

The Colorado Registered Nurse Pool and Out-of-State Recruitment



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Background

This report, prepared exclusively for the Colorado Hospital Association (CHA), presents current data to help CHA members better understand the registered nurse talent pool and guide them in their recruitment marketing efforts.

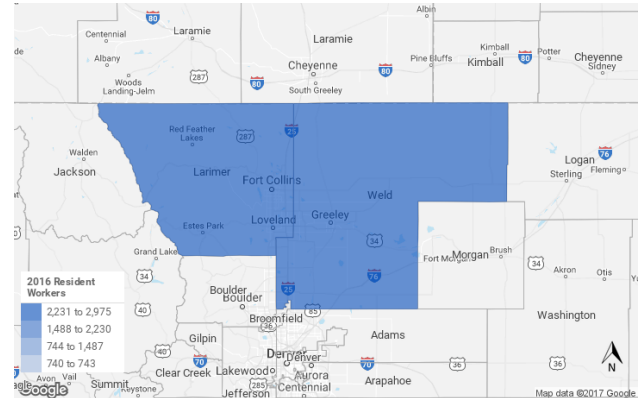
Selected Regions

Four regions in Colorado were selected by CHA for this report. The heat maps and tables show where registered nurses live, where they work and the net commute within each of the four selected regions.

Northern Front Range

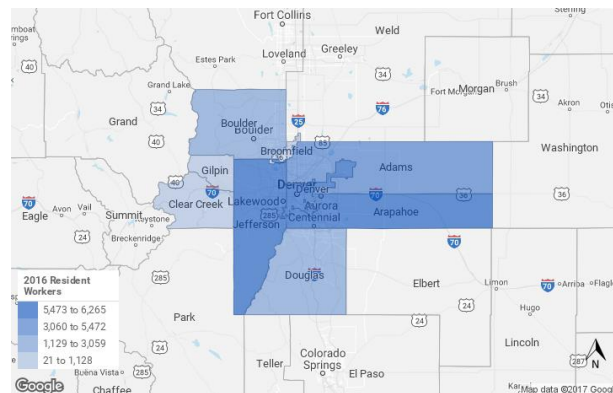
Top Employment Concentrations by County, Northern Front Range			
County	2017 Resident Workers	2017 Jobs	Net Commuters
Larimer County, CO	2,975	3,377	402
Weld County, CO	2,660	1,267	(1,393)

Source: EMSI 2017.3 – QCEW Employees, Non-QCEW Employees & Self-Employed Class of Worker



The first region is called the Northern Front Range, and includes Weld and Larimer counties. The healthcare industry in the two counties employs 25,298 people in 1,170 establishments. There are 15 general medical and surgical hospitals in the region.

Greater Metro Denver & Boulder



Top Employment Concentrations by County, Greater Metro Denver & Boulder			
County	2017 Resident Workers	2017 Jobs	Net Commuters
Arapahoe County, CO	6,265	6,070	(195)
Denver County, CO	6,086	9,407	3,321
Jefferson County, CO	5,521	3,685	(1,836)
Adams County, CO	4,020	5,329	1,309
Douglas County, CO	2,736	1,616	(1,120)
Boulder County, CO	2,216	2,924	708
Broomfield County, CO	636	190	(446)
Clear Creek County, CO	35	10	(25)
Gilpin County, CO	21	<10	Insf. Data

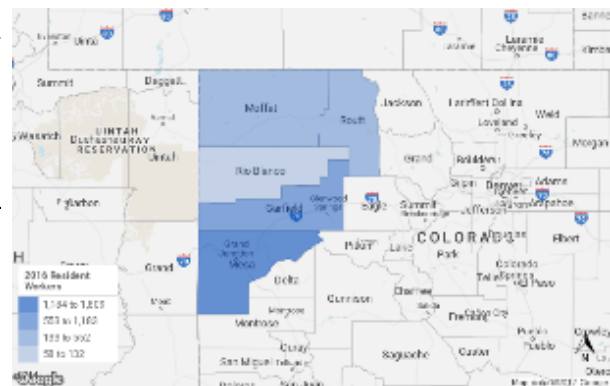
Source: EMSI 2017.3 – QCEW Employees, Non-QCEW Employees & Self-Employed Class of Worker

In greater metro Denver and Boulder, healthcare employs 172,720 people in 7,587 different locations. There are 45 hospitals in the region.

Western Slope

Top Employment Concentrations by County, Western Slope			
County	2017 Resident Workers	2017 Jobs	Net Commuters
Mesa County, CO	1,809	1,869	60
Garfield County, CO	560	552	(8)
Routt County, CO	202	251	49
Moffat County, CO	138	109	(29)
Rio Blanco County, CO	58	70	12

Source: EMSI 2017.3 – QCEW Employees, Non-QCEW Employees & Self-Employed Class of Worker



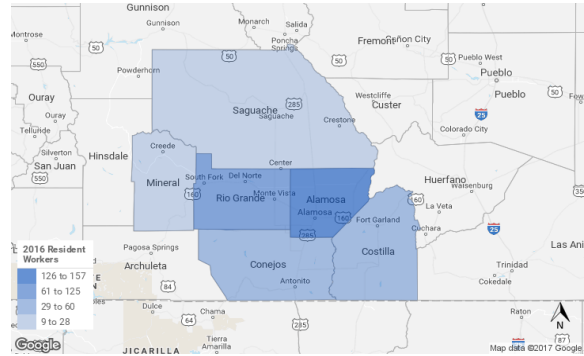
On Colorado's Western Slope, the industry employs 13,888 people in 630 different locations. The region is home to 13 general medical and surgical hospitals.

San Luis Valley

Top Employment Concentrations by County, San Luis Valley			
County	2017 Resident Workers	2017 Jobs	Net Commuters
Alamosa County, CO	157	190	33
Rio Grande County, CO	95	44	(51)
Conejos County, CO	59	33	(26)
Costilla County, CO	31	<10	Insf. Data
Saguache County, CO	18	<10	Insf. Data
Mineral County, CO	<10	<10	Insf. Data

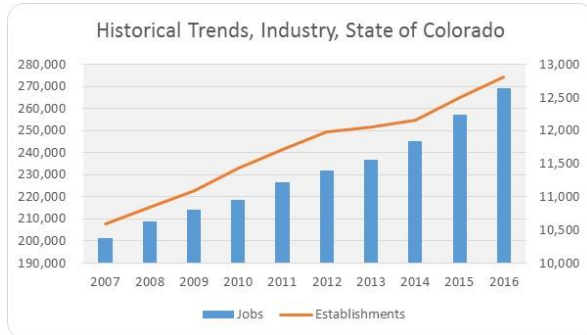
Source: EMSI 2017.3 – QCEW Employees, Non-QCEW Employees & Self-Employed Class of Worker

In the San Luis Valley, 1,975 people work in 83 locations in healthcare. There are several general medical and surgical hospitals in the six-county area.



Critical Issues in Labor Supply

Rapid Growth of Colorado's Healthcare Industry



The healthcare industry experienced rapid growth in Colorado over the last decade, with statewide employment moving from 201,319 in 2007 to 269,059 in 2016, a 33.6% increase. This represents growth of almost 3.4% per year, which is over double the overall employment growth rate in Colorado (1.0% per year).

Imbalance in Age Distribution

Registered nurses in Colorado are disproportionately aged 45 or older. This means if state's training pipeline output isn't increased, there aren't enough younger registered nurses entering the system to replace the retiring cohorts of baby boomers, let alone allow healthcare providers to fill positions created due to growth.

For example, based on the known age distribution of registered nurses in greater metro Denver and Boulder, we can reasonably estimate that 335 new registered nurses aged 34 or under will enter the labor force each year, while around 751 nurses age 45 or older will leave the labor force. This leaves an annual deficit of 416 registered nurses.

Age Distribution, Registered Nurses				
Age Band	Colorado Region			
	North Front Range	Greater Denver & Boulder	San Luis Valley	Western Slope
19-24 Years	118	648	10	73
25-34 Years	1,049	6,695	65	604
35-44 Years	1,236	7,516	65	681
45-54 Years	1,159	7,420	74	733
55-64 Years	1,028	6,391	63	686
65+ Years	132	1,212	10	140
Total	4,722	29,882	287	2,917

Source: EMSI 2017.3 QCEW, Non-QCEW & Self-Employed

Annual Change				
Entering Labor Force	52	335	3	30
Leaving Labor Force	116	751	7	78
Annual Surplus/Shortfall	(64)	(416)	(4)	(48)

Source: EMSI 2017.3 QCEW, Non-QCEW & Self-Employed

This is only one way to look at the challenges Colorado faces in ensuring a steady supply of new registered nurses.

Shortfalls in Colorado’s Nurse Training Pipeline

To supplement this report, a complete list of postsecondary schools with registered nursing programs was run. This list is attached in its entirety. Data is from the Integrated Postsecondary Education Data System (IPEDS) as compiled by Economic Modeling Specialists International (EMSI), and offered through EMSI’s Developer tool.

An analysis of training results reported in IPEDS found that in 2016, nursing programs in Colorado postsecondary institutions produced only 2,887 apparently qualified RNs at the associate level or above to fill 4,931 projected openings – an annual shortfall of 2,044 registered nurses.

Colorado’s postsecondary institutions graduated only 2,044 registered nurses at the associate level or above in 2016, but there were 4,931 openings for registered nurses. This is an annual training pipeline shortfall of 2,044 registered nurses. In order to meet critical needs in registered nursing, Colorado Hospital Association members must work collaboratively with each other and the postsecondary educators to increase the capacity of Colorado’s nurse training pipeline. In spite of good efforts in some regions, this must be a coherent statewide strategy designed to increase capacity to meet current need and grow capacity to meet future projected need.

Out-of-State Recruitment Strategies

While CHA members work toward increasing training pipeline capacity, it is apparent that this will take time. Therefore, member hospitals must also develop a focused out-of-state recruitment strategy. Fortunately, data is now available to allow CHA members to utilize all three different methods of focused out-of-state nurse recruitment.

Recruit from Areas with Surplus Nursing Graduates

This is possibly the most powerful strategy, because in effect, it balances the market. The labor market, like all markets, seeks a state of equilibrium. What this means is that if CHA members can locate cities in the United States that have large annual surpluses of nursing graduates each year, and form an effective recruitment pipeline with those out-of-state schools, then the incoming nurses could fill the gap between Colorado’s nurse training pipeline output and the actual need.

The table on the next page shows a selection of cities in the United States that have the biggest nursing graduate surpluses. **A sample list of nursing schools is provided for the greater Phoenix metropolitan area, which had a surplus of 6,357 nursing graduates in 2016.**

Recruiting Surplus Graduates
Part of a robust and effective out-of-state nurse recruitment strategy is to identify cities that have the biggest surpluses of nursing graduates and recruit from nursing programs in those cities.

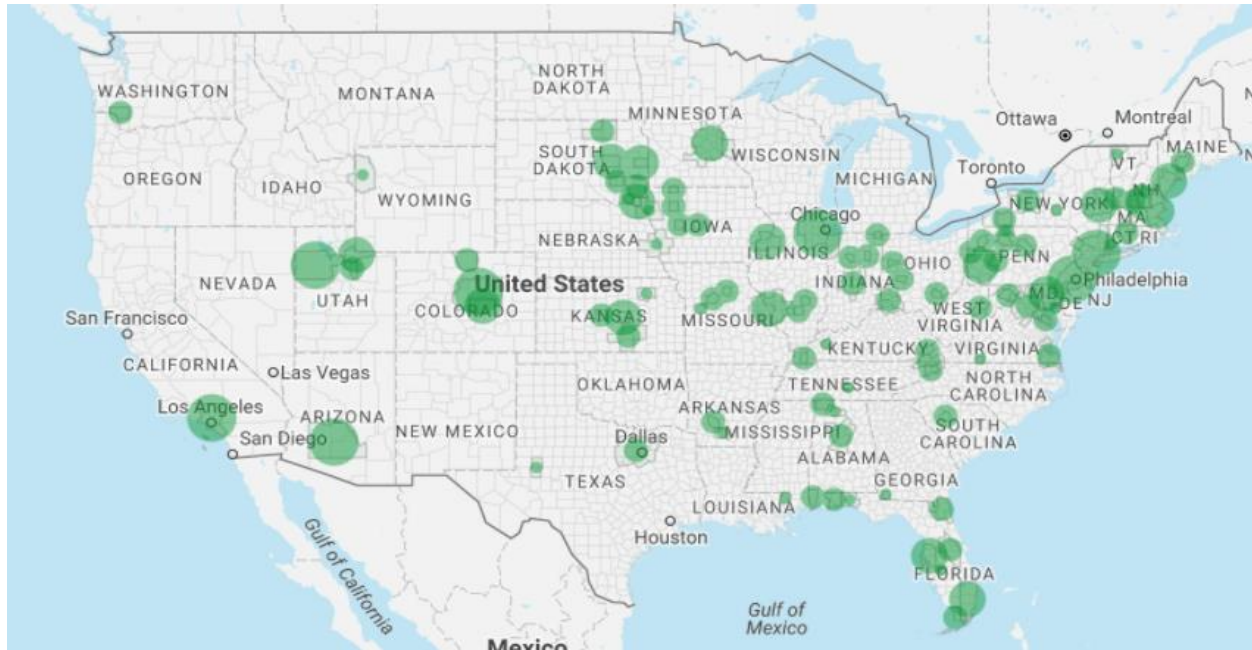
This table shows cities that together have over 31,000 surplus nursing graduates per year. If CHA members can set up recruitment strategies with schools in these cities, it could do much to alleviate nursing shortages in Colorado.

Surplus Graduates for Registered Nurses, Selected Regions				
Colorado Region or Metro Area	2017 Jobs	Annual Openings	Regional Graduations (2016)	Surplus Graduates
Northern Front Range	4,802	379	256	(123)
Greater Metro Denver/Boulder	30,734	2,756	1,969	(787)
San Luis Valley	287	23	30	7
Western Slope	2,973	250	232	(18)
Chicago, IL	92,912	5,952	14,187	8,235
Phoenix, AZ	39,153	3,316	9,673	6,357
Salt Lake City, UT	11,994	962	5,781	4,819
Minneapolis, MN	37,123	2,457	6,364	3,907
Philadelphia, PA	72,444	4,745	7,246	2,501
Miami, FL	55,292	3,778	5,606	1,828
Amarillo/Lubbock, TX	7,025	464	1,679	1,215
Albany, NY	10,431	699	1,900	1,201
Indianapolis, IN	24,047	1,623	2,469	846
Omaha, NE	11,302	729	1,294	565
Kansas City, MO	23,242	1,608	1,957	349
Cheyenne, WY	1,047	64	72	8
Albuquerque, NM	9,962	727	734	7

Source: EMSI 2017.3 QCEW, Non-QCEW & Self-Employed Class of Worker

Recruit Out-of-State Nurses who are Colorado School Alumni

It is reasonable to assume that people who at one time attended college or university in Colorado would be more likely to move back here for the right offer. Colorado enjoys one of the highest in-migration rates in the United States. According to the US Census, 9.7% of Colorado’s population lived somewhere else last year; 4.2% in other states or countries. In the cities along the Front Range, the in-migration rate exceeds 10%. This is because Colorado is perceived as a place of opportunity with a diverse and growing economy. Thus, the state, particularly those urban areas along the Front Range, are a magnet for young, highly skilled, highly educated people who move here for the opportunity to get ahead. Of course, this includes nurses.



This bubble map is weighted for alumni of Colorado schools; the bigger the bubble, the more people there who are working as registered nurses, but at one time went to college or university at some school in Colorado.

Recruiting Alumni from Colorado Schools		
MSA Name	Total Talent	Your Alumni
New York-Newark-Jersey City, NY-NJ-PA	179,706	296
Phoenix-Mesa-Scottsdale, AZ	37,561	242
San Francisco-Oakland-Hayward, CA	38,510	213
Dallas-Fort Worth-Arlington, TX	57,932	200
Los Angeles-Long Beach-Anaheim, CA	102,072	198
Washington-Arlington-Alexandria, DC-VA-MD-WV	42,853	188
Chicago-Naperville-Elgin, IL-IN-WI	91,391	174
Seattle-Tacoma-Bellevue, WA	33,601	168
Houston-The Woodlands-Sugar Land, TX	51,323	148
Atlanta-Sandy Springs-Roswell, GA	40,054	146

Source: Career Builder, EMSI 2017.3 QCEW, Non-QCEW & Self-Employed Class of Worker

If an alumni of a Colorado postsecondary school now resides in another state, they may be willing to relocate back if given the opportunity. Aggregate data is now available that will provide CHA members with insight into where Colorado alumni are currently living and working.

Recruit Based on Cost of Living

Comparative Wages for Registered Nurses, Selected Regions						
Colorado Region or Metro Area	2017 Jobs	Entry (25th Percentile)	Median	Average	Cost of Living Index	COL Adjusted Median
Northern Front Range	4,802	\$27.41	\$30.91	\$31.97	105.6	\$29.27
Greater Metro Denver/Boulder	30,734	\$28.76	\$34.33	\$34.90	113.7	\$30.19
San Luis Valley	287	\$26.08	\$29.50	\$30.26	101.9	\$28.95
Western Slope	2,973	\$28.71	\$34.03	\$34.85	105.8	\$32.16
Albany, NY	10,431	\$26.01	\$30.44	\$30.80	112.8	\$26.99
Salt Lake City, UT	11,994	\$26.18	\$30.21	\$31.12	108.0	\$27.97
Miami, FL	55,292	\$27.11	\$31.38	\$32.53	111.0	\$28.27
Omaha, NE	11,302	\$25.34	\$29.21	\$29.91	101.9	\$28.67
Cheyenne, WY	1,047	\$27.34	\$31.55	\$32.52	106.6	\$29.60
Indianapolis, IN	24,047	\$24.37	\$29.99	\$30.40	100.5	\$29.84
Chicago, IL	92,912	\$29.22	\$35.31	\$35.88	115.9	\$30.47
Kansas City, MO	23,242	\$25.80	\$30.75	\$31.35	100.9	\$30.48
Amarillo/Lubbock, TX	7,025	\$24.73	\$29.48	\$30.72	96.6	\$30.52
Philadelphia, PA	72,444	\$31.19	\$37.04	\$37.26	121.2	\$30.56
Phoenix, AZ	39,153	\$29.58	\$35.62	\$35.95	113.1	\$31.49
Albuquerque, NM	9,962	\$29.29	\$34.33	\$34.76	107.3	\$31.99
Minneapolis, MN	37,123	\$31.48	\$38.55	\$38.12	109.0	\$35.37

Source: EMSI 2017.3 QCEW, Non-QCEW & Self-Employed Class of Worker

The third potential recruitment strategy is to recruit in areas where registered nurses don't have as much purchasing power as they would if they moved to Colorado. To give perspective, this table shows the comparative entry, median and average hourly salaries for registered nurses in the four selected Colorado regions, and the 13 cities mentioned above.

The reader will note the out-of-state cities are sorted from the lowest Cost-of-Living (COL) adjusted median wage to the highest. This way, recruiters can focus on candidates in cities who would, in effect, get a 'raise' in purchasing power by taking a job in Colorado.

This method may be best used in conjunction with other strategies, but as EMSI says, "Workers will be motivated to move to your region if they can earn more money there. A positive number indicates that workers in your region earn more. A negative number indicates that workers in your region earn less. Keep in mind that this number is based on cost-of-living-adjusted wages, which may lead to some surprising comparisons."

On a technical note, the reader should be aware that EMSI derives occupational wages are derived from the most recent published year of the Occupational Employment Statistics (OES) dataset, benchmarked to EMSI industry data. Cost of living data comes from the C2ER cost of living index.

Conclusion

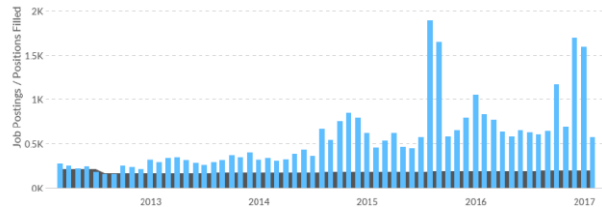
Colorado is currently experiencing historic lows in unemployment. Experts foresee a tight labor market throughout the United States through 2025. In cases where the training pipeline in Colorado is insufficient to meet industry need, it is important to develop strategies which will keep our state competitive. It is fortunate that we now have access to this type of data, because it opens up new vistas for focused external recruitment.

Regional Occupational Reports

When reviewing the regional occupational report for your area, make note of the following:

- Page 8 contains a bar graph. The horizontal gray bar behind the blue bars of the graph is either flat or has a gentle upward slope because it shows the average number of hires per month in the region. This data is reported quarterly, but EMSI annualizes beginning in June each year, yielding a monthly average. The blue bars show unique job postings month over month.

- In all four regions, the blue bars rise substantially above the gray line showing average hires. This suggests that there are substantially more unique job listings than there are people to fill those listings, and the higher the blue bars (job listings) rise above the horizontal charcoal gray bar (average monthly positions filled, the more difficulty employers are experiencing in filling those positions.



- The table on page 9 depicts ‘posting intensity,’ which is simply the total number of job postings made by an employer for each unique position. There are a couple of caveats here of which the reader should be mindful that EMSI is owned by CareerBuilder, and this is an attempt to use ‘big data’ gleaned from 65 million professional profiles on CareerBuilder to provide further insight into labor supply and demand.

- The partial table image shown below is excerpted from the Region 2 report detailing Larimer and Weld counties. The reader will note:

- There may be some duplicates. Though EMSI tries to clean, or de-duplicate job listings from multiple sources, it is impossible to be completely accurate in such an endeavor. For example, in the excerpted table below, it is likely that (unknown) are masked listings with staffing companies that may be hiring on behalf of one or more CHA members but without that member’s identifying information. Thus, the (unknown) line may be a subset of other rows on the table.
- This table represents listing activity aimed at registered nurses residing in the two-county region, but the reader will note that much of the listing volume is from out-of-region or even out-of-state competitors. This is because nationally, registered nurses rank second as the most commonly listed positions, with 372,690 registered nurse positions listed in February 2017. As the healthcare system grows, competition between both in-state and out-of-state employers has become increasingly aggressive. For example, Swedish Health Services refers to a large healthcare provider in the Seattle region. St. Luke’s Health System, Inc. is located in Kansas.

Company	Total/Unique Job Postings (Aug 2016 - Jul 2017)	Posting Intensity	Unique Postings Trend (Aug 2016 - Jul 2017)
Medical Center of Au	8,748 / 895	10:1	
United States Department of the Air Force	5,302 / 868	6:1	
Saint Luke's Health System, Inc.	6,260 / 778	8:1	
University of Colorado Health	2,353 / 642	4:1	
Swedish Health Services	9,137 / 589	16:1	
[Unknown]	7,397 / 552	13:1	

- Data such as that in this report is based on reasonable assumptions, and uses the best sources possible to arrive at the most reasonable estimates, but the numbers provided herein are estimates. Thus, this report is designed to begin a dialog among hospital association leaders about how the capacity of Colorado’s registered nurse training pipeline might be expanded, and how, in the meantime, Colorado Hospital Association members can focus out-of-state recruitment efforts for maximum result.