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Projections of progress toward the 80% Bachelor of Science in Nursing recommendation and strategies to accelerate change

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ABSTRACT

Background: In 2011, the Institute of Medicine recommended that 80% of RNs have a bachelor's degree or higher by 2020. Progress toward this recommendation has been slow.

Purpose: This paper presents a model that projects whether the 80% recommendation can be met within a 10-year period and estimates the impact of education changes that might accelerate progress.

Methods: A projection model for 2016 to 2026 was created using a "stock-and-flow" approach. Secondary data were extracted from multiple sources for the projections. The model includes the option to enter alternative values of key parameters to estimate the impact of changes.

Discussion: Based on current patterns of entry-level and RN-to-BSN education, approximately 66% of RNs are projected to have BSN+ education by 2025.

Conclusions: To reach the 80% goal by 2025, changes in the mix of entry-level education and/or an increase in the number of RN-to-BSN graduates will be required.

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In 2011, the Institute of Medicine (IOM, now part of the National Academy of Science, Engineering, and Medicine) released a report, "The Future of Nursing: Leading Change, Advancing Health," which contained eight recommendations regarding how the nursing workforce can best meet health-care needs in an era of health reform and population aging (Institute of Medicine, 2011). One of the most prominent recommendations was that 80% of Registered Nurses (RNs) have a bachelor's degree or higher by 2020. However, progress toward this recommendation has been slow, and it is now widely recognized that the IOM's target will take longer than it recommended. This paper presents a model that projects whether the 80% recommendation can be met within a 10-year period and estimates the impact of education changes that might accelerate achievement of the IOM recommendation.

Nursing is one of a few professions that have multiple educational paths for entry, with graduates with nursing diplomas, associate degrees in nursing (ADs), bachelor's degrees in nursing (Bachelor of Science in Nursing [BSN]), and entry-level master's degrees in nursing all being qualified to take the national licensing examination. Associate degree education is the most common among newly graduated nurses, accounting for about 54% of graduates and about 46% of the total RN

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workforce in 2016 (National Council of State Boards of Nursing [NCSBN], 2017; U.S. Census Bureau, 2017). Since 1964, the American Nurses' Association has advocated that all RNs be required to have a BSN (Dillon, 1997; Friss, 1994; Institute of Medicine, 2011), and in the mid-1990s the National Advisory Council on Nurse Education and Practice encouraged policy actions to achieve a minimum of 66% of RNs having a BSN degree or higher by 2010 (Aiken, Cheung, & Olds, 2009; Altmann, 2011). The 2011 IOM recommendation echoed these prior guidelines, referring to a growing body of research that linked higher levels of RN education with better patient outcomes in acute-care settings (Aiken, Clarke, Cheung, Sloane, & Silber, 2003; Estabrooks, Midodzi, Cummings, Ricker, & Giovannetti, 2005; Friese, Lake, Aiken, Silber, & Sochalski, 2008; Kendall-Gallagher, Aiken, Sloane, & Cimiotti, 2011; Tourangeau et al., 2007; Van den Heede et al., 2009).

Increases in the share of RNs with BSN and higher education can result from two trends. First, entry-level graduates could shift from AD and Diploma programs to BSN and entry-level master's degree programs, thus increasing the numbers of newly licensed RNs with a BSN degree or higher. There has been such a trend, with an increase in the share of BSN and higher degrees among first-time National Council Licensure Examination (NCLEX) takers from 39.3% in 2010 to 46.2% in 2016 (NCSBN, 2017). Second, greater numbers of AD or diploma-educated RNs could pursue a BSN after licensure. This also is occurring; the number of RNs graduating from BSN completion programs has more than tripled from 19,606 in 2009 to 60,842 in 2016 (American Association of Colleges of Nursing [AACN], 2010–2017).

Despite the shift of entry-level education toward the BSN and growth in RN-to-BSN graduations, only 54.4% of all RNs had a BSN degree or higher in 2016 (Campaign for Action, 2017). Attainment of the 80% target by 2020 will not occur, even though there have been multipronged efforts nationwide to advance RN education (Academic Progression in Nurisng [APIN], 2017) and a growing number of employers prefer to hire BSN-educated RNs (AACN, 2014). Projections of the current trajectory and analysis of the potential impact of different strategies are needed to guide future investments to accelerate progress.

Data

Data

Secondary data were extracted from the American Community Survey (ACS), which is an annual survey conducted by the U.S. Census Bureau to describe the population of states and the nation (U.S. Census Bureau, 2017). The ACS asks respondents to report their highest level of education overall and, if they have a bachelor's degree or higher, to report their field of study for their bachelor's degree. RNs were identified as "BSN+ " if their highest degree was a bachelor's degree with a nursing major or a graduate degree with any bachelor's degree major. BSN+ nurses thus include RNs whose nursing education might not include a bachelor's degree but who have a graduate degree and work as an RN. The numbers of RNs with BSN+ and other education were calculated in 10-year age groups from the ACS for the nation and each state. In addition, state websites were searched to identify whether state-level organizations reported data from their own surveys about RN education levels; these data were used if the data were more recent or had a smaller margin of error than the ACS.

The number of new entrants to the nursing profession was estimated from NCSBN reports on the number of first-time NCLEX-RN takers, by type of degree (NCSBN, 2017). The number of graduates of RN-to-BSN programs was provided by the AACN (AACN, 2010–2017). These data sources do not provide information about the age distribution of test-takers and graduates. Data from the California Board of Registered Nursing 2015–2016 Annual Schools Survey were used to obtain the age distribution of graduates of AD and of BSN programs (Blash, Shinoki, & Spetz, 2017). Data from the California Board of Registered Nursing Survey of RN Education Experiences were used to estimate the age distribution of graduates from RN-to-BSN programs (Spetz, Chu, Blash, Lin, & Keane, 2014).

Methods

A projection model was created using a "stock-and-flow" approach (Bruni, 1988). The "stock" is the number of RNs available and the "flows" are RNs moving into and out of the stock. Figure 1 illustrates the model used for this study. There are stocks of BSN+ RNs (pink ovals) and other RNs (green ovals) in 10-year age groups. The inflows are newly licensed RNs who can enter any of the education-age groups, indicated by the orange boxes and arrows. The outflows are RNs moving into older age groups or leaving the labor market from the oldest age group. RNs also can move from the non-BSN+ stock to the BSN+ stock upon completion of post-licensure education, as indicated by the pink arrows.

The model begins with 2016 data and then estimates the stocks for 2-year increments. Every 2 years, 20% of each age group moves to the next age group, assuming that RNs' ages are evenly distributed within the 10-year age groups (blue arrows), and newly graduated RNs are added to the stock. For the youngest age group (30 years and younger), it is assumed that 40% move to the next age group every 2 years because this age group is predominantly composed of RNs 26 to 30 years old. For the oldest age group (61 years and older), it is assumed that 30% leave the labor force every 2 years, which is consistent with data used in California's forecasts of RN supply (Spetz, 2017).

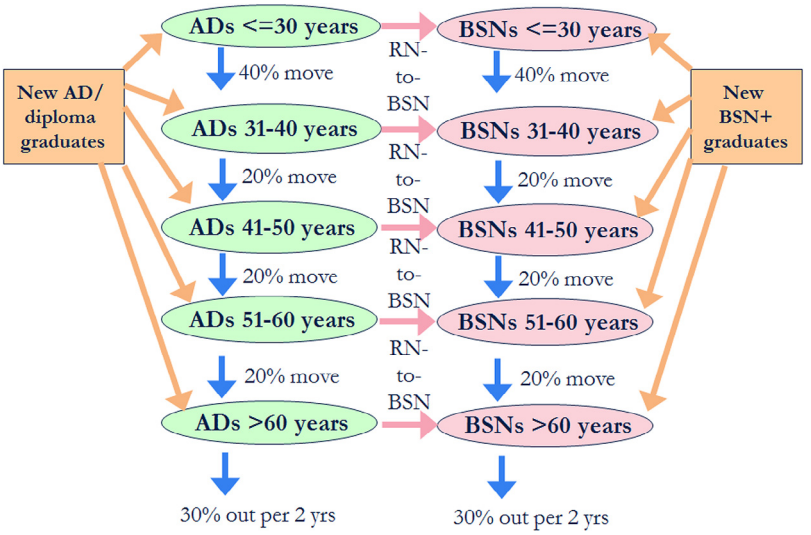

Figure 1 – Stock-and-flow model of the RN workforce. AD, associate degree; BSN, Bachelor of Science in Nursing; RN, Registered Nurse. (Color version available online.)

The calculations are iterated four times to obtain projections 10 years into the future. The projections are computed in an Excel workbook, which is available online (http://rnworkforce.ucsf.edu) and includes the option to enter alternative values of key parameters such as the numbers of newly graduated nurses in each age-education group and the number of RN-to-BSN graduates.

This model has a number of limitations. First, it does not model inflows of internationally educated RNs, many of whom have bachelor's degrees. Second, it does not include outflows of RNs who choose to leave the profession at younger ages or move to other countries. Third, the data from California used to estimate the age distribution of newly graduated RNs may not match the national age distribution owing to unique characteristics of the RN education system in that state. Fourth, this model does not account for internationally educated RNs, most of whom have baccalaureate-level education. Changes in rates of international recruitment may increase or diminish the overall share of RNs with a BSN. Fifth, the model assumes that RN employment is constant over RNs' lifetimes and does not project changes in the stock of nurses as some choose to stop working at various stages of their lives. The omission of these factors was deliberate to ensure a straightforward model design, which is useful for general planning purposes. The results should not be considered precise.

Findings

In 2016, 54.4% of RNs had a bachelor's in nursing or graduate degree (BSN+). Based on current patterns of entry-level and RN-to-BSN education, approximately 66% of RNs are projected to have BSN+ education by 2025 (Figure 2).

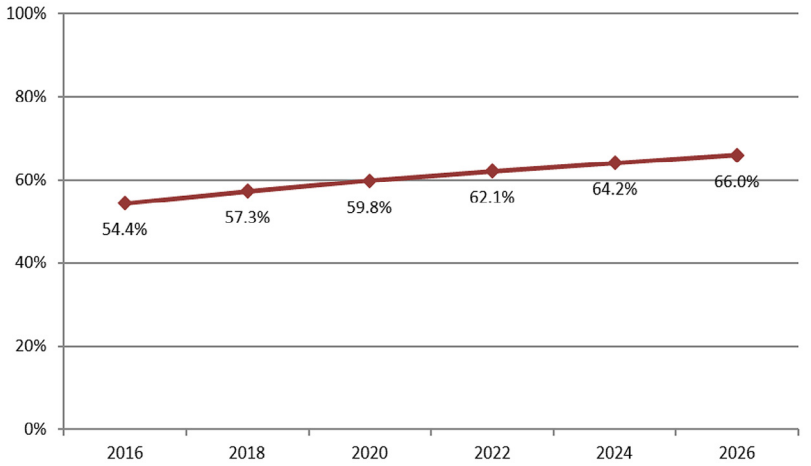

Figure 2 – Projected percent of nurses with Bachelor of Science in Nursing or higher education.

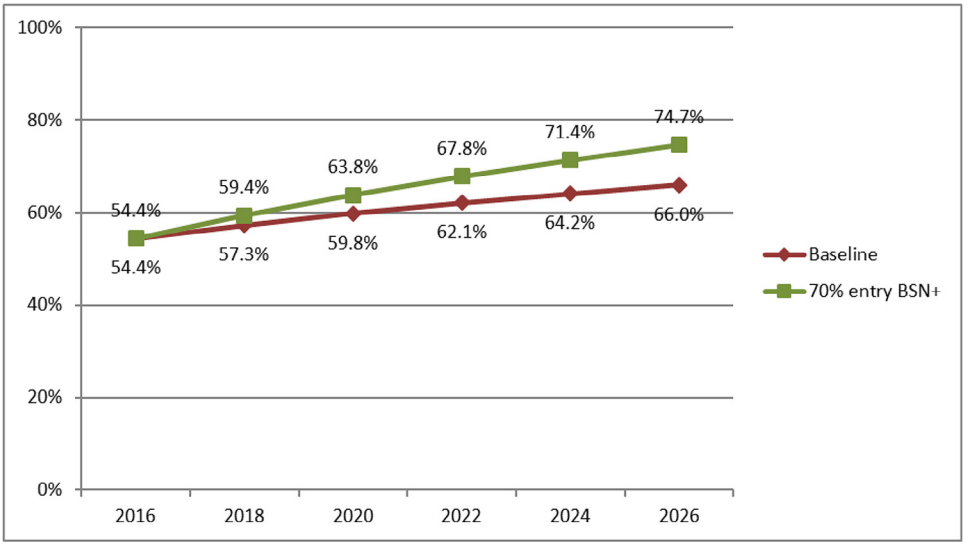

Figure 3 – Projected percent of nurses with BSN or higher education if 70% of new graduates have a BSN or master's degree. BSN, Bachelor of Science in Nursing.

To reach the 80% goal by 2025, changes in the mix of entry-level education and/or an increase in the number of RN-to-BSN graduates will be required. Figure 3 presents projections if the share of newly entering RNs with BSN+ education rises immediately from the current 46% to 70%. In this scenario, nearly three quarters of RNs would have BSN+ education by 2026, which is still short of the IOM recommendation.

Another approach is to have more nurses pursue post-licensure baccalaureate education. As seen in Figure 4, if the number of RN-to-BSN graduates rose to 100,000 per year, 75% of RNs would have BSN+ education in 2026. Figure 5 combines the scenarios presented in Figures 3 and 4, with 70% of new graduates having BSN+ education and 100,000 RN-to-BSN graduates per year. In this projection, the share of RNs with BSN+ education would be 79% in 2024 and nearly 84% in 2026.

Discussion

Since the IOM Future of Nursing report, numerous additional studies have confirmed that more RNs need to attain at least a bachelor's degree to meet future healthcare needs (Blegen, Goode, Park, Vaughn, & Spetz, 2013; Cho et al., 2015; Kutney-Lee, Sloane, & Aiken, 2013; Yakusheva, Lindrooth, & Weiss, 2014a, 2014b; You et al., 2013). In addition, employers have demonstrated a strong preference for hiring BSN-educated nurses (AACN, 2014).

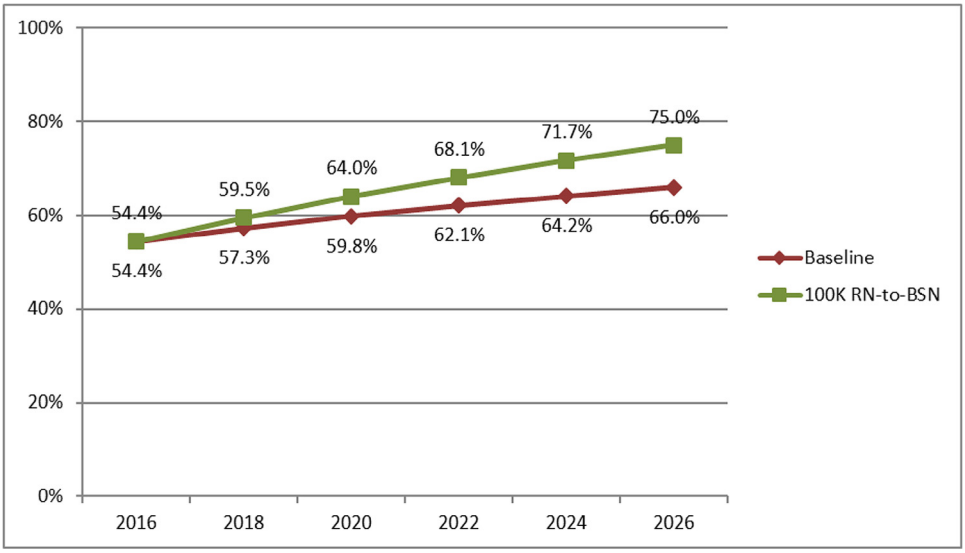

Figure 4 – Projected percent of nurses with Bachelor of Science in Nursing or higher education if the number of Registered Nursing-to-Bachelor of Science in Nursing graduates increases to 100,000 per year.

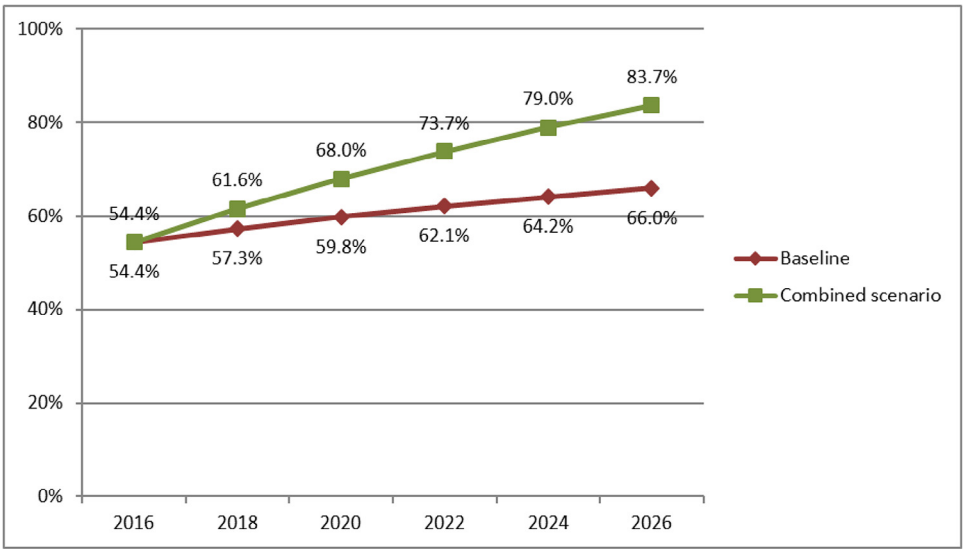

Figure 5 – Projected percent of nurses with Bachelor of Science in Nursing (BSN) or higher education if 70% of new Registered Nurse (RN) graduates have a BSN or higher degree and the number of RN-to-BSN graduates increases to 100,000 per year.

Despite this, progress toward the IOM recommendation has been slow. More than half of entry-level RN graduates have an AD and, while many want to obtain a BSN, there is not sufficient capacity in entry-level BSN or RN-to-BSN programs to reach the IOM recommendation in the foreseeable future.

Most states are faring no better than the nation. In 2016, no state had reached the 80% target; in fact, none had reached even 70% by 2016. Only 11 states—Alaska, Colorado, Delaware, Hawaii, Idaho, Kansas, Michigan, Minnesota, Nebraska, New Jersey, North Dakota—and the District of Columbia have at least 60% of their RNs at the BSN+ level of education (U.S. Census Bureau, 2017; state-specific data obtained by author).

The projection model developed for this study helps identify the key reasons that progress has been and is likely to remain slow toward attaining the IOM's recommendation. The main factor affecting progress is the large incumbent RN workforce. There are over 3.3 million RNs in the United States, and the 157,143 people who took the NCLEX for the first time in 2016 are only 4.7% of the size of the total workforce. The 60,842 RN-to-BSN graduates are only 1.8% of the workforce. These numbers are small compared with the total workforce, and even large changes in the number of new and post-licensure BSN graduates will have small effects on the overall share of RNs with BSN+ education.

There may also be reluctance on the part of some RNs to pursue post-licensure BSN education. A survey conducted in 2013 of California RNs reported that 13.4% was "seriously considering" pursuing additional education, but nearly 60% was "not at all" considering additional education. Younger RNs were more likely to consider additional education, which is not surprising. Among those who were not interested in continuing their education, the most important reasons cited were as follows: believing they were too old to return to school (36.3%), not having enough time for school (29.9%), not believing additional education was needed to provide good patient care (29.9%), and higher education not being relevant to their career plans (28.6%). Nurses in other states may have different perspectives regarding continuing their education; it should be noted that California's nurses work in a heavily unionized environment and have implicit job protection associated with the state's minimum nurse-to-patient hospital staffing requirements, both of which may diminish the value of the BSN for California nurses.

Recent research found that completing an RN-to-BSN program 5 years after finishing the initial AD education increases lifetime earnings between 2.6% and 5.1%, and that the gain for finishing an RN-to-BSN 10 years after initial education is smaller but still positive (Spetz & Bates, 2013). Other reasons for RNs to pursue additional education, as reported by the California survey, include personal fulfillment, the desire to gain new nursing skills to improve the quality of care, interest in updating knowledge of nursing practice, and interest in becoming an advanced practice RN. In that survey, a number of nurses noted in the narrative comments that they would like to pursue additional education but were still paying loans from their initial RN degree. About 8% of those providing comments felt that additional education would not yield enough return on investment to justify the cost.

Amplified efforts are needed to attain the IOM goal of 80% of RNs having BSN or higher education by 2026, or even by 2030. Increasing RN-to-BSN education opportunities is likely to have the greatest impact because it allows incumbent nurses the ability to attain a BSN. Many nurses work while they pursue RN-to-BSN education, which makes it financially feasible to return to school. A growing number of employers offer tuition reimbursement to support RN-to-BSN and graduate-level

education, and some have developed partnerships with colleges to facilitate post-licensure education (Hendricks et al., 2012; Murray, Havener, Davis, Jastremski, & Twichell, 2011; Sportsman & Allen, 2011; Zimmermann, Miner, & Zittel, 2010). Some employers require that newly hired RNs with associate degrees obtain a bachelor's degree within a specified amount of time (Chu, Spetz, & Bates, 2018) and, in 2017, the governor of New York signed Senate Bill 6768, which requires that RNs achieve a bachelor's degree within 10 years of licensure to maintain their license (State of New York, 2017).

Policies that encourage the pursuit of initial BSN degrees also need to be supported. Many nurses select AD entry-level education because it is inexpensive and geographically convenient, especially for rural students. A growing number of community colleges are now offering baccalaureate degrees, including in nursing, and this has been shown to increase both the total number of nurses produced and their education level (Daun-Barnett, 2011). Baccalaureate entry-level programs can expand part-time offerings and work with community colleges to offer BSN-level education at remote sites. Such a strategy is being pursued in New Mexico, for which the University of New Mexico is collaborating with rural community colleges to offer BSN entry-level degrees.

Although the IOM target of 80% of RNs having BSN+ education will not be met by 2020, notable progress has been made toward this goal. The number of RNs graduating from RN-to-BSN programs has more than tripled, and entry-level students are shifting toward BSN and entry-level master's programs. Employers are increasingly rewarding RNs for completing additional education. The main beneficiaries of amplified work toward the IOM recommendation will be health-care consumers, who will receive care from nurses prepared to address complex health-care needs in collaborative health-care teams.

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