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The New Nurse Investigator

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The new investigator is defined by the National Institutes of Health (NIH) as an individual with a doctoral degree who has “not previously competed successfully for an NIH-supported research project other than small or early stage research awards” (NIH, 2009a, Definition of New Investigator Section, para. 1). Other research funding organizations and foundations such as the American Nurses Foundation and the Robert Wood Johnson Foundation suggest that the new investigator should have completed a research doctorate in the previous 5 years, which often includes nurse researchers at the postdoctoral and junior faculty levels. The purpose of the “new investigator” initiative was to increase the pipeline of scientists by providing access to training, research resources, and opportunities to help this cadre of investigators, including nurse investigators, progress to independent and productive research careers.

To support the pipeline, the NIH implemented unique funding mechanisms, such as training (T and F) and career (K) grant awards, and clinical research loan repayment programs to facilitate training and research development. Other research funding agencies target new investigator initiatives to specific disciplines, such as nursing. The Robert Wood Johnson Foundation Nurse Faculty Scholars program, for instance, contributes to preparing future nurse scientists and leaders by providing junior nursing faculty with opportunities to advance research careers in academia through a number of mentored leadership, academic, and research-focused activities. However, while it is important to prepare new investigators through training and development, it is equally important to retain those trained in research to educate a continuous pool of nurse investigators who will subsequently contribute to improving the health of populations and to address the ongoing problem of nursing faculty shortages.

To determine if the existing mechanisms are effective in preparing nurses for an independent research career, one must explore the multifaceted challenges. The purposes of this paper are to (a) discuss the continuing need to adequately mentor and support new investigators, (b) explore some of the challenges presenting barriers to increasing the pipeline of nurse investigators, and (c) provide suggestions to address these challenges.

Challenges and Potential Solutions

Even though new nurse investigators begin their research careers with an average of 15 years of clinical practice (American Association of Colleges of Nursing [AACN], 2005),

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being a nurse researcher is a new role that requires support and time in which to acclimate and achieve competence. With the reality that mature nurses are often new investigators, the nursing profession faces a confluence of important challenges, including: (a) an older-than-average age for new, doctorally-prepared nurses, (b) stipends and/or salaries for new nurse investigators that are significantly lower than those available in clinical care, (c) inconsistent quality of mentorship available to new investigators from senior researchers, and (d) limited investment by schools of nursing and other institutions for quality mentorship programs.

Age

Most nurses who complete a research doctoral program do so later in life, at a median age of 47.3 years compared with 33.3 years nationwide for other disciplines (AACN, 2005). This older age may raise concerns for long-term investment by an institution in a postdoctoral fellow or junior faculty member because of the limited number of years remaining in the career to develop a research program that can improve the health of the population and to educate future nurse researchers.

Given this reality, academic institutions, research funders, and professional organizations need to consider the critical need to attract younger and more diverse nurses to pursue doctoral education. For example, nursing programs could periodically target grade school and high school students to get them thinking about nursing as a career option. This could be accomplished through activities such as shadowing nurses in clinical and community practice settings, visits to university research laboratories, summer externship programs, and other research-related events. These initiatives could get students involved in clinical and research activities, which could motivate them and stimulate a passion for nursing practice and research. Partnering with junior colleges to allow nursing students to enroll in courses at research-intensive universities as well as inviting research-focused nursing faculty to teach at junior colleges could improve nursing education in general and create a research interest among nursing students. The visiting faculty would have the opportunity to share research experiences with students and encourage them to pursue additional education. This partnership would help motivate and inspire nursing students to pursue graduate degrees after learning about the opportunities that the nursing profession had to offer.

Compensation

Even though it is not all about the money, monetary rewards definitely help. The starting salary for a registered nurse may be considered adequate at a range of \$39,000–\$57,785 (U.S. Department of Health and Human Services, 2004) depending on the nurse's level of basic nursing education, practice setting, and regional location; but the rate at which nursing salaries increase is relatively slow and often remains flat. Periodic salary increases to reflect years of service would attract a younger and more diverse group of nurses.

The average salary for a first-year internal medicine physician is \$154,000. The median salary at the assistant professor level for a full-time doctorally-prepared nurse was \$68,444 per year in 2004–2005 (AACN, 2005). Physicians have a clinical degree (MD), and not the terminal degree (PhD) required for most nursing faculty, yet physicians earn more than nursing faculty who have had an average of 15 years of clinical experience in addition to the terminal degree.

The trainee stipend for National Research Service Award postdoctoral fellows with no research experience for fiscal year 2009 was \$37,368 (NIH, 2009b), an amount far below the \$43,000 received by trainees from disciplines that included an internship and residency (NIH, 2009c). In other words, the nurse National Research Service Award postdoctoral

fellow does not receive financial compensation for clinical practice experience, as other professionals do.

There is a critical need to increase trainee stipends and salaries for new nurse investigators at the postdoctoral and junior research-focused faculty levels. These nurses have developed their earning power through long-term clinical service and may lose this financial security when they opt for a research career. Incentivizing new nurse investigators through comparable stipend and salary earnings would be a good start. This would allow them to focus on short-term goals of fulfilling academic and research obligations, applying for pilot and career grants, participating in research, and disseminating research findings through scientific presentations and publications. It would also support long-term goal development such as obtaining an independent investigator-initiated research grant, collaborating with multidisciplinary research teams, and securing appointments at research-intensive universities (Manson, 2009) to better pursue and develop research programs. A recent report from the AACN emphasized the critical need to develop nurses, suggesting that it was a “top priority for the profession given the growing demand for more nurses to serve as teachers and researchers...” (AACN, 2010, p. 3).

Quality Mentorship

The quality of the mentoring that new investigators receive from senior researchers and colleagues clearly influences success in obtaining short- and long-term goals. Mentorship should begin early in the PhD program, as without a significant number of peer-reviewed scientific publications in high impact journals, new nurse investigators can find it challenging to obtain external research funding. Considering the publication requirements for grant funding and academic positions, PhD nursing programs can require their students to publish before they graduate. Some universities, such as Pennsylvania State University, Duke University, and the Johns Hopkins University School of Nursing, have had this requirement in place for years. Although some universities do not require that students publish or submit a set number of manuscripts for publication, others do provide prescriptive guidelines for program consistency. For example, the Johns Hopkins University School of Nursing has a requirement for PhD students to submit a minimum of three manuscripts to peer-reviewed journals. This is not consistent for all PhD nursing programs and is, therefore, an important inconsistency that would benefit from discussion within the profession and PhD program directors and administrators.

Mentors are a critical part of doctoral programs and new-researcher development. Mentors help to connect new investigators to an interdisciplinary network of senior investigators for current and future collaborations, facilitate experience in conducting research, provide support and guidance, and, perhaps most importantly, provide inspiration—all of which can determine the new investigator’s success as a nurse scientist who will contribute significantly to the body of nursing knowledge. Additionally, quality mentoring ensures that new nurse investigators receive the guidance needed to produce competitive grant applications in an environment of limited funding. NIH grant funding continues to be flat despite rising numbers of applicants (Hahm & Ommaya, 2006), making it very difficult to secure funding on an initial submission. Mentors need to be prepared to stay the course with new investigators; they need to exhibit a willingness to provide mentorship over time and multiple submissions.

Structured mentorship has been shown to help new investigators secure grant funding (Marin & Diaz, 2009) and is a critical component when preparing new nurse investigators. It requires deliberate investment in the mentoring process with (a) descriptions of the role and responsibilities of mentors and mentees, (b) plans for career development with stated

measurable goals, (c) periodic meetings with mentors, and (d) evaluation of the mentoring process. Nursing programs must be cognizant of this reality and provide an environment conducive to this process. For example, when we talk to colleagues, we find that some new investigators indicate that their experiences with mentors have been positive. Although they were assigned to a primary mentor, they had access to other senior researchers who provided additional opportunities to contribute to research activities, publications, and other scholarly pursuits. This motivated and inspired them. Other new investigators were not as fortunate. They had concerns about gaps in mentoring programs, such as a lack of mentors and being overloaded with teaching assignments that prevented them from fulfilling their research and scholarly obligations. New nurse investigators need to be encouraged. They need to know that the institution wants them to progress in developing a program of research. Mentors should be prepared to recognize and address problems that lead new investigators to feel overwhelmed, lost, or isolated. Formal evaluations of mentoring programs would help bridge gaps in addressing the specific needs of new nurse investigators and reduce the challenges the profession faces in preparing nurse scientists.

New investigators have an equally important role in shaping success through active participation in the training and development process. They have responsibilities not only to work with mentors, but also to be self-directed, and committed to and passionate about a research career. In partnership, mentors and mentees can reach the mutual goals of producing independent nurse scientists who will not only contribute to building nursing knowledge but will also educate the next generation of nurses.

Institutional Support

Schools of nursing and other institutions often offer limited support for quality mentorship programs for new investigators. As stated above, mentoring is a critical component of new nurse investigator preparation, and quality mentorship from senior investigators is important. Institutional support should include annual awards for outstanding mentorship, monetary compensation, as well as protected time for mentoring to acknowledge the time dedicated to this time-consuming process. Mentors are usually senior researchers with numerous research and academic obligations—in other words, they are busy people. Tangible recognition of their important and valuable contributions would encourage mentors to devote more quality time to new investigators—guiding, supporting, and facilitating competence and independence—engendering quality mentoring programs.

Conclusion

Being serious about increasing the pipeline of nurse investigators in sustainable and effective ways requires recognizing and addressing challenges. Recommendations made in this paper provide a minimal start to this process. Considering that the average new nurse investigator is mature and has extensive clinical practice experience, stipends and salaries should reflect experience, which will encourage more nurses to pursue research careers. Additionally, providing the new nurse investigator with adequate institutional support through a strong investment in the mentoring process, as well as recognizing and rewarding mentors, would go a long way to prepare new nurse investigators, who are the academic scientists of the future.

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