

The 2010 data on Partners in Care clearly demonstrates that the program is working toward achieving its intended goal of increasing clinical effectiveness. The numbers speak for themselves: More than 90% of patients enrolled in Partners for Care system-wide saw a primary care physician during 2010. This was complemented by the fact that Partners in Care enrollees visited the emergency department 6.8% less than patients not enrolled, and inpatient hospitalizations were 34.8% lower among enrollees when compared to patients not enrolled.

These data support the claim that Partners in Care is providing enrollees with care and adequate access to prevent them from misusing MHS' services. Rather than visiting the emergency room for non-emergency care or being hospitalized for manageable diseases, Partners in Care enrollees are learning to take advantage of primary care services and, in turn, are learning to take better care of themselves.

Partners in Care is also making headway regarding cost effectiveness. The 2010 data shows that the average cost of discharging enrollees was 15.4% less (more than $1,400) than discharges for non-enrollees. As a large portion of enrollees are uninsured and underinsured patients whose care is frequently subsidized by the hospital, this is a direct cost savings for MHS.

Community Well-Being

An additional benefit of Partners in Care is its impact on community wellness. Dr. Walker often refers to the program as an investment by MHS in the community. "If you're sick all the time, you're not going to get a job because no one wants to hire someone who can't come to work every day," Dr. Walker explained. "Partners in Care pays off in the community as a whole because there is less illness, less people unable to work, and less early death. It creates a healthier community."

In addition, Partners in Care is educating its enrollees and empowering them to take an active role in their personal health. Smith spoke of a self-support group started by a number of enrollees who completed her chronic management course. This group meets independently of the program and has created an encouraging environment where members are held accountable for their health to the other members of the group. According to Smith, word is spreading throughout the community about her chronic management course and demand for the course is growing.

As surmised by Dr. Walker, it appears that many patients require more than a brief doctor visit, a diagnosis, and a prescription to effectively manage their health. It is these people, particularly those without the resources, knowledge of, or access to medical care, who can benefit substantially from the Partners in Care program. The success of and response to Partners in Care has left no doubt that the

program will not only continue at MHS, but be expanded to integrate all of MHS' facilities across Cuyahoga County. "It's a win-win for MetroHealth," Dr. Walker said. "The patients are better and it saves Metro money in the long run."

THE BREAST PROGRAM: BRINGING EDUCATION, ADVOCACY AND SUPPORT TOGETHER

In 2005, Dr. Jean Stevenson, an oncologist and Director of Breast Services at the MetroHealth Cancer Care Center, noticed a persistent health disparity among her female patients. It appeared that minority women were displaying late-stage breast cancer at a more frequent rate than non-minority women. Discovering this disparity helped Dr. Stevenson identify an unfilled need in the community: accessible breast cancer care for minority and uninsured/underinsured women. In response to this finding, BRinging Education, Advocacy, and Support Together, or the BREAST Program for short, was launched by MHS soon after.

The BREAST Program is a community outreach program affiliated with MHS that is designed to educate and empower women to improve their breast health. The program is targeted specifically at low-income Cuyahoga County women who are uninsured or underinsured and over the age of 35. Those eligible obtain access to free medical services and are taught proper screening methods as a means of facilitating early cancer detection.

Community Outreach

Three times a year, in the spring, summer, and fall, the BREAST Program puts on health fairs around Cuyahoga County. Mobile clinics are set up in churches, homeless shelters, and other community venues where the program's target population can best be reached. At these events, women are able to receive mammograms and clinical breast exams free of charge. A follow-up appointment is also provided for women with exam results that are deemed abnormal.

Although the health fairs are geared toward breast health, they offer participants a more holistic approach. At least 30 different agencies participate in each health fair, providing screenings for various health issues such as blood pressure, glucose, and cholesterol. Pap exams and HIV testing are usually offered as well. Due to the BREAST Program's more than 250 community partnerships, if a screening is not available on-site, staff can refer participants to one agency or another for assistance.

Planting Healthy Seeds

The outreach for each health fair is done largely at the grassroots level, by engaging community partners and neighborhoods. The BREAST Program has a staff member bilingual in Spanish whose sole job is community outreach, relationship building, and spreading the word about events like the health fair. Staff and volunteers drop off flyers at churches, recreation centers, and local businesses where they can reach women in the community. In addition, the BREAST Program staff maintains a database of past

participants and sends letters to hundreds of women informing them of upcoming health fairs. To further spread the word, the program also has an advisory group with over 700 contacts that help disseminate information by word of mouth.

Breaking Down Barriers

An initial objective of the BREAST Program was to understand why minority women were being diagnosed with cancer at later stages than their non-minority counterparts. It was found that minority women were facing numerous and substantial barriers that hindered early detection. For instance, many women were hesitant of the hospital setting because they either lacked insurance and were unable to afford care out of pocket, or they did not have appropriate residency documentation. Other women faced language and literacy barriers that prevented them from understanding the need for breast cancer screenings. Still other women faced a myriad of obstacles like being unable to see a primary care physician during normal business hours due to their job, child care, transportation, and cultural beliefs.

The staff of the BREAST Program took these obstacles into account when establishing the program and developing the health fairs. For each impediment identified, a counteracting solution was implemented: bilingual staff was hired to communicate with women unable to speak English, easy to understand informational materials were created for women with low literacy, free bus passes and parking validation were provided to those with transportation issues, and free child care is provided at health fairs.

Another feature of the BREAST Program implemented for the convenience of participants is the use of patient navigators, who are staff members that work with participants to guide them through all aspects of the process. This includes follow-up phone calls to ensure that participants have all the necessary information to seek further care, and assistance in obtaining medical care unrelated to breast health. “We make it very comfortable for [the women] out in the community,” Camille Garcia, a bilingual patient navigator with the BREAST Program said, “and it’s then easier for us to bring them into the hospital for further care, if that’s what they need done.”

Amigas Unidas

Another integral component of the BREAST Program is Amigas Unidas (Friends United), an educational outreach program targeted specifically at Latina women. Created in 2007, Amigas Unidas was launched in response to the fact that MHS’ core market features a large uninsured and underinsured Hispanic population.

Amigas Unidas is a bilingual, grassroots program in which non-medical, bilingual Latina volunteers receive training on breast self-exams and correct screening guidelines at a one-time, 6-hour session. Women that complete the session become certified Breast Health Advocates and are referred to from then on as Amigas. These Amigas are truly friends to other women; once trained, they go out into the

community and educate other women about breast cancer. These interactions take place either one-on-one, such as at a health fair when someone is waiting to undergo a screening, or at small, one hour sessions called "charlas." About 10 charlas are conducted each year at locations ranging from local women's domestic violence shelters to a volunteer's living room.

Amigas come from many avenues. According to BREAST Program staff and associated MHS staff, Amigas volunteers are largely women who benefitted from the program or brought someone else to a screening. Amigas have also been known to be women who attended a charla and developed an interest in what they learned. Nurses are also counted among the Amigas. Since the creation of the program in 2007, 175 women have been certified as Amigas, which has helped increase the presence and capacity of the program in the community.

Success Story

As with most programs, the BREAST Program started out small. A single grant from the Northeast Ohio affiliate of Susan G. Komen for the Cure provided funding for MHS to conduct screenings at community churches and homeless shelters.

In the past 7 years, however, the BREAST Program has grown substantially. It now receives funding from a number of charitable organizations such as Susan G. Komen, the American Cancer Society, National Breast Cancer Foundation, Inc., and the Walmart Foundation. The program also receives financial assistance from MHS, who pays for a share of staff salaries. (MHS also provides the BREAST Program with in-kind aid in the form of marketing services and materials.) Moreover, the program's notoriety is growing. "At first it was a struggle because people didn't know about the [BREAST Program] and attendance at events was lower," said Luz Oyola, manager of the program, "but now [women] expect it; they call us wanting to know when our next health fair is."

Most important of all, thousands of women have been impacted by the BREAST Program. Since its launch, over 4,760 women have been screened for breast cancer. This includes women screened at both MetroHealth Medical Center and at the 27 community health fairs that have been conducted. Of those women, 20 have been diagnosed with breast cancer; fortunately, due to the early detection afforded by the BREAST Program, 75% of those 20 women were diagnosed early, improving their survival rates drastically.

In addition to the screenings, over 26,300 women have been educated in the need for proper breast health.

Changing Behavior

While the BREAST Program has succeeded in its goal of providing women with the resources and opportunity to assume responsibility for their breast health, the program has done so much more than

that. For one, it has helped create what Phyllis Marino, Vice President of Marketing and Communications at MHS, calls a sisterhood of support. “Breast cancer is a very scary thing,” Marino said. “It takes courage for a woman to get screened for breast cancer. The BREAST Program staff and volunteers have created a sisterhood, an environment designed to help women work through that fear and become empowered.”

The BREAST Program has also helped facilitate changes in the behavior of its participants. Before the program, many women did not know about proper breast health or the need for regular screenings. And if they did, many did not know how to secure access to medical services or avoided hospitals altogether. Today, those same women have become repeat users of the BREAST Program. “We’re seeing that behaviors are changing,” Oyola said. “Women are now coming the second, third, or fourth time for their mammograms.”

As further evidence, over 500 women attended the most recent health fair in July of 2012. This was the largest number of participants ever seen at a BREAST Program event. “The BREAST Program has created awareness so now these women know it needs to be done,” Oyola said. “And they’re calling us for help.”

THE WEST 25TH STREET CORRIDOR INITIATIVE: COMMUNITY COLLABORATION IN PROGRESS

On the near west side of Cleveland is a 4-mile stretch of West 25th Street that connects people and neighborhoods to considerable economic and cultural resources. Stretching from the historic West Side Market in Ohio City to the Metroparks Zoo in Old Brooklyn, this corridor hosts a collection of overlapping and intersecting neighborhoods, voting districts, service areas, community groups, and cultural enclaves. At the center of that stretch stands MetroHealth Medical Center, the main campus of MHS, an anchor institution in the area for the last 175 years.

For years, this assorted group of stakeholders endeavored—sometimes collaboratively, but usually individually—to create a better sense of place that would support the growth of people, communities, and businesses along West 25th Street. In 2011 alone, planning documents pertaining to the West 25th Street Corridor were released by three different community agencies: the Northeast Ohio Areawide Coordinating Agency (NOACA) released a road safety audit of the West 25th Street and Clark Avenue intersection; the Cleveland Metroparks Zoo released a master plan; and Ohio City Inc., the community development corporation for the Ohio City neighborhood, released its strategy for the Market Square area. Although these plans and strategies, and nearly 20 others put in place over the last 10 years, demonstrated forward-thinking and creativity, they have failed to stimulate a cohesive and collaborative effort to redevelop West 25th Street.

Enter MetroHealth System

MHS views its role in the community as being not only a provider of quality health care, but also an integral partner in the community's economic development. "We care not just about the health care needs of our patients, but the social, economic needs of our patients as well," said John Corlett, Vice President of Government Relations and Community Development at MHS. "We know that our patients will be healthier if they have a better, safer, more secure neighborhood to go home to." This 'place matters' concept underpins how MHS envisions its future of local community engagement.

Sheri Dozier, Senior Program Officer with Neighborhood Progress Inc. ("NPI"), said that the West 25th Street Corridor is "one of the most vibrant neighborhood-based corridors" in Cleveland and that it has "an understated regional impact." Due to the large number of existing, uncoordinated redevelopment plans focused on West 25th Street and the surrounding neighborhoods, there was a lot of activity taking place. As the largest employer on the west side of Cleveland and an institution anchored to the community, MHS was frequently sought as an ally by individuals and organizations located up and down West 25th Street. "When I got here a year and a half ago, there were a lot of things going on, and a lot of people were trying to get Metro's [MHS] attention and work with Metro," stated Joel Ratner, President and Chief Executive Officer of NPI. "So our thought was: let's put all of this together instead of having competing pieces."

In 2010, MHS and NPI collaborated on bringing together the myriad of stakeholders interested in redeveloping the West 25th Street Corridor. Together, MHS and NPI "helped bring together all the political leadership, the neighborhood development leadership, a lot of the stakeholders—private businesses, MetroHealth, governmental entities—to start talking about how to move this [a concerted redevelopment effort] forward," said Corlett. This body of stakeholders and the work they would undertake is known today as the West 25th Street Corridor Initiative ("Initiative").

All for One, One for All

The intent of the Initiative is to coordinate a clear and specific vision and action plan for the West 25th Street Corridor. Under the co-leadership of MHS, NPI, and the city of Cleveland, the Initiative brings together representatives from many different stakeholders operating along West 25th Street to advance the Initiative in a united front. The partners include 13 government agencies at the local, county, and state levels; nine community stakeholder groups; and seven of the largest and most recognized employers in the corridor (such as Nestle and Voss Industries).

The Initiative has ambitious goals of revitalizing the neighborhoods adjacent to the targeted 4-mile stretch of West 25th Street, empowering and expanding economic drivers, and increasing transportation connectivity along the corridor. The revitalization efforts leverage the renaissance of places like the Market District in Ohio City and seek to extend that success along the length of West 25th Street and into the surrounding neighborhoods. The aim of this redevelopment is to invest in physical improvements to

infrastructure while building wealth in the community.

Starting Out

The planning process of the Initiative began in earnest with the formation of three subcommittees that focused on institutional and community partnership building; real estate development and land use; and on improvements to infrastructure, the streetscape, and transit options. As part of that process, the Initiative sought out the Cleveland Urban Design Collaborative to examine the infrastructure challenges and potential of the corridor. A large part of their work revolved around the redevelopment of streetscapes surrounding the major anchors like MHS, and fully integrating those anchors into the action plan.

Although still in the early stages of the Initiative, partners have taken advantage of the opportunity to act. The recent redecking of the I-71 Bridge at West 25th Street is an example of how MHS, the city of Cleveland, NPI, and other Initiative stakeholders actively participated in the redevelopment of the West 25th Street Corridor. MHS and its partners collaborated with the Ohio Department of Transportation ("ODOT") to make the redecking of the bridge more than a 'just to specs' project and, as a result, ODOT was able to incorporate decorative light fixtures, fencing, and other streetscape features in line with the Initiative's design scheme. "It came in at the 11th hour, working with the city [of Cleveland] and ODOT to redefine the enhancements of the bridge," said Dozier. "They [MHS] were hands-on in shaping the pedestrian feeling on the bridge."

Building Community Wealth

Fostering a stronger community on Cleveland's near west side is at the core of the Initiative. By growing and nurturing new and existing businesses, the community and its residents can create wealth and build assets to facilitate further growth. The Initiative will require patient capital, committed partners, and a long-term approach to be successful. MHS understands that engagement and economic development are crucial both to its own success as a health system and to the economic well-being of its patients who live in these neighborhoods. MHS, NPI, and other anchor initiations approached the Democracy Collaborative and The Cleveland Foundation for assistance in identifying actions to be taken in pursuit of this mission. This initiative may be viewed as an adaptation of the larger Greater University Circle Initiative established in 2006, which employs an anchor-based development strategy built around the Cleveland Clinic, University Hospitals, and Case Western Reserve University.

Supporting the growth of existing businesses is critical to stimulating economic development. MHS has worked with local restaurants along West 25th Street to incorporate their products into the MHS cafeterias. As a result of these experiences, MHS plans to create purchasing and spending goals that focus on local small businesses, female-owned businesses, and minority-owned businesses.

Creating opportunities for local residents is another important way of supporting the vision of the

Initiative. Seeing an opportunity for MHS to help working families retain their wealth, the hospital volunteered to be a host location for an Earned Income Tax Credit ("EITC") preparation clinic. The EITC is a refundable federal tax credit, ranging from several hundred to several thousand dollars, for low income families with children. According to Ratner, the EITC "puts more money in the pockets of working people, and that means more money gets spent in the neighborhood." Unfortunately, Ratner also noted that many eligible people do not apply for the EITC largely because they do not know about the program. MHS had some success last year with its EITC tax clinic for MHS employees and plans to increase its promotion to MHS employees and the community at large. The clinic is expecting that more MHS employees as well as other people from the community will access their tax preparation services next year.

MetroHealth in Action

The contributions of MHS to the Initiative are many and diverse. In fact, as the largest anchor institution in the corridor, there is hardly a program or project that MHS has not been involved with in some capacity. MHS is in a unique position to impact the redevelopment efforts of the neighborhood. MHS is preparing to invest hundreds of millions of dollars into MetroHealth Medical Center, to create a site that is more practical, aesthetically pleasing, and visitor friendly. Discussions have taken place regarding how MHS can integrate its own capital project into the greater vision of the Initiative. One suggestion was connecting MHS' campus to the Ohio & Erie Canal Towpath Trail, which extends approximately 100 miles from Cleveland to New Philadelphia in Tuscarawas County.

Outside of the interaction between MHS' capital project and the Initiative, MHS has worked to improve the condition of vacant lots along West 25th Street, a priority of the real estate development and land use subcommittee. MHS has worked with vacant lots near its campus to 'green and screen,' which is using landscaping to reduce unsightly gaps in a streetscape.

MHS has also contributed its time, talents, and financial resources to the Initiative. MHS matched a grant of $20,000 from NPI for the Initiative, and staff spent countless hours getting the Initiative off the ground. MHS employees have also given their time in a volunteer capacity; over 130 volunteers helped beautify the West 25th Street streetscape by installing garbage cans painted with the new West 25th Street logo, removing unsightly graffiti, and removing 3,000 pounds of garbage. These actions prompted significantly positive feedback from community groups along the West 25th Street Corridor.

As the largest anchor, MHS has a significant influence on the Initiative and it has not gone unnoticed. Ratner stated that "[MHS is] a great partner, and open to moving the hospital to having a greater impact in the community." The potential of MHS' contributions as the Initiative moves beyond its early stages is immense. The involvement of MHS thus far speaks to that. MHS has gone beyond the expected role of the institution. MHS is involving itself as deeply in the redevelopment efforts as it is in the community it serves and the patients it helps.

EMERGENCY PREPAREDNESS

What would you do if disaster struck unexpectedly? Imagine you are driving to work in Downtown Cleveland and the Innerbelt Bridge, which transports thousands of commuters to and from work each day, was inoperable. Do you have an alternate route to get to and from work? What if there was a massive power outage? If ATMs are down, do you have enough cash on hand? If gas pumps lose power, do you have enough fuel in your car to get you where you need to go? If cell phones are unusable, did you write down important phone numbers so you can contact family and friends? Do your children know what to do if you cannot reach them?

If your answer is simply "I'll figure it out," you may want to rethink your plan. If your answer is "I don't know," then you are not alone. According to Sharon Nicastro, coordinator of the Cuyahoga County Citizen Corps Council, there is a lack of urgency among Cuyahoga County residents, and citizens across the nation, that they need plans in place in the event of an emergency.

Planning for an unforeseen event is difficult, which is why it is important to be ready and prepared for all possible emergencies. Consider the 9/11 attacks in New York and Washington, Hurricane Katrina in New Orleans, the 2007 bridge collapse in Minneapolis, and the 2003 blackouts throughout the Northeast region of the United States. Having procedures in place can mean the difference between life and death for large numbers of people.

The need for emergency preparedness—planning for all aspects of a disaster—is inarguable. Each disaster, be it a power outage, industrial accident, or terrorist attack, is unique and requires its own unique response. Emergency preparedness is an important consideration for all aspects of society, including government, the private sector, and the citizens, but it is an absolutely essential point of focus for hospitals, which are viewed as the epicenter of care, shelter, and aid during emergencies.

The MetroHealth Response

MHS takes to heart its responsibility of caring for the community at critical times. As a public hospital, MHS is devoted to providing a continuum of quality care to the community; care that extends beyond the doors of the hospital. In order to perform this vital function, MHS has built up its capacity and capability to lead in a disaster situation, whatever it may be. MHS and its leadership have made emergency preparedness a priority in their operation and planning.

As a sign of its dedication to emergency preparedness, MHS hired Marek Owca in 2008 as their full-time director of emergency management. Marek is a former chief flight nurse of Metro Life Flight and a registered nurse, making him no stranger to emergencies. He is also considered by many practitioners in the field to be a man who goes "over and above" his position. Beth Gatlin, a project director at The Center for Health Affairs whose job is coordinating emergency planning between Northeast Ohio hospitals, said that Marek "has his thumb on everything that's happening in the county and in the

region." Marek spent the past 4 years developing a fully integrated internal structure at MHS that is capable of responding rapidly and efficiently to disasters.

Like any good leader, Marek understands the importance of teamwork. He has empowered the MHS staff to be engaged actors in order to provide an effective response to any emergency that could arise. In order to do this, Marek re-worked the hospital's existing "disaster" committee to not only focus on response, but also to consider mitigation, preparedness, and recovery aspects. The now, "preparedness" committee meets quarterly and draws its membership from a variety of departments, including, but not limited to, the medical and clinical staff, MHS police, pharmacy services, environment of care including HAZMAT, and patient support services. "Just think about any operational capacity you might need," Marek said. "They're a part of the committee as well." This engagement brings emergency preparedness to light in every corner of MHS.

As the chief advocate of emergency management at MHS, Marek educates and prepares hospital staff on a number of emergency preparedness components, which he organizes into spheres. One sphere is staff management, which focuses on developing staff resiliency and providing emotional support in the wake of a disaster. This sphere also includes components like planning how to move staff from one location to another and how to properly follow existing reporting structures. It is through this sphere that the public can feel most confident in MHS' commitment to community clinical service. By ensuring that MHS' physicians are able to be physically present at the hospital during an emergency, they can in turn help the greater public.

MHS also conducts training sessions using simulated disasters to hone their skills. The hospital uses the Homeland Security Exercise Evaluation Program ("HSEEP"), which offers a national standard for emergency exercises advocated by FEMA, the Federal Emergency Management Agency. According to Marek, the HSEEP utilizes a building block method of learning. First, an emergency plan is introduced and taught. There is then a roundtable discussion where responses to the plan are discussed; scenarios are played out through conversation to determine if any unforeseen problems can be uncovered and amended outright. The next step is a functional drill, which translates the discussion into action. Finally, in some instances, a full-scale exercise will be conducted, which brings together any number of agencies from within the community and beyond. These training exercises benefit the community by ensuring not only that emergency plans are in place, but that they are rehearsed and feasible in practice.

Every Disaster is Local

As the saying goes, "Every disaster is local." Most disasters will impact an entire neighborhood, city, or multi-state region, not just a single institution. That is why preparedness efforts require the involvement and coordination of so many stakeholders within a community.

In addition to building its own capacity, MHS has taken an active role in state and regional emergency planning. At the state level, MHS is involved with the development and coordination of OHTrac, a digital patient tracking and victim/family reunification system accessible to response and coordinating partners

across the state. MHS also contributes to Ohio's Medical Coordination Plan, which addresses both altered and crisis standards of care during disasters. The intent of the Medical Coordination Plan is to implement policies and procedures, such as those related to allocating scarce resources, as a response to shortages in physical and human resources.

Regionally, MHS participates in a number of organizations. For instance, a representative from MHS sits on the Metropolitan Medical Response System ("MMRS"), a regional emergency planning group for Ashtabula, Cuyahoga, Geauga, Lake, Lorain, and Medina Counties. The MMRS is comprised of first responders and planners from across the 6-county region, including organizations such as the Red Cross, Urban Search and Rescue, academic institutions, hospitals, and the directors of the various county emergency management agencies. This group undertakes planning out how all of the working pieces can be coordinated regionally during a disaster.

The crux of MHS' activities at both the state and regional levels revolves around relationship building to ensure that resources are allocated to the appropriate location in order to best serve the affected community, whether that is MHS or another hospital. "We [at MHS] need to understand the community's ability to support MHS operations and how MHS can support the community," Marek said. "The key is establishing those relationships before the crisis happens."

To understand state and regional capacity, Marek said there needs to be an understanding of the 'gives, gets, and gaps.' In the case of MHS, what can the hospital offer, or give, to other hospitals and agencies during disasters? What is available that MHS can get in return? And finally, where are the gaps in the resources needed for a sound emergency disaster response? "If there's a bed, a doctor, a nurse, and a whole team for every patient, there would never be a disaster," Marek said. However, the region will never know what resources are available unless the groundwork for cooperation is laid first.

Fortunately, Northeast Ohio has access to organizations like The Center for Health Affairs ("Center"), a Cleveland-based group that advocates for the region's hospitals and with whom MHS closely works. The Center is a sub-grantee of the Ohio Department of Health and serves as the regional coordinator of emergency management for over two dozen hospitals. The Center provides hospitals with funding from federal grants, assistance with receiving accreditation, and access to resources for training and planning exercises. MHS has been able to leverage the resources available through the Center to further the emergency preparedness of their organization and staff. "The Center is also the communications liaison to all regional hospitals in the event of an emergency," said Gatlin, an employee of the Center.

The regional hospitals have also worked amongst themselves to develop and implement memorandums of understanding ("MOUs"). MHS has MOUs in place with 28 regional hospitals to share 'space, stuff, and staff' during disaster situations. "Instead of being fierce competitors during emergencies, [the regional hospitals] do share information with each other," Marek said. "When it comes to disaster response, we got to get that right."

NOTS

One of MHS' emergency management activities that best demonstrates its collaboration is its leadership in the Northern Ohio Trauma System ("NOTS"). NOTS is a collaboration between MHS and the Cleveland Clinic designed to discover how best to deploy the region's trauma resources. Launched in January 2010, NOTS triages trauma patients and allocates them to regional trauma centers.

The benefit of the program is substantial. Rather than taking all patients to the Level I Trauma Center at MHS, patients are divided among MHS and the trauma centers at the Cleveland Clinic's Fairview and Hillcrest Hospitals. Doing so promotes competency by making sure that the staff members of each trauma center are keeping their skills well-honed in the event of an emergency. In addition, having an established triage plan will prevent first responders from transferring the entirety of a disaster from one location to another, an action within itself that can prove disastrous. "If you can do good triage, you can take a disaster condition and make it a normal operational response for hospitals," Marek explained.

Community Resilience

A final, vital piece of emergency preparedness is community resilience, or the ability of people to survive on their own when disaster strikes. "Survivors participate in their own survival," Marek said. "99% of the time, Fire and EMS will be there for you. During disasters, however, their resources are less dense and may not be available to you as soon as you would like." This resilience extends to MHS staff members that are off-site when an emergency occurs. Any number of obstacles impact who is able to show up for a shift during an emergency. Therefore, Marek tries to encourage each member of the staff to have an emergency plan in place.

In order to give optimal care to patients, MHS contributes to a grassroots effort to educate the public on community resilience. MHS sits on the advisory council for the Cuyahoga County Citizen Corps, a group whose mission is to harness the power of volunteers to make communities safer and better able to respond to disasters. Marek also lectures for stakeholders on a multitude of topics, including community resilience. Going above and beyond, Marek also participates in fairs where he demonstrates the necessity of Go Bags, portable kits that contain the items needed to survive for up to 72 hours in an emergency.

Emergency preparedness is a growing area of interest for the health care industry nationwide, and MHS has invested itself in every step of the process. MHS takes seriously its position as caregiver to the residents of Cuyahoga County; it wants its family of patients, employees, and neighbors to be as prepared as possible for emergencies. For their part, possessing comprehensive emergency plans and supplies not only instills confidence that MHS will continue to operate during a disaster, but it allows the hospital to work at mitigating the effects of a disaster before it happens. Adequate preparations also allow MHS to better serve the community during an emergency, the time when the community relies on its local hospitals the most.

PART 6: CONCLUDING COMMENTS: LOOKING TOWARD THE FUTURE

Much of this report has focused upon the past and present of MetroHealth System ("MHS"). It has highlighted the mission and core functions of MHS (Part 1), provided an economic snapshot of the organization (Part 2), discussed the economic impact of its operating and capital expenditures (Parts 3 and 4), and provided a sample of how MHS engages in the local community (Part 5). While this data and information are vitally important to MHS as an institution, a comprehensive examination requires that a degree of consideration be paid to the future.

It is important for an organization to plan ahead and strategize as a means of sustaining its viability. Although many challenges cannot be anticipated, an attempt should be made; if an organization can effectively forecast changes in their market, be they in demand, infrastructure, public policy, or otherwise, they are better suited to adapt and remain stable in the long-term.

A Future Focus

For their part, the leadership of MHS has kept one eye firmly focused on the future. When the executives were asked what they hoped MHS would be like in 5 to 10 years, a myriad of responses were given. Examples included possessing an entirely new, more cost-efficient physical infrastructure, both on MHS' main campus and throughout Cuyahoga County; increasing countywide access to facilities and services; better utilizing available space by relocating low-acuity services to outpatient centers; maintaining MHS' range of "cradle to grave" services; increasing MHS' market share in the local market; expanding wellness services to keep patients healthier outside the walls of the hospital; and rebranding MHS so it is no longer known exclusively as the "hospital of the poor."

Plans are currently in place to achieve many of these aspirations. A multi-million dollar capital plan, endorsed by the MHS Board of Trustees, is guiding decisions and actions being taken to overhaul MHS' physical infrastructure. As discussed, the plan calls for a more streamlined, cost-effective, aesthetically-pleasing main campus and the expansion of outpatient centers to better provide access for and to meet the demands of Cuyahoga County residents. In addition, MHS has pledged its continued dedication to providing quality, affordable services, including the use of patient centered medical care. This care strives to increase the wellness of patients, particularly the uninsured, thereby mitigating the need for emergency services and the financial impact of caring for the uninsured and underinsured. The aspirations not currently being addressed provide a fertile foundation for future strategic planning.

The Impact of Health Care Reform

The biggest source of impending change is the implementation of the Patient Protection and Affordable Care Act (PPACA). The PPACA, passed in 2010 by the United States Congress, is federal legislation intended to decrease the number of Americans without health coverage while also making health care more affordable. The PPACA is extremely comprehensive and very controversial; it includes numerous

provisions that impact all facets of the health care industry. The general belief of most health care specialists interviewed for this report is that MHS is in a good place to successfully adapt to the PPACA, especially when compared to the competition. The explanations for this assessment varied. One individual stated that MHS' low-cost structure is suited to compensate for expected reductions in Medicare and Medicaid reimbursements; another stated that MHS' integrated model of delivering care and its connectivity with the community are in line with the approach the PPACA is designed to facilitate nationwide.

The feasibility of the PPACA is predicated upon a delicate balance, a give and take of resources. To provide coverage to the uninsured, the PPACA mandated that the 50 states expand the eligibility requirements of their individual Medicaid programs. To assist the states, the costs of expansion will be financed entirely by the federal government in 2014, with funding being reduced in subsequent years.[67] As this is a costly expenditure, the federal government opted to reduce its financial encumbrances in other areas, namely by significantly reducing Disproportionate Share Hospital (DSH) payments.[68] Currently, DSH payments are allocated to hospitals like MHS that care for a disproportionate share of the uninsured to help alleviate the financial burden.[69] The rationale behind reducing DSH payments is that expanding coverage to uninsured Americans would greatly reduce, if not outright eliminate, the need for them.

While their logic may have been reasonable, the federal government could not have foreseen the effect the U.S. Supreme Court would have on the situation. On June 28, 2012, the U.S. Supreme Court upheld the constitutionality of the PPACA's individual mandate, a provision requiring all Americans to purchase health insurance. As part of that judgment, the Supreme Court also ruled that the states' expansion of their Medicaid programs cannot be mandated by the federal government. Instead, the states will be given the option to participate. This ruling could have dramatic effects. The reduction of DSH funds is already written into law and is unlikely to be reinstated given the fiscal conservatism underpinning Congressional action. For the moment, all MHS can do is prepare for possibilities, in this case by strategizing once again how to provide quality services with fewer resources.

[67] The federal government will fund 100% of Medicaid expansions costs for the years 2014 to 2016. Beginning in 2017, that percentage will decrease in phases, from to 95% in 2017 to 90% in 2020. *Source:* Blue Cross Blue Shield of Michigan. (n.d.) National health care reform: The new Medicaid. Retrieved from http://www.bcbsm.com/health reform/ pubs/the_new_medicaid.pdf

[68] DSH payments are expected to be reduced by $18.1 billion between 2014 and 2020. For more information, view the Center for Health Affairs' website at the following URL: http://www.chanet.org/FinanceAndReimbursement/ MedicaidHCAP.aspx

[69] In Ohio, federal DSH funding is funneled through the state and allocated based on a formula through Ohio's Hospital Care Assurance Program (HCAP). For more information, view The Center for Health Affair's website at the following URL: http://www.chanet.org/en/FinanceAndReimbursement/MedicaidHCAP.aspx

DEMAND AND THE NEWLY INSURED

Leadership of MHS must consider the potential impact of the PPACA providing newly-insured patients with the ability to choose their health care provider. Professor J.B. Silvers of Case Western Reserve University's Weatherhead School of Management believes there are two alternative outcomes. The first is that, once insured, MHS' traditional patient base will leave MHS and choose another health care provider, likely a hospital affiliated with the Cleveland Clinic or University Hospitals given their respective market shares. Several members of the MHS leadership recognized this possibility during interviews and acknowledged that MHS' larger competitors have an advantage in patient attraction due to their strong market penetration, stellar reputations, and substantial marketing expenditures.

The second alternative is that the efficiencies and quality of care that MHS has established will make it competitive in the commercial health insurance market and help attract new value-conscious patients away from competitors. As discussed, MHS has already taken steps along this path with the introduction of MetroHealth Select, a health insurance plan for employers to offer employees. The market penetration of MetroHealth Select is limited as of publication,[70] but anecdotal evidence thus far suggests that the plan has been successful in promoting cost savings on health insurance without compromising the quality of care received. While this alternative does not deal directly with the newly-insured patients, it does provide MHS with, among other benefits, a contingency to help offset any losses from its patient base.

Still other evidence suggests that the risk of MHS losing patients is not substantial. Bill Ryan of the Center for Health Affairs stated, "MetroHealth has strong connections with its patients and the community. In general, people tend to remain with a health system after initially choosing it." This sense of loyalty among patients is supported by the academic literature. In a study published in the *Archives of Internal Medicine*, the authors found that, after health insurance coverage was expanded in Massachusetts, the number of patients using public safety net health providers actually grew as the number of uninsured patients decreased.[71] Whether this trend will be replicated in Cuyahoga County remains to be seen, but it does bode well for MHS and its future post-PPACA.

Regardless of which alternative materializes, MHS cannot be complacent. Changes are coming, the effects of which can only be speculated. MHS must prepare itself as best it can given the existing level of uncertainty. Fortunately, between its devotion to mission, quality of care, strategies for overhauling both its services and physical infrastructure, and its experience with operating efficiently, several interviewees both inside and outside MHS are confident that the institution is capable of weathering the coming storm.

[70] As of 2011, MetroHealth Select was offered exclusively to employees of Cuyahoga County. In 2012, it was offered for the first time to employees of Cleveland State University.

[71] Leighton, K., Jones, E., Shin, P., Byrne, F. R., & Long, S. K. (2011). Safety-net providers after health care reform: Lessons from Massachusetts. *Archives of Internal Medicine, 171*(5), 1379-1384.

APPENDICES

APPENDIX A: LIST OF INTERVIEWEES

Kate Brown, Vice President, Development, MetroHealth System

Alfred Connors, Jr., MD, Chief Medical Officer, MetroHealth System

John Corlett, Vice President, Government Relations & Community Affairs, MetroHealth System

Sheri Dozier, Senior Program Officer, Neighborhood Progress Inc.

Camille Garcia, Program Assistant, BREAST/Amigas Program, MetroHealth System

Beth Gatlin, BA Nursing, MA Health Services Administration, Northeast Ohio Regional Healthcare Coordinator for Disaster Preparedness, The Center for Health Affairs

Thomas Goins, Vice President, Construction & Facilities, MetroHealth System

Anne Hill, Local Manager, Government Relations & Community Affairs, MetroHealth System

Edward Hills, DDS, FACD, Chief Operating Officer, MetroHealth System

David Kaelber, MD, PhD, MPH, Chief Medical Informatics Officer, MetroHealth System

Daniel Lewis, Chief Administrative Officer, MetroHealth System

Phyllis Marino, Vice President, Marketing & Communications, MetroHealth System

Mark Moran, President & Chief Executive Officer, MetroHealth System

Marek Owca, RN, BSN, MPA, Director, Emergency Management & Hospital Preparedness, MetroHealth System

Sharon Nicastro, Citizens Corps Coordinator, Cuyahoga County Citizen Corps Council

Luz Oyola, Manager, Community Health Outreach, BREAST/Amigas Program, MetroHealth System

Joel Ratner, President & Chief Executive Officer, Neighborhood Progress Inc.

Dean Robertson, Vice President, Integrated Operations, MetroHealth System

Jeff Rooney, Interim Chief Financial Officer, MetroHealth System

Bill Ryan, President & CEO, The Center for Health Affairs

John Sedor, MD, Vice President, Research, MetroHealth System

J.B. Silvers, PhD, Interim Dean & John R. Mannix Medical Mutual of Ohio Professor of Health Care Finance, Weatherhead School of Management, Case Western Reserve University

Aimee Smith, Manager, Market Development, MetroHealth System

Cathy Smith, RN, Care Coordinator, Partners in Care, MetroHealth System

Joseph Varga, Reimbursement Director, MetroHealth System

E. Harry Walker, MD, Executive Director, MetroHealth Primary Care, MetroHealth System

APPENDIX B: ECONOMIC IMPACT OF OPERATING EXPENDITURES IN THE CITY OF CLEVELAND

Appendix Table B1: Employment Impact of MHS Operations by Major Sector, City of Cleveland

Sector	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	0	0	0
Mining	0	0	0
Utilities	5	1	6
Construction	6	2	8
Manufacturing	18	5	23
Wholesale Trade	9	1	10
Retail Trade	6	61	67
Transportation & Warehousing	6	6	12
Information	3	4	7
Finance &Insurance	79	27	106
Real Estate &Rental	12	26	38
Professional, Scientific &Technical Services	44	11	55
Management of Companies	1	2	3
Administrative &Waste Services	24	14	38
Educational Services	1	15	16
Health &Social Services	62	100	162
Arts, Entertainment &Recreation	1	10	11
Accommodation &Food Services	7	49	56
Other Services	81	39	120
Government &Non-NAICs	4	7	11
Total	**369**	**380**	**749**

Appendix Table B2: Labor Income Impact of MHS Operations by Major Sector, City of Cleveland

Sector	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$7	$598	$605
Mining	$291	$283	$574
Utilities	$496,124	$152,643	$648,767
Construction	$333,549	$93,250	$426,799
Manufacturing	$1,178,588	$325,002	$1,503,590
Wholesale Trade	$715,243	$109,855	$825,098
Retail Trade	$232,793	$1,789,778	$2,022,571
Transportation & Warehousing	$261,767	$409,157	$670,924
Information	$184,331	$255,711	$440,042
Finance & Insurance	$6,940,081	$1,746,762	$8,686,843
Real Estate & Rental	$295,013	$668,961	$963,974
Professional, Scientific & Technical Services	$3,577,163	$966,164	$4,543,327
Management of Companies	$135,418	$148,723	$284,141
Administrative & Waste Services	$751,835	$456,847	$1,208,682
Educational Services	$69,244	$618,621	$687,865
Health & Social Services	$4,098,794	$4,760,781	$8,859,575
Arts, Entertainment & Recreation	$19,994	$293,616	$313,610
Accommodation & Food Services	$140,295	$1,002,350	$1,142,645
Other Services	$1,089,704	$1,140,118	$2,229,822
Government & Non-NAICs	$310,694	$471,544	$782,238
Total	**$20,830,928**	**$15,410,764**	**$36,241,692**

Appendix Table B3: Value Added Impact of MHS Operations by Major Sector, City of Cleveland

Sector	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$6	$502	$508
Mining	$407	$399	$806
Utilities	$1,052,046	$562,277	$1,614,323
Construction	$390,733	$108,974	$499,707
Manufacturing	$2,021,134	$552,952	$2,574,086
Wholesale Trade	$1,188,869	$182,600	$1,371,469
Retail Trade	$275,860	$2,500,177	$2,776,037
Transportation & Warehousing	$339,152	$516,176	$855,328
Information	$458,945	$606,554	$1,065,499
Finance & Insurance	$8,251,630	$2,976,331	$11,227,961
Real Estate & Rental	$1,311,442	$8,447,460	$9,758,902
Professional, Scientific & Technical Services	$4,848,720	$1,212,759	$6,061,479
Management of Companies	$157,905	$173,419	$331,324
Administrative & Waste Services	$850,820	$548,534	$1,399,354
Educational Services	$70,532	$587,295	$657,827
Health & Social Services	$4,465,156	$5,146,227	$9,611,383
Arts, Entertainment & Recreation	$22,198	$376,256	$398,454
Accommodation & Food Services	$220,897	$1,493,307	$1,714,204
Other Services	$1,124,110	$1,177,300	$2,301,410
Government & Non-NAICs	$263,037	$405,013	$668,050
Total	**$27,313,599**	**$27,574,512**	**$54,888,111**

Appendix Table B4: Output Impact of MHS Operations by Major Sector, City of Cleveland

Sector	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$10	$891	$901
Mining	$533	$521	$1,054
Utilities	$1,286,081	$786,689	$2,072,770
Construction	$809,501	$203,595	$1,013,096
Manufacturing	$4,079,738	$1,881,242	$5,960,980
Wholesale Trade	$1,444,032	$221,791	$1,665,823
Retail Trade	$111,844	$3,703,055	$3,814,899
Transportation & Warehousing	$480,551	$834,290	$1,314,841
Information	$849,769	$1,150,700	$2,000,469
Finance & Insurance	$12,261,912	$5,636,416	$17,898,328
Real Estate & Rental	$1,503,531	$9,909,094	$11,412,625
Professional, Scientific & Technical Services	$6,146,176	$1,554,010	$7,700,186
Management of Companies	$258,547	$283,949	$542,496
Administrative & Waste Services	$1,196,090	$848,961	$2,045,051
Educational Services	$127,899	$1,071,265	$1,199,164
Health & Social Services	$8,036,952	$8,599,152	$16,636,104
Arts, Entertainment & Recreation	$34,255	$582,823	$617,078
Accommodation & Food Services	$400,589	$2,741,330	$3,141,919
Other Services	$1,783,035	$2,251,409	$4,034,444
Government & Non-NAICs	$965,122	$1,472,667	$2,437,789
Total	**$41,776,167**	**$43,733,850**	**$85,510,017**

APPENDIX C: ECONOMIC IMPACT OF OPERATING EXPENDITURES IN CUYAHOGA COUNTY

Appendix Table C1: Employment Impact of MHS Operations by Major Sector, Cuyahoga County

Sector	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	0	1	1
Mining	0	5	5
Utilities	6	5	11
Construction	25	15	40
Manufacturing	21	19	40
Wholesale Trade	16	76	92
Retail Trade	8	459	467
Transportation & Warehousing	10	54	64
Information	7	40	47
Finance & Insurance	87	264	351
Real Estate & Rental	23	155	178
Professional, Scientific & Technical Services	74	106	180
Management of Companies	2	13	15
Administrative & Waste Services	83	127	210
Educational Services	2	110	112
Health & Social Services	63	599	662
Arts, Entertainment & Recreation	1	71	72
Accommodation & Food Services	10	275	285
Other Services	102	234	336
Government & Non-NAICs	6	45	51
Total	**546**	**2,673**	**3,219**

Appendix Table C2: Labor Income Impact of MHS Operations by Major Sector, Cuyahoga County

Sector	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$93	$24,473	$24,566
Mining	$20,093	$294,273	$314,366
Utilities	$525,320	$583,090	$1,108,410
Construction	$1,340,187	$753,022	$2,093,209
Manufacturing	$1,365,036	$1,197,248	$2,562,284
Wholesale Trade	$1,247,559	$6,204,909	$7,452,468
Retail Trade	$292,797	$13,380,551	$13,673,348
Transportation & Warehousing	$444,556	$3,318,004	$3,762,560
Information	$483,161	$2,648,135	$3,131,296
Finance & Insurance	$7,586,332	$17,034,831	$24,621,163
Real Estate & Rental	$567,390	$3,997,768	$4,565,158
Professional, Scientific & Technical Services	$6,247,493	$9,114,504	$15,361,997
Management of Companies	$225,341	$1,240,931	$1,466,272
Administrative & Waste Services	$3,357,191	$4,183,428	$7,540,619
Educational Services	$88,873	$4,405,324	$4,494,197
Health & Social Services	$4,230,583	$31,077,931	$35,308,514
Arts, Entertainment & Recreation	$42,069	$1,984,815	$2,026,884
Accommodation & Food Services	$218,248	$5,379,018	$5,597,266
Other Services	$1,385,205	$7,371,199	$8,756,404
Government & Non-NAICs	$441,451	$3,258,752	$3,700,203
Total	**$30,108,978**	**$117,452,206**	**$147,561,184**

Appendix Table C3: Value Added Impact of MHS Operations by Major Sector, Cuyahoga County

Sector	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$84	$24,467	$24,551
Mining	$32,835	$488,428	$521,263
Utilities	$1,112,578	$2,192,463	$3,305,041
Construction	$1,569,419	$878,274	$2,447,693
Manufacturing	$2,373,842	$2,250,289	$4,624,131
Wholesale Trade	$2,073,678	$10,313,725	$12,387,403
Retail Trade	$357,182	$18,738,929	$19,096,111
Transportation & Warehousing	$591,689	$4,518,544	$5,110,233
Information	$1,282,222	$6,608,235	$7,890,457
Finance & Insurance	$9,183,757	$27,868,245	$37,052,002
Real Estate & Rental	$2,577,238	$48,959,875	$51,537,113
Professional, Scientific & Technical Services	$8,584,985	$11,372,490	$19,957,475
Management of Companies	$262,760	$1,446,995	$1,709,755
Administrative & Waste Services	$3,560,896	$4,860,843	$8,421,739
Educational Services	$89,965	$4,125,600	$4,215,565
Health & Social Services	$4,613,984	$33,441,887	$38,055,871
Arts, Entertainment & Recreation	$50,054	$2,580,863	$2,630,917
Accommodation & Food Services	$340,987	$7,912,103	$8,253,090
Other Services	$1,436,994	$7,745,883	$9,182,877
Government & Non-NAICs	$384,574	$2,727,128	$3,111,702
Total	**$40,479,723**	**$199,055,266**	**$239,534,989**

Appendix Table C4: Output Impact of MHS Operations by Major Sector, Cuyahoga County

Sector	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$141	$40,807	$40,948
Mining	$46,003	$688,764	$734,767
Utilities	$1,363,039	$3,153,593	$4,516,632
Construction	$3,248,779	$1,664,023	$4,912,802
Manufacturing	$4,864,981	$8,280,581	$13,145,562
Wholesale Trade	$2,518,745	$12,527,332	$15,046,077
Retail Trade	$177,790	$27,861,168	$28,038,958
Transportation & Warehousing	$866,129	$7,376,330	$8,242,459
Information	$2,327,911	$12,211,075	$14,538,986
Finance & Insurance	$13,946,383	$53,700,492	$67,646,875
Real Estate & Rental	$2,969,617	$57,487,954	$60,457,571
Professional, Scientific & Technical Services	$11,019,428	$14,627,515	$25,646,943
Management of Companies	$430,233	$2,369,251	$2,799,484
Administrative & Waste Services	$4,997,885	$7,325,664	$12,323,549
Educational Services	$161,147	$7,559,289	$7,720,436
Health & Social Services	$8,305,933	$55,075,049	$63,380,982
Arts, Entertainment & Recreation	$80,305	$4,060,722	$4,141,027
Accommodation & Food Services	$619,584	$14,599,879	$15,219,463
Other Services	$2,209,227	$14,901,842	$17,111,069
Government & Non-NAICs	$1,310,553	$9,023,673	$10,334,226
Total	**$61,463,814**	**$314,535,002**	**$375,998,816**

APPENDIX D: ECONOMIC IMPACT OF OPERATING EXPENDITURES IN THE CLEVELAND-ELYRIA-MENTOR MSA

Appendix Table D1: Employment Impact of MHS Operations by Major Sector, Cleveland-Elyria-Mentor MSA

Sector	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	0	6	6
Mining	0	7	7
Utilities	6	11	17
Construction	32	24	56
Manufacturing	26	29	55
Wholesale Trade	23	109	132
Retail Trade	10	627	637
Transportation & Warehousing	12	69	81
Information	7	48	55
Finance & Insurance	97	318	415
Real Estate & Rental	25	205	230
Professional, Scientific & Technical Services	81	141	222
Management of Companies	3	17	20
Administrative & Waste Services	92	172	264
Educational Services	2	130	132
Health & Social Services	65	748	813
Arts, Entertainment & Recreation	2	91	93
Accommodation & Food Services	11	367	378
Other Services	102	301	403
Government & Non-NAICs	6	55	61
Total	**602**	**3,475**	**4,077**

Appendix Table D2: Labor Income Impact of MHS Operations by Major Sector, Cleveland-Elyria-Mentor MSA

Sector	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$1,870	$211,378	$213,248
Mining	$21,854	$322,500	$344,354
Utilities	$530,092	$1,103,231	$1,633,323
Construction	$1,466,318	$1,008,718	$2,475,036
Manufacturing	$1,673,912	$1,834,191	$3,508,103
Wholesale Trade	$1,686,840	$8,097,972	$9,784,812
Retail Trade	$315,740	$17,351,679	$17,667,419
Transportation & Warehousing	$484,227	$3,681,670	$4,165,897
Information	$458,646	$2,885,148	$3,343,794
Finance & Insurance	$7,287,787	$18,849,600	$26,137,387
Real Estate & Rental	$490,893	$4,213,080	$4,703,973
Professional, Scientific & Technical Services	$6,205,732	$10,714,790	$16,920,522
Management of Companies	$254,268	$1,600,282	$1,854,550
Administrative & Waste Services	$3,471,494	$5,349,656	$8,821,150
Educational Services	$87,464	$4,900,376	$4,987,840
Health & Social Services	$4,197,268	$37,432,050	$41,629,318
Arts, Entertainment & Recreation	$44,312	$2,312,128	$2,356,440
Accommodation & Food Services	$218,966	$6,564,127	$6,783,093
Other Services	$1,459,874	$9,475,424	$10,935,298
Government & Non-NAICs	$451,610	$3,917,850	$4,369,460
Total	**$30,809,167**	**$141,825,850**	**$172,635,017**

Appendix Table D3: Value Added Impact of MHS Operations by Major Sector, Cleveland-Elyria-Mentor MSA

Sector	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$2,003	$201,858	$203,861
Mining	$40,626	$580,716	$621,342
Utilities	$1,188,554	$4,403,777	$5,592,331
Construction	$1,760,146	$1,202,735	$2,962,881
Manufacturing	$2,960,256	$3,331,017	$6,291,273
Wholesale Trade	$2,920,616	$14,020,929	$16,941,545
Retail Trade	$392,816	$24,697,890	$25,090,706
Transportation & Warehousing	$668,049	$5,132,915	$5,800,964
Information	$1,246,415	$7,285,883	$8,532,298
Finance & Insurance	$9,033,351	$31,552,492	$40,585,843
Real Estate & Rental	$2,672,050	$62,367,524	$65,039,574
Professional, Scientific & Technical Services	$8,718,747	$13,561,731	$22,280,478
Management of Companies	$296,286	$1,864,725	$2,161,011
Administrative & Waste Services	$3,747,968	$6,316,308	$10,064,276
Educational Services	$88,563	$4,544,147	$4,632,710
Health & Social Services	$4,590,265	$40,380,850	$44,971,115
Arts, Entertainment & Recreation	$54,002	$3,088,304	$3,142,306
Accommodation & Food Services	$351,410	$9,944,134	$10,295,544
Other Services	$1,516,132	$9,970,861	$11,486,993
Government & Non-NAICs	$394,402	$3,287,651	$3,682,053
Total	**$42,642,657**	**$247,736,447**	**$290,379,104**

Appendix Table D4: Output Impact of MHS Operations by Major Sector, Cleveland-Elyria-Mentor MSA

Sector	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$4,758	$396,434	$401,192
Mining	$59,723	$844,845	$904,568
Utilities	$1,462,755	$5,967,118	$7,429,873
Construction	$3,911,585	$2,418,842	$6,330,427
Manufacturing	$6,035,144	$12,166,267	$18,201,411
Wholesale Trade	$3,591,559	$17,241,913	$20,833,472
Retail Trade	$221,254	$37,055,416	$37,276,670
Transportation & Warehousing	$1,026,833	$8,558,060	$9,584,893
Information	$2,295,656	$13,700,338	$15,995,994
Finance & Insurance	$14,340,488	$62,691,449	$77,031,937
Real Estate & Rental	$3,094,736	$73,320,142	$76,414,878
Professional, Scientific & Technical Services	$11,374,017	$17,761,074	$29,135,091
Management of Companies	$484,355	$3,048,370	$3,532,725
Administrative & Waste Services	$5,396,365	$9,770,697	$15,167,062
Educational Services	$161,071	$8,528,792	$8,689,863
Health & Social Services	$8,365,547	$67,172,919	$75,538,466
Arts, Entertainment & Recreation	$92,341	$5,016,038	$5,108,379
Accommodation & Food Services	$654,511	$18,869,516	$19,524,027
Other Services	$2,326,874	$19,732,516	$22,059,390
Government & Non-NAICs	$1,340,587	$10,913,034	$12,253,621
Total	**$66,240,159**	**$395,173,780**	**$461,413,939**

APPENDIX E: ECONOMIC IMPACT OF CAPITAL EXPENDITURES IN THE CITY OF CLEVELAND

Appendix Table E1: Employment Impact of Capital Expenditures by Major Sector, City of Cleveland

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	0	0	0	0
Mining	0	0	0	0
Utilities	0	2	1	3
Construction	1,803	3	2	1,807
Manufacturing	0	27	5	32
Wholesale Trade	0	3	1	4
Retail Trade	0	34	54	88
Transportation & Warehousing	0	27	5	32
Information	0	7	3	11
Finance &Insurance	0	21	23	43
Real Estate &Rental	0	25	22	47
Professional, Scientific &Technical Services	0	168	9	177
Management of Companies	0	5	1	7
Administrative &Waste Services	0	54	12	65
Educational Services	0	0	13	13
Health &Social Services	0	0	81	81
Arts, Entertainment &Recreation	0	2	8	10
Accommodation &Food Services	0	18	43	61
Other Services	0	37	33	70
Government &Non-NAICs	0	4	6	9
Total	**1,803**	**437**	**321**	**2,561**

Appendix Table E2: Labor Income Impact of Capital Expenditures by Major Sector, City of Cleveland

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$0	$46	$504	$550
Mining	$0	$1,877	$238	$2,115
Utilities	$0	$158,662	$127,303	$285,964
Construction	$96,631,987	$147,500	$79,223	$96,858,711
Manufacturing	$0	$2,332,061	$274,310	$2,606,372
Wholesale Trade	$0	$235,697	$96,493	$332,190
Retail Trade	$0	$1,052,967	$1,589,570	$2,642,537
Transportation & Warehousing	$0	$2,077,821	$348,320	$2,426,141
Information	$0	$518,542	$217,653	$736,195
Finance & Insurance	$0	$1,471,707	$1,492,569	$2,964,277
Real Estate & Rental	$0	$1,155,534	$560,089	$1,715,623
Professional, Scientific & Technical Services	$0	$13,586,223	$808,107	$14,394,331
Management of Companies	$0	$491,786	$125,464	$617,250
Administrative & Waste Services	$0	$1,764,328	$385,093	$2,149,421
Educational Services	$0	$10,516	$528,527	$539,042
Health & Social Services	$0	$116	$3,922,791	$3,922,907
Arts, Entertainment & Recreation	$0	$70,379	$243,573	$313,952
Accommodation & Food Services	$0	$388,091	$863,957	$1,252,048
Other Services	$0	$1,700,651	$945,583	$2,646,233
Government & Non-NAICs	$0	$298,634	$396,679	$695,312
Total	**$96,631,987**	**$27,463,139**	**$13,006,044**	**$137,101,171**

Appendix Table E3: Value Added Impact of Capital Expenditures by Major Sector, City of Cleveland

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$0	$33	$423	$456
Mining	$0	$3,497	$335	$3,832
Utilities	$0	$599,463	$468,932	$1,068,395
Construction	$115,175,110	$171,233	$92,594	$115,438,936
Manufacturing	$0	$5,423,136	$465,338	$5,888,475
Wholesale Trade	$0	$391,773	$160,390	$552,163
Retail Trade	$0	$1,439,902	$2,220,525	$3,660,427
Transportation & Warehousing	$0	$2,475,554	$439,319	$2,914,873
Information	$0	$1,340,772	$515,692	$1,856,464
Finance & Insurance	$0	$2,357,866	$2,547,258	$4,905,124
Real Estate & Rental	$0	$3,178,065	$7,245,151	$10,423,216
Professional, Scientific & Technical Services	$0	$14,847,882	$1,014,058	$15,861,940
Management of Companies	$0	$573,450	$146,298	$719,748
Administrative & Waste Services	$0	$2,073,918	$462,275	$2,536,193
Educational Services	$0	$10,600	$500,683	$511,284
Health & Social Services	$0	$141	$4,239,975	$4,240,116
Arts, Entertainment & Recreation	$0	$80,231	$311,670	$391,901
Accommodation & Food Services	$0	$600,121	$1,286,759	$1,886,880
Other Services	$0	$1,983,729	$978,024	$2,961,753
Government & Non-NAICs	$0	$270,838	$341,346	$612,184
Total	**$115,175,110**	**$37,822,204**	**$23,437,045**	**$176,434,358**

Appendix Table E4: Output Impact of Capital Expenditures by Major Sector, City of Cleveland

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$0	$50	$752	$802
Mining	$0	$5,375	$438	$5,813
Utilities	$0	$844,275	$656,200	$1,500,475
Construction	$252,560,798	$335,212	$172,836	$253,068,847
Manufacturing	$0	$12,007,937	$1,580,535	$13,588,471
Wholesale Trade	$0	$475,858	$194,814	$670,672
Retail Trade	$0	$2,145,582	$3,288,848	$5,434,430
Transportation & Warehousing	$0	$4,002,605	$709,715	$4,712,319
Information	$0	$2,433,241	$978,426	$3,411,667
Finance & Insurance	$0	$4,560,314	$4,817,579	$9,377,893
Real Estate & Rental	$0	$4,498,351	$8,501,668	$13,000,020
Professional, Scientific & Technical Services	$0	$21,720,227	$1,299,955	$23,020,182
Management of Companies	$0	$938,944	$239,542	$1,178,486
Administrative & Waste Services	$0	$3,167,352	$715,714	$3,883,066
Educational Services	$0	$18,828	$914,237	$933,065
Health & Social Services	$0	$265	$7,092,281	$7,092,546
Arts, Entertainment & Recreation	$0	$124,812	$483,576	$608,387
Accommodation & Food Services	$0	$1,093,260	$2,362,431	$3,455,691
Other Services	$0	$3,324,155	$1,865,519	$5,189,674
Government & Non-NAICs	$0	$785,520	$1,239,816	$2,025,337
Total	**$252,560,798**	**$62,482,164**	**$37,114,881**	**$352,157,844**

APPENDIX F: ECONOMIC IMPACT OF CAPITAL EXPENDITURES IN CUYAHOGA COUNTY

Appendix Table F1: Employment Impact of Capital Expenditures by Major Sector, Cuyahoga County

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	0	0	1	1
Mining	0	6	2	8
Utilities	0	2	2	4
Construction	2,375	7	7	2,388
Manufacturing	0	52	8	61
Wholesale Trade	0	40	34	74
Retail Trade	0	59	211	270
Transportation & Warehousing	0	44	24	68
Information	0	18	18	36
Finance & Insurance	0	56	118	174
Real Estate & Rental	0	48	67	116
Professional, Scientific & Technical Services	0	320	47	367
Management of Companies	0	11	6	17
Administrative & Waste Services	0	113	56	169
Educational Services	0	1	48	49
Health & Social Services	0	0	259	259
Arts, Entertainment & Recreation	0	6	31	37
Accommodation & Food Services	0	28	123	152
Other Services	0	73	103	176
Government & Non-NAICs	0	9	20	29
Total	**2,375**	**891**	**1,186**	**4,452**

Appendix Table F2: Labor Income Impact of Capital Expenditures by Major Sector, Cuyahoga County

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$0	$752	$10,813	$11,565
Mining	$0	$351,904	$129,582	$481,487
Utilities	$0	$177,283	$255,620	$432,902
Construction	$127,272,845	$355,332	$334,005	$127,962,182
Manufacturing	$0	$4,193,660	$529,029	$4,722,689
Wholesale Trade	$0	$3,311,882	$2,801,120	$6,113,002
Retail Trade	$0	$1,839,813	$6,162,563	$8,002,376
Transportation & Warehousing	$0	$3,169,205	$1,474,570	$4,643,775
Information	$0	$1,267,988	$1,181,554	$2,449,542
Finance & Insurance	$0	$3,850,378	$7,616,281	$11,466,659
Real Estate & Rental	$0	$2,383,365	$1,745,303	$4,128,668
Professional, Scientific & Technical Services	$0	$25,928,665	$4,026,459	$29,955,125
Management of Companies	$0	$1,017,269	$549,337	$1,566,606
Administrative & Waste Services	$0	$3,674,261	$1,851,590	$5,525,851
Educational Services	$0	$22,127	$1,920,478	$1,942,605
Health & Social Services	$0	$265	$13,532,132	$13,532,397
Arts, Entertainment & Recreation	$0	$153,086	$869,292	$1,022,378
Accommodation & Food Services	$0	$557,356	$2,409,826	$2,967,182
Other Services	$0	$3,442,058	$3,213,924	$6,655,982
Government & Non-NAICs	$0	$686,192	$1,435,298	$2,121,490
Total	**$127,272,845**	**$56,382,843**	**$52,048,776**	**$235,704,463**

Appendix Table F3: Value Added Impact of Capital Expenditures by Major Sector, Cuyahoga County

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$0	$659	$10,817	$11,476
Mining	$0	$596,236	$215,079	$811,315
Utilities	$0	$674,656	$961,150	$1,635,806
Construction	$151,695,773	$412,483	$389,584	$152,497,840
Manufacturing	$0	$8,266,837	$992,631	$9,259,468
Wholesale Trade	$0	$5,504,970	$4,655,988	$10,160,958
Retail Trade	$0	$2,519,644	$8,630,516	$11,150,159
Transportation & Warehousing	$0	$3,930,867	$2,006,952	$5,937,819
Information	$0	$3,436,845	$2,947,725	$6,384,570
Finance & Insurance	$0	$6,155,955	$12,469,527	$18,625,482
Real Estate & Rental	$0	$6,806,993	$21,807,763	$28,614,756
Professional, Scientific & Technical Services	$0	$28,622,381	$5,025,325	$33,647,706
Management of Companies	$0	$1,186,193	$640,558	$1,826,751
Administrative & Waste Services	$0	$4,200,246	$2,150,839	$6,351,085
Educational Services	$0	$22,301	$1,794,788	$1,817,089
Health & Social Services	$0	$322	$14,558,338	$14,558,661
Arts, Entertainment & Recreation	$0	$180,086	$1,128,594	$1,308,680
Accommodation & Food Services	$0	$820,846	$3,544,563	$4,365,409
Other Services	$0	$4,068,564	$3,381,789	$7,450,353
Government & Non-NAICs	$0	$596,148	$1,204,132	$1,800,280
Total	**$151,695,773**	**$78,003,233**	**$88,516,658**	**$318,215,664**

Appendix Table F4: Output Impact of Capital Expenditures by Major Sector, Cuyahoga County

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$0	$1,356	$18,039	$19,395
Mining	$0	$848,531	$303,298	$1,151,829
Utilities	$0	$982,006	$1,382,571	$2,364,577
Construction	$332,644,868	$807,779	$737,811	$334,190,458
Manufacturing	$0	$19,467,911	$3,645,546	$23,113,457
Wholesale Trade	$0	$6,686,487	$5,655,291	$12,341,778
Retail Trade	$0	$3,767,994	$12,831,875	$16,599,869
Transportation & Warehousing	$0	$6,327,074	$3,273,639	$9,600,713
Information	$0	$6,196,926	$5,442,411	$11,639,336
Finance & Insurance	$0	$12,070,187	$24,031,498	$36,101,686
Real Estate & Rental	$0	$9,702,468	$25,614,214	$35,316,683
Professional, Scientific & Technical Services	$0	$41,558,224	$6,462,270	$48,020,494
Management of Companies	$0	$1,942,223	$1,048,823	$2,991,046
Administrative & Waste Services	$0	$6,246,197	$3,242,063	$9,488,260
Educational Services	$0	$39,597	$3,292,158	$3,331,755
Health & Social Services	$0	$605	$23,977,987	$23,978,592
Arts, Entertainment & Recreation	$0	$289,183	$1,776,905	$2,066,087
Accommodation & Food Services	$0	$1,514,224	$6,540,698	$8,054,923
Other Services	$0	$6,753,011	$6,492,018	$13,245,029
Government & Non-NAICs	$0	$1,593,630	$3,975,528	$5,569,158
Total	**$332,644,868**	**$126,795,614**	**$139,744,643**	**$599,185,126**

APPENDIX G: ECONOMIC IMPACT OF CAPITAL EXPENDITURES IN THE CLEVELAND-ELYRIA-MENTOR MSA

Appendix Table G1: Employment Impact of Capital Expenditures by Major Sector, Cleveland-Elyria-Mentor MSA

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	0	1	3	4
Mining	0	9	3	12
Utilities	0	3	5	8
Construction	2,714	9	10	2,733
Manufacturing	0	75	13	88
Wholesale Trade	0	51	48	99
Retail Trade	0	73	284	357
Transportation & Warehousing	0	53	30	83
Information	0	19	21	40
Finance & Insurance	0	61	139	200
Real Estate & Rental	0	55	87	142
Professional, Scientific & Technical Services	0	378	61	439
Management of Companies	0	13	7	20
Administrative & Waste Services	0	139	75	214
Educational Services	0	1	56	57
Health & Social Services	0	0	318	318
Arts, Entertainment & Recreation	0	7	39	46
Accommodation & Food Services	0	34	161	195
Other Services	0	90	130	220
Government & Non-NAICs	0	10	24	34
Total	**2,714**	**1,081**	**1,514**	**5,309**

Appendix Table G2: Labor Income Impact of Capital Expenditures by Major Sector, Cleveland-Elyria-Mentor MSA

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$0	$44,166	$91,416	$135,582
Mining	$0	$441,973	$139,147	$581,120
Utilities	$0	$324,462	$474,065	$798,527
Construction	$125,190,066	$433,006	$438,976	$126,062,049
Manufacturing	$0	$5,561,605	$796,123	$6,357,728
Wholesale Trade	$0	$3,816,895	$3,571,747	$7,388,642
Retail Trade	$0	$2,169,793	$7,846,118	$10,015,911
Transportation & Warehousing	$0	$3,286,116	$1,605,843	$4,891,959
Information	$0	$1,223,040	$1,262,168	$2,485,208
Finance & Insurance	$0	$3,904,034	$8,264,590	$12,168,624
Real Estate & Rental	$0	$2,313,928	$1,800,370	$4,114,297
Professional, Scientific & Technical Services	$0	$27,744,117	$4,646,136	$32,390,253
Management of Companies	$0	$1,223,041	$695,186	$1,918,227
Administrative & Waste Services	$0	$4,282,970	$2,324,398	$6,607,369
Educational Services	$0	$22,889	$2,100,837	$2,123,725
Health & Social Services	$0	$340	$15,992,145	$15,992,484
Arts, Entertainment & Recreation	$0	$172,206	$995,175	$1,167,381
Accommodation & Food Services	$0	$615,866	$2,882,281	$3,498,147
Other Services	$0	$4,174,748	$4,059,560	$8,234,308
Government & Non-NAICs	$0	$769,222	$1,693,430	$2,462,652
Total	**$125,190,066**	**$62,524,416**	**$61,679,712**	**$249,394,194**

Appendix Table G3: Value Added Impact of Capital Expenditures by Major Sector, Cleveland-Elyria-Mentor MSA

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$0	$41,745	$87,285	$129,030
Mining	$0	$1,054,411	$250,572	$1,304,984
Utilities	$0	$1,297,305	$1,892,243	$3,189,549
Construction	$153,099,235	$514,257	$523,437	$154,136,929
Manufacturing	$0	$10,075,889	$1,443,423	$11,519,312
Wholesale Trade	$0	$6,608,619	$6,184,167	$12,792,786
Retail Trade	$0	$3,011,250	$11,168,088	$14,179,338
Transportation & Warehousing	$0	$4,142,061	$2,237,988	$6,380,050
Information	$0	$3,381,444	$3,186,053	$6,567,497
Finance & Insurance	$0	$6,500,475	$13,847,185	$20,347,660
Real Estate & Rental	$0	$7,389,287	$27,254,550	$34,643,836
Professional, Scientific & Technical Services	$0	$30,756,175	$5,882,285	$36,638,460
Management of Companies	$0	$1,425,146	$810,064	$2,235,210
Administrative & Waste Services	$0	$4,971,911	$2,743,747	$7,715,658
Educational Services	$0	$23,053	$1,942,998	$1,966,051
Health & Social Services	$0	$416	$17,248,706	$17,249,122
Arts, Entertainment & Recreation	$0	$207,522	$1,327,440	$1,534,962
Accommodation & Food Services	$0	$934,116	$4,366,317	$5,300,433
Other Services	$0	$4,909,773	$4,277,091	$9,186,864
Government & Non-NAICs	$0	$673,496	$1,424,321	$2,097,817
Total	**$153,099,235**	**$87,918,351**	**$108,097,962**	**$349,115,548**

Appendix Table G4: Output Impact of Capital Expenditures by Major Sector, Cleveland-Elyria-Mentor MSA

Sector	Direct	Indirect	Induced	Total
Agriculture, Forestry, Fish & Hunting	$0	$110,358	$171,327	$281,685
Mining	$0	$1,637,016	$364,548	$2,001,564
Utilities	$0	$1,811,248	$2,564,205	$4,375,452
Construction	$359,428,767	$1,074,649	$1,052,128	$361,555,544
Manufacturing	$0	$25,878,984	$5,262,629	$31,141,614
Wholesale Trade	$0	$8,126,797	$7,604,836	$15,731,633
Retail Trade	$0	$4,544,533	$16,755,962	$21,300,496
Transportation & Warehousing	$0	$6,920,245	$3,729,371	$10,649,616
Information	$0	$6,189,754	$5,986,587	$12,176,341
Finance & Insurance	$0	$13,138,652	$27,511,868	$40,650,520
Real Estate & Rental	$0	$10,546,252	$32,050,968	$42,597,220
Professional, Scientific & Technical Services	$0	$45,917,912	$7,702,278	$53,620,190
Management of Companies	$0	$2,329,766	$1,324,257	$3,654,023
Administrative & Waste Services	$0	$7,590,902	$4,245,486	$11,836,388
Educational Services	$0	$41,711	$3,651,419	$3,693,130
Health & Social Services	$0	$787	$28,694,530	$28,695,317
Arts, Entertainment & Recreation	$0	$354,640	$2,157,843	$2,512,483
Accommodation & Food Services	$0	$1,771,912	$8,285,407	$10,057,319
Other Services	$0	$8,187,701	$8,443,653	$16,631,355
Government & Non-NAICs	$0	$1,791,249	$4,714,401	$6,505,651
Total	**$359,428,767**	**$147,965,068**	**$172,273,705**	**$679,667,541**