



## California Registered Nurse Regional Workforce Report Card

**Commissioned by the California Institute for Nursing & Health Care  
 Conducted by researchers from the VA Long Beach Healthcare System  
 and the School of Medicine, University of California, Irvine**

This report provides a simple way to quantify and compare the RN workforce in different areas within California. Analysis of the RN workforce at the regional level supports development and implementation of policy and regional strategies. The measure of the RN population used for the study is the RN jobs per capita metric - the number of RN positions filled for 100,000 persons of the general population. The per capita value allows comparisons to be made based on RN job "density" - a useful measure of RN allocation. The values for RN jobs for each state - provided by the Bureau of Labor Statistics (BLS) - and for each California region - provided by the California Employment Development Department (CA EDD) - originated from the same survey source - the Occupational Employment Statistics survey.

### Methods

A grading rubric was constructed based on the 2004 national value of RN jobs per 100,000 general population and on the standard deviation among the 2004 RN jobs per 100,000 population values of the 50 states and the District of Columbia. Each California metropolitan statistical area (MSA) or primary MSA (PMSA) was given a letter grade to generate a report card for the 24 California regions. Regions were categorized into Northern, Central, and Southern California for the purpose of statewide comparison. The 24 defined California P/MSAs represent 32 counties with the largest populations (out of 58 counties total).

The number of RN jobs per 100,000 was calculated for the entire United States, each of the 50 states and the District of Columbia, and finally the 24 P/MSAs, using the following formula:  
 Number of RN jobs x 100,000 = RN jobs per 100,000 population.

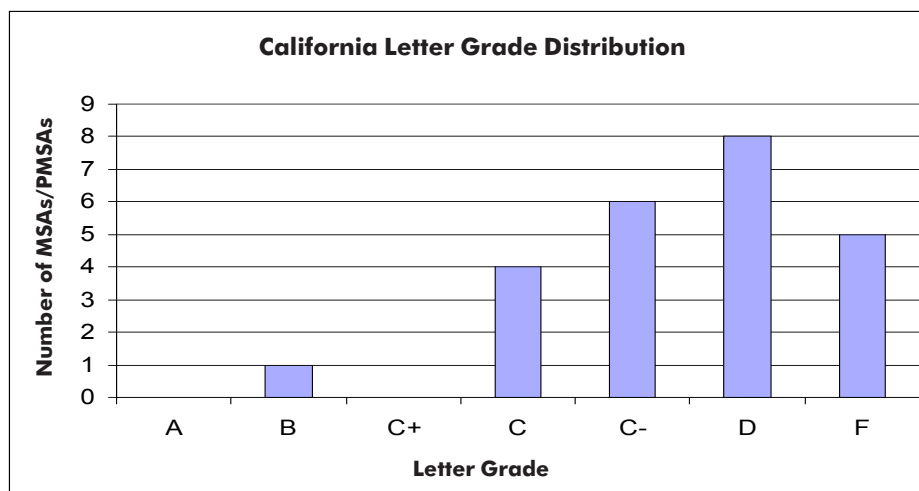
For the nation, the 50 states and the District of Columbia, the number of RN jobs was obtained from the BLS<sup>1</sup>, while the populations were obtained from the United States Census Bureau<sup>2</sup>. For the 24 P/MSAs the number of RN jobs was the average of 1st and 3rd quarter figures obtained from the CA EDD<sup>3, 4</sup>. The July 1, 2004 population estimates were obtained from the State of California Department of Finance<sup>5</sup>.

Both the BLS and CA EDD define an RN as a full-time or part-time employee, representing salaried employment. The standard deviation was calculated using the RN job ratios of the 50 states and the District of Columbia and was found to be 162. The grading rubric is summarized in Table 1.

### Results

The national average number of RN jobs per 100,000 was 787. The California average RN job ratio was 622. All California P/MSAs fell below the national average with the exception of the Redding and San Francisco areas. Five P/MSAs received F's, indicating a ratio more than 320 RN jobs per capita fewer than that of the nation. The most common grade for California is D received by 8 out of 24 P/MSAs.

**Chart 1. Distribution of Letter Grades: 24 California P/MSAs**



**Table 1. Grading Rubric with Letter Grade, Definition of Grade, Range of RN Jobs per 100,000 population , Overview of the 50 States and District of Columbia, and the 24 California P/MSAs.**

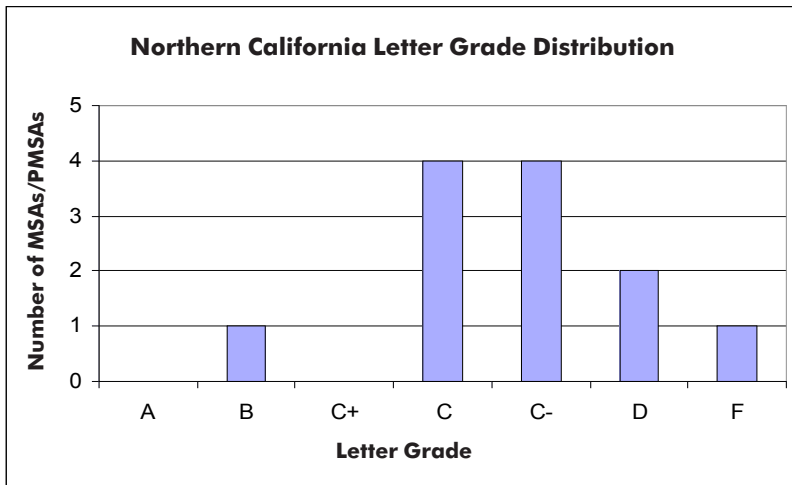
Letter Grade	Definition	Range of RN jobs per 100,000 population	Number of States	Number of California P/MSAs
A	2 or more standard deviations above national mean	1112 or more	3	0
B	1 – 2 standard deviations above national mean	950-1111	6	1
C+	0.5 – 1 standard deviations above national mean	869-949	12	0
C	0.5 standard deviations below to 0.5 standard deviations above national mean	707-868	20	4
C-	0.5 – 1 standard deviations below national mean	626-706	6	6
D	1 – 2 standard deviations below national mean	464-625	4	8
F	2 or more standard deviations below national mean	463 or less	0	5

- National mean of RN jobs per 100,000 population was 787.
- Standard deviation (SD) among the 50 states and the District of Columbia was 162.
- The District of Columbia and forty-six states received a C- or above.
- California received a D with an RN job ratio of 622.

**Table 2. Report Card of the 24 California P/MSAs, District Designation based on Geographical Location, Component Counties, Number of RN jobs, Total Population , RN jobs per 100,000 population, and Letter Grade.**

Name of P/MSAs	California District	Component Counties	Number of RN jobs	Total Population	RN jobs per 100,000 population	Letter Grade
Bakersfield MSA	Central	Kern	2,570	744,325	345	F
Chico-Paradise MSA	Northern	Butte	1,340	213,065	629	C-
Fresno MSA	Central	Fresno, Madera	6,420	1,016,248	632	C-
Los Angeles - Long Beach PMSA	Southern	Los Angeles	65,750	10,179,716	646	C-
Merced MSA	Central	Merced	610	237,155	257	F
Modesto MSA	Northern	Stanislaus	3,300	500,172	660	C-
Oakland PMSA	Northern	Alameda, Contra-Costa	16,790	2,518,254	667	C-
Orange County PMSA	Southern	Orange	18,605	3,044,819	611	D
Redding MSA	Northern	Shasta	1,910	177,002	1,079	B
Riverside-San Bernardino PMSA	Southern	Riverside, San Bernardino	18,010	3,776,511	477	D
Sacramento PMSA	Northern	Sacramento, El Dorado, Placer	13,810	1,835,606	752	C
Salinas MSA	Central	Monterey	2,335	425,521	549	D
San Diego MSA	Southern	San Diego	16,725	3,036,373	551	D
San Francisco PMSA	Northern	San Francisco, Marin, San Mateo	15,275	1,767,311	864	C
San Jose PMSA	Northern	Santa Clara	13,000	1,749,365	743	C
San Luis Obispo-Atascadero -Paso Robles MSA	Central	San Luis Obispo	1,385	259,924	533	D
Santa Barbara-Santa Maria-Lompoc MSA	Southern	Santa Barbara	2,025	416,625	486	D
Santa Cruz - Watsonville PMSA	Northern	Santa Cruz	1,460	259,990	562	D
Santa Rosa PMSA	Northern	Sonoma	3,370	477,437	706	C-
Stockton-Lodi MSA	Northern	San Joaquin	3,445	646,007	533	D
Vallejo - Fairfield - Napa PMSA	Northern	Napa, Solano	3,910	552,078	708	C
Ventura PMSA	Southern	Ventura	3,490	811,505	430	F
Visalia - Tulare - Porterville MSA	Central	Tulare	1,740	405,438	429	F
Yolo PMSA	Northern	Yolo	690	186,554	370	F

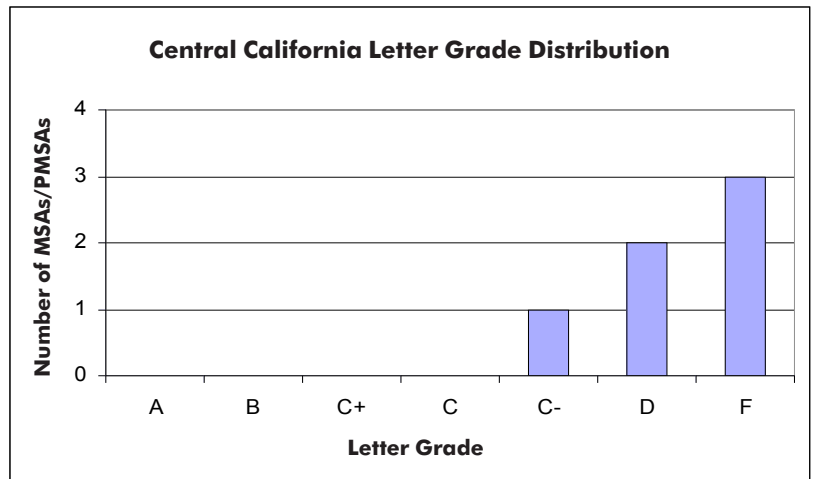
**Chart 2. Distribution of Letter Grades:  
12 Northern California P/MSAs**



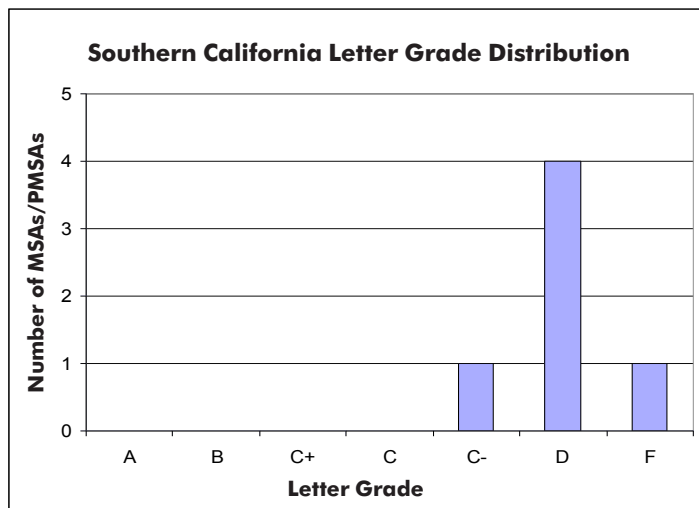
- Among the Northern California P/MSAs, the letter grades range from B to F. The most common grades in this district are C and C- (8 of 12).
- The two regions with the highest RN job ratios, the Redding MSA and the San Francisco PMSA, are located in Northern California.
- The Yolo MSA is the only region in Northern California that received an F.

**Chart 3. Distribution of Letter Grades:  
6 Central California P/MSAs**

- Central California grades range from C- to F with F being its most common grade.
- The three regions receiving Fs in Central California are Bakersfield, Merced, and Visalia-Tulare-Porterville.



**Chart 4. Distribution of Letter Grades:  
6 Southern California P/MSAs**



- The most common grade in Southern California is a D (4 of 6), while the highest grade is a C-.
- Only one region within Southern California, the Ventura PMSA, received an F.

## Conclusion

The current nurse shortage will only intensify as the "baby boomer" and RN populations age<sup>6,7</sup>. Various reports and articles have offered suggestions to alleviate the national and California shortages, though analysis of state RN workforces is still incomplete. Because states, particularly California, are large entities, comprehensive solutions might be difficult. Examination of the RN workforce at a regional level allows solutions to be proposed that meet a region's specific needs.

By using report card methodology, this paper places California and its regions within the larger framework of the nation and the other 49 states. We believe this is a first and significant step toward the construction of region-specific strategies to reduce the nurse shortage. In the use of a grading rubric and assignment of grades, we also hope to draw attention to the severity of the nurse shortage and provide a measure to compare regional shortages in a way that is meaningful to the general public. This report serves to heighten awareness of the shortages that are present in all California regions.

## References

1. 2004 State Cross-Industry Estimates, 2004 Occupational Employment and Wage Estimates. (2004). Bureau of Labor Statistics, United States Department of Labor. Retrieved January, 2006 from <http://www.bls.gov/>.
2. US Census Bureau Public Information Office. Facts for Features. (2006). [http://www.census.gov/Press-Release/www/releases/archives/facts\\_for\\_features\\_special\\_editions/006105.html](http://www.census.gov/Press-Release/www/releases/archives/facts_for_features_special_editions/006105.html).
3. May 2004 State Cross-Industry Estimates, May 2004 Occupational Employment and Wage Estimates. United States Department of Labor, Bureau of Labor Statistics. 2004. Retrieved January 20, 2006 from <http://www.bls.gov/>.
4. November 2004 Occupational Employment and Wage Estimates, United States Department of Labor, Bureau of Labor Statistics. One occupation for multiple geographical areas, Occupation: Registered Nurses. Retrieved January 11, 2006 from <http://www.bls.gov/>.
5. E-2 California County Population Estimates. California Department of Finance, Demographic Research Unit. (2004).
6. Mion L (2003). Care Provision for Older Adults: Who Will Provide? *Online J Issues Nurs.* 8(2):4.
7. Kovner C, Mezey M, et al, (2002). Who cares for older adults? Workforce Implications of an Aging Society. *Health Aff.* 21(5): 78-89.

## Prepared by

Vernon W-H Lin, MD, PhD, (1,2), Ann Lee (1), Stephen Juraschek (1), Deloras Jones, RN, (3), Ian Hsiao (1,2)

1. Health Care First Study Group, VA Long Beach Healthcare System, Long Beach, CA.
2. Department of Physical Medicine and Rehabilitation, School of Medicine, University of California, Irvine, CA.
3. President and Executive Director, California Institute for Nursing & Health Care

No commercial party having a direct or indirect interest in the subject matter of this article has conferred or will confer a benefit upon the authors or upon any organization with which the authors are associated.

This project was supported by the California Institute for Nursing & Health Care.

## Contacts

Please send correspondence or reprint request to:

Vernon W. Lin, MD, Ph.D., Associate Chief of Staff for Education and Healthcare Initiatives,  
VA Long Beach Healthcare System, 5901 E. Seventh Street, Long Beach, CA. 90822. Phone (562) 826-5049;  
Fax (562) 826-5108; Email address: [Vernon.lin@med.va.gov](mailto:Vernon.lin@med.va.gov).

California Institute for Nursing & Health Care, 1815 B Fourth Street, Berkeley, CA 94710. Phone (510) 486-0627; [www.cinhc.org](http://www.cinhc.org).