A Changing Environment: 2016 NCSBN Environmental Scan

National Council of State Boards of Nursing

Annually, the National Council of State Boards of Nursing (NCSBN) publishes an environmental scan. This report captures the current environment in which regulators work in order to help BONs anticipate future needs and plan strategically, and to serve as a resource for nurse leaders in practice and education. Based on information derived from numerous resources, this scan identifies critical information needed for 2016 and beyond.

Change is upon us. Health care, education, and nursing regulation are undergoing historic transformations driven by technology, economics, the Affordable Care Act (ACA), and the entry of the millennial generation into the nursing profession, among other factors. This report documents these extraordinary changes and discusses the resulting challenges and future implications for boards of nursing (BONs) and the entire nursing profession.

Annually, the National Council of State Boards of Nursing (NCSBN) publishes an environmental scan. This report captures the current environment in which regulators work and helps BONs anticipate future needs and plan strategically. In recent years, the environmental scan has also become a resource for nurse leaders in practice and education to stay informed on current issues in nursing and the regulation of nursing.

The current environmental scan is based on a wealth of resources ranging from newsletters to formal research studies, and every effort has been made to capture critical information needed for 2016 and beyond.

The Changing Nursing Workforce

In the next few years, the U.S. nursing workforce will undergo a transformation. As the baby boomers, the mainstay of the nursing profession for decades, retire, the generation entering the workforce, the millennials, will begin making their mark on a changing profession.

Currently, the United States has more than 4.6 million licensed nurses (National Council of State Boards of Nursing [NCSBN], 2015c), and in May 2014, the Occupational Employment Statistics data indicated that 2,687,310 nurses were employed as registered nurses (RNs) and 695,610 were employed as licensed practical/vocational nurses (LPN/VNs) (U.S. Bureau of Labor Statistics, 2014). A substantial number of these RNs (40%) are age 54 and older (Figure 1), and according to the most recent survey conducted by The Center for the Advancement of Healthcare Professionals (AMN Healthcare, 2015), 62% of nurses age 54 and older are planning to retire in the next 3 years. No statistics on the anticipated retirement age of LPN/VNs are available, but more than 35% of the LPN/VN workforce is currently age 54 and older.

Many predict that the retiring baby boomer nurses will leave a significant gap in the workforce and forecast a substantial shortage on the horizon (AMN Healthcare, Inc., 2015); however, the Health Resources and Services Administration's (HRSA) 2014 workforce projections anticipate that the growth in RN supply between 2012 and 2025 will outpace the demand (Health Resources and Services Administration [HRSA], 2014). According to these projections, the RN supply will grow by 952,000 full-time equivalents (FTEs) while the demand will grow by only 612,000 FTEs. According to the HRSA report (2014), the outlook for LPN/VNs is similar. Between 2012 and 2025, the supply of LPN/VNs will increase by 260,900 FTEs, and demand will increase by only 201,000 FTEs.

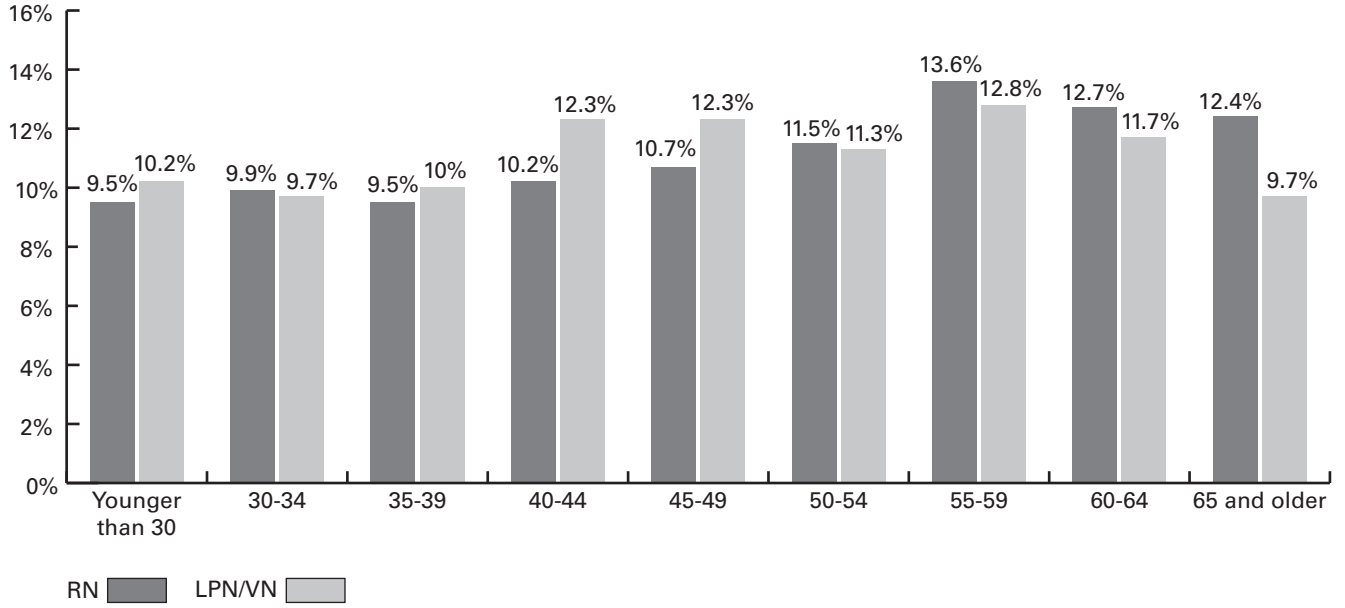
Since 2000, when approximately 2.2 million RNs were employed in the United States (HRSA, 2000), the RN workforce has steadily increased. By 2012, approximately 2.63 million RNs were employed; by 2014, the number had grown to approximately 2.68 million (Bureau of Labor Statistics, 2015). The LPN workforce, on the other hand, has declined from approximately 718,000 in 2012 to approximately 695,000 in 2014 (U.S. Bureau of Labor Statistics, 2015).

Of course, unanticipated events can disrupt even the most seasoned forecaster's predictions. In this case, however, two extremely important factors must be considered:

- The number of new RN graduates entering nursing has gone from approximately 68,000 in 2001 to more than 150,000 in 2013 (HRSA, 2014).
- The generation currently moving through the workforce pipeline, the millennials, is the largest generation in history (over 92 million). In 2013, the millennials were one-third of the U.S. population (The Council of Economic Advisers, 2014). If they

FIGURE 1

Age Distributions of RN and LPN/VN Licenses



NCSBN and The National Forum of State Workforce Centers. (in press).

pursue nursing as a profession at current rates, they may indeed fill any shortages left by the baby boomers.

The Millennial Generation

In the final quarter of 2014, the landmark White House report entitled *15 Economic Facts about Millennials* was released. This report described the likely economic changes resulting from the millennials' entrance into the workforce and noted that the millennials will affect more than the economy. Their diversity, lifestyle, and technological skills will present new opportunities and challenges for the nursing profession. The diversity of this generation will not only bring different perspectives to health care but will also bring more knowledge of cultural differences to the work settings, more sensitivity, and overall more cultural competence.

Numbers

There are 92 million millennials and 76 million baby boomers (Pollard & Scommegna, 2014). If millennials enter the workforce at the same pace as the current nursing population, they may avert any predicted shortages and fill the impending gap in the workplace. However, a high number of entrants into nursing programs in future years will present challenges because programs already report a shortage of faculty members and clinical sites for students in nursing education. This problem will worsen over the next few years because of the number of nursing faculty members nearing retirement age. Data from the 2015 National Nursing Workforce Survey (NCSBN and The National Centers for State Workforce Studies, in press) indicate that approximately 50% of full-time nursing faculty respondents were age 50 and older.

Diversity

The millennials are the most ethnically and racially diverse generation in history, and the composition of the nursing workforce is changing. The American millennial generation contains more people born outside the United States than any other generation. More than 40% belong to a race or ethnic group other than non-Hispanic white—about double the percentage of the baby boomer generation (Decennial Census and American Community Survey, CITA as cited in Council of Economic Advisers, 2014). This change is becoming apparent in the nursing workforce (Figure 2). As the first millennials were entering the workforce after 2000, the number of white non-Hispanic RN licensees decreased.

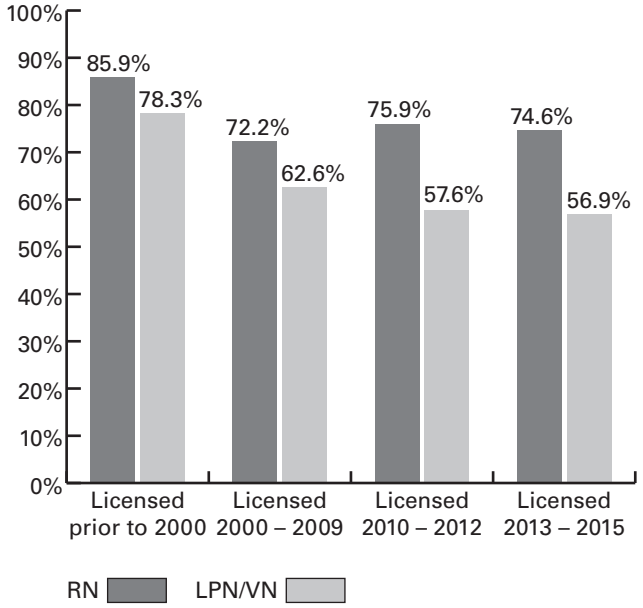
The change in the racial and ethnic makeup of LPN/VN licensees shows even more substantial changes. In the National Nursing Workforce Study, approximately 32% of LPN/VN respondents were minorities; the largest reporting minority group was Black/African American (15.4%). Newly licensed LPN/VNs have a more diverse racial or ethnic composition than those licensed before 2000, and a greater percentage of minority nurses were younger, rather than nearing retirement. For instance, 34% of Asians identified themselves as being younger than age 35, and only 9.8% reported being age 60 or older. Of White/Caucasian respondents, 18.5% were younger than age 35, and 24.5% were age 60 or older (NCSBN and The National Centers for State Workforce Studies, in press).

Gender

The changing workforce is also becoming more diverse in terms of gender. The National Workforce Survey data demonstrate that

FIGURE 2

Non-Hispanic Whites as a Percentage of RN/ LPN Licensees by Year Licensed



NCSBN and The National Forum of State Workforce Centers. (in press).

7.6% of the total LPN/VN workforce was male, but this proportion is likely to increase. Among respondents licensed before 2000, 4.6% were male; among those licensed from 2010 to 2012, 10.3% were male; and among those licensed from 2013 to 2015, 12.9% were male. A substantially larger proportion of foreign-educated LPN/VNs were male (21.6%) compared with U.S.-educated LPN/VNs (6.8%). As can be seen in Figure 3, the percentage of male RN and LPN/VN licensees has substantially increased since 2000 (NCSBN and The National Centers for State Workforce Studies, in press).

Data relating to nurses who will be entering the workforce in the future seem to show that this number will continue to climb. The National League for Nursing (NLN) Biennial Survey of Schools of Nursing (NLN, 2014) shows that all levels of nursing education are seeing strong enrollment of males. In associate's degree (ADN) and bachelor's (BSN) programs, 15% of students are male; in LPN programs, the number is 9%. Although there is little evidence to suggest why more males are entering the profession, some possible factors include a return from a military career or a change to a second career in the weak economy (Brazell, 2013).

Education

Millennials are the most-educated generation. Of those already in the workforce, 62% hold college degrees (Decennial Census and American Community Survey, CITA as cited in Council of Economic Advisers, 2014). The millennials' tendency toward educational advancement also has a positive effect on the nursing workforce. As shown in Figure 4, since the millennials began entering the workforce, the number of baccalaureate-prepared nurses has increased markedly. For the first time in 2011, the number of nurses graduating with a BSN surpassed those graduating with an ADN (Robert Wood Johnson Foundation, 2015). The millennial generation may be the catalyst for significant progress toward achieving the Institute of Medicine's (IOM) recommendation that 80% of the nursing workforce have a BSN by 2020.

The millennial generation's interest in higher education comes as advanced practice registered nurses (APRNs) are growing in the workforce. APRN education programs are proliferating, and APRN associations are using the opportunity to discuss new standards of education. Statistics from the annual survey of graduate educational programs conducted by the American Association of Colleges of Nursing (AACN) lend insight into the growth of APRN graduates and to the trend towards the doctorate of nursing practice (DNP) degree in the APRN roles. DNP programs are now available in 48 states and the District of Columbia (American Association of Colleges of Nursing [AACN], 2014). From 2012 to 2013, enrollment in DNP programs grew by 27% and an additional 26% from 2013 to 2014 and again at 26.2% from 2014 to 2015 (Fang, Li, Arietti, & Tautmans, 2015). The largest group of students enrolled in and graduating from DNP programs was in nurse practitioner programs. Family and adult/gerontology accounted for the largest portion of these students.

One hundred twenty-three schools offer master's programs with a clinical nurse specialist (CNS) tract compared with 36 with the certified nurse midwife (CNM) tract and 64 with the certified registered nurse anesthetist (CRNA) tract. Three hundred seventy-two offer a nurse practitioner tract. Master's programs have shown a nearly 11% growth of graduates in all focus areas within the last year (Pohl, Barksdale, & Werner, 2015).

In 2004, AACN was the first to recommend the DNP be the entry level for all four APRN roles; the goal then was 2015. Movement towards that goal has certainly started, but the target date has recently changed to 2030. The National Association of Clinical Nurse Specialists (NACNS) issued a call for DNP to be the entry-level degree for the CNS by 2030 (Gombkoto et al., 2014). Also, the National Organization of Nurse Practitioner Faculties (NONPF) reaffirmed their position on the DNP as entry into practice for nurse practitioners (NONPF, 2015) and the American Association of Nurse Anesthetists (AANA) also declared their intention for the DNP entry level for CRNAs by 2030 (Hawkins & Nezat, 2009).

Technology

The hallmark of the millennials is their aptitude for technology. These digital natives will be attracted to positions that require knowledge and use of technology, and they will expect that licensing systems, information, and notifications be digital. This facet of millennial culture will affect the future of nursing from the outside as well: Millennial consumers will play a part in dictat-

ing the future of health care delivery. In a recent survey, 60% of millennials stated they would be interested in the opportunity to obtain their health care through mobile devices and telehealth (Salesforce, 2015).

Social Media

Social media is integrated into the millennials' lifestyles: Seventy-five percent of millennials own a social networking account compared with 50% of Generation Xers and less than 30% of baby boomers (Council of Economic Advisers, 2014). This also makes millennials more mobile, allowing them to stay connected at distances. As a possible related side effect of their near-constant connectivity, millennials are also less cognizant of issues related to privacy. It should also be anticipated that social media issues will remain a disciplinary issue in the nursing workforce for some time.

Teams

More than one report describes millennials as wanting to work in teams. They believe that teamwork is the best way to meet challenges and solve problems. This skill will lend itself well to the workforce given the growing emphasis placed on interdisciplinary teams (The Millennial Legacy, n.d.; Monaco & Martin, 2007).

Globalization

Perhaps one of the most powerful differences separating millennials from other generations is that millennials are willing to cross borders. They live in a globalized world that is smaller and more connected because of technology and social media. According to Price Waterhouse Coopers (PWC) (2014), two-thirds of all millennials say they are interested in a job that will take them overseas during their career. Moreover, 37% of millennials versus 28% of nonmillennials want to explore cross-border opportunities for their career development (PWC, 2015).

Integration

Whereas previous generations strove for a work-life balance, millennials are attracted to the idea of integrating their work life into their personal life, blurring the boundaries between work hours and personal time (Schawbel, 2014). They will be attracted to jobs that offer mobility, require technology skills, and offer flexibility. These inclinations may manifest as a preference for a less regular work schedule.

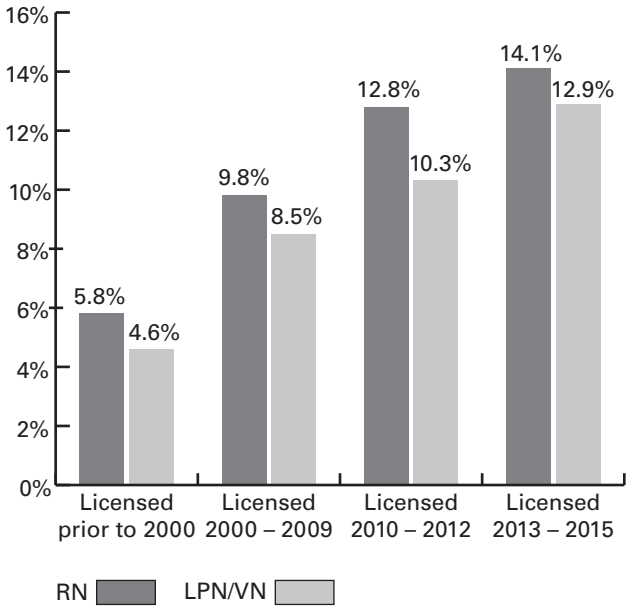
According to the results of the 2015 National Nursing Workforce Survey, 81% of licensees were actively employed in nursing, and 62.9% of licensees were employed full time (NCSBN and The National Centers for State Workforce Studies, in press). It will be interesting to see if this ratio changes in coming years.

Employment of RNs and LPNs

Nursing employers are altering hiring patterns and onboarding processes, and nurses are being utilized in new ways.

FIGURE 3

Males as a Percentage of RN/LPN Licensees by Year Licensed



NCSBN and The National Forum of State Workforce Centers. (in press).

Statistics continue to show that hospitals are the primary setting for RN employment, and long-term care is the primary setting for LPN/VN employment. More than half of RN respondents (54%) in the 2015 National Nursing Workforce Survey reported their primary employment setting as a hospital. Foreign-educated nurses and newly licensed nurses were also more likely to be employed in a hospital setting. The primary job title for the majority (58.1%) of RN respondents was "staff nurse." This title was particularly prevalent for newly licensed RNs and foreign-educated nurses. Approximately half of respondents have engaged in telehealth. Almost 40% of those nurses providing telehealth did so across a state border. Only 10% of respondents who engaged in telehealth did so across a national border (NCSBN and The National Centers for State Workforce Studies, in press).

Data before 2014 showed no difference in the employment status of nurses with an ADN or BSN degree. A recent study, however, provides data that indicate a change. Based on the American Community Survey (2003–2013), Auerbach, Buerhaus, and Staiger (2015) examined differences between ADN- and BSN-prepared RNs in terms of employment setting, earnings, and employment outcomes. Results indicated the percentage of ADN-prepared RNs employed in hospitals dropped from 65% to 60% and the percentage of BSN-prepared RNs employed in hospitals grew from 67% to 72%. These data are consistent with hospitals' growing preference for BSN-prepared RNs. ADN-prepared RNs who otherwise would be working in hospital settings appear to be shifting to long-term care settings; approximately 10% of ADN-prepared RNs shifted from hospitals to long-term care

TABLE 1

New Graduate RN Employment by Program Level

Currently Employed as an RN	2012		2013		2014		2015	
Types of programs	*Percent Employed*	*Number Employed*	*Percent Employed*	*Number Employed*	*Percent Employed*	*Number Employed*	*Percent Employed*	*Number Employed*
Associate degree	61%	966	72%	1,316	72%	1,013	82%	1,070
BSN prelicensure	72%	1,686	81%	1,686	82%	1,698	87%	1,571
Accelerated BSN	58%	218	69%	386	81%	204	83%	422

National Student Nurses Association. (in press). Data for 2012–2014 from previous scans.

settings over this period (Auerbach, Buerhaus, & Staiger, 2015). Overall, ADN-educated nurses seem to have a slight disadvantage when seeking employment compared with BSN-educated nurses; data from the 2015 National Student Nurses Association (NSNA) annual survey of new graduate nurses (in press) show that in recent years newly graduated BSN-educated nurses have been employed at slightly higher rates than their ADN counterparts (Table 1).

Another shift taking place among employers is the growing recognition of the benefits of a transition-to-practice or nurse residency program for new graduate nurses. Three systematic reviews (Chappell & Richards, 2015; Edwards, Hawker, Carrier, & Rees, 2015; Goss, 2015) and a multisite study of hospital-based transition programs (Spector et al., 2015b) found that when there is a formalized, evidence-based transition program that is integrated into the system, new graduates have better outcomes. Additionally, two organizations have begun to set standards for and accredit transition programs. The American Nurses Credentialing Center (ANCC) started accrediting RN residency, RN fellowship, and APRN fellowship programs. Thus far, it has accredited four programs, and it has many in the pipeline. Likewise, the Commission on Collegiate Nursing Education (CCNE), which has been accrediting postbaccalaureate residency programs since 2008, began to accredit entry-to-practice residency (including ADNs) programs in 2015. The CCNE has accredited 17 residency programs.

Although hospitals are progressively incorporating transition programs into their systems, nonhospital settings, particularly long-term care settings, need more resources to implement transition programs successfully. In the Spector et al. (2015a) multisite study of nonhospital sites, turnover rates were high in nursing homes, and finding the time and resources to implement transition programs was challenging. There is a critical need for more research on transitioning new nurses into practice in nonhospital settings.

Employment of New Graduate RNs

Although the nurse shortage has been a cause for concern in recent years and current predictions indicate that nursing programs may soon be graduating more RNs than the workforce demands, the number of RNs currently entering the workforce seems to have struck a balance, as indicated by the NSNA's annual survey on the employment of new graduate nurses (in press). Newly graduated RNs are finding employment faster and in greater numbers than they have in the past several years (Table 2).

Advanced Practice Registered Nurses

Perhaps the most compelling growth in nursing is occurring at the graduate nurse level. The American Association of Nurse Practitioners (AANP) reports that the number of nurse practitioner (NP) graduates has doubled in the past 10 years from 106,000 in 2004 to 205,000 in 2014 (AANP, 2015). Further, the AANA reports 36,500 CRNAs in practice in 2014 (AANA, 2015), and the number of CNMs is reported at 11,018 (American College of Nurse Midwives, 2015). The total number of CNSs is a bit harder to estimate. A 2015 CNS national survey done by the NACNS was answered by 3,370 CNSs (NACNS, 2015). Various estimates of total numbers of CNSs have been near 60,000 (U.S. Department of Health and Human Services [HHS], 2010).

Changes in Nursing Education

A new generation of technologically proficient students is entering higher education, and their learning needs along with the potential shortage in faculty are eliciting dramatic changes in nursing education. Within the last decade, the traditional classroom and clinical environment have been transformed for nursing students. Online classes, simulated clinical experiences, Web conferencing, cloud computing, podcasts, videocasts, virtual worlds, gaming, and mobile technologies are rapidly changing the learning environment in nursing programs (Oermann, 2015).

A few years ago, educators and regulators were grappling with issues related to simulation. Questions about whether it could be substituted for clinical experience, how much it could be substituted for clinical experience, and which courses could use it pervaded discussions. Now, with data supplied by the National Simulation Study (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014) and the new evidence-based guidelines that resulted from it, educators are armed with best practices to keep

the newest generation of students engaged and keep nursing education in sync with the current learning environment (Alexander et al., 2015). A 2015 NCSBN survey of BONs indicated that programs and regulators are already responding to the evidence: Twenty-five of 34 BONs surveyed allow simulation to replace clinical experiences.

Not only is the learning environment rapidly changing, classroom composition is as well. According to the recently released Open Doors Survey (International Institute of Education, 2015), educators in general have seen a striking change in the makeup of their student body. More international students than ever before are seeking higher education in the United States, with enrollment increasing 72% since 2000. Currently, the United States welcomes more international students than any other country. The 2015 survey indicated that almost 1 million international students were enrolled in the 2014–2015 academic year, a number that is up 10% from prior years. More specifically, the number of students enrolled in programs related to the health professions was up 5.5% from the previous year (International Institute of Education, 2015).

Another change in nursing education is the number of for-profit schools. From 2002 to 2012, the number of nursing graduates from private, for-profit programs increased from 1% to 11% (Buerhaus, Auerbach, & Staiger, 2014). Concerns remain regarding the nursing preparation received at these schools. Data from the 2015 NSNA survey of new graduate nurses (in press) do show that new graduates from such programs had a slightly more difficult time finding employment than those from public or not-for-profit institutions (Table 3).

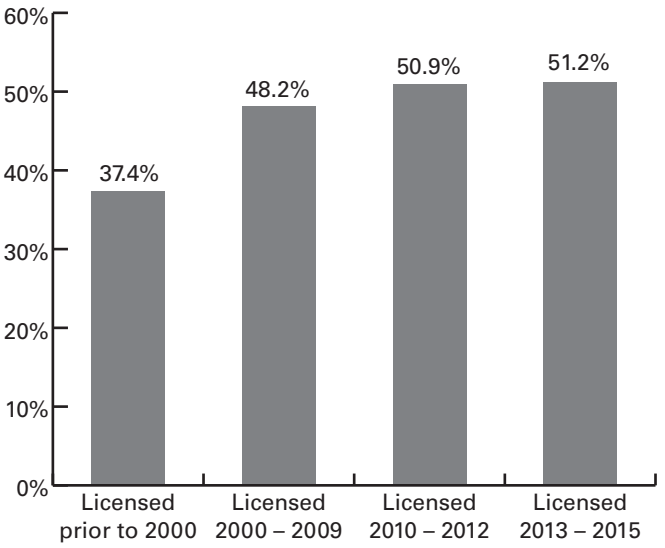
Increase in BSNs

Another change is the substantial rise in the number of BSN-prepared nurses entering the workforce. Educators are responding to IOM recommendations to increase the education of the nursing workforce by facilitating academic progression, including increasing the number of accelerated RN-to-BSN nursing education programs. Also noteworthy is the partnership of community colleges and universities, offering seamless progression from the ADN to the BSN degree, and the offering of baccalaureate degrees by community colleges. In 2015, 39 BONs responded to an NCSBN survey: Nine reported that their community colleges were offering ADN-to-BSN degrees, and another seven reported that their states were considering it.

Spurred on by the Robert Wood Johnson Foundation–funded Academic Progression in Nursing initiative, which focuses on progress toward the IOM recommendation of an 80% BSN-educated workforce by 2020, nine states (California, Hawaii, Massachusetts, Montana, New Mexico, New York, North Carolina, Texas, and Washington) were awarded grants to pilot new models of nursing education that foster a seamless progression from ADN to BSN. Some of the new models being piloted include the following:

FIGURE 4

Percentage of RNs With a BSN or Higher Degree as Initial Nursing Education by Year Licensed



NCSBN and The National Forum of State Workforce Centers. (in press).

- State or regional shared competency or outcomes-based curricula with the expectation that students achieve specific outcomes. Massachusetts has been a forerunner with this model.
- Shared statewide or regional curriculum that promotes seamless progression from ADN to BSN degrees and reduces duplication of coursework. Oregon has been a leader with this model.
- An emerging model is based on the first two models. Students are enrolled in both ADN and BSN programs, but do not take the NCLEX® until after their BSN education is completed.

Educational Transformation

In a report by the National Academies of Sciences, Engineering, and Medicine (Cuff, Global Forum, Board on Global Health, IOM & The National Academies, 2015), international and national experts mapped out the plan to transform health professional education. They identified a gap between what health professionals are taught and how the environments in which they practice are changing. Their conclusion: Students are being prepared for a system that no longer exists. Patients today need more care for chronic disease and age-related ailments than for acute care. Also, huge health care disparities among countries and in access to quality care exist. The group found that current health profession education does not focus sufficient attention on these issues.

The National Academies of Sciences, Engineering, and Medicine report asserts that for the future of global health, education should be less content specific and more competency specific, encouraging students to become lifelong learners. Preparation might include demonstrating the ability to find reliable information and discriminating between biased and unbiased sources.

TABLE 2

Percentage of New Graduate RNs Employed Following Graduation

Graduation Cohort	2012 (*n* = 4,110)	2013 (*n* = 6,121)	2014 (*n* = 8,902)	2015 (*n* = 3,861*)
	Percentage Employed	*Percentage Employed*	*Percentage Employed*	*Percentage Employed*
> 1 month (graduated summer)	51%	56%	62%	71%
> 4 months (graduated spring)	71%	76%	78%	85%
> 6 months (graduated in previous year)	86%	87%	88%	93%
All respondents	66%	76%	78%	84%

*interim data.

National Student Nurses Association. (in press). Data for 2012–2014 from previous scans.

Competencies in collecting, analyzing, comparing, and judging information from traditional and nontraditional sources should be taught and nurtured. This, the group writes, would create problem solvers and thinkers rather than "regurgitators" (Cuff et al., 2015)

Also encouraged in the National Academies of Sciences, Engineering, and Medicine report is the further development of interprofessional education, not only with other health care disciplines but also in a more "transdisciplinary" manner by including nonhealth professions, such as architects and engineers. New faculty members addressing this challenge would need to focus more on designing learning environments and motivating and coaching students rather than on the act of teaching. The report suggests that traditional institutions should move into the virtual learning environment, using technologies to make connections and engage students. It also boldly suggests that the emphasis in academia should be on connecting with policy makers to push for real change rather than on research for publishing papers.

Faculty

The 2015 AACN *Special Survey on Vacant Faculty Positions for Academic Year 2015–2016* (Li, Stauffer, & Fang, 2015) describes the trends related to faculty shortages in baccalaureate and higher nursing education (Table 4). Since 2010, the number of faculty vacancies has increased, the rate of filled faculty positions has slightly decreased, and mean faculty vacancies per school have risen sharply. Even more worrisome is that in 2014 and 2015, the number of schools that have no faculty vacancies but that need additional faculty members has increased. This suggests that nursing programs are having difficulty acquiring enough positions.

Li, Stauffer, and Fang (2015) cite several reasons nursing education programs are not hiring new faculty members (*n* = 130 schools with no vacant positions but need more faculty members):

- Insufficient funds to hire new faculty (65.4%)
- Unwillingness of administration to commit to additional full-time positions (53.1%)
- Inability to recruit qualified faculty because of competition for jobs with other marketplaces (36.2%)
- Qualified applicants for faculty positions unavailable in the geographic area (22.3%).

Schools identified the most critical issue regarding faculty recruitment (*n* = 741) (Li et al., 2015):

- Noncompetitive salaries (30.5%)
- Limited pool of doctorally prepared faculty (29.6%)
- Finding faculty with the right specialty mix (20.8%)
- Finding faculty willing/able to conduct research (5.0%)
- Finding faculty willing/able to teach clinical courses (3.9%)
- High faculty workload (2.4%).

In a 2015 NCSBN survey on emerging education issues, BONs were asked to identify their top three concerns. Of the 39 responding BONs, 11 stated that the top concern was the need for additional qualified faculty members in their jurisdictions, confirming that faculty shortages are a national problem.

Providing increased funding to nursing education is a priority because a lack of funding was cited as the number one reason nursing programs cannot acquire additional positions. Furthermore, noncompetitive salaries were cited as the most critical issue for schools trying to recruit qualified faculty members.

New nursing education models, such as the dedicated education units (DEUs) or the competency-based model initiated in five states in the western United States (Galuska, 2015; Jones-Schenk, Burnes Bolton, Swanson, Hassmiller, & Chow, 2015), may provide some relief to the faculty shortage. In these models, the nursing school partners with clinical agencies to provide clinical experiences, providing ongoing education and support to the staff nurses. Both the DEU and the multistate model have reported positive outcomes (Galuska, 2015; Jones-Schenk et al., 2015). Other innovative models should be developed and piloted.

Educational Challenges

As noted, a 2015 NCSBN survey of BONs identified a faculty shortage as the top issue facing nursing education in their states. The AACN faculty vacancy data confirm that in many cases vacancies cannot be filled and in some cases the schools of nursing are not able to acquire the necessary FTEs.

TABLE 3

Employment Rates of Graduates of For-profit Versus Not-for-profit Private and Public Institutions

Employed as an RN: Answer Options	Public (example: state colleges and state universities; community colleges)		Private Not-for-profit (examples: New York University; Villanova University; Drexel University)		Private Proprietary For-profit (examples: Chamberlain College; University of Phoenix; ITT Technical Institute; Fortis; Rasmussen; Keiser; National American University)		Response Percent	Response Count
Yes	1,930	84.6%	709	86.1%	366	82.4%	84.7%	3,005
No	351	15.4%	114	13.9%	78	17.0%	15.3%	543
						answered question		3,548

National Student Nurses Association. (in press.)

Simulation was named as an issue by 10 BONs. The challenge is to determine the most effective way to utilize this modality to meet the changing educational needs of 21st century students and to meet clinical experience requirements. The recently released NCSBN Simulation Guidelines are intended to provide clarity in this area.

A shortage of clinical sites was cited by nine BONs as being challenging and forcing faculty members to think innovatively about clinical sites. Other notable issues included decreased NCLEX pass rates and difficulties with for-profit or proprietary nursing programs that are struggling with approval standards.

Educators themselves face different challenges, many of which are related to the technologically inclined, globally connected millennials making their way into classrooms. The proliferation of distance learning and new, electronic- and Internet-based teaching modalities increasingly demands that faculty members are prepared to teach students located around the country and possibly around the world. This situation raises a host of licensure and regulatory issues, many of which now focus on the cost of faculty needing multiple licenses and maintaining the requirements of varying state regulations across the country.

Nursing Education and the Future of the Nursing Workforce

The number of nursing education programs continues to grow. Overall, the number of programs has increased from 1,611 in 2002 to 2,240 in 2012. This number includes the addition of 222 public programs, 179 private not-for-profit programs, and 258 private for-profit programs. In 2015, 89 new RN programs and 33 new LPN/VN programs were established. The net number of RN programs continues to grow annually, with a gain of 95 in 2014 and 63 in 2015, while the number of LPN programs continues to decrease slightly, with a net loss of 23 programs in 2014 and 1 in 2015.

One of the best ways of predicting future workforce numbers is by examining the number of students graduating from nursing programs. As first-time NCLEX test taker data show, nursing education programs are seeing steady enrollment overall, with a slight increase in RN test takers and a slight decrease in LPN/VN test takers (Figure 5).

Implications for Boards of Nursing

As innovative learning modalities are used to attract and teach students, BONs will want to ensure that students do not become so "digitalized" that they lose communication and other skills that are integral to competent nursing care. Although simulation is becoming more common and evidence supports its use as a clinical teaching tool, regulators need to ensure that clinical standards are being met. There will always be a place for traditional clinical experiences. Regulators should also expect to see clinical experiences being held via telehealth.

Though new technologies may enhance many aspects of nursing education, the next few years are not without their challenges. Despite a growing number of programs, resources continue to be a concern, with programs reporting shortages of both faculty members and clinical sites. Unless nursing programs are able to attract and maintain qualified faculty members, there will not be enough nurses to meet the demands of the population. Also necessary for maintaining the supply of new nurses is an adequate number of clinical sites. Of course, simulation can provide some relief in areas where clinical sites are sparse. The 2015 NCSBN Simulation Guidelines provide educators with a roadmap for designing quality simulation centers and can be used as a guide by the BONs.

A Brookings Institute report (Looney & Yannelis, 2015) focusing on student loan debt found an association between private, for-profit programs and weaker educational outcomes. Graduates of these programs fare poorly in the labor market (and thus default on student loans at a higher rate). Though the graduation of these students bolsters the supply of nurses, the possible effect of their weaker preparation on the overall quality of nursing care in the Uniited States is a concern that has yet to be explored in detail.

TABLE 4

Nursing Program Full-Time Faculty: Recent Trends (2009–2015)

(*n* = 741 schools responding)	2010	2011	2012	2013	2014	2015
Budgeted faculty positions	12,783	14,166	15,574	16,444	18,010	18,511
Number of faculty vacancies (Vacancy rate)	880 (6.9%)	1,088 (7.7%)	1,181 (7.5%)	1,358 (8.3%)	1,236 (6.9%)	1,328 (7.1%)
Number of filled faculty positions (Filled rate)	11,909 (92.3%)	13,078 (92.3%)	14,393 (92.4%)	15,086 (91.7%)	16,774 (93.1%)	17,183 (92.9%)
Mean faculty vacancies per school	1.6	1.8	1.8	2.0	1.7	3.1
Range of faculty vacancies	1-16	1-16	1-20	1-29	1-20	1-26
Number of schools with no faculty vacancies, but need additional faculty	112	104	103	98	124	130
Number of schools with no faculty vacancies, do not need additional faculty	141	145	182	168	187	182

Li, Stauffer, & Fang. (2015); 2010, 2011, 2012, and 2013 data from previous environmental scans.

Though the number of LPN programs and LPN test takers continues to decline slightly each year, the LPN role is still important.

Finally, over the next few years, expect the focus of nursing education to shift. Educators will focus on competency rather than content, and interprofessional education will become more prevalent in an effort to better prepare nurses for the emerging team-based care models of contemporary health care.

Changes in Health Care Delivery

The delivery of health care in the United States is undergoing dramatic change. The ACA has expanded the number of Americans covered by insurance. Stand-alone hospitals are closing or becoming part of large, national health care organizations. New delivery models such as accountable care organizations are offering new roles for health care workers. Telehealth is expanding, and ubercare is on the horizon. The roles of pharmacists, paramedics, and community health workers have changed and expanded. A new emphasis on quality and patient safety is increasing the emphasis on finding the root causes of errors. Nurses will need to meet the challenges of this new environment, or they may see the role they have traditionally held in the health care environment weakened as other professions adapt more quickly and step in to fill the gap.

Coverage

Since the launch of the ACA in October 2013, an estimated 17.6 million uninsured people have gained health insurance, reducing the percentage of uninsured Americans from 20.3% to 12.6% (ASPE, 2015). The Department of Health and Human Services estimates that another 10.5 million uninsured Americans are eligible for coverage through the public insurance exchanges, and a push will be made to enroll them (Pear, 2015).

In Medicaid expansion states (Figure 6), the uninsured rate declined from 18.2% to 10.1%, while in nonexpansion states it declined from 23.4% to 16.1% (ASPE, 2015). In 2015, after securing concessions from the Obama administration, Indiana opted to expand Medicaid in a way that could take place in other Republican-led states. Indiana has been allowed to impose strict requirements on Medicaid enrollees to pay a portion of their premiums or get locked out of the program. Also, participants who overuse the emergency department (ED) are penalized (Radnofsky & Campo-Flores, 2015).

The addition of Indiana brought the number of states expanding Medicaid up to 30, with an additional state (Utah) pending federal waiver approval. The election of a new governor in Kentucky, however, may lead to a reversal of the Medicaid expansion in that state (Goldstein, 2015). A State Health Reform Assistance Network study suggests that states that have expanded Medicaid are seeing significant budget savings from reducing state spending on programs for the uninsured and revenue gains related to existing insurer or provider taxes (Bachrach, Boozang, & Glanz, 2015).

The ACA may have contributed to an overall slowdown in health care spending in the United States in the past 5 years ("Will Obamacare cut costs?", 2015). Nevertheless, employees are shouldering more of the costs of health care through increased premium contributions and higher deductibles (Schoen, Radley, & Collins, 2015).

Hospital Consolidation

Stand-alone hospitals are rapidly closing or merging into health care organizations that transcend state borders. Since 2010, 57 rural hospitals have closed in the United States, and non-Medicaid expansion states are particularly vulnerable (Ellison, 2015). In 2014, hospitals announced 95 deals involving mergers, acquisitions, and joint ventures (Hirst, 2015). With outpatient

demand projected to rise 21% over the next 10 years while inpatient demand drops by 4%, these trends are expected to continue (Woodson, 2015).

Accountable Care Organizations

An accountable care organization (ACO) is a network of doctors and hospitals that shares financial and medical responsibility for providing coordinated care to patients in hopes of limiting unnecessary spending. At the heart of each patient's care is a primary care physician. About 6 million Medicare beneficiaries and an estimated 23.5 million Americans are now in an ACO. At least 744 organizations have become ACOs since 2011. ACOs are seen as an interim step towards the goal of having providers take on full financial responsibility for caring for a population of patients for a fixed cost (Gold, 2015).

Telehealth

The use of telehealth services in health care delivery is increasing. Adoption of technology in the health care sector by providers and patients continues to grow at a rapid rate. According to a September 2015 study of the U.S. telemedicine market, adoption of telemedicine services increased from 54.5% in 2014 to 57.7% in 2015 (Healthcare Information and Management Systems Society, 2015).

Federal Telehealth Issues

Health care stakeholders continue to pressure Congress to address the statutory and regulatory issues that limit the broader adoption of telehealth. In 2015, bills addressing license portability and telemedicine reimbursement were introduced in both the House of Representatives and the Senate. Also, bipartisan groups of members in both chambers formed telehealth working groups to formulate consensus draft legislation that would be palatable to both chambers. Yet barriers remain.

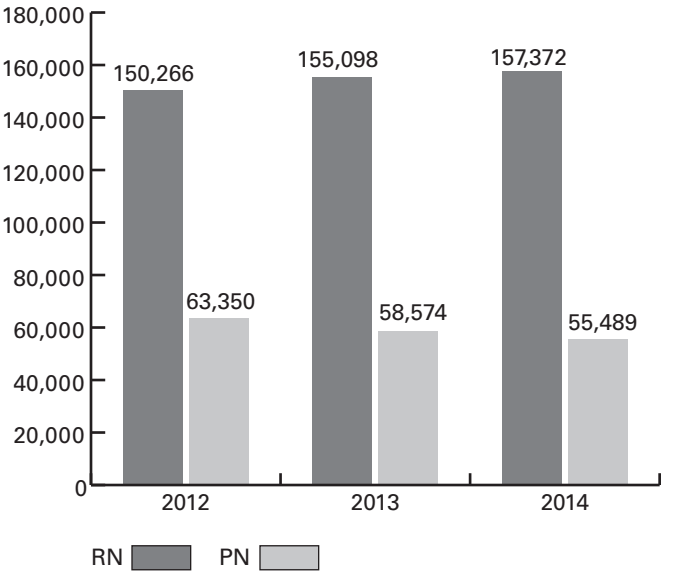
The greatest barrier is the cost projection for reimbursing new telehealth services in the Medicare system. The Centers for Medicare & Medicaid Services (CMS) has stated that paying for telehealth services through traditional Medicare fee-for-service billing would greatly increase health care utilization, potentially costing the federal government billions of dollars. The Congressional Budget Office (CBO), an independent voice for Congress on budgetary matters, expressed similar concerns in a July blogpost (Housman, Williams, & Ellis, 2015). Telehealth advocates in Congress continue to introduce telehealth bills while responding to the CBO's concerns, claiming that the bills, which would largely remove certain CMS restrictions on where telehealth services can be delivered and who can deliver them, would ultimately save the CMS money. The actuaries at CBO disagree.

Bills in Congress include the Telemedicine for Medicare (Tele-Med) Act (H.R. 3081, §1778) and the Veterans E-Health & Telemedicine Support (VETS) Act of 2015 (H.R. 2516, § 2170). The former would amend title XVIII of the Social Security Act to permit certain Medicare providers licensed in a state to provide telemedicine services to certain Medicare beneficiaries in a different state. This bill would allow approved Medicare providers (including APRNs) to deliver care via telehealth to Medicare beneficiaries in any state as long as the provider holds an active license in a U.S. state.

The VETS Act of 2015 would allow any health care professional who is authorized to provide health care through the Department of Veterans Affairs (VA), including those operating in the private sector through a contract agreement, to deliver telehealth care in any state regardless of where the professional or patient is located. Additional state licensure would not be required to provide these services.

FIGURE 5

Number of First-Time U.S.-Educated Students Taking the NCLEX



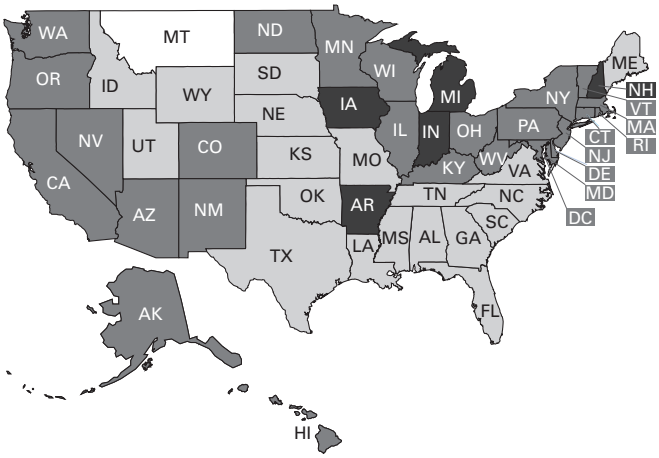
Data from www.ncsbn.org/exam-statistics-and-publications.htm

State Telehealth Issues

States have the greatest reason to be optimistic because of several recently enacted laws that will promote the growth of telehealth. According to a state policy analysis from the American Telemedicine Association (ATA) (2015), Medicaid coverage for certain telehealth services is on the rise, with 48 states offering some form of telebehavioral health coverage, 25 states offering some form of home telehealth coverage, 17 states authorized to cover remote patient monitoring, and 13 states covering store-and-forward–based services. Additionally, the ATA found that 29 states now require private health insurance plans to reimburse telehealth services at the same level as in-person services. Seven of the 29 states and the District of Columbia adopted the parity law in 2015. The state payment parity laws play a major role in

FIGURE 6

Where States Stand on Medicaid Expansion



20 states are not expanding Medicaid

25 states (count includes the District of Columbia) are expanding Medicaid

5 states are expanding Medicaid, but using alternative to traditional expansion

1 state is expanding Medicaid; pending federal waiver approval

Cardwell and Sheedy. (2015).

the growth of telemedicine at the state level, and private payers and insurers see value in integrating telehealth into the benefits they offer to their customers. UnitedHealthcare (2015) announced in April that it would cover virtual physician visits in addition to their already popular NurseLine service, and Carefirst (2015) announced in October that it would invest $3 million in telemedicine initiatives to increase access to care.

State Regulatory Board Issues

Certain medical boards have written rules that telehealth supporters say are unfriendly to the industry because they require physicians to first establish a physician-patient relationship through a face-to-face interaction. In Texas, the state's medical board approved such a rule in spite of opposition from Teladoc, a direct-to-consumer telemedicine company that delivers care to patients exclusively over the phone. Teladoc has since brought litigation against the Texas Medical Board to address the issue. Though the courts ruled in favor of Teladoc in an initial ruling in May, the case is still ongoing (Comstock, 2015).

Patient-Centered Health Homes

The hallmark of a patient-centered health home is true team-based care. On such teams, physicians work in partnership with rather than in supervision of other professionals, such as APRNs, physician assistant (PAs), pharmacists, dietitians, social workers, and therapists. Team members can take the leadership role or a support role based on the patient's needs. The APRNs may take on the management of complex patients, or they may take the least-acute cases, concentrating on wellness as well as disease management. In some team arrangements, APRNs manage the patients with complex comorbid conditions. In other arrangements, APRNs and PAs may comanage cases. Strong features of health homes are patient partnership and patient self-management. The plan of care provides the patient with a home management plan. Frequently, RNs coordinate care and provide patient and family education and follow-up. The Agency for Healthcare Research and Quality (AHRQ) created a primary care practice curriculum designed to convert research findings in primary care and patient centeredness into practice innovations (Crosson, McNellis, & Genevro, 2015).

Despite advances for APRNs, some bills that would restrict APRN practice were introduced. The Patient-Centered Medical Homes bill, for example, would have boards of medicine and BONs coregulate APRNs and allow APRN practice only on physician-led teams. Elements of this bill first seen last session were introduced in states where APRN alignment bills had also been introduced. The American Medical Association (AMA) and medical societies maintain that physicians' additional years of education and training confer greater public protection (American Medical Directors' Association, 2015) despite evidence of similar patient outcomes for patients treated by physicians and APRNs. This evidence includes a recent report in *The Journal of the American College of Cardiology* demonstrating that patients with heart disease treated by APRNs or PAs and those treated by physicians had very little differences in care except for higher rates of smoking cessation education and intervention and a greater number of cardiac rehabilitation referrals by the APRNs and PAs (Virani et al., 2015).

Other Innovations in Care Delivery

Besides telehealth, innovations in care delivery include ubercare, hydration stations, and computer-assisted personalized sedation.

Ubercare

The term *house call* may be replaced with the term *ubercare* as an increasingly on-demand economy begins to affect health care. Instead of spending time in a waiting room, some people want to secure a provider on call who will come to them. For a fee, a person can arrange a house call from an ubercare provider who will come to the patient's home to provide a flu shot or simple care, such as pre- or post-pregnancy care, eldercare, and even I.V. hydration. Some operate on the pay-as-you-use principle, and some operate on a prepay basis. A few are accepted by insurance plans (Cohen and Platkin, 2015).

Hydration Stations

Another growing trend is to provide I.V. hydration, antinausea medication, and vitamin therapy on a walk-in or home-delivery basis. One such program offers a wide selection of I.V. vitamin ther-

apies on a membership or individual-need basis. Nurses may staff such centers under the direction of a provider (Waxman, 2013).

Computer-Assisted Personalized Sedation

Trends in automation and anesthesia have emerged as companies seek to create a means of administering deep sedation without the requirement that an anesthesia professional be present in a special setting such as the endoscopy suite. Questions have come to BONs about the accountability and responsibility of nurses and APRNs on teams when computer-assisted personalized sedation is used. The Food and Drug Administration (FDA) is ready to move forward with this technology for administration by nonanesthesia professionals during colonoscopy and esophagogastroduodenoscopy if they have the appropriate training and have an anesthesia professional immediately available (Ready, 2015).

Emerging Practice and Roles

Physicians

In the United States, 55% of the licensed physicians are older than age 55, with the average age being 52. And despite an increasing number of licensed physicians who were educated internationally (Young, Chaudhry, Rhyne, & Dugan, 2015), a physician shortage has been predicted. Among solutions proposed by government entities and others is the removal of barriers to APRN practice to fill the need, especially in rural areas. However, medical societies persist in opposing full-practice authority for APRNs.

Interestingly, the growth in medical education is impressive, with an expansion of 16 new allopathic schools and 15 new osteopathic schools in the United States and an estimated 49% increase in new graduates (Mullan, Salsberg, & Weider, 2015). Much has been made of the shortage of resident spots for U.S. graduates, but a recent study showed that in 2014 there were 6,846 more first-year positions than graduates. This gap was filled by international medical graduates. Researchers project that there will be more medical residencies available than U.S. medical graduates into 2024.

Medical schools appear to be considering a shorter curriculum. Seven U.S. medical schools and one Canadian medical school recently formed a consortium to examine accelerated MD education programs (Warshaw, 2015). Meanwhile, the AACN reports that practice-focused doctoral nursing programs have increased by 26.2% in 2014, and total enrollment in such programs increased by more than 18,000 over the previous year (AACN, 2015).

Paramedics and EMTs

With a need for lower health care costs and better access to care, states have sought to broaden the role of emergency responders to include preventative health care at the site of the patient by creating community paramedic and community EMT (emergency medical technician) programs.

Nevada Assembly Bill 305 created a community paramedic endorsement program. Nevada limits community paramedic services to those already within the scope of practice of an emergency medical provider but broadens the role to include preventive care.

Arkansas House Bill 1133 established a licensure program for community paramedics to provide services to discharged inpatients who do not qualify for home health services, discharged ED patients, and prehospital patients. The bill originated as a pilot program through Baxter Regional Medical Center in 2013 to reduce the hospital's readmission rate and the number of visits to EDs, saving Baxter millions of dollars in Medicare penalties for patient readmissions (Schwers, 2015).

Minnesota Senate Bill 176 created a community EMT program. Minnesota had previously adopted community paramedic legislation in 2011. Paramedics differ from EMTs in that paramedics require more education and clinical work before they become licensed, which allows them to provide an advanced level of care. Under the bill, a licensed EMT must have 2 years of experience, be a member of a registered medical response unit, and successfully complete a community EMT training program to become a community EMT. This bill would allow more emergency medicine personnel to perform services outside of emergency situations.

Nursing organizations have opposed legislation expanding practice for paramedics and EMTs, expressing difficulties regarding the coordination of care. Although nurses are concerned that a lack of education and training at the EMT and paramedic level can harm patients, nurses do acknowledge the need for better access to care, particularly in rural areas of the United States. Nurses also understand that an evolving health care landscape may require role flexibility (Jorgenson, 2015; Minnesota Organization of Registered Nurses, 2015).

Pharmacists

Pharmacist roles have changed substantially in recent years. Blue Cross/BlueShield of Michigan (2015) recently announced their Michigan Pharmacists Transforming Care and Quality program. Pharmacists will work with patient-centered medical home practices, reviewing medication adherence and monitoring medication plans. Other expanded duties for pharmacists include coordination and monitoring of prescription-drug databases, administration of vaccines, chronic disease drug management as part of a patient-centered team and, in some cases, collaborative practice within a health team (Centers for Disease Control and Prevention [CDC], 2013). The change to a more robust clinical focus has required changes in pharmacy education, which now includes expertise in pharmacy informatics, medication-use processes and treatment strategies; development of group and individual educational strategies; clinical mentoring; vaccine administration; and outcomes measurement (Owusu-Obeng et al., 2014).

Community Health Workers

Community health workers are entering a new era of partnerships with health care homes. They now are more actively engaged in

partnerships among the local community, ambulatory care, acute-care facilities, and provider practices in an effort to better support care in the home and community. Including community health workers as integral members of the provider team is proving to be an important strategy in managing health costs by providing care continuity outside the acute-care centers and supporting patients in their home environments (Phalen and Paradis, 2015).

Quality and Safety of Health Care

Measures of Quality and Safety

Throughout 2014 and 2015, various reports demonstrated improvement in quality and safety outcomes. A U.S. Department of Health and Human Services (HHS) report released in December 2014 illustrates that U.S. hospital mortality decreased by 50,000 and as a result of reductions in hospital-acquired conditions from 2010 through 2013, $12 billion was saved (HHS, 2014a).

The National Database of Nursing Quality Indicators also shows significant reductions in falls and trauma, pressure ulcers, and ventilator-associated pneumonia (National Quality Forum, n.d.). Additionally, CMS data demonstrate a significant decrease in venous thromboembolic complications and readmissions for all causes (HHS, 2014b). The programs or systems that report as part of the patient engagement network of The National Quality Forum indicate significant decreases in early elective delivery and obstetrical trauma (HHS, 2014b). The use of evidence-based care bundles, small sets of evidence-based practices that health care teams practice consistently, have also helped improve patient safety (Institute for Healthcare Improvement, 2015). Evidence suggests that national efforts to address system and person safety are effective. In an effort to continue this forward momentum, the National Patient Safety Foundation (NPSF) suggests that learning from near misses and considering risk before taking action could help with continued safety improvement.

Each year, the Emergency Care Research Institute (ECRI Institute)—whose mission is to promote the highest standards of safety, quality, and cost-effectiveness in health care—publishes a ranking of the top 10 patient safety concerns. In 2015, alarm hazards were ranked first. Patient alert alarms are intended to assist with care but can be configured incorrectly and cause anxiety in the patients and alarm fatigue in staff members. Organizations need sensible policies and procedures regarding the configuration of alarms (ECRI Institute, 2015).

Also on the ECRI Institute list of patient safety concerns were incorrect or missing data from electronic medical records, mix-ups of I.V. lines leading to medication errors, care coordination regarding medication reconciliation, the conducting of independent double-checks as a patient safety strategy, opioid-related events, inadequate cleaning of scopes, inadequate handoffs in patient transport, and medication errors related to converting or recording pounds and kilograms (ECRI Institute, 2015).

Errors in Diagnosis

Errors in diagnosis can lead to delayed, unnecessary, or even harmful treatments. An estimated 5% of U.S. adults, approximately 12 million people, who seek outpatient care are subject to a diagnostic error each year (Singh, Meyer, & Thomas, 2014). However, because of a lack of reliable measures and data, few studies on diagnostic errors exist. To assess and improve the quality and safety of health care, the IOM and 10 sponsors conducted a study addressing the improvement of diagnosis in health care. A 21-member committee, including two nurses (Christine Goeschel, ScD, MPA, MPS, RN, FAAN, an IOM committee member, and Beatrice J. Kalisch, PhD, RN, FAAN), was convened to analyze diagnostic errors and propose solutions for actions.

On September 22, 2015, the IOM released *Improving Diagnosis in Health Care*, the most recent report in the IOM's Quality Chasm series (IOM, 2015b). The recommendations address improvements in teamwork, diagnostic education and training, analysis of near misses, work system and culture, payment and care delivery environment, and funding for research on diagnosis. The committee pointed out that nurses spend more time with patients than other team members; thus, nurses will play a critical role in improving diagnoses, especially in the hospital setting (IOM, 2015b).

Disparities in Quality of Health Care

The AHRQ's national health care quality and disparities reports (QDRs) provide a comprehensive overview of the quality and disparities in health care in the United States. As mandated in the Health Research and Quality Act of 1999 (P.L.106–129), these reports are presented to Congress annually. The 2014 QDR indicated clear progress in improving the health care delivery system through improved access to care, elimination of some disparities, and improved quality on most national safety strategy priorities. However, the report revealed that there is still more work to do to continue to reduce disparities in care (AHRQ, 2015).

Root Cause Analysis Model

In 2015, the NPSF presented new guidelines for the evaluation of errors entitled *RCA²: Improving Root Cause Analyses and Action to Prevent Harm* (RCA²). Root cause analysis is a process frequently used by health care organizations to identify and learn from medical errors and problems. However, no standardized best practices had ever been established. The NPSF, funded by a grant from the Doctors Company Foundation, formed a panel of subject-matter experts and stakeholders, including five nurses, to develop the RCA² guidelines to help health care providers identify and assess mistakes or near misses and determine proper actions in a consistent manner. Endorsed by the NCSBN board of directors, the RCA² guidelines help organizations prioritize risks and reduce the likelihood of an event. The goal is to ensure that efforts taken in performing RCA² lead to problem identification and system

improvements that reduce the recurrence of problems and prevent harm to patients (NPSF, 2015).

The RCA[2] includes the following:

- Review of near misses and close calls
- Timely action when incidents occur
- Solutions to errors or problems to eliminate system vulnerabilities
- Development of measurement to evaluate the effectiveness of solutions
- Leaders' active involvement in making changes
- Focus on system solution instead of individual blame.

Implications for Boards of Nursing

The ACA's evolution will continue to change the health care environment in 2016 and beyond. States participating in Medicaid expansion see a decline in the proportion of uninsured as well as increased spending on health care. As part of the health care community, nurses may see more opportunities arise in those states. The next few years will be a period of sorting out the balance of responsibility among governments, insurers, employers, employees, patients, and health professionals for picking up the costs of the health care expansion.

The trend of stand-alone hospitals closing or moving into national health care organizations will continue through the next decade. Urged by ACA regulations, providers will continue to experiment with ACOs and other forms of team-based health delivery such as patient-centered health homes. Innovative delivery methods, such as ubercare and hydration stations, will continue to expand as health professionals take advantages of new technologies.

Congressional telehealth advocates will continue to push for Medicare and other federal health programs to reimburse providers for the delivery of telehealth services. These advocates also will continue to consider the possibility of licensure exemptions for health professionals delivering telehealth services. And state legislatures will continue considering and adopting several different health care licensure compacts in the next year.

The need for better access to care, particularly in rural areas, and the creation of new service models is leading paramedics, EMTs, pharmacists, and community health workers to take on expanded roles. APRNs are also looking forward to taking on expanded roles in the new delivery models, but the trend of state medical associations putting forth legislation to inhibit the solo practice of APRNs may grow.

Nurses are becoming increasingly involved with other health team members and are actively participating in initiatives to improve the quality of health care as well as the equality of health care for all Americans. Because nurses serve an increasingly more diverse population, there is an urgent need to build a diverse nursing workforce that represents the people it serves to meet these challenges.

To better facilitate nurses' roles in patient safety, nursing educators should focus on strengthening curricula in communication, teamwork, and critical thinking. With the increasing demand for quality care and expanded access to care for underserved populations, BONs may face more challenges in nursing education and telehealth regulation, for example, how to maintain or raise nursing educational standards with limited clinical sites and nursing faculty shortages and how to increase collaboration among BONs to regulate and discipline nurses who practice telehealth across state borders.

The RCA[2] provides a rich resource on how to form a team, plan and implement a root cause analysis that incorporates action, and assess the quality of the RCA[2] process. The release of the new guidelines is expected to stimulate global interest in conducting RCA[2] in the health care system. Workplace culture is shifting to identifying system issues and taking action towards solutions by understanding the root causes of errors or near misses.

Societal Influences on Nursing Practice

As described, the regulation of nursing is influenced by the characteristics of the workforce, the nursing education system, and health care access and delivery. Additional factors that will continue to affect the U.S. nursing workforce include the health of the general public, new therapies and technology, and emerging societal behaviors.

Opioid Epidemic

The first compilation of global evidence on addictive disorders showed that tobacco and alcohol use are the most prevalent addictive behaviors; however, unsanctioned psychoactive drug use was another major contributor to morbidity and premature death (Gowing et al., 2015). The use of unsanctioned psychoactive drugs accounts for approximately 83 disability-adjusted life years lost per 100,000 population. The study authors note that "while opiate use (e.g., opium and heroin) has remained relatively stable in recent years, misuse of pharmaceutical opioids is increasing and opioid dependence is the greatest contributor to illicit drug burden" (Gowing et al., 2015).

According to the Centers for Disease Control and Prevention (CDC), 16,235 U.S. deaths involved prescription opioids in 2013, an increase of 1% from 2012 (CDC, 2015b). In 2013, the number of deaths involving heroin increased to 8,257, up 39% from 2012. Total drug overdose deaths in 2013 totaled 43,982, a 6% increase from 2012 (CDC, 2015a).

Misuse of pharmaceutical opioids influences the health care regulatory environment on two fronts: inappropriate or nontherapeutic prescribing by prescribers and the diversion of drugs by health care practitioners at all levels. Opioid dependence can result from misuse of prescribed opioids as well as the nontherapeutic prescription of opioids. Published best medical practices cannot alone combat this public health epidemic. Only a multifaceted approach, including prescribers, regulatory authorities, pharmaceutical companies, employers, legislators, law enforcement, and

the federal government has a chance at turning the tide of the opioid-related morbidity and mortality.

Diversion of opioids can result from theft and unlicensed Internet pharmacies, although in the United States most opioid misuse is a result of doctor shopping. Patients exploit gaps and weaknesses in the health care system. Estimates of opioid abuse range from 0.3% to 12.8% of all patients purchasing opioids, depending on location or study sample (McDonald & Carlson, 2013).

Florida, once a state rife with pill mills, has demonstrated that a prescription drug monitoring program (PDMP) and pill mill legislation can decrease opioid prescribing and use. One year after the implementation of Florida's measures, researchers report that opioid prescriptions decreased by 1.4% and opioid volume decreased by 2.5%. Also, morphine milligram equivalent per transaction (measure of morphine across different preparations) decreased by 5.6% (Rutkow et al, 2015).

Despite these results, PDMP legislation without a campaign involving practitioners, regulators, and law enforcement will allow PDMPs to become instruments used only by highly effective practitioners. In a study released in April 2015, a majority of surveyed primary care physicians reported that PDMPs were difficult to access (Rutkow, Turner, Lucas, Hwang, & Alexander, 2015). The researchers noted that 72% of respondents were aware of the state's PDMP, and only 87% of them had used the PDMP for their patients. Thus, only slightly more than half of the respondents used the PDMP.

Physician groups are working together to address drug overdose deaths resulting from prescription opioid use, proposing education on the need for and use of PDMPs. An AMA task force is urging physicians to register for and use state-based PDMPs (AMA, 2015). Educating prescribers about the need for and use of drug-monitoring measures is necessary to make PDMPs instruments that provide effective, evidence-based prescribing and curtail prescription drug misuse.

State legislators and governors are among those participating in efforts against opioid drug abuse. New Jersey authorized the attorney general to coordinate statewide law enforcement efforts against opioid drug abuse that include law enforcement, the division of consumer affairs, and professional licensing boards. Recommended training for physicians, pharmacists, and other health care professionals will also be provided (New Jersey Senate Bill 2372, 2015). New York announced the expansion of its Combat Heroin and Prescription Drug Abuse Awareness campaign. The expansion will include advertisements via social media, website, and television (New York State, 2015). Massachusetts announced the formation of a new task force that will formulate a statewide strategy for dealing with addiction, treatment, and recovery. The task force—consisting of law enforcement officials; physicians; and addiction, prevention, treatment, and recovery experts—will hold public meetings and submit recommendations. In addition, county-level data on opiate addiction were released with the intention of highlighting trends, such as doctor shopping and using various pharmacies to fill opioid prescriptions (LeBlanc, 2015).

Opioid products are often manipulated for purposes of abuse by different routes of administration or to defeat extended-release preparation. To combat this manipulation and deter abuse, the FDA (2015) issued guidance for the study and development of abuse-deterrent opioids.

In the 2016 budget, President Obama proposed millions of dollars in new investments for the HHS to decrease the number of deaths from prescription opioids and heroin (HHS, 2015b; "How Obama plans," 2015;). In July, the HHS announced that $100 million in funding will be made available to states and community health centers to expand the use of medication-assisted treatment for opioid use disorder (HHS, 2015b). The new funding is provided through the Substance Abuse and Mental Health Services Administration and will go to 11 states to increase access to comprehensive medication-assisted treatment for opioid use disorders. The states can use the funding to enhance and expand their opioid use disorder treatment service systems.

Most recently, the White House announced federal, state, local, and private sector efforts to address prescription drug abuse and the heroin epidemic (The White House, 2015). The new initiative includes two major aims: prescriber training and improved access to treatment. Federally employed health care providers who prescribe opioid pain medications will be required to complete opioid prescriber training. More than 40 provider groups have made commitments to have more than 540,000 providers complete opioid prescriber training in the next 2 years. The provider groups include APRNs, PAs, physicians, dentists, and physical therapists. The required training addresses best practices for prescribing, principles of pain management, and information on misuse.

The initiative seeks to improve access to addiction treatment through the use of medication-assisted therapy for the treatment of prescription painkiller and heroin addiction. Federal departments and agencies that directly provide, contract to provide, reimburse for, or facilitate access to health benefits must conduct a review to identify barriers to medication-assisted treatment for opioid use disorders and develop action plans that address the barriers.

Additionally, the HHS announced that the CMS is offering state Medicaid programs an additional way to receive government funding through a demonstration project that reimburses providers for substance use disorder (SUD) treatment (HHS, 2015a). This new opportunity will help states implement treatment approaches, including the development of effective care coordination models to better connect people with SUD to providers.

Legalized Medical and Recreational Cannabis

Despite the long-term controversy over the legalization of marijuana, medical cannabis is legal in 23 states and the District of Columbia, and the sale or distribution of recreational mari-

juana is legal in four states and the District of Columbia (Office of National Drug Control Policy, n.d.). In states with access to medical marijuana, a significant decrease in opioid-related deaths is reported, possibly as a result of chronic pain patients switching their prescriptions to medical marijuana (Bachhuber, Saloner, Cunningham, & Barry, 2014).

A current clinical trial is testing the use of cannabidiol, a nonpsychoactive component of marijuana, as a possible method of reducing opioid cravings in the treatment of addiction (Hurd, 2015). Cannabidiol is also being studied as a treatment for certain medical conditions such as epilepsy, and clinical trials are in progress for other marijuana extracts to treat a variety of autoimmune and mental disorders (National Institute on Drug Abuse, 2015).

At the federal level, however, marijuana remains a Schedule I substance, which prevents practitioners from prescribing it; instead, a patient must receive a recommendation to purchase marijuana at a dispensary or grow it themselves. Federal law also prevents the National Institutes of Health (NIH) from conducting research on marijuana's benefits and recommended dosage. A federal bill that would have rescheduled marijuana to allow such research, H.R. 6, failed to pass the House of Representatives in July (Davis, 2015). Two reviews published in the *Journal of American Medicine* shortly before the vote emphasized the paucity of evidence to support marijuana treatment for various ailments (Hill, 2015; Whiting et al., 2015). An accompanying editorial called for federal support of methodologically sound trials (D'Souza & Ranganathan, 2015). The American Academy of Neurology (2014) released a similar statement in late 2014, citing the need for rigorous study before advocating the use of marijuana for neurological disorders.

A 2015 systematic review of research (Sznitman & Zolotov, 2015) shows an absence of evidence that medical marijuana availability is detrimental to public health and safety; however, the article notes that the current body of research in this area is small and that evolving policies, including the full legalization of marijuana, may change the environment. Though evidence of a public health threat is unclear, a Johns Hopkins study found that the dosages in available cannabis products vary widely and are largely unregulated and inaccurate (Vandrey et al., 2015).

Known health hazards from the use of marijuana include the risk of addiction, psychosis, and the exacerbation of existing psychological disorders. EDs are seeing an uptick in cases of psychosis caused by marijuana overdoses in areas where recreational marijuana is readily available, and hospitalizations related to marijuana consumption are also on the rise (Rocky Mountain High Intensity Drug Trafficking Area, 2015). More pertinent to the nursing workforce, however, is the cognitive impairment caused by marijuana use. The relationship between THC concentrations and the degree of intoxication and the time needed to metabolize has proven difficult to correlate. Depending on the user, THC may still be detected in the bloodstream up to 2 weeks after use (Gundersen, 2015b).

Evidence suggests that the potential for abuse should not be ignored. The majority of marijuana recommendations to date have been made for subjective conditions such as chronic pain, and made by practitioners whose practices are built on marijuana recommendations, potentially without learning a patient's complete medical history (Gundersen, 2015a). Colorado revised its marijuana policy in 2015 to strengthen the requirements of the physician-patient relationship and ensure that practitioners are practicing responsibly (Colorado Revised Section 25-1.5-106(6)).

Even in states where recreational marijuana has been legalized, the fact that marijuana use, distribution, and sale remain illegal at the federal level creates some legal confusion. In June 2015, the Colorado Supreme Court determined that employers could still dismiss employees for marijuana use even if the drug use was legal by state law and took place off duty. In the 24 jurisdictions where medical marijuana is legal, this decision has profound implications for working adults consuming marijuana as a medical treatment (Berman, 2015).

Workplace Violence

Whether referred to as incivility, bullying, or lateral or psychological violence, behaviors that include threats, verbal abuse, and physical abuse are considered acts of workplace violence and create a hostile work environment. Over the past few years, numerous articles were published in professional journals highlighting the seriousness of the problem of bullying and other disruptive workplace behaviors among nurses in all roles and settings. Workplace violence was near the top of the ECRI Institute ranking of patient-safety concerns (ECRI Institute, 2015). Additionally, "research has linked workplace bullying among RNs to medical errors, unsafe hospital environments, and negative patient outcomes" (Skarbek, Johnson, & Dawson, 2015, p. 492).

Another serious and growing problem for nurses and the health care workplace is workplace violence perpetrated by hospital patients or visitors. Violent acts against health care workers are being reported in the media more frequently, and many of these acts result in serious injuries and affect workers' sense of safety and teamwork and ultimately lead to high turnover rates (Cipriano, 2015). Despite the high numbers of such incidents, no federal laws regulate such behavior, and only seven states require employers to have workplace violence prevention programs (Flanagan, 2015).

In a recent survey of 3,765 RNs, nearly 25% of respondents reported being physically assaulted at work by a patient or visitor. Up to 50% of respondents reported being bullied by a peer or manager (American Nurses Association [ANA], 2015a).

The environment that accepts violence and incivility does so at risk to safe patient care. Nurses have an ethical responsibility to their colleagues to respect the worth, dignity, and human rights of all individuals with whom they interact in the workplace (Longo, 2012). The American Nurses Association (2015a) issued a position statement, *Incivility, Bullying, and Workplace Violence*, stating that all "RNs and employers in all settings, including

practice, academia, and research, must collaborate to create a culture of respect that is free of incivility, bullying, and workplace violence." It also calls for the implementation of evidence-based practice "to prevent and mitigate incivility, bullying, and workplace violence; to promote the health, safety, and wellness of RNs; and to ensure optimal outcomes across the health care continuum" (ANA, 2015a).

The ANA position statement, which was developed by RN clinicians, executives, and educators, calls for zero tolerance of violence of any kind from any source and recommends strategies that include education, conflict resolution, and respectful communications and workplace policies to prevent and deal with bullying and other forms of violence.

Changes to Nursing's Code of Ethics

Coinciding with the release of a revised *Code of Ethics for Nurses with Interpretive Statements* (ANA, 2015c), the ANA declared 2015 as The Year of Ethics and identified the focus of 2015 National Nurses Week as ethical practice and quality care. The ANA received several thousand comments during the 4-year process of revising the *2001 ANA Code of Ethics for Nurses with Interpretive Statements.* Nurses commented on the need for additional content to reflect changes in the nursing profession, the health care delivery system, and society as well as challenges to ethical practice brought about by such factors as social media and technology. As with past versions, the 2015 Code (ANA, 2015d) establishes the profession's nonnegotiable ethical standard, expresses nurses' professional commitment to society, and describes the "values, obligations, duties, and professional ideals" of the profession (Epstein & Turner, 2015). As such, the 2015 Code provides constancy by stating the core of professional values and obligations and change by reflecting changes in the nursing profession, health care, and the practice environment.

The 2015 Code retains the nine provisions of the 2001 Code: The first three provisions describe the fundamental values and commitments of the nurse, including respect and a commitment to relationships with patients, colleagues, and others; the next three address the issues of duty and loyalty, such as duty to self and others and responsibilities for the health care environment; and the final three address aspects of duty that go beyond individual patient encounters, such as advancing the profession through research and scholarly inquiry, integrating social justice, and advancing health policy. Provision six focuses on the responsibility of nurses to contribute to health care environments that are conducive to safe, quality health care. The focus is on the role of nurse leaders, on social justice, and on the code providing ethical guidance to nurses in all roles and settings. The Code provides guidance to nurse regulators when they deliberate on appropriate actions to take regarding a violation of the ethical standard of care. In the District of Columbia, the responsibility of nurses to adhere to the standards in the Code is incorporated into the municipal regulations (Stokes, 2015). Some states have incorporated the Code into their nurse practice acts (NPAs).

Blueprint for 21st Century Nursing Ethics

Before the 2014 summit on nursing ethics for the 21st century (Johns Hopkins Berman Institute of Bioethics, 2014), *A Blueprint for 21st Century Nursing Ethics* was created. This blueprint delineates four critical domains—clinical practice, education, research, and the public—and priorities for each domain. Following the blueprint can help achieve the triple aim of health care: improving the experience of care, reducing per capita health care costs, and improving population health.

Big Data

In the future, the collection and analysis of *big data,* defined as a large volume of digitized information that traditional database and software techniques cannot adequately process, may revolutionize health care. Patient-related data are generated from a vast array of sources along the continuum of care and collected in massive databases and repositories of electronic information (HIMSS Analytics, 2015). With the right tools and in the right hands, these data can offer a comprehensive picture of patient processes and outcomes and expedite the translation of evidence into clinical practice (Brennan & Bakken, 2015; Price, Shea, & Gephart, 2015). The challenges for nurse leaders are to engage in the generation and use of big data and to ensure that big data systems encompass nursing activity and lead to discoveries that advance nursing practice and improve patient outcomes.

Familiar sources of big data that inform nursing practice include digitized clinical records from the electronic health record (EHR), such as encounter notes, laboratory reports, and medication data; standardized survey measures; staffing figures; public health databases; and costs and claims data. Mobile and personal health technologies, such as biosensors, sleep monitors, and patient communication portals for reporting self-care and tracking outcomes, are new and growing sources of big data. Analysis of these datasets can reveal patterns and correlations, which can be used to predict future activity. For example, data from implantable cardiac sensors can identify subtle patterns of approaching heart failure; optic fibers in carpet pads detect patient gait patterns and can predict the probability of a fall (Westra et al., 2015).

Big data from existing and emerging sources offer a vast modeling and analytic resource with the potential to inform nursing practice and drive innovative approaches to improve patient care outcomes. For example, the genomic technologies generate large volumes of data (Stephens et al., 2015), and innovative nurse researchers are mining them to characterize genetic polymorphisms that interact with the gastrointestinal microbiome to affect pain and sleep patterns in patients with irritable bowel syndrome (Conley et al., 2015). By incorporating new areas of science such as genomics with areas in which nursing has built an important

foundation of clinical knowledge, researchers can continue to blaze new trails in evidence-based patient care.

Despite a call to action from the ANA to engage in big data science (Clancy et al, 2014), nurse leaders face obstacles to utilizing big data to inform nursing science and enhance nursing practice. For instance, little to none of the clinical information on nursing actions and patient outcomes are entered into EHRs in ways that can be used in big data analyses (Keenan, 2014). Most EHRs use data language specific to the organization they serve; thus, nursing and other clinical data are not standardized and not comparable across settings. To be comparable, data elements need to be interoperable (i.e., defined, measured, and retrievable in the exact same format). Without standardization and interoperability in EHR systems, demonstrating the impact of nursing care on patient outcomes is difficult (Keenan, 2014). Similarly, the lack of direct billing for care provided by APRNs makes using big data to evaluate APRN care and patient outcomes difficult.

Nurse researchers and educators may not have a command of big data methods needed to access and integrate datasets that can generate actionable knowledge for nursing practice (Henly et al., 2015). The VA has compiled a data warehouse of 20 years of clinically relevant data for research. Between 2010 and 2014, 79 studies were conducted using this data warehouse, primarily on systems issues affecting health care quality and outcomes. Yet only one study was conducted by a nurse researcher (Price et al., 2015). In 2015, an advisory committee of experts in nursing science convened by The Council for Advancement of Nursing Science concluded that important steps need to be taken to equip future nurse researchers with the knowledge and skills necessary to work in the fast-paced world of big data science and technology (Henley, McCarthy, Wyman et al., 2015).

Numerous avenues are available for nursing to engage in big data science. Many advocate establishing appropriate standards to support the inclusion of nursing data in EHRs across sites and settings (Brennan & Bakken, 2015; Westra et al., 2015). In 2015, the ANA recommended the use of "standardized and accepted terminologies" regardless of setting (ANA, 2015b). Such use would increase system interoperability as would the consistent use of research-based assessment scales and instruments that have been standardized via international consensus (HIMSS Analytics, 2015). The National Database of Nursing Quality Indicators provides an excellent example of the power of analyzing large aggregated datasets of standardized nursing-sensitive measures to inform patient care, such as staffing ratios, fall prevention, and wound care (Boyle, Cramer, Potter, & Staggs, 2015; Choi, Boyle, & Dunton, 2014; Morehead & Blain, 2014).

The development of a national credentialing database to explore potential links among credentialing and quality of care, uniformity of practice, and patient outcomes is still in the preliminary stages, but the database may offer an opportunity to engage in big data generation and ensure nursing activity is encompassed in big data systems (Hickey et al., 2014). In 2015, the IOM hosted the Future Directions of Credentialing Research in Nursing Workshop. Experts provided both short- and long-term strategies to advance the field of nurse and organization credentialing research (IOM, 2015c). Although APRN care is billed in collaboration with a physician, certain costs and claims data from Medicare Part D can also provide researchers with prescribing and billing information at the individual provider level that could help facilitate tracking cost-effectiveness per skill mix of care provider.

Nurse executives have an incentive to understand the sources of big data and be able to glean important insights about care delivery, care outcomes, cost-effectiveness, and patient safety (University of Minnesota School of Nursing [UMSON], 2014). They have a responsibility to ensure that big data insights drive organizational improvements and advance business performance (UMSON, 2014). Nurse executives in health facilities are well positioned to leverage nursing informatics to optimize health technology that supports standardized EHR systems for tracking quality metrics that affect health outcomes. Trained nursing informaticists can also help develop new applications that incorporate patient-generated information, include nurse-centric measures, and provide decision support for clinicians (HIMSS Analytics, 2015).

Resources on big data for nurse leaders are plentiful. The NIH has an initiative called Big Data to Knowledge (BD2K) to support research and development of innovative approaches to integrate big data into medical research (NIH, 2015) The National Library of Medicine (2015) recently published the Resource for Nursing Standards and Interoperability. An evolving national plan spearheaded by the University of Minnesota School of Nursing provides nursing leaders with guidance on including nursing and patient-generated data along with interprofessional and contextual data into interoperable systems (Westra et al., 2015). The Nursing Knowledge: Big Data Science plan even created a big data checklist for nurse executives (UMSON, 2014). The Patient Centered Outcomes Research Institute (PCORI) has developed PCORnet, a representative national system for conducting clinical outcomes research and an ever-increasing amount of data from clinical research data networks and patient-powered research networks (Brennan & Bakken, 2015; Fleurence et al., 2014). With the right resources and skill sets, nurse executives, educators, and researchers can discover and translate knowledge into practices that transform care interventions and improve patient outcomes.

Implications for Boards of Nursing

The many societal influences on nursing practice described above will also impact nursing regulatory bodies. For example, many stakeholders, including legislators, regulatory bodies, medical groups, the CDC, CMS, FDA, and law enforcement, are involved in deterring opioid abuse. Only through the coordination of stakeholder efforts can opioid abuse be decreased. Employers of health care professionals must accept accountability for preventing, detecting, and reporting diversion of opioids or other drugs

by health care professionals. Terminating employees for diversion or use does not terminate the problem; it just moves the nurse and the problem to another facility and continues to put patients at risk. Employers must notify BONs, who then can investigate, reveal violations of NPAs, and remove a nurse from practice in most states by offering help through an alternative-to-discipline program, which provides rapid involvement in a rehabilitation or treatment program.

Nurses with prescribing authority may not see FDA-approved, cannabis-derived treatments for some time. Despite a number of early-stage clinical trials, the moratorium on federal funding for marijuana-related research is a barrier to development. Six states (California, Maine, Minnesota, New Mexico, New York, and Washington) permit APRNs to write patient recommendations for marijuana. To practice responsibly, APRNs who choose to recommend medical marijuana must take extra steps to ensure that they practice evidence-based nursing. A thorough, documented medical history should be compiled for each patient, an informed consent should be obtained, and the practitioner-patient relationship must be maintained with regular follow-ups to monitor the patient for adverse effects and signs of SUD (Gundersen, 2015b).

Because SUD is one of the most prominent disciplinary issues facing nurses, the potential use of cannabidiol, a nonpsychoactive marijuana extract, as a treatment for opioid addiction may open new possibilities for nurses struggling with SUD. Nurses who obtain recommendations for medical marijuana use or who use marijuana recreationally where statutes allow should be aware of the impact such use may have on their practice. Marijuana use, even if legal at the state level, is a defensible cause for dismissal. Unregulated potency and dosage and variation in the metabolic rate from person to person means that users may not be able to predict the duration of their impairment. Little evidence exists on which to base a legal standard of impairment, and signs of marijuana use may continue to appear in drug tests long after impairment ends. In states where marijuana use is legal, BONs should have objective processes that allow consistent discipline for nurses practicing under the influence of marijuana to ensure that all nurses are safe to practice.

Regulators need to be aware of the emerging ethical themes for nursing: the need for a more intentional and proactive approach to ethical practice; the significance of moral distress in the daily lives of nurses; the interplay among ethics, environment, and culture; the need for interdisciplinary and cross-organizational efforts; and the changing nursing work environments.

Big data offers a profound opportunity to advance nursing's unique understanding of the patient experience and nurse-sensitive outcomes of care and to ensure that data are fully utilized to discover new knowledge useful to nursing practice and the delivery of health care (Brennan & Bakken, 2015). Nursing education programs at all levels should require training in big data science. Additional training and certification in nursing informatics will help harness big data. Also, policies that call for the standardization of nursing data and quality measures in EHRs are important. Once policies are implemented, evidence-based practice, research, and education can flow from the analysis of big data.

The Changing Face of U.S. Nursing Regulation

As described, the environment in which practitioners, educators, and regulators work is undergoing sweeping transformations. No longer are practice and education confined to the walls of a facility or the boundaries of a state. Nursing in the 21st century is a dynamic profession, with nurses caring for and communicating with patients across long distances, and nursing licensure in the 21st century needs to be fluid across state boundaries.

In 2015, the need to facilitate telehealth and the mobility of practitioners became a pivotal issue for regulators. A significant number of licensing boards began examining how to better facilitate the mobility of licensees and increase access to care across state lines while protecting the public. At the forefront was nursing. BONs seeking a solution to questions related to the future of regulation united in a series of meetings to examine the current licensure models and determine a course of action for the future. The anticipated outcome will unite states in their licensure requirements, increase access to care, and decrease the cost of multiple licenses while maintaining the quality of care and providing the highest standards in public protection.

For the last 15 years, two licensure models have coexisted across the United States and its territories. The traditional, single-state licensure model requires a license for every state in which a nurse works. The alternate model introduced in 2001 is the nurse licensure compact (NLC). This model includes a multistate license provided by the state of residence and allows a nurse to work in other compact states without obtaining additional licenses. Twenty-four states passed legislation enabling nurses in their states to have one multistate license; however, not all states were willing to become members of the NLC because of differing licensure requirements, namely state and federal criminal background checks (CBCs).

In 2015, BONs made a commitment to one another to examine their states' differences and develop a model that would meet the needs of a majority of the BONs. The result was a new version of the NLC enhanced with uniform licensure requirements, including state and federal CBCs. In May 2015, the BONs adopted the enhanced NLC as the model of the future in the United States.

The enhanced NLC facilitates telehealth; case management; numerous specialties, such as hospice and transport nursing; and nursing practice in general by allowing a nurse to be located in one state and communicate or provide care to patients in other states without the expense of an additional license. NCSBN's initiative to adopt the enhanced NLC will be at the forefront of regulation in the coming years.

Enhanced Nurse Licensure Compact

While maintaining many of the elements of the original NLC, the enhanced NLC also addresses some of the hurdles to adoption and some improvements to allow the NLC to operate seamlessly into the future. The new elements of the enhanced NLC are discussed below.

Uniform Licensure Requirements

The enhanced NLC contains uniform licensure requirements (ULRs) for the issuance of a multistate license. Enumerating the ULRs allows all states to be confident that the nurses practicing in their state are qualified and have met a uniform standard of nursing.

Each nurse is required to:

- Meet the home state's qualifications for licensure
- Graduate from a qualifying education program and be proficient in the English language
- Pass the NCLEX-RN® or NCLEX-PN®
- Have no prior felony convictions and no misdemeanors related to the practice of nursing as determined on a case-by-case basis
- Submit to a criminal background check
- Not be currently enrolled in an alternative program
- Have a valid social security number and be proficient in English, if a graduate of a foreign prelicensure program.

Grandfathering Provision

When a state adopts the enhanced NLC, all new licensees in the state will receive a multistate license that allows them to practice nursing in any enhanced NLC state. For the process to be as seamless as possible, all licensed nurses in the current NLC will automatically be grandfathered into the enhanced NLC when his or her state adopts the enhanced NLC. The exceptions are nurses who change their primary state of residence, nurses whose multistate license is revoked (e.g., a nurse is convicted of a felony), and nurses who have not renewed their license in accordance with state laws.

The Interstate Commission of Nurse Licensure Compact Administrators

The Interstate Commission, comparable to the current Nurse Licensure Compact Administrators, is composed of NLC administrators representing each state. Establishing the compact governing body and naming it a commission in statute are appropriate actions to give the commission standing, to afford the commission immunity protections, and to hold it accountable. The enhanced NLC was drafted utilizing the same boilerplate language as several other modern interstate compacts in which a joint public entity is established and referred to as a *commission*.

Rule Making

Rule-making authority is needed to carry out internal functions of an administrative nature that do not directly pertain to qualifications for a multistate license or, most importantly, scope of practice. The rule-making ability of the commission removes the requirement that rules be adopted by individual states in the NLC, which proved difficult in the current NLC. Some issues the commission could decide via rule making include the time for a state to complete data entry related to licensing actions involving a nurse and the time that a state may allow a nurse to practice on a former multistate license after changing primary residence from one compact state to another. Additionally, there are procedural requirements to guarantee transparency and public involvement, including notice to the public of proposed and adopted rules and opportunity for comment and public hearing.

Nursys® and Criminal History

BONs who adopt the NLC are required to participate in the national nurse license database, Nursys, which authorizes sharing licensure and disciplinary information among NLC states throughout the investigative course; thus, a nurse is flagged while under investigation, not only when formally disciplined. The enhanced NLC continues to require participation in Nursys and requires that BONs collect fingerprint criminal history records from the state and the Federal Bureau of Investigation. CBCs provide information necessary to make sound licensure decisions, supporting the BONs' mission to protect the public. A nurse with a prior felony conviction is not allowed to possess a multistate license, but he or she may have an individual state license.

Effective Date

The enhanced NLC does not become effective until the earlier of enactment by 26 states or December 31, 2018. Multistate licenses issued under the current NLC will be recognized by party states in the enhanced NLC for 6 months after the enhanced NLC's effective date.

New APRN Compact

The new APRN Compact shares many of the provisions of the enhanced NLC, but it is a separate compact for the multistate mobility of APRNs. This compact is available to APRNs in all four roles: CRNA, CNM, CNS, and certified nurse practitioner (CNP). Similar to the enhanced NLC, the APRN Compact is a mutual recognition model of licensure that allows APRNs to be licensed in the state where they reside but hold privileges to practice in every state that is a member of the Compact.

The APRN Compact includes all tenets of the APRN Consensus Model, including full practice authority and full prescriptive authority for noncontrolled prescription drugs. To be eligible for the APRN Compact, a nurse must be licensed as an APRN in one of the four roles, have completed graduate education from an accredited program, and be certified at an advanced level from an accredited program.

As with the enhanced NLC, the APRN Compact requires a fingerprint background check and bars a nurse with a felony from participation. The APRN Compact also has an interstate commission with rule-making ability. The commission, which is

made up of a representative from each member state in the APRN Compact, will adopt the rules for uniform licensure requirements based on the APRN Consensus Model.

The APRN Compact will come into effect when 10 states enact the APRN Compact into law, at which time the commission will be established and convene. A party state of the APRN Compact can withdraw by enacting a statute repealing the APRN Compact. The withdrawal will take effect 6 months after the repeal.

APRN Campaign for Consensus

Begun in 2008 (NCSBN, 2008), the NCSBN Campaign for APRN Consensus is in its 7th year and provides BONs and other stakeholders with resources, services, consultation, and support for passing legislation that aligns state APRN regulations with the Consensus Model for APRN Regulation, Licensure, Accreditation, Certification, and Education (Consensus Model).

APRN State Legislation

Many states made progress in the 2015 legislative session toward aligning their regulations with the Consensus Model. Delaware, Iowa, and Oregon passed legislation to bring their NPA, rules, and regulations into complete alignment with the seven most important elements of the Consensus Model.

Nebraska's new governor signed an APRN bill that removes the collaborative agreement requirement for CNPs, and Maryland successfully removed the required attestation of continued collaboration for the CNP, CNM, and CNS roles. Iowa and Oregon were successful in aligning the APRN titles for all four APRN roles with those prescribed in the Consensus Model.

Other 2015 state legislation extended the APRN scope of practice:

- Psychiatric mental health CNSs and psychiatric mental health CNPs can determine which patients require involuntary commitment. (Florida, Hawaii, Iowa, Maryland, New Hampshire, North Dakota, Nevada, Vermont, and Washington)
- APRNs gained expanded authority to sign medical records and death certificates. (California, Maryland, Missouri, New Mexico, New Jersey, and Washington)
- Certain CNPs qualified to serve as medical examiners. (Virginia)

Delaware enacted legislation that defines APRN roles as autonomous and independent, allowing APRNs to practice without a written agreement, under the direction of the BON, acting alone, and not in a team-based model. Application review is subject to an APRN Council composed of an equal number of APRNs and physicians and one pharmacist (Delaware General Assembly, 2015). This new distinction could have significance in future legislation. In other states, bills have been introduced that specifically inhibit the ability of APRNs to seek out solo practice.

BONs also moved forward on the APRN Consensus elements of title alignment and the requirement for a separate APRN license. Some states have been able to move toward alignment in a single bill; others choose the elements that are most likely to succeed in 1 year and follow up in subsequent years with other elements.

The enactment of major Consensus Model elements by a sufficient number of states now should create the momentum to encourage the remaining states to align. Continued attention and persistence along the Consensus Model elements demonstrates that full practice authority removes barriers to APRN practice.

Some state medical associations have put forth legislation to hinder the solo practice of APRNs. The restrictions of the state medical society bills run counter to multiple advisories issued by the Federal Trade Commission (FTC) in recent years. The frequent requests for opinions regarding proposed legislation prompted the FTC (2014) to issue *Policy Perspectives in Competition Advocacy and the Regulation of Advanced Practice Nurse Practitioners,* which maintains that effective collaboration does not require physicians to formally supervise APRNs and that independently practicing APRNs typically consult with others and make appropriate referrals (FTC, 2014). In 2015, at the request of a Missouri legislator, the FTC released an additional advisory on the subject. The proposed Missouri bill, MO HB 633, would have "removed some but imposed other" constraints on the collaboration of Missouri APRNs and physicians, while retaining the required collaboration that the FTC suggested is likely unjustified by health and safety concerns (FTC, 2015a).

Federal Legislation Affecting APRNs

Congress recently passed the Medicare Access and CHIP Reauthorization Act (H.R. 2, 2015), part of which makes APRN-led medical homes eligible to receive incentive payments for the management of patients with chronic disease and allows APRNs to document face-to-face encounters with Medicare patients when ordering certain durable medical equipment. Before this law, access to care was complicated by requiring patients to see multiple providers to receive care and durable medical equipment (Lowes, 2015).

Review of Regulatory Board Antitrust Supervision

Throughout 2015, regulators kept watch on a U.S. Supreme Court case involving the North Carolina board of dental examiners. Although the issues were not directly connected to any action by nursing regulators, the Supreme Court decision and subsequent FTC guidance may influence health care regulations for all U.S. licensing boards.

In this case, the FTC charged the dental board with illegal suppression of competition for its members' personal benefit when the dental board issued cease-and-desist letters to nondentists who offered teeth whitening services. The FTC also claimed that the dental board could not claim exemption from federal antitrust law in this instance. The ensuing lawsuit, *North Carolina Board of Dental Examiners v. Federal Trade Commission* (2015), was decided

by the U.S. Supreme Court in February 2015. For administrative law and regulatory boards, it is a landmark case.

U.S. Supreme Court Decision

The U.S. Supreme Court ruled that the North Carolina state board of dental examiners did not have the authority to regulate teeth-whitening services and that the dental board comprised primarily of dentists acted illegally by telling nondentists they could not offer teeth-whitening services. Although state entities are typically exempt from federal antitrust laws, the Court agreed with the FTC's claim that the exemption did not apply because the dental board's noncompetitive activities were not actively supervised by the state. Also, the immunity usually relied upon by state regulatory boards could not be invoked because the challenged restraint, teeth whitening, was not clearly articulated in the state's dental practice act and thus was not an exercise of the state's sovereign power.

The Court used the test of active supervision of anticompetitive conduct to determine whether the dental board should be shielded from antitrust laws. The Court noted that active supervision is supervision of the risk that active market participants on the regulatory body could pursue private interests in restraining trade. Although the Court did not specifically conclude that the dental board acted in bad faith, the issue at the heart of the decision is the risk of market participants confusing their own interests with the state's policy goals.

The Court concluded that active state supervision requirements depend on all the circumstances of the case and an analysis of whether the state supervisor reviewed the substance of the anticompetitive decision, has the power to veto or modify particular decisions to ensure they accord with state policy, and was an active market participant. The mere potential for state supervision of a regulatory agency's conduct is not an adequate substitute for a decisive act of governance. The Court did not review the state's supervisory system because the dental board did not claim that the state exercised active supervision over its decision to tell nondentists they could not offer teeth-whitening services.

The dental board was ordered to stop sending cease-and-desist letters to nondentists regarding teeth-whitening services and to issue notices to all recipients of cease-and-desist orders advising them of the dental board's proper sphere of authority and stating that they had a right to seek declaratory rulings in state court.

The Supreme Court used the following terms and phrases in the opinion: *active supervision, controlling number, and active participants.* No definitions were included in the opinion, leaving regulatory boards to guess as to the meaning of the terms. The decision specified certain requirements be evaluated for future similar regulatory actions requesting that an entity cease and desist the practice of the profession.

FTC Guidance

In October, 2015, the FTC provided the document, *FTC Staff Guidance on Active Supervision of State Regulatory Boards Controlled by Market Participants (*FTC, 2015b). The FTC noted that this guidance is limited in that it addresses only the active supervision prong of the state action defense. Any deviation from this guidance does not necessarily mean that the state action defense is inapplicable or that a violation of the antitrust laws has occurred. The guidance document provides the following information as well as specific examples for regulatory bodies.

When is active state supervision of a state regulatory board required to invoke the state action defense? Citing case law that provides the general standard for a controlling number of decision makers as active market participants to satisfy the active supervision requirement, the FTC guidance document defines a board member as an active member of the profession, if:

- The board member participates in any professional or occupational subspecialty regulated by the board or
- The board member temporarily suspends active participation in an occupation for the purpose of serving on a state board that regulates the former and intended future occupation.

Further, the method by which a person is selected, appointed, or elected to serve on a state regulatory board does not determine whether or not he or she is an active market participant.

The FTC guidance document also notes that the *controlling number* need not be a numerical majority. A controlling number can occur as a matter of law, procedure, or fact by active participants in the regulated market. For example, if a board cannot make decisions without at least one vote from an active participant member, the active participant members are considered to control the board. Also, the active market participants can be considered controlling members if the nonpracticing members of a board routinely defer to them or only the active market participants have veto power over decisions of the board.

What constitutes active supervision? The FTC specified several components of the definition of *active supervision*:

- The state must play a substantial role in determining the specifics of the economic policy.
- The state supervisor must review the substance of the anticompetitive decision, not merely the procedures followed to produce it.
- State supervision must precede implementation of the allegedly anticompetitive restraint.
- The state supervisor must have the power to veto or modify particular decisions to ensure they are in accord with state policy.
- The state supervisor may not be an active market participant.

Further, the FTC guidance document delineated factors for determining if the active supervision requirement has been satisfied. Most importantly, the supervision must include more than just advice to the board from a state attorney general or another

TABLE 5

Three-Year Trend in NCLEX® Candidate Numbers and Pass Rates

	2012	2013	2014
Number of first time U.S. educated students taking the NCLEX-RN	150,266	155,098	157,372
Number of first time U.S. educated students taking the NCLEX-PN	63,350	58,574	55,489
NCLEX pass rates for first-time RN test takers	90.34%	83.05%	81.78%
NCLEX pass rates for first time PN test takers	84.23%	84.63%	82.16%

Data from www.ncsbn.org/exam-statistics-and-publications.htm.

state official. For active supervision, the supervisor must do the following:

- Obtain the relevant facts, collect data, conduct suitable public hearings, receive public comment, investigate market conditions, conduct studies, and review evidence. (The supervisor's gathering of information can depend in part on inquiry previously conducted by the regulatory board.)
- Evaluate the substantive merits of the recommended action and assess whether it is in agreement with the state legislation.
- Issue a written decision on the board's action.

The state supervisor also must be able to veto a board's decisions.

U.S. Regulatory Actions for Patient Protection

Four pillars form the foundation of the BON's protection of the public: nursing education, licensure, nursing practice, and discipline.

Nursing Education

National Nursing Accreditation

In 2011, NCSBN recommended that BONs require national accreditation of all nursing programs by 2020 (NCSBN, 2011). In a recent survey of BONs (n = 34), 13 BONs indicated national nursing accreditation is required for all nursing programs, and another seven are discussing this recommendation with their boards of directors.

The Accreditation Commission for Education in Nursing (ACEN) accredits all nursing programs and is the only national nursing accrediting body recognized by the U.S. Department of Education (DOE) as a Title IV gatekeeper, which allows students in accredited programs access to federal aid. Recent issues regarding ACEN's independence from the NLN have threatened the DOE's recognition of the ACEN; however, in September 2015, the NLN and ACEN agreed that ACEN will become a subsidiary of the NLN. This will allow the measure of independence that the DOE requires for ACEN to independently control its bylaws.

The CCNE accredits baccalaureate programs and entry-to-practice residency programs, as noted previously. It is not a title IV gatekeeper. The Commission on Nursing Education Accreditation (CNEA), a new accrediting body in nursing, plans to accredit all levels of programs from LPN/VN through higher education. A division of NLN, the CNEA was built on the mission and core values of the NLN and will begin to accredit programs in 2016. It is not a title IV gatekeeper.

NCLEX

To remain psychometrically sound and legally defensible, the NLCEX is subject to rigorous practice analysis that links it to practice. An ongoing process of reviewing test items, test plans, and passing standards ensures that the NCLEX reflects the current standards of entry-level nurse competency. Although the NCLEX data from 2015 give insight into the changing environment of nursing, the greatest change to the NCLEX in 2015 has been its adoption by nursing regulatory bodies across Canada as the entry-to-practice examination for new nurse graduates.

First-Time Test Takers in the United States

Data over the past 3 years indicate a slight increase in RN test takers and a slight decrease in LPN/VN test takers (Table 5). Although the RN pass rates have decreased since 2012, most likely because the passing standard rose on April 1, 2013, they have now stabilized. As of September 2015, the NCLEX pass rate for first-time RN test takers was 85.49%. Likewise, the LPN/VN passing standard rose on April 1, 2014, and the 2014 NCLEX-PN pass rates dipped slightly. As of September 2015, the LPN/VN pass rate was 82.14%.

ADN graduates still comprise the largest number of first-time test takers. As shown in Figure 7. the number of BSN graduates has steadily increased, and the number of diploma graduates has progressively decreased from 2012 through 2014.

The year-to-date 2015 NCLEX pass rates differ by program type. BSN graduates have the highest pass rate (88.04%) followed by diploma graduates (86.84%) and ADN graduates (83.30%). Figure 8 shows a comparison of the pass rates of the three program types.

Canadian Provinces and Territories

As of August 2015, all Canadian provinces and territories are associate members of NCSBN (Alexander, 2015). NCLEX testing for nursing licensure/registration in Canada began in the provinces of Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland and Labrador, Nova Scotia, Northwest Territories and Nunavut, Ontario, Prince Edward Island, and Saskatchewan (NCSBN, 2015b). The number of test takers in Canada is low at this point (4,701 for the first two quarters versus. 88,190 in the United States). Thus, it is too soon to make any conclusions about trends.

Licensing Challenges

Application Fraud

Between 2012 and 2014, 78% of BONs denied licensure for an initial or renewal license as a result of fraud or misrepresentation. The number of cases per BON ranged from 1 to 25. The violations included misrepresentation of credentials, filing of false reports, fraud, deceit or material omission in obtaining license or credentials, failure to disclose, and unspecified fraud. In 2014, the NCSBN board of directors convened a fraud detection committee to develop a rigorous, high-quality verification and authentication process for identifying proactive strategies to detect fraudulent applications and materials. The failure to prevent and detect fraudulent nurse credentials can significantly compromise patient safety.

The committee's work resulted in the *Resource Manual on Licensure Application Fraud Prevention, Detection and Communication* and an accompanying e-toolkit. BONs must ensure that the education and training of an applicant meets the standards of the specific state by evaluating the applicant's credentials and the veracity of the documents provided. The development, adoption, and implementation of specific BON policies will strengthen the licensure application process and decrease the number of individuals in practice who have misrepresented themselves. The committee's recommendations include BON policies and safe practices.

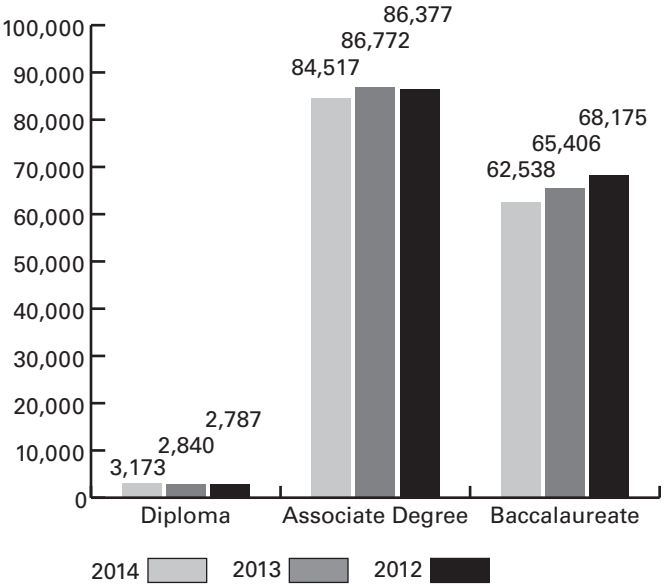
The recommended policies for fraud prevention, detection, and communication during the licensure application review process are as follows:

- Required initial and ongoing staff fraud detection training for all licensure staff
- Plain language in application questions
- Clear description and definition of attestation in licensure application
- Clear description of acceptable verification of licensure in application
- No withdrawal of licensure applications to avoid denial or discipline
- Verification of identity, licensure, denial, or discipline via Nursys.org
- Denial of initial or renewal licensure and imposters entered into Nursys.org/National Practitioner Data Bank (NPDB)
- Executive officer or lead staff to approve method and type of electronic documents
- Staff separation of duties throughout the licensure application review process
- Reduction of effective time period or elimination of temporary permits
- Establishment of an expiration date for Credentials Evaluation Agency Reports.

The safe practices for fraud detection and communication during the licensure application review process include appropriate verification of applicant identity and licensure, Nursys record, authenticity of documents, analysis of educational chronology, behavior patterns and progression of applicant file, review of CBCs, and the necessary and important reporting of any instance of fraud that results in a denial of licensure or renewal licensure.

FIGURE 7

Three-Year Trend in Number of NCLEX® Test Takers According to Program Type



Data from www.ncsbn.org/exam-statistics-and-publications.htm.

Licensure of Foreign-Educated Nurses

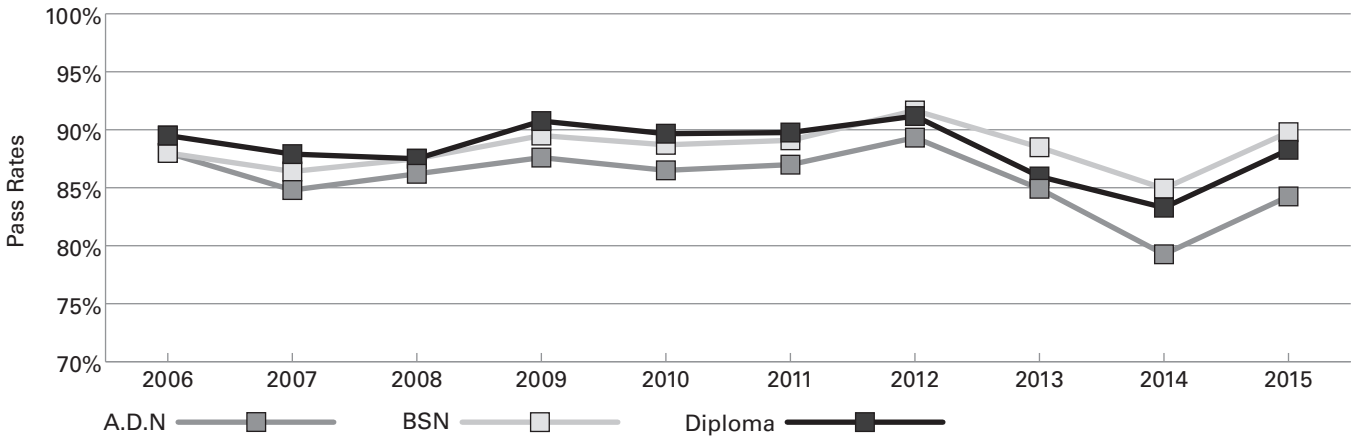
As the need for growth in the nursing workforce increases globally, pressures increase on low- and middle-income countries to rapidly produce new graduate nurses. To fill the gap, nursing education programs proliferate, and the varying curricula and quality are not always comparable to those of U.S. programs (Durham, Pavignani, Beesley, & Hill, 2015). To assist U.S. regulators with evaluating education credentials and practice-related competency of foreign-educated applicants, NCSBN recently developed the *Resource Manual on the Licensure of Foreign-Educated Nurses*. This resource provides BONs with a standardized set of criteria for making licensure decisions to improve the credential evaluation of nurses, regardless of where they were educated (NCSBN, 2015a).

Criminal Background Checks

In November 2013, NCSBN received the designation of the American National Standards Institute (ANSI) Accredited Standards Developer Organization (SDO). ANSI empowers its members and constituents to strengthen the U.S. marketplace position in the global economy while helping to ensure the safety and health of consumers and the protection of the environment. In support of NCSBN's mission, the ANSI designation promotes increased recognition and voluntary adoption of standards of excellence in the regulation of nursing practice.

FIGURE 8

NCLEX First-Time U.S.-Educated Pass Rates by Program Type



Data from www.ncsbn.org/exam-statistics-and-publications.htm.

An applicant's criminal history could significantly affect his or her ability to provide safe care and interact with patients; therefore, the majority of BONs require a state and federal fingerprint-based CBC. A few jurisdictions, however, allow self-disclosure or a state records search as the only requirement for determining the existence of a criminal history. The state records search alone does not take into account an individual's mobility among jurisdictions. Further, a review of the literature determined that self-disclosure results do not reveal the same extent of criminal history as a state and federal fingerprint-based CBC.

NCSBN proposed to ANSI that the CBC standard requiring a biometrics-based state and federal CBC for all who apply for licensure by examination, reactivation, reinstatement, endorsement, or renewal be deemed as an American National Standard (ANS). On August 11, 2015, ANSI approved the CBC as an ANS.

The CBC American National Standard reads as follows:

- *Section 1.0 A board of nursing (BON) shall obtain the statutory authority to conduct criminal background checks (CBCs) by adoption of the language of section 2.0 of this standard.*
- *Section 2.0 The BON shall require a state and federal CBC of an applicant by means of a fingerprint check or other biometric method which is in compliance with the methodology acceptable to the appropriate state law enforcement agency and the Federal Bureau of Investigation (FBI).*
- *Section 3.0 The BON shall include the CBCs as part of the application process in such a manner as is consistent with the FBI policy.*

Evolving Practice of Nursing

As nursing practice evolves, licensees ask questions and look to BONs to provide guidance regarding specific nursing practice issues. The BONs' response is often in the form of position or practice statements, clinical practice advisories, advisory rulings or opinions, and interpretive guidelines (referred to as *advisory statements*). These advisory statements interpret or clarify the state NPA and regulations for a particular practice. Although not laws or regulations, these advisory statements provide direction on specific issues of practice and further protect the public.

A recent review of the advisory statements reveals that sedation and delegation are the two most prominent practice issues affecting BONs (Appendix A). Over the past year, seven BONs (Arkansas, Kentucky, Louisiana, North Carolina, Oklahoma, Washington, and Wyoming) developed or revised advisory statements regarding sedation. These advisory statements detailed practice related to the administration or monitoring of procedural sedation by RNs or LPNs. Nine states (Arizona, Georgia, New Hampshire, New York, North Carolina, South Carolina, Tennessee, Vermont, and West Virginia) addressed practice concerns related to delegation or assignment. These practice concerns primarily stem from the confusion related to scope of practice or scope of employment or function.

Disciplinary Innovations

As in previous years, the number of complaints to the BONs varies among the jurisdictions. Some experienced increases, others experienced decreases. The most common violations remain those related to substance use, diversion, and impaired practice. Therefore, some recent disciplinary innovations by BONs include processes to improve alternative-to-discipline or monitoring programs for substance use disorder. A test of ethyl glucuronide levels, which detects alcohol consumption even after ethanol is no longer measurable (Connecticut), and noncompliance guidelines (Wyoming) are being implemented to make monitoring programs more well defined for BONs, monitoring staff, and participants.

Other disciplinary innovations involve disciplinary consistency, standardization of disciplinary order paperwork, and delegation of routine disciplinary matters to staff. A variety of

methods have been implemented to increase disciplinary consistency; among them are the Regulatory Decision Pathway (New Hampshire), pilot complaint resolution analysis and screening tool (Nevada), and revisions to the state disciplinary matrix (Texas).

Texas has initiated a pilot program to study the effectiveness of an alternative method of discipline for nurses who commit practice violations (the Knowledge, Skills, Training, Assessment, and Research Pilot).

A majority of the BONs report an increase in the number of cases settled without a hearing. Among these BONs, the number of hearings ranged from 4 to 120 in the last year. The majority of BONs (55%) report that 90% of cases are settled without a hearing. Seventeen percent of BONs report that 75% to 80% of cases are settled without a hearing, and 22% of BONs report that 35% to 50% of cases settled without a hearing. One BON reported that only 10% of cases are settled without a hearing.

Implications for Boards of Nursing

When taking an action that would initiate the application of antitrust laws, a BON should follow the FTC oversight provisions of active state supervision to invoke the state action defense. This includes a review of the evidence, written decisions, and approval of the intended action.

BONs must develop policies and educate licensure staff in safe practices for the evaluation of credentials and licensure applications. Once trained, staff members can detect fraud and make the necessary report to Nursys.org/NPDB so individuals who attempt to enter the profession fraudulently do not move to the next jurisdiction and make their attempt again. A combined approach of prevention, detection, and communication will deter these individuals from entering the profession and harming patients.

The purpose of the CBC American National standard is to help each jurisdiction pass legislation consistent with Public Law 92-544 to require a state and federal fingerprint-based CBC. The standard is written to allow the use of new biometric technologies as they emerge. It is anticipated that each jurisdiction would implement a review process for applicants with criminal convictions to determine which convictions may warrant disciplinary action or denial.

With Canada now using an identical practice assessment of entry-level nurses, BONs can more easily process certain Canadian applicants for licensure in the United States.

Key Findings of This Report

The workforce is changing, nursing education is being transformed, health care delivery models are new, and technology is revolutionizing our work. The need for greater mobility, the need for nurses to respond to emergencies in other states, and the need for nurses to communicate with patients across state borders call for a new licensure model that lends itself to interstate practice. BONs have responded by replacing the one-license–one-state model with the NLC. Although the NLC has been in existence for 15 years, some states were reluctant to join because of differing licensure requirements, namely state and federal CBCs. In May 2015, ULRs, including CBCs, were made to the NLC. NCSBN anticipates that in 2016 and beyond, BONs across the nation will join the enhanced NLC and that it will be the premier licensure model for the future and an exemplar for other professions.

For APRNs, a new licensure model, the APRN Compact, is also on the horizon. This compact will provide multistate privileges to all four roles of APRNs. States adopting the Compact have to also adopt the Consensus Model for APRN Regulation requirements. Although 12 states are fully aligned with the licensure requirements outlined in the Consensus Model for APRN Regulation, many states still lack basic elements, such as the title of APRN. The APRN Compact will also increase access to care and be a focus for regulators in 2016 and beyond.

Nurses age 54 and older are planning to retire in the next 3 years, leaving a significant gap in the workforce. At the same time that nursing programs strive to maintain or increase their enrollment to accommodate this loss, they are grappling with a shortage of faculty members and clinical sites. Simulation may provide an alternative to clinical sites; however, rigorous preparation and education are required on the part of the program and faculty.

One issue that has dominated discussions among nurse leaders for decades, entry to practice, may be changing, as a new generation enters the workforce and seeks higher education. But that is not the only reason for this change. Change is also has evolving through the collaboration of community colleges and universities and a concerted effort on the part of the nursing profession to meet the IOM goal of an 80% BSN workforce.

New roles, expanded scopes of practice, and new modalities such as ubercare are part of new models to deliver and expand health care. However, the effort to expand care cannot compromise public safety. Nursing regulators need to stay mindful of innovations and ensure they meet the standards for public protection.

Specific societal issues, such as opioid abuse and the legalization of cannabis, will be at the forefront of nursing regulation in 2016. Violence in the workplace is increasingly becoming a public protection issue. Lateral violence among staff members disrupts patient care and can lead to patient safety issues. Institutions need to adopt a no-tolerance policy, and BONs should consider workplace violence a public protection issue when patient safety is compromised.

During 2016, BONs will be challenged in many ways. Knowledge of the health care environment and society will allow BONs to make preparations to meet the regulatory challenges ahead.

Appendix A

Inventory of Advisory Statements Issued or Revised by Boards of Nursing During 2015

Advisory statements include position or practice statements, clinical practice advisories, advisory rulings or opinions, and interpretive guidelines.

Alaska

Adopted

- Nitrous oxide administration by RN for a pediatric patient
- I.V. administration by LPNs; Position on safety to practice
- Telehealth for the advanced nurse practitioner

Arizona

Adopted

- Acupuncture procedures performed by advanced practice registered nurses
- Intradermal, subcutaneous, and submucosal infiltration of local anesthetic agents
- Role of the nurse; Role of the advanced practice registered nurse
- Treating and prescribing of medications to self and/or family
- Use of simulation in approved RN/LPN programs

Revised

- Cardiac electrophysiology related procedures by registered nurses
- Central venous catheter insertion/removal for the adult population by registered nurses
- Dual profession & dual health care licensure/certification
- Intraventricular implanted devices & temporary intracranial catheters
- Medical esthetic procedures performed by licensed nurses
- Nitrous oxide administration
- Pre-hospital nursing
- Prescription medication renewals using a nursing protocol in an ambulatory setting
- Supervision of unlicensed nurse externs by registered nurses
- Ventilator care by licensed practical nurses

Arkansas

Revised

- Administration of I.V. moderate sedation by the registered nurse

California

Released statements legislation

- Emergency epinephrine auto-injectors: Pupil health
- Military spouses: Temporary RN licenses
- Residential care facilities for the elderly (RCFE): Registered nurses
- Telehealth: Patient consent required
- Workplace violence prevention plans—Hospitals
- Nurse practitioner and nurse midwives—Medical assistants: Handing to a patient properly labeled and prepackaged prescriptions, and does not include controlled substances

Approved

- National certification organizations and their requirements

Georgia

Approved

- Administration of intranasal Versed for treatment of signs and symptoms of acute seizure outside the clinical setting
- Administration of propofol, etomidate and neuromuscular blocking agents
- Assignment to unlicensed assistive personnel
- Family nurse practitioners in acute care settings
- Medication administration
- Patient abandonment
- Telephonic nursing
- Use of abstinence-based model for recovery for nurses with substance abuse disorder

Iowa

Adopted

- Provision of nursing services by telehealth/electronic means
- Registered nurse first assistant

Kentucky

Revised

- Recommended course content intravenous therapy for registered nurses and licensed practical nurses
- Roles of nurses in the administration of "PRN" medication and placebos
- Employment of nursing students as nursing personnel using either an academic or a "nurse extern" service model
- Responsibility and accountability of nurses for patient care assignments and nursing care delivery
- Advisory opinion statement on patient abandonment by nurses
- Placement of central lines by nurses
- Roles of nurses in endoscopic procedures
- Administration of medications for procedural sedation and analgesia by nurses
- Role of the advanced practice registered nurse in the prescribing of medications to self and/or family

Louisiana

Reaffirmed

- Role and scope of practice of the registered nurse in the administration of medication and monitoring of patients during the levels of intravenous procedural/conscious sedation (minimal, moderate, deep, and anesthesia)

Maine

Responded to practice questions

- Registered professional nurse's scope of practice to perform gastric band adjustments

Revisited

- Peripheral inserted central catheters; Registered nurse-first assistant (RNFA)

Massachusetts

Issued advisory ruling

- Enhancing the Disclosure of Unanticipated Outcomes

Revised

- Foot Care; Holistic Nursing and Complementary Integrative Health Approaches
- Infusion Therapy; Management of Patients Receiving Analgesia by Catheter Technique
- Advisory Ruling on the Management of Pain
- Peripherally Inserted Central Catheters (PICC); Accepting, Verifying, Transcribing and Implementing Prescriber Orders

Minnesota

Revised

- Minnesota Guidelines for Medication Administration in Schools

New Hampshire

Issued

- RN/LPN scope of practice (SOP) in performing decrease/increase on ventilator settings with provider's order
- RN SOP in depressing foot pedal to take x-ray
- RN SOP in performing testing needed to determine non-invasive therapy
- RN SOP in performing cystometrics independently
- LPN SOP in administering cosmetic injectables
- RN SOP in applying ice and heating pads
- Licensed Nursing Assistant (LNA) delegation
- LPN SOP in inflating cuff of tracheostomy
- RN SOP in supervising stress testing with nuclear imaging
- LNA SOP in cast removal
- LNA SOP in assisting provider with sclerotherapy injection
- RN/LPN SOP in increasing voltage settings on deep brain stimulator
- RN/LPN SOP in refilling or renewing prescriptions
- RN SOP in administration of agitated saline and contrast for bubble studies
- LNA SOP in application of Buck's traction
- LNA SOP in emptying JP drains in home care setting
- RN SOP in performing history and exam portions of established patient office visit.

New York

Revised

- Utilization of Medical Assistants

Issued

- APRN Prescription Privileges and Electronic Prescribing; Practice Requirements for Nurse Practitioners

North Carolina

Revised

- Delegation of Medication Administration to UAP
- Infusion Therapy/Access Procedures; Rapid Sequence Intubation (RSI)
- Transport of the Client

Created

- Out-of-State Nurses Practicing in North Carolina for a Limited Period of Time
- Palliative Sedation for End-of-Life Care
- Practicing at Level Other than Highest Licensure/Approval/Recognition
- Procedural Sedation/Analgesia

North Dakota

Revised

- Guidelines for the Role of a RN in the Examination of Obstetrical Patients
- RN & LPN SOP in the Utilization of Prescription Protocols in Clinical Settings

Ohio

Revised

- RN Performance of Conservative Sharp Wound Debridement
- Role of the RN in Monitoring Obstetrical Patients Receiving Epidural Infusions
- Role of the RN in Administering, Managing, and Monitoring Patients Receiving Epidural Infusions Excluding Obstetrical Patients
- Licensed Nurse's Role in the Care of Patients Receiving Intramuscular, Subdermal, or Subcutaneously Injected Medications for Cosmetic/Aesthetic Treatment
- RN Performance of a Patient Health History and Physical Examination for Purposes of Providing Nursing Care

Oklahoma

Revised

- Board Document Definitions
- CRNA Inclusionary Formulary
- Exclusionary Formulary for APRNs with Prescriptive Authority
- Formulary Advisory Council Procedure for Amending the Formulary
- IV Medication Administration by LPNs Guidelines

- Limited Obstetric Ultrasound and Limited Ultrasound in a Reproductive Medicine Setting: Examinations Performed by RNs Guidelines
- Moderate (Conscious) Sedation Guidelines for RN Managing and Monitoring Patients
- Monitoring of the Moderate (Conscious) Sedation Patient by LPN Guidelines
- Wound Debridement by Licensed Nurses Guidelines
- School Nurse Position Statement

South Carolina

Published
- Administrative Process for Approval of Exemption Requests Involving APRNs
- Scope of Practice of APRN to Use Expedited Partner Therapy (EPT)
- Scope of Practice for LPN to Perform Ear Irrigation
- Scope of Responsibility of RN to Obtain Informed Consent for Peripherally Inserted Centralized Catheter (PICC)

Revised
- Pain Management Guidelines
- Role and Scope of LPN to Perform Additional Acts
- Role and Scope of Responsibilities of RN to Remove Pleural and Mediastinal Chest Tubes as Ordered by Physician
- Role and Scope of Practice for APRNs to conduct assessments without physician collaboration or preceptors
- Scope of Practice of RN to Remove Trans-thoracic (Epicardial) Pacing Wire Following Open-Heart Surgery
- Role and Scope of Practice of RN to Apply Internal Fetal Electrodes and Intrauterine Monitoring Devices
- Role and Scope of Responsibility of RN to Determine if Patient is in Labor
- RN Administration of Red Blood Cells and Platelets in Home Setting
- RN Insertion of Prostaglandin into Vagina to Induce Abortion
- Role and Scope of Responsibilities of LPN to Remove Skin Sutures and/or Staples
- Delegation of Nursing Care Tasks to UAP
- Scope of Practice Decision Tree

Tennessee

Approved
- Abandonment of Patients
- Decision-Making Guidelines
- Guidelines for New Graduates of APN Programs Prior to Receiving BON APN Certificate
- LPN Role in Physical Assessment
- LPN Role in I.V. Access and Infusions in Peripheral Lines
- LPN Role in I.V. Access and Infusions in Central Lines
- Supervision of LPNs
- LPNs in a Supervisory Role
- LPN Care of Ventilator Dependent Patients in the Home Health Setting
- Emergencies
- Reporting Incompetent, Unethical or Illegal Practice
- Skilled Nursing Services Rendered by Unlicensed Personnel

Texas

Revised
- Role of the LVN in Pronouncement of Death
- LVNs Engaging in I.V. Therapy, Venipuncture, or PICC Lines
- Educational Mobility
- Board Rules Associated with Alleged Patient "Abandonment"
- Use of American Psychiatric Association Diagnoses by LVNs, RNs, or APRNs

Vermont

Accepted
- Role of the RN, LPN, and LNA in Foot Care
- Substance Use Disorder in Nursing
- Role of the RN and LPN When Working with Medical Assistants

Revised
- RN and LPN Role in Dermatologic Procedures
- APRN/RN/LPN Scope of Practice Position Statement and Decision Tree
- LNA Scope of Practice Position Statement
- Role of the Nurse in Pronouncement of Death

Virginia

Adopted
- Medication Administration Training Curriculum

Revised
- Guidelines for Training of Public School Employees in the Administration of Insulin and Glucagon
- Continuing Competency Violations for Nurse Practitioners
- Practice Agreement Requirements for Licensed Nurse Practitioners
- Telemedicine for Nurse Practitioners

Washington

Adopted
- Physician's Order for Life Sustaining Treatment
- Administration of Sedating, Analgesic, and Anesthetic Agents; Standing Orders and Verbal Orders

West Virginia

Revised
- Criteria for Determining Scope of Practice for Licensed Nurses and Guidelines for Determining Acts That May Be Delegated or Assigned By Licensed Nurses

Wyoming

Approved

- Analgesia by Catheter: Epidural, Intrathecal, Intrapleural, Perineural
- Anesthetic & Neuromuscular Agents Administered by RNs for Specific Purposes
- Blood Transport by CNA; Deep Sedation for Mechanically Ventilated Patients
- Moderate Sedation; Pain Management Guidelines
- Quadriplegic Client Bowel Maintenance Program by CNA/HHA

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