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Center for Economic Development
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The Springfield Medical District:

An Analysis of the Medical Industry and its Workers

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- Mercy Medical Center
- New England Orthopedic Surgeons
- Pioneer Valley Cardiology
- Shriners Hospital
- Springfield Medical Associates
- Weldon Rehabilitation Hospital

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EXECUTIVE SUMMARY

The Springfield Medical District is located in the northwest corner of Springfield, bordered by Chicopee to the north, the Connecticut River to the west, and by Interstate 291 to the south. It is home to roughly 315 businesses in the medical and health services industry. Together they employ nearly 10,000 workers, or roughly 13 percent of the City's total employment base. The District is anchored by three major hospitals (Baystate, Mercy and Shriners) that, along with their affiliates, account for roughly 80 percent of all medical employment. Outside of the three major hospitals, most businesses are small practices (e.g. offices of doctors and dentists). Many medical service providers working in the District are self-employed.

Springfield's Medical and Health services industry is also expanding. Although not reflected in the aforementioned employment figures, Baystate Health is currently undergoing a major \$296 million, 640,000 square foot expansion as part of its Hospital of the Future project. It is slated to open in March of 2012. This comes in concert with a flurry of recent spinoff private development activity that has occurred in the district, particularly in the Wason Avenue and Main Street area.

The concentration of the medical industry in the District offers many opportunities for commercial and residential development. However, the City must overcome considerable barriers if it wishes to realize this potential. There is a large potential market for additional shopping, eateries, and other services that cater to medical workers and clients – although few such opportunities currently exist. The dissection of the District by Interstate 91 separates the main commercial district on lower main street from a complex of medical offices along northern Birnie Ave, creating a spatial barrier to pedestrian circulation within the District.

Unlike most occupations, a large percentage of medical personnel also work non-traditional shifts, such as second and third shifts and/or a mix of weekdays and weekends. Part-time and per diem work arrangements are also common. Effective planning must recognize that demand for street level retail will be spread over a longer period (e.g. less of a peak lunch-time rush) and must offer appropriately suited transportation options and commercial amenities that cater to the 24-7 nature of the industry.

There are also potential opportunities to encourage more medical industry workers to live in the District or in surrounding neighborhoods. The District is predominantly residential with a range of housing options that might cater to a variety of tastes. However only a handful of medical personnel actually live in the District, although just under

EXECUTIVE SUMMARY

half live within 5 miles. Those that do are concentrated in relatively low-earning occupations, such as orderlies and maintenance staff. There is a fairly consistent trend – the more one earns, the further they live from the District, with the highly paid physicians and administrators living the furthest away. We estimate roughly \$400 million in aggregate purchasing power of employees who live outside of the City. This means that Springfield fails to capture the indirect economic benefits of its medical industry – the jobs and businesses that are supported by the spending of households.

There are a number of actions that the City of Springfield may consider to realize the full economic potential of its expanding Medical sector. The urban renewal plans that have guided redevelopment in the District for the past 30 years need to be updated. Likewise, zoning in the district better needs to reflect the needs of the expanding health care industry and its workers. For example, many medical offices and ancillary services are located in areas zoned for light-industrial or residential uses. The City may want to encourage more mixed-use development in the district to facilitate more street level commerce that caters to the workers and the guests of the major hospitals and medical offices. These may also be developed with an eye providing the types of amenities that would make the district a more attractive place to live for people of a variety of tastes. While updating its plans for the district, the City may also want to reconsider pedestrian circulation and look for ways to better connect major employers to commercial corridors. As its currently stands, few hospital employees and guest actually leave the medical campuses during their work shift – whether to get a quick lunch or otherwise.

The City should continue working with major employers and real estate developers to encourage more workers to reside in the District and the City. Several of the major employers offers incentives to encourage workers to live nearby. Yet these incentive programs only extend to the lowest paid workers and do not encourage residency across a broad spectrum of workers. But incentives alone are unlikely to be a sufficient motivation for relocation – especially for the high-wage workers for whom the incentive would be a negligible portion of their overall earnings. The area also has to be viewed as a desirable place to live. However, a detailed analysis of housing market is beyond the scope of this study, and more analysis is needed to understand whether there is sufficient demand for housing for medical industry workers in the district, and what types of residential and commercial development would be most suitable for new and existing residents, alike.

INTRODUCTION

Study Purpose

The purpose of the study is to assist planning and economic development professionals in the City of Springfield, Massachusetts to better understand the nature and scope of medical and medical businesses located in the North End “Medical” district and to learn more about the employment, wage, and commuting patterns of medical workers in the District.

Background

In compliance with the U.S. Department of Housing and Urban Development’s now-defunct Urban Renewal Program, the City of Springfield created plans for numerous “urban renewal areas,” including one titled the “North Main Street Urban Renewal Project” created in July of 1980.

The Urban Renewal Program was designed to aid city planners in addressing issues of vacancy, blight and economic depression/non-competitiveness. At the time, the neighborhoods now comprising the Medical District was deemed a “deteriorated mixed-use area” with rampant “residential blight.”¹ Not surprisingly, many of the early plans following the renewal program focused on housing rehabilitation and removing structurally substandard buildings.

While rehabilitation and blight removal remain important targets of redevelopment efforts, subsequent plans have focused on the redevelopment of the area as “an economic development resource.”² Planning efforts during the past three decades also have sought to strike a balance between meeting the long-range comprehensive planning objectives of the city with efforts to attend to blighted, vacant, and underutilized parcels and buildings. These efforts have either sparked or aided in several major redevelopment projects and positive land use change in the District.

THE UMASS AMHERST

CENTER FOR ECONOMIC DEVELOPMENT

The Center for Economic Development at University of Massachusetts-Amherst is an applied research and community-oriented technical assistance center.

Housed in the [Department of Landscape Architecture and Regional Planning](#), the Center's role is to provide technical assistance to communities and other not-for-profit entities interested in promoting economic development, to undertake critical community-based and regional studies, to disseminate information on the state of the economy, and to enhance local and multi-community capacity for strategic planning and development.

For more information on the Center for Economic Development please visit www.umass.edu/ced/ or call Dr. Henry Renski at 413-545-3796.

¹City of Springfield North Main Street Urban Renewal Project Plan, August 1980.

²City of Springfield North End Industrial Park Urban Renewal Project Plan, May 1983.

This study provides new data and insights to the Springfield Office of Planning and Economic Development so that it may continue cultivating growth within the District, responding to industrial, economic and demographic changes, and proactively envisioning a successful future for the neighborhoods of the North End. The motivation behind this study lies in recognizing the vast economic potential of the medical industry in Springfield – both as an economic engine in its own right, but also as a catalyst for commercial and residential neighborhood revitalization. The Medical District is home to three major hospitals: Baystate, Shriners and Mercy, not to mention hundreds of medical and dental offices, private practices, and other supporting structures.

Outline

Our study consists of three major sections. The first section provides a comprehensive audit of all medical offices and related businesses in the District, using information collected from electronic business directories combined with information collected directly from major employers. Our goal was to provide an accurate estimate of businesses and workers that are either directly or indirectly connected to the medical industry and its ancillary services as of the summer of 2011. In developing this inventory, we took great care to avoid double-counting physicians and others who may be affiliated with one or more of the larger hospitals while also operating a private office within the District. The second section profiles employees of three major hospitals in the District – Bay State, Mercy and Shriners Memorial – as well as a small number of other relatively large medical practices. The data on employee characteristics was provided by the human resources/personnel offices of each employer and reports data on earnings, primary occupations, shift (day, night, etc.), and work status (i.e. full-time, part-time, etc.) . The final section analyzes the residency patterns of Medical District workers, using the same database compiled for the employee profile. We sought to understand the extent to which hospital employees either lived within the Medical District, the City of Springfield, or commuted in from elsewhere. This analysis also profiles the characteristics of workers based upon where they live, whether by community or by how far they live from the Medical District.

THE SPRINGFIELD MEDICAL DISTRICT

The Medical District (“the District”) is composed of multiple small neighborhoods – mainly Springfield’s North End – covering more than 1,500 acres and includes 2,837 individual parcels. The District is bisected by Interstate 91 from north to south, and bordered by Interstate 291, Armory Street, Wason Avenue, and Hamburg Streets (Figure 1).

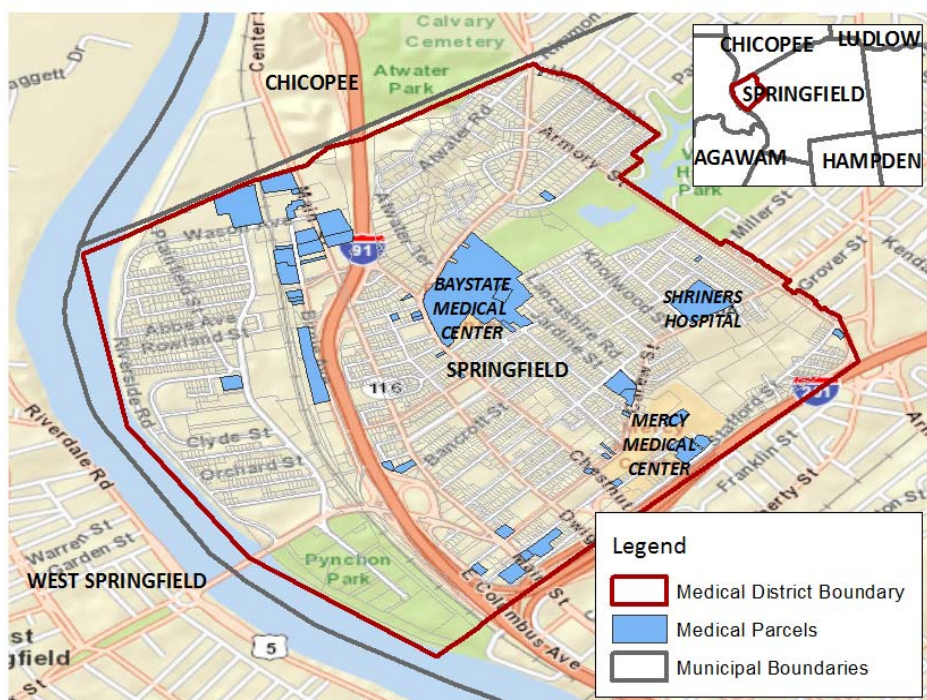
The District is predominantly residential, with residential zoned properties accounting for 81 percent of all parcels, although only 62 percent of the total land area (Figure 2). There are a variety of housing options available within the District. Forty-eight percent of residential parcels are single-family. A near equal share (47 percent) are designed to accommodate two- and three-family units. The remaining 3 percent of parcels are apartment buildings and other residential complexes capable of accommodating four or more units. Housing is very affordable. The median assessed value for a single-family dwelling is \$125K, although roughly three percent of all single-family units are valued in excess of \$300K.

The District also has an abundance of public green space with the Connecticut Riverwalk and Bikeway and Van Horn Park just to the east. However, the District has relatively few stores, restaurants, or other services targeting resident or commuter needs. Less than two percent of parcels are described as predominantly retail or service oriented (e.g. restaurants, stores, shopping centers, auto repair, banks, and gas stations).

VALUE FOR PLANNING AND POLICY

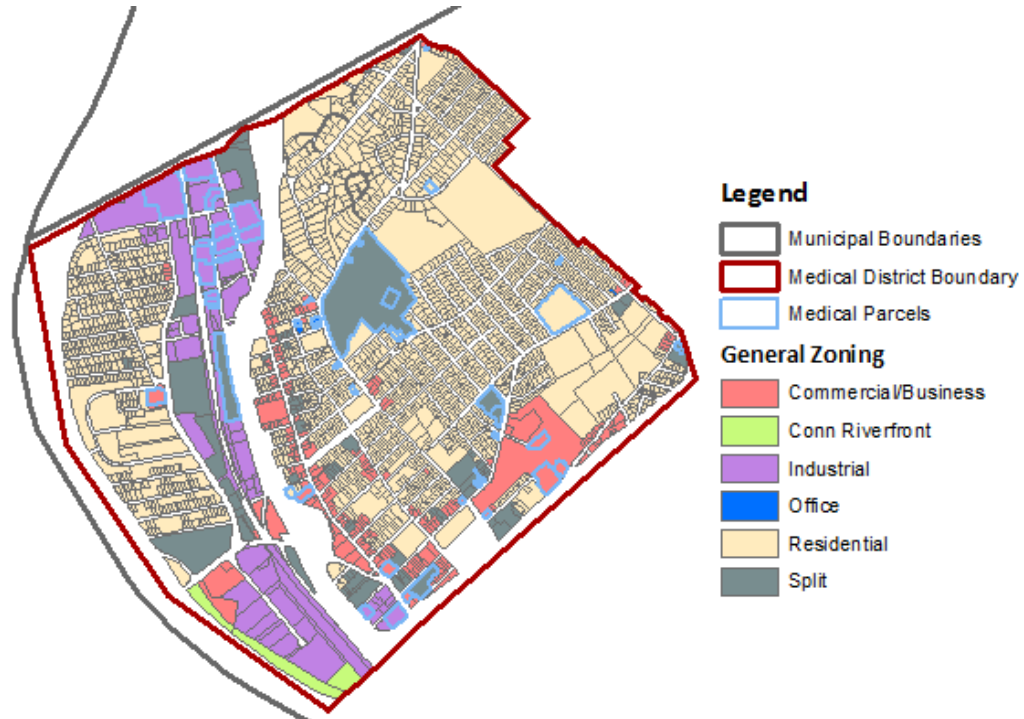
The blend of single and multi-unit private residences close to major employment centers provide an opportunity to market the District to medical workers. Yet, there are relatively few stores, eateries, or other commercial venues in the District. Attracting medical workers to the District would likely require the development of additional amenities targeting a broad range of tastes.

Figure 1
The Springfield Medical District



THE SPRINGFIELD MEDICAL DISTRICT

Figure 2
Parcel Zoning in the Springfield Medical District



Medical establishments operate on 48 parcels, representing less than two percent of all parcels in the District (Figure 2). The low share of parcels with health care businesses reflects the overall residential character of the District as well as the heavy concentration of medical offices — often with multiple practices co-locating in a single building where they can economize on specialized workspaces, equipment and shared administrative and support staff. Roughly one-third of these parcels are zoned for light industrial use, with the remaining parcels near evenly split between commercial/business, residential, and split-use designations.

Baystate Medical Center lies at the heart of district with Mercy and Shiners located closer the District's eastern corner. There are few commercial businesses that immediately abut the three major medical centers. However, the primary commercial strip (i.e. Main Street) runs just a few blocks to the west of Baystate. There is also a large concentration of medical offices and suites in the northwestern corner of the District along Birnie Avenue and Route 116. This corridor features access to transit, on-street parking, and private parking lots, but is physically isolated from the rest of the District by Interstate 91 — posing a considerable challenge to promoting pedestrian circulation and street-level commercial development.

AN INVENTORY OF MEDICAL BUSINESSES

Summary

This section describes the businesses that comprise the broader health care industry located within the Medical District. There are nearly 315 individual business establishments located in the District that are members of the medical and health services industry. They employ nearly 10,000 workers, accounting for nearly 13 percent of the City's total employment base. Most medical businesses are small – 90 percent have fewer than five employees, including many self-employed individuals. Although large in number, these small practices are dwarfed by the three major hospitals and their affiliates, which collectively account for nearly 80 percent of all medical industry employment.

Data and Methods

We began our inventory of Medical businesses in the Medical District by compiling information from the ReferenceUSA electronic database. ReferenceUSA is a subscription-based electronic business directory available to researchers at the University of Massachusetts Amherst. It includes basic business attribute and contact information, such as street addresses and zip codes, detailed industry (NAICS) codes, contact information, as well as range estimates of employment and payroll expenditures.

First we identified industries that were most likely to include businesses that are part of the medical sector. We followed a rather broad definition of the medical sector, including not only hospitals and offices of physicians and surgeons, but also dental offices, offices of other health care specialists (e.g. chiropractors, optometrists, and podiatrists), physical rehabilitation services, medical laboratories, etc. Our inventory also includes businesses that are specialized suppliers to the medical industry (such as prosthetics manufacturing) as well as other services that serve the general physical and mental welfare of the population, such as clinics, family planning services, and drugs and alcohol addiction treatment centers. A full list of the industries covered by our study is provided in Appendix A.

The preliminary data set was then refined to include only businesses with physical addresses located within the District boundaries. This involved matching the street address listing in ReferenceUSA to a digital parcel map of the District provided by the City of Springfield Office of Planning & Economic Development . Each business was matched to an individual parcel, which was then verified through a

AN INVENTORY OF MEDICAL BUSINESSES

street-level visual inspection. As a final step we individually reviewed each record remaining in the dataset, consolidating those where multiple records existed for the same practice or establishment, and following up with specific businesses to confirm the accuracy of the data.³

How many medical businesses and workers are in the District?

We identified approximately 315 medical related business establishments located within the Springfield Medical District (Table 1).⁴ Together they employ roughly

9,622 people, accounting for nearly 13 percent of the total employment of the City of Springfield, and approximately half of the city's health and social assistance workforce.

Table 1
Establishment and Employment Summary

Establishments	Establishments		Employment	
	#	%	#	%
Total medical establishments	315	100%	9,622	100%
Non-employers	117	37%	117	1%
Employer firms	198	63%	9,505	99%
less than 5 employees	105	53%	306	3%
5 to 9 employees	35	18%	260	3%
10 to 24 employees	34	17%	473	5%
25 to 29 employees	13	7%	438	5%
50 to 100 employees	3	2%	214	2%
more than 100 employees	8	4%	7,814	81%
Average establishment size			31	
Median establishment size			3	

Of these 315 establishments, just over one-third are non-employer firms – essentially businesses without any payroll employees. This makes sense when one recognizes that many physicians, rehabilitation specialists, psychiatrists and other medical and wellness practitioners are, in fact, self-employed individuals. The remaining 198 businesses (63 percent) are payroll employer firms. These payroll firms account for

³ We contacted, by telephone, businesses with either (1) \$2.5M or more in annual payroll expenditures or (2) 100 or more total employees listed in ReferenceUSA.

⁴ Among these 315 establishments are several separately listed centers that are closely affiliated with the largest hospitals. For instance, Life Laboratories and Weldon Rehabilitation Hospital are affiliated with Mercy Medical Center. The main campus of the Baystate Medical Center is separately listed from Baystate Family Practice, Baystate Administrative Services, and Baystate Health Partners.

AN INVENTORY OF MEDICAL BUSINESSES

Table 2

Top 10 employers in the Springfield Medical District

Establishment	Address	Zip	Employees	Annual Payroll	Industry
Baystate Medical Center	759 Chestnut St	01107	4,718		General medical and surgical hospitals
Mercy Medical Center	271 Carew St	01104	1,499		General medical and surgical hospitals
Baystate Medical Practices	759 Chestnut St	01107	703		General medical and surgical hospitals
Shriners Hospital For Children	516 Carew St	01104	234	> \$10 mi.	General medical and surgical hospitals
Baystate Administrative Services	759 Chestnut St	01107	211		General medical and surgical hospitals
New England Orthopedic Surgeons	300 Birnie Ave	01107	196	> \$10 mi.	Physicians and Surgeons
Life Laboratories (Mercy)	299 Carew St	01104	134	\$2.5 to 10 mil.	General medical and surgical hospitals
Weldon Rehabilitation Hospital	233 Carew St	01104	119		General medical and surgical hospitals
Springfield Medical Associates	2150 Main St	01104	97	\$2.5 to 10 mil.	Physicians and Surgeons
Carlson Recovery Center	471 Chestnut St	01107	60		Alcoholism Information & Treatment Centers

the vast majority of medical employment in the District (99 percent).

The average establishment has 30 employees, but the size distribution is highly skewed by the presence of a few, very large, employers. The typical (or median) establishment is actually quite small, hiring only three employees per establishment. The largest employer (Baystate Medical Center) alone accounts for roughly 43 percent of the health care employment in the District (Table 2). Baystate’s share rises to over 52 percent when affiliated establishments, such as Baystate Medical Practices and Baystate Administrative Services, are combined.

VALUE FOR PLANNING AND POLICY

Initial strategies to engage major employers in the Medical District might target the few establishments that employ the greatest share of workers in the District, in order to assess workers’ economic impact, community needs, and other planning concerns.

Payroll expenditures

Another way to gauge the relative economic contribution of an industry and its workers is to examine the size of its payroll. This essentially represents the aggregate ‘purchasing power’ of medical industry employees in the District – an important number given the City’s desire to tailor its commercial redevelopment efforts at tapping into the consumer power of health care workers in the District.

AN INVENTORY OF MEDICAL BUSINESSES

Table 3
Payroll Expenditures in Firms

Expenditures	Number	Percent
Total firms reporting*	106	
Less than \$100,000	3	3%
\$100,000 to \$250,000	13	12%
\$250,000 to \$500,000	14	13%
\$500,000 to \$1 Million	25	24%
\$1 to \$2.5 Million	30	28%
\$2.5 to \$10 Million	14	13%
More than \$10 Million	7	7%

**Payroll information in ReferenceUSA is only reported at the firm level and not individual establishments. There are also some firms that do not report any payroll information.*

Unfortunately, ReferenceUSA is rather limited in the detail and scope of the payroll information it reports. It only provides annual payroll information for firms and not for independent or non-employer establishments. Furthermore, roughly one-third of firms report their total payroll in ranges as opposed to a point estimates, making it impossible to calculate the aggregate spending power of medical workers. Lastly, a small number (11) of firms reported no payroll information at all.

Given these caveats and limitations, we provide a summary of the payroll information that is available (Table 3), recognizing that this is a gross underestimate of the total payroll earnings of District workers.

Establishments & employment by industry

In addition to providing employment levels and payroll expenditures, ReferenceUSA also reports highly detailed

industry codes of establishments according to the North American Industrial Classification System (NAICS). As explained in the methods section, we used these codes as the initial filter for determining whether or not a business was part of the medical industry. A total of 29 unique NAICS-based codes were recorded for 309 establishments. For unknown reasons, establishments closely affiliated with the major medical centers were not coded. Therefore, we assigned them the code for General medical and surgical hospitals (NAICS 622110). The full table of employment and number of establishments by industry is provided in Appendix C.

The top four industries account for 77 percent of all establishments, all associated with offices of medical practitioners: physicians and surgeons, nurses-practitioners, physician assistants, and physical therapists (Figure 3). But as these practitioner offices are typically rather small, these top four industries only account for 17 percent of all medical employment. By contrast, the employment distribution is much more heavily skewed, with the top four industries account for 96 percent of all employment (Figure 4). This is because of the heavy concentration of workers in the three major medical centers. General medical and surgical hospitals alone accounts for nearly 80 percent of total medical employment. Offices of physicians & surgeons follows as a distant se-

AN INVENTORY OF MEDICAL BUSINESSES

Figure 3
Establishment Share of Top 10 Industries

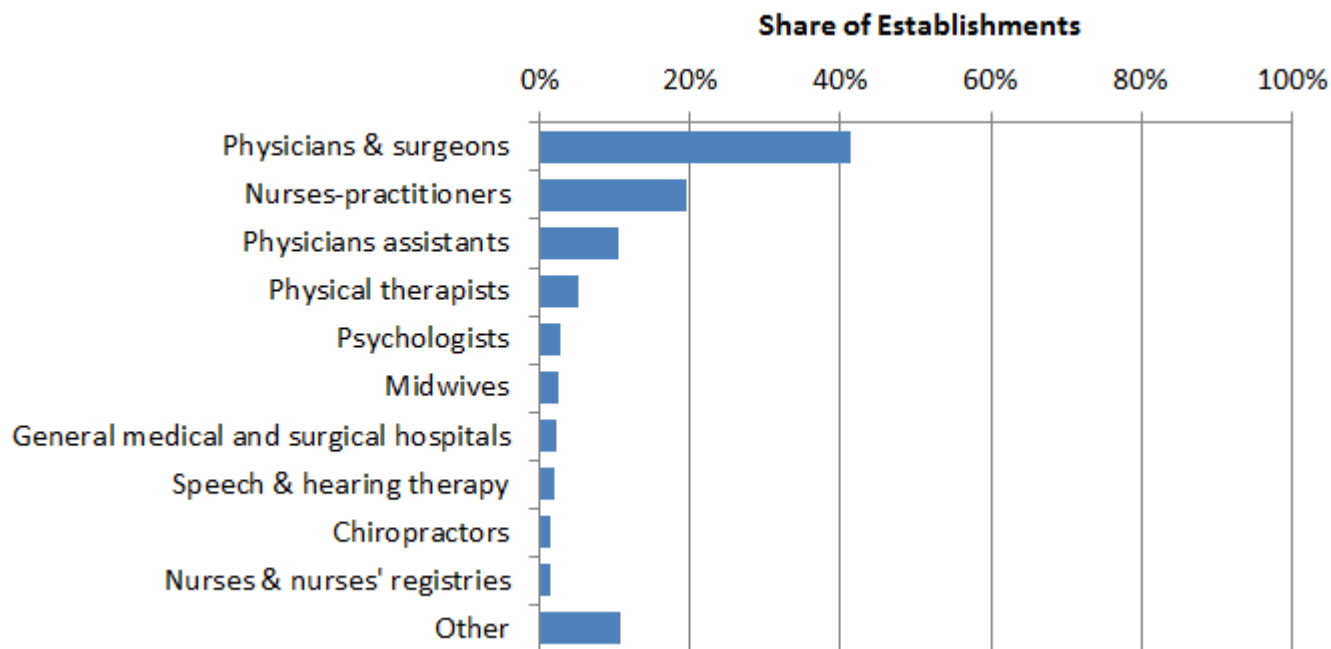
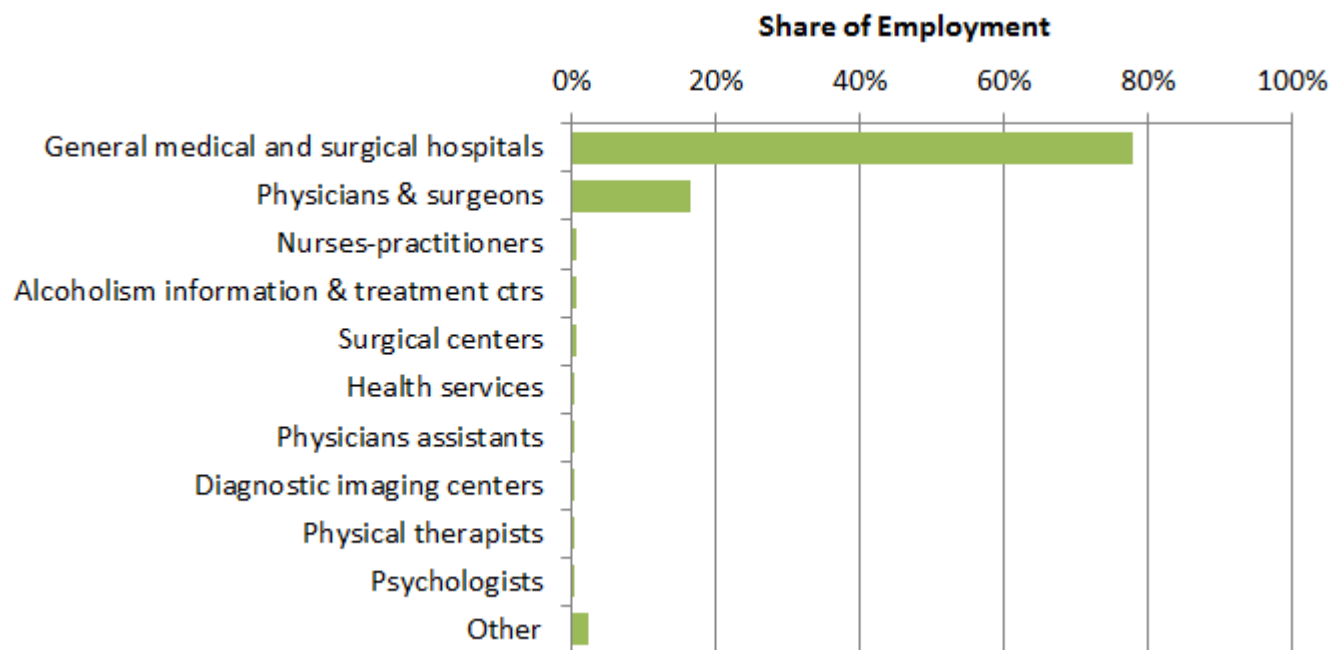


Figure 4
Employment Share of Top 10 Industries



WORKER CHARACTERISTICS

Summary

The previous section described the characteristics of health care and related businesses in the Springfield Medical District. This section looks at their workers. Although the Medical industry invokes perceptions of highly skilled and highly-paid physicians, surgeons and hospital administrators, a large portion of the workforce is comprised of people making more modest incomes: nurses, orderlies, technicians, and custodial staff. The average worker earns \$52,000 per year, but this average hides considerable variation with the average administrator making more than three times that of the average custodian. Many medical personnel also work non-traditional shifts, such as second and third shifts and/or a mix of weekdays and weekends. Nursing staff, in particular, commonly work 12 daily shifts but for fewer days per week. Part-time and per diem work arrangements are also common. This means that effective planning must offer appropriately suited transportation options and commercial amenities that cater to the 24-7 nature of the industry.

Methods and Scope

Our primary data source in the business establishment profile was the ReferenceUSA database, which contains no information describing individual employees other than

their aggregate payroll. To examine the characteristics of medical industry employees we developed a smaller data set compiled directly from a group of the largest employers in the Medical District. The research team selected 13 major employers for study, based on employment and payroll levels. Because employment is heavily concentrated in a small number of large businesses, or analysis includes the vast majority of medical workers in the District – although it may not be particularly representative of the workers of the smallest establishments or self-employed professionals.

We worked with human resources and government/community relations departments to collect anonymous employee data covering wages, home

Table 4
Coverage of the Employees Data Set

Employees	Number	Percent
Total employees in data set	8,942	100%
Home zip code	8,942	100%
Occupation	8,521	95%
Years of Service	8,275	93%
Shift	8,275	93%
Employment Status	8,279	93%
Hourly Wage Rate	7,886	88%
Annual Earnings	8,338	93%

WORKER CHARACTERISTICS

address, years of service, occupations, work shifts and full v. part time status of each worker (Table 4). While we requested the same type of data from each business, some were able to only provide some of the requested information or provided incompatible data. Therefore, some measures included in our analysis cover a larger or smaller universe of workers, depending upon the specific information each business was able to provide. As a result, the percentages described in our analysis are based on the total number of workers for which valid data was obtained, and not from the total number of workers in our dataset. For example, our dataset includes a total of 8,942 workers, however, only 8,521 (or 95 percent) workers have useable occupation data. Therefore, when we calculate the percentage of workers in specific occupations we divide the number of workers in each occupation by the total number of workers for which we have occupation data (i.e. 8,521).

We offer two measures of employee earnings, median hourly wages and estimated annual earnings – both reported in 2011 dollars. Per diem employees are excluded from the calculation of annual earnings, but are included in our estimates of median hourly wages. Per diem employees do not maintain regular schedules and may earn the bulk of their income from other businesses, and thus their annual earnings are typically much less than their part-time and full-time counterparts. When the employer provided only either hourly or annual earnings, we harmonized the estimates across employers by assuming a standard 50-week labor year. This allows us to compare hourly wages and annual earnings across different types of employees (full-time, part-time) and employees in different occupational categories.

Employment Status

The medical industry employs a mix of workers on a full-time and part-time basis (Table 5). In addition to these benefitted employees, many medical practices, hospitals, and other medical providers hire per diem employees on a seasonal or ad-hoc basis or to meet immediate or changing needs. Typically, these per diem employees are not provided with fringe benefits such as leave or time off, health insurance, or other employee programs. At the time of our study, there were 123 workers characterized as temporarily “on leave.”

More than two-thirds of workers in our data set work full time, although part-time and per diem workers also make up a substantial portion of the medical workforce (Table 5). These part-time and per diem workers are substantively different than the full-time

WORKER CHARACTERISTICS

Table 5
Employee Work Status, Summary

Employee Type	Number	Percent	Median Hourly Wage	Median Annual Earnings	Median Years of Service
All employees	8,279	100%	\$28.61	\$52,000	7.8
Full-time	5,566	67%	\$31.07	\$56,229	7.6
Part-time	1,324	16%	\$23.49	\$38,767	8.8
Per diem	1,266	15%	\$17.10	N/A	3.3
Workers on leave	123	1%	\$20.85	\$42,300	N/A

employees. For one, they tend to make less money – at least from the portion of their income earned at a single employer in our sample.⁵ The median earnings of Medical District employees is \$52,000, with full-time workers earning almost \$20,000 more than part-time workers. This is more than \$15,000 higher than the state’s median individual income of \$37,197.

The average hourly wage, which accounts for aggregate differences in number of hours worked, is also noticeably higher for full-time employees than part-time and per diem workers. A full-time employee’s median hourly wage (\$31.07/hr.) is 32 percent higher than that of a part-time worker (\$23.49/hr.). In turn, the part-time worker’s median hourly wage is 37.3 percent higher than that of the per diem worker (\$17.10/hr.).

There are also differences by employee tenure, i.e. the median number of years each worker has been with their current employer. Tenure is also sometimes used as a proxy for employee turnover and of job security – although many other factors, such as the age of the labor force, factor into years of service as well. Surprisingly, the typical part-time worker has been with their employer for longer than the typical full-time worker, although both have far higher tenure levels than per diem workers. Considering the tentative nature of per diem work, a median tenure of over three years seems surprising high. This may be due to the anemic labor market resulting in a lack or more stable job prospects. Or it may be due to a self-selection process where workers that like the flexibility of per diem work stick with it for several years, while those that do not leave early and thus are less likely to be represented in our measure.

⁵ We cannot tell how much they earned while working for other businesses, or whether the same individual worked for more than one medical business in the District.

WORKER CHARACTERISTICS

Work Shift

Unlike most other industries, the medical and medical industry provides 24/7 care and service with a substantial number of its employees working in ‘non-traditional’ shifts – especially for the largest hospitals and in-patient care facilities.

Generally, most workers maintain a traditional “first shift” workday, although many nursing staff are assigned a 12-hour shift (7 AM to 7 PM). Just over one in four workers in our sample are working second-, third-, or ‘other’ shifts (Figure 5).⁶ This is likely to be slightly higher than the average for all medical workers, because workers in smaller businesses were not covered by our survey and are more likely to work standard business hours.

If we cross-tabulate shift by work status, we find that part-time workers are noticeably more likely to work non-traditional shifts (Figure 6). Per-diem workers are less likely than either full-or part-time workers to work non-traditional shifts. Although there are a relatively larger number of per diem workers falling into the ‘other’ category that often include weekend, holiday and seasonal shifts.

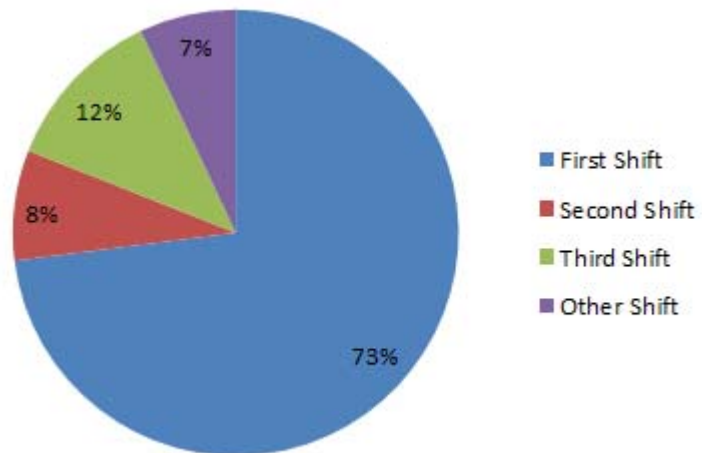
Medical Occupations

The final portion of this section provides an occupational profile of medical workers in the Springfield Medical District. The occupation mix of workers is quite diverse,

VALUE FOR PLANNING AND POLICY

Understanding the number and type of workers commuting to and working in the District outside of the typical “first shift” can help planning staff align community services and facilities with worker needs. For example, a district with a sizable group of overnight workers with limited mobility (e.g. no car) may benefit from the expansion of public transportation services during non-standard commuting hours.

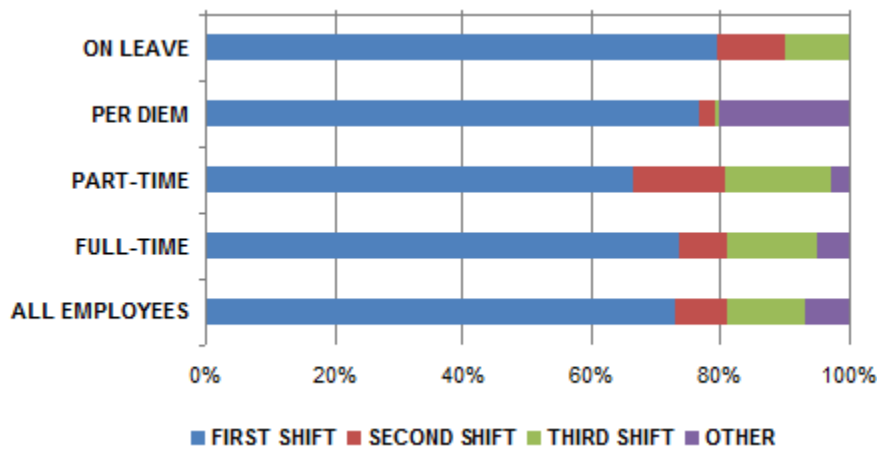
Figure 5
Share of workers by shift



⁶ “First shift” denotes traditional business hours (approximately 8 AM to 5 PM), “second shift” denotes a midday to evening shift (approximately 3 PM to 11 PM) and “third shift” denotes an overnight shift (approximately 11 PM to 8 AM). Twelve-hour nursing shifts were assigned to first, second, or third shift based on when the bulk of the work takes place. “Other shifts” includes weekends or shifts outside of typical shift conventions.

WORKER CHARACTERISTICS

Figure 6
Work shift by status



with an equally diverse salary mix (Table 6). Physicians, surgeons and other non-physician medical staff most commonly associated with the Medical Industry together comprise only 14 percent of all workers. More than half of all workers are represented by two of the eight occupational categories: Nursing (24.7 percent) and Technicians and Professionals (33.9 percent).

While medicine is perceived as a highly lucrative career, the bulk of the medical workforce make decent, but rather modest earnings – just over \$40,000 for technicians, \$66,000 for nurses, and \$34,000 for clerical staff. Managerial staff are the most highly paid, but represent less than four percent of the workforce. Managerial staff also have the longest tenures at their current employer, suggesting some internal movement through the managerial ranks. The non-physician medical staff and physicians also earn fairly high median wage of just under \$80,000 per year, although this is likely to an underestimate for some who also earn

Table 6
Worker Characteristics by Occupational Category

	Number	Percent	Median Hourly Wage	Median Annual Wage	Median Years of Service
All employees	8,521	100%	\$28.61	\$52,000	7.8
Technicians and Professionals	2,885	34%	\$23.04	\$41,492	7.7
Nursing	2,107	25%	\$39.42	\$66,512	9.9
Clerical	925	11%	\$17.45	\$34,216	8.5
Facilities and Support	794	9%	\$14.27	\$28,683	5.8
Physician or Surgeon	699	8%	\$68.92	\$77,837	2.9
Non-Physician Medical	547	6%	\$42.64	\$78,700	6.0
Management and Administration	334	4%	\$47.55	\$97,450	13.1
Aides/Orderlies	230	3%	\$14.50	\$27,444	5.7

WORKER CHARACTERISTICS

their income from private practice. Particularly surprising, is the very brief median service length for physicians and surgeons, although this may be due to medical students in residency at the major hospitals. At the low end of the earnings profile are the aides/orderlies and facilities and support staff who represent 12 percent of the workforce and whose average earnings are less than \$30,000 per year.

Some occupations are overrepresented during certain shifts (Table 7). A full 27 percent of the workforce works a non-traditional shift (something other than the first shift). Aides/Orderlies and Nurses are the most overrepresented, with 42 percent of all aides/orderlies and 40 percent of all nurses working afternoons, evenings, or other unconventional shifts. Management and non-physician medical staff are most likely to work conventional shifts.

The research team next examined whether certain types of occupations were more prevalent among full-time, part-time, and per diem workers. Keeping in mind that the largest number of workers are full-time, regardless of occupation, we examine the share of workers in each occupation separately for part-time, full-time and per-diem workers (Figure 7).

Physicians and surgeons and management occupations are predominantly full-time, with relatively few working either part-time or on a per diem basis. Nurses, by contrast, make up a substantial share of all part-time employees. Nurses comprise 34 percent of the part-time workforce relative to only 20 percent of the full-time workforce. Technical and professional workers are overrepresented among per diem workers – presumably because their type of specific technical ex-

VALUE FOR PLANNING AND POLICY

The wide range of annual earnings among medical workers may provide an opportunity to develop a range of housing options or other community amenities to attract residents from a variety of occupations and income levels.

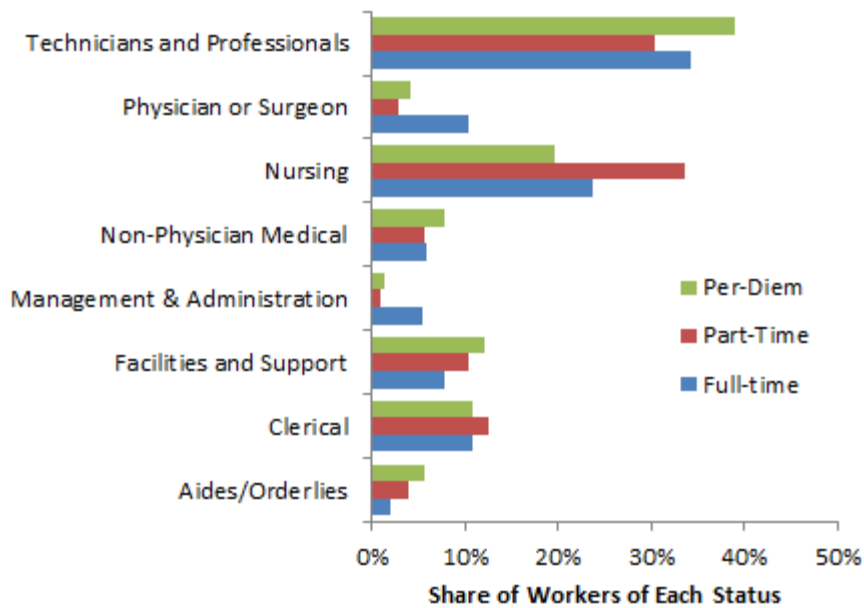
Table 7
Share of Occupations by Work Shift

	First Shift	Second Shift	Third Shift	Other Shift
All Employees	73%	8%	12%	7%
Aides/Orderlies	58%	15%	14%	13%
Clerical	79%	8%	6%	7%
Facilities and Support	70%	19%	6%	5%
Management and Administration	90%	4%	4%	3%
Non-Physician Medical	92%	4%	2%	1%
Nursing	60%	6%	27%	7%
Physician or Surgeon	79%	0%	1%	21%
Technicians and Professionals	76%	9%	10%	5%

WORKER CHARACTERISTICS

expertise is only needed on a limited and ad-hoc basis. We also find a higher share of non-physical medical workers and facilities and support workers among per diem workers than compared to full-time employees.

Figure 7
Share of Workers Employment Status by Occupation



LOCATION ANALYSIS

Summary

This final section examines the commuting patterns of healthcare workers in Springfield's Medical District. Only a fraction live within the Medical District, and those that do are concentrated in relatively low-earning occupations, such as orderlies and maintenance staff. A larger share lives within the City of Springfield, but these workers also tend to be among the less lucrative medical professions. There is a pretty consistent trend that the more one earns, the further they live from the District. While certainly beneficial to the larger region, this means that Springfield fails to capture the indirect economic benefits of its medical industry – the jobs and businesses that are supported by the spending of households in their own neighborhood.

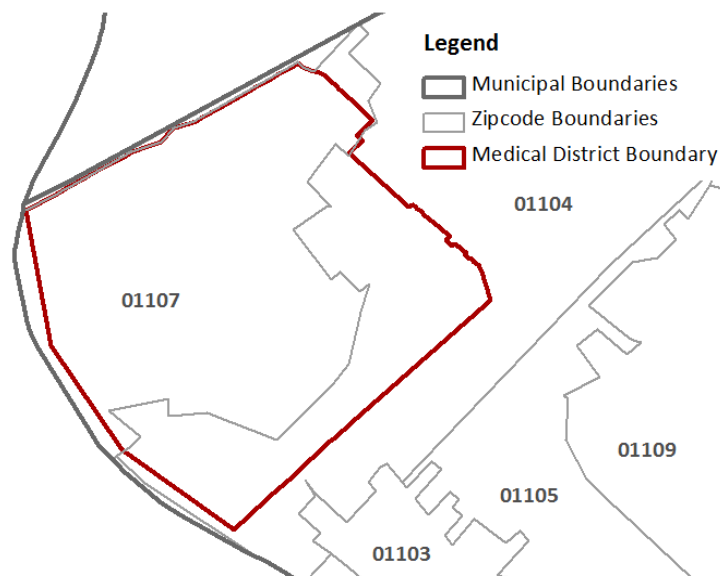
Methods

Along with the worker characteristics reviewed in the previous section, we also collected information on the place of residence of the employees of the major medical practices and health centers in the District. Our locational analysis is based upon the town/city and state of each worker's primary residence as well as a distance based analysis derived from the zip code of each worker's primary residence. In both, we distinguish

workers living inside the District, identified as workers whose residential zip code was "01107."⁷ As shown on Figure 8, this is only a rough approximation of the actual district boundaries, which also includes a small portion of zip code "01104."

For the distance-based analysis, we collected usable zip code information for 8,275 workers, which were then matched to the latitude and longitude of that zip code's geographic center (i.e. its centroid), and displayed on a regional map. Next, we created a series of distance buffers

Figure 8
Zip Codes in the Springfield Medical District



⁷ There were also three workers listed as having the unidentified zip code '01099.' However, their street address was clearly located within the Medical District, and were therefore re-assigned to zip code '01107.'

LOCATION ANALYSIS

Table 8

Summary profile of Medical District workers by city/town/state of residence

City/Town	State	Employees		Median Hourly Wage	Median Annual Earnings ⁸	Aggregate Earnings Amount	
		Number	Percent			(000s)	Percent
Springfield Medical District	MA	140	2%	\$15.94	\$33,062	\$4,727	1.1%
Rest of Springfield	MA	1,844	21%	\$17.77	\$35,439	\$62,127	14.2%
Chicopee	MA	871	10%	\$19.82	\$39,828	\$31,495	7.2%
West Springfield	MA	533	6%	\$25.75	\$48,225	\$23,058	5.3%
Westfield	MA	446	5%	\$30.90	\$57,264	\$21,531	4.9%
Ludlow	MA	407	5%	\$26.79	\$48,137	\$17,357	4.0%
Longmeadow	MA	386	4%	\$40.87	\$79,860	\$36,182	8.3%
Agawam	MA	343	4%	\$26.35	\$49,005	\$14,152	3.2%
East Longmeadow	MA	328	4%	\$34.50	\$59,006	\$18,420	4.2%
Holyoke	MA	288	3%	\$26.01	\$52,000	\$12,536	2.9%
Wilbraham	MA	287	3%	\$33.01	\$60,300	\$16,687	3.8%
Feeding Hills	MA	245	3%	\$28.61	\$51,160	\$9,962	2.3%
Belchertown	MA	207	2%	\$34.50	\$57,938	\$10,675	2.4%
South Hadley	MA	193	2%	\$33.00	\$58,968	\$11,216	2.6%
Enfield	CT	172	2%	\$27.59	\$57,000	\$9,566	2.2%
Northampton	MA	165	2%	\$31.00	\$59,500	\$14,124	3.2%
Easthampton	MA	147	2%	\$34.33	\$58,756	\$7,791	1.8%
Southwick	MA	128	1%	\$35.03	\$65,370	\$7,460	1.7%
Hampden	MA	107	1%	\$34.67	\$59,093	\$5,285	1.2%
Monson	MA	103	1%	\$30.28	\$52,593	\$4,428	1.0%
Palmer	MA	103	1%	\$25.00	\$49,758	\$4,170	1.0%
Other Massachusetts		1,085	12%	\$35.57	\$72,162	\$61,988	14.2%
Other Connecticut		364	4%	\$37.80	\$75,795	\$29,124	6.7%
Other New England		29	0%	\$44.72	\$78,905	\$1,906	0.4%
Outside New England		19	0%	\$50.24	\$104,500	\$1,734	0.4%
<i>Total</i>		<i>8,940</i>	<i>100%</i>	<i>780</i>	<i>1,463,623</i>	<i>\$437,699</i>	<i>100%</i>

⁸ Per diem workers are excluded in our calculations of median annual earnings, although they are included in all other measures.

LOCATION ANALYSIS

that dissected the file into concentric bands radiating outward from the Medical District — starting one mile from Medical District, extending outward to 25 miles, measured in 5 mile increments.

Where do Medical District workers live?

Roughly 23 percent of all of people in our sample of Medical District workers are residents of the City of Springfield, although very few (< 2 percent) actually live within the Medical District (Table 8). The commute-shed of Medical District workers is fairly narrow, with Chicopee (which bounds the District to the north) and West Springfield (just across the Connecticut River to the West) particularly well-represented. In fact, roughly two-thirds of all Medical District employees live within Hampden County, with an additional 14 percent living just to the north in Hampshire County. Another six percent of Medical District workers commute across the state border from Connecticut. Most Connecticut in-commuters live in Hartford County (5 percent of the all district workers), although only Enfield, CT appears on our list of the top twenty communities of residence.

The fairly narrow commuting band around the Medical District is even more apparent if we consider the actual distance between the Medical District and each worker’s place of residence (Table 9). Just under half of all Medical District employees live within five miles of the District with more than three-quarters living within 10 miles. Relatively few (5 percent) live beyond twenty-five miles. As we shall see in the sections ahead, longer-distance commuters are substantively different than those living close by.

VALUE FOR PLANNING AND POLICY

Variations among employees in different municipalities or neighborhoods can help inform a variety of planning concerns, such as size and type of housing, community facilities, or transportation options.

Table 9

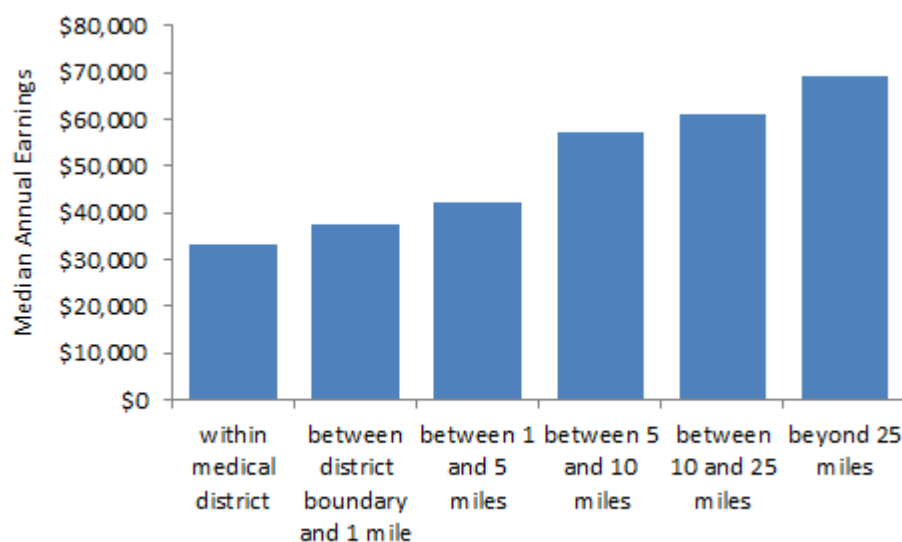
Profile of Medical District workers by distance between place of residence and the Medical District

Distance Band	Employees		Median Hourly Wage	Median Annual Earnings	Aggregate Earnings	
	Number	Percent			Amount (000s)	Percent
within Medical District	140	2%	\$15.94	\$33,062	\$4,727	1%
between district boundary and 1 mile	985	11%	\$19.50	\$37,690	\$36,702	8%
between 1 and 5 miles	3,179	36%	\$22.35	\$42,120	\$136,712	31%
between 5 and 10 miles	2,732	31%	\$31.20	\$57,000	\$140,500	32%
between 10 and 25 miles	1,479	17%	\$35.20	\$60,948	\$90,037	21%
beyond 25 miles	427	5%	\$37.35	\$69,376	\$29,144	7%

Earnings, Location, and Work Status

Even a cursory examination of the median wage and earnings data included in Tables 8 and 9 suggests a direct relationship between earnings and location. Simply put, the further you live away from the District – the more likely you are to earn a higher wage. Workers living within the District make the least of all, followed by those living within one mile of the District, followed by those living between 1 and 5 miles of the District, and so on. This is depicted graphically in Figure 9, which shows that the typical worker living within the District makes just under half (47 percent) as much in median annual earnings as those living beyond the 25 mile buffer. The general trend holds whether looking at annual earnings, which excludes per diem employees, or hourly wages (where per diem employees are included).

Figure 9
Median Annual Earnings by distance to the Medical District



We might expect that employees closer to the hospitals make less money because they are more likely to be part-time workers – but this is not the case. Differences in employee work status explains little of the relationship between distance and earnings. Consider Figure 10, which shows the share of workers by status by their location of residence. In general, we see only slight differences between the share of full/part/per diem workers

living within different distance bands from the Medical District. Next consider Figure 11, which breaks down the relationship between distance and earnings by work status. Here we see the same general linear trend between earnings and distance regardless of full-time, part-time or per diem work status – with the exception of part-time workers beyond the 25 mile buffer who make slightly less than their counterparts living between 10 and 25 miles away from the District.

LOCATION ANALYSIS

Aggregate Earnings by Location

The rightmost columns in Tables 8 and 9 respectively report the aggregate earnings of workers in our sample living within different communities or measured at different distances from the Medical District. Aggregate earnings looks both at the concentration of workers combined with their individual annual salaries and thus provides a rough barometer of the spending potential (or power) of workers in an area.

The spending power of medical workers that live in the District is relatively low, given the relatively small number of people who both live and work in the District who generally make less than workers who commute in from outside the District.

The bulk of aggregate spending power is found among those living from 5 to 25 miles outside of the District. Medical District workers living in the City of Springfield account for roughly 15 percent of the total earnings of all Medical District employees – a respectable share but noticea-

Figure 10

Percent of full-time/part-time/per diem workers by distance between place of residence and the Medical District

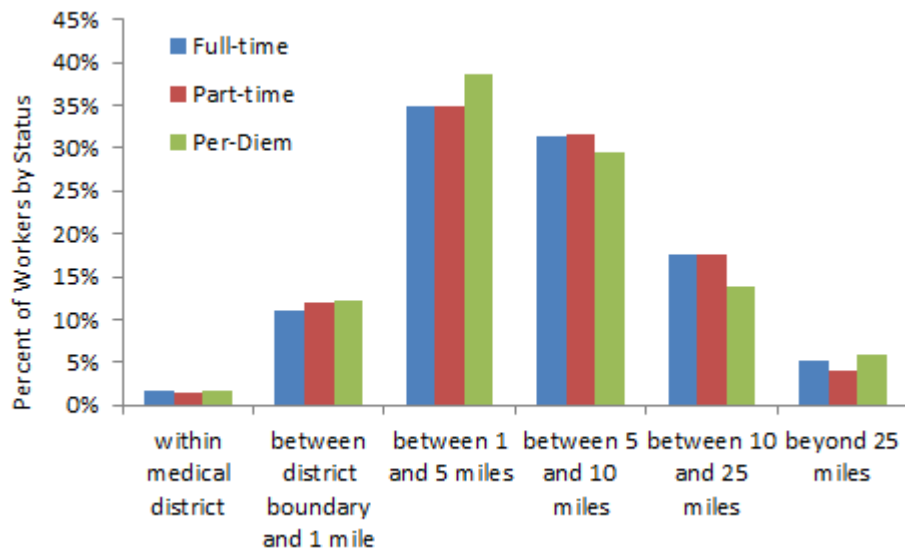
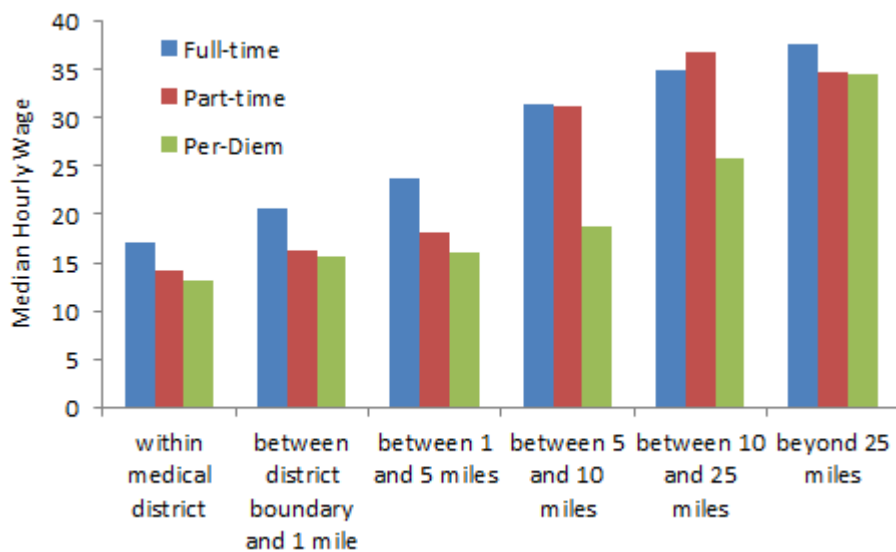


Figure 11

Median Hourly Earnings for full-time/part-time/per diem workers by distance between place of residence and the Medical District



VALUE FOR PLANNING AND POLICY

The limited aggregate purchasing power of workers currently living in the Medical District may limit its attractiveness to new businesses that caters to resident needs (such as grocery and hardware stores). However, there may be new opportunities to attract commerce that catering to commuter needs. An alternative, but complimentary, strategy would focus on increasing the range of housing options to attract residents from a variety of occupations and income levels.

bly less than 21 percent of Medical District workers residing in Springfield. Tapping into the spending power of these workers would more likely be a transfer of income from one neighborhood to another. In light of the limited existing commercial and retail offerings in the District, the nearly \$400 million in aggregate purchasing power of workers living outside the City represents a sizable development opportunity.

Occupation Mix by Distance

A second explanation behind the strong relationship between distance and earnings is that workers in higher earning occupations, i.e. management, doctors and surgeons, are more likely to live outside of Springfield and further from the Medical District. A deeper analysis of median hourly wage by location and occupation confirms the trend. Table 10 presents our major occupation groups sorted low to high by the median hourly wage. The remaining columns show the occupational distribution within different distance

Table 10

Occupational Profile of Medical District workers by distance between place of residence and the Medical District

Occupation	Median Hourly Wage ⁹	between					
		within Medical District	district boundary & 1 mile	between 1 and 5 miles	between 5 and 10 miles	between 10 and 25 miles	beyond 25 miles
Aides/Orderlies	\$13.90	7%	4%	4%	2%	1%	0%
Facilities And Support	\$14.13	16%	14%	14%	10%	7%	5%
Clerical	\$17.11	23%	17%	12%	5%	3%	0%
Technicians And Professionals	\$21.60	3%	2%	3%	5%	5%	6%
Nursing	\$39.26	7%	5%	4%	7%	9%	11%
Non-Physician Medical	\$42.50	4%	17%	20%	30%	31%	33%
Management and Administration	\$47.25	4%	6%	7%	7%	13%	14%
Physician or Surgeon	\$74.28	34%	34%	37%	34%	31%	30%

⁹ Occupational median hourly earnings differs in Table 11 than previously reported in Table 6 because of the differences in the sample of workers with valid zip code information.

LOCATION ANALYSIS

VALUE FOR PLANNING AND POLICY

Fewer than 2 percent of Medical District workers live within the District, close enough to potentially walk to work. However, many of these workers are in the lower-earning occupations and are more likely to work nighttime and irregular shifts. This may influence the both the type of amenities offered, the types of housing targeted for renovation and redevelopment, as well as the types of employees targeted for future 'live in Springfield' incentive programs.

bands. The lowest paying occupations (aides/orderlies, facilities and support personnel, and clerical workers) are more heavily concentrated in the Medical District and its immediately surrounding areas. The share of workers in these districts goes down as distance from the Medical District increases. By contrast, the share of workers in the high wage occupations of non-physician medical and management & administration increases with distance from the Medical District. Physicians or surgeons provides an interesting exception, where shares initially increase with distance from the District, peak at a distance between 1 and 5 miles, and then decline. Nurses, follow the opposite pattern – one where residency patterns initially decline with distance from the District, but then rising.

Community Profiles

As a final compliment to our locational analysis, we offer summary profiles of District workers living by community of residence (Table 11). This includes the Medical District, the remainder of the City of Springfield, the next eight communities with the largest number of Medical District workers, and workers residing in Connecticut.

LOCATION ANALYSIS

Table 11
Summary Profiles of Medical District workers residing in different communities

	Medical District	Rest of Springfield	Chicopee	West Springfield	Westfield	Ludlow	Longmeadow	Agawam	Connecticut	East Longmeadow	Holyoke
Employees (in sample)	140	1,844	871	533	446	407	386	343	536	328	288
Median Hourly Wage	\$15.94	\$17.77	\$19.82	\$25.75	\$30.90	\$26.79	\$40.87	\$26.35	\$34.42	\$34.50	\$26.01
Median Annual Earnings	\$33,062	\$35,439	\$39,828	\$48,225	\$57,264	\$48,137	\$79,860	\$49,005	\$66,227	\$59,006	\$52,000
Aggregate Annual Earnings (000s)	\$4,727	\$62,127	\$31,453	\$23,007	\$21,509	\$17,332	\$36,165	\$14,133	\$38,666	\$18,411	\$12,524
Median Years of Service	6.1	6.3	6.9	6.3	7.8	8.4	6.7	6.3	4.6	9.8	5.3
Shift											
First Shift	75%	66%	66%	70%	67%	65%	71%	65%	71%	68%	64%
Second Shift	6%	12%	7%	6%	7%	8%	3%	9%	6%	3%	7%
Third Shift	8%	11%	12%	11%	15%	10%	5%	11%	7%	12%	14%
Weekend/Other Shift	8%	5%	4%	6%	4%	7%	8%	6%	9%	7%	9%
Work Status											
Full-time	66%	62%	63%	60%	60%	64%	52%	62%	71%	58%	69%
On Leave	1%	2%	2%	2%	2%	1%	1%	1%	1%	1%	2%
Part-time	14%	14%	12%	16%	17%	13%	17%	15%	11%	18%	13%
Per diem	15%	16%	12%	16%	13%	13%	17%	14%	11%	13%	10%
Occupation											
Aides/Orderlies	7%	5%	3%	2%	1%	3%	2%	3%	1%	1%	2%
Clerical	16%	13%	14%	12%	10%	10%	6%	14%	5%	10%	10%
Facilities and Support	22%	18%	11%	9%	3%	9%	2%	7%	2%	4%	8%
Management and Administration	3%	2%	3%	3%	4%	3%	3%	3%	7%	6%	3%
Non-Physician Medical	7%	3%	4%	7%	7%	5%	7%	3%	10%	5%	6%
Nursing	4%	14%	16%	23%	32%	23%	19%	26%	16%	32%	17%
Physician or Surgeon	4%	3%	2%	7%	2%	1%	30%	3%	20%	8%	13%
Technicians and Professionals	33%	36%	37%	30%	33%	36%	19%	32%	32%	25%	35%

APPENDIX A: REFERENCEUSA DATABASE QUERY

The research team queried the ReferenceUSA database major industry code. All businesses in the Health Services industry were extracted. Additionally, some sectors of the Social Services sector were extracted, including:

Residential Care

- Homes - Cognitive Disability
- Residential Care Homes
- Blind Institutions
- Sheltered Care Homes
- Retirement & Life Care Community Homes
- Homes - Maternity
- Community Care Facilities - Adult Care
- Children's Nursing & Rehabilitation Centers
- Homes - Blind
- Homes for the Handicapped

Social Services (not elsewhere classified)

- Drug Abuse & Addiction Information and Treatment
- Alcoholism Information and Treatment Centers
- Abortion Alternatives Organizations
- Child Abuse Information and Treatment Centers
- Disability Services
- Gambling Abuse/Addiction Information and Treatment
- Handicapped Services and Organizations
- Smokers Information and Treatment Centers
- Medical Management Services
- Suicide Prevention Service
- Breastfeeding Supplies and Information
- Addiction Treatment Centers
- Dependency Information and Help Centers
- Epilepsy Educational Referral/Support Services

In addition to basic company contact information, the following fields were available and selected for inclusion in the data extract:

- Primary NAICS
- NAICS 1
- NAICS 2
- Location employment size range
- Location employment size actual
- Year established
- Firm or individual
- Payroll and benefits expenses

APPENDIX B: CREATING OCCUPATIONAL CATEGORIES

Some medical practices/businesses categorized employees by occupation or function prior to providing the research team with a data file. Others provided employee titles, and the researchers reviewed each record and created logical categories. These categories were reconciled and were appropriately combined or renamed based on a review of the employee's function within the organization.

The following categories were applied to the data set of employee records:

- **Aides/Orderlies:** Includes Orderly, Constant Companions, ED Assistants, HIM Technicians, Intake Coordinators, Lift Team, OR Assistants, Orthopedic Techs Associates, Rehab Aides, Support Associates, Transplant Associates
- **Clerical:** Includes Administrative Secretaries, Access Service Associates, Administrative/Data Coordinators, Billing Coordinators, Coding Specialists, Emergency Service Associates, Financial Councilors, Insurance Verification Representatives Medical Secretary, Operations Analysts, Billing Associates, Practice Associates, Gift Shop Associates. Clerical staff are not likely to hold 4-year college degrees, but may have received specialized training or certification.
- **Facilities and Support:** Generally, includes tradespeople like electricians and plumbers, as well as employees who do not provide healthcare or medical support to patients, such as cafeteria aides and interpreters. Specific positions include Food Service Aides, Bus and Shuttle Drivers, Carpet Installers, Cooks, Custodians, Dining Service Attendants, Environmental Services, Equipment Aides, Maintenance workers, Licensed Groundskeeper, Housekeeping, Various Materials Management positions, Project Workers, Room Service Attendants, Recycling Technicians.
- **Management and Administration:** All VPs and director-level staff persons.
- **Nursing:** Includes any employee with nursing credentials, such as registered nurses and licensed practical nurses.
- **Non-Physician Medical:** Includes employees who are not surgeons, physicians, or nurses, but who provide healthcare services to patients or have an inherently "medical" function. Specific positions include Audiologists, Physician Assistants, Clinical Pharmacists, CNS, Electronic Image Technicians, Hospital Case Managers, Social Worker MSW, Nurse Practitioners, Midwife, Occupational Therapists, Physical Therapists, etc. Note that all social workers and rehabilitation specialists are included in this group, including COTAs, counselors, and HOT team members.
- **Physician or Surgeon:** Any employee listed as physician or surgeon. This group includes interns and residents.
- **Technical Specialists:** Includes employees who appear to require specialized education, training, or credentials to support the entity. Specific positions included in this group are Anesthesia Techs, Application Analysts, Application Engineers, Business Analysts, Cardiac Cath Techs, Clinical Engineers, Child Life Specialists, Dietitians, Clinical Lab Techs, Clinical Research, CT Scan Technologist, Cyto Genetic Technologists, Data Base Administrators, Diet Technicians, Electricians, Electroneurodiagnostic Tech, Endoscopy Techs, Equipment Repair Techs, Exercise Physiologists, Genetic Counselors, Histotechnologists, Rad Techs, Interventional Rad Techs, Lab Assistants, Mammography Techs, HVAC, Polysomnography Tech, Lead Phlebotomy Techs, Reproductive Biologists, Respiratory Therapists, Security Officers, Sterile Processing Techs, IT Training, Ultrasound Techs, Windows Engineers (basically all IT positions). Note that employees in this category may provide both medical and non-medical services to a particular establishment, employer, or practice.

APPENDIX C: MEDICAL DISTRICT EMPLOYMENT AND ESTABLISHMENTS BY DETAILED INDUSTRIES

NAICS	Industry Description	Establishments		Employment	
		Number	Percent	Number	Percent
54171126	Laboratories	1	0.3%	10	0.1%
62111107	Physicians & surgeons	130	41.3%	1,573	16.3%
62121003	Dentists	4	1.3%	19	0.2%
62131002	Chiropractors dc	5	1.6%	15	0.2%
62132003	Optometrists od	1	0.3%	3	0.0%
62133001	Psychotherapists	1	0.3%	2	0.0%
62133002	Pharmacists	2	0.6%	2	0.0%
62134007	Physical therapists	16	5.1%	27	0.3%
62134008	Speech & hearing therapy	6	1.9%	6	0.1%
62139103	Podiatrists	1	0.3%	3	0.0%
62139904	Dietitians	3	1.0%	3	0.0%
62139916	Midwives	8	2.5%	24	0.2%
62139920	Nurses & nurses' registries	5	1.6%	8	0.1%
62139923	Nurses-practitioners	62	19.7%	67	0.7%
62139932	Physicians assistants	33	10.5%	34	0.4%
62139936	Psychologists	9	2.9%	27	0.3%
62149301	Clinics	1	0.3%	9	0.1%
62149810	Surgical centers	2	0.6%	49	0.5%
62151106	Laboratories-medical	2	0.6%	27	0.3%
62151207	Diagnostic imaging centers	4	1.3%	34	0.4%
62161001	Home health service	1	0.3%	10	0.1%
62199921	Health services	3	1.0%	38	0.4%
62211000	General medical and surgical hospitals	7	2.2%	7,508	78.0%
62221001	Mental health services	2	0.6%	17	0.2%
62331206	Residential care homes	1	0.3%	2	0.0%
62419001	Family planning information centers	1	0.3%	13	0.1%
62419013	Referral services	1	0.3%	4	0.0%
62431009	Rehabilitation services	1	0.3%	8	0.1%
81331904	Drug abuse & addiction info & treatment	1	0.3%	20	0.2%
81331905	Alcoholism information & treatment ctrs	1	0.3%	60	0.6%
	Total	315		9,622	

APPENDIX D: EMPLOYEE DATA REQUEST (SAMPLE)

Springfield Medical Industry Study

REQUEST FOR DATA Mercy Medical Center

Thank you for your willingness to assist the City of Springfield and the Center for Economic Development in its efforts to learn more about the employment, wages, and commuting patterns of workers in medical and healthcare businesses in a portion of Springfield's North End.

The research project is designed to help City officials better understand the very significant and positive impact the medical industry has on Springfield. Over the past several decades, segments of the North End have been identified as HUD "Urban Renewal Areas." Planning documents in one of the larger urban renewal areas were most recently updated in 2003. Analyzing current data and potential future trends can enable economic development planners to thoughtfully consider North End redevelopment efforts in partnership with the area's major hospitals and healthcare providers, and to respond to the needs of medical and healthcare sector employees who are based in this particular geographic area.

Please review the request for data below. Your participation will ensure that the research is up-to-date, and accurately reflects employment at Mercy Medical Center and its affiliates. Please supply or verify data through CY2010, or, through the date of data extraction (April 2011).

Please note: This project is being carried out by researchers at the University of Massachusetts Amherst in partnership with the City of Springfield's Office of Planning and Economic Development. Any and all data supplied by Mercy Medical Center or its affiliates will be used in aggregate with (1) data provided by other healthcare institutions and (2) data extracted from ReferenceUSA, a licensed business database.

Any data provided by Mercy Medical Center or its affiliates will be consolidated with the existing data set, and all analyses and findings will be reported at this consolidated level. All data shall be used only for this project, "A study of Springfield Medical Employees and Their Commuting Patterns," to be completed by Summer 2011 for internal consumption by the City of Springfield.

All data shall remain confidential and will be destroyed upon completion of the project. The research team will not request, nor will it accept, any personally identifiable information (such as names, home addresses, or Social Security numbers). Data will not be shared, sold, or traded in any way, shape, or form. The final report shall be the property of the City of Springfield's Office of Planning and Economic Development and the Center for Economic Development.

Please contact Theresa Perrone, Project Manager, with questions or comments.
Email: TPerrone@LARP.UMass.edu
Tel: XXX-XXX-XXXX

(continued)

APPENDIX D: EMPLOYEE DATA REQUEST (SAMPLE)

Researchers seek a data file containing the following pieces of information:

ID (any identification number other than SSN, or simply a sequential record number)
Employee's specific work location (i.e. street address and/or name of practice area)
Employee's title and/or occupational category
Years of service with the organization and/or current age
Employee's home zip code
Employee's shift or work hours
Employee's work status (full-time, part-time, per diem) or %FTE
Annual wage or salary (please specify if dollar amount is with or without benefits)

In lieu of sending a raw data file, Mercy Medical Center may supply separate pieces of data for each of the following items:

Number of employees at Mercy Medical Center whose primary work location is within the study area (see addresses below), identified by occupation or some other reasonable occupational category or code (e.g. "physicians," "hospital administration," etc.).

The study will only analyze data for employees whose work locations are:

Mercy Medical Center - 271 / 299 Carew St.

Weldon Rehabilitation Hospital - 233 Carew St.

Employees of the **Life Laboratories** located at

Mercy Medical Center - 299 Carew Street

Stafford Street Medical Building - 300 Stafford St.

Other Mercy Medical Center programs based at locations within the study boundary.

Earnings. Please supply wage or salary income for each employee. Please indicate the employee's status (full-time, part-time, per diem, etc.)

Commuting patterns. The City is interested in learning where employees in Springfield's North End healthcare and medical industry live, and how far they travel to work. Employee home zip codes for the full study data set will be used in a spatial analysis.

Tenure. It would be useful to understand potential future changes in employment or commuting patterns, defined as total years of service per employee, the year the employee joined the organization, or expected retirement date.

APPENDIX E: BUSINESSES INCLUDED IN THE EMPLOYEE SURVEY

Employer	Address	Employees Reported
Arthritis Treatment Center	3377 Main Street	42
Baycare	338 Birnie Avenue	24
Baystate Administrative Services	759 Chestnut Street	223
Baystate Medical Practices	759 Chestnut Street	816
Baystate Medical Center	759 Chestnut Street	5,460
Ear, Nose & Throat Surgeons of Western	100 Wason Ave. Suite 100	42
Life Laboratories (Mercy Medical Center)	299 Carew Street	134
Mercy Medical Center	300 Carew Street	1,499
New England Orthopedic Surgeons	300 Birnie Avenue, Suite 201	196
Pioneer Valley Cardiology	2 Medical Center Drive, #140	57
Shriners Hospital	516 Carew Street	234
Springfield Medical Associates	2150 Main Street	96
Weldon Rehabilitation Hospital	233 Carew Street	119