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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, entrylevel 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).

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