



Health Care



Skills Gap Analysis & Sector Strategies

*Commissioned by Workforce Central on behalf of
the Pierce County Workforce Development Council*

September 2016



EXECUTIVE SUMMARY

Background and Purpose

WorkForce Central (WFC) and the Pierce County Workforce Development Council (WDC) work closely together to support a strong economy by leading and overseeing our region's comprehensive workforce development system that prepares job seekers and workers with 21st century knowledge and skills required by businesses. WFC and WDC partner with leaders from the business community, philanthropic organizations, organized labor, education, government, community based organizations and other key stakeholders to shape and support workforce solutions.

Commissioned by WFC on behalf of the WDC, this study compares projected demand for specific occupations against labor supply to identify potential workforce gaps. This skills gap and sector strategy analysis, combined with feedback from industry stakeholders, will be used to plan for the changing needs of the industry and inform workforce preparation strategies. In addition, this study may be used to influence policy and investment decisions throughout and beyond the workforce development system.

Since 2010, Community Attributes Inc. (CAI) has produced multiple talent pipeline studies that examine various sectors. The studies compare projected demand for specific occupations against labor supply to identify potential workforce gaps.

Methods

Talent pipeline analysis draws from data published by the Washington State Employment Security Department (ESD), the Bureau of Labor Statistics (BLS) and the National Center for Education Statistics (NCES).

In addition to the talent pipeline analysis, findings are informed by in-depth interviews conducted with stakeholders in the healthcare industry. Interviews covered topics of hiring, recruiting, education and training as well as skills needs. Stakeholders interviewed included representatives from a variety of healthcare employers who provided a range of perspectives on the healthcare industry and “on-the-ground” realities.

Key Findings

Pierce County's healthcare industry is the county's largest private industry, representing more than 15 percent of county employment, and when combined with the more than 3,100 healthcare workers employed by the government, totals more than 43,700 workers.

Overall the healthcare industry statewide employs more than 336,000. As

one of Pierce County's fastest growing industries healthcare is a key industry to watch within the county.

The healthcare industry as a whole is projected to grow 1.8 percent annually between 2018 and 2023. Employment in key healthcare occupations is expected to reach 36,350 workers in 2018 and 39,680 in 2023. This represents net growth of 1,445 jobs per year. Net growth equals new hires minus exiting workers.

This growth is not uniform across all occupations. The fastest growing components of the healthcare workforce is in “direct care” occupations – certified nursing assistants, medical assistants, and home health and personal care aides. Together employment in these occupations is projected to grow 2.0 percent annually between 2018 and 2023. This growth reflects changes occurring in service delivery as a result of payment and quality reforms taking place in Washington state and throughout the country. Many of these workers are employed in settings that provide less expensive care than hospitals, such as long-term care, primary care or home-based care.

The **Talent Pipeline Dashboard** (*page vii*) shows occupations in the healthcare industry grouped by education level required for entry ranked by average annual openings within the industry from 2018 to 2023. The minimum education required for entry is defined by the Bureau of Labor Statistics and is not meant to indicate the education requirement defined by individual employers, which may be higher or lower¹. Supply is composed of two elements: the entry of new graduates into the workforce and the existing talent pool of qualified unemployment insurance (UI) claimants actively seeking employment.

Some overall findings include the following:

- Across 50 core healthcare occupations there is a forecasted supply of 1,571 local workers, anticipated demand among these occupations is projected to be 1,323, leaving a final surplus of 248 workers in Pierce County. This industry-wide surplus is driven largely by a surplus of 349 medical assistants.
- A total of 24 core healthcare occupations requiring a degree or postsecondary award for entry have no Pierce County college or university supplying graduates. Some of these occupations include: dental hygienists, physical therapist assistants, diagnostic medical sonographers, medical and clinical laboratory technologists, physicians and surgeons, physical therapists and dentists.

¹ Some healthcare occupations are regulated. In these cases, minimum education level is determined by state or federal regulations and employers do not deviate from them.

- Among all core healthcare occupations registered nurses have the largest shortage at more than 100 workers annually. These positions are in demand throughout the healthcare industry, at 249 average annual openings, and are also the most difficult for industry employers to fill.
- Stakeholders noted that a lack of soft skills is impacting job applications and new employees. Initial contact and interview skills are lacking among new entrants into the industry. This includes resumes, etiquette, how to dress, how to interview and even how to fill out job applications.
- LPN positions are increasingly difficult to fill, especially in community health and long-term care settings. One major Pierce County hospital system is beginning to integrate LPNs back into nursing care teams due to difficulties hiring RNs. If this occurs on a wide scale across the industry, current demand for LPNs may be understated.

Some initial recommendations include the following:

- Stakeholders agreed that expanding focus on soft skills within educational programs or other organizations in the workforce system could be valuable. Students who have experience with interviews and understand the work environments present themselves more strongly to employers.
- Local education institutions should explore options to add BSN completion programs and/or specialty training for existing nurses. They can also consider opportunities to continue adding cultural and linguistic competence to their students.
- Training LPNs is hampered by a perceived low demand for graduates as well as lack of clinical space for students. Employers and educators should develop a nursing education and workforce plan for Pierce County that incorporates existing workforce projections with output from nursing education programs and serves to help employers and educators agree on the balance of LPN and RN training. This plan should include where LPN students will gain their required clinical education experience.
- Expand partnerships with employers and labor organizations who employ/represent direct care workers to explore career pathways that will help boost job retention.

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Pierce County Healthcare Talent Pipeline

On-the-Job Training

Annual Average Demand and Supply All Occupations by Education	Occupation Ranked by Annual Openings (2018-2023)	Employment		CAGR 2013-2023	Annual Demand and Supply, 2018-2023		Gap
		2013	2023		Scale: 0 - 170 annual openings in sector		
	1 Social and Human Service Assistants	1,505	1,887	2.3%	Demand	80	(67)
					Supply	13	
	2 Home Health Aides	1,160	1,673	3.7%	Demand	76	(62)
					Supply	14	
	3 Personal Care Aides	2,924	3,701	2.4%	Demand	73	15
					Supply	87	
4 Medical Secretaries	1,173	1,477	2.3%	Demand	46	96	
				Supply	142		
5 Food Servers, Nonrestaurant	484	616	2.4%	Demand	27	(23)	
				Supply	4		
6 Health Technologists and Technicians, All Other	606	690	1.3%	Demand	17	(7)	
				Supply	10		

Associate Degree or Postsecondary Award

Annual Average Demand and Supply All Occupations by Education	Occupation Ranked by Annual Openings (2018-2023)	Employment		CAGR 2013-2023	Annual Demand and Supply, 2018-2023		Gap
		2013	2023		Scale: 0 - 485 annual openings in sector		
	1 Registered Nurses	6,621	7,642	1.4%	Demand	249	(109)
					Supply	139	
	2 Nursing Assistants	2,500	2,950	1.7%	Demand	87	14
					Supply	101	
	3 Licensed Practical and Licensed Vocational Nurses	1,565	1,770	1.2%	Demand	60	95
					Supply	155	
	4 Medical Assistants	1,118	1,395	2.2%	Demand	56	349
					Supply	405	
	5 Massage Therapists	1,272	1,798	3.5%	Demand	47	(35)
					Supply	12	
6 Dental Assistants	937	1,095	1.6%	Demand	38	18	
				Supply	56		
7 Dental Hygienists	518	633	2.0%	Demand	28	(17)	
				Supply	11		
8 Medical Records and Health Information Technicians	518	590	1.3%	Demand	23	42	
				Supply	65		
9 Medical and Clinical Laboratory Technicians	246	285	1.5%	Demand	12	3	
				Supply	15		
10 Phlebotomists	259	312	1.9%	Demand	12	164	
				Supply	176		

Bachelor's Degree

Annual Average Demand and Supply All Occupations by Education	Occupation Ranked by Annual Openings (2018-2023)	Employment		CAGR 2013-2023	Annual Demand and Supply, 2018-2023		Gap
		2013	2023		Scale: 0 - 83 annual openings in sector		
	1 Medical and Health Services Managers	783	903	1.4%	Demand	34	10
					Supply	44	
	2 Social and Community Service Managers	412	516	2.3%	Demand	19	50
					Supply	69	
3 Medical and Clinical Laboratory Technologists	373	429	1.4%	Demand	18	(18)	
				Supply	0		
4 Mental Health and Substance Abuse Social Workers	280	309	1.0%	Demand	9	2	
				Supply	11		

Master's Degree or Higher

Annual Average Demand and Supply All Occupations by Education	Occupation Ranked by Annual Openings (2018-2023)	Employment		CAGR 2013-2023	Annual Demand and Supply, 2018-2023		Gap
		2013	2023		Scale: 0 - 38 annual openings in sector		
	1 Physicians and Surgeons, All Other	751	842	1.2%	Demand	32	(32)
					Supply	0	
	2 Physical Therapists	539	646	1.8%	Demand	25	(24)
					Supply	1	
	3 Dentists, General	354	433	2.0%	Demand	17	(17)
					Supply	0	
	4 Mental Health Counselors	518	571	1.0%	Demand	16	(8)
					Supply	9	
5 Physician Assistants	327	389	1.8%	Demand	14	(14)	
				Supply	0		
6 Family and General Practitioners	196	245	2.3%	Demand	11	(11)	
				Supply	0		
7 Occupational Therapists	341	407	1.8%	Demand	11	(10)	
				Supply	1		
8 Healthcare Social Workers	221	266	1.9%	Demand	10	(2)	
				Supply	8		

Sources: Washington State Employment Security Department, 2014; Bureau of Labor Statistics, 2016; National Center for Education Statistics, 2016; Community Attributes Inc., 2016.

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INTRODUCTION

Background and Purpose

Healthcare is an essential piece of every county economy and community. Pierce County in particular has a high concentration of employment in healthcare indicated by a location quotient of 1.3.

The healthcare industry has historically undergone change as it responds to advances in technology, regulatory pressures and a constantly evolving business market. However, with the advent of quality and payment reforms, the rate and scale of change has accelerated significantly. Today, employers are adjusting to changes in service setting, service delivery, market, technology and more. These changes are driving new requirements in the mix of occupations and skills required by the industry. This skills gap analysis and strategies will help WorkForce Central (WFC) plan for the changing workforce needs of the healthcare industry in Pierce County.

Covered employment in Pierce County's healthcare industry is 15 percent of total county covered employment. For comparison, healthcare employment in Washington is 11 percent of total employment. Pierce County's healthcare industry employs more than 39,200 people as of 2013 and occupational employment in the healthcare industry is projected to grow 1.9 percent annually between 2013 and 2023, faster than Pierce County employment as a whole. The healthcare industry is the top private employer in Pierce county. Employers in the healthcare industry range from small companies, to major hospitals and the federal government in the county. Additionally, Pierce County's healthcare industry pays higher wages than the region. The annual average wage in the healthcare industry is \$58,900 compared to an economy-wide average wage of \$57,370. Among core healthcare occupations median wages lie between \$21,750 annually and \$179,280 annually, out of 50 core occupations 24 have median wages greater than \$50,000 annually.

The employment growth in the healthcare industry is not uniform across all occupations. The fastest growing components of the healthcare workforce is in "direct care" occupations – certified nursing assistants, medical assistants, and home health and personal care aides, at 2.4 percent annually between 2013 and 2023. This growth reflects the changes occurring in service delivery as a result of payment and quality reforms taking place in Washington state and throughout the country. These reforms are increasing demand for care delivered in less expensive settings, such as long term care, home-based care or primary care. Many of these workers are employed in these settings.

As one of Pierce County's growing and largest private industries a strong understanding of the demand, supply and stakeholder feedback will allow WFC and industry leaders to help address workforce challenges of tomorrow. Workforce professionals can use this information to help ensure Pierce County's educational assets and workforce development organizations are providing the appropriate mix of training opportunities to meet the needs of the healthcare industry.

Methods

WorkForce Central serves employers and workers within Pierce County, representing almost ten percent of Washington's total employment covered by unemployment insurance. CAI's analysis relies on data published by the state of Washington and federal agencies. Specifically, the following data sources form the foundation of the modeling:

- **Occupational estimates and forecasts from the Washington State Employment Security Department (ESD) and the Bureau of Labor Statistics.** This data provides current estimates and forecasted demand for occupations in Pierce County and associated educational requirements, as well as occupational wages. Occupational forecasts include openings created by retirements and separations, in addition to openings created by newly created positions. For this reason, average annual openings are larger than the average of net jobs created over a period of time.
- **Washington unemployment insurance claims.** This data, also published by ESD, provides monthly unemployment claims and the previous occupations of the claimant by occupation code.
- **Educational attainment data from the National Center for Education Statistics' Integrated Postsecondary Education System (IPEDS).** IPEDS provides the number of graduates by educational program for Pierce County's higher education institutions, defined according to the Classification of Instructional Programs, as well as a table of equivalence used to match educational programs to occupations.

Subsequent sections explain the details and limits of this data. In general, this data provides measures of demand and supply for a geographic region (i.e., Pierce County) by occupation across industries. The occupations are defined in accordance with the Bureau of Labor Statistics Standard Occupational Classification system and industries are delineated using definitions from the North American Industry Classification System.

To help provide context to the data, and capture rapidly evolving factors affecting employment patterns, in-depth interviews were also conducted as a part of this detailed healthcare talent pipeline analysis. Interviews were conducted with key stakeholders within the healthcare industry ranging from hospitals to long-term care facilities. These interviews were

open-ended discussions and provided qualitative perspectives on workforce issues impacting the healthcare industry.

Organization of Report

- **Healthcare Industry Overview.** Provides an overview of the healthcare industry and the occupations that define the industry.
- **Demand Analysis.** Describes the composition of healthcare occupational demand in Pierce County.
- **Supply Analysis.** Breaks out the two elements of talent supply: new graduates entering the workforce and the existing pool of unemployment insurance claimants.
- **Supply and Demand.** Examines how local supply is expected to meet occupational demand in Pierce County.
- **Summary of Key Findings and Preliminary Recommendations.** Assesses in detail the results of the talent pipeline analysis and interview findings, focusing on key implications for Pierce County.

HEALTHCARE INDUSTRY OVERVIEW

Assessing occupational gaps in an industry relies on a strict operational definition of which occupations compose that industry. Some occupations are present in nearly every industry and do not characterize the skills that define the industry specifically. Many administrative roles, for example, fit into this category. The first step in determining the core occupations that represent the primary set of skills within Pierce County's healthcare industry is developing an operable definition of the industry. The North American Industry Classification System (NAICS) groups industries in increasingly specific segments from the two-digit to the six-digit level. Healthcare is defined by all of the detailed industries falling within the broad 2-digit NAICS code 62, healthcare and social assistance (**Exhibit 1**).

Exhibit 1. Pierce County Healthcare NAICS by Employment, 2013²

Four Digit NAICS	Description	Employment, 2013
6221	General medical and surgical hospitals	11,470
6211	Offices of physicians	6,080
6241	Individual and family services	4,870
6214	Outpatient care centers	3,530
6233	Community care facilities for the elderly	3,070
6213	Offices of other health practitioners	2,980
6212	Offices of dentists	2,670
6231	Nursing care facilities	2,470
6243	Vocational rehabilitation services	1,450
6216	Home health care services	770
6232	Residential mental health facilities	480
6242	Emergency and other relief services	270
6215	Medical and diagnostic laboratories	220
6239	Other residential care facilities	210
Healthcare and Social Assistance Total		40,540
9991	Federal Government	2,490
9992	State Government Other	410
9993	Local Government Other	260
Government (Healthcare Only) Total		3,160
Healthcare Industry Total		43,700

Sources: U.S. Bureau of Labor Statistics, 2016; Washington State Employment Security Department, 2016; Community Attributes Inc., 2016.

² The data in this analysis represents a base year of 2013. Although some employment datasets now have data available for 2014 and 2015, base year 2013 is used throughout this report for consistency. The occupational projections that are the source for occupational employment and demand analysis are developed by the Washington State Employment Security Department and are updated annually. However, the projections lag available employment data by a year, at the time of this analysis the projections had not yet been updated to reflect 2014 base year.

The healthcare industry employs more than 40,500 people in Pierce County. Including healthcare employment in government, the healthcare industry employs more than 43,700 people. Pierce County's healthcare industry is primarily composed of employment in hospitals, followed by employment in offices of physicians and individual and family services. Government entities employ more than 3,000 healthcare workers. Throughout this analysis, estimates of healthcare industry employment includes both government and private employment of healthcare workers. **(Exhibit 1)**

As mentioned above, another method for defining the healthcare industry is to identify the core occupations that represent the primary skills within the industry. **Exhibits 2** and **3** lay out the core occupations that define Pierce County's healthcare industry. The process of assembling this list began with examining the structure of the occupation codes with employment in the healthcare industry. The Bureau of Labor Statistics defines occupations using the Standard Occupation Code system (SOC). These occupations have a two-digit prefix, grouping occupations of similar types, followed by a more detailed four-digit code, identifying each individual occupation. Occupations matching healthcare are first grouped by their concentration within the healthcare industry.

Occupations with fewer than 100 employees in the healthcare industry, or less than 50 percent concentration within the industry, are excluded from the analysis as they are not considered core jobs within the industry. The core occupations identified represent only a portion of total employment within the healthcare industry. The occupations in **Exhibits 2** and **3** are highlighted because they represent the core occupations that define employment within this industry. Overall employment within the healthcare industry includes employment in other occupations that are not core to the industry. Additionally, core healthcare occupations are also present in industries other than healthcare throughout Pierce County.

Exhibit 2. Healthcare Practitioners and Technical Occupations and Healthcare Support Occupations, Employment in Industry and Total Employment, Pierce County, 2013

SOC	Occupation	Employment in Industry	Employment in Other Industries	Total Employment	Share in Industry
29-1141	Registered Nurses	6,186	435	6,621	93%
29-2061	Licensed Practical and Licensed Vocational Nurses	1,435	130	1,565	92%
29-1069	Physicians and Surgeons, All Other	751	0	751	100%
29-2099	Health Technologists and Technicians, All Other	606	0	606	100%
29-1123	Physical Therapists	516	23	539	96%
29-2021	Dental Hygienists	514	4	518	99%
29-2071	Medical Records and Health Information Technicians	501	17	518	97%
29-2034	Radiologic Technologists	468	0	468	100%
29-2011	Medical and Clinical Laboratory Technologists	373	0	373	100%
29-1021	Dentists, General	353	1	354	100%
29-1071	Physician Assistants	327	0	327	100%
29-2055	Surgical Technologists	289	1	290	100%
29-1122	Occupational Therapists	258	83	341	76%
29-2012	Medical and Clinical Laboratory Technicians	246	0	246	100%
29-1126	Respiratory Therapists	242	23	265	91%
29-1171	Nurse Practitioners	208	24	232	89%
29-1199	Health Diagnosing and Treating Practitioners, All Other	205	0	205	100%
29-1062	Family and General Practitioners	196	0	196	100%
29-2032	Diagnostic Medical Sonographers	175	0	175	100%
29-9099	Healthcare Practitioners and Technical Workers, All Other	169	11	180	94%
29-1011	Chiropractors	164	0	164	100%
29-1031	Dietitians and Nutritionists	155	0	155	100%
29-1061	Anesthesiologists	154	0	154	100%
29-2035	Magnetic Resonance Imaging Technologists	143	0	143	100%
29-1067	Surgeons	133	0	133	100%
29-2031	Cardiovascular Technologists and Technicians	118	0	118	100%
29-1022	Oral and Maxillofacial Surgeons	110	0	110	100%
29-2081	Opticians, Dispensing	102	84	186	55%
29-2057	Ophthalmic Medical Technicians	102	0	102	100%
Healthcare Practitioners and Technical Occupations Subtotal		15,198	837	16,035	95%
31-1014	Nursing Assistants	2,168	332	2,500	87%
31-1011	Home Health Aides	1,160	0	1,160	100%
31-9092	Medical Assistants	1,109	9	1,118	99%
31-9091	Dental Assistants	937	0	937	100%
31-9011	Massage Therapists	757	515	1,272	60%
31-9097	Phlebotomists	259	0	259	100%
31-9093	Medical Equipment Preparers	237	14	251	94%
31-2021	Physical Therapist Assistants	195	3	198	98%
Healthcare Support Occupations Subtotal		6,822	873	7,695	89%

Sources: Washington State Employment Security Department, 2014; Community Attributes Inc., 2016.

More than 73 percent of healthcare employment in Pierce County falls within healthcare practitioners and technical occupations and healthcare support occupations. Additionally, a large portion of these occupations are highly concentrated within the industry. Among healthcare practitioners and technical occupations 95 percent of occupational employment is within the industry and 89 percent of healthcare support occupation employment is within the industry. (**Exhibit 2**)

Exhibit 3. All Other Healthcare Occupations, Employment in Industry and Total Employment, Pierce County, 2013

SOC	Occupation	Employment in Industry ↓	Employment in Other Industries	Total Employment	Share in Industry
21-1093	Social and Human Service Assistants	1,449	56	1,505	96%
21-1014	Mental Health Counselors	502	16	518	97%
21-1023	Mental Health and Substance Abuse Social Workers	280	0	280	100%
21-1022	Healthcare Social Workers	221	0	221	100%
21-1011	Substance Abuse and Behavioral Disorder Counselors	135	8	143	94%
21-1013	Marriage and Family Therapists	105	0	105	100%
21-1091	Health Educators	103	3	106	97%
Community and Social Services Occupations Subtotal		2,795	83	2,878	97%
43-6013	Medical Secretaries	1,149	24	1,173	98%
43-4111	Interviewers, Except Eligibility and Loan	401	23	424	94%
Office and Administrative Support Occupations Subtotal		1,550	47	1,597	97%
11-9111	Medical and Health Services Managers	748	35	783	96%
11-9151	Social and Community Service Managers	365	47	412	88%
Management Occupations Subtotal		1,113	82	1,195	93%
39-9021	Personal Care Aides	2,144	780	2,924	73%
35-3041	Food Servers, Nonrestaurant	434	50	484	90%
All Occupations		30,055	2,753	32,808	92%

Sources: Washington State Employment Security Department, 2014; Community Attributes Inc., 2016.

Community and social services occupations, office and administrative support occupations and management occupations are also prominent within the industry. Among core healthcare occupations employment in Pierce County totals more than 32,800. Out of this total occupational employment, more than 30,000 are employed in the healthcare industry, representing 92 percent of total healthcare occupational employment. (Exhibit 3)

Exhibit 4. Healthcare Occupations Median Wage and 90th Percentile Wage, On-the-Job Training and Associate Degree or Postsecondary Award, Seattle-Tacoma-Bellevue MSA, 2014

SOC	Occupation	Employment in Industry	Median Wage ↓	90 th Percentile Wage
On-the-Job Training				
29-2099	Health Technologists and Technicians, All Other	606	\$49,050	\$81,590
29-2081	Opticians, Dispensing	102	\$48,700	\$60,000
21-1011	Substance Abuse and Behavioral Disorder Counselors	135	\$44,020	\$60,330
43-6013	Medical Secretaries	1,149	\$42,230	\$57,000
43-4111	Interviewers, Except Eligibility and Loan	401	\$38,880	\$52,840
31-9093	Medical Equipment Preparers	237	\$35,190	\$48,420
21-1093	Social and Human Service Assistants	1,449	\$29,120	\$44,340
31-1011	Home Health Aides	1,160	\$25,730	\$30,750
39-9021	Personal Care Aides	2,144	\$23,850	\$30,980
35-3041	Food Servers, Nonrestaurant	434	\$21,750	\$30,240
Associate degree or Postsecondary Award				
29-2021	Dental Hygienists	514	\$93,700	\$118,130
29-2032	Diagnostic Medical Sonographers	175	\$85,940	\$110,580
29-2035	Magnetic Resonance Imaging Technologists	143	\$83,640	\$106,910
29-1141	Registered Nurses	6,186	\$82,370	\$114,480
29-2034	Radiologic Technologists	468	\$70,810	\$94,640
29-1126	Respiratory Therapists	242	\$68,120	\$91,530
29-2031	Cardiovascular Technologists and Technicians	118	\$67,180	\$96,310
31-2021	Physical Therapist Assistants	195	\$56,820	\$81,540
29-2055	Surgical Technologists	289	\$51,280	\$64,350
29-2061	Licensed Practical and Licensed Vocational Nurses	1,435	\$51,230	\$63,940
31-9011	Massage Therapists	757	\$43,490	\$74,170
29-2057	Ophthalmic Medical Technicians	102	\$42,440	\$58,080
29-2012	Medical and Clinical Laboratory Technicians	246	\$42,280	\$60,000
29-2071	Medical Records and Health Information Technicians	501	\$41,890	\$66,340
31-9091	Dental Assistants	937	\$41,340	\$55,260
31-9092	Medical Assistants	1,109	\$36,820	\$47,700
31-9097	Phlebotomists	259	\$34,690	\$45,420
31-1014	Nursing Assistants	2,168	\$30,380	\$40,780

Due to data limitations median and 90th percentile wages are those for the matching occupation in the Seattle-Tacoma-Bellevue MSA, and are used as a proxy for Pierce County wages by occupation given data limitations for occupational wage data for Pierce County alone.

Sources: U.S. Bureau of Labor Statistics, 2014; Washington State Employment Security Department, 2014; Community Attributes Inc., 2016.

On-the-job training, associate degree or postsecondary award, bachelor's degree and master's degree or higher are categories used to break core occupations into key groupings. These categories are based on Bureau of Labor Statistics minimum education required for entry. These education levels are set at a national level (or, for many licensed positions, at the state level) and may not be fully reflective of the hiring practices in Pierce County, or within individual companies. Interview feedback indicated, for example that home health aides are required to earn a certificate to be eligible for employment. Additionally, actual openings for these occupations may have different requirements and the talent pool for these occupations may have different levels of education than indicated by the minimum educational level. These minimum education levels are used to

group occupations by the relative level of training and education required for entry.

Data for **Exhibit 4** and **5** is only available for the metropolitan Seattle-Tacoma-Bellevue region. Healthcare occupations have high median wages, even among occupations requiring a minimum of on-the-job training for entry. Among on-the-job training and associate degree occupations, dental hygienists have the highest median wage at more than \$93,700 annually, with the highest ten percent of wages reaching more than \$118,100 annually. Out of the 28 occupations within the on-the-job training and associate degree groupings, ten have median wages greater than \$50,000 annually. Additionally, 20 out of 28 occupations within these groupings have 90th percentile wage, the top ten percent of earners, greater than \$50,000 annually. (**Exhibit 4**)

Exhibit 5. Healthcare Occupations Median Wage and 90th Percentile Wage, Bachelor's Degree or Higher, Seattle-Tacoma-Bellevue MSA, 2014

SOC	Occupation	Employment in Industry	Median Wage ↓	90th Percentile Wage
Bachelor's degree				
11-9111	Medical and Health Services Managers	748	\$106,600	*
29-1031	Dietitians and Nutritionists	155	\$67,320	\$86,330
29-2011	Medical and Clinical Laboratory Technologists	373	\$67,070	\$89,400
11-9151	Social and Community Service Managers	365	\$63,680	\$110,820
29-9099	Healthcare Practitioners and Technical Workers, All Other	169	\$54,360	\$96,400
21-1091	Health Educators	103	\$49,120	\$84,710
21-1023	Mental Health and Substance Abuse Social Workers	280	\$43,490	\$71,070
Master's degree or higher				
29-1062	Family and General Practitioners	196	\$179,280	*
29-1021	Dentists, General	353	\$178,740	*
29-1071	Physician Assistants	327	\$109,810	\$147,560
29-1171	Nurse Practitioners	208	\$102,940	\$128,180
29-1122	Occupational Therapists	258	\$84,050	\$107,110
29-1123	Physical Therapists	516	\$83,140	\$111,830
29-1199	Health Diagnosing and Treating Practitioners, All Other	205	\$77,850	\$110,240
21-1022	Healthcare Social Workers	221	\$57,820	\$83,530
29-1011	Chiropractors	164	\$54,950	\$153,890
21-1013	Marriage and Family Therapists	105	\$47,830	\$83,490
21-1014	Mental Health Counselors	502	\$42,730	\$60,260
29-1061	Anesthesiologists	154	*	*
29-1022	Oral and Maxillofacial Surgeons	110	*	*
29-1069	Physicians and Surgeons, All Other	751	*	*
29-1067	Surgeons	133	*	*

* indicates that data is suppressed by the U.S. Bureau of Labor Statistics in order to comply with nondisclosure rules.

Due to data limitations median and 90th percentile wages are those for the matching occupation in the Seattle-Tacoma-Bellevue MSA, and are used as a proxy for Pierce County wages by occupation given data limitations for occupational wage data for Pierce County alone.

Sources: U.S. Bureau of Labor Statistics, 2014; Washington State Employment Security Department, 2014; Community Attributes Inc., 2016.

Bachelor's degree and higher occupations have even higher median wages. Among these occupations where data is available, family and general

practitioners have the highest median wages in the industry at \$179,280 annually. Some bachelor's degree occupations have median wages in equivalent ranges as some on-the-job training and associate degree occupations such as health educators, mental health counselors and marriage and family therapists. (**Exhibit 5**)

Exhibit 6. Comparative Average Wages, Pierce County and Seattle-Tacoma-Bellevue MSA, 2014

	Employment	Average Wage
Pierce County Healthcare Industry		
On-the-Job Training Occupations	7,817	\$32,774
Associate Degree or Postsecondary Award Occupations	15,844	\$61,673
Bachelor's Degree Occupations	2,192	\$81,377
Master's Degree or Higher Occupations	4,203	\$95,154
Healthcare Industry Total	30,055	\$58,891
Seattle-Tacoma-Bellevue MSA	1,761,920	\$57,370

Due to data limitations median and 90th percentile wages are those for the matching occupation in the Seattle-Tacoma-Bellevue MSA, and are used as a proxy for Pierce County wages by occupation, given data limitations for occupational wage data for Pierce County alone.

Sources: U.S. Bureau of Labor Statistics, 2014; Washington State Employment Security Department, 2014; Community Attributes Inc., 2016.

The average wage for core Pierce County healthcare industry occupations across the Seattle-Tacoma-Bellevue MSA is almost \$58,900 annually. Within the healthcare occupational groupings average wages range between \$32,800 and \$95,200 annually. Overall, the industry average wage is slightly higher than the regional economy-wide average wage of \$57,400 annually. (**Exhibit 6**)

Exhibit 7. Healthcare Occupation Employment in Other Industries by Industry, 2013

Industry	Healthcare Occupation Employment in Industry
Private households	824
Personal care services	523
Employment Services	373
Education	343
Religious organizations	300
Health and personal care stores	84
Food Services and drinking places	39
Grantmaking and giving services	35
Other general merchandise stores	29
Management of Companies & Enterprises	29
Other professional and technical services	28
Insurance carriers	24
Lessors of real estate	20
All Other Industries	100
Total	2,751

Sources: Washington State Employment Security Department, 2015; Community Attributes Inc., 2016.

Among healthcare occupations almost 2,800 workers are employed in industries other than healthcare and government. Private households and personal care services represent 49 percent of total healthcare occupation employment in other industries. This is a growing trend as the healthcare industry responds to pressures resulting from payment and quality reforms. Employment in five other industries including: private households; personal care services; employment services; and education and religious organizations totals almost 2,400, or 86 percent of healthcare occupation employment in other industries. (**Exhibit 7**)

Exhibit 8. Healthcare Occupation Employment in Other Industries by Occupation, 2013

Occupation	Employment in Other Industries	Top Other Industry
Personal Care Aides	780	Private households
Massage Therapists	515	Personal care services
Registered Nurses	435	Employment Services
Nursing Assistants	332	Religious organizations
Licensed Practical and Licensed Vocational Nurses	130	Religious organizations
Opticians, Dispensing	84	Health and personal care stores
Occupational Therapists	83	Education
Social and Human Service Assistants	56	Education
Food Servers, Nonrestaurant	50	Food Services and Drinking Places
Social and Community Service Managers	47	Religious organizations
Medical and Health Services Managers	35	Insurance carriers
Nurse Practitioners	24	Personal care services
Medical Secretaries	24	Other professional and technical services
Interviewers, Except Eligibility and Loan	23	Other professional and technical services
Respiratory Therapists	23	Health and personal care stores
Physical Therapists	23	Education
Medical Records and Health Information Technicians	17	Accounting and bookkeeping services
Mental Health Counselors	16	Education
Medical Equipment Preparers	14	Health and personal care stores
Healthcare Practitioners and Technical Workers, All Other	11	Education
All Other Occupations	29	
Total	2,753	

Sources: Washington State Employment Security Department, 2015; Community Attributes Inc., 2016.

Among healthcare occupations, employment in other industries is primarily concentrated within four occupations: personal care aides, massage therapists, registered nurses and nursing assistants. Between these occupations employment in other industries is 75 percent of all healthcare occupation employment in other industries. (**Exhibit 8**)

Healthcare employment is highly concentrated within healthcare companies and government. Overall, 92 percent of employment in core healthcare occupations is within the healthcare industry. This is an indicator that the technical skills required for healthcare occupations are relatively unique to healthcare, and do not have strong crossover with other industries.

DEMAND ANALYSIS: PIERCE COUNTY HEALTHCARE OCCUPATIONAL FORECASTS

Total demand³ for occupations matching the workforce needs of healthcare⁴ in Pierce County is projected to average 1,445 annual openings between 2018 and 2023. Among healthcare occupations, registered nurses are projected to have the highest number of average annual openings both economy-wide and within the healthcare industry at almost 270 annual openings overall and just under 250 annual openings in the healthcare industry. Massage therapists are projected to see the highest occupational growth rate at 3.5 percent annually between 2018 and 2023. Direct care workers (i.e., certified nursing assistants, home health aides, personal care aides, and medical assistants) are among the top ten fastest growing occupations in Pierce County. Another occupation with high forecasted annual growth rate is diagnostic medical sonographers, projected to grow 2.8 percent annually. (**Exhibit 9**)

Core healthcare occupations are projected to average 1,320 openings annually between 2018 and 2023. Additionally, overall growth among healthcare occupations is projected to be 1.8 percent annually, compared to a projected 1.4 percent annual growth in total employment in Pierce County. (**Exhibit 9**)

Healthcare industry stakeholders provided feedback that registered nurses are in demand throughout the healthcare industry, approaching the level of concern, if not the actual vacancy rates, common in the early 2000's. In addition to being in demand these positions are often the most difficult to fill. Although baccalaureate prepared nurses are preferred, stakeholders are willing to hire nurses directly out of community college for non-specialized positions.

Stakeholders also noted that the shortage of registered nurses has implications across other occupations in the industry. As some employers struggle to find registered nurses they are starting to increase the number of LPNs on staff in order to compensate for the shortage. Because LPN educational programs have been scaled down over the past decade due to declining demand, healthcare employers are finding it challenging to recruit LPNs. For this reason, stakeholder feedback indicated that the

³ Total demand may be underestimated as it is represented by average annual openings. Average annual openings are calculated by the Employment Security Department based on projections of employment by occupation. The employment projections only represent the point of equilibrium between demand and supply and therefore do not account for unmet demand or unfilled jobs. As a result, total demand may be underestimated.

⁴ Total demand for occupations covers demand across all industries in Pierce County and includes but is not limited to the healthcare industry.

demand for LPNs is possibly understated in the employment projection data.

Occupations used throughout the analysis are defined by the Bureau of Labor Statistics using a standardized code system. This code system allows for the analysis of data however, the occupations defined may not capture some of the specializations that fall within each occupation. For example, billers and coders, which some stakeholders indicated were difficult to recruit, are both grouped under the medical records and health information technician SOC code, which shows lessened demand overall. Within each occupation there may be specializations that individual employers expect to see in higher demand than others.

Exhibit 9. Pierce County Healthcare Occupational Demand per Year, 2018 and 2023

SOC	Occupation	Estimated Employment 2018	Estimated Employment 2023	Average Annual Openings ↓ (2018-2023)	Average Annual Openings in Industry (2018-2023)	Estimated Employment CAGR (2018-2023)
29-1141	Registered Nurses	7,113	7,642	266	249	1.4%
31-1014	Nursing Assistants	2,737	2,950	100	87	1.5%
39-9021	Personal Care Aides	3,361	3,701	99	73	1.9%
21-1093	Social and Human Service Assistants	1,720	1,887	83	80	1.9%
31-9011	Massage Therapists	1,513	1,798	79	47	3.5%
31-1011	Home Health Aides	1,449	1,673	76	76	2.9%
29-2061	Licensed Practical and Licensed Vocational Nurses	1,664	1,770	65	60	1.2%
31-9092	Medical Assistants	1,254	1,395	56	56	2.2%
43-6013	Medical Secretaries	1,326	1,477	47	46	2.2%
31-9091	Dental Assistants	1,025	1,095	38	38	1.3%
11-9111	Medical and Health Services Managers	841	903	36	34	1.4%
29-1069	Physicians and Surgeons, All Other	787	842	32	32	1.4%
35-3041	Food Servers, Nonrestaurant	552	616	30	27	2.2%
29-2021	Dental Hygienists	582	633	28	28	1.7%
29-1123	Physical Therapists	595	646	26	25	1.7%
29-2071	Medical Records and Health Information Technicians	550	590	24	23	1.4%
11-9151	Social and Community Service Managers	468	516	21	19	2.0%
29-2011	Medical and Clinical Laboratory Technologists	399	429	18	18	1.5%
21-1014	Mental Health Counselors	550	571	17	16	0.8%
29-1021	Dentists, General	398	433	17	17	1.7%
29-2034	Radiologic Technologists	505	546	17	17	1.6%
29-2099	Health Technologists and Technicians, All Other	646	690	17	17	1.3%
43-4111	Interviewers, Except Eligibility and Loan	461	496	16	15	1.5%
29-1122	Occupational Therapists	376	407	14	11	1.6%
29-1071	Physician Assistants	355	389	14	14	1.8%
29-2012	Medical and Clinical Laboratory Technicians	263	285	12	12	1.6%
31-9097	Phlebotomists	285	312	12	12	1.8%
29-2081	Opticians, Dispensing	205	224	11	6	1.8%
29-1171	Nurse Practitioners	258	285	11	10	2.0%
31-2021	Physical Therapist Assistants	224	248	11	11	2.1%
29-1062	Family and General Practitioners	221	245	11	11	2.1%
29-1126	Respiratory Therapists	284	305	10	9	1.4%
31-9093	Medical Equipment Preparers	274	296	10	9	1.6%
21-1022	Healthcare Social Workers	245	266	10	10	1.7%
29-2032	Diagnostic Medical Sonographers	202	232	10	10	2.8%
	All Other Occupations (15)	2,661	2,889	101	100	1.7%
	Total	36,349	39,682	1,445	1,323	1.8%

Sources: U.S. Bureau of Labor Statistics, 2014; Washington State Employment Security Department, 2014; Community Attributes Inc., 2016.

SUPPLY ANALYSIS: AVAILABILITY OF REGIONAL TALENT AND EMPLOYABLE WORKFORCE

The local workforce supply is primarily composed of two elements: the entry of new graduates into the available talent pool and the existing talent pool of qualified unemployed workers actively seeking employment. Qualified graduates are drawn from the National Center for Education Statistics' Integrated Postsecondary Education System (IPEDS) data via a match of Classification Instructional Program (CIP) codes to the appropriate SOC codes. These are totaled by occupation code, including duplicates, and are then adjusted down controlled to total occupational employment. Unemployment insurance claimants are organized by their most recently reported occupation (i.e. SOC codes) and represent the second element of supply. It is important to note that workers from outside Pierce County often fill talent gaps, but are not assessed in this analysis.

Local Graduates

IPEDS standardizes educational curriculum with CIP codes. Each CIP code can match to several SOC codes because graduates from the same program can be qualified to be employed in a variety of occupations and industries. Similarly, each occupation may draw on graduates from several relevant CIP codes. For example, graduates in registered nursing programs are qualified to work as registered nurses as well as nursing instructors and teachers for some education programs. Both occupations also draw on graduates from clinical nurse specialist programs (**Exhibit 10**).

Exhibit 10. Other Occupational Matches for Graduates Qualified to Work as Registered Nurses

CIP	Description	SOC	Description
51.3801	Registered Nursing/Registered Nurse	25-1072	Nursing Instructors and Teachers, Postsecondary
51.3803	Adult Health Nurse/Nursing	29-1141	Registered Nurses
51.3813	Clinical Nurse Specialist	29-1171	Nurse Practitioners

Sources: National Center for Education Statistics' Integrated Postsecondary Education System, 2014; Community Attributes Inc., 2016.

Accredited programs matching to one or more healthcare occupation(s) are summarized across educational institutions and programs located in the county in order to determine the number of graduates that will be able to fill forecasted annual openings within the healthcare industry in Pierce County.⁵

⁵ Relevant to healthcare, this data does not show supply of programs that are designed to provide a baccalaureate degree in nursing to students with an associate degree (called baccalaureate completion or ADN to BSN programs).

Graduation data is tied to the primary location of the educational institution providing the accredited program. Therefore, institutions located outside of Pierce County are not included as part of the local talent supply, even though employers likely recruit from education institutions located outside Pierce County.

The top nine programs in Pierce County each have more than 150 completions annually in fields that match to one or more healthcare occupation(s). Completions in these nine programs represent more than 75 percent of total healthcare completions in Pierce County. Overall, there are 2,830 completions from programs in Pierce County that link to one or more healthcare occupation(s). Registered nursing programs have the most annual completions at 377, followed by business administration and management and medical administrative/executive assistant and medical secretary programs. (Exhibit 11)

Exhibit 11. Total Graduates by CIP Codes that Match to One or More Healthcare Occupation(s), Pierce County, 2014

CIP	Description	Graduates
51.3801	Registered Nursing/Registered Nurse	377
52.0201	Business Administration and Management, General	285
51.0716	Medical Administrative/Executive Assistant and Medical Secretary	263
51.1009	Phlebotomy Technician/Phlebotomist	251
51.0801	Medical/Clinical Assistant	225
52.0101	Business/Commerce, General	225
51.3901	Licensed Practical/Vocational Nurse Training	187
51.0601	Dental Assisting/Assistant	178
51.3902	Nursing Assistant/Aide and Patient Care Assistant/Aide	166
51.3501	Massage Therapy/Therapeutic Massage	97
44.0701	Social Work	91
51.0707	Health Information/Medical Records Technology/Technician	71
51.0713	Medical Insurance Coding Specialist/Coder	66
51.0712	Medical Reception/Receptionist	62
51.0714	Medical Insurance Specialist/Medical Biller	57
51.2308	Physical Therapy/Therapist	37
51.2306	Occupational Therapy/Therapist	35
51.2211	Health Services Administration	32
51.1505	Marriage and Family Therapy/Counseling	19
51.0907	Medical Radiologic Technology/Science - Radiation Therapist	16
51.0602	Dental Hygiene/Hygienist	16
51.0909	Surgical Technology/Technologist	16
51.3820	Clinical Nurse Leader	15
51.0910	Diagnostic Medical Sonography/Sonographer and Ultrasound Technician	13
51.0802	Clinical/Medical Laboratory Assistant	11
51.1008	Histologic Technician	10
51.3805	Family Practice Nurse/Nursing	9
	Total	2,830

Sources: National Center for Education Statistics' Integrated Postsecondary Education System, 2014; Community Attributes Inc., 2016.

Examining the same completions by the institution from which they graduated shows the geographic source of qualified healthcare occupation candidates, and the institutions from which Pierce County residents graduate and move on to fill healthcare occupational openings. In total nine institutions in Pierce County have annual completions that match to one or more healthcare occupation(s). Among these, Tacoma Community College is the institution with the greatest number of annual completions with more than 600. Each of these nine institutions have more than 100 annual completions from programs matching to healthcare occupations. **(Exhibit 12)**

Stakeholders shared that they recruit students from regional community colleges and universities. In particular employers mentioned Bates Technical College, Clover Park Technical College, Tacoma Community College, Pacific Lutheran University and the University of Washington-Tacoma as institutions that produce quality graduates for the healthcare industry. Pierce County employers face competition from healthcare providers outside of Pierce County for qualified graduates, especially for graduates from the University of Washington-Tacoma.

Exhibit 12. Pierce County’s Educational Institutions by Graduates Qualified for Healthcare Occupations, 2014

Institution	Graduates Qualified for Healthcare Occupations
Tacoma Community College	606
Everest College-Tacoma	482
Clover Park Technical College	429
Bates Technical College	362
University of Washington-Tacoma Campus	285
Pacific Lutheran University	252
Pierce College-Fort Steilacoom	153
University of Puget Sound	137
Pierce College-Puyallup	124
Total	2,830

Sources: National Center for Education Statistics’ Integrated Postsecondary Education System, 2014; Community Attributes Inc., 2016.

In order to determine the number of potential graduates that are likely to fill occupations within Pierce County’s healthcare industry, qualified graduates are totaled by every possible combination of CIP and SOC codes. Each combination is adjusted to match the ratio of occupational employment to total occupational employment for all possible occupations matching to relevant CIPs. This method results in an estimate of how many graduates could potentially be employed in each available occupation. Each estimate is adjusted to account for the approximate share of local graduates who obtain work locally after graduation by multiplying the estimates by a 70 percent local retention rate. Lastly, the number of graduates expected to seek work locally is

adjusted again to account for the number of local graduates who can be reasonably expected to fill positions within the healthcare industry.

This approach yields a total of 1,767 graduates in 2014 who are qualified for the needs of the healthcare industry. **(Exhibit 13)**

IPEDS data is only available through the 2013-2014 academic year. Because the majority of completions occur at the end of the spring semester, students who complete programs during the 2013-2014 academic year are most likely to seek employment in 2014. Completions data provides a snapshot of what educational programs are expected to look like in future years if current conditions do not change.

IPEDS data only captures information on people who complete programs in postsecondary schools. This means that high school graduates, many of whom may be appropriately qualified for certain positions, are not counted in this analysis.

Although regional employers are in general satisfied with the technical skills of local graduates, they expressed concern about the lack of soft skills among new entrants into the healthcare industry. Applicants have increasingly displayed a lack of interview skills at the initial contact. Additionally, employers noted that new entrants into the healthcare industry also lack essential daily soft skills. Within the healthcare industry personal presentation is important, as first impressions can have a strong influence in patient experiences, and many of the new graduates display a lack of awareness of the importance of these factors.

In 2014, educational institutions in Pierce County conferred degrees to 1,237 graduates in healthcare related occupations who are expected to stay in Pierce County. Of these 1,237 graduates qualified to work in healthcare occupations, 1,182 graduates are expected to seek employment within the healthcare industry. Among all of the occupations with projected graduate supply, medical assistants and phlebotomists are projected to have the greatest local graduate supply. Out of the total 50 core healthcare occupations, 17 have projected supply from local graduates. **(Exhibit 13)**

Exhibit 13. Healthcare Occupations by Total Graduates, Pierce County, 2014

SOC	Description	All Graduates	Graduates After 70% Retention	Graduates in Industry	↓
43-6013	Medical Secretaries	147	103		101
	On-the-Job Training Subtotal	147	103		101
31-9092	Medical Assistants	514	360		357
31-9097	Phlebotomists	251	176		176
29-1141	Registered Nurses	213	149		139
29-2061	Licensed Practical and Licensed Vocational Nurses	187	131		120
31-1014	Nursing Assistants	166	116		101
29-2071	Medical Records and Health Information Technicians	83	58		56
31-9091	Dental Assistants	40	28		28
29-2012	Medical and Clinical Laboratory Technicians	10	7		7
31-9011	Massage Therapists	14	10		6
	Associate degree or Postsecondary Award Subtotal	1,478	1,035		990
11-9151	Social and Community Service Managers	81	57		50
11-9111	Medical and Health Services Managers	32	22		21
21-1023	Mental Health and Substance Abuse Social Workers	6	4		4
	Bachelor's degree Subtotal	119	83		76
21-1013	Marriage and Family Therapists	13	9		9
21-1022	Healthcare Social Workers	6	4		4
29-1123	Physical Therapists	2	1		1
29-1122	Occupational Therapists	2	1		1
	Master's degree or higher Subtotal	23	16		16
	Grand Total	1,767	1,237		1,182

Sources: National Center for Education Statistics' Integrated Postsecondary Education System, 2014; Community Attributes Inc., 2016.

Unemployment Insurance

The second key element of the local talent supply is the pool of unemployment insurance (UI) claimants whose previous occupations match those in Pierce County's core healthcare occupations. Due to nondisclosure rules, not all UI data is available for every SOC.

Overall, there are a total of 435 unemployment insurance claimants whose previous occupation was a core healthcare occupation. Of these UI claimants, 389 are expected to seek work within the Pierce County core healthcare occupations. (**Exhibit 14**)

The majority of these UI claimants were previously employed in occupations with a minimum educational requirement of on-the-job training, however, there are claimants available for occupations within each educational grouping. UI claimants matching to on-the-job training and associate degree or postsecondary award jobs represent 84 percent of total UI claimant talent supply. The occupations with the greatest projected supply from UI claimants are personal care aides and medical assistants. Out of all of the core healthcare occupations in Pierce County, 20 have projected supply from unemployment claimants. (**Exhibit 14**)

Exhibit 14. Unemployment Insurance Claimants by Previous SOC, Pierce County, 2014

SOC	Description	Total Qualified Unemployment Insurance Claimants	Unemployment Insurance Claimants in Sector ↓
39-9021	Personal Care Aides	119	87
43-6013	Medical Secretaries	42	41
31-1011	Home Health Aides	14	14
21-1093	Social and Human Service Assistants	13	13
29-2099	Health Technologists and Technicians, All Other	10	10
21-1011	Substance Abuse and Behavioral Disorder Counselors	6	6
35-3041	Food Servers, Nonrestaurant	4	4
	On-the-Job Training Subtotal	208	174
31-9092	Medical Assistants	48	48
29-2061	Licensed Practical and Licensed Vocational Nurses	38	35
31-9091	Dental Assistants	28	28
29-2021	Dental Hygienists	11	11
29-2034	Radiologic Technologists	9	9
29-2071	Medical Records and Health Information Technicians	9	9
29-2012	Medical and Clinical Laboratory Technicians	8	8
31-9011	Massage Therapists	11	7
	Associate degree or Postsecondary Award Subtotal	162	154
11-9111	Medical and Health Services Managers	24	23
11-9151	Social and Community Service Managers	21	19
21-1023	Mental Health and Substance Abuse Social Workers	7	7
	Bachelor's degree Subtotal	52	49
21-1014	Mental Health Counselors	9	9
21-1022	Healthcare Social Workers	4	4
	Master's degree or higher Subtotal	13	13
	Grand Total	435	389

Sources: Washington State Employment Security Department, 2014; Community Attributes Inc., 2016.

Total supply is defined as the sum of local qualified graduates and qualified unemployment insurance claimants. Within Pierce County, there are a total of 1,182 local graduates and 389 unemployment insurance claimants who can reasonably be expected to fill the needs of the healthcare industry within Pierce County. (Exhibit 15)

Exhibit 15. Total Talent Supply, Pierce County, 2014

Source of Supply	Qualified Workers
On-the-Job Training	101
Associate Degree or Postsecondary Award	990
Bachelor's Degree	76
Master's Degree or Higher	16
Graduate Subtotal	1,182
Unemployment Insurance Claimants	389
Grand Total	1,571

Sources: National Center for Education Statistics' Integrated Postsecondary Education System, 2014; Washington State Employment Security Department, 2014; Community Attributes Inc., 2016.

SUPPLY AND DEMAND

The combined elements of expected supply and projected occupational demand yields a summary of annual occupational gaps within the healthcare industry. **Exhibits 16** and **17** summarize graduate supply, total demand, UI claimant supply and the expected gaps for each healthcare occupation.

Among the ten occupations that require on-the-job training there is an expected supply of 101 local graduates and an additional supply of 174 UI claimants, totaling a supply of 275 workers. Total demand among these same occupations is projected to be 355 openings annually. Combining supply and demand there is an expected shortfall in expected supply of 80 workers. Social and human service assistants are projected to have an annual shortage of 67 workers, while medical secretaries are projected to have an annual surplus of 96 workers. (**Exhibit 16**)

A total of 18 occupations require an associate degree or postsecondary award. These occupations have an expected supply of 990 local graduates, which combined with the projected supply of 154 UI claimants leads to a total projected supply of 1,143 local qualified candidates. Forecasted annual demand among these occupations is projected to be 680 workers. The difference in supply and demand leads to an anticipated surplus of 463 local candidates. Of this surplus, 349 come from medical assistants. It is worth acknowledging that the majority of this oversupply occurs because private, for-profit trade schools oversupply the region. Many local employers find that the graduates from these trade schools are unqualified.

Despite an overall surplus of workers within the category there are a total of 11 occupations with individual shortages in supply. The greatest shortage in local workers is among registered nurses, which is confirmed by feedback from Pierce County employers. (**Exhibit 16**)

It is important to note a fast growing segment of this workforce: direct care workers. Direct care workers are those who provide direct care to patients (e.g., certified nursing assistants (CNAs), personal care and home care aides, and medical assistants). Many of these workers are employed in settings that provide less expensive care than hospitals, such as long-term care, primary care or home-based care. For this reason, employers across the country anticipate that growth rates for these occupations may increase as payment and quality reforms occurring in Washington come online and emphasize direct care services provided by primary and long-term care organizations.

Exhibit 16. Annual Supply and Demand, On-the-Job Training and Associate Degree or Postsecondary Award, Pierce County, 2018-2023

Occupation	Total Graduate Supply	Total Demand	Interim Gap	Total UI Claims Supply	Final Gap ↓
Social and Human Service Assistants	0	80	(80)	13	(67)
Home Health Aides	0	76	(76)	14	(62)
Food Servers, Nonrestaurant	0	27	(27)	4	(23)
Interviewers, Except Eligibility and Loan	0	15	(15)	0	(15)
Medical Equipment Preparers	0	9	(9)	0	(9)
Health Technologists and Technicians, All Other	0	17	(17)	10	(7)
Opticians, Dispensing	0	6	(6)	0	(6)
Substance Abuse and Behavioral Disorder Counselors	0	6	(6)	6	0
Personal Care Aides	0	73	(73)	87	15
Medical Secretaries	101	46	55	41	96
On-the-Job Training Subtotal	101	355	(254)	174	(80)
Registered Nurses	139	249	(109)	0	(109)
Massage Therapists	6	47	(41)	7	(35)
Dental Hygienists	0	28	(28)	11	(17)
Physical Therapist Assistants	0	11	(11)	0	(11)
Diagnostic Medical Sonographers	0	10	(10)	0	(10)
Respiratory Therapists	0	9	(9)	0	(9)
Surgical Technologists	0	9	(9)	0	(9)
Radiologic Technologists	0	17	(17)	9	(8)
Cardiovascular Technologists and Technicians	0	5	(5)	0	(5)
Magnetic Resonance Imaging Technologists	0	5	(5)	0	(5)
Ophthalmic Medical Technicians	0	4	(4)	0	(4)
Medical and Clinical Laboratory Technicians	7	12	(5)	8	3
Nursing Assistants	101	87	14	0	14
Dental Assistants	28	38	(10)	28	18
Medical Records and Health Information Technicians	56	23	33	9	42
Licensed Practical and Licensed Vocational Nurses	120	60	60	35	95
Phlebotomists	176	12	164	0	164
Medical Assistants	357	56	301	48	349
Associate degree or Postsecondary Award Subtotal	990	680	309	154	463

Sources: U.S. Bureau of Labor Statistics, 2014; Washington State Employment Security Department, 2014; National Center for Education Statistics' Integrated Postsecondary Education System, 2014; Community Attributes Inc., 2016.

Studying occupations requiring a minimum of a bachelor's degree for entry reveals that there are 76 local graduates for healthcare occupations that are expected to work in the healthcare industry. Additionally, there are 49 UI claimants whose previous occupation matches to one of the seven occupations requiring a bachelor's degree for entry. Together these local candidates provide a projected talent supply of 124 local workers. The total forecasted demand among these seven occupations is projected to be 98 workers annually. As such the expected talent surplus among bachelor's degree occupations is anticipated to be 26 workers annually. However, social and community service managers accounts for the vast majority of this surplus and if they are removed from the analysis bachelor's degree occupations would show a deficit of 24 workers annually. **(Exhibit 17)**

The remaining 15 core occupations of the healthcare industry require a minimum of a master's degree or higher. Graduate supply among these occupations is projected to be just 16 local qualified candidates annually,

driven largely because there are no schools located in Pierce County for all but two of the 15 occupations listed. Additionally, there is a supply of 13 local unemployment claimants annually within the region. Together they provide a total supply of 28 candidates. The total expected demand from the healthcare industry for this talent pool is anticipated to reach 190 workers annually. As such the expected talent shortfall is estimated to be 161 workers. Among these occupations physicians and surgeons are projected to have the greatest annual shortfall in talent, followed by physical therapists and dentists. Just one occupation is projected to have a small surplus, marriage and family therapists with an anticipated surplus of one worker annually. (Exhibit 17)

Overall, across the 50 core occupations in the healthcare industry there is a forecasted supply of 1,571 local workers. Anticipated demand among these occupations is projected to be 1,323 openings annually, leaving a final surplus of 248 workers in Pierce County, driven in large part by the surplus of 349 medical assistants as described above. (Exhibit 17)

Exhibit 17. Annual Supply and Demand, Bachelor's Degree and Higher, Pierce County, 2018-2023

Occupation	Total Graduate Supply	Total Demand	Interim Gap	Total UI Claims Supply	Final Gap ↓
Medical and Clinical Laboratory Technologists	0	18	(18)	0	(18)
Healthcare Practitioners and Technical Workers, All Other	0	8	(8)	0	(8)
Dietitians and Nutritionists	0	5	(5)	0	(5)
Health Educators	0	5	(5)	0	(5)
Mental Health and Substance Abuse Social Workers	4	9	(5)	7	2
Medical and Health Services Managers	21	34	(13)	23	10
Social and Community Service Managers	50	19	32	19	50
Bachelor's degree Subtotal	76	98	(22)	49	26
Physicians and Surgeons, All Other	0	32	(32)	0	(32)
Physical Therapists	1	25	(24)	0	(24)
Dentists, General	0	17	(17)	0	(17)
Physician Assistants	0	14	(14)	0	(14)
Family and General Practitioners	0	11	(11)	0	(11)
Nurse Practitioners	0	10	(10)	0	(10)
Occupational Therapists	1	11	(10)	0	(10)
Anesthesiologists	0	9	(9)	0	(9)
Chiropractors	0	8	(8)	0	(8)
Mental Health Counselors	0	16	(16)	9	(8)
Health Diagnosing and Treating Practitioners, All Other	0	7	(7)	0	(7)
Surgeons	0	7	(7)	0	(7)
Oral and Maxillofacial Surgeons	0	5	(5)	0	(5)
Healthcare Social Workers	4	10	(6)	4	(2)
Marriage and Family Therapists	9	8	1	0	1
Master's degree or higher Subtotal	16	190	(174)	13	(161)
Grand Total	1,182	1,323	(141)	389	248

Sources: U.S. Bureau of Labor Statistics, 2014; Washington State Employment Security Department, 2014; National Center for Education Statistics' Integrated Postsecondary Education System, 2014; Community Attributes Inc., 2016.

It is important to bear in mind not all occupations within an educational grouping are easily substitutable. A surplus in one occupation may not necessarily be countered by a shortage in another occupation. The skills

required may not be the same between occupations. As such, a detailed account of the prospective supply and demand for each core occupation can help organizations anticipate and plan for possible labor shortages and surpluses in the future.

There are 24 occupations that have educational requirements for entry for which there is no local graduate supply. Additionally, nine occupations requiring a minimum of on-the-job training also have no supply of local graduates. These nine occupations are: social and human service assistants; home health aides; food servers, nonrestaurant; interviewers, except eligibility and loan; health technologists and technicians, all other; opticians, dispensing; substance abuse and behavioral disorder counselors; and personal care aides. Occupations requiring an associate degree or post-secondary award that have no local graduate supply are: dental hygienists; physical therapist assistants; diagnostic medical sonographers; respiratory therapists; surgical technologists; radiologic technologists; cardiovascular technologists and technicians; and ophthalmic medical technicians. Bachelor's degree occupations that have no Pierce County program as a source of local supply are: medical and clinical laboratory technologists; healthcare practitioners and technical workers, all other; dietitians and nutritionists; and health educators. Lastly, occupations that require a graduate level degree that have no local graduate supply include: physicians and surgeons, all other; physical therapists; dentists, general; physician assistants; family and general practitioners; nurse practitioners; occupational therapists; anesthesiologists; chiropractors; mental health counselors; health diagnosing and treating practitioners, all other; surgeons; and oral and maxillofacial surgeons.

SUMMARY OF KEY FINDINGS AND PRELIMINARY RECOMMENDATIONS

Pierce County’s healthcare industry is projected to have an annual supply of 1,571 local candidates between 2018 and 2023. Local graduates are projected to represent 75 percent of annual anticipated supply. Feedback from industry stakeholders indicates that although there may be a surplus of local candidates for healthcare occupations many of these candidates may not be considered qualified by local employers. (**Exhibit 18**)

Exhibit 18. Summary of Annual Pierce County Healthcare Talent Supply, 2018-2023

Projected Talent Supply (Annual)	
Unemployed	389
Newly-Trained Candidates	1,182

Sources: National Center for Education Statistics’ Integrated Postsecondary Education System, 2014; Washington State Employment Security Department, 2014; Community Attributes Inc., 2016.

Combining the local supply of workers and the projected annual demand of 1,323 openings, indicates an annual surplus of 248 local workers between 2018 and 2023. This surplus represents less than one percent of total core occupational employment in the industry. Although the overall talent pipeline indicates a surplus of qualified workers, it is important to note that there are shortages among key healthcare occupations. Overall, 24 out of 50 core healthcare occupations have no projected annual supply. Additionally, registered nurses, noted by local employers as a vitally important occupation within the region are projected to have a shortage of more than 100 qualified candidates annually. (**Exhibit 19**)

Exhibit 19. Summary of Annual Pierce County Healthcare Talent Supply and Demand, 2018-2023

Annual Surplus or (Shortage)	
Total Openings (Demand)	1,323
Total Supply	1,571
Surplus or (Shortage)	248

Sources: U.S. Bureau of Labor Statistics, 2014; Washington State Employment Security Department, 2014; Community Attributes Inc., 2016.

Stakeholders agreed that a lack of soft skills was negatively impacting job applicants and new employees. Initial contact and interview skills are lacking among new entrants into the industry. This includes resumes, etiquette, how to dress, how to interview and even how to fill out job applications. Some applicants are losing jobs because they request day shifts for a position requiring 24-hour coverage. All of these are critical skills that impact first impressions of an applicant, and when these skills are lacking it can be a career breaker.

- *Recommendation* - Stakeholders agreed that expanding focus on soft skills within educational programs or other organizations in the workforce system could be valuable. Students who have experience with interviews and understand the work environments present themselves more strongly to employers.

Registered nurses are in demand throughout the healthcare industry. These positions are also the most difficult to fill. Some stakeholders shared concerns that there were not enough ADN to BSN completion programs in Pierce County to meet demand.

Even more challenging for healthcare providers is finding RNs qualified for specialties, especially critical care and operating room.

- *Recommendation* – Local education institutions should explore options to add BSN completion programs and/or specialty training for existing nurses. They can also consider opportunities to continue adding cultural and linguistic competence to their students.

LPN positions are increasingly difficult to fill, especially in community health and long-term care settings. One major Pierce County hospital system is beginning to integrate LPNs back into nursing care teams due to difficulties hiring RNs. If this occurs wide scale, current demand for LPNs may be understated.

Other occupations in demand include medical coders and mental health workers at the baccalaureate and master’s degree levels.

- *Recommendation* – Training LPNs is hampered by perceived demand for graduates as well as lack of clinical space for students. Employers and educators should develop a nursing education and workforce plan for Pierce County that incorporates existing workforce projections with output from nursing education programs and serves to help employers and educators agree on the balance of LPN and RN training, including where LPN students will gain their required clinical education experience.

The direct care workforce will likely grow faster than the other healthcare occupations in Pierce County. These workers (e.g., CNAs, home and personal care aides and medical assistants) provide the majority of direct care to patients in home-based, ambulatory and long-term care settings. As payment reforms increasingly emphasize care delivery in these settings, employers anticipate continued occupational growth. However, these low paying jobs are quite challenging and often have high turnover.

- *Recommendation* – Expand partnerships with employers and labor organizations to explore career pathways for these workers to help boost job retention.

- *Recommendation* – Develop systems to identify personal care and home health aide UI claimants (estimated at 110 per year) and help them either quickly gain re-employment or enroll them into Dislocated Worker training programs customized to help them articulate their current training and experience into new, shortened training programs.

As the economy improves, qualified workers have more choices with regard to jobs. New entrants are beginning to require better hours, automatic pay increases and excellent benefits packages. Employers are increasingly competing within the industry for the best talent.

Recruitment and retention challenges go hand-in-hand. As the labor market has opened up, retention has become a bigger challenge. In order to retain staff, organizations need to be able to meet the requirements of each diverse age range, in healthcare this particularly applies to the benefits package.

The industry is facing a significant skills gap. Stakeholders indicated they are working with local institutions to create incumbent worker training programs that serve industry needs and increasing pathways for advancement.

- *Recommendation* – Helping to address retention challenges and skills gaps can go hand in hand with additional incumbent worker training opportunities. To some extent, incumbent worker training can be marketed as a benefit to existing employees to boost retention, especially when incumbent worker training is coupled with a formal employment agreement to remain at the institution for a specific amount of time to “pay back” the value of the training.
- *Recommendation* – Many of the skills gaps occurring now are related to the rapidly changing healthcare environment and generate opportunities to create high quality continuing education opportunities for existing healthcare workers. Employers of all stripes are requiring new skills related to: interprofessional continuing education; quality improvement processes; understanding, manipulating, and reporting data; patient coaching techniques such as motivational interviewing; coordinating and managing care within a healthcare system⁶; and “boundary spanning” functions that address patient care needs across health and community-based settings.⁷ One occupation ripe for continuing education consideration is medical assistants.

⁶ Erin Fraher et al., “The Workforce Transformations Needed to Staff Value-based Models of Care”. The Cecil G. Shepps Center for Health Services Research, the University of North Carolina; November 2015.

⁷ Ibid, p. 1

According to the Shepp Center at the University of North Carolina⁸, medical assistants have one of the most rapidly evolving roles in redesigned healthcare delivery models. They are being asked to be more deeply involved in patient care (e.g., giving immunizations), documenting clinical encounters and managing population health (e.g., using information management systems to flag patients with overdue services).

- *Recommendation* – Consider working with local community colleges to expand healthcare career pathway training targeted to working adults. This includes; expanding weekend, evening and online program offerings; expanding innovations in developmental education to ensure remediation surpasses persistence; and making greater use of intrusive academic advising to catch students struggling early.

Employers tend to take a multi-faceted approach to recruitment.

Some employers have successfully used the services provided by WorkForce Central. Success hinges on candidates who are pre-screened, interested in and qualified for the jobs for which they are applying. Some stakeholders shared that they have had success recruiting from job fairs. Stakeholders indicated that online resources are a fickle resource for recruitment, sometimes leading to a full set of applicants and at other times providing no applicants. Often these online resources can be a resource that has low return on investment.

Increasing diversity and linguistic and cultural competence is another issue that stakeholders and local educational institutions continue to work together to address. As the regional population diversifies, healthcare providers are focusing on increasing the cultural and linguistic diversity of their staff. Through increased partnerships between employers and educators the industry can increase diversity and the potential talent pool.

Finally, as service delivery continues to provide a greater emphasis on community health, **stakeholders shared a desire for education programs that provide a greater focus on community health.** For example, one stakeholder expressed a desire for associate degree-level nursing education to incorporate a community health component. Employers understand that licensing and accrediting bodies will impact the speed of this evolution.

- *Recommendation* – Explore opportunities to partner with regulatory and accreditation bodies to experiment with an increased focus on community health in nursing and other key healthcare education programs.

⁸ Ibid, p. 3