Leadership in Nursing Research: Making an Impact on Patient Care

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Dorothy M Smith Nursing Leadership Conference, 2014
Impacting Delivery of Health Care Through Research

• Identify a question that if answered could substantially affect patient outcomes
• Rigorous methods that withstand scrutiny
• Dissemination to influential stakeholders
• Frame findings to maximize stakeholder support
• Persistence to stay the course until change is achieved
BSN Education

• UF CON was launched in 1956 as one of the first generic BSN programs
• Vision: Lead a transition to BSN education
• ANA in 1965 set 1985 as target for BSN qualification for entry into practice for nurses
• In 1965 10% nurses had bachelor’s; 90% had diplomas; associate degrees were negligible
• Progress made but by 1999 only 38% of hospital nurses held BSNs; production of generic BSNs plateaued; dramatic rise in associate degree nurses who were less likely to get BSNs than earlier cohorts of diploma nurses
• BSN education held little stakeholder interest outside nursing including by most employers
Two-thirds of New Nurses Graduate from Associate Degree Programs

Leadership: Case example of how research made an impact on BSN uptake

By framing studies around

• Quality of Care
• Shortage of Primary Care
• Easing of Nurse Shortage
Critical advance: Showing that BSN education affects patient outcomes by defining nurse education as property of hospitals
Nurse Education and Hospital Mortality

• Study of all hospitals in PA (N=210) making it the largest to examine outcomes of nursing education, 1999

• Why one state? Ingenious design
  – Needed to study 100% of hospitals to reflect real life
  – Needed design that avoided getting permission from hospitals
  – Nurses as informants about their place of employment
  – States have the only sampling frame through licensure lists

• Conceived of nursing education as a modifiable feature of hospitals measured as proportion of staff nurses with BSNs

• Published in Journal of American Medical Association JAMA, 2003 thus vetted by interdisciplinary scientists

• Principal finding: Each 10% increase in the proportion of nurses with BSNs was associated with 5 percent decline in mortality following common surgeries
Responses to JAMA paper

• The most important stakeholder—nurse employers represented by AONE—took notice and passed a historic statement that BSN was the preferred education of hospital nurses resulting in move towards preferential hiring and market response to BSNs

• Research critiques commissioned by opposed stakeholders (community colleges)

• Quasi-scientific debate about how to evaluate evidence across studies, most of which were too small to detect effects or had design flaws
Multi-State Nursing Care and Patient Safety Study, 2006-08

• Larger study of hospitals in 4 large states: PA, CA, NJ, FL which account for 25% of all U.S. hospital admissions
  – 800 hospitals
  – 100,000 nurses surveyed
  – Outcomes for over million patients

• Impact of changes in hospital BSN employment over time in PA, 1999-2006

• Evaluate different state policy contexts
  – UF CON funded the inclusion of Florida
30-Day Risk-Adjusted General Surgical Mortality Rate, By Hospital (n=800)

Mean death rate: 1.65% - Range: 0.00% - 12.50%
BSN Nurses as Percent of Hospital Staff Nurses, By Hospital (n=800)

Mean: 38% - Range: 0% - 80%
Effect of Nurse Education on Surgical Patient Mortality

(independent of nurse staffing)

Patients in hospitals with 50% BSNs have 15% lower odds on dying than patients in hospitals with 10% BSNs

Aiken et al. Medical Care 2011
Nurse Experience & Specialty Certification
Kendall Gallagher and Aiken, J Nurs Scholarship, 2011

• There is no effect of nurse experience on mortality after taking into account education suggesting that experience is not a substitute for education

• % nurses with specialty certification is significantly associated with lower mortality but only among bachelor’s nurses
Lower mortality in Magnet hospitals linked to higher % BSNs and Specialty Certified Nurses

McHugh ... Aiken, Medical Care, 2012
Establishing Causality Between % BSN and Lower Mortality

• Panel study of hospitals: Comparison of changes in all PA hospitals in % BSN nurses between 1999 and 2006

• Hospitals that improved % BSN between 1999 & 2006 had more rapid declines in mortality than hospitals that did not increase

• Among the 15 most widely read papers in 2013 published in prestigious health policy journal Health Affairs (Kutney-Lee, Sloane, Aiken, Health Affairs, 2013)
Replications of Association Between % BSN and Better Patient Outcomes

- **Canada** Estabrooks (Nursing Research, 2005) documents significantly lower mortality in hospitals with higher % BSNs
- **Belgium** VandenHeede (Int J Nurs Studies, 2009) significantly lower mortality among cardiac surgery patients and % BSN
- **China** You (Int J Nurs Studies, 2013) significantly higher patient satisfaction and % BSN
- **US Teaching Hospitals** Blegen (JONA 2013) Lower mortality and adverse outcomes and % BSN
Bachelor’s Education of Nurses in Europe

- RN4CAST study funded by EU of nursing education and hospital mortality in 9 countries
- Every 10% increase in proportion of hospital nurses with bachelor’s degrees is associated with 7% decrease in odds of mortality after common surgery
- Findings have been influential in EU debates about standardizing nursing education across countries
- Forthcoming in leading international health science policy journal
- Evidence base is growing in numbers of well designed studies and replications in different parts of the world that there is an association between BSN education and better patient outcomes
Institute of Medicine of National Academy of Sciences, 2010

Landmark Report: It is in the public’s interest for nursing to move to a bachelor’s-qualified nurse workforce and assume a larger role in health care.
### Institute of Medicine Future of Nursing Recommendations, 2010

<table>
<thead>
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<tr>
<td>Remove scope-of-practice barriers</td>
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<td>Expand opportunities for nurses to lead and diffuse collaborative improvement efforts</td>
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<td>Implement nurse residency programs</td>
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<td>Increase proportion of nurses with BSN degree to 80% by 2020</td>
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<td>Double the number of nurses with a doctorate by 2020</td>
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<td>Ensure that nurses engage in lifelong learning</td>
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<td>Prepare and enable nurses to lead change to advance health</td>
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<td>Build an infrastructure to collect and analyze health care workforce data</td>
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Employer Response

• AONE recommends RNs be educated in BSN programs
• BSNs are good buy; not significant wage premium but better outcomes (Moneyball analogy)
• AACN 2013 survey: 44% hospitals and other employers are requiring BSN for new hires; 79% employers express strong preference for BSNs
• Magnet: all nurse managers are required to have BSN or higher; action plan required showing progress toward achieving 80% BSNs
• Preferential employment of BSN nurses will increase demand for BSNs and decrease demand for ADNs
More RNs are Returning to School to Get BSNs

Source: American Association of Colleges of Nursing
Percent hospitals with 50% or more BSNs, by State

- Florida: 20.6%
- New Jersey: 27.4%
- California: 31.4%
Florida has higher proportion of ADNs and lower proportion of baccalaureate and graduate educated nurses than national average

<table>
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1Multistate Nursing Care & Patient Safety Study, Florida.
22008 National Sample Survey of RNs.
Florida: Most of the 61 New Nursing Programs Approved in 2012 Offer Associate Degrees

- 39% Practical Nursing
- 57% Associate Degree
- 3% BSN

Source: OPPAGA, FL Legislature, 2013
Florida: Student Enrollment Increases Across Program Types, 2008-2012

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<th>Program Type</th>
<th>Enrollment # Students</th>
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<td>ADN-Generic</td>
<td>15,118</td>
<td>54%</td>
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<td>ADN-Bridge</td>
<td>4,371</td>
<td>126%</td>
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<tr>
<td>BSN-Generic</td>
<td>5,600</td>
<td>37%</td>
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<tr>
<td>BSN-2nd Degree</td>
<td>1,011</td>
<td>-11%</td>
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Source: OPPAGA, FL Legislature, 2013
IOM Recommendation # 1 Remove Scope of Practice Barriers

- Shortage of primary care cannot be solved by doctors; nurse practitioners and others are needed.
- Hundreds of studies show outcomes of NPs comparable to and better on some dimensions than MDs.
- Needs of growing numbers of chronically ill and frail elderly, as well as focus on wellness & prevention are a good match with nurses’ expertise and interests.
- NPs have less expensive practice patterns and cost less to educate than MDs.
Patient Protection and Affordable Care Act

• Signed into law March 23, 2010
• Provides health insurance for more than 30 million previously uninsured Americans
• Shortage of primary care could be an acute problem
• Health system redesign is more important than ever
• Public believes nursing can help respond to these national challenges
New Stakeholders Promoting Expanded Roles for APRNs

• American Association of Retired Persons (AARP)
  – Elderly want improved access, better quality, more patient-centered care, and less expensive care and nurses can help

• Retail clinics staffed by NPs: 1300 sites
  – Walk in for minor ailments and preventive care: Walgreens, CVS, Wal-Mart biggest
  – CVS 650 locations in 25 states
  – Walgreens 350 clinics: will expand to chronic illness care
  – Differences in state scope of practice affect profits, thus mobilizing these stakeholders to advocate for expanded scope of practice legislation
EDITORIAL
When the Doctor Is Not Needed

Published: December 15, 2012 | 296 Comments

There is already a shortage of doctors in many parts of the United States. The expansion of health care coverage to millions of uninsured Americans under the Affordable Care Act will make that shortage even worse. Expanding medical schools and residency programs could help in the long run.

NURSE PRACTITIONERS In 2012, 18 states and the District of Columbia allowed nurse practitioners, who typically have master's degrees and more advanced training than registered nurses, to diagnose illnesses and treat patients, and to prescribe medications without a doctor's involvement.

Substantial evidence shows that nurse practitioners are as capable of providing primary care as doctors and are generally more sensitive to what a patient wants and needs.

In a report in October 2010, the Institute of Medicine, a unit of the National Academy of Sciences, called for the removal of legal barriers that hinder nurse practitioners from providing medical care for which they have been trained. It also urged that more nurses be given higher levels of training, and that better data be collected on the number of nurse practitioners and other advance practice nurses in the country and the roles they are performing. Tens of thousands will probably be needed, if not more.
Philadelphia

Top Doc in 2011 is a Nurse

THE INSIDE SECRETS TO Navigating Philly Health Care

See Page 94
IOM # 4: “80 by 20”

- IOM recommendation for “80 by 20” is based upon what is in the public interest
- Evidence shows BSNs are associated with better patient outcomes
- Improbable shortage of faculty can be solved without having most nurses graduate with BSN or higher in their first RN program; faculty shortage is one of greatest threats to future shortage of nurses
- Cannot increase production of APRNs without more graduate degrees
Highest Degree Attained by Nurses Is Determined by Initial Type of Education: Cohort Study 1974-2008 per 1000 Graduates

Aiken, 2011, New England Journal of Medicine
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\(^1\)Multistate Nursing Care & Patient Safety Study, Florida.  
\(^2\)2008 National Sample Survey of RNs.
Opportune Time to Reform Pre-Licensure Nursing Education

• Largest and most qualified applicant pool in history

• National nurse shortage has abated so no need to train nurses as quickly as possible

• Plenty of nursing jobs in nursing in an economy without enough good jobs: almost 600,000 new jobs for nurses expected to be created between 2006 and 2016 with highest demand for BSNs+

• Challenges:
  – Budget constraints in higher education
  – Little evidence-based decision making in investing public nursing education funds
  – Applicant pool is not well informed
Leadership Through Research

• What changed between 1985 when ANA goal of achieving BSN education for all nurses was not met? **RIGOROUS RESEARCH**

• Nurse researchers changed the discussion by producing strong evidence that it is in the public’s interest and in the interest of new stakeholders in health services to have better educated nurses
Dorothy Smith’s Legacy

• Nursing is an intellectual discipline that uses evidence to improve nursing practice and patient outcomes
• Florida is a key state in moving toward a national BSN workforce because of its historical commitment to community college education
• UF CON should lead the way in BSN transition
• New 2014 study in Florida will provide evidence
• CON has to step up to effectively use the study to inform changes in education, practice and policy as Dean Smith envisioned for the role of UF in the state and the nation.