

## What Occupational Location Quotients Say About New England, 2014

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The concentration of *forest fire inspectors and prevention specialists* in New Hampshire was nearly 24 times that of the nation in 2014.

The location quotient for *forest fire inspectors and prevention specialists* was 23.45, the highest location quotient among occupations in New Hampshire, though only 180 were employed in that position.

A location quotient is a ratio that compares the concentration of

a resource or activity, such as employment, in a defined area to the same measure in another, usually larger, area. For example, location quotients can be used to compare employment by occupation in a state to that of the nation. A location quotient equal to 1.0 indicates the areas have the same concentration of workers in the occupation. A location quotient higher than 1.0 indicates a higher concentration of workers in the smaller area, while a location

quotient lower than 1.0 indicates a lower concentration of workers in that occupation in the smaller geographic area.

Occupational location quotients were calculated using employment estimates from the Occupational Employment Statistics (OES) survey.<sup>1</sup> Comparing the concentration of occupational employment provides insights into the composition of jobs by geographic area. A high location

<sup>1</sup> Bureau of Labor Statistics, US Department of Labor. [http://www.bls.gov/oes/oes\\_emp.htm#scope](http://www.bls.gov/oes/oes_emp.htm#scope) The OES survey covers all full-time and part-time wage and salary workers in nonfarm industries. The survey does not include the self-employed, owners and partners in unincorporated firms, household workers, or unpaid family workers. In Sector 11 - Agriculture, forestry, fishing and hunting, the survey covers only NAICS codes 1133, 1151, and 1152 and covers all other NAICS sectors.

### Top 10 Occupations by Location Quotient, New England States, 2014

SOC	Title	Employment	Location Quotient
<b>New Hampshire</b>			
33-2022	Forest Fire Inspectors and Prevention Specialists	180	23.48
51-4199	Metal Workers and Plastic Workers, All Other	1,070	10.44
51-6099	Textile, Apparel, and Furnishings Workers, All Other	420	5.60
51-2023	Electromechanical Equipment Assemblers	1,050	4.82
53-2021	Air Traffic Controllers	500	4.69
51-4071	Foundry Mold and Coremakers	240	4.38
25-1053	Environmental Science Teachers, Postsecondary	110	4.27
35-2015	Cooks, Short Order	3,190	3.80
37-3019	Grounds Maintenance Workers, All Other	280	3.26
29-9099	Healthcare Practitioners and Technical Workers, All Other	580	3.05
<b>Connecticut</b>			
15-2011	Actuaries	1,180	4.50
33-2021	Fire Inspectors and Investigators	570	4.09
13-2053	Insurance Underwriters	3,790	3.39
29-1066	Psychiatrists	930	3.05
19-3022	Survey Researchers	550	2.95
25-1113	Social Work Teachers, Postsecondary	390	2.89
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	1,410	2.85
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	840	2.77
51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	1,330	2.57
17-2121	Marine Engineers and Naval Architects	240	2.56

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**Top 10 Occupations by Location Quotient, New England States, 2014 (continued)**

SOC	Title	Employment	Location Quotient
<b>Maine</b>			
45-4022	Logging Equipment Operators	1,240	10.98
33-2022	Forest Fire Inspectors and Prevention Specialists	70	9.19
45-4023	Log Graders and Scalers	80	6.28
25-1043	Forestry and Conservation Science Teachers, Postsecondary	40	5.44
25-1051	Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary	230	4.91
33-3031	Fish and Game Wardens	120	4.86
39-3093	Locker Room, Coatroom, and Dressing Room Attendants	320	4.17
49-3051	Motorboat Mechanics and Service Technicians	350	3.95
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	1,050	3.67
53-7032	Excavating and Loading Machine and Dragline Operators	750	3.63
<b>Massachusetts</b>			
19-3032	Industrial-Organizational Psychologists	220	8.25
41-9012	Models	850	6.70
27-4013	Radio Operators	170	6.15
29-2053	Psychiatric Technicians	7,280	4.59
17-2031	Biomedical Engineers	2,090	4.24
19-1042	Medical Scientists, Except Epidemiologists	10,000	4.04
19-1022	Microbiologists	1,980	3.90
25-1031	Architecture Teachers, Postsecondary	670	3.78
15-2041	Statisticians	2,310	3.49
19-1099	Life Scientists, All Other	800	3.46
<b>Rhode Island</b>			
25-1031	Architecture Teachers, Postsecondary	190	7.61
51-9071	Jewelers and Precious Stone and Metal Workers	570	7.16
51-6061	Textile Bleaching and Dyeing Machine Operators and Tenders	250	6.36
15-1111	Computer and Information Research Scientists	380	4.52
25-4011	Archivists	70	3.96
25-2059	Special Education Teachers, All Other	520	3.85
25-1082	Library Science Teachers, Postsecondary	60	3.79
33-9099	Protective Service Workers, All Other	1,460	3.77
47-3016	Helpers--Roofers	150	3.67
51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders	270	3.41
<b>Vermont</b>			
51-7021	Furniture Finishers	320	9.42
47-5051	Rock Splitters, Quarry	60	6.81
27-2032	Choreographers	80	6.18
51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	230	5.38
25-1053	Environmental Science Teachers, Postsecondary	60	5.34
25-1125	History Teachers, Postsecondary	260	4.97
47-2022	Stonemasons	120	4.96
25-1124	Foreign Language and Literature Teachers, Postsecondary	330	4.81
51-9193	Cooling and Freezing Equipment Operators and Tenders	80	4.43
19-1032	Foresters	90	4.25

quotient, however, may not equate to a high number of jobs; it is a simply a comparison of the relative share of an occupation in two geographic areas.

### What are the Implications of a Location Quotient?

Location quotients for occupations provide a workforce view of an area’s economic base. By definition, a location quotient value higher than 1.0 indicates the concentration of that occupation in the area – in this case, a state - is higher than that of the comparison area – in this case, the nation. By identifying the industries most commonly employing workers in these occupations, the importance of those industries to the local economy can also be determined.

➤ In New Hampshire, there were high concentrations of *forest fire inspectors and prevention specialists, metal workers and plastics workers, all other, and textile, apparel, and furnishings workers, all other*, reflecting the strength of specialized manufacturing as well as the national forest.

- The high location quotients of *logging equipment operators, forest fire inspectors and prevention specialists, and log graders and scalers* in Maine illustrate the importance of the forest industry to that state.
- In Connecticut, high concentrations of *actuaries, fire inspectors and investigators, and insurance underwriters* reflect the importance of the insurance industry.
- The importance of biomedical research businesses was reflected in Massachusetts by a high concentration of *biomedical engineers, medical scientists, except epidemiologists, and microbiologists*.

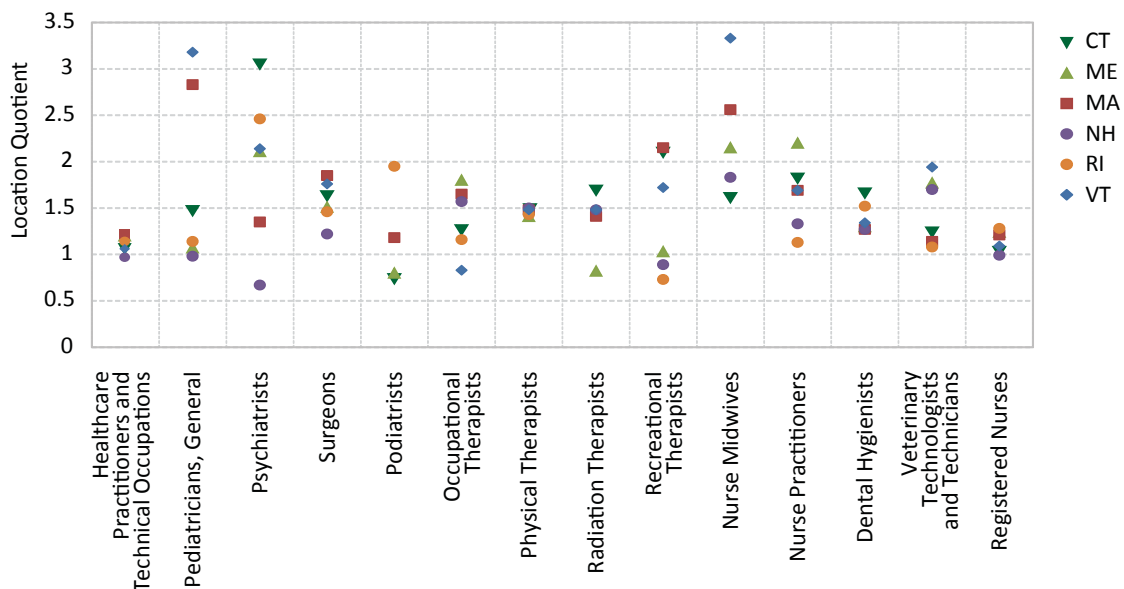
industry, which accounts for roughly 16 percent or more of private employment among the New England states. The location quotient for the Healthcare practitioner and technical occupations group in each New England state was very close to the national rate, ranging from 0.97 in New Hampshire to 1.22 in Massachusetts.

Individual occupations in the group showed regional similarities and differences. Each of the New England states had similar concentrations of *registered nurses* as the nation, with location quotients ranging from 0.99 in New Hampshire to 1.28 in Rhode Island. On the other hand, the concentration of *psychiatrists* in New Hampshire was roughly two-thirds of the national rate (location quotient of 0.67); while Connecticut had three times the national rate, with a location quotient of 3.05. In Vermont, the location quotient for *nurse midwives* was 3.33, compared to 1.86 in New Hampshire, 2.56 in Massachusetts, and 2.15 in Maine.

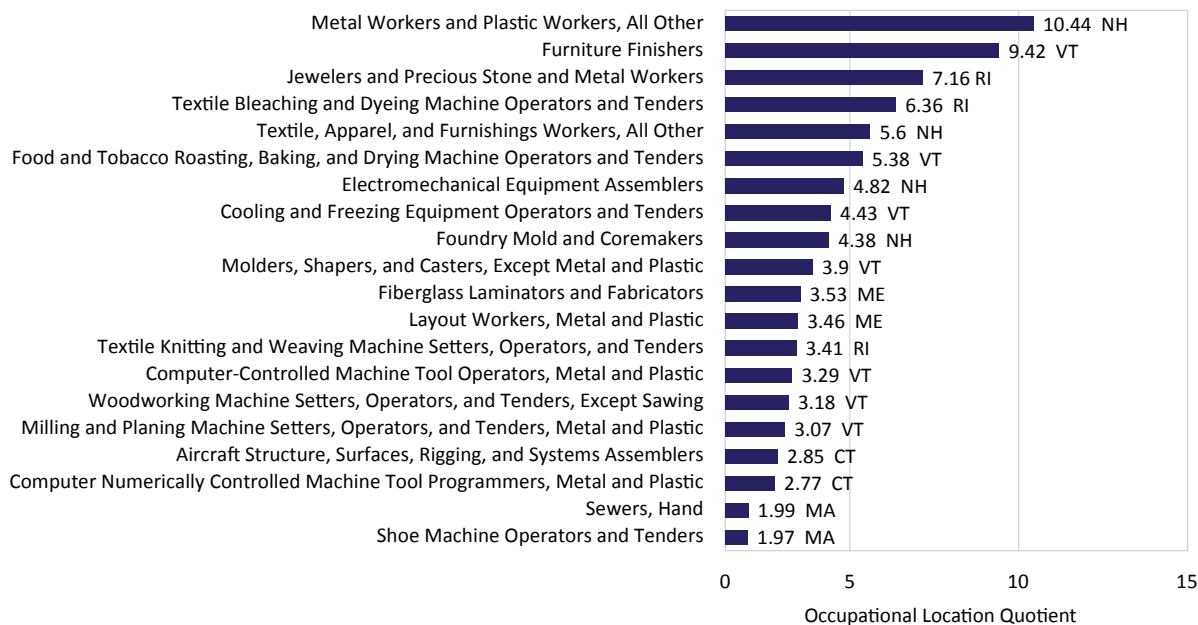
### Location Quotients of Healthcare Practitioner and Technical Occupations

A majority of workers in *Healthcare practitioner and technical occupations* are employed in the *Health care and social assistance*

Location Quotients of Select Healthcare Practitioners and Technical Occupations in New England, 2014



### Highest Location Quotients in Production Occupations in New England, 2014



#### Location Quotients of Production Occupations

Most workers in production occupations are employed in the *Manufacturing* industry. The *Manufacturing* industry accounts for roughly 10 percent of total private employment in the New England states. The concentration of all production occupations in New England was slightly below or equal to that of the nation, with location quotients ranging from 0.73 in Massachusetts to 1.06 in New Hampshire.

Unlike the healthcare occupations illustrated above, detail production occupations were not consistently

found in all New England states. Each state had a different mix of occupations, as well as a different mix of location quotients for the occupations.

Comparing 20 production occupations in the New England states having the highest location quotient provides some insight into the manufacturing specialty areas in each state. For example, Vermont had high location quotients for *food and tobacco roasting, baking, and drying machine operators*, and *cooling and freezing equipment operators and tenders*. These occupations are commonly found in the *Food product manufacturing* industry.

In New Hampshire, *metal workers and plastic workers, all other* had the highest location quotient among production occupations in the New England states. This occupation is commonly found in *Primary metal manufacturing* and *Fabricated metal product manufacturing*, two of the strongest manufacturing sub-sectors in the state. In Massachusetts, *hand sewers and shoe machine operators and tenders* had location quotients just below two. Even though these location quotients were at the bottom of the top 20 for New England, the concentration of these occupations was twice that of the nation.