Changes In The Pipeline Of New NPs And RNs: Implications For Health Care Delivery And Educational Capacity

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The number of new nurse practitioners (NPs) graduating each year continues to rise rapidly and will likely exceed the annual number of new physicians completing training in the next few years. This has significant implications for the future delivery system as well as for the number of registered nurses (RNs) and physicians the nation will need to educate in the future. The number of new nurses entering the profession with a bachelor of science in nursing (BSN) has continued to rise steadily, and in 2017 for the first time more new nurses entered the profession with a BSN than an associate's degree in nursing (ADN). However, the overall inflow of new RNs may not be sufficient to meet future demand.

This post presents recent data from the American Association of Colleges of Nursing and the National Council of State Boards of Nursing (NCSBN) about the pipeline of new NPs and RNs with significant implications for the health care system, nursing and physician education, and federal and state policies.

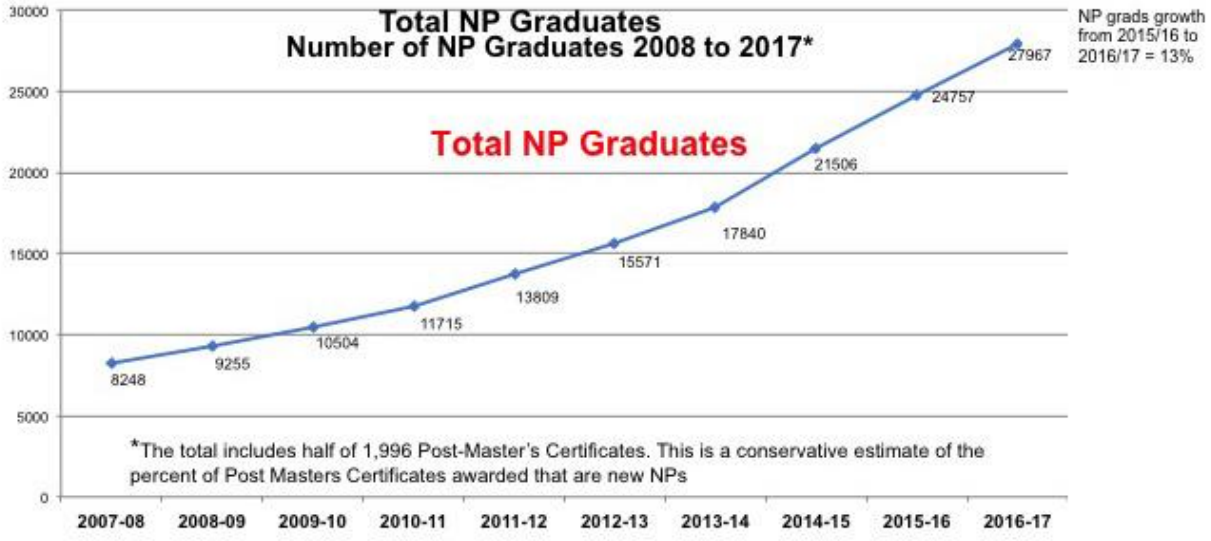
The Inflow Of New Nurse Practitioners And Registered Nurses

The number of entrants into a profession has a major impact on the future supply available to the profession. If the inflow is growing rapidly or considerably higher than in prior years then the future supply is very likely to be higher than the current supply.

New Nurse Practitioners

In 2017, nearly 28,000 individuals graduated from NP programs in the US, which is almost 3.5 times the number of individuals (8,248) who graduated from these programs a decade earlier. The number of graduates in 2017 was nearly 13 percent above the number in 2016 and at least the ninth year in a row of double-digit growth (Exhibit 1). This indicates that the future supply of NPs will be well above the current supply.

Exhibit 1: Growth In The Number Of Nurse Practitioner Graduates, 2008–17



Source: American Association of Colleges of Nursing. Enrollment and graduations in baccalaureate and graduate programs in nursing, annual issues 2008–18.Washington (DC): AACN.

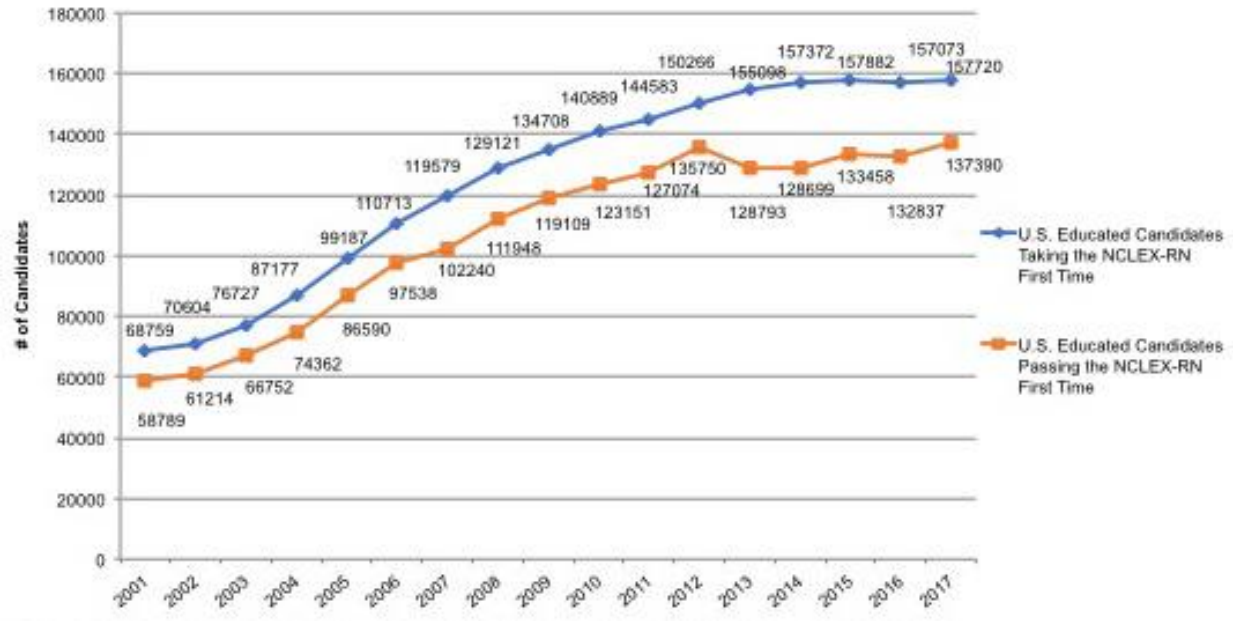
For the first time, in 2017, the inflow of NPs and physician assistants (PAs) exceeded the inflow of physicians. At the current rate of growth, the inflow of new NPs alone will exceed the inflow of physicians within a few years. According to the National Commission on Certification of Physician Assistants, 8,788 PAs passed the certifying examination in 2017. Combined with the 27,967 graduates from NP programs, there were more than 36,700 new NPs and PAs eligible to enter practice. This number is comparable with an estimated inflow of approximately 33,000 new physicians per year (Note 1). With physician training positions growing at about 1 percent per year, the inflow of new NPs per year alone may exceed the number of new physicians in the next two or three years.

Registered Nurses

The inflow of new RNs each year may not be sufficient to meet projected future needs for registered nurses due to the leveling off of the number of RN graduates and the growth in the number of RNs becoming NPs. The annual number of RN graduates has stabilized at about 155,000 per year (Exhibit 2). This is well above historical levels of such graduates and above the number projected by the Bureau of Labor Statistics (BLS) as the level needed each year for the next decade (135,000) to replace nurses leaving the field and to meet increasing demand. However, considering that 28,000 RNs per year are becoming NPs along with the fact that some nurses do not pass the exam required for the National

Council Licensure Examination (NCLEX), the number of new RNs entering the field is unlikely to be adequate to meet future needs if the BLS projections of demand are accurate.

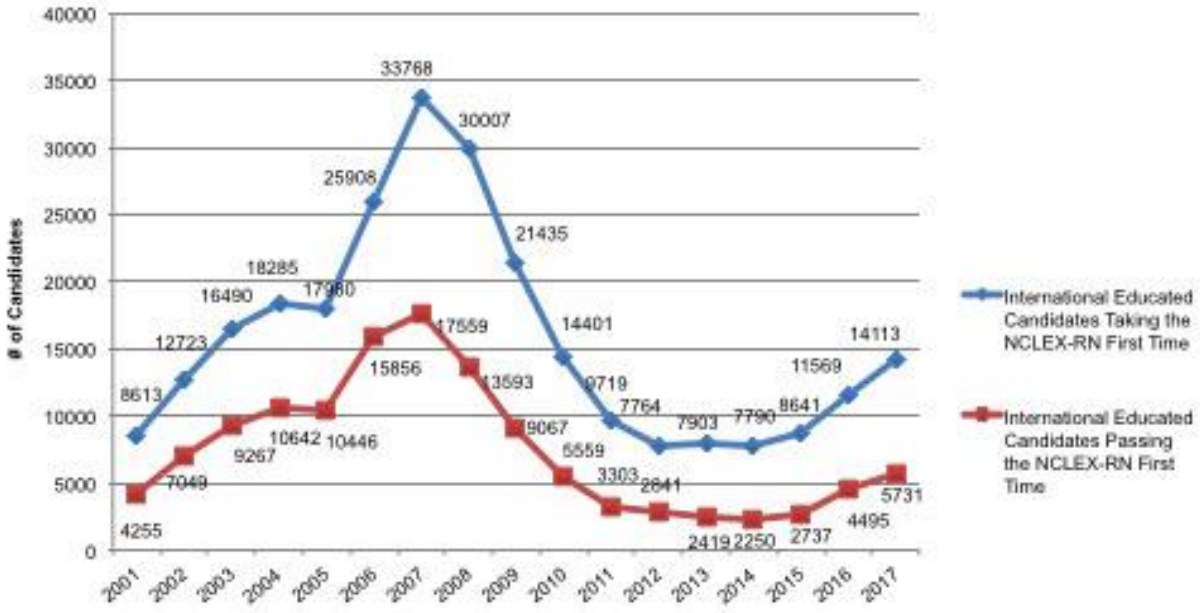
Exhibit 2: US Graduates—Total First-Time NCLEX Takers And Passers, 2001–17



Source: National Council of State Boards of Nursing. Annual table of National Council Licensure Examination (NCLEX) pass rates. Chicago (IL): NCSBN. Notes: Based on date of the NCLEX. For this analysis, it is assumed to be the same date as year of graduation. Most first-time exam takers do take the exam in their year of graduation.

For the third year in a row, the number of foreign-educated RNs taking the required licensure exam for the first time increased, reaching 14,113 individuals, 81 percent above the 7,790 people in 2014 but still less than half of the high point of 33,768 individuals in 2007. In times of nurse shortages, some employers, such as hospitals, increase their recruitment of foreign-educated nurses. Thus, this recent increase in foreign-educated nurse applicants for the NCLEX, a prerequisite to become licensed in the US, may reflect shortages in some communities (Exhibit 3).

Exhibit 3: International Graduates—First-Time NCLEX Takers And Passers, 2001–17

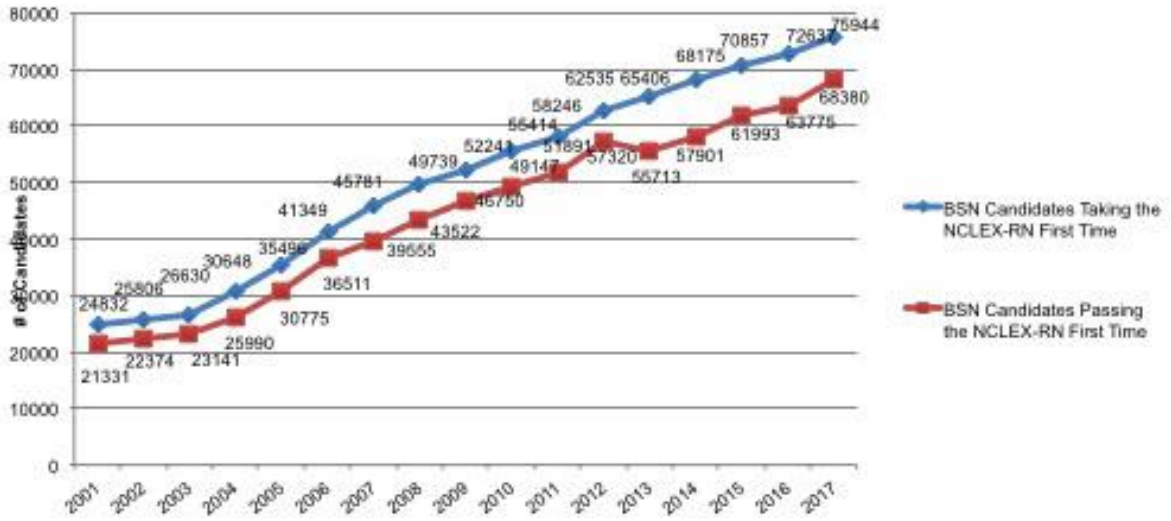


Source: National Council of State Boards of Nursing. Annual table of National Council Licensure Examination (NCLEX) pass rates. Chicago (IL): NCSBN. Notes: Based on date of the NCLEX. For this analysis, it is assumed to be the same date as year of graduation. Most first-time exam takers do take the exam in their year of graduation.

For the sixteenth consecutive year, the number of US-educated BSN graduates taking the NCLEX increased, reaching nearly 76,000 in 2017. This was triple the number in 2001 (24,832). In addition, the number of ADN and diploma nurses (Note 2) completing an RN-to-BSN program reached nearly 58,000 in 2016, more than 73 percent above the 33,443 graduates just five years earlier.

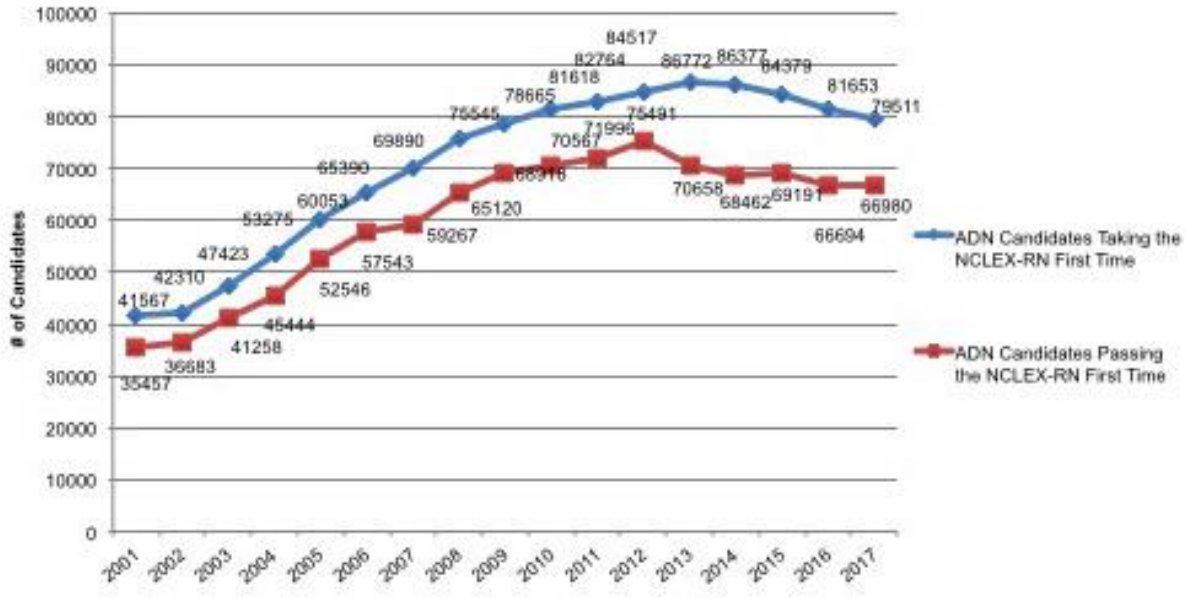
For the first time, a majority of new nurses passing the NCLEX to become an RN had a BSN instead of an ADN. This reflects the steady, long-term growth of BSN graduates as the entry-level degree for new nurses as well as the decreasing number of ADN graduates and a higher NCLEX pass rate for BSNs. According to the NCSBN, the number of BSN graduates (first-time exam takers) increased by 3,307 (4.6 percent) between 2016 and 2017, while the number of ADN graduates taking the exam dropped by 2,142 (2.6 percent) (Exhibit 4 and Exhibit 5). The number of ADN graduates taking the licensure exam decreased for the fourth year in a row: dropping from 86,772 in 2013 to 79,511 in 2017, a decrease of 8.4 percent.

Exhibit 4: BSN Graduates—First-Time NCLEX Takers And Passers, 2001–17



Source: National Council of State Boards of Nursing. Annual table of National Council Licensure Examination (NCLEX) pass rates. Chicago (IL): NCSBN. Notes: Based on date of the NCLEX. For this analysis, it is assumed to be the same date as year of graduation. Most first-time exam takers do take the exam in their year of graduation.

Exhibit 5: ADN Graduates—First-Time NCLEX Takers And Passers, 2001–17



Source: National Council of State Boards of Nursing. Annual table of National Council Licensure Examination (NCLEX) pass rates. Chicago (IL): NCSBN. Notes: Based on date of the NCLEX. For this analysis, it is assumed to be the same date as year of graduation. Most first-time exam takers do take the exam in their year of graduation.

Discussion

The increasing supply of NPs (along with new PAs) is good news for the health care system. It gives providers and organizations an opportunity to meet growing health care needs in a cost-effective manner. While the increasing supply will not necessarily fill all specialty and geographic gaps, it should help. The increasing supply will also support efforts to expand the use of clinical care teams and make better use of the unique knowledge and skills of physicians that reflect their additional years of education.

For those worried about a potential physician shortage, this increase should alleviate some of their concerns. The availability of a robust supply of NPs combined with pressures to constrain the growth in costs and to improve efficiency is likely to mean that more health care organizations and physician groups will look to NPs to help meet growing needs. While some of the additional services that NPs will provide will be new services that patients might not have otherwise received, some will be services that in the past would have been provided by physicians. This makes a physician shortage less likely and, hence, reduces the need for more residency positions. The findings of Hilary Barnes, Michael R. Richards, Matthew D. McHugh, and Grant Martsolf in this month's issue of Health Affairs supports this conclusion: they found that between 2008 and 2016 the percent of the primary care providers in rural areas that were NPs jumped from 17.6 percent to 25.2 percent while the percent in urban areas grew from 15.9 percent to 23.0 percent.

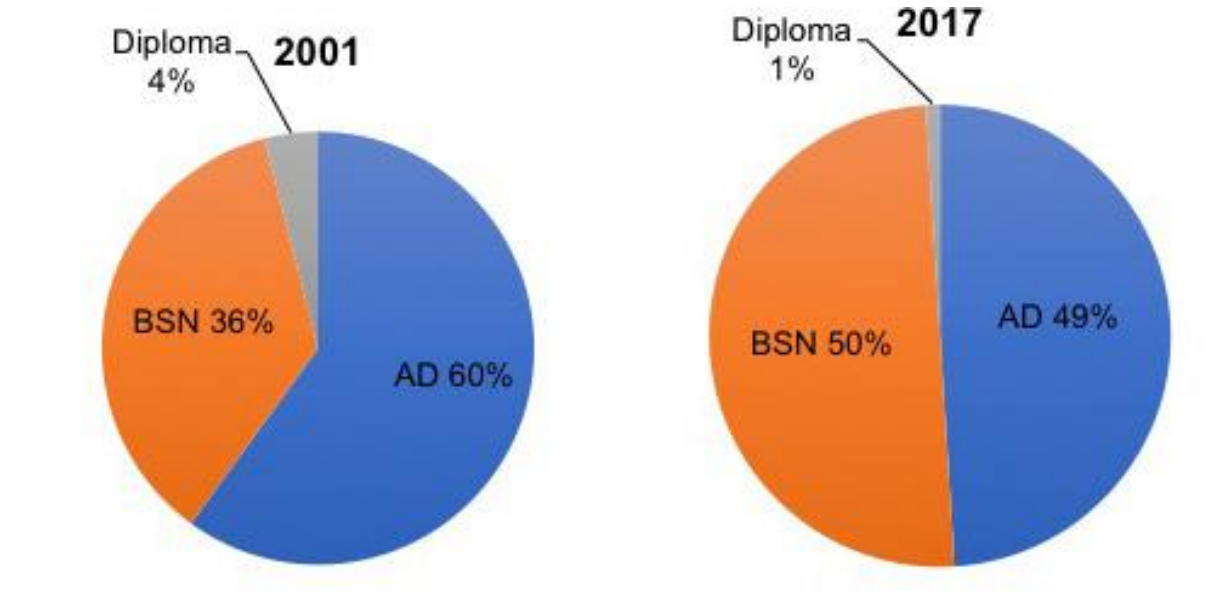
As strange as it may sound, there is also a potential for a surplus of NPs to arise over the next decade. Any time the production of an occupation increases significantly to meet short-term needs, there is potential to overshoot and create a surplus in future years. The potential for a surplus may be less in the case of NPs given that many enter the profession after several years of practice as an RN (Note 3), reducing the number of years available for practice as a nurse practitioner. Nevertheless, with the rapid growth in graduates from NP programs, it would be wise for the profession to monitor the marketplace closely.

In regard to RNs, employers in some communities are already experiencing shortages. While some of this reflects geographical imbalances, the fact that the national production of RNs seems to be below projected annual need means that shortages may become more widespread in the future. This is consistent with federal projections of supply and demand: Some areas will face shortages, while others will experience surpluses.

Finally, the increase in the number of BSNs relative to ADN and diploma nurses both from the pool of brand-new RNs and from the pool of existing RNs completing RN-to-BSN programs means that a greater proportion of the US supply of RNs will have a BSN. While the US will not reach the very ambitious goal of the Institute of Medicine (IOM) report on the Future of Nursing—that recommended 80 percent of all

active RNs have a BSN by 2020—the sharp growth in the number of new nurses with BSNs relative to the number with an ADN and the number of diploma nurses is a major step in the direction recommended by the IOM report and a major accomplishment (Exhibit 6). With the nearly 76,000 BSNs taking the NCLEX for first time and 58,000 RN-to-BSN graduates, there were nearly 134,000 new nurses with BSNs in 2017.

Exhibit 6: Comparison Of The Percentage Of ADN, BSN, And Diploma Nurses—First-Time NCLEX Passers In 2001 And 2017



Source: National Council of State Boards of Nursing. Annual table of National Council Licensure Examination (NCLEX) pass rates. Chicago (IL): NCSBN. Notes: Based on date of the NCLEX. For this analysis, it is assumed to be the same date as year of graduation. Most first-time exam takers do take the exam in their year of graduation. ADN is associate's degree in nursing. BSN is bachelor of science in nursing.

Limitations

The suggested number of new NPs and nurses recommended in this post may be at the upper end of the likely inflow since some new RN and NP graduates may not end up passing licensure exams or certification requirements and some may decide not to practice. In addition, some NPs may decide to continue to practice as an RN if the local job market for NPs becomes tight and if as an RN with many years of experience they already hold a senior, well-paying position.

It is also important to note that national figures can mask unmet needs or surpluses at the local and regional level; serious distribution problems already exist. In fact, in many professions, shortages and surpluses exist simultaneously, often with surpluses in urban areas and wealthier communities and

shortages in rural and poorer communities. Thus, the discussion of national shortages and surpluses should refer to shortages that are widespread across a majority of communities that go beyond shortages due to mal-distribution alone.

Note 1

The estimate of 33,000 new physicians per year is based on an estimate of the number of new entrants to graduate medical education, the prerequisite for licensure. In 2018, there were approximately 30,200 first-year positions in the National Resident Matching Program, an estimated 2,000 residents entering American Osteopathic Association accredited programs, and an estimated 800 residents entering training through the military match and the San Francisco match.

Note 2

Diploma nurses are nurses who have had two or three years of training but did not receive a college degree.

Note 3

In an initial survey of nurse practitioners (NPs) completing their training, which was conducted at the George Washington University School of Nursing in 2017, new NPs on average were 35 years of age.

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