

# Examining New York State Nurses

A Regional Analysis of the  
2000 National Sample Survey  
of Registered Nurses

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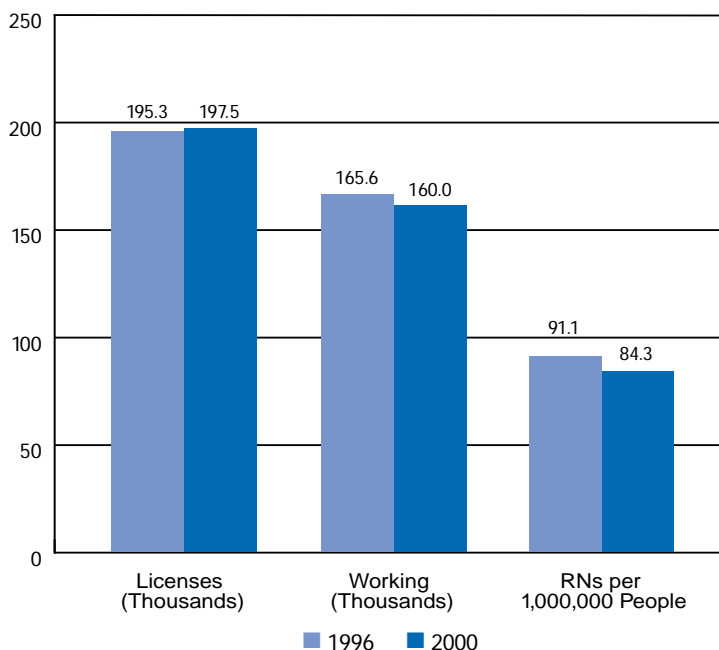


Specific solutions addressing long and short term strategies depend on local markets to some degree, but will also be generally affected by societal perception of nursing as a desirable career and nursing working conditions, wages, and educational strategies as well as future employer demand. Recent nursing workforce reports, such as the Brewer and Kovner (2000) study, the recent Robert Wood Johnson report (Kimball & O'Neill, 2001), and the American Hospital Association Commission on Workforce for Hospitals and Health Systems (2002), detail short and long-term strategies that can be considered to address nursing workforce shortages.

### Licensed Nurses in New York State

Understanding the role of the NYS education system in producing RNs and LPNs that stay in our state and also migrate to other states may be important in reducing a nursing shortage. NYS has one of the largest populations of RNs in the US, but it is not known how many of these RNs actually practice in the state. The National Council of States Boards of Nursing (NCSBN; <http://www.NCSBN.org>, Crawford, Marks, Gawel, & White, 2002, Crawford, Marks, Gawel, White, & Obichere, 2001) states there are 231,310 RNs licensed in the state in 2001, and the NSSRN, which adjusts for duplicate licenses (Spratley et al., 2001), estimates a total population of New York RNs in 2000 of 197,532, an increase of only 2239 RNs over 1996. In 2000 the ratio of RNs per 100,000 was 843, compared to 911 in 1996. In 1996 only 15.2% of RNs were not working in nursing, but by 2000 this had risen to 18.9%, or 160,009 working RNs. The NYS Department of Labor estimates there were 154,000 working nurses in 1998, and there will be 171,300 working RNs by 2008, with the 11th highest national number of net annual openings at 4220 (NYS Department of Labor, 2002). NYS was second only to California in the total percentage of all active licensed RNs from 1997 through 2001.

Figure 1  
NY State RN Workforce in 1996 and 2000



Over the last few years, there was little growth in both the production of RNs (licenses for new graduates and potential immigrants into the state, or New-in-State licenses) and the license renewals for previously registered nurses, or active licenses. Data available from the NCSBN (<http://www.NCSBN.org>, and Crawford et al., 2001, 2002) indicate that in NYS from 1997 to 2001 the total number of active licenses decreased 3653 (1.5%) and the number of New-in-State licenses decreased by 57 (0.4%) for a net decrease of 3710 licenses over the 5 year period. From 2000 to 2001 there was a slight increase of 153 licenses and 578 New-in-State licenses, reflecting a recent, somewhat positive upturn in the trends. However, this decrease occurs in the face of an increasing state population of 1.9% during the same period (US Census Bureau, 2002a, 2002b).

NYS was also first in New-in-State licensed RNs in 1996 and second in 1997. However, NYS dropped to fourth in 1999 (4.95%) after California, Florida, and Texas, and remained there through 2001 (with 5.4% of New-in-State RNs). These four states claimed 27% of all New-in-State licensed RNs in the country in 2001.

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Licensed Practical Nurses (LPNs) and nursing aides participate in nursing work, but there is no existing data-base on LPNs or aides comparable to the NSSRN data. NYS saw a net decrease ( $n = 2396$ , or 2.9%) in total licensed LPNs from 1997 to 2001, and a decrease in New-in-State licenses (totaling 2532 LPNs, or 55.9%. Crawford et al., 2001, 2002: (<http://www.NCSBN.org>). The licensed LPN population has decreased steadily the last five years, although much less from 2000 to 2001, indicating perhaps that the number of LPNs licensed each year will begin to increase. Also, about 15% of RNs were licensed as LPNs; some of these maintain previous LPN licensure, so some double counting occurs, but the extent is unknown.

The goal of the present report is to accurately report the New York State sample data from the National Survey of Registered Nurses to assist policy makers, educators and administrators formulate strategies to develop the RN workforce. While these data are a representative sample of approximately 1% of registered nurses in NYS, it is important to remember that regional samples may not be representative. However, the survey data can provide reasonable clues both about the status of the RN workforce in NYS as a whole, some key differences among the regions, as well as useful and informative trends in nursing workforce issues relevant to health education training, access, and professional development – all primary goals of the New York State Area Health Education Center System.

## II

## Methods

This report will present analysis of the 2000 National Sample Survey of Registered Nurses' data by AHEC Regions as well as by the state. Basic information about the RN workforce can help shape the development of nursing workforce programs in each region of the state. The findings in this report are based on the 2000 NSSRN Public Use and County Level data files. The County Level file contains codes that identify the RN's county of residence. In the County Level file, race/ethnicity is limited to white/non-white and age is limited to a categorical range to protect the anonymity of the survey respondent. As such, more specific analyses of race/ethnicity and age were performed on the Public Use File, which does not contain county of residence.

The NSSRN was conducted by the Research Triangle Institute under contract with the Division of Nursing in the Bureau of Health Professions of the U.S. Department of Health and Human Services' Health Resources and Services Administration (HRSA). Because a comprehensive list of licensed registered nurses for the U.S. does not exist, samples were drawn from each State's list of active licensees (Spratley, et al., 2001). States with smaller RN populations were over-sampled to provide more valid work force estimates at the state level. Additionally, minorities were over-sampled to ensure adequate representation in the survey. The initial sample for the survey consisted of approximately 54,000 licensees. After removing 4,520 duplicate licenses and correcting for other sampling errors, the final national sample was comprised of 35,579 individual nurses yielding a response rate of about 72 percent.

The New York State RN sample was selected by first excluding both nurses who were living outside the United States. Second, the sample was finalized by simply selecting the cases associated with the appropriate Geocode for New York State. This Geocode is a derived variable "that identifies the RN's state where employed in nursing, or the place of residence, if the RN is not employed in nursing as of

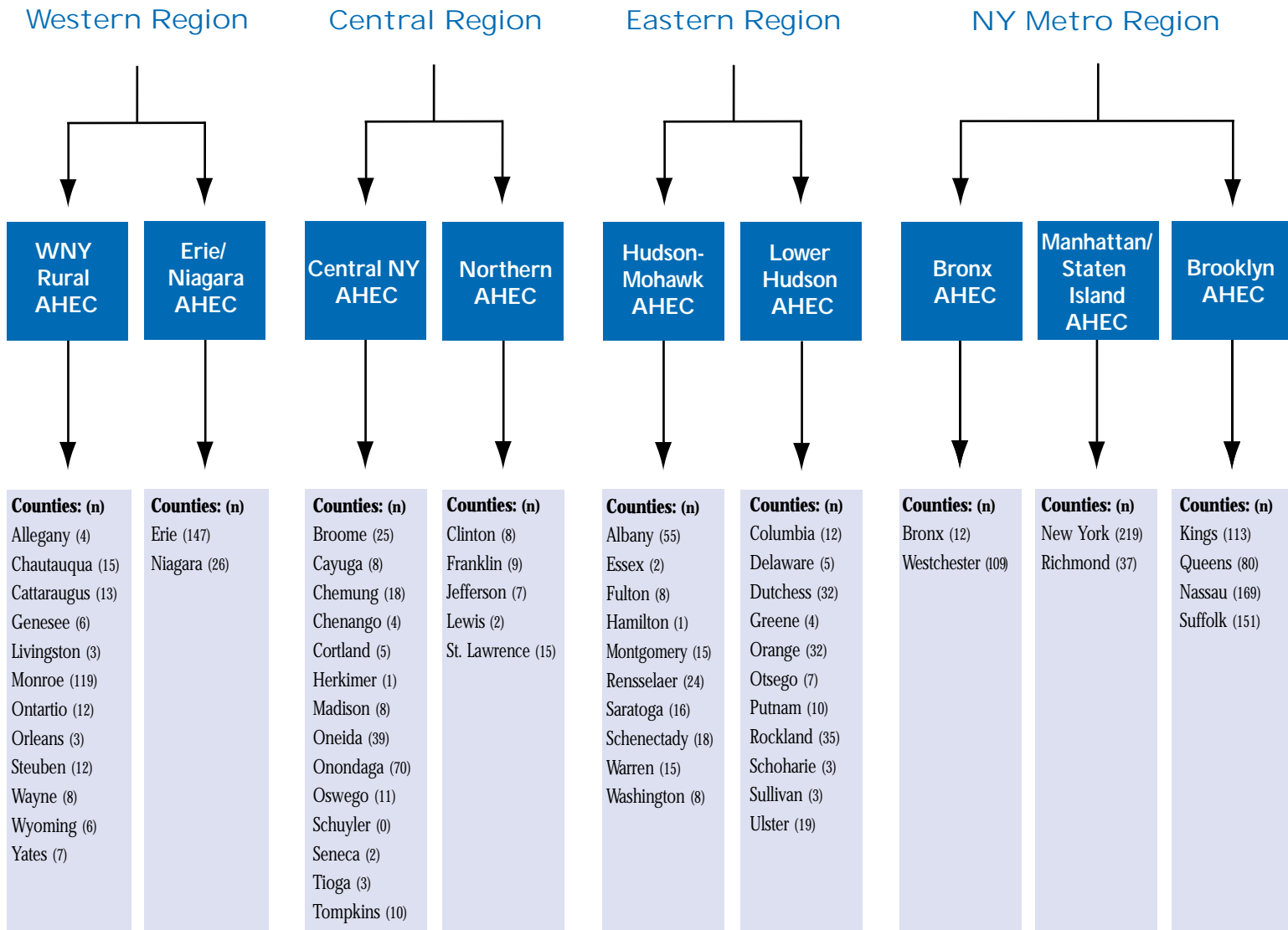
Recall that the NSSRN is designed to provide valid National and State-level workforce estimates.

March 2000." (Spratley et al. 2001, Appendix C, p.10). This methodology yielded a sample of 1,928 New York State registered nurses.

NYS registered nurses were grouped into the AHEC office that serves their county based on the Geocode for each county. Nine AHEC Regions resulted in rather small samples of RNs in each region, so the regions were further grouped into the Western, Central, Eastern, and New York Metropolitan Regions. Figure 1 characterizes the mapping of New York State RNs to counties, AHEC offices, and AHEC Regions. Where appropriate, analyses are carried out both at the New York State and AHEC Regional level. Recall that the NSSRN is designed to provide valid National and State-level workforce estimates. Subdivisions of NYS estimates such as analyses by AHEC Region should be interpreted with an appropriate level of caution.

Figure 2

Distribution of Sampled NY RNs Across AHEC Regions





# Results

## ■ A. Demographics/Employment Status

### Race/Ethnicity

The proportion of minority nurses in NYS is relatively large at 19.8%. The NSSRN data is estimated so that there is no overlap among racial or ethnic categories; all Hispanics, for example, are included in a separate category. However, the NYS non-white population from US Census data is estimated at 29.9%, although the census definition of white may include Hispanic whites, for example (Schreiber, 2002a). Minority RNs are mostly concentrated in the NY Metropolitan Region, but still are a smaller percentage than the 42.2% minority population of the NY Metropolitan Region indicated in the 2000 Census Data (Schreiber, 2002a). The percentage of minorities in other AHEC Regions falls considerably short of the percentage of minorities in the population at large in these other regions, according to both NYS RN survey and NYS census data. It is interesting to note that minority nurses are also more likely to work than white nurses. Table 1 breaks down minority nursing workforce percentages by AHEC Region.

It is interesting to note that minority nurses are also more likely to work than white nurses.

Table 1

Race/Ethnicity of NY Nurses Employed in Nursing by AHEC Region

Region	White			Minority		
	N	Employed	Unemployed	N	Employed	Unemployed
NY Metro	609	80.1%	19.9%	318	84.9%	15.1%
Eastern	301	78.1%	21.9%	18	72.2%	27.8%
Central	237	82.7%	17.3%	7	100.0%	00.0%
Western	357	80.4%	19.6%	21	76.2%	23.8%
<b>NY State</b>	<b>1528</b>	<b>80.5%</b>	<b>19.5%</b>	<b>376</b>	<b>84.6%</b>	<b>15.4%</b>

**Gender**

Of the total sample of registered nurses surveyed, 95% self-identified as female and 5% as male. In the NY Metropolitan Region male and female nurses are equally likely to work (Table 2). Males in the Central and Western Regions have a higher employment rate than female RNs. The Eastern Region has the lowest employment rate for both male and female RNs. Table 2 lists the number and percentage of nurses sampled by AHEC Region, gender and employment status.

Of the total sample of registered nurses surveyed, 95% self-identified as female and 5% as male.

**Table 2**  
Gender and Employment by AHEC Region

Region	Female			Male		
	N	Employed	Unemployed	N	Employed	Unemployed
NY Metro	904	81.5%	18.5%	38	81.6%	18.4%
Eastern	305	77.4%	22.6%	19	73.7%	26.3%
Central	234	82.9%	17.1%	11	90.9%	9.1%
Western	353	79.9%	20.1%	28	85.7%	14.3%
<b>NY State</b>	<b>1830</b>	<b>81.0%</b>	<b>19.0%</b>	<b>98</b>	<b>82.7%</b>	<b>17.3%</b>

## Age

The average age of a New York State RN is 45.8 years old, up from 44.5 years in 1996 (Brewer & Kovner, 2000). Only grouped data (Table 3) is present in the County file of the NSSRN – hence average RN ages in the various AHEC Regions could not be calculated.

Figure 2 shows clearly that the regions have about the same peak age but in the Eastern Region there is a larger percentage of RNs in the 50-59 age category and fewer in the 40-49 age group.

**Table 3**  
Age and Employment Status by AHEC Region

Region	N	Age Group	Employed	Unemployed	Column % within Region
NY Metro	67	<30	92.5%	7.5%	7.2%
	213	30-39	89.7%	10.3%	23.0%
	333	40-49	87.7%	12.3%	36.0%
	201	50-59	84.6%	15.4%	21.7%
	112	>60	36.6%	63.4%	12.1%
Eastern	13	<30	76.9%	23.1%	4.1%
	73	30-39	90.4%	9.6%	22.7%
	106	40-49	84.9%	15.1%	33.0%
	91	50-59	71.4%	28.6%	28.4%
	38	>60	44.7%	55.3%	11.8%
Central	17	<30	94.1%	5.9%	7.0%
	54	30-39	92.6%	7.4%	22.1%
	94	40-49	89.4%	10.6%	38.5%
	49	50-59	77.6%	22.5%	20.1%
	30	>60	50.0%	50.0%	12.3%
Western	24	<30	95.8%	4.2%	6.4%
	81	30-39	86.4%	13.6%	21.4%
	147	40-49	87.8%	12.2%	38.9%
	85	50-59	74.1%	25.9%	22.5%
	41	>60	43.9%	56.1%	10.9%
<b>NY State</b>	<b>124</b>	<b>&lt;30</b>	<b>91.9%</b>	<b>8.1%</b>	<b>6.5%</b>
	<b>431</b>	<b>30-39</b>	<b>89.8%</b>	<b>10.2%</b>	<b>22.6%</b>
	<b>689</b>	<b>40-49</b>	<b>87.7%</b>	<b>12.3%</b>	<b>36.2%</b>
	<b>435</b>	<b>50-59</b>	<b>79.3%</b>	<b>20.7%</b>	<b>22.9%</b>
	<b>225</b>	<b>&gt;60</b>	<b>42.2%</b>	<b>57.8%</b>	<b>11.8%</b>

### Employment

Except in the Eastern Region, RNs under 30 have low unemployment rates, ranging from 4.2% - 8.1%. In the Eastern Region however, 23.1% of RNs under 30 are unemployed (although the sample size is small). The unemployment rate remains at or under 15% for all groups until the age group 50-59. In this age group, NY Metropolitan Region remains highly employed at 84.6%, but the other regions' unemployment rates increase to 20.7%-28.6%. The Eastern Region has the highest unemployment rates in the under 30, 40-49 and 50-59 age groups. After age 60, unemployment drops substantially for all regions, ranging from 50.0% to 63.3%. Central has the lowest proportion of unemployed RNs over 60, as well as the largest percentage in that age group. NY Metropolitan has the highest unemployment rates over age 60. (Table 3)

The unemployment rate remains at or under 15% for all groups until the age group 50-59.

Figure 3  
RN Age for State and AHEC Regions

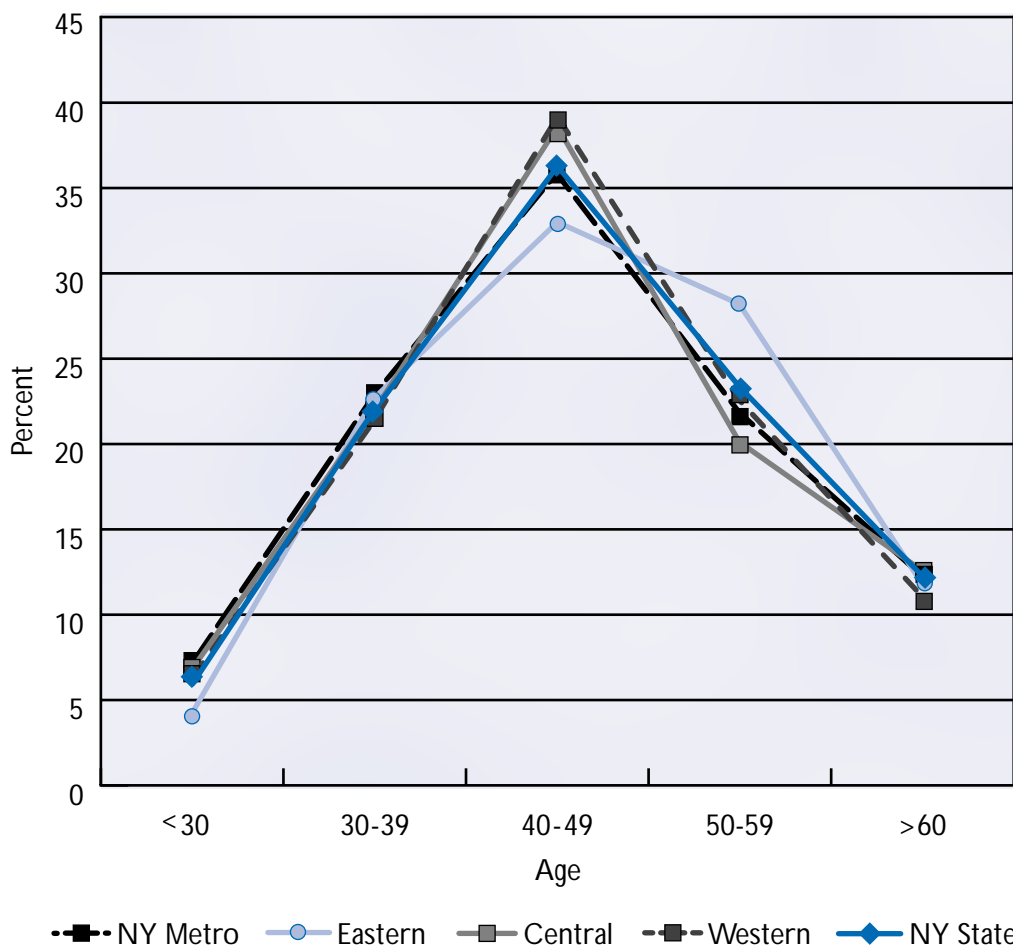
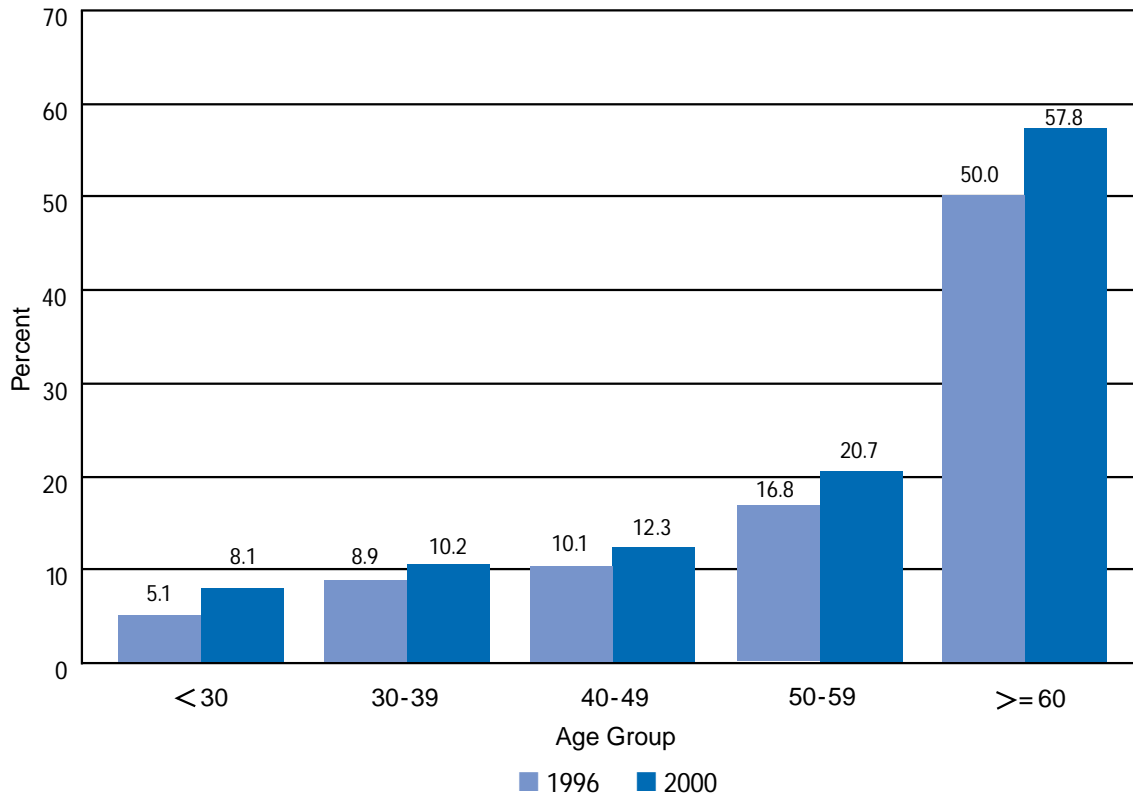


Figure 4  
**Comparison of Unemployment Rate by Age Group  
 Based on 1996 and 2000 NSSRN Data**



**Income**

The average income for full-time nurses was reported at just over \$53,000 per year (median = \$52,000) but is skewed upward by the higher income (mean = \$61,510) of nurses working in the NY Metropolitan Region. Table 4 reports a mean full-time income for Eastern, Central, and Western nurses in the low to mid \$41,000 - \$46,000 range. The average number of hours worked per year is highest in the Western Region, and somewhat more nurses in the NY Metropolitan area work two jobs. The part-time (PT) mean income pattern (Table 5) is the same for NY Metropolitan and Eastern Regions, and Central RNs earn more in PT jobs than in the Western Region (whereas it is the reverse for FT jobs in these two regions). However, the regions all have the same median PT income, except for the NY Metropolitan area. More PT nurses are likely to have a second job, and this is quite variable by region as it is most common in the Central area (25.9%), and least common in the Western Region (9.7%).

Table 4

## Annual Income Figures for Nurses Identified as Full-Time Employees

Item	NY Metro	Eastern	Central	Western	NY State
Median Income in Primary Nursing Position	\$60,000	\$42,042	\$39,000	\$41,000	\$52,000
Mean Income in Primary Nursing Position	\$61,510	\$46,192	\$41,316	\$43,885	\$53,198
Hours/Year	1,932	1,966	1,986	2,012	1,959
Mean Hourly Wage	\$31.84	\$23.50	\$20.80	\$21.81	\$27.16
Weeks/Year	50.2	50.7	50.8	50.5	50.5
Mean Weekly Wage	\$1,225	\$911	\$813	\$869	\$1,053
Percent with Secondary Position	12.8	11.3	11.6	11.4	12.2
Median Income from Secondary Position	\$10,000	\$4,000	\$4,500	\$6,500	\$6,800
Mean Income from Secondary Position	\$12,657	\$6,718	\$9,628	\$9,357	\$10,648

Table 5

## Annual Income Figures for Nurses Identified as Part-Time Employees

Item	NY Metro	Eastern	Central	Western	NY State
Median Income in Primary Nursing Position	\$35,000	\$20,000	\$20,000	\$20,000	\$26,000
Mean Income in Primary Nursing Position	\$33,722	\$20,976	\$22,655	\$19,734	\$26,413
Hours/Year	1,117	977	1,223	1,063	1,093
Mean Hourly Wage	\$30.19	\$21.47	\$18.52	\$18.56	\$24.17
Weeks/Year	46.7	46.4	49.0	46.2	46.7
Mean Weekly Wage	\$722	\$452	\$462	\$427	\$566
Percent with Secondary Position	18.3	17.1	25.9	9.7	16.7
Median Income from Secondary Position	\$6,764	\$6,500	\$4,400	\$7,600	\$6,000
Mean Income from Secondary Position	\$10,336	\$8,680	\$7,728	\$8,009	\$9,180

**Education and Employment**

In the Eastern Region, RNs with graduate degrees are less likely to work than in other regions (Table 6). In the Central Region, baccalaureate-prepared RNs are less likely to work in nursing. In the Western Region, RNs with graduate degrees are more likely to work in nursing than in other regions. Otherwise, the regions are similar with respect to education and employment.

**Diploma RNs are more likely to have added a Baccalaureate nursing degree than an Associate degree** Of those employed in nursing, about 20% have only a Diploma, whereas almost 35% of unemployed RNs have only a Diploma. Diploma RNs are more likely to have added a Baccalaureate nursing degree than an Associate degree (AD). About 15% of nurses with a Baccalaureate degree that are employed also have a graduate degree (data not shown). Overall, the Eastern Region has the largest proportion of AD graduates, NY Metropolitan has the largest proportion of Baccalaureate and RNs with graduate degrees, and Central has the largest proportion of Diploma graduates. (Figure 3)

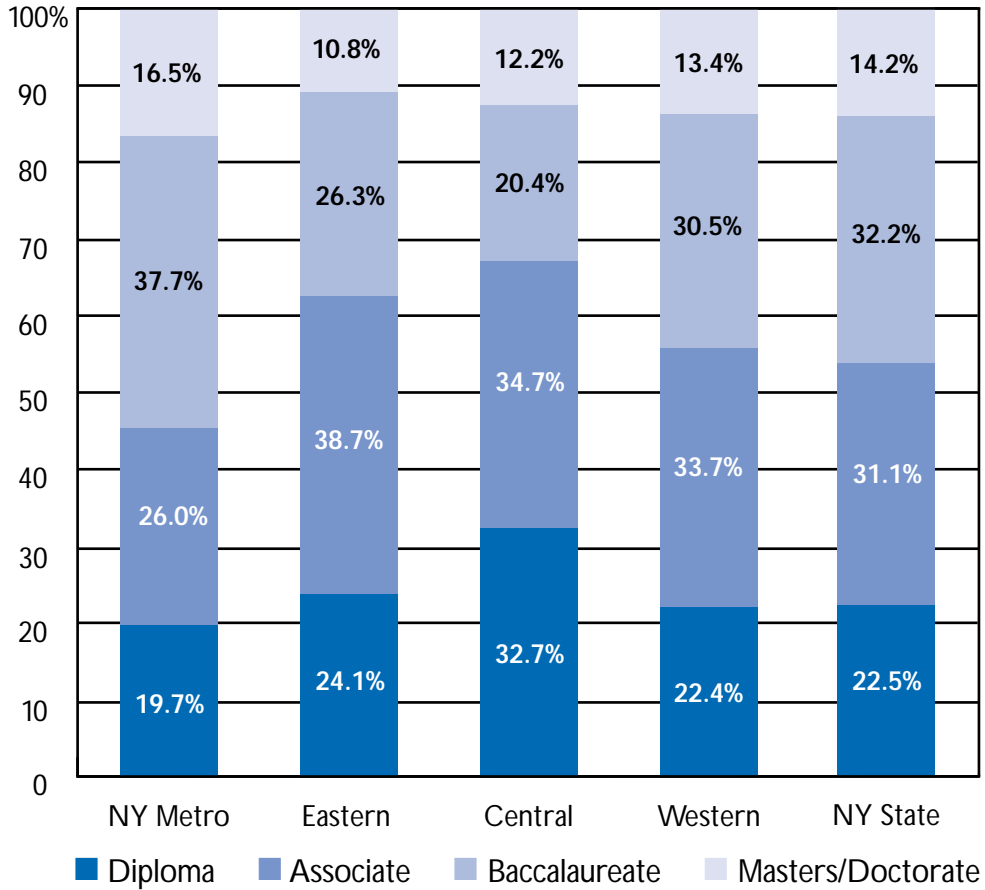
Table 6

**Educational Preparation and Employment Status by AHEC Region**

Region	N	Education	Employed	Unemployed	Column % within Region
NY Metro	185	Diploma	67.6%	32.4%	19.7%
	244	Associate	85.3%	14.8%	26.0%
	354	Baccalaureate	84.8%	15.3%	37.7%
	155	Masters/Doctorate	84.5%	15.5%	16.5%
Eastern	78	Diploma	65.4%	34.6%	24.2%
	125	Associate	84.0%	16.0%	38.7%
	85	Baccalaureate	82.4%	17.7%	26.3%
	35	Masters/Doctorate	65.7%	34.3%	10.8%
Central	80	Diploma	83.8%	16.3%	32.7%
	85	Associate	88.2%	11.8%	34.7%
	50	Baccalaureate	76.0%	24.0%	20.4%
	30	Masters/Doctorate	80.0%	20.0%	12.2%
Western	85	Diploma	69.4%	30.6%	22.4%
	128	Associate	80.5%	19.5%	33.7%
	116	Baccalaureate	83.6%	16.4%	30.5%
	51	Masters/Doctorate	90.2%	9.8%	13.4%
<b>NY State</b>	<b>432</b>	<b>Diploma</b>	<b>70.8%</b>	<b>29.2%</b>	<b>22.5%</b>
	<b>598</b>	<b>Associate</b>	<b>84.8%</b>	<b>15.2%</b>	<b>31.1%</b>
	<b>619</b>	<b>Baccalaureate</b>	<b>83.8%</b>	<b>16.2%</b>	<b>32.2%</b>
	<b>273</b>	<b>Masters/Doctorate</b>	<b>82.8%</b>	<b>17.2%</b>	<b>14.2%</b>

Figure 5

■ Highest Nursing-Related Education for the State and AHEC Regions



Based on 2000 Integrated Post-secondary Educational Data System (Schreiber, 2002b) for about every 10 AD graduates, in each region, WNY Region produces approximately 8 BSN graduates, Central Region produces 9, and the Eastern Region produces only 4. The NY Metropolitan Region produces even more BS graduates, at a ratio of 12 to 10 (Table 7).

Table 7

Number of Educational Programs by AHEC Region and Number of Graduates (IPEDS 2000 Data)

AHEC Region	AD <sup>a</sup>	Baccalaureate <sup>a</sup>	Master's	Doctoral
NY Metro	18 (1117)	22 (1290)	17 (603)	3 (7)
Eastern	15 (534 + 1607 <sup>c</sup> )	7 (234 + 347 <sup>c</sup> )	3 (75)	0
Central	9 (420)	7 (394)	4 (102)	1 <sup>b</sup>
Western	7 (551)	6 (444)	3 (110)	1 (12)

**Notes:** <sup>a</sup> These programs include nurses with prior basic nursing degrees. <sup>b</sup> One doctoral program has opened in this region since 2000. <sup>c</sup> Second number is from Excelsior College, a primarily Internet-based educational program

While over time there is considerable geographic migration among nurses (for little known reasons), most nurses work in the areas where they were educated. This is an explicit assumption and goal of AHEC – to train and educate health professionals to treat patients in their community. For example, in WNY a previous survey (Brewer & Nauenberg, 1999) showed that about 85% of the RNs were educated in WNY. Nationally, 35% are working or living in a different state from where they were educated. Basic BSN graduates are most likely to move, and basic AD graduates the least likely to migrate (Spratley, et al., 2001). As expected, foreign educated RNs are most likely to be licensed in the NY Metropolitan Region (see Table 8). The Eastern Region is most likely to have RNs educated out of state, and the Western Region the least likely.

Table 8

Location of RN Basic Education by AHEC Region N (%)

Region	In State	Out of State	Foreign
NY Metro	643 (72.5)	111 (12.5)	133 (15.0)
Eastern	255 (80.4)	56 (17.7)	6 (1.9)
Central	217 (89.3)	25 (10.3)	1 (0.4)
Western	340 (90.0)	32 (8.5)	6 (1.6)
<b>NY State</b>	<b>1483 (79.7)</b>	<b>226 (12.2)</b>	<b>151 (8.1)</b>

## ■ B. Employment Setting

The NY Metropolitan Region has a substantially larger proportion of RNs that work in hospitals (Table 9). Western Region has the lowest proportion of RNs that work in hospitals at only 45.4% well below the 61.1% of the NY Metropolitan Region (Spratley, et al., 2001). In NYS there is little difference in the settings in which Diploma, AD or Baccalaureate degree RNs are likely to work. About 4.6% more Diploma RNs and RNs with graduate degrees are likely to work outside of hospitals, whereas AD and Baccalaureate RNs are more likely to work in a hospital setting (5.3% and 3.9% respectively; Table 10).

Table 9

### Hospital vs. Non-Hospital Setting by AHEC Region

Region	Hospital N(%)	Non-Hospital N(%)
NY Metro	468 (61.1)	298 (38.9)
Eastern	124 (49.8)	125 (50.2)
Central	100 (49.0)	104 (51.0)
Western	138 (45.4)	166 (54.6)
<b>NY State</b>	<b>857 (55.0)</b>	<b>701 (45.0)</b>

Table 10

### Educational Preparation and Employment Setting – Condensed

Education	Hospital			Non-Hospital		
	N	Row %	Col %	N	Row %	Col %
Diploma	151	49.5	17.6	154	50.5	22.2
Associate	298	59.2	34.8	205	40.8	29.5
Baccalaureate	301	58.1	35.1	217	41.9	31.2
Masters/Doctorate	107	47.3	12.5	119	52.7	17.1

When expanded employment settings are examined (Table 11), Diploma nurses are most common in occupational settings, AD nurses are somewhat more likely to work in nursing homes, and Baccalaureate RNs are most likely to work in ambulatory care.

Table 11

## Employment Setting by Educational Preparation – Expanded [N Row%]

Setting	Diploma	Associate	Baccalaureate	Masters/Doctorate	Total (Col%)
Hospital	151 (17.6)	298 (34.8)	301 (35.1)	107 (12.5)	857 (55.2)
Nursing Home	36 (29.5)	43 (35.3)	32 (26.2)	11 (9.0)	122 (7.9)
Nursing Education	2 (8.7)	1 (4.4)	7 (30.4)	13 (56.5)	23 (1.5)
Public/Comm Health	42 (16.7)	83 (33.1)	88 (35.1)	38 (15.1)	251 (16.2)
Student Health	21 (22.6)	26 (28.0)	27 (29.0)	19 (20.4)	93 (6.0)
Occupational Health	9 (50.0)	2 (11.1)	3 (16.7)	4 (22.2)	18 (1.2)
Ambulatory Care	35 (23.5)	37 (24.8)	50 (33.6)	27 (18.1)	149 (9.6)
Other	9 (23.1)	13 (33.3)	10 (25.6)	7 (17.9)	39 (2.5)

### ■ C. Job Satisfaction

Job satisfaction was measured with one item that asked, “Compared to a year ago, how would you best describe your feeling about your nursing job?” This question was measured on a five-point scale where 1 = Extremely satisfied, 2 = Moderately satisfied, 3 = Neither satisfied nor dissatisfied, 4 = Moderately dissatisfied, and 5 = Extremely dissatisfied. Lower mean values indicate a higher level of satisfaction.

Somewhat more (22.6%) RNs in NYS were moderately or extremely dissatisfied a year ago compared to 19.5% nationally. However, the degree of satisfaction for NYS nurses as a whole ( $\underline{M} = 2.43$ ,  $\underline{SD} = 1.15$ ) is significantly worse than that for the rest of the nation ( $\underline{M} = 2.32$ ,  $\underline{SD} = 1.10$ )  $t(1714) = 3.92$ ,  $p < .0001$ . The differences among AHEC Regions in job satisfaction were not statistically significant, although the Eastern Region had the highest degree of dissatisfaction ( $\underline{M} = 2.47$ ,  $\underline{SD} = 1.11$ ). The Central Region was the most satisfied and closest to the national level ( $\underline{M} = 2.34$ ,  $\underline{SD} = 1.17$ ).

There were no significant differences in the mean satisfaction of working RNs by age group. However, the mean dissatisfaction peaks for the 50-59 year age group ( $\underline{M} = 2.48$ ,  $\underline{SD} = 1.17$ ), and the proportion of extremely dissatisfied RNs rose with each older age group (from 4.5% to 7.4%), suggesting a reason why RNs reduce workforce participation at this age. Working nurses over 60 are more likely to be extremely satisfied (24.2%) compared to a year ago than nurses in younger age groups. The proportion of RNs who were extremely satisfied ranged from 18.1% to 20.3%.

There were no significant differences in the mean satisfaction of working RNs by age group.

Consistent with concerns that delivering patient care is stressful and difficult work, RNs who provide direct patient care in a hospital setting are significantly less satisfied ( $\underline{M} = 2.55$ ,  $\underline{SD} = 1.14$ ) than those who do not work in direct patient care ( $\underline{M} = 2.31$ ,  $\underline{SD} = 1.14$ ),  $t(1,541) = 4.10$ ,  $p < .001$ . A much higher proportion of nurses not in direct patient care are also extremely satisfied (24.5% versus 15.3%). Also, hospital RNs ( $\underline{M} = 2.52$ ,  $\underline{SD} = 1.13$ ) are less satisfied than non-hospital RNs ( $\underline{M} = 2.33$ ,  $\underline{SD} = 1.15$ ). This difference is statistically significant,  $t(1542) = 3.29$ ,  $p < .001$ . However, among all RNs, the satisfaction of RNs who will provide direct patient care 50% or more of the time is not significantly different from those who provide patient care for less time.

A one-way ANOVA revealed a significant effect of some job settings on satisfaction ( $F(7,1536) = 3.60$ ,  $p < .001$ ). Post-hoc pairwise comparisons using Tukey’s correction procedure revealed specific differences underlying the omnibus F-test. Nurses working in education were the most satisfied ( $n = 23$ ,  $\underline{M} = 1.74$ ,  $\underline{SD} = .75$ ), and are significantly more satisfied than both hospital RNs ( $n = 851$ ,  $\underline{M} = 2.52$ ,  $\underline{SD} = 1.13$ ), nurses working in nursing homes ( $n = 121$ ,  $\underline{M} = 2.55$ ,  $\underline{SD} = 1.21$ ), and nurses working in other settings ( $n = 40$ ,  $\underline{M} = 2.68$ ,  $\underline{SD} = 1.06$ ). The other work settings were Public Health/Community Health ( $n = 249$ ,  $\underline{M} = 2.32$ ,  $\underline{SD} = 1.20$ ), Student Health ( $n = 92$ ,  $\underline{M} = 2.22$ ,  $\underline{SD} = 1.11$ ), and Occupational Health ( $n = 18$ ,  $\underline{M} = 2.17$ ,  $\underline{SD} = 1.15$ ), Ambulatory care ( $n = 150$ ,  $\underline{M} = 2.28$ ,  $\underline{SD} = 1.09$ ).

The most dissatisfied RNs have an AD education ( $\underline{M} = 2.54$ ,  $\underline{SD} = 1.17$ ). Post-hoc analyses revealed that nurses with a Masters or Doctorate ( $\underline{M} = 2.2$ ,  $\underline{SD} = 1.09$ ) are more satisfied than both nurses with Diplomas ( $\underline{M} = 2.49$ ,  $\underline{SD} = 1.15$ ) and nurses with Baccalaureate degrees ( $\underline{M} = 2.41$ ,  $\underline{SD} = 1.13$ ). These differences are significant  $F(3,1540) = 4.98$ ,  $p < .002$ .

### ■ D. Unemployed/Nurses in Transition

Almost one-third (31.9%) of RNs unemployed in nursing are employed in non-nursing positions and 45% of unemployed nurses work in health-related fields (Table 12). The three most oft-cited reasons for leaving nursing positions for non-nursing positions included a more rewarding new position, more convenient hours, or better salary (Table 12).

Table 12

#### NY Unemployed Nurses' Current Situations and Reasons for Unemployment

Item	Percent	Out of N
<b>Current situation</b>		
Employed in an occupation other than nursing	31.9	354
Employed in a health-related organization or position	45.0	109
Actively seeking employment as a nurse (Average Duration=8.1 Weeks)	10.2	352
<b>Reasons for Unemployment</b> (marked all that apply):		
Find current position more rewarding professionally	43.1	109
Hours more convenient in other position	38.5	109
Better salaries available in current type of position	27.5	109
Concern about safety in health care environment	25.7	109
Taking care of home and family	23.9	109
My nursing skills are out-of-date	15.6	109
Inability to practice nursing on a professional level	8.3	109
Difficult to find a nursing position	8.3	109
Retired	6.2	113
Disability	4.6	109
Illness	1.8	109

One way to deal with dissatisfaction is to leave one's job. This may be a successful strategy, as nurses who had changed positions but kept the same employer in the last year were most likely to be extremely satisfied ( $n = 109$ , 29.4%) compared to the previous year, and had the highest mean satisfaction ( $M = 2.21$ ,  $SD = 1.13$ ). Nurses who had changed employers were also satisfied ( $n = 149$ ,  $M = 2.33$ ,  $SD = 1.21$ ) and more likely to be extremely satisfied (28.2%) compared to RNs who stayed ( $n = 1176$ ,  $M = 2.48$ ,  $SD = 1.13$ ; 17.2% extremely satisfied). This difference is statistically significant  $F(2,1431) = 3.51$ ,  $p < .03$ . A change in the position alone rather than the type of nursing work may improve satisfaction, as RNs who had switched to a non-inpatient setting were not more satisfied and the difference in means between RN satisfaction in inpatient and non-inpatient work settings is not significant.

RNs who change positions give some indication of the level of labor activity in the RN labor market. Eighty percent ( $n = 1176$ ) of working RN's in New York State remained in the same position that they held the previous year. Those RNs who changed positions but stayed with the employer most often changed due to: (1) a job promotion (28.8%), (2) greater interest in another position or job (21.6%) or (3) organizational changes (e.g., downsizing) made work stressful (7.2%). Unknown reasons, or at least reasons not accounted for on the survey items, accounted for the changes of 25.2% of changes in positions with the same employer. RNs who changed to another employer were most likely to move because they were more interested in another position or job (19.3%), or stressful organizational changes (11.6%), or relocation to another geographic area (10.5%), or 8.8% were offered better pay or benefits. Unknown reasons affected 27.1% of RNs with a new employer (Table 13).

Table 13

Reasons Why NY Nurses Changed Jobs by Nature of Change

Reason for change	One year ago, were you employed by your current employer?	
	Yes, in a different position: N (col%)	No: N (col%)
Received a promotion	32 (28.8)	4 (2.2)
Was laid off	0 (0.0)	8 (4.4)
Employer shifted positions due to reorganization	6 (5.4)	9 (5.0)
Was more interested in another position/job	24 (21.6)	35 (19.3)
Offered better pay/benefits	4 (3.6)	16 (8.8)
Relocated to a different geographic area	1 (0.9)	19 (10.5)
Employer reduced the number of registered nurses on staff	1 (0.9)	2 (1.1)
Better opportunity to do the kind of nursing that I like	5 (4.5)	14 (7.7)
Changes in organization/unit made work more stressful	8 (7.2)	21 (11.6)
Disability	1 (0.9)	2 (1.1)
Illness	1 (0.9)	2 (1.1)
Other	28 (25.2)	49 (27.1)
Total (Percent of all nurses)	111 (7.1)	181 (12.1)

In NYS, changes in demand were indicated by several factors: 2.7% of nurses who had changed jobs were laid off, 1.0% were affected by their employer reducing the number of RNs on staff, 5.1% were affected when the employer shifted positions in reorganization efforts, 10.5% of RNs relocated to a different area, and 2.1% were affected by illness or disability. More than one category could be indicated by the RN.

Another indirect way to look at RN labor activity is to categorize nurse's employment changes from 1999 to 2000 as changes in FT, PT or NW work status into three categories, increased (e.g. NW to PT, NW to FT, or PT to FT), decreased (e.g. FT to NW, FT to PT, or PT to NW) or no change in work status (Table 14). Within the state, the changes were balanced. Regionally, the NY Metropolitan and Central Regions as well as NYS saw about as many RNs increase work status as decrease, whereas in the Eastern Region more RNs increased slightly and in the Western Region more RNs decreased work status (Table 14).

Table 14

Comparison of Full-Time/Part-Time Status between 1999 and 2000

Region	Increased Time		Decreased Time		Remained the Same
NY Metro	50	(5.5)	49	(5.4)	813 (89.1)
Eastern	22	(7.0)	20	(6.3)	274 (86.7)
Central	15	(6.4)	16	(6.8)	205 (86.9)
Western	21	(5.7)	24	(6.6)	321 (87.7)
<b>NY State</b>	<b>109</b>	<b>(5.9)</b>	<b>109</b>	<b>(5.9)</b>	<b>1645 (88.3)</b>

■ E. Nurse Educators

Nurse educators were defined by two methods. The first method defined RNs who had any teaching responsibilities (i.e., “all nurse educators”). This group met at least one of the following criteria: (1) They described the type of setting of their principal nursing position as a LPN/LVN, Diploma, Associate degree, Baccalaureate, or other nursing education program, (2) they listed dean, director, or assistant/associate director of nursing education, in-service education director, in-service instructor, instructor at a school of nursing, or professor or assistant/associate professor as the position title for their principal nursing position, or (3) they indicated that they spend at least 50 percent of their time in their principal nursing position teaching nursing or other students in health care occupations, including class preparation time. Tables 15 and 16 characterize these nurse educators. The sub-sample of nurse educators in NYS is quite small, but compared to RNs nationally, general nurse educators are more likely to have a baccalaureate degree, and less likely to have a graduate degree, than nationally. There are more general nurse educators in the 30-39 year age group, fewer from 40-59, and slightly more over 60 years of age.

...compared to RNs nationally, general nurse educators are more likely to have a baccalaureate degree, and less likely to have a graduate degree, than nationally.

Table 15

Age Distribution of General Nurse Educators Compared to National and State Non-teaching Nurses

Age Group	National		State	
	Non-Teachers	Teachers	Non-Teachers	Teachers
<30	10.2%	2.6%	7.6%	2.8%
30-39	25.1%	16.6%	25.2%	21.1%
40-49	38.0%	40.1%	39.2%	36.6%
50-59	21.0%	30.2%	22.1%	26.8%
>60	5.7%	10.5%	5.8%	12.7%
N	27814	1327	1474	71
Mean	43.3	47.5	43.8	47.4

Table 16

### Highest Educational Preparation of All Nurse Educators Compared to National and State Non-teaching Nurses

Education	National		State	
	Non-Teachers	Teachers	Non-Teachers	Teachers
Diploma	19.0%	11.5%	20.0%	12.3%
Associate Degree	38.0%	18.2%	33.3%	17.8%
Baccalaureate	34.2%	26.4%	33.3%	32.9%
Masters/Doctorate	8.8%	43.9%	13.4%	37.0%
N	28007	1336	1485	73

The second definition refers to teachers in AD or BSN programs. These nurse educators indicated that the type of setting for their principal nursing position was in an Associate, or Baccalaureate and/or higher degree nursing education program. While quite small, the sample of AD/BSN educators is similar to the national sample (Tables 17 and 18). A higher proportion of RNs who teach in AD or BSN programs have a baccalaureate degree, and the majority have a Master's degree or doctorate, in striking contrast to general RN educators. NYS nursing educators have a somewhat flatter age curve than RN educators nationally as there are fewer RNs in the 40-59 year age groups, and slightly more in the under 30 and over 60 year groups.

Table 17

### Age Distribution of Nurses Who Teach in AD or BSN Programs Compared to National and State Non-teaching Nurses

Age Group	National		State	
	Non-Teachers	Teachers	Non-Teachers	Teachers
<30	10.0%	1.4%	7.4%	7.7%
30-39	24.9%	9.5%	25.2%	7.7%
40-49	38.1%	38.5%	39.2%	30.8%
50-59	21.2%	38.0%	22.2%	38.5%
>60	5.8%	12.7%	6.1%	15.4%
N	28699	442	1532	13
Mean	43.4	49.6	43.9	50.0

Table 18

### Highest Educational Preparation of AD/BSN Teaching Nurses Compared to National and State Non-teaching Nurses

Education	<i>National</i>		<i>State</i>	
	Non-Teachers	Teachers	Non-Teachers	Teachers
Diploma	18.9%	2.0%	19.7%	7.7%
Associate Degree	37.6%	3.1%	32.8%	0.0%
Baccalaureate	34.2%	10.8%	33.5%	7.7%
Masters/Doctorate	9.3%	84.1%	13.9%	84.6%
N	28897	446	1545	13

## IV Discussion

### ■ Demographics

The aging of registered nurses is clearly an important issue in the NYS population of nurses. The average age of nurses is 45.8, slightly older than the 45.2 years of the national population (Spratley, et al., 2001) and the 44.5 years in the 1996 data. While it was not possible to compute average ages in each region due to survey restrictions, we could look at the age distribution across the regions. Regional age distribution of nurses is quite similar, with the exception of the Eastern Region, which has a flatter age curve and up to 8.3% more RNs in the 50-59 age group. In addition, the Eastern Region has the lowest employment rates of RNs under 30 as well as those in the 50-59 year age group. This suggests both a more severe lack of nurses entering the supply, as well as more nurses dropping out in the largest age group.

It is clear that minority nurses are still under-represented in NYS nursing, ...

It is clear that minority nurses are still under-represented in NYS nursing, ... 19.8% minority RNs compared to 12% nationally, and about 2% more than were in NYS in 1996 (Brewer & Kovner, 2000; Spratley et al., 2001). The NY Metropolitan Region has the highest work participation of minority nurses, and it is likely that the majority of the minority nurses in the other NYS AHEC Regions are located in the urban areas of those regions. While NYS appears to be making some progress, redressing this problem is a multifaceted issue, complicated by the lack of research into its causes (NACNEP, 2000). Proposed solutions focus on identifying and publicizing successful models for getting more minority nurses into and through the educational pipeline, developing minority faculty role models, minority nursing leadership, and improving the cultural competence of all nurses (NACNEP, 2000). AHEC has targeted these issues, and the Nurse Reinvestment Act, signed into law August 2002, includes funding to improve cultural competency and recruit minority nurses.

### ■ Income

Income in the NY Metropolitan Region is clearly affected by the higher cost of living prevalent in this area. Average income from the principal position increased by 15.3% over the 1996 average of \$46,119 and part-time income increased only 9.2% over the 1996 average of \$26,413. Differences among the regions in this data are consistent with results reported by Brewer and Kovner (2000). What is not clear is whether these wage differences have any effect over time on working or migration patterns of RNs among regions in NYS. What may be more important is the relative income of RNs compared to other professions in the region (Erhrenberg, 2000) in terms of attracting people into the profession and keeping them in nursing versus teaching or business, for example. Evidence is mixed that RNs are secondary workers (i.e. tied geographically to an area by spouse and family ties). Over time RNs do migrate away from the state where they were educated (Spratley, et al., 2001), but little evidence exists to suggest that RNs are particularly mobile for their own career purposes rather than for personal reasons.

## ■ Employment

There has been a clear reduction in the work participation of NYS RNs from 1996 to 2000 across all age groups. The strong drop in employment predicted by some sources (Buerhaus, 2001) around the age of 55 is evident in NYS. It is particularly noteworthy as well as troublesome that in each age category, fewer NYS nurses in 2000 are working than in 1996. Whether these changes are voluntary, or related to working conditions, decreased employer demand or other factors is unknown.

In 2000, evidence that there was a nursing shortage was not yet clear (Brewer & Kovner, 2000), but the steep decline in employment indicates profound changes were occurring in the nursing workforce. Understanding what factors encourage older RNs to remain in the workforce in the Central Region may allow replication in other regions. Nurses in all age groups need to be enticed back into work, but strategies focused on the older nurse will influence the work behavior of RNs well into the future and should be a major focus of employers wanting to keep RNs in their workforce longer.

Nurses in all age groups need to be enticed back into work, ...

Only 55.2% of NYS RNs now work in hospitals, compared to 59.1% in 1996. However, this still is an increase from 97,909 to 108,038 hospital RNs because the population of RNs is larger than in 1996, even though the supply of total acute hospital beds (excludes psych, rehab, SNF beds etc. beds) has decreased by 10,922 beds, and total facility beds have decreased by 9,034 beds in the same period (personal communication, Karl Stauffenberg, Hospital Association of New York State, September 5, 2002; data from Exhibit 3, Institutional Costs Reports ). The increased number but lower percentage of RNs working in hospitals may represent an increased intensity of care, changes in hospital demand due to the effects of managed care (Brewer and Nauenberg, 1999), or other factors. NY Metropolitan Region has the highest proportion of nurses who work in hospitals, close to the national proportion of 59% (Spratley et al., 2001), whereas Western New York has the lowest proportion of nurses working in hospitals (45.4%).

One explanation of employment patterns in hospitals could be staffing patterns in NY Metropolitan hospitals versus other regions. If hospitals in this region prefer BSN graduates, or a higher proportion of BSN graduates to other nursing staff, this could result in a higher proportion of BSN RNs working in hospitals, and greater demand for and enrollment in those programs. Minority nurses, especially Asian nurses, are more likely to be educated in baccalaureate programs (Spratley, 2001). The higher proportion of baccalaureate prepared nurses in the NY Metropolitan Region may partially reflect the minority nurse population in the NY Metropolitan Region.

Over 10% of NYS RNs work two nursing jobs, comparable to the US norm as well as the 1996 data (Spratley et al., 2001); even more work two nursing jobs if they are part-time workers. While it is unknown why so many nurses work two jobs, a number of reasons are possible: (1) RNs cannot find the work they want in a full time position, (2) income or benefits from one position is insufficient, or (3) working conditions (such as hours) do not meet the needs of the RN's situation or family. In one study (Brewer & Nauenberg, 1999), benefit availability was an important reason cited by nurses for choosing to work full-time.



It is important to distinguish between nurses who leave the profession, and do not work as a nurse, and nurses who leave particular settings. Because of the well-publicized problems in hospitals (American Hospital Association (AHA), 2002), it is often stated or assumed that there is a mass exodus out of nursing. The 2000 NSSRN survey does not entirely support this conclusion. Of the 18% of NYS RNs who are unemployed, 31% are employed but not in nursing, and almost half of those are employed in health related professions (compared to 28.7% and 54.9%, respectively, in 1996). If these data represent a shift out of nursing, nursing remains a useful preparation for case management positions and positions in science and technology, such as research and pharmaceutical representatives. Under shortage conditions,

In fact, nursing education could be marketed as excellent preparation for a variety of non-traditional careers

having this group providing patient care is desirable (if unlikely), but it is not a negative for the profession for nursing experience to be desirable in these jobs. In fact, nursing education could be marketed as excellent preparation for a variety of non-traditional careers in addition to clinical nursing. However, this might require redefining nursing, a politically challenging task.

Of the remaining two thirds that are not employed, 10.2% (14.1% in 1996) are transitional – that is, looking for jobs in nursing and thus still in the nursing labor force according to Bureau of Labor definition, (Ehrenberg & Smith, 2000), 11% are retired or disabled, and 23.9% are taking care of their home or family. These numbers may overlap as respondents could indicate more than one reason for unemployment.

These data do indicate a shift in employment patterns. Registered nurses unemployed but taking care of home or family, or working in another job, represent a potential pool of re-entrants into the nursing workforce that could be targeted by employers and health care recruitment strategies. Programs to provide child care, elder care, flexible work environments and hours of work, and other benefits may help draw some of these nurses back to work.

## ■ Educational Preparation

There are some small differences among nurses in terms of their educational preparation and where they practice, but there is no way to know if these differences are the result of NYS employers' deliberate choices, regulatory influences, qualities of the RNs' educations, or preferences of the RNs in relation to the required skills or environments of various work settings.

Geographic variations in the distribution of RN education are likely to be at least partially the result of educational avenues available in each region. For example, the Eastern Region has the highest percentage of AD graduates, who are typically older than other RNs at graduation (Spratley et al., 2001) as well as the lowest percentage of RNs with graduate degrees. The Eastern Region may find it difficult to recruit and train nursing faculty because the graduate programs produce fewer Master's prepared RNs and there are no doctoral programs in the region for nursing. AD programs, due to the shorter time requirement and financial investment, attract local students who tend to remain local once graduated. While this is important from the standpoint of a stable regional workforce, from a broader, long term, perspective this may be at odds with the need for better educated RNs to function in a more complex health environment, as only 7.4% go on to get at least a BSN. Programs and training support to develop faculty and therefore capacity is also important.

### ■ Nurse educators

In addition to retaining nurses and encouraging RNs to work more hours and years, we need to develop a sufficient cadre of nurses who can teach if enrollment is expected to climb. Only about one-half of the AD and BSN faculty at schools accredited by AACN nationally have a doctoral degree (AACN, 1999). In the NSSRN data, 84% have graduate degrees (doctoral preparation included with master's).

Entry into master's and doctoral degree graduate programs has been declining (AACN, 2001). Even if pipeline programs are successful, adequate numbers of faculty as well as clinical placement sites may not be available to teach enrolling students. Declining numbers of RNs prepared at the graduate level also jeopardizes the adequate preparation of RNs who spend at least 50% of their time teaching in additional settings, such as hospital staff development, LPN, and Aide programs, of whom only 43.9% have a graduate degree.

Entry into master's and doctoral degree graduate programs has been declining

Except in the Central Region, which has the only two remaining Diploma schools in NYS (Ellis Hospital School of Nursing and Arnot-Ogden Nursing School; personal communications, S. Schreiber, Sept 5, 2002 and J. Moore, July 29, 2002), Diploma RNs are more likely to be unemployed than other groups; this is probably because most Diploma graduates are older RNs and more likely to be out of the workforce.

### ■ Satisfaction

In the NSSRN only 69.5% of RNs report being satisfied compared to the previous year in their position (Spratley, et al., 2001), but the National Opinion Research Center's General Social Survey data (1996) indicated that 85% of workers and 90% of professionals reported satisfaction with their job. Taken together, it appears NYS RNs are somewhat less satisfied with their jobs when compared to RNs nationally and national data on workers and professionals. This implies that nursing has a disadvantage when recruiting new entrants compared to other career options.

Work satisfaction has been shown to be an important determinant of organizational turnover for nurses (Blegen, 1993; Irvine & Evans, 1995, Tett and Meyer) but had not been studied in relation to work setting or participation before the study by Brewer et al. (1999, 2001). Dissatisfied nurses may leave one employer, but if they get another position in nursing, it does not necessarily have a negative effect on the total workforce. However, if nurses leave one particular setting consistently, this may create shortages within certain settings such as hospitals and possible ripple effects can be deleterious for employee morale resulting in more turnover – creating a “hole” in the hospital or office nursing staff (Feeley, 2000; Feeley & Barnett, 1997). Fewer RN staff in hospitals has been recently linked to adverse outcomes indicating the critical importance of shortages in hospital settings (Needleman, Buerhaus, Mattke, Stewart, & Zelivinsky, 2002)

Caution is necessary in interpreting the satisfaction variable, because it asks the nurse to describe their feelings about their jobs compared to one year before. Overall, the satisfaction of RNs is about the same throughout the state, and only 65% of nurses are satisfied with their jobs, compared to 69.5% of the national sample. This contrasts with the data from the General Social Survey of the National Opinion

Research Center that indicates from 1986 through 1996 85% of general workers and 90% of professional workers are (currently) satisfied with their jobs (Spratley, et al., 2001). This contrast in satisfaction is not well understood, but may play an important part in the public perception of nursing versus other professions.

Interestingly enough, neither age nor income was significantly related to reported job satisfaction in this sample of NYS nurses. However, the pattern of responses was interesting: the youngest nurses are the most satisfied, and typically the youngest nurses work in hospitals (Spratley et al, 2001). As nurses age, the proportion of RNs who were highly dissatisfied increased, possibly indicating a process of progressive disenchantment with the profession or tedium, as older nurses are less likely to work in hospitals. Nurses over 60 had the highest proportion of extremely satisfied nurses; understanding who these nurses are and why they continue to work could yield strategies for retention of the older nurse.

In addition, the limited evidence available here is mixed in terms of whether it is the job setting or the nature of nursing work that may be problematic. Much has been written about the problems nurses have encountered in hospital settings (AHA, 2001). Nurses working directly with patients in a hospital are more dissatisfied than those who spend less time in direct patient care, and hospital nurses overall are less satisfied than non-hospital RNs. Interestingly, nurses who changed to a different position with the same employer were more satisfied than those who stayed in the same position. Also, nurses who switched from inpatient (generally hospital or nursing home) to non-inpatient were less satisfied than nurses who did not make this switch. Thus, RN dissatisfaction has more complex causation than just the hospital setting; relationships with coworkers, managers, or characteristics unique to a particular unit may be an issue. Helping nurses find alternatives within an organization may reduce turnover.

### What is somewhat surprising is the high level of satisfaction in Nursing Education, and among nurses with graduate degrees

What is somewhat surprising is the high level of satisfaction in Nursing Education, and among nurses with graduate degrees; the data does not allow sorting out the direct effects of each. Given the expected future need for educators, this is encouraging. However, the low number of master's graduates in the Eastern Region, and the lack of a doctoral program, may create particular difficulties for that region in recruiting faculty and other APNs.

The data presented here is intended to provide a context for administrators, educators and policy makers to address nursing workforce issues in NYS and its regions. In particular, the Eastern region will need to develop strategies to help RNs cope with aging and remaining active in the workforce. Examination of sources of satisfaction and dissatisfaction may help employers retain their RN workforce. In addition, the Eastern Region may have particular difficulties in increasing its supply of RNs as they have the smallest number of RNs with graduate degrees and no doctoral program. This study points out that the Eastern Region differs from the rest of the state in terms of the age distribution of its RN workforce, education, % educated out of state, and work participation of its youngest and most highly educated RNs.

Concerted effort is still needed to attract minorities into nursing. More studies are also needed on the relative influence of RN income and benefits versus improvements in work environment and the function of multiple jobs for RNs, especially in relation to other professions also competing for entrants. Given the current and impending worsening of the nursing shortage, better understanding of nursing workforce behavior is essential to the health of our population.



## *Recommendations*

Solutions for workforce issues are complex, as they must account for both supply side issues (relating to the personal preferences, needs, and education of the RNs) as well as demand side issues (preferences and needs of employers). Market forces will to some degree solve the nursing workforce problem if we simply are patient, as shortages will drive up wages, which will attract more entrants, increase work from already licensed nurses, and keep RNs in the workforce longer. However, market forces are not particularly good at the kind of coordinated, systemic efforts that may be needed to solve the structural labor market problem anticipated

Attention should occur at two levels 1) local labor markets regions, such as the AHEC regions and 2) state and national levels. The NYS Area Health Education Center System, as well as many professional organizations and institutional organizations already have programs in place to address some of the issues. There is a rich literature available that specifically gives many ideas for addressing the nursing shortage and its causes, some of which have been recommended in this report (such as: AHA, 2002; Brewer and Kovner, 2000; NACNEP, 2000; and Kimball and O'Neill, 2002). The challenge is to develop and implement a plan for each region and the state. Below, we offer some specific examples.

### Some recommendations for future efforts in NYS and AHEC Regions

- Systematic monitoring of the NYS RN supply through data to better project workforce needs.
  - Reconciliation of conflicting estimates of RNs
  - Further analysis of :
    - New 2003 NYS Board of Nursing RN survey.
    - Trend analysis of past and future NYS NSSRN surveys.
    - Department. of Labor data.
    - Institutional Cost Report (Medicare) data
  - Data collection on LPN workforce.
  
- Regional councils or forums (Coalition of employers, educational institutions, and nurses in each region to prioritize and work on local solutions).

- Attraction of new entrants, particularly minorities and males
  - Legislation as required (e.g. scholarships and tuition breaks tied to service in NYS).
  - Utilization of Nurse Investment Act (passed August 02) provisions.
  - Long term image promotions in all major and local media focusing on the positive aspects of nursing.
  - Educational programs that expose and attract students to nursing
    - Pre-career programs, such as developed by AHEC
    - Programs with educational ladders and upward mobility built in, appropriate to local populations (eg. programs that articulate aide and LPN training).
  - Specific programs for Native Americans, other minorities.
  
- Assessment of regional educational capacity for right number and type of RNs, LPNs, and faculty.
  
- Retention and re-entry of licensed nurses by improvement of working conditions
  - Determination of and dissemination of employer best practices within each region, particularly those that are low cost.
  - Emphasis on cooperative goal of keeping RNs in workforce, and not just with one employer.
  - Promotion of Magnet Hospital (or similar) program to improve work environment.
  
- Wages and benefits
  - Legislation that addresses components of Medicaid, Medicare or other funding that effects employers ability to raise wages.
  - Assessment of role of benefits in selecting and retaining employment by RNs.
  - Improve market functioning by publicizing and disseminating wage and benefit information.

# Addendum

## ■ Cost of living adjustments to RN Salaries

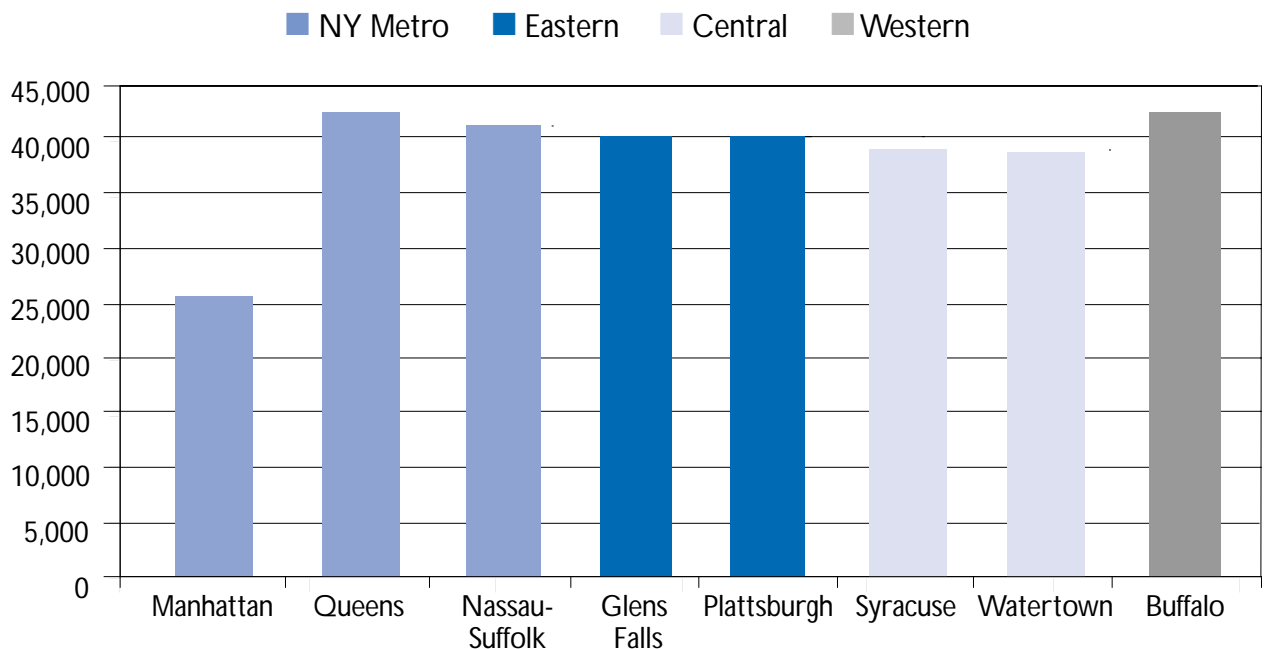
The median salary for US RNs was \$46,782 and the NYS Median was \$52,000. The NY Metropolitan Region median was \$60,000, the Eastern Region was \$41,000, the Central Region was \$39,000, and Western New York Region was \$42,042.

Note that when median salaries alone are examined, the high median salaries in the NY Metropolitan Region raise the median for the whole state to above the national median. Median salaries for the three regions excluding the NY Metropolitan Region are well below the national median.

These salaries were adjusted with cost of living data [Figure 1; Source: American Chambers of Commerce Researchers' Association, (March, 2002), *Cost of Living Index*, 34: 4] based on data available for the following cities: Buffalo (WNY), Glens Falls and Plattsburgh (Eastern Region), Syracuse and Watertown (Central Region), and Manhattan, Queens, and Nassau-Suffolk (NY Metropolitan Region). This analysis shows that median NYS RN salaries are below national medians when adjusted for COL, even in the NY Metropolitan Region.

The very low cost of living adjusted salaries in Manhattan may be the result of unmeasured benefits provided to these nurses, that do not count as salary, such as housing subsidies. It may also be the RNs in Manhattan actually make a median salary well above the median figure used to adjust salaries; thus this figure might actually be too low. However, salaries in NYS state generally are not at par with the national median, and this factor should be considered when determining how to attract and retain RNs in NYS.

### COL Adjusted Median Salaries: What that Regional Salary is Really Worth



# References

- American Association of Colleges of Nursing (AACN). (Dec., 2001). *Enrollments rise at U.S. nursing colleges and universities, ending a six-year period of decline*. Retrieved August 21, 2002 from <http://www.aacn.nche.edu/Media/NewsReleases/enrl01.htm>.
- American Association of Colleges of Nursing. (Apr., 1999). *Faculty shortages intensify nation's nursing deficit*. Issue Bulletin. Washington, DC: Author. Retrieved from: <http://www.aacn.nche.edu/Publications/issues/IB499WB.htm>.
- American Hospital Association (AHA) Commission on Workforce for Hospitals and Health Systems. (2002). *In our hands: how hospital leaders can build a thriving workforce*. Chicago: Author.
- American Hospital Association. (2001). *Workforce supply for hospitals and health systems: issues and recommendations*. Strategic Policy Planning Committee (Jan 23, 2001) of the American Hospital Association, Chicago: Author.
- Brewer, C.S. & Kovner, C.T. (2001). Is there another nursing shortage. *Nursing Outlook* 49 (1), 20-26.
- Brewer, C.S. & Kovner, C.T. (2000). *A report on the supply and demand for registered nurses in NYS*. Albany, NY: New York State Nurses Association.
- Brewer, C.S. & Nauenberg, E. (1999). *Effects of labor market turmoil on hospital, non-hospital and full-time and part-time RNs in WNY*. Paper presented at the Sigma Theta Tau International State of the Science Congress, Better Health Through Nursing Research, Washington, D.C., September 15-19, 1999.
- Buerhaus, P.I. (2001). Aging nurses in an aging society; long term implications. *Reflections on Nursing Leadership* 27 (1), 35-36, 46.
- Buerhaus, P.I. & Staiger, D.O. (1999). Trouble in the nurse labor market? Recent trends and future outlook. *Health Affairs* 18 (1), 214-222.
- Center for Health Workforce Studies. (2000). *Meeting future needs of New Yorkers: The role of the State University of New York*. Center for Health Workforce Studies: Albany. <http://chws.albany.edu/>.
- Crawford, L., Marks, C., Gawel, S.H., & White, E. (2002). *NCSBN research brief: 2001 licensure and examination statistics*. Chicago: National Council of State Boards of Nursing.
- Crawford, L., Marks, C., Gawel, S.H., White, E. & Obichere, L. (2001). *NCSBN research brief: 2000 licensure and examination statistics*. Chicago: National Council of State Boards of Nursing.
- Ehrenberg, R.G. & Smith, R.S. (2000). *Modern labor economics: Theory and public policy (7th Ed.)*. Reading MA: Addison Wesley Longman, Inc.
- Feeley, T.H. (2000). Testing a communication network model of employee turnover based on centrality. *Journal of Applied Communication Research*, 28, 262-267.
- Feeley, T.H., Barnett, G.A. (1997). Predicting employee turnover from communication networks. *Communication Research Reports*, 14, 249-259.

Health Resources and Services Administration (July, 2002). *Projected supply, demand, and shortages of registered nurses: 2000-2020*. Retrieved August 22, 2002, from <http://hrsa.gov/bhpr/nationalcenter/rnproject.pdf>.

Irvine, D.M., & Evans, M.G. (1992). Job satisfaction and turnover among nurses: A review and meta-analysis. *Quality of Nursing Worklife Center Monograph*. Toronto, Canada: Faculty of Nursing, University of Toronto.

Integrated Post-Secondary Data System. Retrieved August 15, from: <http://nces.ed.gov/ipeds/>.

Kimball, B., O'Neill, E. (April 2002). *Health care's human crisis: the American nursing shortage*. Health Workforce Solutions for Robert Wood Johnson Foundation. San Francisco: Robert Wood Johnson Foundation.

McKibbin, R. (1990). *The nursing shortage: Realities and remedies*. Kansas City: American Nurses Association.

Moses, E. (1997). *The registered nurse population, March 1996: Findings from the National Sample Survey of Registered Nurses*. Washington, DC: U.S. Dept. of Health and Human Services.

National Advisory Council on Nurse Education and Practice (NACNEP). (2000). *A national agenda for nursing workforce racial and ethnic diversity: Report to the Secretary of HHS and Congress*. USDHHS Health Resources and Services Administration, Bureau of Health Professions, Division of Nursing.

National Council of State Boards of Nursing, Inc.(NCSBN). (1997, 1998, 1999). *Licensure and examination statistics*. Chicago, IL: Author. Retrieved June 25, 2001 from [http://www.NCSBN.org/public/regulation/licensure\\_stats/](http://www.NCSBN.org/public/regulation/licensure_stats/).

*National Opinion Research Data*. (1996). Chicago, IL: Author.

Needleman, J., Buerhaus, P., Mattke, S., Stewart, M. & Zelivinsky, K. (2002). Nurse staffing levels and the quality of care in hospitals, *New England Journal of Medicine*, 346 (22), 1715-1722.

New York State Department of Labor. (2002). Retrieved on August 21, 2002 , from [http://www.labor.state.ny.us/labor\\_market/lmi\\_business/projections/trends.asp?trend=2&area=11](http://www.labor.state.ny.us/labor_market/lmi_business/projections/trends.asp?trend=2&area=11).

*Nursing's agenda for the future: A call to the nation*. (2002). Retrieved August 22, 2002, <http://nursingworld.org/naf/>.

Schreiber, S. (2002). *Analysis of 2000 Census data, NYS population statistics*. New York State Area Health Education Data Resource Center.

Schreiber, S. (2002b). *Report of Integrated Post Secondary Data System NYS nursing school graduations*. New York State Area Health Education Data Resource Center.

Spratley, E. Johnson, A., Sochalski, J., Fritz, M., and Spencer, W. (2001). *The registered nurse population: March 2000: Findings from the National Sample Survey of Registered Nurses*. Washington, DC: U.S. Dept. of Health and Human Services.

US General Accounting Office (USGAO). (July 2001). *Nursing workforce: Emerging nurse shortages due to multiple factors*. GAO Report # 01-944. Retrieved August 1, 2002 from <http://www.gao.gov/main.html>.

Service Employees International Union Nurse Alliance (SEIUNA). (May 9, 2001). *The shortage of care*. American Association of Colleges of Nursing, American Nurses Association, American Organization of Nurse Executives, National League for Nursing. Retrieved Aug 21, 2002 from <http://www.aacn.nche.edu/Publications/positions/tricshortage.htm>.

U.S. Census Bureau, Population Division. (2002a). Table CO-EST2001-12-36, Time Series of New York Intercensal Population Estimates by County April 1, 1990 to April 1, 2000.

U.S. Census Bureau, Population Division. (2002b). Table CO-EST2001-07-36, Time Series of New York Intercensal Population Estimates by County, April 1, 2000 to July 1, 2001.

Yett, D.E. (1970). Causes and consequences of salary differentials in nursing. *Inquiry*, 7 (1), 78-99.



