

Economics Center

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The Impact Of Hospitals In Northeast Ohio On The Economy Of The Region

prepared for

The Center for Health Affairs

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**THE IMPACT OF HOSPITALS IN NORTHEAST OHIO
ON THE ECONOMY OF THE REGION**

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Executive Summary

The Center for Health Affairs (CHA) represents 35 hospitals in Northeast Ohio whose employment and business interactions create economic benefits across households and industries in the Greater Cleveland area.¹ This report estimates the economic impact of 35 hospitals on Greater Cleveland's employment, household earnings, and business sales for the most recently completed fiscal year as of December 2002.²

Economic Impact

- The total economic impact of Cleveland area hospitals and their related health care facilities is \$11.58 billion. This includes a household earnings impact of \$3.28 billion. The total impact on employment in the Cleveland area is 109,107 jobs.
- Together, these economic activities generate nearly \$254 million annually in state and local tax revenues.
- The economic impact associated with hospital patients who do not reside in the Greater Cleveland area is estimated at \$2.16 billion. Patients from outside the region account for approximately 14 percent of area hospitals' patient days and 22 percent of inpatient billings.
- The total economic impact of local construction is \$699 million.

Expenditures and Employment

- In 2002, CHA member institutions' expenditures totaled more than \$5.45 billion.
- When all personnel expenditures are considered (contracted professional and temporary services, along with wages and benefits), they account for 55 percent of total hospital expenditures. Wages and benefits were the largest component of expenditures, totaling \$2.86 billion.
- The hospitals and their related facilities employed a total of 51,542 people in 2002, of which 76 percent were full-time, and 24 percent were part-time jobs.

¹ The Greater Cleveland area is defined as the six counties in Northeast Ohio that are served by CHA-member hospitals. They are the five counties that make up the Cleveland Metropolitan Area: Cuyahoga, Lorain, Geauga, Medina, and Lake Counties, plus neighboring Ashtabula County. Together, these counties constitute the Greater Cleveland area, also referred to in this study as Northeast Ohio or the Cleveland area.

² The economic impact of CHA members is based on survey data that describes the expenditures of 35 hospitals, two nursing and personal care facilities, and 26 other medical and health service facilities affiliated with the 35 hospitals.

Other Findings

- Over a two-year period, the hospitals and their related facilities have invested over \$135 million in information technology to improve quality and efficiency.
- Insurance and drug costs have affected hospitals as well as individual consumers. Pharmaceutical expenditures accounted for 5.8 percent of hospital expenditures, while professional liability insurance expenditures amounted to 5.0 percent of hospital expenditures.

Section I

Introduction

The hospitals and hospital systems that are members of The Center for Health Affairs (CHA) have a tremendous impact the economy of Northeast Ohio. They are a vital part of the Cleveland area's economy as well as its health care system. Their employment and business interactions create economic benefits across many households and businesses in the Cleveland area.

Purpose of the Study

The purpose of this study is to identify the economic impacts that the hospitals have on the economy of the Greater Cleveland area. This report measures those economic benefits by estimating the economic impact of CHA-member hospitals and their affiliated facilities on Cleveland area's employment, household earnings, and business sales. The economic impact estimates use direct local spending by CHA members to determine their indirect effects on other industries and households in the region.

Data Sources

In general, the data on which this analysis is based came directly from CHA members. The Center for Health Affairs distributed a survey to all of its members in order to acquire expenditure data for the most recently completed fiscal year as of December 2002. All but three hospitals or systems that belong to CHA responded, providing detailed data on employment and expenditures. For the remaining three, estimates were developed on the basis of statistics for 2002 published in the 2003/04 AHA Guide.

The organizations responding to the survey provided separate data on expenditures made by: hospitals; affiliated nursing and personal care facilities; and other affiliated medical and health service facilities. This disaggregation is important because the structure of economic activity in each of these areas is different, and therefore they have different economic characteristics in the Northeast Ohio region. These three different operations are described as follows.

- Hospital facilities include inpatient and outpatient facilities and services (including skilled nursing) physically located on the hospital campus.
- Nursing and personal care facilities include long-term care, home health, hospice, skilled nursing, and intermediate care that are affiliated with the institution but are provided at locations other than the main hospital site.
- Other medical and health service facilities include freestanding surgery centers, urgent care centers, laboratory services, and physician offices that are affiliated with the institution.

Definitions

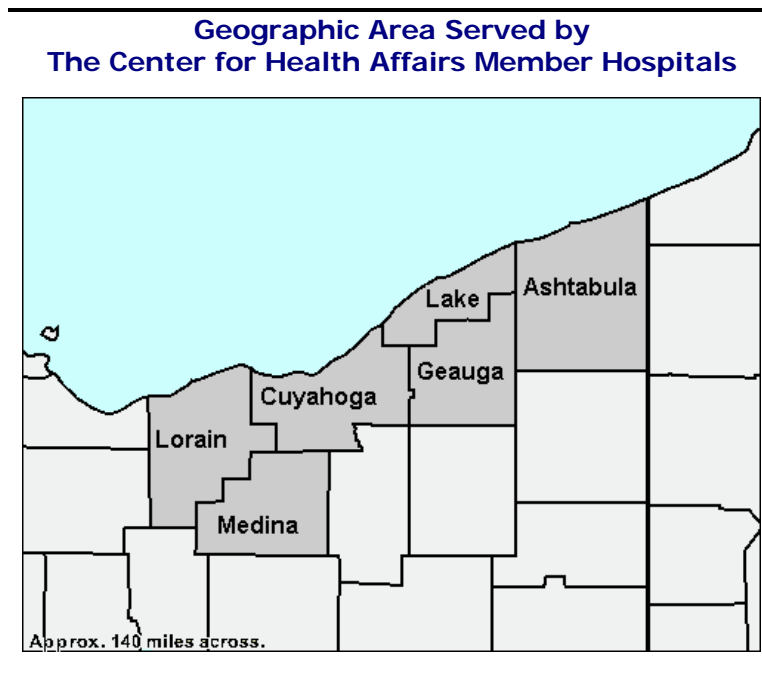
The subject of study in this report is the member hospitals and affiliated facilities of The Center for Health Affairs. The economic impact calculations are based on the total expenditures of these institutions.

As a rule, references to “Cleveland area hospitals” include all member health institutions. The phrase “hospital(s) only” is used when the facilities affiliated with the hospitals are not included.

The economic impact of any business includes three elements, as defined here: the direct impact, the indirect impact, and the induced impact.

- The direct impact of the Cleveland area hospital institutions comprises the purchases of local resources (labor, goods, and services) to provide health care and related services.
- The indirect impact is the purchases of local resources made by local businesses in order to produce the goods and services purchased by the hospital institutions, along with consequent purchases by other businesses that supply the first group of businesses.
- The induced impact is the local household spending of the earnings of employees of hospital institutions and their suppliers.

The study area for this analysis is the 6-county area served by The Center for Health Affairs member hospitals, as shown on the following map. Hence, all economic impact estimates are made for this region.



The map above highlights the six counties in Northeast Ohio that are served by CHA-member hospitals. They are the five counties that make up the Cleveland Metropolitan Area: Cuyahoga, Lorain, Geauga, Medina, and Lake Counties, plus neighboring Ashtabula County. Together, these counties constitute the Greater Cleveland area, also referred to in this study as Northeast Ohio or the Cleveland area.

Section II

Expenditures and Employment of CHA-Member Hospitals

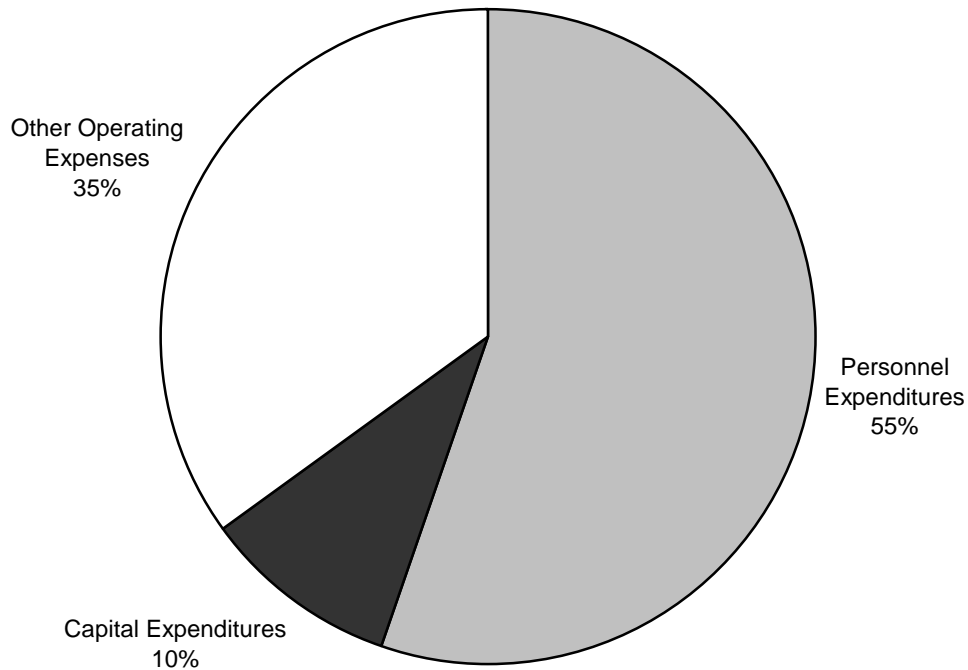
The economic impact of CHA members' business operations is generated through their expenditures and employment. The operation and capital needs of these hospitals and other health institutions require spending large sums on staffing, equipment, utilities, and other goods and services. CHA-member institutions had total expenditures of \$4.46 billion in 2002. Table 1 shows total local health institution expenditures for three major categories.¹

Table 1: Total Expenditures

Major Category	Hospital Only	Nursing and Personal Care	Medical and Health Service	Total	
Personnel Expenditures	\$2,806,921,175	\$51,716,122	\$149,352,905	\$3,007,990,202	55%
Other Operating Expenses	\$1,853,461,673	\$11,877,209	\$36,633,114	\$1,901,971,996	35%
Capital Expenditures	\$518,600,368	\$5,518,489	\$19,691,886	\$543,810,744	10%
Total	\$5,178,983,216	\$69,111,820	\$205,677,905	\$5,453,772,942	

Chart 1 displays the allocation of these hospital expenditures for the Northeast Ohio.

Chart 1: Total Expenditures



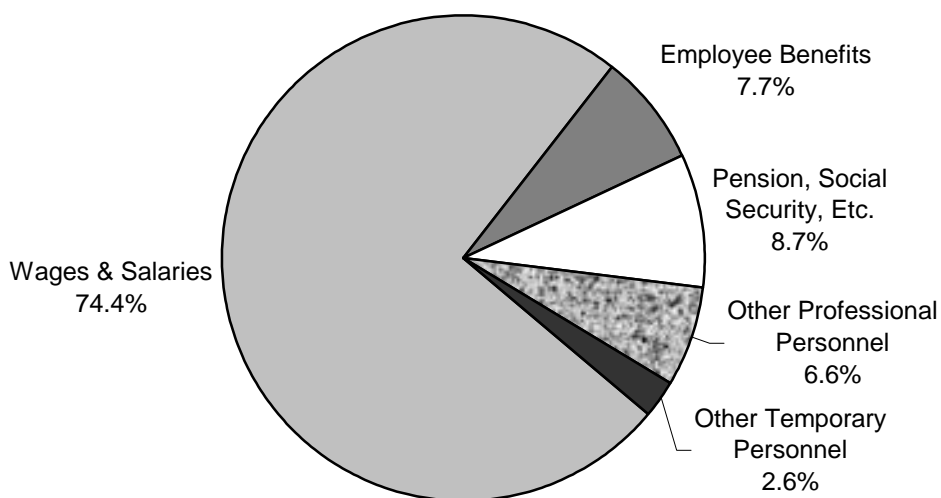
¹ Hospitals account for 95 percent of all spending; nursing and personal care facilities account for less than one percent; and medical and health service facilities account for four percent.

Personnel Expenditures

As shown in the preceding table and chart, Personnel Expenditures account for 55 percent of all health institution spending. This massive category can be divided into five types of expenditures, as shown in Chart 2.

- The largest component of personnel expenditures (indeed, of all expenditures) by area health institutions is Wages and Salaries paid to employees. This component accounts for 74.4 percent of personnel expenditures.
- Employee Benefits accounts for 7.7 percent of expenditures in this category, and payments for Pension, Social Security, etc., accounts for another 8.7 percent.
- Personnel expenditures also include two other types of non-employee expenses: Other Professional Fees (e.g., physicians, legal services, etc.), which accounted for 6.6 percent of this category, and Other Temporary Personnel, which accounted for 2.6 percent.

Chart 2: Personnel Expenditures



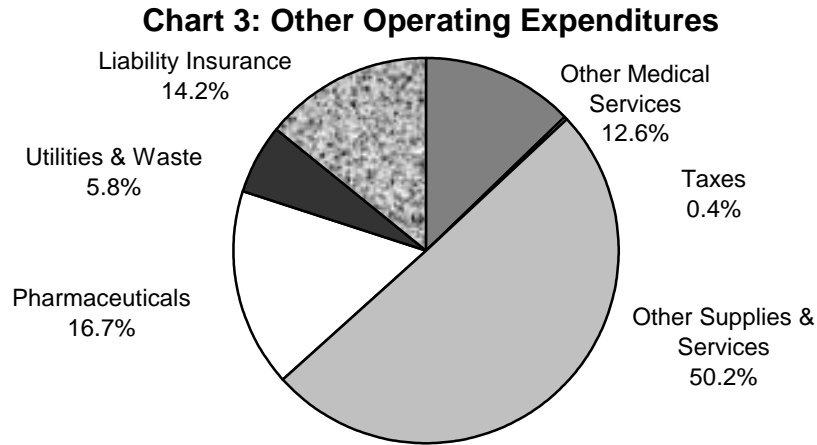
Other Operating Expenses

The next major category is Other Operating Expenses, which makes up 35 percent of all expenditures. Several specific expenditure areas are broken out from the total to allow detailed tracking of trends and inter-organization comparison, as shown in Chart 3.

- Other Supplies and Services make up the bulk of this expenditure category. This includes administrative supplies, laboratory and operating room supplies, and a variety of non-professional, non-medical services such as food service, automotive services, printing, and equipment rental. In total it accounts for 50.2 percent of expenditures in this category.
- The next largest expense in this category is for Pharmaceuticals, which is 16.7 percent of the total category. Expenditures on Utilities and Waste Disposal account for 5.8

percent of Other Operating Expenses, while Liability Insurance accounts for another 14.2 percent of the category. These three types of expenses consume a growing portion of hospital budgets.

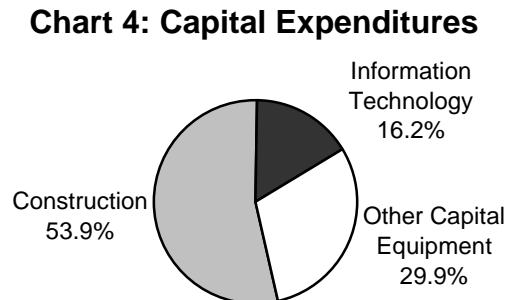
- Two other types of spending are Other Medical Services and Taxes, which respectively account for 12.6 percent and 0.4 percent of Other Operating Expenses.



Capital Expenditures

The third major category is Capital Expenditures. This spending, which made up 10 percent of total expenditures in 2002, is divided into three areas, as shown in Chart 4.

- Construction expenditures accounted for 53.9 percent of Capital Expenditures.
- Spending on Information Technology is an increasingly important area for health institutions. Expenditures in this area accounted for 16.2 percent of capital spending.
- Other Capital Equipment expenditures accounted for 29.9 percent of Capital Expenditures.



Household Income

Cleveland area hospitals paid out a total of \$2.86 billion in wages and benefits during 2002. Table 2 shows the wages and benefits paid by health institutions during 2002. Highlights include the following:

- Health institutions paid \$2.34 billion in wages and salaries during 2002. Benefits for employees totaled \$520 million.
- “Hospital only” employees accounted for 94.1 percent of health institution wage and benefit payments. Affiliated nursing and personal care employees and other affiliated medical and health service employees accounted for 1.7 percent and 4.2 percent of wage and benefit payments from health institutions respectively.

	Hospital Only	Nursing and Personal Care	Medical and Health Services	Total
Wages and Salaries	\$2,194,785,728	\$41,015,538	\$101,610,979	\$2,337,412,245
Benefits	\$492,837,897	\$8,707,474	\$18,295,987	\$519,841,358
Total	\$2,687,623,625	\$49,723,012	\$119,906,966	\$2,857,253,603

Employment

Employment in 2002 totaled 51,542 people, not including temporary personnel and contracted professional staffing services.

- Full-time employees represented 75.7 percent of the total, while 24.3 percent were employed part-time.
- “Hospital only” employees accounted for 95.1 percent of all jobs, 1.1 percent were in nursing and personal care facilities, and 3.8 percent were in other medical and health service facilities.

Table 3 shows the breakdown of jobs by full- and part-time status and by type of facility.

Type of Employment	Hospital Only	Nursing and Personal Care	Medical and Health Services
Total Full-time	37,134	434	1,428
Medical Residents	3,515	0	0
Total Part-time	11,862	155	529
Medical Residents	0	0	0
Employment by Facility Type	48,996	589	1,957
Total Employment		51,542	

Revenues

Expenditures by CHA-member hospitals are funded by their revenues, almost all of which come from payments for patient care. In 2002, 45 percent of the hospitals responding to the survey had insufficient revenues to cover their expenses. While some of these hospitals are able to cover their deficits through sharing of revenues within multi-institution health care organizations (multiple hospitals and/or the presence of other medical and health service facilities), the overall picture appears to be one in which revenues barely cover or fail to cover total expenditures.

Section III

Economic Impact of CHA-Member Hospitals

The expenditures described in the previous section create additional indirect and induced economic impacts within the Northeast Ohio region. As shown in the table below, \$5.45 billion in expenditures by Cleveland area hospitals generated an additional \$6.12 billion in indirect and induced economic activity within the Cleveland region. When these expenditures and impacts are combined, Cleveland area hospitals' total annual economic impact on Northeast Ohio was \$11.58 billion in 2002.

Table 5: Total Economic Impact

Total Expenditures	\$5,453,772,942
Indirect and Induced Impact	\$6,121,797,462
Total Economic Impact	\$11,575,570,403

Hospital Operations

Most of the economic impact of the hospitals comes from their operations. The total impact of hospital operations was \$10.40 billion, which is 89.8 percent of the total impact. The indirect and induced impact is greater than the direct expenditures for every facility type. This is a result of the large economic multipliers for these business types, and it shows why health institutions are so important to the local economy.

Considering the three business types separately, hospitals alone accounted for 95.0 percent of all spending; nursing and personal care facilities accounted for 1.3 percent; and medical and health service facilities accounted for 3.7 percent.

Table 6: Economic Impact of Hospital Operations

	Hospital Only	Nursing And Personal Care	Medical and Health Service	Total
Direct Expenditures	\$4,660,382,848	\$63,593,331	\$185,986,019	\$4,909,962,198
Indirect and Induced Impact	\$5,221,492,943	\$69,761,884	\$195,488,045	\$5,486,742,871
Total Economic Impact	\$9,881,875,790	\$133,355,214	\$381,474,064	\$10,396,705,069

Hospitals as an Export Industry

A substantial share of the economic impact of Cleveland area health care organizations is generated by new money coming into the local economy. Patients, their families and visitors, and professionals from outside of the area come here, eat at local restaurants, and stay in local hotels. In addition to this, a considerable amount of funding from grants and other sources originates outside of the area, but is spent here.

A generally-accepted theory of regional growth, known as export-base theory, argues that a region's export industries are key to achieving sustained regional economic viability and growth. To the extent that their health care services are funded by out-of-area monies, CHA members are considered to be among Northeast Ohio's exporting firms, since they

export clinical, research, and educational services to individuals from outside the local economy.

It is possible to estimate the clinical exports of area hospitals by using inpatient data supplied by the Ohio Hospital Association.² In 2002, inpatient charges totaled \$5.22 billion. Of total inpatient charges, almost 22 percent are from patients that do not lie in any of the six counties that comprise the Northeast Ohio region. Table 7 shows inpatient days and charges by area of residence.

Table 7: Inpatient Days and Charges by Residence

Area of Patient Residence	Inpatient Days	Percentage	
		of Total	Inpatient Charges of Total
Within Cleveland area	1,471,801	86%	\$4,077,929,437 78%
Outside Cleveland area	236,952	14%	\$1,138,196,629 22%
Total	1,708,753	100%	\$5,216,126,066 100%

This means that \$2.16 billion of the \$8.19 “hospital only” economic impact is generated by people who are not residents of the Cleveland area. This new money is very important for its role in replenishing the local economy. Other sources of new money for the local economy include more than \$300 million in federal funding for National Institutes of Health grants (to the Cleveland Clinic, MetroHealth, and University Hospital Health System) and for the Louis B. Stokes Veterans Affairs Medical Center.

Capital Expenditures

Capital expenditures are a relatively small but very important part of the economic impact of Cleveland area hospitals. Collectively, their economic impact was \$1.18 billion.

- Spending on Construction was \$293 million during 2002. This created an additional \$406 million in indirect business sales and household income in the local economy (using economic multipliers), producing a total economic impact of almost \$700 million.
- Investment in Information Technology amounted to about \$88 million during 2002. This created an additional \$67 million in indirect business sales and household income in the local economy, producing a total economic impact of \$155 million.
 - Over a two-year period (2001 and 2002), investment in information technology exceeded \$135 million, as a part of the ongoing efforts of health care organizations to improve quality and efficiency.
- Other Capital Equipment accounted for the remaining \$162 million. This created an additional \$163 million in indirect business sales and household income in the local economy, producing a total economic impact of \$325 million.

Table 8 shows the contributions to the total economic impact made by each of the three components of capital expenditures. Construction accounted for 59 percent of this impact, Information Technology accounted for 13 percent, and Other Capital Equipment generated the remaining 28 percent.

² The data source used is *2002 Full Year HUS Reports, Medical Service by Zip*.

Table 8: Capital Expenditures Impact

	Construction	Information Technology	Other Capital Equipment	Total
Total Expenditures	\$293,372,535	\$88,029,002	\$162,409,207	\$543,810,744
Indirect and Induced Impact	\$405,734,216	\$66,714,246	\$162,606,128	\$635,054,590
Total Economic Impact	\$699,106,751	\$154,743,248	\$325,015,335	\$1,178,865,334

Household Income

The impact of Cleveland area hospitals on household income begins with the wages and benefits paid to its own employees. Next come the indirect impacts, as other businesses hire and pay employees to meet the demands of the hospitals. All of these activities generate household income and help to support full- and part-time jobs in the Cleveland area.

The economic impact on household earnings due to Cleveland Metropolitan health institutions totals \$3.28 billion.

- Local hospitals contributed a total impact of \$2.72 billion to household earnings.
- Affiliated nursing and personal care facilities contributed a total of \$68 million to local household earnings.
- Other affiliated medical and health services facilities directly and indirectly generated \$174 million in Cleveland Metropolitan household earnings.
- Total capital expenditures contributed \$324 million to total earnings impacts.

The breakdown of this impact is shown in Table 9.

Table 9: Impact on Household Earnings

Type of Impact	Hospital	Nursing and Personal Care	Medical and Health Services
Direct Earnings	\$1,309,691,375	\$49,723,012	\$119,906,966
Indirect Earnings	\$1,407,678,600	\$18,629,425	\$53,955,170
Combined Impact	\$2,717,369,975	\$68,352,437	\$173,862,136
Capital Expenditures Impact		\$324,385,457	
Total Impact		\$3,283,970,005	

Employment

In 2002, expenditures by Cleveland area hospitals resulted in a total direct and indirect employment creation of 109,107 jobs throughout a variety of industries in Northeast Ohio. This overall impact on employment is the sum of all jobs created or maintained as a result of the economic activity generated by these local health institutions.

- Of these jobs, 94,317, or 86.4 percent, stem from hospital only expenditures.
- Another 1,253 jobs, or 1.1 percent, come from spending by affiliated nursing and personal care operations.

- Medical and health service operations account for 3,686 jobs, or 3.4 percent of the total employment impact.
- The remaining 9,850 positions, 9.0 percent of all jobs, are the result of construction and other capital expenditures.

Table 10 shows the number of jobs directly and indirectly created by the economic activity generated in each of these three categories.

Type of Impact	Hospital	Nursing and Personal Care	Medical and Health Services
Direct employment	48,996	589	1,957
Indirect employment	45,322	664	1,729
Combined impact	94,317	1,253	3,686
Capital expenditures impact		9,850	
Total Impact		109,107	

Fiscal Impact

Although area health institutions do not, by themselves make large real estate and corporate tax payments, through their operations and the related indirect and induced activity, they accounted for nearly \$254 million in state and local tax revenues in 2002. Most of this (98.7%) comes as a result of hospital employee income taxes, income taxes paid on indirect household earnings, and sales taxes from consumer spending of household income. The remaining 1.3 percent comes from hospital real estate and income taxes.

Hospital Tax Payments	
Real estate taxes	\$3,208,639
Corporate income taxes	\$37,578
Withholding for state income tax	\$64,229,833
Withholding for local payroll tax	\$31,775,074
Taxes from Indirect and Induced Activity	
Withholding for state income tax	\$42,576,806
Withholding for local payroll tax	\$42,054,432
State and local sales tax	\$69,691,746
Total Impact	\$253,574,108

Appendix 1

Health Institutions Included in the Study

Hospitals (35)

Allen Medical Center
Ashtabula County Medical Center

Cleveland Clinic Health System

Cleveland Clinic Children's Hospital for
Rehabilitation
The Cleveland Clinic Foundation
Marymount Hospital
Euclid Hospital
Hillcrest Hospital
Huron Hospital
South Pointe Hospital
Fairview Hospital
Lakewood Hospital
Lutheran Hospital

Community Health Partners
EMH Regional Medical Center
Grace Hospital
Harrison Community Hospital

Lake Hospital System, Inc.

Lake East Hospital
Lake West Hospital

Louis Stokes Cleveland VA Medical Center
Medina General Hospital
MetroHealth Medical Center
Parma Community General Hospital
Southwest General Health Center

University Hospitals Health System

Rainbow Babies & Children's Hospital
UHHS Bedford Medical Center
UHHS Brown Memorial Hospital
UHHS Geauga Regional Hospital
UHHS Laurelwood Hospital
UHHS Memorial Hospital of Geneva
UHHS Richmond Heights Hospital
University Hospitals of Cleveland
University Hospitals Heather Hill

St. John West Shore Hospital
St. Vincent Charity Hospital
Wadsworth-Rittman Hospital

Off-Site Nursing & Personal Care Facilities (2)

UHHS System

UHHCE/ Health Care Enterprises

Metro Health

Skilled Nursing Care at MetroHealth Care

Other Off-Site Medical and Health Service Facilities (26)

Grace Hospital

An affiliate of the Cleveland Clinic health
System

Lake Hospital

Mentor Medical Campus
Heisley Rehab & Wellness
Madison Medical Campus
Willowick Walk-In Center
Mentor Walk-In Center
Lake Hospital System Home Health Agency
PrimeHealth Willoughby Hills Women's Group
PrimeHealth Willoughby Internal Medicine
PrimeHealth Mentor Internal Medicine
PrimeHealth Willoughby Pediatrics
PrimeHealth Mentor Pediatrics
PrimeHealth Madison Pediatrics
PrimeHealth Madison Family Practice
PrimeHealth Chardon Family Practice

Southwest

Strongsville Urgicare
Brookpark Urgicare
Oaktree Physicians

St. John

Cuyahoga Physician Network
Westshore Primary Care Associates
Westshore Physician Corp.

St. Vincent

Cuyahoga Physician Network
St. Luke's Medical Center
St. Luke's Solon Emergency Room

UHHS System

University Mednet, Inc.
UHHS / University Primary Care Physicians

Appendix 2

Survey Instrument

Center for Health Affairs

2002 Economic Impact Survey

SECTION I – GENERAL

Name of Hospital/System

Person Responsible for Survey Completion: Name, Title, Phone, Email

Data reported here are for the fiscal year that: begins, and ends

(Questions 1-4)

- 1. Are you reporting for: a hospital system, a single hospital

GO to #2., GO to #3.

- 2. Which hospitals are included in the system?

Blank lines for hospital names

- 3. Names of nursing and personal care facilities associated with your hospital or hospital system:

Blank lines for nursing and personal care facilities

- 4. Names of other medical and health service facilities associated with your hospital or hospital system:

Blank lines for other medical and health service facilities

Appendix 3

Additional Methodological Notes

The total economic impact of the Center for Health Affairs member organizations is the sales, income, and jobs of the organizations themselves plus their direct, indirect, and induced impacts on the local economy. More simply stated, the total economic impact is the value of their expenditures plus the value of any other local economic activity that is directly or indirectly linked to it.

An economic impact analysis measures an organization's total economic effect on the region. The total economic effect is derived not only from the direct expenditures made by the organization in the geographic area under analysis, but also from the economic benefits that accrue to local businesses and households from the recirculation of this money. This approach requires understanding the nature and extent of an organization's local expenditures to calculate how they affect overall business sales, household earnings, and employment in the region. Economic impact analyses multiply local expenditures by an industry- and location-specific factor that reflects how much *indirect* business activity, earnings, and employment will result after the initial spending or investment has occurred.

Measuring the indirect and induced impacts related to the operations and capital expenditures of Cleveland area hospitals and affiliated health institutions is made possible by multipliers derived from an input-output table for the Cleveland area. The Bureau of Economic Analysis of the U.S. Department of Commerce has constructed these tables for major metropolitan areas in the U.S. through its RIMS II project. The RIMS II tables for the six-county Greater Cleveland area provide multipliers to measure the indirect and induced impacts of virtually any type of economic activity in the region.

Pension Expenditures, which were reported as single totals, were assumed to follow the distribution of Payroll and Employee Benefits, and were allocated accordingly among the three types of health care operations.

Similarly, Capital Expenditures were not separated by type of operation. These expenditures were assumed to follow the distribution of Other Operating Expenses (i.e., non-personnel expenditures), and were allocated accordingly.