



## A Profile of Registered Nurses in New York State





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## PREFACE

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This report was prepared at the Center for Health Workforce Studies (CHWS) by Nafin Harun, Robert Martiniano, Carol Rodat, and Jean Moore, with layout design by Rachel Carter. Support for this analysis was provided by the New York State Department of Health.

Established in 1996, CHWS is an academic research organization, based at the School of Public Health, University at Albany, State University of New York (SUNY). The mission of CHWS is to provide timely, accurate data and conduct policy-relevant research about the health workforce. The research conducted by CHWS supports and promotes health workforce planning and policymaking at local, regional, state, and national levels.

The views expressed in this report are those of CHWS and do not necessarily represent positions or policies of the School of Public Health, University at Albany, SUNY.

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# BACKGROUND

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Registered nursing is the single largest health profession in New York. Registered nurses (RNs) are found in a wide array of settings, often playing key roles in the delivery of patient care services. The state's health reform initiatives are resulting in dramatic shifts in care delivery, changing how and where care is delivered and reimbursed. Increasingly, providers are using interdisciplinary teams to provide care in ambulatory settings. Demand for RNs in the evolving care delivery system is likely to change, with RNs assuming new roles aimed at improving population health, including the provision of care coordination services, increasing patient engagement and promoting preventive services.

This report, developed by the Center for Health Workforce Studies (CHWS), provides an overview of the RN workforce in New York. It was developed using two 5-year estimates from the American Community Survey (ACS)<sup>a</sup> and salary data from the Bureau of Labor Statistics, Occupation Employment Survey. The report compares New York's RN workforce at two different points in time. For purposes of this report, period 1 refers to 2005-2009 and period 2 refers to 2010-2014. In previous analyses, CHWS used RN re-licensure survey data to produce this report. A sharp drop in the response rate to this survey precludes the use of these data for any RN workforce analysis.

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<sup>a</sup> The American Community Survey (ACS) of the U.S. Census Bureau is an ongoing statistical survey that annually samples 3.5 million households in the United States and Puerto Rico. To guarantee target accuracy for estimates, the sampling rate varies from 15 percent for small, rural areas to less than 1 percent for large urban areas. For more information on the ACS go to: <http://www.census.gov/programs-surveys/acs/technical-documentation.html>.

## DATA AND METHODS

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This analysis used data drawn from the American Community Survey (ACS) 5-year estimates for 2005-2009 and 2010-2014 for purposes of describing active RN characteristics in New York. Eberts' Typology<sup>b</sup> was used to define rural and urban counties within the state. Salary information for comparison to inflation was obtained from the Bureau of Labor Statistics, Occupational Employment Survey for New York State for the years 2004 through 2014. New York State Department of Labor, Bureau of Labor Statistics Occupational Wages (2015), were used for regional wage comparisons, and Department of Labor regions were used throughout.

The data for this study were retrieved from Public Use Microdata Sample (PUMS) files for the two periods for populations living in New York State and adjacent states (Vermont, Massachusetts, Connecticut, New Jersey and Pennsylvania), and reporting as working as RNs in New York State. The analysis included RNs who were at least 18 years of age, were actively working in New York, and reported at least some college. Data from the ACS were weighted for the analysis to estimate the entire RN active workforce.

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<sup>b</sup> Eberts' typology categorizes urban and rural counties on the basis of population density. Counties with a total population of less than 200,000 are considered rural. This definition is cited in New York State Public Health Law, Article 2, Title 2C, Section 235. Urban counties at the time of data analysis were: Albany, Broome, Dutchess, Erie, Monroe, Nassau, New York City, Niagara, Oneida, Onondaga, Orange, Rockland, Saratoga and Westchester. Broome has since been classified as rural due to a decrease in population in the county.

## KEY FINDINGS

### The statewide supply of active RNs grew slightly between period 1 (2005-2009) and period 2 (2010-2014).

Between the two periods, the number of active RNs in New York increased by 5.6% (9,861) for a total of about 186,700 statewide. The percentage increase in RNs in rural areas of the state was somewhat greater, 6.2% (1,590) than the percentage increase in urban areas, 5.1% (8,271). However, the distribution of RNs between urban and rural areas remained relatively consistent between the two time periods, with rural RNs comprising 13.6% (25,423) and urban RNs comprising 86.4% (161,318) of the state's nursing workforce.

*Table 1. Active RNs in NYS, 2005-2009 and 2010-2014*

| 5-year ACS Period | Rural  | Urban   | Total   |
|-------------------|--------|---------|---------|
| 2005-2009         | 23,833 | 153,047 | 176,880 |
| 2010-2014         | 25,423 | 161,318 | 186,741 |

### New York's nursing workforce is aging, as the proportion of active RNs age 55 and older grew by nearly 6 percent between the two time periods.

The proportion of RNs age 55 and older increased in both rural and urban areas of the state, between periods 1 and 2. RNs in rural areas between the ages of 18-54 increased by less than 1 percent, while RNs 55 and older increased by 26.5%. RNs in urban areas between the ages of 18 and 54 decreased by 1.2% while RNs age 55 and older increased by almost a third (29.4%).

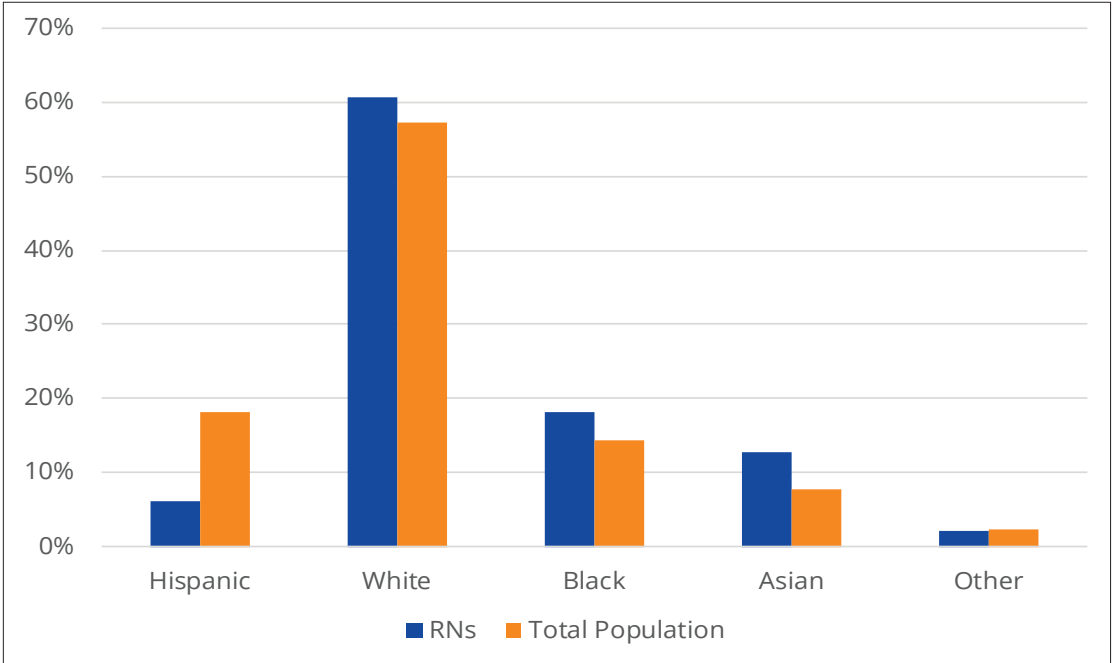
*Table 2. Active RNs by Selected Age Groupings, 2005-2009 and 2010-2014*

| 5-Year ACS Periods        | Age 18-54      | Age 55 and older | Age 65 and older |
|---------------------------|----------------|------------------|------------------|
| Rural difference, 1 and 2 | 48 (0.3%)      | 1,541 (26.5%)    | 157 (24.1%)      |
| Urban difference, 1 and 2 | -1,436 (-1.2%) | 9,710 (29.4%)    | 2,043 (42.4%)    |

**Hispanic/Latino RNs remain under-represented in the nursing workforce compared to their presence in the state’s population.**

While the percentages of White, Black and Asian RNs are similar to their percentages in the state’s population, Hispanic/Latinos remain under-represented in registered nursing (6.0%) compared to their presence in the state’s population (18.2%).

*Figure 1. Comparison of Active RNs in NYS by Race/Ethnicity to State Total Population Race/Ethnicity, Period 2 (2010-2014)*



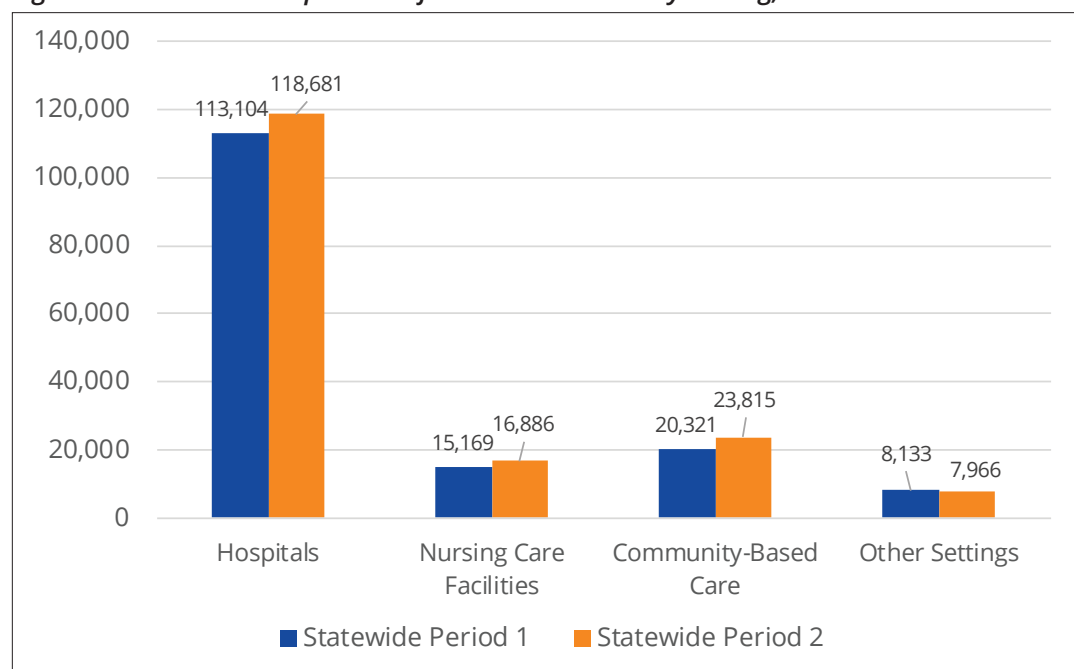
**The percentage of RNs reporting a bachelor’s degree as their highest degree increased.**

There was approximately an 11% increase in the percentage of RNs reporting a bachelor’s degree as their highest educational degree, and no change in the percentage of RNs with less than a bachelor’s degree. The percentage of RNs with a master’s or higher degree increased by 6.3%.

**The majority of RNs in the state work in hospitals.**

There was a 3 percent increase in the percentage of RNs working in hospitals in rural areas between period 1 and 2, (62.7% vs. 65.7%), while the percentage of RNs working in hospitals in urban areas remained the same. There was a small increase in the percentage of RNs also worked in nursing care facilities, and community-based settings such as health practitioner offices, outpatient care centers and home health care. Approximately 10% of respondents failed to report a work setting in each period.

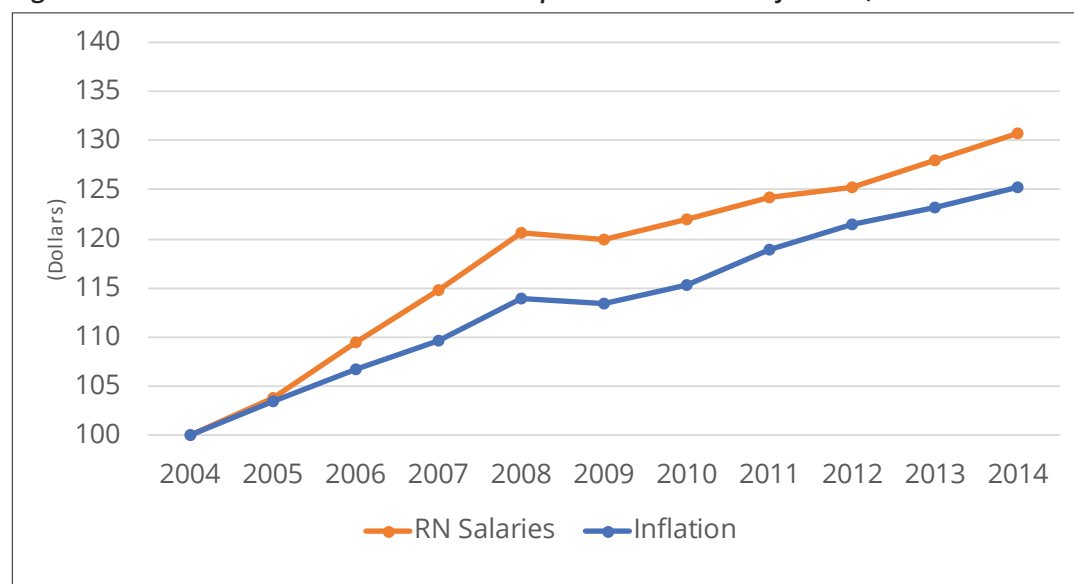
**Figure 2. Statewide Comparison of Active RNs in NYS by Setting, 2005-2009 and 2010-2014**



**While RN salaries have increased faster than overall inflation, there is substantial variation by region.**

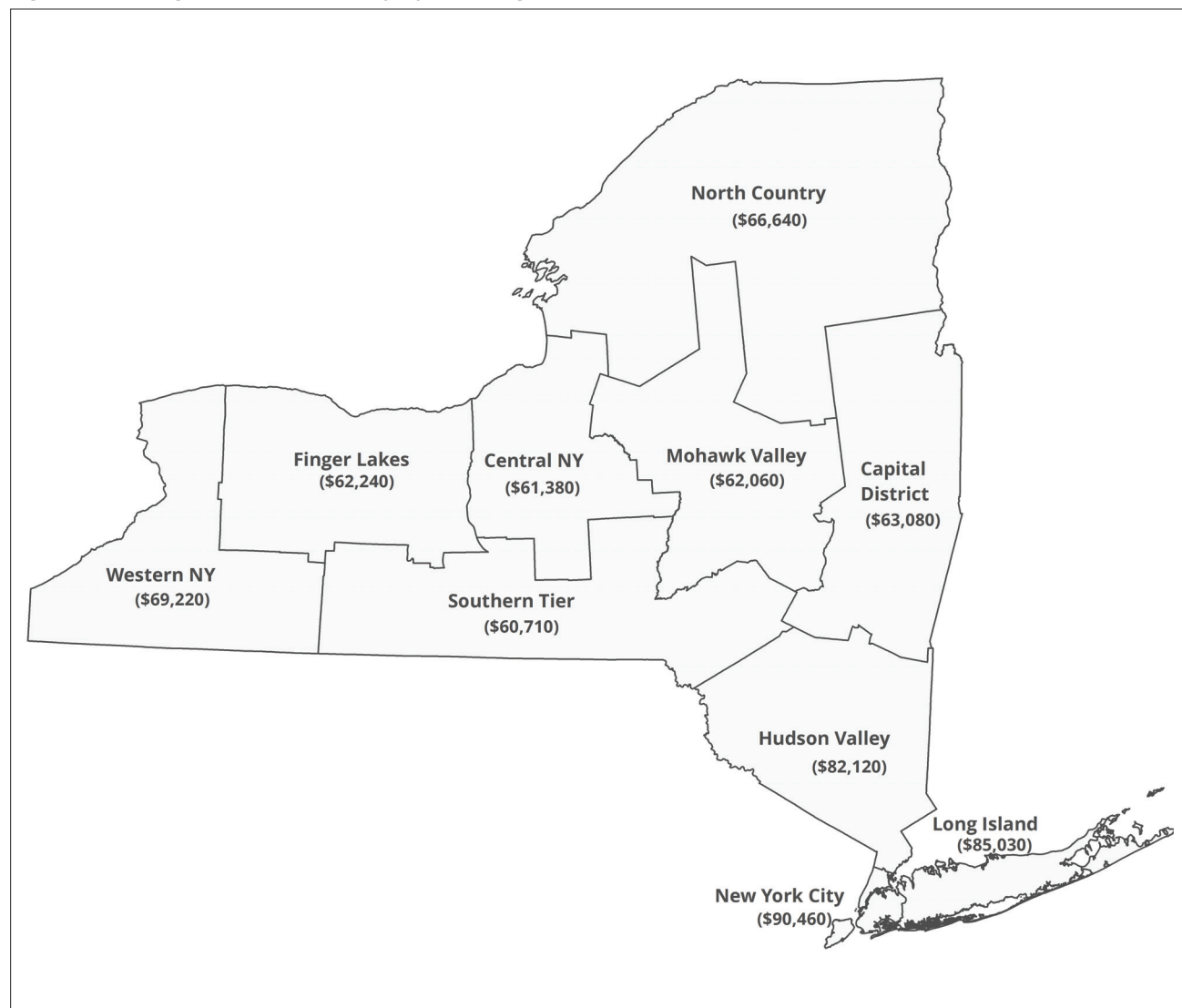
Between 2004 and 2014, salaries of active RNs increased by nearly 31 percent compared to inflation, which grew cumulatively by 25 percent over the same period (Figure 5).

**Figure 3. Growth in RN Salaries in NYS Compared to General Inflation (Standardized to \$100 in 2004)**



While average RN salaries have increased over time, there is significant variation in average annual RN salary by region (Figure 6), with higher salaries in downstate regions. The average salary for an RN in 2004 was \$60,680, compared with \$80,090<sup>c</sup> in 2015. These findings are consistent with recently reported data indicating significantly higher wages in urban areas of New York<sup>d</sup> than in rural areas. However, these data do not account for setting, type of work, or highest degree attained.

**Figure 4. Average Annual RN Salary by DOL Region, 2015**



<sup>c</sup> Data were collected in 2012, 2013, 2014, and 2015 and then updated to the first quarter of 2016 by making cost-of-living adjustments.

<sup>d</sup> Occupational Employment and Wages for Registered Nurses and Nursing Assistants in New York's Metropolitan Areas – May 2015, at: [www.bls.gov/regions/new-york-new-jersey/news-release/nursesoccupationalemploymentandwages\\_newyork.htm](http://www.bls.gov/regions/new-york-new-jersey/news-release/nursesoccupationalemploymentandwages_newyork.htm).

# LIMITATIONS

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The ACS is a survey of both households and individuals, and while it provides basic information on the number of active RNs as well as some demographic, educational and practice characteristics, the capacity to draw conclusions for this report is limited. The limitations include:

- Occupation data in the ACS are self-reported and subject to potential misclassification
- The ACS captures limited information on practice characteristics:
  - Not all respondents selected a work setting
  - General health care employment settings are reported, but it is not detailed enough to distinguish between inpatient and outpatient hospital departments
  - Work hours are not reported in ACS, limiting the ability to assess RN full-time equivalents
- The ACS question on education asks for highest degree attained and not highest nursing degree, so there is no way to estimate the percent of active RNs holding a Bachelor in Science of Nursing (BSN)
- The ACS sample size is not large enough in sparsely populated areas to allow for reliable sub-state analysis
- RNs not currently working in nursing cannot be identified in the ACS, so it can only be used to estimate active RNs and not all RNs licensed in the state

## DISCUSSION

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This report presents a profile of active RNs in the state using the best available data for this analysis. The supply of RNs saw modest growth between time period 1 (2005-2009) and time period 2 (2010-2014). Active RNs in the state are aging as the proportion of active RNs age 55 and older grew by nearly 29 percent between the two time periods. While racial/ethnic diversity in the RN workforce is improving, Hispanics/Latinos remain under-represented compared to their presence in the state's population.

Hospitals continue to be the primary place of employment but there was an increase in employment of RNs in nursing facilities and community-based settings as well. Salaries of active RNs increased by nearly 31%, and remained ahead of general inflation. However, the downstate region of the state had higher salaries while average salaries in upstate and rural areas remained below the state average.

While the ACS provides some information on active RNs in New York, more accurate, timely and detailed RN workforce data are needed in order to produce a more reliable picture of the supply, distribution and characteristics of the state's RN workforce. Better RN data could support more granular analysis of RN geographic distribution at regional and local levels, would better identify potential maldistributions, and would enable tracking of RN trends over time, all of which could be used to inform nursing workforce policy. As New York's health delivery system transitions to providing more basic health services in ambulatory settings, it will be important to track the changing practice characteristics of the state's RN workforce.





## About the Authors



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Nafin Harun assists in the analyses of provider shortage areas and works to develop applications, maps, and data visualizations for CHWS. He specializes in research, data analysis, GIS applications, SAS, and SPSS. He previously worked for the New York State Department of Health Bureau of Early Intervention, identifying patient risk factors through statistical mapping and database management.



### Robert Martiniano, DrPH, MPA

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Dr. Martiniano has an extensive background in health workforce research and program management, including 11 years at the New York State Department of Health. He has worked with a number of different communities, agencies and membership organizations on developing community health assessments, identifying provider and workforce shortages, and understanding the impact of new models of care on the healthcare workforce – including the development of emerging workforce titles.



### Carol Rodat, MA

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Carol Rodat has decades of experience in policy analysis, research, and technical writing. In her previous position as the New York Policy Director at the Paraprofessional Health Institute, she was dedicated to increasing the quality of long term care by improving workforce opportunities for paraprofessional health workers. Additionally, she has worked in health care for the Hospital Trustees of New York State, the Home Care Association of New York State, and for the Child Welfare League of America.



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Dr. Moore has been the director of CHWS since 2004. She has provided technical assistance on health workforce data collection and analysis to many states, and national professional associations, including associations representing dental hygienists, registered nurses, social workers, and psychologists. Dr. Moore has served as principal investigator for more than 35 health workforce research studies and authored nearly 70 publications, including peer-reviewed journal articles and reports.



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