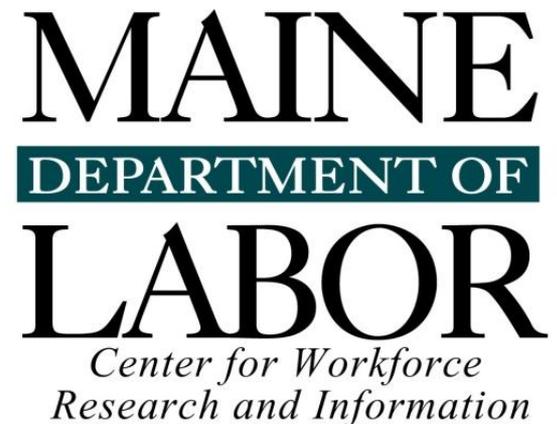


MDOL Workforce Data

Sources-Uses-Limitations

October 18, 2011

*Paul Leparulo, CFA
Principal Economic Research Analyst*



Occupational Data Sources:

Occupational Employment Statistics (OES)
Employment Projections

Occupational Employment Statistics (OES)

- Produces employment and wage estimates for over 800 occupations.
- Self employed not included in the estimates.
- Estimates available for the nation, individual states, metropolitan and nonmetropolitan areas.
- Frequently cited as the most popular labor market information program in the US.
- A variety of uses.

Occupational Employment Statistics (OES)

Occupational Employment and Wage Estimates for Maine					
Maine Statewide, May 2010					
				Relative Error	
SOC	Standard Occupational Classification (SOC) Title	Estimated Employment	Mean (Average)	Mean	Empl
29-1051	Pharmacists	1,210	\$58.40	1.10	10.30

- 1,210 employed pharmacists in Maine.
- Relative error is a measure of the reliability of the survey statistic. The smaller the RSE, the more precise the estimates.
- 91 pharmacists per 100,000 population in Maine; 87 for the US.

Sub-State Employment & Wage Estimates

Occupational Employment and Wage Estimates for Maine

areaname	soctitle	roundempl	emplrse	mean wage
Bangor, ME Metropolitan NECTA, Maine	Pharmacists	120	18.50	\$58.65
Lewiston-Auburn, ME Metropolitan NECTA,	Pharmacists	70	42.90	\$57.18
Portland-South Portland-Biddeford, ME Me	Pharmacists	410	20.50	\$58.64
BOS area 230001, Maine	Pharmacists	150	23.30	\$60.57
BOS area 230002, Maine	Pharmacists	450	17.10	\$57.56

- Approximately one third of the employed pharmacists in Maine are working in the Portland MSA.
- Relative standard error tends to increase as the size of the employment pool and/or geography decreases.
- *BOS 230001 = Aroostook, Hancock, Penobscot (except Bangor), Piscataquis and Washington Counties.*
- *BOS 230002= Androscoggin County (except Lewiston-Auburn MSA), Cumberland County (except Portland MSA), Franklin, Kennebec, Knox, Oxford, Sagadahoc, Somerset Counties, Waldo (except Winterport and Frankfort) County, York County (except towns in Portsmouth, Rochester and Portland MSAs).*

Data Suppression

- Employment and wage estimates for smaller geographies can be produced.
- ...But they may be withheld from publication due to confidentiality and data quality standards.
 - Issues arise when data users can triangulate the employer's identity. The confidentiality of survey respondents is protected by federal laws.
 - Data quality: In general, statistical reliability declines as the sample area/sample size becomes smaller. Estimates are withheld if they fail to meet Bureau of Labor Statistics (BLS) data quality standards.
- In general, the larger the area and employment pool, the more likely the data can be published. Occupational statistics will always be more available on a statewide basis than at the sub-state level.

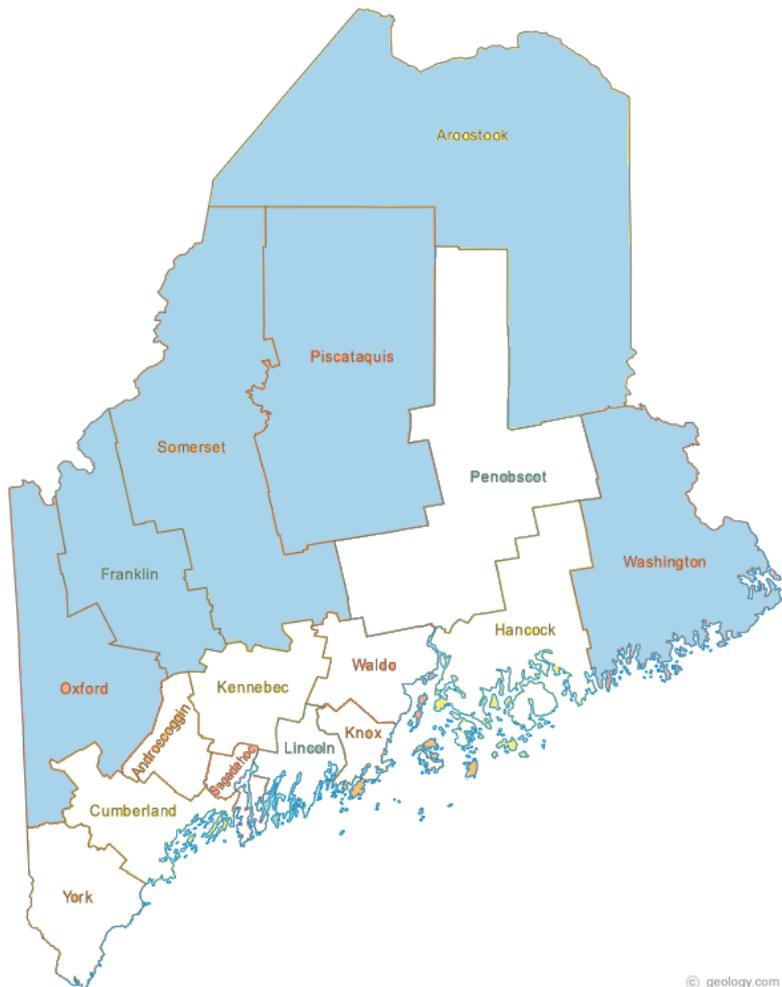
Data Suppression

Occupational Employment and Wage Estimates for Maine

areaname	soctitle	roundempl	emplrse	mean
Maine Statewide	Surgical Technologists	560	21.90	\$19.27
Lewiston-Auburn, ME Metropolitan NECTA,	Surgical Technologists	70	16.00	\$17.34
Portland-South Portland-Biddeford, ME Me	Surgical Technologists	**	**	\$20.35
BOS area 230001, Maine	Surgical Technologists	30	10.60	\$18.56
BOS area 230002, Maine	Surgical Technologists	180	26.40	\$19.30

- 560 surgical technologists in Maine, earning \$19.27 per hour, on average.
- Employment in the Portland MSA is suppressed. For the Bangor MSA, both employment and wage estimates are suppressed.

- Aggregating smaller geographic areas is one way around data suppression



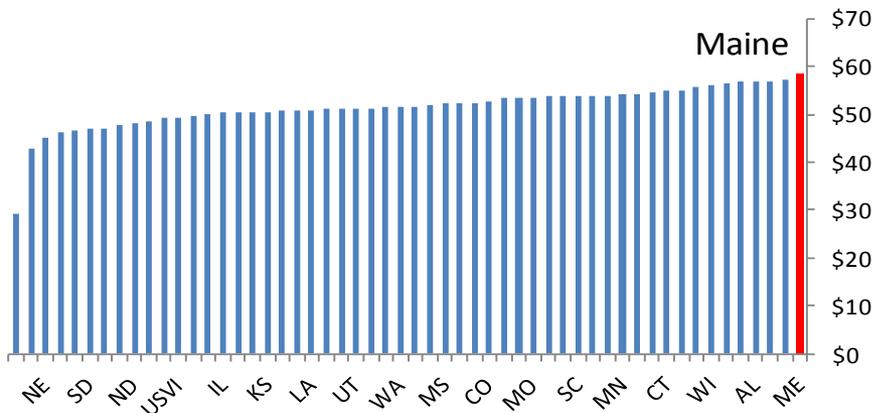
Dealing with Suppression

In Workforce Analysis of Maine's Health Services Sector the employment and wage statistics of health occupations in Maine's six most rural counties were compared to the rest of the state and the nation.

This approach has caveats as well: some 'rural county' residents will have better access to health services than others.

- Other uses of OES data:
Comparing occupational wage differential across geographies

Pharmacist Mean Hourly Wage



- With average hourly wages of \$58.4, Pharmacists in Maine earn more than any other state in the nation and 11% more than the US mean hourly wage of \$52.6.
- Dentists in Maine had average hourly compensation that was 30% above the national average and 3rd highest of all reporting states.

If comparably trained and experienced practitioners earn substantially more in one market for performing the same functions as practitioners in other markets...

...this may indicate that demand exceeds the supply of workers for that occupation in the higher wage area.

Mitigating factors:

- Cost of living differentials
- OES statistics don't capture practitioner experience levels.
- Differences in payer systems among states (i.e. states that are more reliant on HMOs may have lower practitioner wages).

OES Caveats & Limitations

- OES Statistics don't capture levels of experience.
- Estimates don't include the self employed.
- Data is not designed to compare two different points in time.
- Data suppression often results for smaller geographies and occupations.
- No estimates for some specialty occupations (e.g. cardiologists).
- SOC occupations don't always match job titles used in the field.

Employment Projections

- U.S. Bureau of Labor Statistics (BLS) develops national projections for each industry and occupation for 10 years in the future.
- Labor Market Information (LMI) shops create state level projections for each industry and occupation using BLS inputs.
- Projections are updated every other year, have a 10 year span and currently go to 2018.

Industry Employment Projections

Employment by Industry in Maine, 2008 and Projected 2018					
Industry	NAICS	Average Employment		Employment Change	
		2008	2018	Net	Percent
Total Employment		675,743	690,130	14,387	2.1%
Health Care and Social Assistance		98,167	107,654	9,487	9.7%
Ambulatory health care services	621	25,944	29,013	3,069	11.8%
Hospitals	622	30,879	35,204	4,325	14.0%
Nursing and residential care facilities	623	22,919	23,995	1,076	4.7%
Social assistance	624	18,425	19,442	1,017	5.5%

- Projected number of jobs and net job growth by industry.
- Ambulatory health services and hospitals expected to grow more rapidly than nursing and residential care facilities and social assistance.
- 78% of new jobs in Maine's health sector expected to be generated in ambulatory health care and hospitals.

Employment Projections by Occupation

Employment by Occupational Group in Maine in 2008 and Projected 2018								
Occupational Group		Average		Change in		Average Annual Openings		
		2008	2018	Net	Percent	Growth	Replacement	Total
29-1051	Pharmacists	1,288	1,401	113	8.8%	11	29	40

- Projections are made for the 10 year period, and then spread evenly over each year.
- Estimates number of job openings due to growth and replacement needs.
- Estimates include the self employed.
- Expect 400 pharmacist job openings due to growth and replacement needs (2008-2018).
- Nearly 75% of job openings expected to be from replacement demand.
- For occupations requiring training, the data may be used to assess the minimum number of workers who will need to be trained.

Employment Projections Caveats

- Projections for occupations with higher proportions of self employed are more subjective.
- Designed to capture long-term structural drivers more so than economic cycles.
- State level replacement rates are largely based on national metrics.
- Projections only include those expected to be working in a specific occupation.

Other Occupational Data Sources

- UI benefits
- Job postings
- Longitudinal data
- American Community Survey