Developing a Statewide Solution to the Faculty Shortage in Maryland

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The nurse shortage continues into a third decade despite 10 years of increased pre-licensure enrollments resulting from innovative efforts by nursing programs to maximize faculty and infrastructure resources. Further efforts to increase capacity have been hampered by a nationwide faculty shortage that has resulted in the denial of thousands of qualified applicants to associate degree and baccalaureate degree programs. This article describes one state's approach to the development and implementation of a financially robust, sustained approach to the lack of educational capacity in nursing programs and provides important lessons for replication to achieve measurably successful outcomes.

The nurse shortage that was viewed as a typical cyclical shortfall in 1998 continues today. The nationwide gap between supply and demand for full-time hospital registered nurses (RNs) was estimated to be more than 110,000 in 1998. Despite a 5.3% growth in the RN population from 2004 to 2008 and the current recession-fueled respite, the shortage is expected to persist (Health Resources and Services Administration [HRSA], 2010). Retirements among the aging nurse workforce, temporarily postponed by the recession, will remain a driving factor: roughly two-thirds of the 444,668 new RNs licensed in 2004 to 2008 were absorbed into slots opened by retirees. As a result, the RN workforce during this period grew by only 153,806 (HRSA, 2010). Further pressure on the workforce is expected to be exerted by an evolving health-care system in the wake of reform. By 2025, the full-time RN deficit is forecast to be 260,000 (Buerhaus, Auerbach, & Staiger, 2009).

Since 2000, student enrollment in pre-licensure nursing programs has increased annually because of nursing program strategies to optimize infrastructure and faculty resources (Fang, Tracy, & Bednash, 2010). The percentage of nurse educators in the workforce rose from 2.4% in 2004 to 3.8% in 2008 (HRSA, 2004, 2010). However, as enrollments grew, the faculty vacancy rate increased from 7.9% in 2006–2007 to 8.8% in 2007–2008 (Fang, Htut, & Bednash, 2008). These data underestimate the faculty shortage because they reflect only budgeted positions and do not capture the need for additional positions to increase enrollment. Moreover, because the average retirement age of nurse educators, many of whom are in their mid-to-late 50s, is 62.5 years, a substantial portion of the faculty is predicted to retire in the next decade. The pipeline cannot replenish the loss or fill additional positions (Allan & Aldebron, 2008; Berlin & Sechrist, 2002). Further efforts to increase capacity have been hampered by the faculty shortage, which has resulted in qualified applicants to associate degree (ADN) and baccalaureate degree (BSN) programs being denied admission. In 2008–2009, for example, 45% of qualified ADN and 28% of qualified BSN applicants were denied admission (National League for Nursing, 2010).

Nursing Education Capacity in Maryland

Maryland data on the nurse and faculty shortage parallel national data. Despite successful efforts to increase enrollment, the Maryland Board of Nursing estimated in 2003–2004 that pre-licensure programs were close to capacity and had to deny admission to more than 1,900 qualified applicants. In 2007, Maryland had more than 800 full- and part-time educators in its 27 nursing programs, of which 15 award ADN and 12 award BSN and higher degrees, including 7 that award master's (MSN) degrees, 2 that award doctor of nursing practice (DNP) degrees, and 2 that award doctor of nursing (PhD) degrees. A 2007 assessment determined that to meet future demand, graduation of pre-licensure students had to double—from 1,800 to 3,600 per year—and 160 more faculty members would be needed (Allan & McClellan, 2007; Who Will Care?, 2007). These data provided a strong impetus for declaring a growing crisis in Maryland and developing statewide solutions (Allan & McClellan, 2007).

Before 2000, awareness of the nursing faculty shortage was not widespread, and few states addressed it. In 2003, a report from the National Conference of State Legislatures sounded the alarm, calling for state-level strategies and solutions (Greene, Allan, & Henderson, 2003). Since then, states have funded many local and statewide efforts to increase the faculty pool, using strategies including new degrees, scholarships and loan forgiveness for master's and doctoral graduates who agree to teach, and increased budgets to hire more faculty (Allan & Aldebron, 2008;

Bargagliotti, 2009). Nevertheless, few state efforts are scaled to provide the sustained, financially robust support needed.

This article describes one state's sustained approach to the nursing faculty shortage. The article will discuss the development of a state solution, a description of the solution, and selected outcomes.

Developing a State Solution

To increase awareness and ensure one voice for nursing, one of the authors, Janet Allan, and her legislative assistant, Shannon McClellan, met with a variety of stakeholders from 2002 through 2005. Stakeholders included the Maryland Deans and Directors of Nursing Programs, Maryland Hospital Association and its Council of Clinical and Quality Issues, Chancellor of the University System of Maryland, governor of Maryland, state legislators, Statewide Commission on the Crisis in Nursing, Maryland Health Services Cost Review Commission (HSCRC), Department of Health and Mental Hygiene, Maryland Higher Education Commission (MHEC), and U.S. Senator Barbara Mikulski (Allan & Aldebron, 2008; Allan & McClellan, 2007). The message delivered in these meetings was that to address the nurse shortage, we must address the faculty shortage. Given scarce state resources for higher education, a core team of nursing educators led by Allan pressed for the involvement of Maryland's hospitals. Three years of persistent advocacy efforts managed to raise awareness of the effect of the faculty shortage on the nurse shortage and, ultimately, patient care (Aiken, Clarke, Cheung, Sloane, & Silber, 2003).

At a 2005 meeting, Senator Mikulski challenged a small group of nursing school deans to develop an innovative public-private proposal with statewide scope. This challenge served as the catalyst for developing a concrete plan. Key stakeholders collaborated with nursing leaders in developing a statewide plan that targeted education and faculty retention as the primary means of increasing nursing education capacity. Armed with this proposal, the group initiated another round of strategic meetings that succeeded in garnering broad support from all stakeholders.

The Proposal: Nurse Support Program II

The plan that resulted from the statewide public-private collaboration, known as the Nurse Support Program II (NSP II), was to generate $8.8 to $13 million a year for 10 years to increase nursing educational capacity by preparing more educators, expanding the educator pipeline by graduating more RNs with master's and doctoral degrees, and improving student retention in all programs (Health Services Cost Review Commission [HSCRC], 2010). The money would come from an increase in hospital rates charged to all payers and would be used to fund eligible projects proposed by educational institutions.

The linchpin of the plan was HSCRC, an independent state agency created by statute in 1971 that would establish the rate surcharge. HSCRC exercises full rate-setting authority over all general acute hospitals in Maryland and has the flexibility to adapt the rate system to the changing dynamics of the health-care landscape. In 1977, HSCRC obtained a waiver of federal Medicare and Medicaid reimbursement rates that enabled Maryland hospitals to get reimbursement based on HSCRC rates. Five states have federal Medicare and Medicaid reimbursement waivers, but Maryland is the only state with all-payer rate setting for hospitals. This system is responsible for Maryland's success in confronting the key issues of hospital cost containment, access to care for the uninsured, equity in payment levels, financial stability, accountability and transparency, and measurement and improvement of hospital quality (HSCRC, 2010).

How NSP II Works

HSCRC approved NSP II in July 2005, and the first request for applications (RFA) was sent out in December 2005. To generate revenue for NSP II, HSCRC added 0.1% to hospital rates in Maryland each year. MHEC, the state's higher education authority, administers NSP II for HSCRC and uses a small portion of the fund to cover its costs. In fiscal year (FY) 2010, the NSP II adjustment to hospital rates generated $13 million for nursing education projects.

NSP II provides funds in two categories: competitive institutional grants and statewide initiatives. Competitive institutional grants, for which all Maryland nursing programs are eligible, are intended to increase the structural capacity of nursing education through shared resources, innovative educational designs, and preparation of new educators. RFAs are announced annually, and proposals from individual schools and consortia are scored based on criteria defined in the RFA. An eight-member panel of nurse educators, hospital administrators, state regulators, HSCRC staff, and others with strong interests in nursing education reviews the proposals. Recommendations for funding are forwarded by MHEC to HSCRC for final approval (HSCRC, 2010).

Statewide initiatives fund graduate nursing faculty scholarships and living-expenses grants, new nursing faculty fellowships, and state nursing scholarships and living-expenses grants.

The graduate nursing faculty scholarship and living-expenses grants fund Maryland residents enrolled full- or part-time in a Maryland graduate-level nursing program. The award pays up to $13,000 per academic year (renewable for a maximum of $26,000) for tuition and fees and $25,000 per academic year for living expenses. Recipients must be sponsored by a nursing education program (to ensure mentoring, career counseling, and career placement assistance) and must work after graduation as a nurse educator for the equivalent of 2 years full-time; service

must begin within 6 months of graduation or the award must be repaid with interest.

Nursing programs are eligible to apply for new nursing faculty fellowships, which they can use to offer signing bonuses or salary supplements to new faculty hires. These funds cannot be used to offset regular salary of existing faculty members. The purpose of the fellowship is to support faculty recruitment and retention. The maximum amount of the fellowship is $30,000, which must be disbursed over 3 years.

NSP II also provides varying amounts to supplement the fund for state nursing scholarships and living-expenses grants, so the maximum number of qualified students can receive aid.

NSP II Outcomes

Over the first 4 years of NSP II (FY 2007–FY 2010), MHEC received 81 competitive institutional grant proposals. Review panels evaluated each proposal based on RFA criteria, the comparative outcomes of each initiative, geographic distribution across the state, and the racial diversity of the program participants.

Of the 81 proposals, the panels recommended and HSCRC approved funding for 40 projects based on their ability to tackle various aspects of the nurse shortage by increasing the number of ADN graduates, expanding the pipeline of ADN-to-BSN students, and creating pathways for nurses to become educators by earning postgraduate degrees in nursing. The approved projects, involving 60 hospital and higher education institution partners and consortium members, exemplified the strategic vision of NSP II, which emphasizes cross-sector collaboration as a cornerstone of success.

Funding over the lifetime of the 40 projects approved as of FY 2010 will be nearly $35 million. Another $5.47 million has been awarded for statewide initiatives in the first 4 years for a grand total of nearly $40.5 million in NSP II awards. Unallocated funds are used to support future projects and statewide initiatives that ultimately increase the number of qualified bedside nurses (HSCRC, 2010).

Since its inception, NSP II has addressed the nurse shortage by supporting faculty education and innovative program development. Significant achievements include providing new options for RNs to complete MSN and doctoral degrees, thus preparing them to teach in traditional and accelerated programs and increasing enrollment in undergraduate programs. Also, NSP II statewide initiatives have contributed to a more diversified workforce by providing tuition assistance and living-expense support to students in need. (See Table 1.)

The first three grant cycles (FY 2007–FY 2009) illustrate the range of NSP II project activities and outcomes: 19 grants were awarded to 15 schools (another 21 grants were awarded during the fourth phase). Program goals for the first three grant cycles and the number of educational institutions participating are shown in Table 2.

TABLE 1

NSP II Success Stories

Prince George's Community College (PGCC) began its NSP II program in July 2007. The "RN Partnership Activities for Recruitment and Retention Success" has increased enrollment in the LPN-to-RN program and established a satellite LPN-to-RN program at a partnering hospital. Retention rates have increased through the establishment of a Nursing Collegian Center on campus and strategies such as peer tutoring and early identification of at-risk students. Partnering hospitals provide nursing lab space, additional clinical rotations, and student scholarships and allow employees time to attend classes provided by PGCC at the hospital. In its first 2 years, the program increased enrollment by 110 students and offered review sessions and tutoring that boosted student retention to 89%. The program also allowed PGCC to hire two new faculty members. The majority of new students are ethnic minorities, and 24 are male.

The **College of Notre Dame** (CND) implemented "Synergistic Pathways to Address the Nursing Shortage in Maryland through Hospital Partnerships, Student Retention Efforts, Educating Nursing Faculty, and Increasing the Pipeline for Nursing Faculty" in 2007. The goals are to increase the number of RNs who earn a baccalaureate degree (BSN) and to launch a new master's degree program with a concentration in leadership in nursing education. CND partners with three hospitals and offers on-site classes to the hospitals' employees. Successes include hiring of three new faculty members, instituting four new courses, increasing enrollment in the BSN program, and achieving a 92% student retention rate, far exceeding the goal of 85%.

The **University of Maryland School of Nursing** (UMSON) and **Johns Hopkins University** (JHU) **School of Nursing** were funded in 2007 to institute doctor of nursing practice (DNP) programs. The DNP provides the opportunity for master's-prepared nurses seeking a doctoral credential to meet the standard that many universities require for their faculty. The NSP II grant funded curriculum development and new faculty and support staff hires. To date, the full-time JHU program has admitted 100 students and has 38 graduates. UMSON, which offers a part-time option in a blended face-to-face and online format, has had 100 admissions and 32 graduates. Together, the DNP programs have already created a pipeline of 70 potential nursing educators that has so far generated 10 new faculty appointments and career advancement opportunity for another 11 educators.

Statewide initiatives through the end of the first three grant cycles have provided the following:

- 128 graduate nursing faculty scholarships, totaling $1.5 million (Students accepting these grants must agree to teach in nursing programs for 2 years for each year of scholarship support.)
- 73 grants for living expenses of up to $25,000 per year, totaling $2 million
- 57 new nursing faculty fellowships for new full-time, tenure-track faculty, totaling $960,000

TABLE 2

Goals of Funded Projects for Fiscal Years 2007–2009

This table shows the number of grantees for each project goal during the first three grant cycles. Several grants addressed multiple goals.

Project Goal	Number of Grantees with This Goal
Prepare new teachers through master's and certificate programs in traditional and distance learning modes	10
Provide student support services to increase retention and graduation rates	7
Establish learning communities for educators involved in clinical simulation	2
Admit new classes in spring and summer	1
Develop an accelerated associate degree program	4
Develop an accelerated master's (MSN) program	1
Offer new second degree entry program (baccalaureate, MSN, or clinical nurse leader)	1
Establish doctor of nursing practice program	2
Offer new program in rural area	2
Support graduate transition to employment	1
Increase registered nurse–BSN enrollment	4
Increase faculty staffing	3

- NSP II funds for up to 200 students in the "Workforce Shortage Student Assistance Grants" program, totaling $800,000 (Recipients must work 1 year as a nurse for each year of scholarship support.)

Essential Program Components

Through the first 4 years of the program, NSP II–funded projects are expected to produce 2,033 new RNs, 1,184 BSN-educated nurses, and 1,344 graduate-level nurses eligible to become nursing educators. The program is now in its fifth year, and another 11 3- to 5-year projects starting in FY 2011 involving 24 Maryland institutions and $8.6 million were approved in May 2010 (HSCRC, 2010). Enthusiasm for NSP II is high, and all but two nursing programs in the state have received funding for at least one project.

Though Maryland has a unique advantage in its rate-setting authority and HSCRC has helped create a stable funding stream to expand nursing education, other states can create programs comparable to NSP II without an identical statutory or regulatory scheme. Policy makers, nursing educators, and industry leaders in other states have resources that can be marshaled in innovative ways to achieve a similar end. Future programs will need to craft a solution tailored to the local environment and incorporate certain elements critical to developing and implementing a program such as NSP II:

- *A statewide solution for a statewide problem.* Though isolated initiatives can be successful, they are often unsustainable and on too small a scale to have sufficient impact. Bringing statewide resources to bear ensures that the big picture is addressed, and it greatly enlarges the scope in terms of material needs, program design, and intrinsic synergies. Moreover, identification with a state effort creates a heightened incentive to succeed because the investment is great and visibility is high.
- *Involvement of all stakeholders across all sectors.* Government, industry, academic and health professionals, and consumers all have an interest in ensuring an adequate workforce of well-qualified nurses to meet the health-care needs of the population. Though each sector may view the problem through a different lens, each seeks, in broad terms, the same result. Helping each group and each faction within groups understand the potential gravity of the problem and its own interests in crafting a response reinforces the collaborative enterprise needed for a statewide venture. Such collaboration is critical at every stage; for example, the NSP II review panels include members from all sectors, which ensures continued relevance of the projects and a sense of investment by participating groups.
- *Stable, sustainable funding.* Institutions have to submit proposals for NSP II funding each cycle and report back on progress, but the existence of a continually replenished, self-generating source of funds encourages innovative thinking and collaborative enterprise. Good ideas and no money soon lead to cynicism and despondency. Stable, sustainable funding ensures that projects can proceed to fruition, which is not always the case with contingent federal or private foundation grant funding.
- *Project criteria that externalize benefits.* NSP II awards competitive institutional grants for projects that increase the following: nursing education capacity using shared resources, the pool of nursing educators, student retention, the nursing educator pipeline, and nursing educational capacity statewide. With the exception of student retention, these project goals either optimize resources of participating entities or benefit the expansion of all programs by making more educators available. For example, the 100 new educators produced by the University of Maryland School of Nursing's teaching certificate program, funded by NSP II, put enough new skilled

educators on the market for schools statewide to add 800 to 1,000 students. To ensure that initiatives are meeting individual project objectives and serving overall program goals, outcomes should be measured over time.

Conclusion

Maryland's experience with a statewide program to increase nursing education capacity and the nurse workforce demonstrates the advantages of public-private partnerships involving all stakeholders. The benefits of NSP II can be replicated in other states by focusing on the essential program components and crafting strategies to achieve them.

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