## Nursing Trends: 2009

Key facts about a changing workforce

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## Introduction and Summary

The professional nursing workforce in the United States consists of an estimated 2.5 million registered nurses (RNs) who are employed in thousands of healthcare settings where they provide nursing care to millions of people every day. Large numbers of the RN workforce were born in the baby boom generation but they are not being replaced with younger RNs to resupply the future workforce. Not only has this resulted in an increasing average age of the current workforce, but as baby boom RNs retire during the next decade, the overall growth in the future supply of RNs will slow. This slowdown will occur at the same time that the demand for nurses is expected to increase as the size of the population expands, the baby boom generation ages, and the proportion of the population with multiple chronic conditions increases. Yet, during the current decade nursing education programs have turned away many thousands of qualified applicants, the very people needed to become RNs for the future. Consequently, prolonged shortages of RNs are projected to develop during the next decade, threatening to decrease access, lower quality, jeopardize patient safety, and increase healthcare costs.

There is a danger that policymakers may turn their focus away from combating the forces that are expected to play out over the decade ahead. This danger has resulted from the recession's impact on increasing hospital RN employment in 2007 and 2008 that, in turn, is easing the current RN shortage that has endured since 1998. There is a danger that employers and policymakers may turn their focus away from the nursing profession to other matters, thereby allowing the build-up of long-run supply-side forces that will eventually lead to unprecedented shortages in the years ahead, shortages that can be prevented.

Beyond providing information explaining these trends, this chart book provides a glimpse of other developments in the RN workforce based on national biennial surveys of RNs conducted since 2002. Results indicate that while this decade's shortage negatively impacted the quality of care, on balance, RNs' perceive that many elements of the workplace environment have improved. Finally, data are presented that show the public's strong support for the nursing profession.

Finally, I acknowledge my colleagues who have worked with me over the years conducting studies on the nursing workforce. Douglas Staiger, PhD, John French Professor in Economics, Department of Economics, Dartmouth College and Research Associate at the National Bureau of Economic Research; David Auerbach, PhD, Principal Analyst, Health and Human Resources Division, Congressional Budget Office; Karen Donelan, ScD Senior Scientist in Health Policy at the Massachusetts General Hospital, Catherine DesRoches, Dr.P.H., Instructor, Massachusetts General Hospital. An earlier version of this chart book was produced in 2007 for the Johnson & Johnson Campaign for Nursing's Future, and I acknowledge the Campaign for allowing me to build off this earlier work in developing this Chart book.

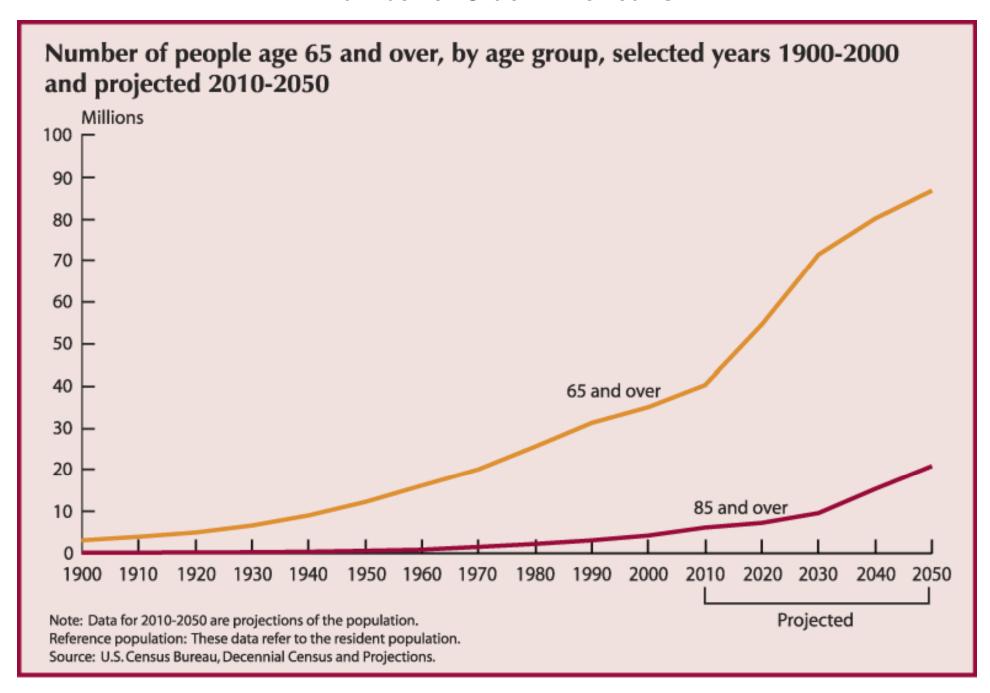
# Demand for and Supply of Registered Nurses in the United States

## Over the next 15 years, the demand for RNs is expected to increase substantially

- Demand for RNs is derived from the demand for health care ... and the demand for health care has been growing due to increases in:
  - Income, health insurance coverage, use of technology, and changes in the health, size, and composition of the population
  - In the decade ahead, demand for RNs will grow due to
    - Increase in number with chronic conditions, obesity, diabetes
    - Increase in the size of population
    - Increase in older population (baby boomers)
      - Older individuals consume far more health care than those under the age of 65
- Consequently, the demand for RNs is projected to increase approximately 3% per year during the next decade

Source: P. Buerhaus, D. Staiger, D. Auerbach. <u>The Future of the Nursing Workforce in the United States: Data, Trends, and Implications</u>. Jones & Bartlett, 2008.

#### **Number of Older Americans**

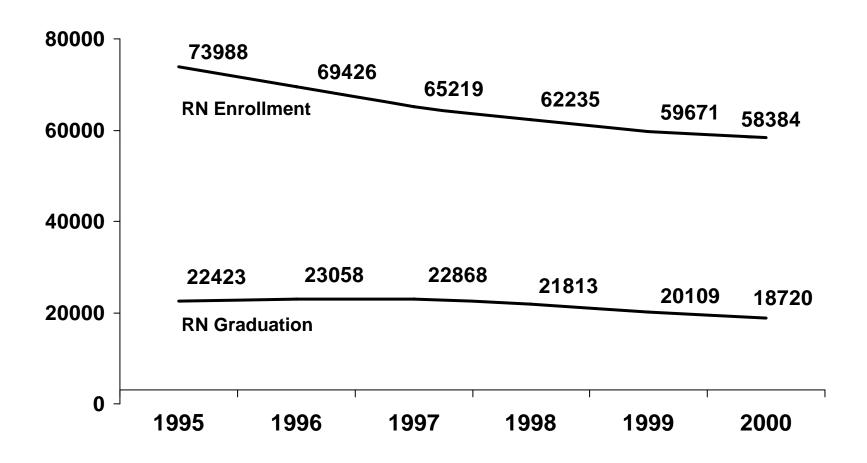


## Over the next 15 years, large numbers of RNs will retire, leading to a slow-down in the growth in the future size of the RN workforce

- Nearly half (45%) of the current RN workforce is comprised of women born during the baby boom generation (between 1946 and 1964)
- However, since the 1980s, fewer women have graduated from high school compared to previous decades, and interest in nursing declined due to the growth in career opportunities for women beyond teaching and nursing
  - Beginning in the mid 1990s, the number of people enrolling in nursing education programs decreased significantly, and the number graduating began falling
- Consequently, the nursing profession is not expected to replace all the aging baby boom RNs who will be retiring during the next decade

Source: Buerhaus, Staiger, Auerbach, Implications of a rapidly aging registered nurse workforce. *The Journal of the American Medical Association* 2000; 283 (22): 2948-295.

### US Nursing Baccalaureate School Enrollment and Graduation



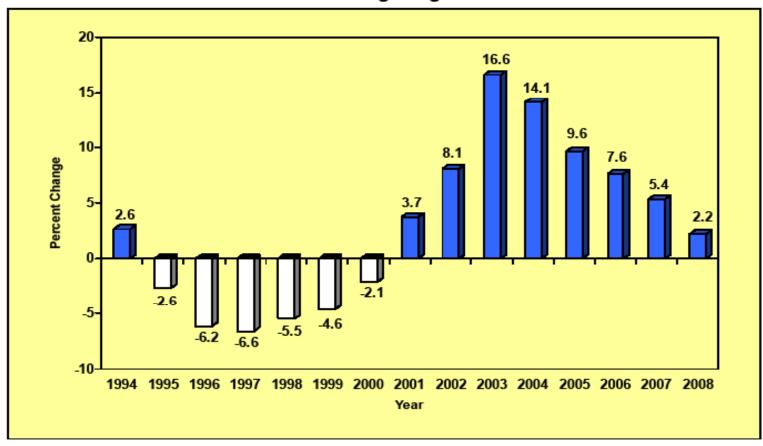
Source: American Association of Colleges of Nursing, www.aacn.org

## But, beginning in 2002, interest in nursing began to increase

- Following 9/11, some people sought a career that would allow them to make greater social contribution
- Increased awareness of opportunities in nursing due to national TV advertisements by the Johnson & Johnson Campaign for Nursing's Future
- Large wage increases received by RNs in 2002 and 2003
- Nursing viewed as recession-resistant (recession in 2001 and current recession)
- Interest in nursing has been particularly strong among "twenty somethings" and people in their early 30s

Source: P. Buerhaus, D. Staiger, D. Auerbach. <u>The Future of the Nursing Workforce in the United States: Data, Trends, and Implications</u>. Jones & Bartlett, 2008.

#### Percentage Change in Enrollments in Entry-Level Baccalaureate Nursing Programs: 1994-2008



SOURCE: American Association of Colleges of Nursing, Research and Data Center, 1994-2008 AACN is not responsible for reporting errors by respondent institutions.

## Despite the recent increased interest in nursing, a large shortage of RNs is expected to develop and worsen over the next decade

- Various estimates of the size of the shortage range from several hundred thousand to 1 million by 2020.
- Projections reflect different data, assumptions, and methods.
- The most recent published projections (Buerhaus, Auerbach, Staiger, 2009) indicate improvements: Absent any change in workforce policy, a shortage of 265,000 RNs will develop by 2025. A shortage of this magnitude, however, would be nearly *three times larger* than any shortage experienced in the past 50 years.
- This projection rests heavily on the assumption that the recently observed surge in the number of RNs produced by young cohorts (those below the age of 25) will continue over time.
  - This surge could easily dissipate for a number of reasons, including a decrease in social preferences for a career in nursing once the current recession is over
  - Thus, there remains significant uncertainty as to the magnitude of the expected future shortage, but little disagreement that a large shortage will develop as large numbers of baby boom RNs retire in the decade ahead

Source: Buerhaus, P, Auerbach, D., Staiger, D. The Recent Surge in Nurse Employment: Causes and Implications. *Health Affairs*, (Web Exclusive, June 12, 2009) w657-668.

https://email.mc.vanderbilt.edu/exchweb/bin/redir.asp?URL=http://www.healthaffairs.org/alert\_link.php?url=http://content.healthaffairs.org/cgi/content/abstract/hlthaff.28.4.w657%26t=h%26id=883

## Other Projections

- HRSA's 2004 projections indicate that by 2020, if current trends continue, the national shortage of RNs will be roughly 1 million FTE RNs, suggesting that only 64% of projected demand will be met. Source: Health Resources and Services Administration. "What Is Behind HRSA's Projected Supply, Demand, and Shortage of Registered Nurses?"
- Bureau of Labor Statistics Between 2006-2016, estimated 587,000 new RN jobs will be created Source: Bureau of Labor Statistics, Office of Occupational

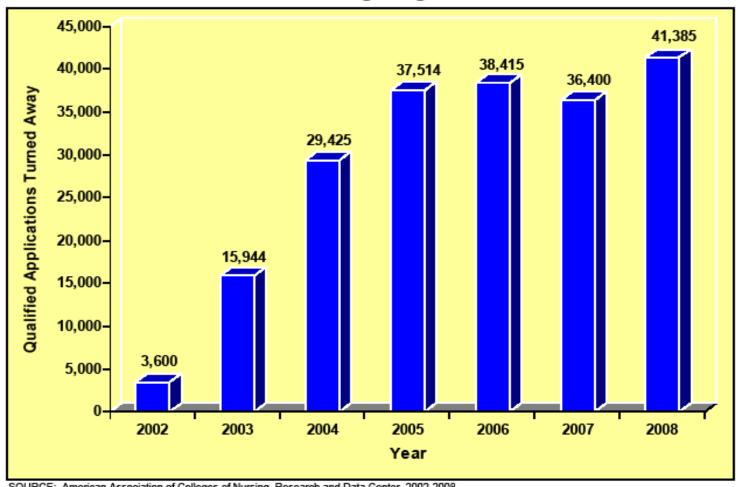
Statistics and Employment. <a href="http://www.bls.gov/oco/ocos083.htm#outlook">http://www.bls.gov/oco/ocos083.htm#outlook</a>

# Problems in Nursing Education Will Make it Very Difficult to Close the Gap Between the Future Demand and Supply of RNs

## Decreased Capacity in Nursing Education Programs in the US

- Nursing education programs are experiencing shortages of:
  - Faculty
  - Classroom space
  - Clinical space
- Budget reductions induced by recession
- Resulting in thousands of qualified applicants turned away from nursing education programs over past several years.

#### Qualified Applications Turned Away from Entry-Level Baccalaureate Nursing Programs: 2002-2008

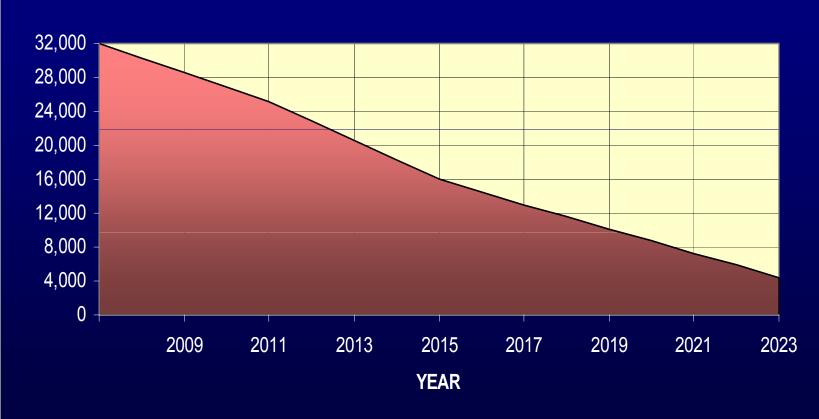


SOURCE: American Association of Colleges of Nursing, Research and Data Center, 2002-2008 AACN is not responsible for reporting errors by respondent institutions.

Looking ahead, increasing retirement of nursing educators is likely to further constrain the ability of nursing education programs to produce all the nurses needed for the future

#### **Anticipated Nurse Faculty Retirements: 2008-2023**

■ Number of Today's Nurse Faculty Expected to Remain ■ Anticipated Retirements





National League for Nursing • (800) 669-1656 • research@nln.org

NLN-Carnegie National Survey of Nurse Educators.

Format adapted frrom Charting Nursing's Future, Robert Wood Johnson Foundation, April 2007, p.1

## Trends in RN Employment and Earnings in the US

## Total, Full-time, and Part-Time Employed RNs in U.S., 1983 - 2006

- Total RN employment has grown over the past 25 years, increasing by more than 1,000,000 since 1993.
- 83% of RNs with active licenses were employed in 2004
- In 2006, total RN employment in the U.S. reached an estimated 2,432,000 RNs
- Most RNs are employed on a full time basis – only 16% of RNs in 2006 worked on a parttime basis

Year	Total Employed	Total Full-time	Percent Part- time
1983	1,363,000	1,201,000	23.9
1993	1,832,000	1,656,000	19.2
2006	2,432,000	2,240,000	15.7

Source: Buerhaus, Auerbach, Staiger, Calculations based on data from the US Current Population Surveys, 1983-2006.

## Full-Time RN Employment in Hospitals and All Other Settings, 1983-2006

- In 2006, 1,346,000 RNs were employed on a full-time basis in hospitals.
- Growth in employment in nonhospital settings has risen faster than in hospitals
- In 1983, nearly 75% of RNs worked in hospitals; in 2006, 60% of all employed RNs work in hospitals
- In 1983, a little more than one quarter of all RNs worked out side of hospitals, whereas today 40% work on a full-time basis in nonhospital settings

Year	Hospitals Number (%)	Non-hospitals Number (%)
1983	879,000 (73)	322,000 (27)
1993	1,167,000 (71)	489,000 (29)
2006	1,346,000 (60)	894,000 (40)

Source: Buerhaus, Auerbach, Staiger, Calculations based on data from the US Current Population Surveys, 1983-2006.

## However, the recession increased FTE RN employment dramatically in <u>hospitals</u>

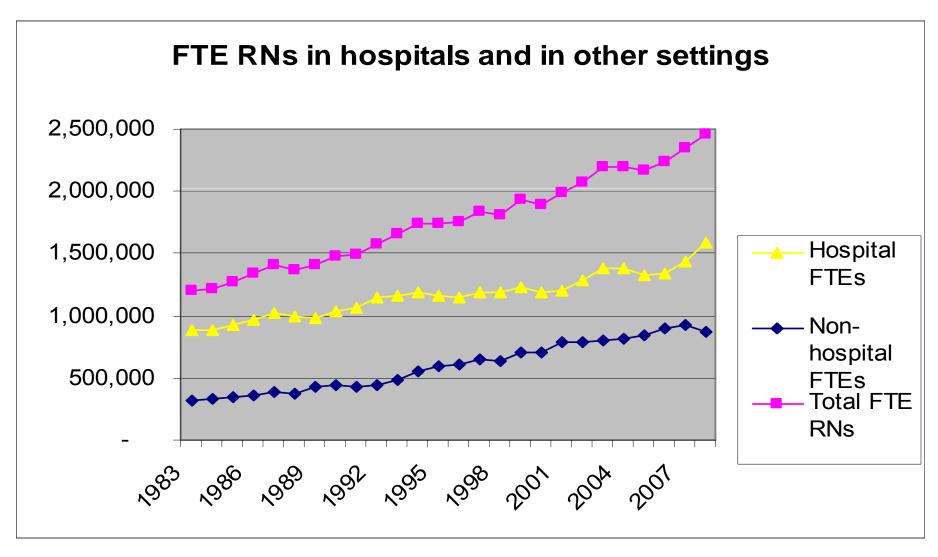
- In 2007 and 2008, hospital RN employment increased by a record 243,000 FTEs
- In the same years, employment in non-hospital settings decreased by 19,000
- The proportion of all FTE RNs employed in hospitals increased to 64.5% in 2008 from 60% in 2006

Year	Growth in Hospital RN FTEs	Growth in Non-hospital FTE RNs
2007	84,000	29,000
2008	159,000	-48,000

Source: Buerhaus, P, Auerbach, D., Staiger, D. The Recent Surge in Nurse Employment: Causes and Implications. *Health Affairs*, (Web Exclusive, June 12, 2009) w657-668.

https://email.mc.vanderbilt.edu/exchweb/bin/redir.asp?URL=http://www.healthaffairs.org/alert\_link.php?url=http://content.healthaffairs.org/cgi/content/abstract/hlthaff.28.4.w657%26t=h%26id=883

#### Total RN FTE Employment, Hospital and Other

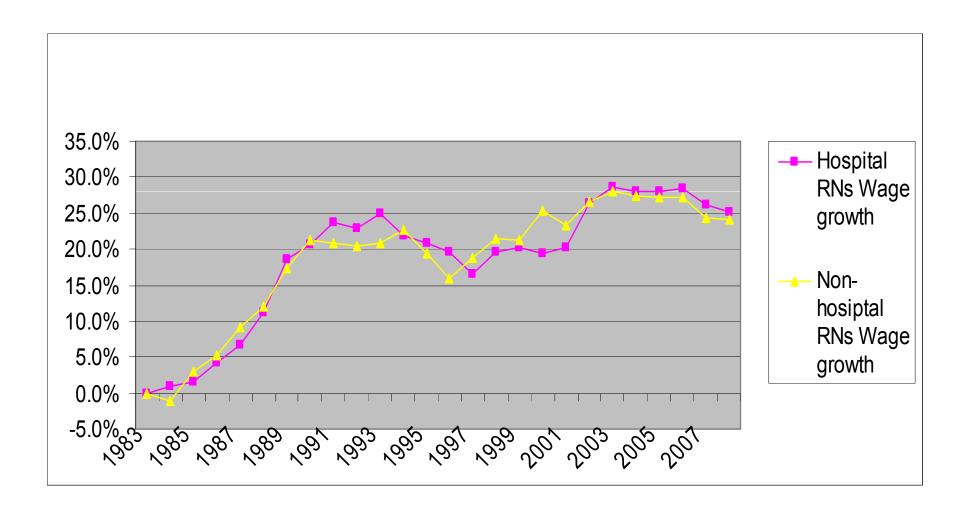


Source: Buerhaus, Auerbach, Staiger, Calculations based on data from the US Current Population Surveys, 1983-2008

### Growth of Real (inflation-adjusted) RN wages

- RN wages in hospitals and in non-hospital settings track each other closely
- For all RNs, wages increased significantly in the 1980s, grew very little during the 1990s, and increased substantially in the early years of the current decade
- Since 2003, real wages have been stagnant, and decreased in 2007 and 2008

#### Cumulative Growth in Real RN Wages Since 1983



Source: Buerhaus, Auerbach, Staiger, Calculations based on data from the US Current Population Surveys, 1983-2009

# Changes in the Composition of the RN Workforce in the United States

Increasingly older and foreign-born

## The RN workforce is becoming increasingly <u>older</u>

- Over the past seven years (2001 to 2008), employment of older RNs (age 50 to 64) increased by an estimated 368,000 FTEs, or 77% of the total increase in RN employment over this period.
  - Hospital employment of older RNs increased 230,000 (59% of the total growth in hospital employment), whereas
  - Non-hospital employment of older RNs increased 138,000, accounting for essentially all of the employment growth in these settings
- In contrast, since 2001, net employment growth of middle-aged RNs (35-49 years) is <u>negative</u>
- Total employment of younger RNs (under age 35) increased by an estimated 132,000 (28% of the total increase in RN employment since 2001), with hospitals accounting for nearly all of the employment growth (126,000) of younger RNs

Source: Buerhaus, P, Auerbach, D., Staiger, D. The Recent Surge in Nurse Employment: Causes and Implications. *Health Affairs*, (Web Exclusive, June 12, 2009) w657-668.

## Current RN Workforce is Getting Older

Employment Setting and Age	Employment Growth FTE RNs, 2001-2008		
Hospital	387,000		
Under 35 years	126,000		
35 - 49	31,000		
50 - 64	230,000		
Non-Hospital	89,000		
Under 35 years	5,700		
35 - 49	-55,000		
50 - 64	138,000		

Source: Buerhaus, P, Auerbach, D., Staiger, D. The Recent Surge in Nurse Employment: Causes and Implications. *Health Affairs*, (Web Exclusive, June 12, 2009) w657-668.

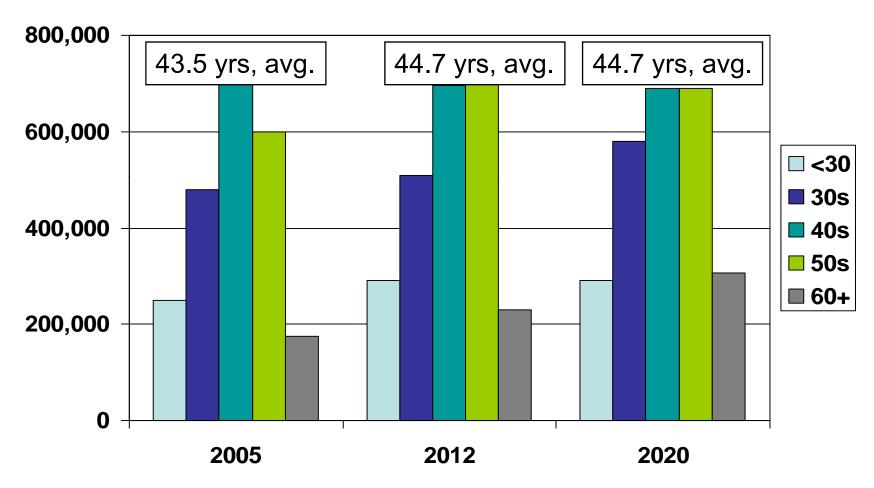
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#### And, in the future...

- The average age of FTE RNs (now at 43.8 years) is projected to increase to 44.1 in 2014, returning to 43.7 by 2025
- In three years (2012), more employed RNs will be in their 50s than in any other age group
- By 2020 there will be more RNs in their 60s than in their 20s

Source: Auerbach, Buerhaus, Staiger "Better Late than Never: Implications of Later Entry into the Profession for the Future Supply of Nurses" *Health Affairs*, January/February 2007; author calculations of Current Population Survey data.

## Actual and Projected RN FTEs by Age Group, Selected Years



In 2012, the largest age group of RNs will be between 50-60 yrs old

Source: Auerbach, Buerhaus, Staiger "Better Late than Never: Implications of Later Entry into the Profession for the Future Supply of Nurses" *Health Affairs*, January/February 2007

## Foreign-born RNs

- The proportion of employed RNs in the US who were born outside the U.S. has increased rapidly over the past 10 years.
- In the seven year period (2001-2008) total RN employment grew by an estimated 476,000 FTEs. Approximately 155,000 of this growth is accounted for by foreign-born RNs
- The increase in employment of foreign-born RNs has occurred to a greater extent in hospitals than in non-hospital settings

Source: Buerhaus, P, Auerbach, D., Staiger, D. The Recent Surge in Nurse Employment: Causes and Implications. *Health Affairs*, (Web Exclusive, June 12, 2009) w657-668.

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## Growth of Foreign-Born RNs

Employment Setting and Age	Employment Growth FTE RNs, 2001-2008		
<b>Total Growth</b>	476,000		
US Born	321,000		
Hospital	268,000		
Non-hospital	53,000		
Foreign-Born	155,000		
Hospital	119,000		
Non-hospital	35,000		

Source: Buerhaus, P, Auerbach, D., Staiger, D. The Recent Surge in Nurse Employment: Causes and Implications. *Health Affairs*, (Web Exclusive, June 12, 2009) w657-668.

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# Racial/Ethnic composition of the RN and the national workforce, 1983 and 2006

	White	Black	Hispanic	Other	Men
1983					
RNs	86.8%	6.4%	1.9%	4.9%	4.8%
Nationally	82.6%	9.5%	5.3%	2.6%	50.0%
2006					
RNs	76.0%	10.7%	4.3%	9.1%	8.9%
Nationally	69.1%	10.7%	13.9%	6.3%	51.0%

Hispanics and men remain underrepresented in nursing

Based on Bureau of Census Current Population Surveys, 1983-2006

## RNs' Perceptions of the Hospital Workplace Environment

And Impact of this Decade's Nursing Shortage on Quality of Care

## Biennial National Surveys of RNs

- Since 2002, biennial national random sample surveys of RNs have examined: prevalence, severity, and impact of the nursing shortage; characteristics of the workplace environment; nurse staffing and how RNs spend their time; quality of professional relationships; job and career satisfaction; and other characteristics.
- The following selected charts offer a sample of results from the subset of RNs in each survey who reported they are employed in <a href="https://new.ncbi.nlm.ncbi.
- Results indicate that RNs perceive that the nursing shortage has negatively impacted quality of care but, on balance, hospital workplace conditions have tended to improve rather than worsen over the decade.
- For a comprehensive description of survey results, see: Buerhaus, Donelan, DesRoches, Hess. Still Making Progress to Improve the Quality of the Hospital Workplace Environment? Results from the 2008 National Survey of Registered Nurses, Nursing Economic\$, (in press, 2009).

#### Reasons for the Current Nursing Shortage

- In national surveys, RNs rank the main reasons for the current shortage of nurses as:
  - Salary and benefits
  - Shortage of nursing faculty
  - More career options for women
  - Undesirable hours
  - Negative perception of the healthcare work environment
  - Lack of qualified students pursuing nursing as a career
- However, over the course of this decade, surveys reveal a decreasing proportion of RNs believe the current nursing shortage is caused by the above factors, suggesting that RNs perceive some improvements in these factors

Source: Buerhaus, Donelan, DesRoches, Hess. Still Making Progress to Improve the Quality of the Hospital Workplace Environment? Results from the 2008 National Survey of Registered Nurses, *Nursing Economic\$*, (in press, 2009)

## Main Reasons for Current Hospital Nursing Shortage

Reasons	2002	2004	2006	2008
Salary and Benefits	58 <sup>a</sup>	41 <sup>a</sup>	32	29
Faculty shortages	*	11 <sup>a</sup>	26	30
More career options for women	44 <sup>a</sup>	32	30	18 <sup>c</sup>
Undesirable hours	38 <sup>a</sup>	27	24	18 <sup>c</sup>
Negative perception of the healthcare work environment	29 <sup>a</sup>	15	15	14
Lack of qualified students pursuing nursing as a career	15	12	13	11
Nursing not seen as rewarding career	*	26 <sup>b</sup>	21	15
Nursing not a respected profession	*	17	14	10

Note: Respondents were asked to select up to two responses

Source: Buerhaus, Donelan, DesRoches, Hess. Still Making Progress to Improve the Quality of the Hospital Workplace Environment? Results from the 2008 National Survey of Registered Nurses, *Nursing Economic*\$, (in press, 2009)

### Physical & Mental Safety

- Nearly one-half of RNs report a back or musculoskeletal injury during the previous year
  - With an aging workforce, and the growth of obesity among the population, even more RNs in the future could experience musculoskeletal injuries, thereby reducing RNs time participation and hours in the workforce.
- Roughly 20% perceive sexual harassment/hostile workplace and discrimination
- About 60% report experiencing verbal violence and 1 in 3 physical violence in the workplace

### Physical and Mental Safety, 2002-2008

Threats	2002	2004	2006	2008
	Percent	Percent	Percent	Percent
Workplace injuries – Back or musculoskeletal injury	34	31	41	45
Discrimination – gender, age, race	13	12	20	18
Sexual harassment hostile work environment	19	16	19	23*
Violence				
Verbal			59	59
Physical			26	32*

<sup>•</sup>Significantly different from 2006 at p<.05

## Union Membership Among Employed RNs

- Since 2002, RN
  membership in
  unions has
  changed little, with
  approximately 25%
  of RNs reporting
  that they or other
  nurses in their
  organizations
  belong to a
  collective
  bargaining unit
- Question not asked in 2008

	2002 (percent)	2004 (percent)	2006 (percent)
Self and other RNs belong	14	18	16
Other RNs, but not self belong	7	9	6
Neither self or other RNs belong	75	69	69
No answer	4	5	9

Source: Buerhaus, Donelan, Ulrich, DesRoches, Dittus. Trends in the Experiences of Hospital Employed Registered Nurses: Results from Three National Surveys, *Nursing Economic\$*, March/April, 2007.

### Time Spent During a Typical Work Week

Activities	2006 (Percent)	2008 (Percent)
Direct patient care: hands-on care, family teaching, discharge planning	41	48 <sup>a</sup>
Patient care related notes/documentation	23	21
Locating supplies & equipment	8	6
Patient-related telephone calls: Rx, lab results, referrals	8	7
Meeting or activities related to quality improvement or patient safety	7	4
Shift changes & other hand-off functions	7	5
Transporting patients	5	4

<sup>&</sup>lt;sup>a</sup> Significantly different from 2006 at p<.05

### Hospital-Employed RN's Perception of Impact of Nursing Shortage

In the past year, have you observed any of the following as a result of nursing shortage?	2004 N=657 Percent observing an increase	2006 N=617 Percent observing an increase	2008 N=468 Percent observing an increase
Delayed response to pages or calls	89	72	67 <sup>b</sup>
Staff communication problems	88	72	65 a
Patients' complaints about nursing care	87	69	66
Reduced number of available beds	81	34	40 b
Patients' wait time for surgery or tests	75	60	51 a
Delayed discharges	72	64	63
Workload on physicians	53	51	52
Discontinued or closed patient care programs	42	35	34

a 2008 Significantly different from 2006 at p  $\leq$  .01.

b 2008 Significantly different from 2006 at p  $\leq$  .05.

### Hospital-Employed RN Perceptions of Frequency Nursing Shortage Impact Institute of Medicine's Six Aims for Improving the Quality of HealthCare Systems

	Shortage had Frequently or Often Impacted		
IOM Aims for Improving the Quality of Health Care Systems	2006 Hospital RNs (n=617)	2008 Hospital RNs (n= 468)	
Patient-Centered	48	45	
Effective	48	47	
Safe	45	46	
Timely	63	57 <sup>a</sup>	
Efficient	55	51 b	
Equitable	40	36	

a 2008 Significantly different from 2006 at p  $\leq$  .01.

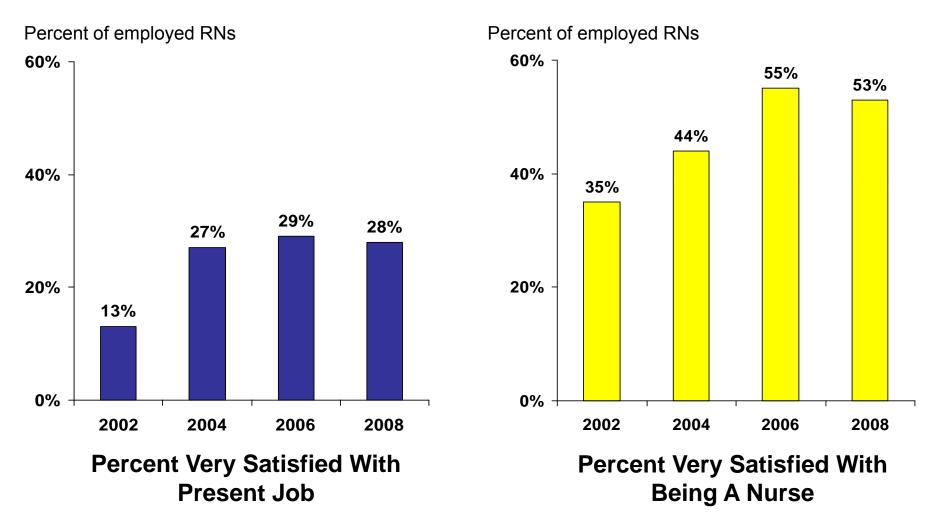
b 2008 Significantly different from 2006 at p  $\leq$  .05.

## Perceptions of Nursing

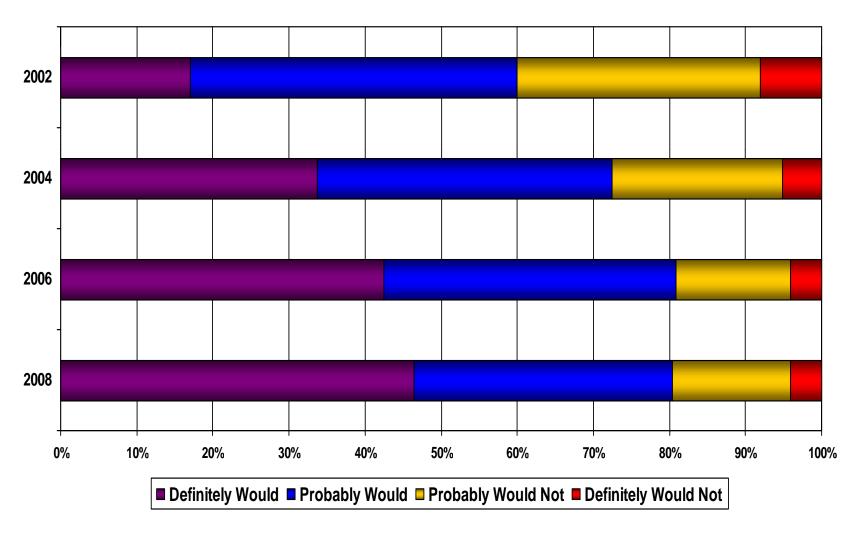
# RNs' Satisfaction with Job and with Being a Registered Nurse

- The percent of employed RNs who report they are <u>very</u> satisfied with their jobs has grown in recent years.
- The growth in satisfaction with being a nurse has been even stronger.
- And, increasing numbers of RNs would advise a career in nursing to a qualified high school or college student.

### **RN Satisfaction With Job and Career**



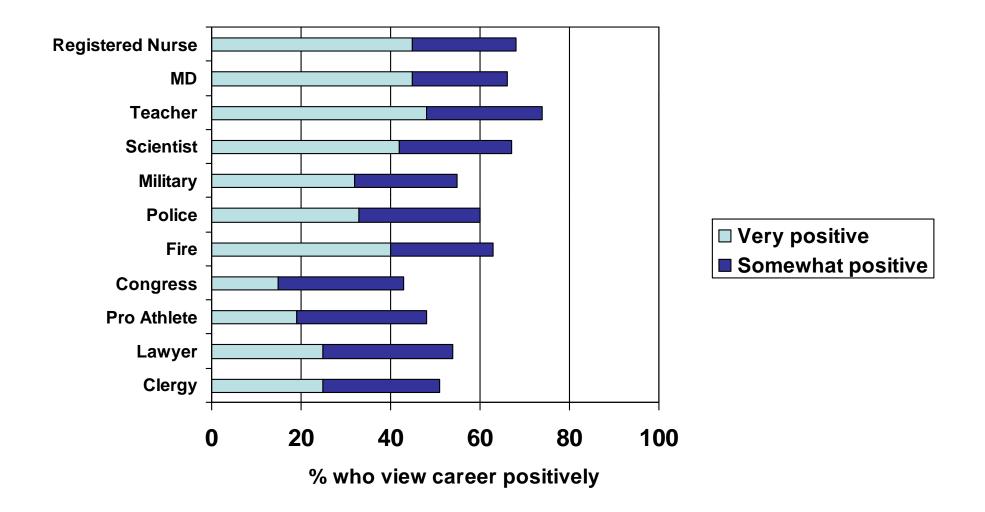
Given what you know about health care, how likely would you be to advise a qualified high school or college student to pursue a career in nursing?



# Public Perceptions of Nurses and Nursing Careers

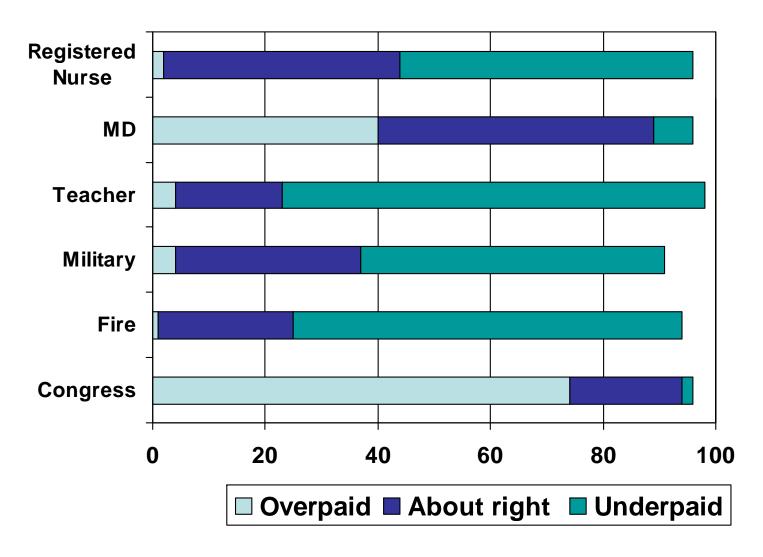
- The public views nursing careers very positively in comparison with other careers and are equally likely to recommend nursing to qualified students as they are a career in medicine.
- A substantial share of the public believes nurses are underpaid.
- Nurses are a trusted source of health information
- If anything, media exposure of nurses lead to increased respect among the public.

### Public Comparative Perceptions of Careers



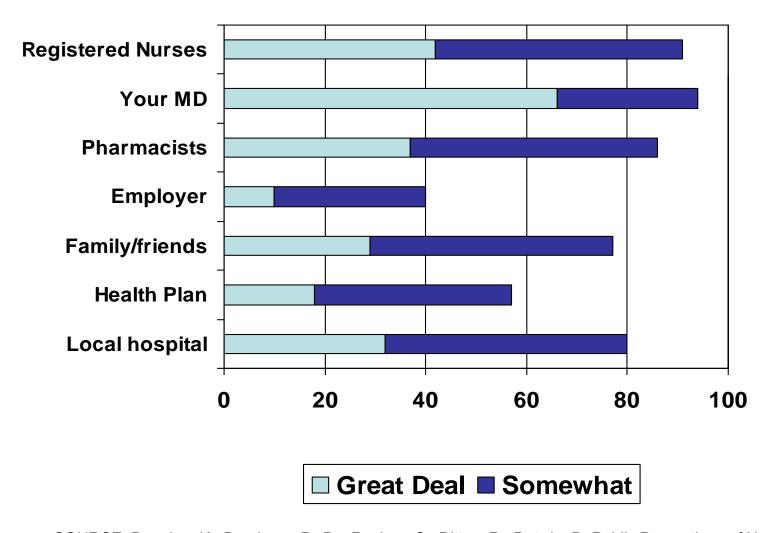
SOURCE: Donelan, K., Buerhaus, P., DesRoches, C., Dittus, R., Dutwin, D. Public Perceptions of Nursing Careers: The Influence of the Media and Nursing Shortages." *Nursing Economic*\$, 2008;26(3);143-150,165.

### Public Perceptions of Pay for Selected Careers



SOURCE: Donelan, Buerhaus, DesRoches, Dittus. Unpublished preliminary results of 2007 national public opinion survey of the nursing profession.

## Trust Advice to Make Decisions About Own Health Care



SOURCE: Donelan, K., Buerhaus, P., DesRoches, C., Dittus, R., Dutwin, D. Public Perceptions of Nursing Careers: The Influence of the Media and Nursing Shortages." *Nursing Economic*\$, 2008;26(3);143-150,165.

## Did Media Lead to More or Less Respect for RNs?

	% who saw in past year	More respect	Less Respect	Made No Difference
Scrubs, House, ER, Grays Anatomy	61%	29	4	66
News: RNs on strike	22	32	12	54
News: RN shortage	63	50	1	48
News: RNs important to pt safety	36	64	1	34
News: RNs help in disaster	67	74	0	25
Advertisements about nursing	48	39	1	60

SOURCE: Donelan, K., Buerhaus, P., DesRoches, C., Dittus, R., Dutwin, D. Public Perceptions of Nursing Careers: The Influence of the Media and Nursing Shortages." *Nursing Economic*\$, 2008;26(3);143-150,165.

### **Data Sources**

#### **Publications**

- Auerbach, D., Buerhaus, P., Staiger, D. "Better Late than Never: Implications of Later Entry into the Profession for the Future Supply of Nurses" Health Affairs, January/February 2007; Vol. 26, No.1: 178-185.
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- Bureau of Labor Statistics, Office of Occupational Statistics and Employment. <a href="http://www.bls.gov/oco/ocos083.htm#outlook">http://www.bls.gov/oco/ocos083.htm#outlook</a>