

Fact Sheet:

The Impact of Education on Nursing Practice

The American Association of Colleges of Nursing (AACN), the national voice for academic nursing, believes that education has a significant impact on the knowledge and competencies of the nurse clinician, as it does for all healthcare providers. Clinicians with Bachelor of Science in Nursing (BSN) degrees are well-prepared to meet the demands placed on today's nurse. BSN nurses are prized for their skills in critical thinking, leadership, case management, and health promotion, and for their ability to practice across a variety of inpatient and outpatient settings. Nurse executives, federal agencies, the military, leading nursing organizations, healthcare foundations, magnet hospitals, and minority nurse advocacy groups all recognize the unique value that baccalaureate-prepared nurses bring to the practice setting.

AACN encourages employers to foster practice environments that embrace lifelong learning and offer incentives for registered nurses (RNs) seeking to advance their education to the baccalaureate and higher degree levels. We also encourage BSN graduates to seek out employers who value their level of education and distinct competencies.

Different Approaches to Nursing Education

There are three routes to becoming a registered nurse: a 3-year diploma program typically administered in hospitals; a 3-year associate degree usually offered at community colleges; and the 4-year baccalaureate degree offered at senior colleges and universities. Graduates of all three programs sit for the same NCLEX-RN[®] licensing examination.

Baccalaureate nursing programs encompass all of the course work taught in associate degree and diploma programs plus a more in-depth treatment of the physical and social sciences, nursing research, public and community health, nursing management, and the humanities. The additional course work enhances the student's professional development, prepares the new nurse for a broader scope of practice, and provides the nurse with a better understanding of the cultural, political, economic, and social issues that affect patients and influence healthcare delivery. For more than a decade, policymakers, healthcare authorities, and practice leaders have recognized that education makes a difference when it comes to nursing practice.

- In February 2019, the Campaign for Nursing's Future, an initiative of the Center to Champion Nursing in America, published a [series of state maps](#) showcasing the progress being made by nurses in attaining baccalaureate degrees. The percentage of RNs with a BSN or higher degree is now at an all-time high with a national average of approximately 56%, up from 49% in 2010 when the Institute of Medicine's report on the *Future of Nursing* was released. The BSN maps

are based on data compiled in the American Community Survey.

- In December 2017, New York Governor Andrew Cuomo [signed legislation into law](#) requiring future registered nurses graduating from associate degree or diploma nursing programs in the state to obtain a baccalaureate in nursing within 10 years of initial licensure. The legislators found that given “the increasing complexity of the American healthcare system and rapidly expanding technology, the educational preparation of the registered professional nurse must be expanded.”
- In the September-October 2014 issue of *Nurse Educator*, a research team led by Sharon Kumm from the University of Kansas published [findings from a statewide study](#), which showed clear differences in outcomes from BSN and ADN programs. The study showed that 42 of 109 baccalaureate outcomes were reported met in ADN programs. The 67 outcomes that were not met were in the categories of liberal education, organizational and systems leadership, evidence-based practice, healthcare policy, finance and regulatory environments, interprofessional collaboration, and population health.
- In September 2013, the Robert Wood Johnson Foundation (RWJF) released an issue of its Charting Nursing’s Future newsletter titled [The Case for Academic Progression](#), which outlined how patients, employers, and the profession benefits when nurses advance their education. Articles focus on the evidence linking better outcomes to baccalaureate and higher degree nurses, educational pathways, and promising strategies for facilitating academic progression at the school, state, and national levels. See
- In September 2012, the [Joint Statement on Academic Progression for Nursing Students and Graduates](#) was endorsed by the American Association of Colleges of Nursing, American Association of Community Colleges, Association of Community Colleges Trustees, National League for Nursing, and the Organization for Associate Degree Nursing. This historic agreement represents the first time leaders from the major national organizations representing community college presidents, boards, and program administrators have joined with representatives from nursing education associations to promote academic progression in nursing. With the common goal of preparing a well-educated, diverse nursing workforce, this statement represents the shared view that nursing students and practicing nurses should be supported in their efforts to pursue higher levels of education.
- In October 2010, the Institute of Medicine released its landmark report on [The Future of Nursing: Leading Change, Advancing Health](#), initiated by the Robert Wood Johnson Foundation, which called for increasing the number of baccalaureate-prepared nurses in the workforce to 80% by 2020. The expert committee charged with preparing the evidence-based recommendations in this report state that to respond “to the demands of an evolving health care system and meet the changing needs of patients, nurses must achieve higher levels of education.”

- In May 2010, the Tri-Council for Nursing (AACN, ANA, AONE, and NLN) issued a consensus statement calling for all RNs to advance their education in the interest of enhancing quality and safety across healthcare settings. In the statement titled [*Education Advancement of Registered Nurses*](#), the Tri-Council organizations present a united view that a more highly educated nursing workforce is critical to meeting the nation's nursing needs and delivering safe, effective patient care. In the policy statement, the Tri-Council finds that "without a more educated nursing workforce, the nation's health will be further at risk."
- In December 2009, Dr. Patricia Benner and her team at the Carnegie Foundation for the Advancement of Teaching released a new study titled *Educating Nurses: A Call for Radical Transformation*, which recommended preparing all entry-level registered nurses at the baccalaureate level and requiring all RNs to earn a master's degree within 10 years of initial licensure. The authors found that many of today's new nurses are "undereducated" to meet practice demands across settings. Their strong support for high quality baccalaureate degree programs as the appropriate pathway for RNs entering the profession is consistent with the views of many leading nursing organizations, including AACN.
- In February 2007, the Council on Physician and Nurse Supply [released a statement](#) calling for a national effort to substantially expand baccalaureate nursing programs. Chaired by Richard "Buz" Cooper, MD and Linda Aiken, PhD, RN, the Council is based at the University of Pennsylvania. In the statement, the Council noted that a growing body of research supports the relationship between the level of nursing education and both the quality and safety of patient care. Consequently, the group is calling on policymakers to shift federal funding priorities in favor of supporting more baccalaureate nursing programs. This call was reaffirmed in a new statement released in March 2008.
- In March 2005, the American Organization of Nurse Executives (AONE) released a statement calling for all RNs to be educated in baccalaureate programs in an effort to adequately prepare clinicians for their challenging, complex roles. AONE's statement, titled [*Practice and Education Partnership for the Future*](#), represents the view of nursing's practice leaders and a desire to create a more highly educated nursing workforce in the interest of improving patient safety and nursing care.
- The National Advisory Council on Nurse Education and Practice (NACNEP), policy advisors to Congress and the Secretary for Health and Human Services on nursing issues, has urged that at least two-thirds of the nurse workforce hold baccalaureate or higher degrees in nursing. Currently, only 55 percent of nurses hold degrees at the baccalaureate level and above according to HRSA's 2013 report on [*The U.S. Nursing Workforce: Trends in Supply and Education*](#).
- NACNEP found that nursing's role calls for RNs to manage care along a continuum, to work as peers in interdisciplinary teams, and to integrate clinical expertise with knowledge of community resources. The increased complexity of the scope of practice for RNs requires a workforce that has the capacity to adapt to change. It requires critical thinking and problem

solving skills; a sound foundation in a broad range of basic sciences; knowledge of behavioral, social and management sciences; and the ability to analyze and communicate data. Among the three types of entry-level nursing education programs, NACNEP found that baccalaureate education with its broader and stronger scientific curriculum best fulfills these requirements and provides a sound foundation for addressing the complex health care needs of today in a variety of nursing positions. Baccalaureate education provides a base from which nurses move into graduate education and advanced nursing roles.

- There is a growing consensus in the higher education community that a liberal arts education should be embedded in all the professional disciplines. Graduates with a liberal education are prized by employers for their analytical and creative capacities and demonstrate stronger skills in the areas of communication, assessment, cultural sensitivity, resourcefulness, the ability to apply knowledge, and scientific reasoning. Though some arts and science courses are included in ADN programs, the BSN provides a much stronger base in the humanities and sciences.
- There are 777 RN-to-BSN and 219 RN-to-MSN programs that build on the education provided in diploma and associate degree programs and prepare graduates for a broader base of practice. In addition to hundreds of individual agreements between community colleges and four-year schools, state-wide articulation agreements exist in many areas including Florida, Connecticut, Texas, Iowa, Maryland, South Carolina, Idaho, Alabama, and Nevada to facilitate advancement to the baccalaureate. These programs further validate the unique competencies gained in BSN programs.
- Registered nurses today work as a part of an interdisciplinary team with colleagues educated at the master's degree or higher level. These health professionals, including physicians, pharmacists, and speech pathologists, recognize the complexity involved in providing patient care and understand the value and need for higher education. For example, Occupational Therapists (OT) require education at the master's level, while OT Assistants are prepared at the associate degree level. Since nurses are primarily responsible for direct patient care and care coordination, these clinicians should not be the least educated member of the healthcare team.

Recognizing Differences Among Nursing Program Graduates

There is a growing body of evidence that shows that BSN graduates bring unique skills to their work as nursing clinicians and play an important role in the delivery of safe patient care.

- In the March 2019 issue of *The Joint Commission Journal of Quality and Patient Safety*, Dr. Maya Djukic and her colleagues from New York University released details from a new study, which found that baccalaureate-prepared RNs reported being significantly better prepared than associate degree nurses on 12 out of 16 areas related to quality and safety, including evidence-based practice, data analysis, and project implementation. The authors conclude

that improving accreditation and organizational policies requiring the BSN for RNs could help safeguard the quality of patient care.

- In the July 2017 issue of *BMJ Quality and Safety*, Dr. Linda Aiken and colleagues reported findings from a study of adult acute care hospitals in six European nations, which found that a greater proportion of professional nurses at the bedside is associated with better outcomes for patients and nurses. Reducing nursing skill mix by adding assistive personnel without professional nurse qualifications may contribute to preventable deaths, erode care quality, and contribute to nurse shortages.
- In a study published in the October 2014 issue of *Medical Care*, researcher Olga Yakusheva from the University of Michigan and her colleagues found that a 10% increase in the proportion of baccalaureate-prepared nurses on hospital units was associated with lowering the odds of patient mortality by 10.9%. Titled “Economic Evaluation of the 80% Baccalaureate Nurse Workforce Recommendation,” the study authors also found that increasing the amount of care provided by BSNs to 80% would result in significantly lower readmission rates and shorter lengths of stay. These outcomes translate into cost savings that would more than off-set expenses for increasing the number of baccalaureate-prepared nurses in hospital settings.
- In an article published in the March 2013 issue of *Health Affairs*, nurse researcher Ann Kutney-Lee and colleagues found that a 10-point increase in the percentage of nurses holding a BSN within a hospital was associated with an average reduction of 2.12 deaths for every 1,000 patients—and for a subset of patients with complications, an average reduction of 7.47 deaths per 1,000 patients..”
- In the February 2013 issue of the *Journal of Nursing Administration*, Mary Blegen and colleagues published findings from a cross-sectional study of 21 University HealthSystem Consortium hospitals to analyze the association between RN education and patient outcomes. The researchers found that hospitals with a higher percentage of RNs with baccalaureate or higher degrees had lower congestive heart failure mortality, decubitus ulcers, failure to rescue, and postoperative deep vein thrombosis or pulmonary embolism and shorter length of stay.
- In the October 2012 issue of *Medical Care*, researchers from the University of Pennsylvania found that surgical patients in Magnet hospitals had 14% lower odds of inpatient death within 30 days and 12% lower odds of failure-to-rescue compared with patients cared for in non-Magnet hospitals. The study authors conclude that these better outcomes were attributed in large part to investments in highly qualified and educated nurses, including a higher proportion of baccalaureate prepared nurses.

- In a January 2011 article published in the *Journal of Nursing Scholarship*, Drs. Deborah Kendall-Gallagher, Linda Aiken, and colleagues released the findings of an extensive study of the impact nurse specialty certification has on lowering patient mortality and failure to rescue rates in hospital settings. The researchers found that certification was associated with better patient outcomes, but only when care was provided by nurses with baccalaureate level education. The authors concluded that “no effect of specialization was seen in the absence of baccalaureate education.”
- In an article published in *Health Services Research* in August 2008 that examined the effect of nursing practice environments on outcomes of hospitalized cancer patients undergoing surgery, Dr. Christopher Friese and colleagues found that nursing education level was significantly associated with patient outcomes. Nurses prepared at the baccalaureate-level were linked with lower mortality and failure-to-rescue rates. The authors conclude that “moving to a nurse workforce in which a higher proportion of staff nurses have at least a baccalaureate-level education would result in substantially fewer adverse outcomes for patients.”
- In a study released in the May 2008 issue of the *Journal of Nursing Administration*, Dr. Linda Aiken and her colleagues confirmed the findings from her landmark 2003 study (see below) which show a strong link between RN education level and patient outcomes. Titled “Effects of Hospital Care Environment on Patient Mortality and Nurse Outcomes,” these leading nurse researchers found that every 10% increase in the proportion of BSN nurses on the hospital staff was associated with a 4% decrease in the risk of death.
- In the January 2007 *Journal of Advanced Nursing*, a study on the “Impact of Hospital Nursing Care on 30-day Mortality for Acute Medical Patients” found that BSN-prepared nurses have a positive impact on lowering mortality rates. Led by Dr. Ann E. Tourangeau, researchers from the University of Toronto and the Institute for Clinical Evaluative Sciences in Ontario studied 46,993 patients admitted to the hospital with heart attacks, strokes, pneumonia and blood poisoning. The authors found that: “Hospitals with higher proportions of baccalaureate-prepared nurses tended to have lower 30-day mortality rates. Our findings indicated that a 10% increase in the proportion of baccalaureate prepared nurses was associated with 9 fewer deaths for every 1,000 discharged patients.”
- In a study published in the March/April 2005 issue of *Nursing Research*, Dr. Carole Estabrooks and her colleagues at the University of Alberta found that baccalaureate prepared nurses have a positive impact on mortality rates following an examination of more than 18,000 patient outcomes at 49 Canadian hospitals. This study, titled *The Impact of Hospital Nursing Characteristics on 30-Day Mortality*, confirms the findings from Dr. Linda Aiken’s landmark study in September 2003.

- In a study published in the September 24, 2003 issue of the *Journal of the American Medical Association* (JAMA), Dr. Linda Aiken and her colleagues at the University of Pennsylvania identified a clear link between higher levels of nursing education and better patient outcomes. This extensive study found that surgical patients have a "substantial survival advantage" if treated in hospitals with higher proportions of nurses educated at the baccalaureate or higher degree level. In hospitals, a 10 percent increase in the proportion of nurses holding BSN degrees decreased the risk of patient death and failure to rescue by 5 percent. The study authors further recommend that public financing of nursing education should aim at shaping a workforce best prepared to meet the needs of the population. They also call for renewed support and incentives from nurse employers to encourage registered nurses to pursue education at the baccalaureate and higher degree levels.
- Evidence shows that nursing education level is a factor in patient safety and quality of care. As cited in the report *When Care Becomes a Burden* released by the Milbank Memorial Fund in 2001, two separate studies conducted in 1996 – one by the state of New York and one by the state of Texas – clearly show that significantly higher levels of medication errors and procedural violations are committed by nurses prepared at the associate degree and diploma levels as compared with the baccalaureate level. These findings are consistent with findings published in the July/August 2002 issue of *Nurse Educator* magazine that references studies conducted in Arizona, Colorado, Louisiana, Ohio and Tennessee that also found that nurses prepared at the associate degree and diploma levels make the majority of practice-related violations.
- Chief nurse officers (CNO) in university hospitals prefer to hire nurses who have baccalaureate degrees, and nurse administrators recognize distinct differences in competencies based on education. In a 2001 survey published in the *Journal of Nursing Administration*, 72% of these directors identified differences in practice between BSN-prepared nurses and those who have an associate degree or hospital diploma, citing stronger critical thinking and leadership skills.
- Studies have also found that nurses prepared at the baccalaureate level have stronger communication and problem-solving skills (Johnson, 1988) and a higher proficiency in their ability to make nursing diagnoses and evaluate nursing interventions (Giger & Davidhizar, 1990).
- Research shows that RNs prepared at the associate degree and diploma levels develop stronger professional-level skills after completing a BSN program. In a study of RN-to-BSN graduates from 1995 to 1998 (Phillips, et al., 2002), these students demonstrated higher competency in nursing practice, communication, leadership, professional integration, and research/evaluation.
- Data show that health care facilities with higher percentages of BSN nurses enjoy better patient outcomes and significantly lower mortality rates. Magnet hospitals are model patient

care facilities that typically employ a higher proportion of baccalaureate prepared nurses, 59% BSN as compared to 34% BSN at other hospitals. In several research studies, Marlene Kramer, Linda Aiken and others have found a strong relationship between organizational characteristics and patient outcomes.

- The fact that passing rates for the NCLEX-RN[®], the national licensing exam for RNs, are essentially the same for all three types of graduates is not proof that there are no differences among graduates. The NCLEX-RN[®] is a multiple-choice test that measures the *minimum technical competency* for safe entry into basic nursing practice. Passing rates *should* be high across all programs preparing new nurses. This exam does not test for differences between graduates of different entry-level programs. The NCLEX-RN[®] is only one indicator of competency, and it does not measure performance over time or test for all of the knowledge and skills developed through a BSN program.

Public and Private Support for BSN-Prepared Nurses

The federal government, the military, nurse executives, healthcare foundations, nursing organizations, and practice settings acknowledge the unique value of baccalaureate-prepared nurses and advocate for an increase in the number of BSN nurses across clinical settings.

- The nation's **Magnet hospitals**, which are recognized for nursing excellence and superior patient outcomes, have moved to require all nurse managers and nurse leaders to hold a baccalaureate or graduate degree in nursing. Settings applying for Magnet designation must also show what plans are in place to achieve the IOM recommendation of having an 80% baccalaureate prepared RN workforce by 2020.
- The **National Advisory Council on Nurse Education and Practice (NACNEP)** calls for at least two-thirds of the nurse workforce to hold baccalaureate or higher degrees in nursing. Currently, only 55 percent of nurses hold degrees at the baccalaureate level and above.
- In the interest of providing the best patient care and leadership by its nurse corps officers, the **U.S. Army, U.S. Navy and U.S. Air Force** all require the baccalaureate degree to practice as an active duty Registered Nurse. Commissioned officers within the **U.S. Public Health Service** must also be baccalaureate-prepared.
- The **Veteran's Administration (VA)**, the nation's largest employer of registered nurses, has established the baccalaureate degree as the minimum preparation its nurses must have for promotion beyond the entry-level.
- Minority nurse organizations, including the **National Black Nurses Association, Hispanic Association of Colleges and Universities, and National Association of Hispanic Nurses**, are committed to increasing the number of minority nurses with baccalaureate and higher degrees.

- Based on a nationwide **Harris Poll** conducted in June 1999, an overwhelming percentage of the public – 76% – believes that nurses should have four years of education or more past high school to perform their duties.
- The **Pew Health Professions Commission** in a 1998 report called for a more concentrated production of baccalaureate and higher degree nurses. This commission was an interdisciplinary group of health care leaders, legislators, academics, corporate leaders, and consumer advocates created to help policy-makers and educators produce health care professionals able to meet the changing needs of the American health care system.
- Countries around the world are moving to create a more highly educated nursing workforce. Canada, Sweden, Portugal, Brazil, Iceland, Korea, Greece and the Philippines are just some of the countries that require a four-year undergraduate degree to practice as a registered nurse.

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