

American Traveler PIC Math Project: Job outlook for traveling nurses
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Nursing Shortage Background

<http://www.newyorker.com/business/currency/why-is-the-u-s-perpetually-short-of-nurses>
<http://www.aacn.nche.edu/media-relations/fact-sheets/nursing-shortage>
<http://www.bls.gov/ooh/healthcare/registered-nurses.htm#tab-1>

Data

<http://www.bls.gov/oes/current/oes291141.htm>
<http://www.bea.gov/>

Travel Nursing and the Nursing Labor Market

Hospitals and other healthcare facilities spent \$2.4 billion dollars to supplement their workforce with travel nurses in 2014.¹ Principally due to the nursing shortage and seasonal needs (e.g., Florida in the winter), healthcare facilities contract with travel nursing staffing companies, like American Traveler, to provide nurses on short-term contracts.

As referenced in *The New Yorker* article, the nursing labor market is very dynamic and sensitive to economic trends. It is possible to analyze these trends at both the national and state level. For business planning purposes, it is valuable to understand historically what economic factors have had the greatest impact on nursing employment on both a national and state basis. Wage and employment levels of the overall nursing workforce are highly indicative of the demand for travel nurses.

There is a trove of labor data published by the Bureau of Labor Statistics and economic data by the Bureau of Economic Analysis. There is other credible labor and economic data to be found on the internet as well.

Areas to Explore

1. In conducting statistical analyses, see what economic factors historically you find to be most impactful on the nursing labor market. Develop recommendations on what economic factors should be tracked on a national and/ or state basis to serve as a leading indicator for the demand for nursing services.
2. As seen on the “Nursing Shortage” webpage of the American Association of Colleges of Nursing website, there are varying opinions about whether there will be a nursing shortage in the future or not. Join the conversation - develop a forecast for nursing employment and propose your own analysis of the nursing shortage and whether it will persist (and if so to what degree).

Methods and challenges

For problem 1. the students can get started by doing a multiple regression combining several data sets (they should use the speculations from the above articles to determine which factors to include). In order to isolate the most important contributing factors, the students can learn about “Principal Component Analysis” and implement it using Excel or a statistical programming language like R. For problem 2. the students should first set up a “baseline” using linear regression and the employment predictions stated by the BLS. Then they can proceed to devise more sophisticated predictions informed by their work on problem 1. There are many other directions the students can take, such as investigating the recent increased need for nurses due to an increase in the number insured in the US.

¹ Staffing Industry Analysts