Nursing Shortages: Is there a crisis? If so, what are the implications?

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Nursing Shortages Result From …

- Inadequate supply
- Failed employer human resource policies
- Too few budgeted positions
- Excess demand because of system deficiencies and failures
- Wrong educational mix
Over One Million New Nurses Needed by 2012

Growth
Replacement (2002 - 2012)
Current RN Jobs (2002)

## Age of Registered Nurse Population

<table>
<thead>
<tr>
<th></th>
<th>1980</th>
<th>2000</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average Years</strong></td>
<td>40.3</td>
<td>45.2</td>
<td>46.8</td>
</tr>
<tr>
<td>Less than 30 years</td>
<td>25.7%</td>
<td>9.1%</td>
<td>8.1%</td>
</tr>
<tr>
<td>Less than 35 years</td>
<td>41.4%</td>
<td>18.4%</td>
<td>16.6%</td>
</tr>
<tr>
<td>Less than 40 years</td>
<td>54.0%</td>
<td>31.9%</td>
<td>26.6%</td>
</tr>
<tr>
<td>40 years and over</td>
<td>46.0%</td>
<td>68.1%</td>
<td>73.4%</td>
</tr>
</tbody>
</table>

Source: National Sample Survey of Registered Nurses, BHPr, HRSA.
Forecast for FTE Registered Nurses Suggests Shortfall of 800,000 by 2020

Demand
Supply

Shortage

Source: Health Resources and Services Administration, Bureau of Health Professions (HRSA), 2002
Number of Newly Licensed Foreign Educated Registered Nurses in U.S., 1994-2005

Source: Author’s calculation from National Council of State Boards of Nursing
Consequences of Future Nurse Shortage

- Nurse understaffing in general and specifically in hospitals
- Deficient quality and unsafe care
- Impaired access to hospitals and other health services
- Compromise/cripple emergency preparedness
- Dampen health services expansion which adversely affects jobs and local economy
- Virtually no risk of oversupply of nurses
Operations are ready. Now where are the nurses? The stakes are high. You’ve put a lot on the line to make sure operations are ready to go. But without the nurses, you’re going nowhere—you’re left with expense and no revenue.
For every 100 surgical patients who die in hospitals with 4 to 1 patient to nurse ratios, the number that would die in hospitals with higher ratios would be be…

(L. Aiken et al. JAMA 2002)
Odds Ratios for Cases Meeting CMS/JCAHO Diagnosis/Treatment Composite Indicator Criteria (AMI, CHF, Pneumonia) by Hospital RN HPPD, 2004
(N=3590, Mean 404 cases/hospital)

Landon et al., *Arch Intern Med* 2006; 166: 2511
Odds Ratios for Cases Meeting CMS/JCAHO AMI-Specific Composite Indicator Criteria by Hospital LPN HPPD, 2004
(N=3378, Mean 272 cases/hospital)

Landon et al., Arch Intern Med 2006; 166: 2511
Mortality Rates in Hospitals with Differing Workloads and Percentages of BSNs

L. Aiken, Univ. of Pennsylvania
Deaths Per 1000 Surgical Patients

Staffing (Patients per Nurse)

Poor PE- 20% BSN
Mixed PE- 40% BSN
Good PE- 60% BSN

Deaths Per 1000 Surgical Patients

- 4 P/N: 16.6, 17.9, 16.6
- 6 P/N: 16.6, 19.3, 19.7
- 8 P/N: 16.6, 23.3, 21.6, 28
## Employment Settings of Registered Nurses, 2000 and 2004

(in percents)

<table>
<thead>
<tr>
<th>Employment Setting</th>
<th>2000</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>59%</td>
<td>57%</td>
</tr>
<tr>
<td>Nursing Home/Extended Care Facilities</td>
<td>7%</td>
<td>6%</td>
</tr>
<tr>
<td>Nursing Education</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>Public/Community Health</td>
<td>18%</td>
<td>15%</td>
</tr>
<tr>
<td>Ambulatory Care</td>
<td>9%</td>
<td>12%</td>
</tr>
<tr>
<td>Other</td>
<td>4%</td>
<td>7%</td>
</tr>
</tbody>
</table>

Source: National Sample Survey of Registered Nurses, BHP, HRSA.
No Improvement in Nurse Burnout Since Institute of Medicine’s 1999 Medical Error Report

% Hospital Staff Nurses with High Burnout

- 1999: 41%
- 2006: 45%
Graduations and Enrollments in RN Programs 1958 - 2003*

Trends in Title VIII Appropriations for Nursing

[Graph showing trends in Title VIII appropriations from 1965 to 2005, with data in nominal and real 2006 dollars.]
## Percent Distribution of RN Graduations by Basic Education Type, pre 1950 to 2000

<table>
<thead>
<tr>
<th>Year</th>
<th>DIPLOMA</th>
<th>ADN</th>
<th>BSN</th>
<th>MSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre 1950</td>
<td>95%</td>
<td>1%</td>
<td>4%</td>
<td>0.2%</td>
</tr>
<tr>
<td>1950-59</td>
<td>88%</td>
<td>2%</td>
<td>10%</td>
<td>0.2%</td>
</tr>
<tr>
<td>1960-69</td>
<td>75%</td>
<td>8%</td>
<td>17%</td>
<td>0.0%</td>
</tr>
<tr>
<td>1970-79</td>
<td>33%</td>
<td>39%</td>
<td>29%</td>
<td>0.1%</td>
</tr>
<tr>
<td>1980-89</td>
<td>15%</td>
<td>51%</td>
<td>34%</td>
<td>0.2%</td>
</tr>
<tr>
<td>1990-2000</td>
<td>8%</td>
<td>60%</td>
<td>31%</td>
<td>0.5%</td>
</tr>
</tbody>
</table>
Faculty in BSN or Higher Degree Programs by Age

- Average Age: 50.4 years
- Under 35 years: 10.1 percent
- 35 to 45 years: 15.5 percent
- 45 to 55 years: 36.3 percent
- 55 years or older: 38.0 percent

Source: National Sample Survey of Registered Nurses, BHPr, HRSA.
Barriers to Higher Education

- Over 400,000 qualified high school graduates a year are financially unable to attend a 4-yr college; expected to rise to 4.4 million by 2010.
- Nurses from middle income families sensitive to cost of higher education
- Earlier increases in nurse enrollments helped by influx of women into higher education; will be more difficult in future to replicate with untargeted subsidies
- Universities unable to expand nursing enrollments without targeted subsidies for infrastructure development
Policy Recommendations

• Substantial increase in targeted public subsidies to baccalaureate nursing programs
  – To upgrade education of nurse workforce to improve quality and efficiency
  – To create a larger qualified pool from which to recruit faculty for all schools of nursing

• Increase in graduate education
  – To increase qualified faculty
  – To meet demand for higher educated nurse clinicians in primary care, chronic disease management, and acute care