

# NEW SKILLS AT WORK

JPMORGAN CHASE & CO.

## GROWING SKILLS FOR A GROWING CHICAGO

STRENGTHENING THE MIDDLE-SKILL WORKFORCE  
IN THE CITY THAT WORKS



CHICAGO

# WELCOME

## CONTENTS

- WELCOME
- 01 ACKNOWLEDGEMENTS
- 02 EXECUTIVE SUMMARY
- 08 INTRODUCTION
- 09 THE OPPORTUNITIES
- 11 OPPORTUNITIES IN  
TRANSPORTATION, DISTRIBUTION  
AND LOGISTICS
- 14 OPPORTUNITIES IN HEALTHCARE
- 17 THE CHALLENGES
- 20 RECOMMENDATIONS
- 22 CONCLUSION
- 23 APPENDIX A – METHODOLOGY
- 24 APPENDIX B – SELECTED  
OCCUPATIONS BY SKILL AREA:  
TRANSPORTATION, DISTRIBUTION  
AND LOGISTICS
- 25 APPENDIX C – SELECTED  
OCCUPATIONS BY SKILL AREA:  
HEALTHCARE

We are pleased to share this skills gap report for the Chicago region. This is one in a series that will examine labor market conditions in metropolitan regions across the United States and in France, Germany, Spain and the United Kingdom, and provide data-driven solutions to address the mismatch between employer needs and the skills of current job seekers. These reports are a key component of *New Skills at Work*, JPMorgan Chase's five-year, \$250 million global workforce readiness and demand-driven training initiative. Communities across the United States are working to rebuild their economies and the good news is that indicators, such as the unemployment rate, tell us we are moving in the right direction. At the same time, we face persistent challenges ensuring that everyone has access to opportunity as economies continue to strengthen and grow.

For JPMorgan Chase, we see an opportunity to reduce the gap between the skilled workforce employers need to be competitive and the training opportunities available to job seekers. This is especially critical for middle-skill jobs – those that require a high school diploma and some postsecondary education and training, but not necessarily a four-year college degree. Aligning workforce training with the skills industries value will benefit job seekers and employers, and contribute to more broadly shared economic prosperity.

One obstacle that policymakers, civic leaders and employers face in solving this problem is the lack of actionable data. Everyone involved – from mayors to educators to employers – needs to understand what skills and competencies jobs require so that community colleges, training providers and high school career and technical education programs can align curriculum and credentials to actual industry needs. Good data can help everyone better target their efforts on key sectors and occupations where jobs – particularly those that pay good wages and offer opportunities for advancement – are going unfilled.

By focusing on the jobs that have opportunities for advancement along a clear career pathway, we can help give workers opportunities for advancement and businesses a steady pipeline of skilled talent that they need. We also need to learn from best practices that are already demonstrating success across communities and industries in the United States and overseas.

This report has been designed with these requirements in mind. We hope the data presented here will support the work under way in the Chicago region's healthcare and transportation, distribution and logistics industries, and encourage additional efforts to build a pipeline of skilled workers for career-building jobs.



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# ACKNOWLEDGEMENTS

JPMorgan Chase & Co. is investing \$250 million over five years in a global initiative to help markets build a demand-driven workforce development system, and to prepare youth and adults for careers in high-demand, middle-skill occupations. To advance this work, we are supporting data analysis in domestic and international markets: Chicago, Columbus, Dallas-Fort Worth, Detroit, Houston, Los Angeles, Miami, New York City, San Francisco, France, Germany, Spain and the United Kingdom.



## JOBS FOR THE FUTURE

JPMorgan Chase deeply appreciates the work of partners in producing this report. **Jobs for the Future** ([www.jff.org](http://www.jff.org)), which is a national partner in the *New Skills at Work* initiative, is serving as the lead intermediary for the U.S. reports. Founded in 1983, Jobs for the Future works to ensure that all under-prepared young people and workers have the skills and credentials needed to succeed in our economy, by creating solutions that catalyze change in our education and workforce delivery systems. We are especially thankful for the work of the writers of this report: Deborah Kobes and Ian Rosenblum, as well as data collection and analysis provided by Jeremy Kelley. The report has been strengthened by insightful feedback from Navjeet Singh, Lucretia Murphy, Maria Flynn, Steven Baker, Krista Ford and Caesar Mickens, and by editing from Sara Lamback.

Two national organizations provided the data and analysis for the U.S. reports: **Economic Modeling Specialists International**, a CareerBuilder company, turns labor market data into useful information that helps organizations understand the connection between economies, people and work ([www.economicmodeling.com](http://www.economicmodeling.com)). **Burning Glass Technologies** develops leading technologies for matching people with jobs through pioneering solutions and leverages a deep understanding of people and their careers in order to deliver superior workforce and marketplace insight ([www.burning-glass.com](http://www.burning-glass.com)).

Each report also relies on the insights and feedback of local stakeholders. We would like to express our appreciation to the employers and economic development and workforce development stakeholders in the Chicago region who informed report findings and reviewed drafts:

Haven Allen, Strategy Manager, Plan for Economic Growth & Jobs, World Business Chicago; Deborah Bennett, Senior Program Officer, Polk Bros Foundation; Matthew Bruce, Executive Director,

Chicagoland Workforce Funder Alliance; Amanda Cage, Director of Strategic Initiatives and Policy, Chicago Cook Workforce Partnership; Edward Coleman, Vice President, Community Economic Development, Bethel New Life; Brooke Daniels, Associate, McKinsey & Co.; Loren Dinneen, Program Manager, 1000 Jobs for Chicagoland Manufacturing, Plan for Economic Growth & Jobs, World Business Chicago; Dr. Ricardo Estrada, Vice President of Programs and Education, Instituto del Progreso Latino; Brian Fabes, Chief Executive Officer, Civic Consulting Alliance; Sameer Gadkaree, Education and Workforce Consultant; Darrious Hilmon, former Vice President and Chief Development Officer, Chicago Urban League; Ann Kisting, Executive Director, Chamber Foundation, Chicagoland Chamber of Commerce; Marie Lynch, President and CEO, Skills For Chicagoland's Future; Brenda Palms Barber, Executive Director, North Lawndale Employment Network; John Ramirez, Deputy Director, Plan for Economic Growth & Jobs, World Business Chicago; Mark Sanders, Director of Reentry and Policy, North Lawndale Employment Network; Mark Schlifske, McKinsey & Co.; Rachana Sharma, 2014 Fellow, World Business Chicago; Whitney Smith, Senior Program Director, Joyce Foundation; Meredith Sparks Ament, Associate Vice Chancellor, Workforce Development at City Colleges of Chicago, City Colleges of Chicago; Haley Stevens, Associate Director of Workforce Development, Digital Manufacturing and Design Innovation Institute; Veenu Verma, Director of Career and Technical Education, Chicago Public Schools; Doug Whitley, Executive Director, Supply Chain Innovation Network of Chicago; and Jennifer Wittner, Associate Director, Women Employed.

We would also like to thank Melody Barnes, former Assistant to the President and Director of the White House Domestic Policy Council and Co-chair of the Global Workforce Advisory Council, for her insights, time and support throughout this process.



# EXECUTIVE SUMMARY

## THE CHICAGO RECOVERY IS ACCELERATING

The Chicago metropolitan region's economy is gaining momentum and is soon projected to recover all the jobs lost over the previous decade. The region's diverse array of high-demand industries and large share of middle-skill jobs are expected to fuel the growth.<sup>1</sup>

The Chicago metropolitan region contributes nearly **3%** of the nation's total jobs

The region has added over **200,000** new jobs since 2010

Job growth is expected to be **8.9%** from 2010 to 2020

Unemployment fell to **6.4%** in March 2015, down considerably from a high of 10.5% in 2010

The gross regional product of the Chicago metropolitan area was more than **\$529 billion** in 2013

(Source: EMSI and U.S. Bureau of Labor Statistics)

### MIDDLE-SKILL JOBS ARE CRITICAL TO CHICAGO'S ECONOMIC GROWTH

- 44% of jobs in the Chicago region are in middle-skill occupations - jobs that require more than a high school credential but less than a Bachelor's degree.
- Of those middle-skill jobs, half are what this report refers to as "target middle-skill jobs" - high-demand occupations that also pay a living wage.

The Chicago region currently has more than **980,000** target middle-skill jobs, representing 23% of all positions

Target middle-skill jobs pay a median hourly wage of **\$26.93** - higher than the region's living wage of \$18.98 per hour<sup>2</sup>

Nearly **28,000** target middle-skill job openings are projected every year from 2014 to 2019

(Source: EMSI and MIT Living Wage Calculator)

<sup>1</sup> This report focuses on the Chicago Metropolitan Region, defined as the following counties: Cook, DuPage, Kane, Kendall, Lake, McHenry and Will (see Appendix A).

<sup>2</sup> This report draws upon data from the MIT Living Wage Calculator. The living wage for a family of two adults and one child living in Chicago is \$18.98. Additional information can be found here: <http://livingwage.mit.edu>.

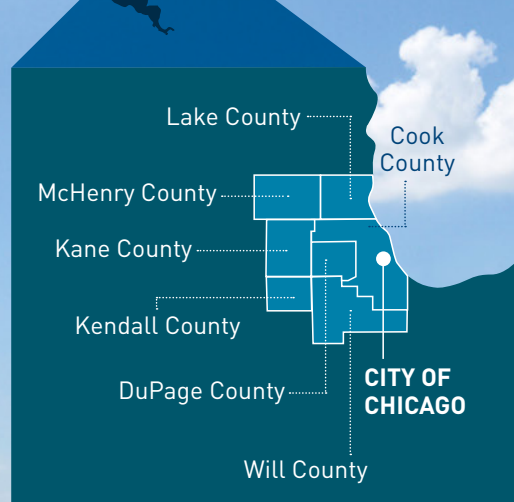


## THE CHICAGO REGION



More than  
**8.5 million**

people live in the Chicago metropolitan region<sup>4</sup>



## GROWING CHALLENGES IN FILLING MIDDLE-SKILL JOBS

As in many regional economies, some employers in the Chicago metropolitan region are having difficulty filling certain middle-skill positions. World Business Chicago has identified the shortage of middle-skill workers as a major regional hurdle. Approximately 60% of job openings require middle-skill credentials, but only 54% of the region's workforce have the necessary education levels – reflecting the mismatch between the education and skills that workers currently have and the skills required by the regions' emerging industries.<sup>3</sup>

If not addressed, this mismatch between job-seeker skills and business needs could hurt the region's economic competitiveness and limit the financial well-being of hundreds of thousands of people in the Chicago area.

Fortunately, Chicago area employers, education institutions, workforce system and other leaders are coming together to develop a set of strategies to address workforce challenges. This report supports these efforts by offering a framework for developing a demand-driven career pathways system that incorporates high-value occupational credentials.

## PREPARING WORKERS FOR MIDDLE-SKILL JOBS WILL BENEFIT FAMILIES AND THE CHICAGO REGION'S BROADER ECONOMY

Preparing more Chicagoans for middle-skill occupations will benefit the entire region. Businesses will access the steady stream of qualified applicants they need to continue growing and families will attain the stable income they need to join the middle class.

<sup>3</sup> World Business Chicago. (2012). *A Plan For Economic Growth and Jobs*. Retrieved from: <http://www.worldbusinesschicago.com/plan/>.

<sup>4</sup> U.S. Census Bureau, Population Division. Annual Estimates of the Resident Population of target counties for 2014. Retrieved from: [www.factfinder.census.gov](http://www.factfinder.census.gov).



# EXECUTIVE SUMMARY CONT.

# MIDDLE-SKILL OPPORTUNITIES IN HEALTHCARE AND TRANSPORTATION, DISTRIBUTION AND LOGISTICS

CHICAGO

## HEALTHCARE

More than

**410,000**

total jobs in 2014

**10%**

job growth projected 2014-2019

## TRANSPORTATION, DISTRIBUTION AND LOGISTICS (TDL)

More than

**200,000**

total jobs in 2014

**4%**

job growth projected 2014-2019

(Source: EMSI)

Chicago is unique among major U.S. cities, in that the region's diverse economy is home to both a strong service sector and a strong manufacturing sector.

In addition to healthcare and TDL, other economic drivers include:



MANUFACTURING



FINANCE AND INSURANCE



PROFESSIONAL SERVICES



WHOLESALE TRADE



ADMINISTRATIVE SUPPORT



MANAGEMENT

NEARLY  
**20,000**

target middle-skill job openings are projected every year in these two sectors from 2014 to 2019



HEALTHCARE

**14,464**

annual target middle-skill healthcare job openings

23% of all target middle-skill online job postings



TDL

**5,502**

annual target middle-skill TDL job openings

13% of all target middle-skill online job postings

(Source: EMSI and Burning Glass<sup>5</sup>)

High wages for in-demand middle-skill occupations

**\$28.94**

median hourly wage for radiology technicians

**\$22.60**

median hourly wage for diesel mechanics

**\$18.98**

regional living wage per hour

(Source: EMSI and MIT Living Wage Calculator)

<sup>5</sup> This report includes a proprietary analysis of middle-skill opportunities in the Chicago region for JPMorgan Chase. In subsequent citations, data from this analysis are cited as "Burning Glass."



## TOO MANY RESIDENTS ARE NOT BENEFITING FROM THE REGION'S ECONOMY

Residents currently outside the talent pipeline could become candidates to fill middle-skill jobs.

### Unemployment and poverty restrict opportunity

- A growing percentage of jobs overall are low-wage, including some middle-skill jobs.
- Illinois' average unemployment period lasts 38.5 weeks; five weeks longer than the nation.<sup>6</sup>
- African-American unemployment (16.5%) is almost twice the region's rate<sup>7</sup>; almost one in three African-Americans lives in poverty.<sup>8</sup>
- Latinos' poverty rate of 21%, despite an 11.1% unemployment rate<sup>9</sup>, suggests that many Latinos hold low-wage jobs without economic advancement opportunities.

### Criminal records pose employment barriers

- The Chicago region accounts for two-thirds of Illinois prisoners released.<sup>10</sup>
- Individuals with criminal records often face hiring discrimination, and workers reentering the community may need to update job skills that have become out of date while incarcerated.
- Illinois law now requires employers to evaluate an applicant's qualifications before checking criminal records.<sup>11</sup>

## BUILDING ON REGIONAL EFFORTS TO DEVELOP A JOB-READY WORKFORCE

The region's deep network of organizations prepares its diverse communities for middle-skill jobs. Greater coordination and employer engagement would strengthen their efforts. Recognizing this need, three Chicago Workforce Investment Boards merged to form the Chicago Cook Workforce Partnership. Stakeholders also launched the Chicagoland Workforce Funder Alliance, which increases alignment between providers and industry by engaging employers in workforce development. But, employers receive just 3% of public workforce resources, suggesting their role shaping regional training priorities is still limited.<sup>12</sup>

JPMorgan Chase has committed \$15 million as part of its *New Skills at Work* workforce readiness initiative to support expansion of industry workforce collaboratives and sector-driven training and employment programs. This financial commitment will enable the city's education, business and nonprofit community to expand regional capacity and bring successful workforce initiatives to scale.

6 Illinois Department of Employment Security (2015). *Average Duration of Unemployment for Illinois and the U.S. in 2014*. Data from the U.S. Census Bureau, *Current Population Survey*. Retrieved from: [http://www.ides.illinois.gov/LMI/Pages/Characteristics\\_of\\_Employed\\_Unemployed.aspx](http://www.ides.illinois.gov/LMI/Pages/Characteristics_of_Employed_Unemployed.aspx).

7 U.S. Bureau of Labor Statistics, 2013 annual average. Retrieved from: [http://www.bls.gov/opub/gp/pdf/gp13\\_27.pdf](http://www.bls.gov/opub/gp/pdf/gp13_27.pdf).

8 U.S. Census Bureau, *American Community Survey*, 3-year average, 2011-2013.

9 *Ibid.*

10 Illinois Department of Corrections. (2013). *Fiscal Year 2013 Report*. Retrieved from: <https://www.illinois.gov/idoc/reportsandstatistics/Documents/FY2013%20Annual%20Report.pdf>.

11 Illinois law passed in 2014: "Job Opportunities for Qualified Applicants Act." Retrieved from: <http://ilga.gov/legislation/98/HB/PDF/09800HB5701lv.pdf>.

12 The Workforce Boards of Metropolitan Chicago. (2012). *Metropolitan Chicago Region: An Analysis of Public Workforce Development Resources*.

# EXECUTIVE SUMMARY CONT.

## OPPORTUNITIES TO EARN HIGH INCOMES WITH MORE EDUCATION AND TRAINING



### CAREER PATHWAYS IN TDL



### CAREER PATHWAYS IN HEALTHCARE

	Occupation	Median hourly wage (Chicago region)
High-Skill	<b>TRACK 1: Maintenance and Servicing Supervisor</b> Advanced postsecondary non-degree certifications with 5+ years of experience	<b>\$32.43</b>
	<b>TRACK 2: Supply Chain/Logistics Manager</b> Bachelor's degree, or Associate's degree with 5+ years of experience	<b>\$37.97</b>
Middle-Skill	<b>TRACK 1: Diesel Mechanic</b> Postsecondary non-degree award plus long-term on-the-job training	<b>\$22.60</b>
	<b>TRACK 2: Supply Chain Specialist</b> Associate of Applied Sciences	<b>\$20.81</b> (starting wage)
Entry-Level	<b>TRACK 1: Heavy Truck and Trailer Drivers</b> Postsecondary non-degree award	<b>\$16.74</b> (starting wage)
	<b>TRACK 2: Scheduler/Operations Coordinator</b> High school diploma plus moderate on-the-job training	<b>\$12.06</b> (starting wage)

	Occupation	Median hourly wage (Chicago region)
High-Skill	<b>TRACK 1: Auditing and Compliance Specialist</b> Bachelor's degree	<b>\$36.95</b>
	<b>TRACK 2: Registered Nurse</b> Bachelor's degree, Associate's degree with 5+ years of experience	<b>\$33.55</b>
Middle-Skill	<b>TRACK 1: Health Information Manager</b> Associate's degree or postsecondary certificate	<b>\$17.77</b>
	<b>TRACK 2: Surgical Technologist</b> Associate's degree	<b>\$22.16</b>
Entry-Level	<b>TRACK 1: Medical Biller</b> High school diploma with moderate on-the-job training	<b>\$14.05</b> (starting wage)
	<b>TRACK 2: Medical Assistant</b> Postsecondary non-degree award	<b>\$14.93</b>

(Source: Burning Glass, Burning Glass Labor/Insight and EMSI. JFF Analysis using Burning Glass Labor/Insight conducted by Jeremy Kelley (2015).)



## EXECUTIVE SUMMARY CONT.

# OUR RECOMMENDATIONS

Stakeholders should build on existing programs and partnerships to strengthen the capacity of the region's comprehensive career pathways system to prepare residents for middle-skill jobs in healthcare, TDL and other growing industries.

### DEVELOP A DEMAND-DRIVEN CAREER PATHWAYS SYSTEM TO CONNECT RESIDENTS TO MIDDLE-SKILL JOBS

Business leadership, industry groups and private-sector investment are key to scaling and sustaining flexible, employer-driven workforce strategies.

#### Recommendation

#### 1. **Develop employer leadership in strengthening the talent pipeline.**

Industry leaders and the workforce system should coordinate to define joint goals for improving the talent pipeline and creating opportunities for career advancement. Employers should also invest in designing and implementing education and training programs that address their current and projected labor needs.

#### Recommendation

#### 2. **Continue to link workforce entities across sectors in a way that builds on and connects existing sector strategies.**

Cross-sector leaders should convene to analyze the changing middle-skill job opportunities and start cross-sector coordination to extend the region's strong sector-based strategies to emerging sector efforts like TDL. Workforce partners should help employers and job seekers navigate the diversity of education and training options across sectors.

#### Recommendation

#### 3. **Build on the region's established work in career pathways to identify new opportunities in high-demand, middle-skill occupations.**

Education and training providers should standardize career pathways and programming across institutions to maximize the transferability of skills, meet industry needs and ensure advancement opportunities. Successful coordination in advanced manufacturing should serve as a blueprint for aligning education and training to employer demand in other sectors, including healthcare and TDL. Employers, the workforce system and education and training providers should work together to target middle-skill positions and connect entry-level occupations to opportunities for career advancement and a family-supporting wage.

#### Recommendation

#### 4. **Build on the region's robust data capacity and create a critical feedback loop between employers and providers.**

Workforce partners should improve employer input and demand-side data and help training programs use their labor market information more effectively. Regional workforce partners should adopt a shared framework and a shared data system for defining and measuring progress toward connecting residents to middle-skill jobs.

Through the *New Skills at Work* initiative, JPMorgan Chase will contribute resources and expertise to accelerate this work to transform lives and strengthen economies.

# INTRODUCTION

The Chicago metropolitan region is poised for growth as it emerges from the great recession.<sup>13</sup> An important and diverse economic engine regionally and nationally, the Chicago region contributes nearly 3% of the country's total jobs.<sup>14</sup> Although the region has experienced a slower recovery than the nation, it is projected to exceed prerecession employment levels by 2017.<sup>15</sup>

Looking ahead, the region's employers have coordinated an impressive effort to strengthen the city's **economic growth** **1**. Regional leaders have now turned their attention to workforce development – in particular, addressing the mismatch between the skills that workers currently have and the skills required by the region's industries.<sup>16</sup> With the leadership of education and workforce system stakeholders and organized involvement of employers, the region is poised to scale up its workforce development efforts to ensure that businesses have the talent they need to grow and compete. This, in turn, will help the many residents who still need opportunities earn middle-class wages and overcome continuing high levels of unemployment, underemployment and poverty.

This report discusses the importance of middle-skill jobs to the Chicago area's economic recovery and analyzes labor market information to identify specific high-growth career opportunities in healthcare and transportation, distribution and logistics (TDL). It also describes the economic obstacles that disproportionately affect some residents, outlines the challenges facing the region's education and training system, and offers recommendations for stakeholders to develop a demand-driven **career pathways system** **2** that better connects workers to good jobs in growing industries.

## **1** Linking Economic and Workforce Development

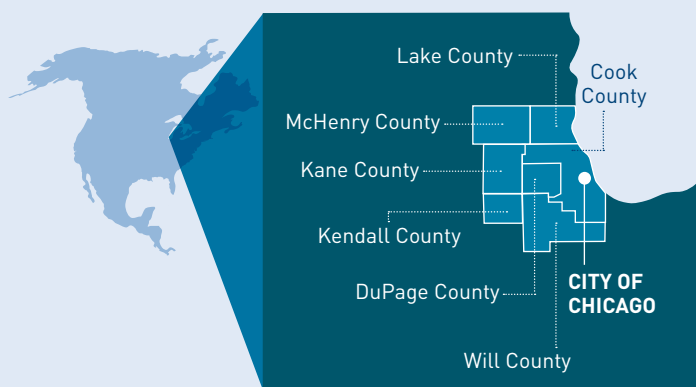
World Business Chicago has established a shared voice for business and government leaders to drive economic development in Chicago. In 2014, the organization worked with businesses to bring or keep over 3,500 jobs in the region.<sup>17</sup> World Business Chicago's *Plan for Economic Growth and Jobs* features a commitment to build on the area's many successful workforce development efforts to meet industry's talent needs. The plan focuses on several sectors critical to the regional economy, including advanced manufacturing and TDL.

## **2** Career Pathways

The term "career pathways", as used in this report, describes education and training programs that offer a well-articulated sequence of courses and work experiences that align with employer skill demands and lead to the completion of industry-valued "stackable credentials". Stackable credentials offer students multiple clear entry and exit points for education and training as they progress toward an Associate's degree or the highest industry credential required for a specific occupation. Stackable credentials enable people to find jobs with increasing responsibility knowing they can access additional training as needed to move ahead. Career pathways can be particularly effective for launching young people and low-skill adults into good jobs because they can be designed to serve a range of populations and skill levels.

A **career pathways system** aligns employers, workforce development agencies, education providers, funders and other partners to identify shared goals and drive changes in programs, institutions and policies to address employer demand through multiple career pathways in the targeted industry sectors.

## THE CHICAGO REGION



<sup>13</sup> This report focuses on the Chicago metropolitan region, defined as Cook, DuPage, Kane, Kendall, Lake, McHenry and Will counties (see Appendix A). All references to the "Chicago region" or the "Chicago area" throughout the report refer to this area unless otherwise stated. The larger Metropolitan Statistical Area (MSA) defined by the Census will occasionally be referenced for context, and the trends in the MSA are consistent with the trends of the Chicago metropolitan region.

<sup>14</sup> This report includes a proprietary analysis of middle-skill opportunities in the Chicago region for JPMorgan Chase; in subsequent citations, data from this analysis are cited as "EMSI."

<sup>15</sup> *Ibid.*

<sup>16</sup> World Business Chicago. (2012). *A Plan For Economic Growth and Jobs*. Retrieved from: <http://www.worldbusinesschicago.com/plan/>.

<sup>17</sup> *Ibid.*



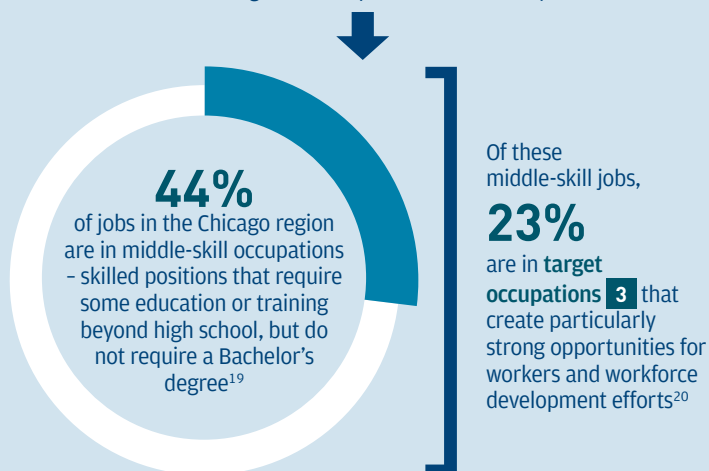
# THE OPPORTUNITIES

## BUILDING ON DEMAND FOR MIDDLE-SKILL WORKERS

The Chicago area's economy is recovering. Connecting qualified workers to opportunities in middle-skill careers is critical to the region's ongoing economic growth.



each contribute over  
**\$10 billion**  
 to the gross regional product and are highly concentrated in the region as compared to the country<sup>18</sup>



### 3 Target Middle-Skill Occupations

Target middle-skill occupations are ones that pay a median wage that meets or exceeds the region's living wage of \$18.98 per hour,<sup>21</sup> and are projected to grow. Each target occupation has at least 150 jobs in 2014 and 10 annual openings from 2014 to 2019.

### THE REGION HAS A DIVERSE ECONOMY THAT IS EXPERIENCING A STEADY RECOVERY AFTER THE MOST RECENT RECESSION

- Since 2001, employment in the Chicago region has contracted by 1.4%, while national employment grew by 5.6%. When the recession began, unemployment in the Chicago region more than doubled, topping out at 10.5%.<sup>22</sup>
- The Chicago region's unemployment rate is down to 6.4% and it has recovered over 200,000 jobs since 2010. By 2017, the region is expected to recover all jobs lost since 2006 – with job growth over the next 10 years expected to be 8%.<sup>23</sup>
- Unique among major cities, the region possesses a strong service-based economy and has a significant presence of manufacturing-based industries.<sup>24</sup> This combination promotes economic growth by supporting a range of different types of businesses.

### MIDDLE-SKILL JOBS ARE A KEY PART OF CHICAGO'S REGIONAL ECONOMY

Healthcare and TDL, the two largest private-sector employers in the region, provide a high concentration of **middle-skill opportunities** **4** and career advancement potential for workers.

#### 4 Information Technology – Providing Middle-Skill Opportunities Across Sectors

Information Technology (IT) posts almost 23,000 middle-skill job openings in the Chicago MSA annually, second only to healthcare in middle-skill demand.<sup>25</sup> With an average salary of \$29.98 per hour, these jobs advertise a salary premium of over \$5,000 per year in Chicago compared to equivalent roles nationally.<sup>26</sup> The region's commitment to growing its IT talent begins in high school: in 2012, the Chicago Public Schools opened five Early College STEM High Schools focused on IT. In the past three semesters, almost 2,000 students across these schools have earned 1,500 college credits through a curriculum that emphasizes project-based learning. Employers – including IBM, Motorola, Microsoft, Verizon and Cisco – provide mentoring, host work-based learning opportunities, offer 100 internships that launch in 2015 and guarantee that graduates will be first in line for consideration for entry-level positions at their companies.<sup>27</sup>

25 This Burning Glass analysis was conducted prior to the remaining analysis throughout the report, and represents job openings from July 2013 to June 2014.

26 *Ibid.*

27 Kobes, Deborah. 2015. Interview with Veenu Verma, Chicago Public Schools.

18 World Business Chicago. [2012]. *A Plan For Economic Growth and Jobs*. Retrieved from: <http://www.worldbusinesschicago.com/plan/>.

19 EMSI.

20 *Ibid.*

21 MIT Living Wage Calculator. Additional information can be found here: <http://livingwage.mit.edu>.

22 EMSI.

23 *Ibid.*

24 *Ibid.*

## MANUFACTURING A TALENT PIPELINE

**Along with TDL and healthcare, advanced manufacturing is a key sector for the region's economy and middle-skill job opportunities.** The manufacturing sector employs more than 350,000 people – 8.4% of the region's overall workforce – and represents 16% of target middle-skill jobs.<sup>28</sup> Middle-skill machining and installation, maintenance and repair occupations within the sector are projected to grow 9% by 2023 across the MSA.<sup>29</sup>

**The advanced manufacturing sector has the most coordination across employers, education and training providers and the public workforce system. This sector effort is a model for emerging sector strategies.** Investments in sector-based training have grown over the past few years and are starting to pay off. Advanced manufacturing has been the focus of:

- **Statewide efforts**, such as the STEM Learning Exchanges, in which educators and industry partners share best practices and drive innovation.
- **Regional efforts**, such as the Calumet Green Manufacturing Partnership and Manufacturing Renaissance, which train job seekers and expose youth to manufacturing careers.
- **City College and suburban community college efforts** to scale up and improve manufacturing education, including Harper College's participation in the President's Advanced Manufacturing Partnership 2.0 efforts and the Illinois Network for Advanced Manufacturing.
- **Economic development efforts**, such as World Business Chicago, a public-private partnership that advances the city's economic growth plan.

**The 1,000 Jobs for Chicagoland Manufacturing campaign has created a focal point for sector efforts** by mobilizing and convening the Mayor's Office, World Business Chicago, the Chicago Cook Workforce Partnership, manufacturing businesses, community colleges and community-based organizations.<sup>30</sup>

- The campaign has recently begun to match hard-to-serve populations with high-quality jobs, primarily at the entry level.
- The model connects economic and workforce development efforts as a strategy to grow jobs while creating opportunities for the community.
- An outreach and awareness campaign draws job-seeker attention to career pathways in manufacturing, and employer attention to the workforce system designed to serve them.
- A benchmarking system will continue to demonstrate progress as the campaign grows.

- Designed to test new approaches for coordination and employer engagement, the campaign is working to ensure lessons learned feed into continuously improving the workforce system.

**Related sectors can directly benefit from key elements of the manufacturing effort** by building on the transferable skills, outreach districts and respected brand of the 1,000 Jobs campaign. This strategic planning and sector approach can also serve as a blueprint to be replicated across the region's diverse economy.

**TABLE 1. ADVANCED MANUFACTURING MIDDLE-SKILL OCCUPATIONS, POSTINGS AND WAGES, 2014**

Examples of Advanced Manufacturing Occupations	Total Job Postings in 2014	Median Hourly Wage
Computer-Controlled Machine Tool Operators	2,215	\$17.81
First-Line Supervisors of Mechanics, Installers and Repairers	1,571	\$32.52
Installation, Maintenance and Repair Workers	1,524	\$19.84
Welders, Cutters and Welder Fitters	509	\$17.85
Machinists	395	\$19.42
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	228	\$22.25
Industrial Machinery Mechanics	110	\$26.73

(Source: Burning Glass Labor/Insight)



28 EMSI.

29 Burning Glass. The information for these occupations is at the MSA level, not the Chicago region level.

30 Kobes, Deborah and Kelley, Jeremy. (2015). Interview with Haven Allen and Rachana Sharma, World Business Chicago. For more information about 1,000 Jobs, see <http://www.1000jobscampaign.com/>.





## OPPORTUNITIES IN TRANSPORTATION, DISTRIBUTION AND LOGISTICS

TDL is central to the region’s economy, and Chicago’s infrastructure assets make it well situated for continued robustness and growth.

- The Chicago region boasts numerous TDL assets, including the largest rail freight hub in country, with one-quarter of rail freight starting or going through the region. Chicago is the only U.S. city where six of the seven largest North American railroads intersect.<sup>31</sup>
- With over 200,000 total jobs, TDL makes up 13% of all target middle-skill online job postings in the Chicago region.<sup>32</sup> TDL has a projected growth rate of 4% to 2019.<sup>33</sup>
- TDL – particularly transportation and warehousing – has a higher concentration of jobs in the Chicago region than in the nation, giving the region a competitive advantage (see Appendix B for competitive advantage by occupation).<sup>34</sup>
- TDL encompasses diverse occupations that support several important sectors, including manufacturing. In fact, logistics-related occupations, such as supply chain analysts, make up the largest middle-skill occupation group in manufacturing.<sup>35</sup> In addition, in a 2012 survey, two-thirds of manufacturers indicated that the region’s extensive transportation network was key to their location choice.<sup>36</sup> The retail sector also accounts for 16% of all TDL jobs, higher than the national average.<sup>37</sup>

**TABLE 2. TDL JOBS IN VARIOUS SECTORS**

Industry	Share of Middle-Skill Jobs that are in TDL Occupations
Transportation and Warehousing	60%
Real Estate, and Rental and Leasing	55%
Retail Trade	44%
Mining, Quarrying, and Oil and Gas Extraction	34%
Utilities	33%
Manufacturing	30%

[Source: EMSI]



31 World Business Chicago. (2012). *A Plan For Economic Growth and Jobs*. Retrieved from: <http://www.worldbusinesschicago.com/plan/>.

32 EMSI.

33 *Ibid.*

34 According to Burning Glass, the location quotient for middle-skill trade and logistics postings within the transportation and warehousing sector is 2.0.

35 Burning Glass.

36 Chicago Metropolitan Agency for Planning. (2013). *Metropolitan Chicago’s Manufacturing Cluster: A Drill-Down Report on Innovation, Workforce, and Infrastructure, Technical Report*. Retrieved from: <http://www.cmap.illinois.gov/documents/10180/69902/FULL%20Technical%20Report%20web.pdf/3243f710-f91d-4632-934a-3682fc19ffc>.

37 Burning Glass. The location quotient for middle-skill trade and logistics postings in the retail sector is 1.7.

## SEVERAL SUBSECTORS OF TDL OFFER PARTICULARLY STRONG OPPORTUNITIES FOR MIDDLE-SKILL WORKERS

- Middle-skill opportunities vary across TDL's six major skill areas. Procurement, with occupations such as purchasing agent and buyer,<sup>38</sup> has the highest middle-skill concentration – 92% of openings are middle-skill jobs. In contrast, warehouse demand is mostly low skilled and only 5% of postings are for middle-skill jobs.<sup>39</sup> (See Appendix B for detailed occupations.)
- Employers have the highest demand for mechanical repair workers, accounting for almost half of all TDL demand.<sup>40</sup> The region has over 18,000 **auto mechanics 5** alone.<sup>41</sup>
- Mechanics have opportunities for advancement: specialized mechanics for aircraft or heavy equipment can earn 40% more than automotive technicians.<sup>42</sup>
- Passenger air transportation has high concentration and growth, strong wages and middle-skill jobs. The region has almost 17,000 jobs in **aviation 6**, and at \$72.88 per hour, air traffic controller is the highest-paying middle-skill occupation in TDL.<sup>43</sup>
- Rail transportation jobs employ more than 6,300 people in middle-skill positions and pay a median wage of \$26.57 for employees with medium- to long-term on-the-job training. They have high projected demand for workers due to both job growth and retirements.<sup>44</sup>
- Logistics connects TDL to opportunities in advanced manufacturing; skills such as procurement and supply chain knowledge and management are easily transferred between these two sectors.

### 5 From Truck Drivers to Mechanics: A Pathway to a Middle-Skill Career

Truck drivers are in high demand in the Chicago region, with over 35,000 postings,<sup>45</sup> and the occupation has a low barrier to entry: a Commercial Driver License (CDL) can be earned in as little as seven weeks. However, the long hours and tough conditions of many truck-driving jobs lead to a turnover rate of up to 95%.<sup>46</sup> Workforce programs that focus on truck driving can pair CDLs with other certifications, such as hazardous materials certification, to advance workers into specialized middle-skill opportunities. On-the-job knowledge of basic repairs can also serve as the basis for becoming an automotive mechanic.

### 6 Opportunity Through Aviation

With funding from the Chicago Department of Aviation, Skills for Chicagoland's Future is matching qualified job seekers with companies that partner with O'Hare International Airport. The program combines specialized job training with strong employer relationships to place high-quality candidates into local jobs. Employers provide hiring commitments before the program trains job seekers with in-demand skills. In two-and-a-half years, Skills for Chicagoland's Future has placed 1,500 people in jobs with 200 airport vendor employers, most often in the TDL sector. Of the job seekers placed last year, 70% were classified as "long-term unemployed."<sup>47</sup>

**TABLE 3. HIGH DEMAND FOR MIDDLE-SKILL TDL WORKERS**

Primary Skill Areas	Examples of Occupations	Median Hourly Wage	Average Annual Openings 2014–2019	Job Postings 2014	Average Posting Duration
Mechanical and Auto Repair	Diesel Mechanic, Aircraft Mechanic	\$25.30	2,913	6,612	33 days
Procurement	Purchasing Agent	\$24.80	448	3,051	34 days
Logistics and Supply Chain	Logistics or Supply Chain Analyst	\$31.57	301	2,102	34 days
Aviation, Rail and Marine Transportation*	Air Traffic Controller, Signal and Track Switch Repairers	\$36.13	737	804	
Warehouse and Distribution	Warehousing Supervisor	\$24.59	114	633	29 days
Transportation*	Transportation Planner	\$31.34	989	229	

\* Sample size too small to calculate the average posting duration

(Source: Burning Glass and EMSI)

38 Procurement jobs require purchasing required materials, goods and products.

39 Burning Glass.

40 *Ibid.*

41 EMSI.

42 *Ibid.*

43 Burning Glass and EMSI.

44 *Ibid.*

45 Burning Glass.

46 American Trucking Associations' website. [2015]. "Truckload Turnover Remained High in Fourth Quarter." Retrieved from: <http://www.trucking.org/article.aspx?uid=ee5468d9-0b00-4e01-9f9b-42d970b1510c>.

47 Skills for Chicagoland's Future. [2014]. Retrieved from: <http://www.skillsforchicagolandfuture.com/news/stigma-of-long-term-unemployment/>.



# CAREER PATHWAYS



## TRANSPORTATION, DISTRIBUTION AND LOGISTICS PATHWAY

	Occupation	Median Hourly Wage (Chicago region)	Education Level	Industry-Valued Certifications Skills and Competencies
High-Skill	<b>TRACK 1: Maintenance and Servicing Supervisor</b>	\$32.43	Advanced postsecondary non-degree certifications with 5+ years of experience	<b>Industry-Valued Certifications</b> Automotive Service Excellence L1, L2, L3; Project Management Certification (e.g., PMP) <b>Common Skills</b> Operations management; performance management; facility management; scheduling
	<b>TRACK 2: Supply Chain/ Logistics Manager</b>	\$37.97	Bachelor's degree, or Associate's degree with 5+ years of experience	<b>Industry-Valued Certifications</b> Certified Materials and Resource Professional (CMRP); Six Sigma; Project Management Certification (e.g., PMP) <b>Common Skills</b> Quality assurance and control; budgeting; business and employee management; mapping software (ArcGIS); logistics and supply chain management strategy; enterprise resource planning
Middle-Skill	<b>TRACK 1: Diesel Mechanic</b>	\$22.60	Postsecondary non-degree awards plus long-term on-the-job training	<b>Industry-Valued Certifications</b> Automotive Service Excellence (ASE) Certification; ICAR Certification; Air Brake certification <b>Common Skills</b> Diesel fuel systems; onboard computers; electrical networks/systems; diesel ignition systems; failure analysis
	<b>TRACK 2: Supply Chain Specialist</b>	\$20.81 (starting wage)	Associate of Applied Sciences	<b>Industry-Valued Certification</b> Certified Supply Chain Professional <b>Skills and Competencies</b> Logistics and supply chain knowledge (e.g., order management); general business skills (e.g., business processes); productivity software skills (advanced Microsoft Excel); strategic sourcing
Entry-Level	<b>TRACK 1: Heavy Truck and Trailer Drivers</b>	\$16.74 (starting wage)	Postsecondary non-degree award	<b>Industry-Valued Certification</b> Commercial Driver License <b>Skills and Competencies</b> Basic repair and auto maintenance; scheduling
	<b>TRACK 2: Scheduler/ Operations Coordinator</b>	\$12.06 (starting wage)	High school diploma plus moderate on-the-job training	<b>Industry-Valued Certification</b> APICS (American Production and Inventory Control) Certification <b>Skills and Competencies</b> Scheduling; Microsoft Office; customer service; data entry; planning; file management; appointment scheduling

(Source: Burning Glass, Burning Glass Labor/Insight and EMSI)



## OPPORTUNITIES IN HEALTHCARE

Healthcare is a diverse and growing part of the region’s economy, providing a variety of middle-skill opportunities.

- With over 410,000 jobs, healthcare is the largest private-sector employer in the Chicago region.<sup>48</sup>
- Healthcare makes up 23% of all target middle-skill online job postings in the region, including in some of the highest-paying middle-skill occupations.<sup>49</sup>
- Employers are seeking middle-skill workers in a range of occupations, including patient care, administration and health information [see table 4 and Appendix C for details].
- Although nursing is the largest middle-skill healthcare subsector, credential requirements are becoming increasingly high skilled nationwide,<sup>50</sup> and employers in the Chicago area are even less likely to hire new nurses with two-year degrees.<sup>51</sup>
- Chicago-area employers have identified a particular need for bilingual health providers who speak Spanish and other languages.<sup>52</sup>
- Kidney dialysis centers and medical laboratories are relatively small but fast-growing subsectors with many middle-skill opportunities. Biomedical equipment technicians for these and other facilities are in particularly high demand, and they are usually employed by contractors rather than directly by healthcare institutions.<sup>53</sup>
- Technical non-patient care positions, physical therapy assistants, and occupational therapy assistant positions take more than 50 days to fill, on average.<sup>54</sup>

**TABLE 4. HIGH DEMAND FOR MIDDLE-SKILL HEALTHCARE WORKERS**

Primary Skill Areas	Examples of Occupations	Median Hourly Wage	Average Annual Openings 2014-2019	Job Postings 2014	Average Posting Duration
Nursing	Registered Nurse, Nurse Case Manager	\$32.24	3,045	19,849	35 days
Sub-BA Practitioners	Physical Therapy Assistant, Radiology Technician	\$21.65	2,567	9,392	38 days
Healthcare Support	Nursing Manager	\$18.71	3,831	8,649	24 days
Administrative	Nursing Manager, Medical Secretary	\$15.15	3,724	6,844	40 days
Technical, Non-Patient Care	Medical Laboratory Technician, Pharmacy Technician	\$16.25	691	3,210	52 days
Health Information Management	Medical Coder	\$17.43	606	1,068	39 days

[Source: Burning Glass and EMSI]

48 EMSI.

49 Burning Glass.

50 Institute of Medicine. (2010). *The Future of Nursing: Leading Changing, Advancing Health*. Retrieved from: [www.iom.edu/Reports/2010/The-Future-of-Nursing-Leading-Change-Advancing-Health.aspx](http://www.iom.edu/Reports/2010/The-Future-of-Nursing-Leading-Change-Advancing-Health.aspx).

51 Burning Glass.

52 Travis, Amber. (2012). *Demand for Bilingual Professionals Grows Along with Hispanic Population*. Medill Reports, Northwestern University. Retrieved from: <http://newsarchive.medill.northwestern.edu/chicago/news.aspx?id=198562>. These findings are also supported by the work of the Chicago LEADS Initiative, Healthcare Diversity Subcommittee meeting notes from 2008.

53 Burning Glass. Across the Chicago MSA, the average posting duration for biomedical equipment technicians was 44 days, while that for other technical non-patient care roles is 36 days or fewer.

54 Burning Glass data for the Chicago MSA.



## THIS IS A TRANSFORMATIVE MOMENT FOR THE HEALTHCARE SECTOR

- Spurred in part by the **Affordable Care Act (ACA)** **7**, health informatics, which uses information technology to improve health outcomes, and electronic medical records are projected to grow over the next 10 years. These occupations allow job seekers to stack credentials and advance to higher-paying positions within the industry (see healthcare pathway chart for additional details). They also maximize opportunities for skill transferability, connecting healthcare and IT.
- The healthcare sector already posts 13% of all administrative positions, making it the second-largest source of demand for administrative jobs of any industry in the region, and these jobs are also projected to grow.
- As the sector consolidates, care will continue to shift to a focus on outcomes rather than services, with hospitals coordinating with greater care in other facilities,<sup>55</sup> and the types of positions in demand will change.

### **7 Affordable Care Act: Transforming Opportunities in the Healthcare Sector**

The ACA seeks to expand healthcare coverage, lower costs and improve health outcomes, and it is projected to increase overall demand for middle-skill healthcare job opportunities. Key skill needs will respond to a new focus for patient care settings.<sup>56</sup> The ACA's emphasis on primary care over hospital-based care is expected to expand the need for primary care providers and community health centers. The roles of health coaches, educators, care coordinators, patient navigators, care transition managers and case managers will also evolve with the implementation of the law. ACA will shift the skills required by existing jobs across the healthcare industry by making software skills and digital literacy increasingly essential for entry-level and middle-skill workers.



55 Ellen Jean Hirst. (2015). "Hospital mergers continued to create larger systems in 2014." *Chicago Tribune*. February 10. Retrieved from: <http://www.chicagotribune.com/business/breaking/ct-hospital-mergers-0211-biz-20150210-story.html>

56 For a more comprehensive overview of the Affordable Care Act and its implications for workforce demand, see Wilson, R. (2014). *Implementing the Patient Protection and Affordable Care Act: Impacts on the Frontlines of Caregiving*. Jobs for the Future.

# CAREER PATHWAYS



## HEALTHCARE PATHWAY

	Occupation	Median Hourly Wage (Chicago region)	Education Level	Industry-Valued Certifications Skills and Competencies
High-Skill	<b>TRACK 1: Auditing and Compliance Specialist</b>	\$36.95	Bachelor's degree	<b>Industry-Valued Certifications</b> RHIA Certification, Certified HIPAA Administrator <b>Common Skills</b> Advanced clinical billing; accounting; business administration; auditing; mentoring; problem-solving
	<b>TRACK 2: Registered Nurse</b>	\$33.55	Bachelor's degree, Associate's degree with 5+ years of experience	<b>Industry-Valued Certification</b> Registered Nurse <b>Common Skills</b> Acute and critical patient care; treatment planning; patient evaluation and monitoring; case management and care plans
Middle-Skill	<b>TRACK 1: Health Information Manager</b>	\$17.77	Associate's degree or postsecondary certificate	<b>Industry-Valued Certification</b> RHIT Certification <b>Common Skills</b> ICD-10; electronic health records; clinical procedure terminology; CPT; Microsoft Excel; organizational skills; research; writing
	<b>TRACK 2: Surgical Technologist</b>	\$22.16	Associate's degree	<b>Industry-Valued Certification</b> Certified Surgical Technologist <b>Skills and Competencies</b> Surgical equipment and technology; operating room experience; patient preparation; aseptic technique; time management; multitasking
Entry-Level	<b>TRACK 1: Medical Biller</b>	\$14.05 (starting wage)	High school diploma with moderate on-the-job training	<b>Skills and Competencies</b> Scheduling and appointment setting; basic medical terminology; basic billing systems; data entry and word processing; customer service; communication skills
	<b>TRACK 2: Medical Assistant</b>	\$14.93	Postsecondary non-degree award	<b>Industry-Valued Certifications</b> First Aid CPR AED; Medical Assistant Certification <b>Skills and Competencies</b> Vital signs measurement; patient preparation; cleaning; injections; communication skills; basic computer skills

(Source: Burning Glass, Burning Glass Labor/Insight and EMSI)

# THE CHALLENGES

## EXPANDING MIDDLE-SKILL TALENT SUPPLY TO MEET DEMAND

### Changes in the economy have made mid- to high-wage jobs less accessible to some residents across the region

- While the total number of jobs in Chicago increased in recent years, not all of those are good jobs. Since 2007, the proportion of all jobs that are low-wage increased by 3%, while the proportion of jobs that are mid-wage or high-wage declined.<sup>57</sup>
- The employment structures of key subsectors of TDL have made growth into middle-skill jobs difficult. In particular, the heavy presence of staffing firms within logistics and independent contractors within trucking limit workers' access to training, as employers prefer to direct their training resources to permanent employees.

### Persistent unemployment and underemployment are keeping a significant pool of potential workers, especially African-American and Latino residents, out of the middle-skill talent track

- For each of the past five years, the average duration of unemployment in Illinois has exceeded the U.S. average by almost five weeks. In 2014, the state's average of 38.5 weeks of unemployment compared to a national average of 33.7 weeks.<sup>58</sup>
- Almost half of the state's **long-term unemployed 8** – those who have been out of work for 26 weeks or longer – live in Chicago or Cook County. These 200,000 residents are struggling to reconnect to the city's rebounding economy.<sup>59</sup>

### African-Americans are particularly disconnected from the region's economic growth

- The 16.5% unemployment rate for African-Americans is almost double the overall unemployment rate of the Chicago MSA.<sup>60</sup> In addition, almost one in three African-Americans in the Chicago region lives in poverty.<sup>61</sup>
- African-Americans are especially hard-hit by long-term unemployment, with a statewide average duration of 45.5 weeks (up from about 30 weeks in 2009).<sup>62</sup>
- This disconnect exists despite the fact that African-Americans have similar levels of educational attainment as the total population: 56% of African-Americans have completed at least some college.<sup>63</sup>

#### 8 (Re)employing the Long-Term Unemployed

The long-term unemployed often require additional support services, including debt assistance, financial counseling, healthcare and child care. In 2014, President Obama issued a call to action to the nation's employers to focus on long-term unemployment and remedy this "stubborn legacy of the recession." JPMorgan Chase accepted this challenge. Through its national *New Skills at Work* initiative, JPMorgan Chase is acting on this commitment by helping local stakeholders better understand the needs of the long-term unemployed and implement best practices to get more Americans back to work.

57 Low-wage jobs are defined as those below \$13.33 per hour, mid-wage jobs are from \$13.33 to \$20.00 per hour, and high-wage jobs are above \$20.00 per hour. Civic Consulting Alliance internal analysis.

58 All data on the duration of unemployment in this report are at the state level. Illinois Department of Employment Security. (2015). Average Duration of Unemployment for Illinois and the U.S. Data from the U.S. Census Bureau, *Current Population Survey*. Retrieved from: [http://www.ides.illinois.gov/LMI/Local%20Area%20Unemployment%20Statistics%20LAUS/Characteristics/Illinois\\_US\\_duration\\_unemployment\\_unemp\\_rate.PDF?pdf=characteristics](http://www.ides.illinois.gov/LMI/Local%20Area%20Unemployment%20Statistics%20LAUS/Characteristics/Illinois_US_duration_unemployment_unemp_rate.PDF?pdf=characteristics).

59 Skills for Chicagoland's Future. (2014). Retrieved from: <http://www.skillsforchicagolandsfuture.com/news/stigma-of-long-term-unemployment/>.

60 All unemployment information by race and ethnicity in this report is at the MSA level. United States Bureau of Labor Statistics, 2013 annual average. Retrieved from: [http://www.bls.gov/opub/gp/pdf/gp13\\_27.pdf](http://www.bls.gov/opub/gp/pdf/gp13_27.pdf).

61 U.S. Census Bureau, *American Community Survey*, 3-year average, 2011–2013.

62 Illinois Department of Employment Security. (2015). Annual Average Number of Weeks Unemployed by Gender, Race, and Youth Age Group. Data are from the U.S. Bureau of Labor Statistics, *Current Population Survey*, February 2014. Retrieved from: [http://www.ides.illinois.gov/LMI/Local%20Area%20Unemployment%20Statistics%20LAUS/Characteristics/Illinois\\_duration\\_unemployment\\_race\\_gender\\_age.PDF?pdf=characteristics](http://www.ides.illinois.gov/LMI/Local%20Area%20Unemployment%20Statistics%20LAUS/Characteristics/Illinois_duration_unemployment_race_gender_age.PDF?pdf=characteristics). Several major workforce development agencies within the city of Chicago estimate that chronically unemployed African-Americans who have never been connected to the formal workforce are even more prominent.

63 U.S. Census Bureau, *American Community Survey*, 3-year average, 2011–2013.



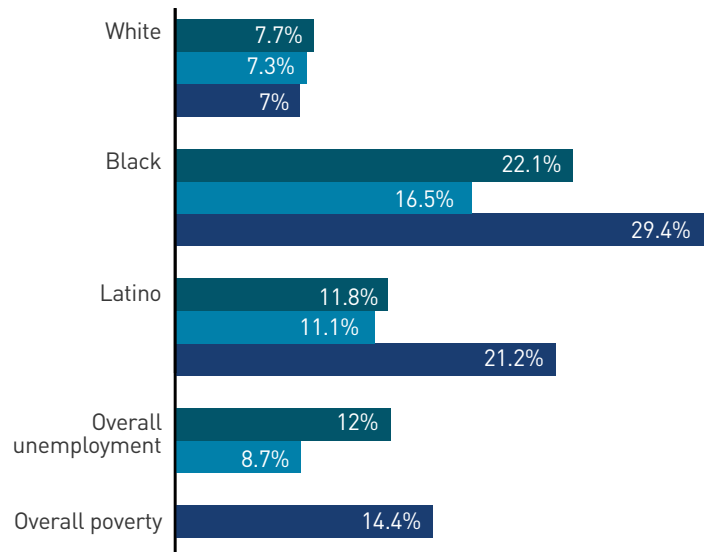
## Latinos are well represented in the region's entry-level jobs but remain disconnected from the middle-skill economy

- Low education levels are one barrier to middle-skills jobs for Latinos, with 39% of the Latino population aged 25 and over lacking a high school diploma or equivalent, and another 29% lacking formal education beyond high school.<sup>64</sup>
- The unemployment rate for Latino workers is only 2.4 percentage points above the average for the MSA, and they have a shorter duration of unemployment than whites statewide. However, their very high poverty rate of 21% suggests that these jobs do not provide sufficient earnings or opportunities for economic advancement.<sup>65</sup>
- Despite making up more than 25% of Cook County's population, Latinos represent only 14% of incumbent workers and 16% of new hires in healthcare, and 18% of incumbent workers in transportation and warehousing.<sup>66</sup>

## With 70% of Illinois' parole population made up of African-American and Latino residents, economic barriers based on criminal records present a major challenge<sup>67</sup>

- The Chicago region accounts for approximately two-thirds of prisoners released in the state each year, and 10 zip codes in Chicago make up a quarter of the total released.<sup>68</sup>
- Individuals with criminal records often face hiring discrimination, and workers reentering the community may need to update job skills that have become out of date while incarcerated.
- A new law enacted in January 2015 bars Illinois employers from conducting background checks until late in the hiring process, meaning that an employer must evaluate a candidate based on his or her qualifications before asking about criminal history. Local organizations are also working to get **individuals with criminal records** **9** back into the labor force.<sup>69</sup>

## UNEMPLOYMENT AND POVERTY BY RACE/ETHNICITY IN THE CHICAGO AREA



- Unemployment in Chicago City
- Unemployment in Chicago MSA
- Poverty in Chicago Metropolitan Region

(Source: Poverty data were drawn from the U.S. Census Bureau, *American Community Survey* 2011–2013; unemployment data are from the Bureau of Labor Statistics)

### 9 Addressing the Needs of Hard-to-Employ Job Seekers

The North Lawndale Employment Network (NLEN) provides tools and support for hard-to-employ job seekers. Its diesel mechanic training program, Moving Forward, prepares residents with criminal records for careers with the Chicago Transit Authority as bus and truck mechanics or diesel engine specialists, which have a median wage of \$22.60.<sup>70</sup> NLEN has placed over 100 mechanics and apprentices with the Chicago Transit Authority. As part of the program, participants earn an Illinois CDL learner's permit and endorsement preparation. Moving Forward also raises awareness of the multiple barriers to employment faced by individuals with a criminal record and influences the business culture around hiring them.<sup>71</sup>

<sup>64</sup> U.S. Census Bureau, *American Community Survey*, 3-year average, 2011–2013.

<sup>65</sup> United States Bureau of Labor Statistics, 2013 annual average. Retrieved from: [http://www.bls.gov/opub/gp/pdf/gp13\\_27.pdf](http://www.bls.gov/opub/gp/pdf/gp13_27.pdf); U.S. Census Bureau, *American Community Survey*, 3-year average, 2011–2013.

<sup>66</sup> US Census Bureau, Local Employment Household Dynamics, according to the last two quarters for which data is available (2013Q4 and 2014Q1).

<sup>67</sup> Illinois Department of Corrections. (2013). Fiscal Year 2013 Report. Retrieved from: <https://www.illinois.gov/idoc/reportsandstatistics/Documents/FY2013%20Annual%20Report.pdf>.

<sup>68</sup> *Ibid.* and Marin, Carol and Moseley, Don. (2014). "Tracking Illinois' Released Prison Population." NBC Chicago. Retrieved from: <http://www.nbcchicago.com/investigations/Released-Inmates-Face-Roadblocks-Adjusting-to-Society-258402151.html#ixzz3S8PvSg21>.

<sup>69</sup> ThriveChicago. (2014). *ThriveChicago Baseline Report*. Retrieved from: <http://www.thrivechi.org/wp-content/uploads/2014/12/Thrive-Chicago-Baseline-Report.pdf>. See the Illinois "Job Opportunities for Qualified Applicants Act" for more details. Retrieved from: <http://ilga.gov/legislation/98/HB/PDF/09800HB5701lv.pdf>.

<sup>70</sup> EMSI.

<sup>71</sup> Ford, Krista. (2015). Interview with Brenda Palms-Barber, North Lawndale Employment Network.

## The large number of service providers in the Chicago area poses a challenge for coordination

The region has significantly streamlined its workforce system in the past few years, including by merging three Workforce Investment Boards to form the Chicago Cook Workforce Partnership and establishing the Chicagoland Workforce Funder Alliance.

- In healthcare, a variety of programs connect employers and providers, but these programs lack systemic coordination with each other. TDL has started work in aviation and rail, but does not yet have a robust network of providers and strategic, workforce-focused employer engagement across the sector.
- The multitude of independent workforce efforts in the region makes it difficult to scale successes and translate strategies to emerging sector development efforts.
- Many skills are transferable from well-developed sectors in the region to emerging ones (e.g., supply chain knowledge from manufacturing to TDL), but there is not enough coordination among providers to offer effective career advising to navigate cross-sector opportunities.
- The public workforce system distributes nearly \$300 million in public resources annually, but only 3% flows to employers, suggesting that their influence on regional training priorities is limited.<sup>72</sup>

## Providers struggle to train enough middle-skill workers in high-demand occupations

- The City Colleges of Chicago and suburban community colleges serve employers, but no single mechanism coordinates the region's multiple community college districts with each other and industry priorities.
- The recently established City Colleges' "College to Careers" program, where individual colleges serve as sector headquarters, will ultimately improve partnerships among employers, and education and training providers.
- **Community-based training programs** **10** account for the largest share of the region's workforce resources – 40% – and are a critical way to connect both young people and adults from underserved communities to career pathway opportunities, but providers struggle to achieve true scale.

<sup>72</sup> 40% of workforce system resources flow through community-based organizations, 35% through public agencies and 22% to educational institutions. The Workforce Boards of Metropolitan Chicago. (2012). *Metropolitan Chicago Region: An Analysis of Public Workforce Development Resources*.

<sup>73</sup> Ford, Krista. (2015). Interview with Ricardo Estrada, Instituto del Progreso Latino. Hourly wage calculated based on full-time schedule for an annual income of \$45,000.

<sup>74</sup> The "1,000 Jobs for Chicagoland Manufacturing" initiative and ThriveChicago have developed baseline data systems that are not yet widely adopted.

## **10** Training Bilingual Healthcare Workers at Scale

Carreras en Salud – led by Instituto del Progreso Latino – prepares individuals who speak limited English for careers in healthcare. Developed to increase the representation of Latinos in healthcare, the program trains individuals to be Certified Nursing Assistants (CNAs), Licensed Practical Nurses (LPNs) and Registered Nurses (RNs) while improving English proficiency.

The program has served over 2,000, mostly unemployed or underemployed, individuals since 2005. The average income for the almost 400 individuals who completed RN or LPN training has doubled to \$21.15 per hour. The program has a 75% placement rate for CNAs and a 100% placement rate for LPNs and RNs.<sup>73</sup>

## Individual workforce development efforts in the region are data-driven, but the lessons from each effort are not yet aggregated for a broader understanding of sector successes and needs

Regional efforts to coordinate and use labor market information (LMI) can build upon the efforts of the Chicago Cook Workforce Partnership, City Colleges and other workforce organizations that already conduct sophisticated LMI analysis to define career pathways and design training programs.

- The several sector strategies in the region do not share a framework for tracking and benchmarking progress in training and placing students in middle-skill jobs.<sup>74</sup>
- Consistent engagement with employer groups to review and supplement labor market data in the healthcare and TDL sectors will ensure that occupational training programs are data-driven.

# RECOMMENDATIONS

Given existing work in the Chicago region, stakeholders are well positioned to engage employers and expand demand-driven career pathways to strengthen the middle-skill talent pipeline not only for healthcare and TDL but also for other sectors.

## Recommendation

### 1. Expanding on the model of the manufacturing sector, draw on employer leadership in healthcare and TDL to develop sector-based strategies to strengthen the talent pipeline.

- Workforce intermediaries, in partnership with employers and education and training providers, should coordinate industry partnerships to identify current and projected skill shortages and define joint goals for building middle-skill talent and advancing the careers of workers. The partnerships can also serve as a forum for large employers to engage smaller businesses within their supply chains to aggregate labor needs and solutions.
- Employers should invest in designing and implementing **education and training programs 11** that address their current and projected labor needs.

## 11 Learning from School at Work

From 2009 to 2012, safety net hospitals in the Chicago region connected their entry-level workers to advancement opportunities in healthcare through the School at Work initiative. Hospital workers in the eight-month training program received on-site instruction and mentorship. Graduates were admitted to Wilbur Wright City College and many became eligible for middle-skill jobs such as radiology technicians. Saint Anthony Hospital launched and championed the initiative, serving as a mentor for 12 other participating hospitals. Saint Anthony continues to use the School at Work curriculum and model as part of its career development.<sup>75</sup>

## Recommendation

### 2. Increase coordination across sectors to leverage resources and knowledge from the region's strong workforce development partners and established sector-based initiatives.

The region's workforce system will more efficiently connect residents to middle-skill jobs if existing talent development efforts leverage each other's assets to build capacity and respond to common needs across the regional economy.

- Workforce partners should simplify how employers navigate the diversity of offerings in healthcare and TDL to identify the programs aligned to their specific needs. The ongoing **Metropolitan Export Initiative 12** illustrates the benefits of this approach. Workforce partners should continue to develop and more broadly disseminate transparent maps for job seekers that identify middle-skill opportunities across sectors, high-quality education and training options within a sector and pathways for career advancement.
- Strong sector strategies exist in the region. As the next step, workforce leaders across sectors committed to convening together should ensure that their plans for addressing shared concerns lead to efficiencies gained by aligning the robust network of providers around employer priorities.

## 12 Leveraging Resources Address Shared Concerns

As part of the Global Cities Initiative of the Brookings Institution and JPMorgan Chase, the City of Chicago and Presidents of the seven County Boards across the region came together to establish the Metropolitan Export Initiative (MEI). MEI developed a plan for helping small- and mid-sized manufacturing companies leverage capacity across sectors to expand exports to global markets. The goal is to use a more broad-based approach in order to strengthen the regional economy, rather than proliferate small pockets of localized economic growth. Officials from each county in the region are working together to identify the business partners and will support their growth through mentoring, microgrants and referrals.

<sup>75</sup> *Gazette Chicago*. (2010). "Saint Anthony is mentor hospital for School at Work Launch." Retrieved from: <http://www.gazettechicago.com/index/2010/04/saint-anthony-is-mentor-hospital-for-school-at-work-launch/>.



## Recommendation

### 3. Build on the region's established work in career pathways to expand training for high-demand, middle-skill occupations in emerging sectors.

While many sectors have already been the focus of career pathway development, the target sectors in this report would benefit from additional development. TDL stakeholders, in particular, would benefit from a coordinated effort to develop well-articulated education and training pathways for entry-level and middle-skill jobs.

- Workforce partners should target middle-skill occupations for career pathway development. Education and training providers should couple training for high-demand entry-level positions with credentials that position individuals for career advancement and family-sustaining wages.
- Stakeholders should document and leverage the strengths of existing sector-based approaches to accelerate emerging efforts for comprehensive sector strategies, such as the **Supply Chain Innovation Network of Chicago** <sup>13</sup> in TDL. As a strategy for efficiently addressing the diverse needs of the economy, this coordination should maximize skill transferability across sectors (e.g., advanced manufacturing and TDL) and within a sector (e.g., long-term health and hospitals).
- Education and training providers should standardize their programming for occupations across institutions based on industry demand, and providers and employers should ensure that workers progress in their career as they gain skills and experience.
- Employers and educational institutions should engage community-based organizations with deep ties to underserved communities as essential partners in developing and scaling career pathways.

### <sup>13</sup> Moving from Economic Development to Workforce Development

The Supply Chain Innovation Network of Chicago (SINC) is a business leadership council created to strengthen the regional economy and grow businesses by better moving goods through the supply chain. Executives from CenterPoint Properties, Load Delivered Logistics, Rand McNally, BNSF Railway, DSC Logistics, Carry Transit, Echo, and other private and public partners are working together to streamline truck permitting, coordinate off-peak delivery and spur innovation. Building on these successes, SINC also seeks to improve the TDL workforce as one of its priority initiatives. SINC harnesses employer leadership to drive TDL improvements through business programs, increased awareness of industry needs and public policy.

## Recommendation

### 4. Build on the region's robust data capacity and create a critical feedback loop between employers and providers.

The next step for the Chicago region's strong use of data would be to develop enhanced systems to refine, regularly update and communicate labor market intelligence to improve stakeholders' responsiveness to sector demand.

- Workforce partners should incorporate employer input, including quantitative and qualitative data on sector demand, employer satisfaction, hiring and retention, into regional workforce intelligence-gathering efforts. Sector intermediaries could assist small- and medium-sized employers to define and articulate their needs to ensure they are represented in the LMI.
- Industry experts should expand data to refine demand-side analysis (such as quantifying the scale and timing of an expected retirement wave) and identifying proxies for real-time data for industries like manufacturing that do not regularly advertise online.
- Workforce intermediaries should build capacity for training programs to use **labor market information** <sup>14</sup> effectively to respond to changing industry demand and to help job seekers make strategic education and employment decisions.
- Industry partnerships should establish a shared framework and a shared system to target middle-skill jobs and benchmarks for achieving strong outcomes preparing individuals for these jobs. They should implement tracking and feedback mechanisms to evaluate the efficacy of career pathways, identify transition points where individuals may have trouble advancing, and trigger support systems or revise pathways to address challenges.

### <sup>14</sup> High-Demand for LMI

The Chicago Cook Workforce Partnership uses a combination of traditional LMI (occupational and industry projections), real-time LMI (data drawn from a large number of online job postings) and other public workforce and demographic data to identify occupations for training investment and they distill this critical information into accessible products. Target occupational profiles allow job seekers to navigate their options, while quarterly "Where are the Jobs" reports list the occupations, employers, and skills/certifications that demonstrate the highest demand. The Partnership also provides regional stakeholders with pro bono assistance gathering and analyzing LMI for program planning, reporting, grant applications and other uses.<sup>76</sup>

76 Kobes, Deborah. [2015]. Interview with Amanda Cage and Marisa Lewis, Chicago Cook Workforce Partnership.

# CONCLUSION

Chicago's regional economy - while slightly underperforming compared to the nation's - is poised to surpass its prerecession job levels. At this critical moment, coordinated and employer-driven workforce development is essential to creating sustainable economic opportunity for Chicago area residents. The Chicago region is unusual in that it has both strong service and manufacturing industries. With an effective workforce strategy, this economic diversity has the potential to allow workers to transfer skills between industries and maximize career opportunities.

This report's recommendations focus on building coordination across the workforce system in a way that targets the needs of specific sectors; develops career pathways with an emphasis on skills transferability and high-quality, middle-skill jobs; and fully utilizes data and employer input to design, improve and measure training strategies and success.

Through the *New Skills at Work* initiative, JPMorgan Chase proposes to help advance these efforts by offering guidance on how to develop a demand-driven career pathways system to launch young people and low-skill adults into good jobs with advancement potential. Starting with the middle-skill occupations open in the healthcare and TDL sectors, JPMorgan Chase has helped to provide targeted recommendations to implement this strategy in the Chicago region, fortify the region's economy for the future and realize the vision that all residents of the Chicago metropolitan area have the opportunity for good jobs that enable them to support themselves and their families.

# APPENDIX A – Methodology

All data in this report are provided for the Chicago metropolitan region, unless otherwise noted. This includes Cook, DuPage, Kane, Kendall, Lake, McHenry and Will counties. The larger Metropolitan Statistical Area defined by the Census will occasionally be referenced for context, and the trends in the MSA are consistent with the trends of the Chicago metropolitan region.

To provide a picture of the economy (e.g., description of employment, unemployment, productivity, workforce and education), the report draws on EMSI's data aggregated from over 90 federal, state and private sources. EMSI applies proprietary methods to remove suppressions and include data for proprietors to yield a comprehensive representation of the regional workforce.

The report also includes analytical information from Burning Glass Technologies, which provides real-time labor market information (RT LMI) from online job postings. Burning Glass' patented parsing and data extraction capabilities can extract, derive and infer more than 70 data elements from any online job posting, providing in-depth insights into employers' demand for skills and credentials.

## Methodology to Identify “Middle-Skill” Occupations

Four criteria were used to identify middle-skill occupations, as follows:

1. Selected occupations must require at least a high school diploma and some on-the-job training experience (to filter out low-skill jobs requiring a high school diploma and no training).
2. Selected occupations must also require less than a Bachelor's degree, or employ at least 25% of workers with “some college” or an Associate's degree according to the Bureau of Labor Statistics: [http://www.bls.gov/emp/ep\\_table\\_111.htm](http://www.bls.gov/emp/ep_table_111.htm).

## Methodology to Identify “Target Middle-Skill” Occupations

3. In addition to the above criteria, 25% or more of the workforce for each target occupation must surpass the living wage for families with two adults and one child (\$18.98.)
4. Occupations with limited annual openings or low total employment are filtered out.

The term “middle-skill” typically refers to the level of education required by a job. These target occupations expand the common definition by adding three additional criteria. This expanded approach will make sure selected occupations are not only middle-skill but also provide a living wage and viable employment opportunities in the region.

## Sector Definitions

The healthcare and TDL sectors are defined using the industry sector classifications of the North American Industry Classification System (NAICS). Healthcare includes the Hospitals (622), Ambulatory and Health Care Services (621), and Nursing and Residential Care Facilities (623) industry sectors. TDL includes the Transportation and Warehousing (48–49), Process, Physical Distribution, and Logistics Services (521,614), Commercial Air, Rail, and Water Transportation Equipment Rental Leasing (532,411), Packaging and Labeling Services (561,910), and Wholesale Trade Agents and Brokers (425,120) industry sectors.

## Limitations

When assessing a phenomenon as complex as a local economy, gaps in our analysis and understanding remain. While traditional LMI offers the best data available to capture historical industry and occupational trends, it is infrequently updated and does not adequately account for future macro- or micro-economic shifts in supply or demand. Some of the federal and state data sources EMSI uses contain non-disclosed or “suppressed” data points, created by the government organizations that publish the data products in order for them to comply with laws and regulations that are in place to help protect the privacy of the businesses that report to them. In some cases, EMSI utilizes proprietary algorithms to replace suppressions with mathematically educated estimates.

RT LMI complements the traditional LMI with more recent information on employer skills, education and credential demand. However, a common limitation of job postings data is that it can only access information that is indeed posted online. To control for duplicate job listings, Burning Glass employs an advanced parsing engine that considers the actual job functions and skills described by the employer rather than just the text. Burning Glass focuses on the content of the posting, not simply the words or basic fields.

Some of the limitations from both traditional and RT LMI will be ameliorated through qualitative interviews with employers, educators, policymakers and workforce intermediaries whose on-the-ground experience can fill in gaps about both future employer skill demand and participant supply. Overall, data can be a useful starting point, but the intricacies of talent shortages and job openings will need to be verified locally.



# APPENDIX B – Selected Occupations by Skill Area: Transportation, Distribution and Logistics

Primary Skill Areas/Occupation	2014 Jobs	2014 Median Wages	2014–2019 Average Annual Openings	2014 Job Postings	Average Posting Duration (Days)	2014 Location Quotient (Job Postings)
<b>Mechanic and Auto Repair</b>						
Automotive Service Technician	19,002	\$17.67	656	3,532	33	Average (LQ=1.15)
Diesel Mechanic	6,134	\$22.60	173	1,214	38	Very High (LQ=1.58)
Bus Drivers Intercity/Transit <sup>2</sup>	5,382	\$29.48	130	486		Very High (LQ=1.77)
Heavy Equipment Mechanic <sup>2</sup>	1,283	\$28.23	61	102		Low (LQ=0.53)
Heavy and Tractor-Trailer Truck Drivers <sup>1</sup>	45,030	\$21.34	1,141	30,178	24	Very High (LQ=1.76)
<b>Procurement</b>						
Procurement Manager <sup>1</sup>	3,006	\$43.53	76	1,507	35	Very High (LQ=2.65)
Wholesale and Retail Buyers, Except Farm Products <sup>2</sup>	4,847	\$24.43	153	552		Very High (LQ=3.5)
Procurement/Contract Administrator <sup>2</sup>	1,842	\$19.13	76	155		Very High (LQ=1.59)
Purchasing Agent	6,286	\$29.57	143	2,490	31	Very High (LQ=1.48)
<b>Logistics and Supply Chain</b>						
Logisticians	2,549	\$31.65	92	1,110	38	Very High (LQ=2.57)
Supply Chain Specialist	2,140	\$37.33	96	992	30	High (LQ=1.32)
Scheduler/Operations Coordinator <sup>1</sup>	8,014	\$22.26	228	2,814	28	High (LQ=1.31)
<b>Aviation, Rail and Marine Transportation</b>						
Air Traffic Controllers <sup>2</sup>	829	\$72.88	46	57		Average (LQ=1.13)
Locomotive Engineers <sup>2</sup>	1,731	\$27.71	53	12		Average (LQ=0.87)
Railroad Brake, Signal and Switch Operators <sup>2</sup>	1,093	\$24.14	34	N/A		N/A
Railroad Conductors and Yardmasters <sup>2</sup>	1,879	\$29.69	58	52		Average (LQ=0.87)
Rail Car Repairers <sup>2</sup>	821	\$27.58	30	N/A		N/A
Mates and Pilots of Water Vessels <sup>2</sup>	519	\$30.57	36	80		High (LQ=1.4)
Flight Attendants <sup>1,2</sup>	9,796	\$17.62	220	N/A		N/A
<b>Warehouse and Distribution</b>						
Storage/Distribution Manager	3,794	\$43.53	114	659	32	Very High (LQ=1.60)
First Line Supervisors of Material Movers and Helpers <sup>2</sup>	5,820	\$24.31	196	228		High (LQ=1.5)
Cargo and Freight Agents <sup>2</sup>	6,306	\$21.41	296	362		Very High (LQ=2.5)
Dispatchers, Except Police, Fire and Ambulance <sup>2</sup>	5,333	\$19.13	192	426		Average (LQ=1.0)
Inventory Associate <sup>1</sup>	5,220	\$17.09	147	2,502	35	Average (LQ=1.02)
<b>Transportation</b>						
Shipping/Receiving Clerk <sup>1</sup>	21,947	\$14.30	649	1,620	25	Very High (LQ=1.55)
Transportation Manager	4,159	\$43.53	149	403	14	Very High (LQ=1.55)

(Source: Burning Glass and EMSI. Median wage for Shipping/Receiving Clerk is from Burning Glass Labor/Insight)

- 1 These occupations are not classified as middle-skill but are included because they are critical to the economy and closely aligned with target occupations within a career pathway.
- 2 Sample size too small to calculate the average posting duration.

# APPENDIX C – Selected Occupations by Skill Area: Healthcare

Primary Skill Areas/Occupation	2014 Jobs	2014 Median Wages	2014–2019 Average Annual Openings	2014 Job Postings	Average Posting Duration (Days)
<b>Nursing</b>					
Registered Nurse	71,839	\$33.55	2,328	16,711	36
Nurse Case Manager	N/A	\$34.21	N/A	1,503	31
<b>Sub-BA Practitioner</b>					
Physical Therapy Assistant	2,158	\$26.49	163	573	54
Health Technologist/Other <sup>1</sup>	3,626	\$19.79	71	957	35
Surgical Technician/Technologist	1,867	\$21.90	51	640	33
Cardiovascular Technician/Technologist	1,055	\$29.58	34	470	33
Ultrasound Technologist/Sonographer	1,359	\$36.70	62	304	35
Occupational Therapy Assistant	765	\$28.80	67	591	57
Respiratory Therapist	2,800	\$27.05	67	379	42
MRI/CT Technician	735	\$36.61	20	271	37
Radiology Technician	4,998	\$28.94	125	537	34
<b>Healthcare Support</b>					
Nursing Assistant <sup>1</sup>	37,029	\$11.70	1,423	3,983	32
Mental Health/Psychiatric Technician	2,158	\$21.02	25	103	25
Home Health Aide <sup>1</sup>	36,350	\$10.53	2,164	720	30
<b>Administrative</b>					
Medical Office/Practice Manager	8,998	\$25.35	367	216	35
Medical Secretary <sup>1</sup>	8,883	\$16.40	361	1,039	28
Interpreter/Translator	2,164	\$18.79	126	462	38
Medical Transcriptionists	1,348	\$16.68	53	58	51
<b>Technical, Non-Patient Care</b>					
Medical Lab Technician	3,809	\$19.97	173	1,427	35
Pharmacy Technician <sup>1</sup>	11,932	\$13.58	275	1,099	76
Sterile Processing Technician	2,212	\$15.99	61	300	36
Biomedical Equipment Technician	1,159	\$22.79	59	119	44
Dental Laboratory Technician	840	\$17.17	48	45	16
Histotechnologist	N/A	\$28.61	N/A	75	32
<b>Health Information Management</b>					
Medical Records/Health Information Technician	5,059	\$17.79	216	622	40

(Source: Burning Glass and EMSI)

<sup>1</sup> These occupations are not classified as middle-skill but are included because they are critical to the economy and closely aligned with target occupations within a career pathway.

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