

**Health Enterprises Network
Health Economic Research Study**

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Introduction

The Health Enterprises Network (HEN) is an economic development-focused business network formed by the leadership of Louisville's health-related economy. Examples of health-related businesses include health insurance companies, hospitals, health services providers, health-related information technology companies, health benefits companies, medical device manufacturers, and professional service providers. The HEN's mission is to champion and foster the growth of the health-related economy of the region and support the vision that the Louisville metro be recognized as a center of excellence for health-related business, research, education, and investment.

This study is the third installment summarizing the economic impact of the local healthcare industry. The Health Enterprises Network commissioned Dr. Paul Coomes to author the initial report in 2001. A follow up study was completed by the ANGLE Technology Group in 2006, which included both an update to the initial report and a supplemental component that surveyed local business leaders to identify future areas of development and growth.

The third installment of this series will provide an updated assessment of the Louisville Metro health-related economy. The updated report provides information on the overall health of the Louisville metro economy as well as comparisons of changes in revenue, payroll, employment, and research in the health-related economy with respect to changes over time and across similar metropolitan areas.

Louisville's Health-related Economic Base

I. The Louisville Metro Economy

The Louisville Metro is the 42nd largest metro in the United States and home to a population of 1.25 million people, with a labor force of over 643,000. In 2012, the Louisville Metro generated over \$54.4 billion in commerce and has per capita real GDP of \$43,500 in 2005 dollars. The per capita real GDP nationwide is \$45,604. Six of the ten largest employers are part of the healthcare industry ranging from insurance companies to hospitals. The largest of these is Humana. The largest employer in the metro is the United Parcel Service (UPS). The Louisville Metro is also home to international restaurant companies including Yum! Brands, Papa Johns, and Texas Roadhouse.

The second largest industry by employment is manufacturing where the Louisville Metro has experienced larger than expected growth. Manufacturing represents nearly 12 percent of non-farm employment. The growth in manufacturing employment has been driven by the auto industry, specifically Ford and Toyota plants, as well as appliance manufacturing expansion by General Electric.

Relative to the national average, the Louisville metro has a slightly higher unemployment rate at 7.1 percent and lower income per capita. The Louisville Metro also lags behind in education with only 26.5 percent of people 25 years or older with a college education relative to the national average of 29.1 percent. However, Metro Louisville experienced less adverse effects associated with the 2008 housing crisis than the rest of the nation. Home prices have fallen, but at a slower rate than the national average. Between June 2007 and February 2010, the Louisville economy lost 58,523 jobs, but has since recovered and added an additional 37,000 jobs.

(Sources: The Federal Reserve Bank of St. Louis – Metro Profile: Louisville and The Brookings Institute – Metro Monitor for Louisville/Jefferson County KY-IN MSA.)

II. Health Care Economy Highlights

In the section below, we highlight significant improvements and challenges in comparison to the previous report. More detailed analyses are provided in the following sections. A summary of the major findings is found in **Figure 1** of the appendix.

- We have identified nearly 3,900 health-related establishments in the Louisville metro area, making up almost 15% of Louisville's total business establishments. Collectively, they employ over 100,000 persons with an annual payroll over \$3.8 billion. All major components of Louisville's healthcare industry have posted growth since the completion of the 2006 study, though on a smaller scale than some of their comparison metros.
- Average annual pay in Health Care and Social Assistance within the Louisville Metro is \$41,295. The three highest paying sectors are Management of Companies & Enterprises (\$100,181), Finance & Insurance (\$67,384), and Mining (\$53,939). The three lowest

paying sectors are Accommodation and Food Services (\$14,967), Retail Trade (\$24,635), and Other Services not including Public Administration (\$25,586). Construction (\$46,321) and Real Estate (\$39,454) provide similar average compensation as that of the Health Sector. **(Figure 2)**

- Health care has become the largest employer in the Louisville area, accounting for 16.3 percent of all jobs **(Figure 3)**. This sector has increased by 19.3 percent between 2003 and 2012. Employee payrolls grew by 3.6 percent over this same time period, but have lagged in comparison to other similar metros **(Figure 4)**. On a per capita basis, most health care economic measures indicate that Louisville ranks in the middle or above compared to other similar metro areas for revenue and jobs, but ranks near the bottom and middle for payroll.
- Louisville is home to two of the 23 *Fortune 1000* headquarters of health-related companies located in the twelve comparison metros: Humana and Kindred **(Figure 5)**. The Nashville metro hosts six major headquarters, while the Cincinnati and Columbus metros each contain four major headquarters. In total, six publicly traded healthcare companies reside in Louisville with a total market value of over \$36 billion **(Figure 6)**.
- The University of Louisville has held steady with 123 grants from the National Institutes of Health totaling over \$47 million dollars in 2013 **(Figure 7)**. The University of Louisville has experience a small decrease in NIH rank falling from 76 in 2004 to 83 in 2013 among domestic institutions of higher education nationwide. In comparison, the University of Kentucky has been awarded 231 grants totaling over \$77 million dollars and is ranked 53 among domestic institutions of higher education **(Figure 8)**.
- Private sector research and development has experienced marginal increases since the last report. In 2006, Louisville ranked last among similar metros in private research and development. Although still in the lower half of the comparison metros, Louisville has seen growth in the previously non-existent pharmaceutical industry with four new establishments **(Figure 9)** and has maintained the same number of medical device companies **(Figure 10)**. However, the Louisville metro is still lagging in small business technology grants (13) with a total value of \$5,800,000, which ranks it in the middle of the comparison metros and behind Lexington, KY with \$8,066,000 **(Figures 11, 12, and 13)**.

III. Healthcare Revenue

- The Louisville metro ranks above the national average in health care and social assistance revenue with \$6,210 per capita, a 15 percent increase from 2002 - 2007. Among comparison metros, healthcare per capita revenues range from \$4,732 - \$7,498 placing the Louisville metro near the center (**Figure 14**).
- The Louisville metro has experienced increases in revenue among each of the three sectors: Ambulatory Care, General Medical & Surgical Hospitals, and Nursing & Residential Care Facilities. Both Hospital and Ambulatory Care rank in the middle of the comparison metros. However, the Louisville metro ranks near the top for Nursing & Residential Care Facilities.
- In the Louisville metro, hospital revenue per capita is \$2,441 (**Figure 15**), ambulatory care revenue per capita is \$2,413 (**Figure 16**), and Nursing care facility revenue per capita is \$682 (**Figure 17**). Notably, hospital expenses per capita are \$2,406, an increase of 2.16 percent from 2004 – 2012, suggesting hospital margins have decreased over time. (**Figure 18**)
- The primary sources of ambulatory care revenue are from physician offices (39.4 percent) and dentist offices (22.7 percent) (**Figure 19**).
- Hospital and Ambulatory Care increased revenues by 9.3 – 10.2 percent from 2002 – 2007. Nursing & Residential Care Facilities, on the other hand, experienced a surge in revenues equivalent to a 24.9 percent increase.
- A portion of the increased revenues across all metros is due to an increase in adjusted inpatient days per capita, which increased from 0.74 in 2002 to 1.25 in 2012, a percent change of 69 percent. In the Louisville metro, the adjusted number of inpatient days per capita is 1.29, which is larger than the average among similar metros (**Figure 20**). Further, hospital expenses per inpatient day have increased by 252 percent from 2004 – 2012 at a cost of \$1,871 per inpatient day (**Figure 21**).

IV. Healthcare Payroll & Employment

- The Louisville metro Health Care and Social Assistance annual payroll total is greater than \$3.5 billion and is the largest payroll sector in the metro. The Health Care and Social Assistance sector employs 84,962 people. The second largest payroll sector is manufacturing with \$3.2 billion and employs 62,528 people (**Figure 22**).
- Health care compensation per capita in metro Louisville is greater than the national average and has experienced a steady annual increase of 5.6 percent per year (**Figure 23**). Health care compensation in metro Louisville appears to be isolated from national trends. Average compensation grew at a slower rate than other areas in the United States between 2005 and 2009, but did not experience significant adverse effects from the 2008 recession (**Figure 24**).
- According to the Brookings Institute, the Louisville health care sector was immune to the most recent recession, recording 4 percent job growth both during the recession and the current recovery period. Only the leisure and hospital industry grew faster over this time period with a net 10.7 percent growth in employment.
- All job categories in the health sector are experiencing growth. The job categories with the largest observed growth are Home Health Aides (64 percent), Lab Technicians/Medical Diagnostics (42 percent), and Physical Therapists (35 percent)/Physical Therapist Assistants (40 percent) (**Figure 25**).
- Three of the top five local employers (Humana Inc., Norton Healthcare Inc., and KentuckyOne Health Inc.) are in the healthcare sector.
- Health Care and Social Assistance Industry per capita payroll in metro Louisville is \$2,803, an increase of 8.6 percent from 2002 – 2012, placing the Louisville metro in the lower half of similar metros (**Figure 26**). Nursing & Residential care facilities per capita payroll is \$321 (9.9 percent increase), Hospital per capita payroll is \$909 (9.1 percent decrease), and Ambulatory Care per capita payroll is \$1,277 (21.5 percent increase) (**Figures 27, 28, and 29**). Among community hospitals, per capita payroll is lower at \$844, which is a decrease of 7.5 percent from 2002 – 2012 (**Figure 30**).
- In light of lower payroll amounts, the Louisville metro has experienced increases in the number of healthcare employees. The Louisville metro supplies 6.79 healthcare paid employees per 100 residents (**Figure 31**). The largest sector is ambulatory care with 2.31 paid employees per 100 residents (**Figure 32**). Hospital paid employees per 100 residents increased by 3.7 percent to 1.96 employees per 100 residents from 2002 – 2012 (**Figure 33**). Nursing paid employees increased by 16 percent to 1.23 paid employees per 100 residents over the same time period (**Figure 34**). These reported increases imply an increase in the access of care.
- Relative to other similar metros, the Louisville metro has fewer internists (-75 percent), massage therapists (-62 percent), and home health aides (-61 percent). However, metro

Louisville has a surplus of therapists and medical assistants in excess of 90 percent greater than the average in similar metro areas (**Figure 35**).

- With respect to wages, chiropractors (-26 percent), optometrists (-17 percent), and dentists (-14 percent) are under compensated relative to the average in other similar metro areas. However, therapists receive the greatest location premiums with the top three being physical therapists (21 percent), podiatrists (20 percent), and other therapists (19 percent).

V. Health Care Research and Development

- The Louisville metro ranks in the bottom half of similar metro areas for health care research and development. Metro Louisville contains 37 scientific research & development establishments while similar metros have between 31 – 176 establishments with an average of 70.4 establishments (**Figure 36**). Even after accounting for population size, metro Louisville contains 2.96 scientific research establishments per 100,000 residents, which is below the national average of 5.55 scientific establishments per 100,000 residents (**Figure 37**).
- However, the Louisville metro has increased the number of pharmaceutical & medical manufacturing establishments from zero in 2004 to four in 2012. Similar metro areas have an average of 7.1 pharmaceutical & medical manufacturing establishments.
- Currently, the medical equipment & supplies industry in metro Louisville employs 1,036 employees within 35 establishments, which is near the median of similar metro areas (**Figure 38**). The average annual pay in this sector is \$55,927 situating metro Louisville above the average of \$51,413 among similar metros in light of a decrease of 12.8 percent from 2002 – 2012 (**Figure 39**).
- Private businesses have been awarded 13 SBIR-STTR grants in 2012 totaling \$5.8 million, placing metro Louisville near the median of comparable metro areas.
- Public research generated at the University of Louisville has maintained steady in recent years. The University of Louisville has been awarded 123 National Institutes of Health (NIH) grants in 2013 totaling over \$47 million. This amount is greater than the University of Tennessee (\$33.8 million), but is lower than the University of Cincinnati (\$65 million) and University of Kentucky (\$77 million). Scholars at the University of Louisville have published 5,964 medical articles placing metro Louisville near the median of 7,109 medical articles with respect to similar metro areas (**Figure 40**).

Summary & Recommendations

The Louisville metro healthcare service sector continues to grow. Since the last report, the healthcare sector has become the single largest employer in the metropolitan area. Established hospital networks such as Norton Healthcare Inc. and Baptist Hospital have made capital improvements reaching the greater suburban areas of the metro. The nursing industry now ranks second among similar metropolitan areas in establishments, revenue, and payroll.

The Louisville metro area still lags in research and development remaining in the bottom quartile of similar metros for manufacturing establishments, research firms, and grants. However, there is a growing pharmaceutical sector that was previously non-existent in the past two studies. Additionally, the University of Louisville continues progress in publicly funded research remaining close to regional public institutions in medical publication and National Institutes of Health grants awarded.

The largest areas of growth remain in non-physician health-related services. Specifically, therapists and home health aides have seen the largest increases in job growth and wages. One observation that differentiates the Louisville metro health-sector versus other similar metros is the ability to generate similar levels of revenue, but carry payrolls in the lower quartile. A potential cause for this observation is the substitution away from higher skilled labor (physicians, researchers) toward lower skilled labor (therapist, home health aides). Some of this substitution effect is due to the demographic composition of the Louisville metro area that ranks below the national average with respect to income per capita and education. The percent of college educated individuals that are 25 years or older is 26.5 percent relative to 29.1 percent for the US and 32.1 percent for other similar metros.

Recommendations

- 1) The Louisville Metro should continue supporting the 55,000 Degree Initiative (<http://www.55000degrees.org/>) to improve educational attainment of the labor force and increase payrolls and productivity in the healthcare sector. The University of Louisville is also expanding efforts to serve the local healthcare sector by providing new degrees in public health at the undergraduate level and an MBA with a health concentration at the graduate level.
- 2) The Louisville Metro should continue areas of excellence in the health service sector, in particular the Nursing Facilities sector where Louisville now ranks second among similar metropolitan areas.
- 3) The Louisville Metro should consider providing additional tax incentives for medical research and manufacturing establishments in order to bolster the currently immature research and development sector. Other programs could include grant writing workshops to increase the number of Small Business Technology Transfer grants.
- 4) To encourage further growth in private research, the Louisville Metro should identify the reasons the new pharmaceutical companies decided to locate in the metro.