

Fact Sheet:

The Impact of Education on Nursing Practice

The American Association of Colleges of Nursing (AACN), the national voice for academic nursing, recognizes that education has a significant impact on the knowledge and competencies of the nurse clinician, as it does for all healthcare providers. Clinicians with a Bachelor of Science in Nursing (BSN) degree are well-prepared to meet the demands placed on today's nurses. 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 health care.

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 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. The BSN prepares nurses to practice the full scope of nursing responsibilities across all healthcare settings (NASEM, 2021). For more than two decades, policymakers, healthcare authorities, and practice leaders have recognized that education makes a difference when it comes to nursing practice.

- In April 2023, results from the [2022 National Nursing Workforce Survey](#) show that the percentage of RNs with a BSN or higher degree in the US workforce exceeded 70% for the first time (71.7%). Most nurses now enter the workforce with a BSN or entry-level master's degree (51.5%). This survey is administered every two years by the National Council of State Boards of Nursing and the National Forum of State Nursing

Workforce Centers.

- Issued in November 2022, findings from the [CGFNS Nurse Migration Report 2022](#) point to an international shift toward baccalaureate education as the preferred pathway into the nursing profession. The latest data show the majority of nurses who migrated to the U.S. in 2022 were educated at the baccalaureate or higher level, which is consistent with how most new nurses are prepared in U.S. schools of nursing.
- In March 2019, AACN approved a position statement on [Academic Progression in Nursing](#), which called for preparing all RNs with a baccalaureate degree, at minimum, offered by an accredited four-year college or university. AACN supports the many pathways available to assist nurses in advancing their education, including expanding articulation agreements and concurrent enrollment options with community colleges.
- In December 2017, the governor of New York [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 Dr. Sharon Kumm from the University of Kansas published [findings from a statewide study](#), which showed clear differences in outcomes from BSN and associate degree in nursing (ADN) programs. The study showed that 42 of 109 baccalaureate outcomes were met in ADN programs. The 67 outcomes that were not met were in the areas 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 benefit 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.
- 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 College Trustees, National League for Nursing, and the Organization for Associate Degree Nursing. This historic agreement represents the first time that leaders from the major national organizations representing community college presidents, boards, and administrators joined with representatives from nursing education associations to promote academic progression in nursing. With the 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 healthcare 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, AONL, and NLN) issued a 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 patient care. 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 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.
- In February 2008, the [Council on Physician and Nurse Supply](#), which is based at the University of Pennsylvania, called for increasing nursing school graduations by 30% and for increased federal support to enable more nurses to complete the BSN.
- In March 2005, the American Organization of Nurse Executives (AONE) – today known as the [American Organization for Nursing Leadership](#) (AONL) - released a statement calling for all RNs to be educated in baccalaureate programs to adequately prepare clinicians for their challenging, complex roles. AONL'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) has urged that at least two-thirds of the nurse workforce hold baccalaureate or higher degrees in nursing. In a [2000 report](#), 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. To meet scope of practice expectations, RNs must have 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 the BSN, with its broader and stronger scientific curriculum, best fulfills these requirements and provides a sound foundation for addressing the complex healthcare 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.
- Currently, there are 747 RN-to-BSN and 195 RN-to-MSN programs that build on the education provided in associate degree and diploma programs and prepare graduates for a broader base of practice (AACN, 2023). In addition to hundreds of individual agreements between community colleges and four-year schools, [state-wide articulation agreements exist in most states](#) to facilitate advancement to the baccalaureate. These programs further validate the unique competencies gained in BSN programs.

- RNs work as part of an interprofessional team with colleagues educated at the graduate level. These professionals, including physicians and pharmacists, recognize the complexity involved in providing care and the need for higher education. Because 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 indicates BSN graduates bring unique skills to their work as nursing clinicians and play an important role in the delivery of safe patient care.

- In March 2022, *Nursing Outlook* published an article from Dr. Joshua Porat-Dahlerbruch, Dr. Linda Aiken, and colleagues that explored “Variations in Nursing Baccalaureate Education and 30-day Inpatient Surgical Mortality.” The authors found that having a higher proportion of baccalaureate-prepared nurses in hospital settings, regardless of educational pathway, is associated with lower rates of 30-day inpatient surgical mortality.
- In the July 2019 issue of *Health Affairs*, Dr. Jordan Harrison, Dr. Linda Aiken, and their colleagues from the University of Pennsylvania published findings from a study, which found that each 10% increase in the hospital share of nurses with a BSN was associated with 24% greater odds of surviving to discharge with good cerebral performance among patients who experienced in-hospital cardiac arrest.
- In the March 2019 issue of *The Joint Commission Journal of Quality and Patient Safety*, Dr. Maya Djukic and colleagues from New York University released details from a 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 the October 2015 issue of *Global Qualitative Nursing Research*, Dr. Allison Brandt Anbari published a qualitative meta-synthesis of studies on practice differences identified by graduates of RN to BSN programs. Nurses completing the programs reported enhanced assessment and critical thinking skills, improved communication abilities, and better patient outcomes. Findings were consistent with a 1988 study published by Dr. Joyce Johnson in *Research in Nursing and Health*.
- In a study published in the October 2014 issue of *Medical Care*, researcher Dr. Olga Yakusheva from the University of Michigan and 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%. The 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 the May 2013 issue of *Medical Care*, researchers from the University of Pennsylvania, led by Dr. Matthew McHugh, 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 an article published in the March 2013 issue of *Health Affairs*, nurse researcher Dr. 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 *Journal of Nursing Administration*, Dr. Mary Blegen and colleagues published findings from a study of 21 University HealthSystem Consortium hospitals on the association between RN education and patient outcomes. Hospitals with a higher percentage of RNs with baccalaureate or higher degrees had lower rates of congestive heart failure mortality, decubitus ulcers, failure to rescue, and postoperative deep vein thrombosis as well as shorter lengths of stay.
- 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 hospitals. 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 colleagues confirmed the findings from her landmark 2003 study, which show a strong link between RN education level and patient outcomes. Titled “Effects of Hospital Care Environment on Patient Mortality and Nurse Outcomes,” the 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, a team of Canadian researchers 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." Findings indicated that a 10% increase in the proportion of BSN 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 *Journal of the American Medical Association (JAMA)* on September 24, 2003, Dr. Linda Aiken and 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% increase in the proportion of nurses holding BSN degrees decreased the risk of patient death and failure to rescue by 5%. The authors 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 RNs to pursue 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* by Dr. Cheryl Delgado that reference 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 (CNOs) 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 CNOs 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 (Goode et al., 2001). A strong preference for hiring new RNs with a BSN was confirmed in a study released by NCSBN in 2002.
- 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 healthcare 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 much higher proportion of baccalaureate prepared nurses when compared to other hospitals. In several research studies, Dr. Marlene Kramer (1988), Dr. Linda Aiken (2013) and others have found a strong relationship between organizational characteristics and patient outcomes.
- The fact that graduates of baccalaureate, associate degree, and diploma nursing programs can pass the NCLEX-RN©, the national licensing exam for RNs, is not proof that no differences exist 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 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.
- 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, and the **National Academy of Science, Engineering, and Medicine** recognize the unique contributions of baccalaureate-prepared nurses to high quality, safe, and effective patient care.
- 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** also must 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 healthcare leaders, legislators, academics, corporate leaders, and consumer advocates created to help policymakers and educators produce a workforce able to meet the changing needs of the American healthcare 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.

References

- Aiken, L. H., Sloan, D., Griffiths, P. et al. (2017). Nursing skill mix in European hospitals: association with mortality, patient ratings, and quality of care. *BMJ Quality & Safety*, 26(7), 559- 568. DOI: 10.1136/bmjqs-2016-005567.
- Aiken, L.H., Clarke, S.P., Sloane, D.M., Lake, E.T., & Cheney, T. (2008, May). Effects of hospital care environment on patient mortality and nurse outcomes. *Journal of Nursing Administration*, 38(5), 223-229. DOI: 10.1097/01.NNA.0000312773.42352.d7.
- Aiken, L.H., Clarke, S.P., Cheung, R.B., Sloane, D.M., & Silber, J.H. (2003, September 24). Educational levels of hospital nurses and surgical patient mortality. *Journal of the American Medical Association*, 290, 1617-1623. DOI: 10.1001/jama.290.12.1617.
- American Association of Colleges of Nursing. (2023). 2022-2023 Enrollment and graduations in baccalaureate and graduate programs in nursing. Washington, DC: Author.
- American Association of Colleges of Nursing. (2019). Academic progression in nursing: Moving together toward a highly educated nursing workforce. Position statement. Available at <https://www.aacnnursing.org/Portals/42/News/Position-Statements/Academic-Progression.pdf>.
- American Association of Colleges of Nursing. (2019). Articulation agreements among nursing education programs. Fact sheet. Available at <https://www.aacnnursing.org/News-Information/Fact-Sheets/Articulation-Agreements>.
- American Association of Colleges of Nursing, American Association of Community Colleges, Association of Community College Trustees, National League for Nursing, National Organization for Associate Degree Nursing. (2012, September). Joint statement on academic progression for nursing students and graduates. Available at <https://www.aacnnursing.org/NewsInformation/Position-Statements-White-Papers/Academic-Progression>.
- American Organization of Nurse Executives. (2005). Practice and education partnership for the future. Washington, DC: American Organization of Nurse Executives.
- Brandt Anbari, A. (2015, January-December). The RN to BSN transition: A qualitative systematic review. *Global Qualitative Nursing Research*, 2, 1-11. DOI: 10.1177/2333393615614306.
- Benner, P., Sutphen, M., Leonard, V., & Day, L. (2009). *Educating Nurses: A Call for Radical Transformation*. Carnegie Foundation for the Advancement of Teach. San Francisco: Jossey-Bass. DOI: 10.3928/01484834-20120402-01.
- Blegen, M.A., Goode, C.J., Park, S.H., Vaughn, T., & Spetz, J. (2013, February). Baccalaureate education in nursing and patient outcomes. *Journal of Nursing Administration*, 43(2), 89-94. DOI: 10.1097/NNA.0b013e31827f2028.
- CGFNS International (2022). Eds. Bakhshi, M., Álvarez, T.D., & Cook, K. CGFNS nurse migration report: Trends in healthcare migration to the United States. Online Report.

Available at <http://www.cgfns.org/2022nursemigrationreport>.

Delgado, C. (2002, July/August). Competent and safe practice: a profile of disciplined registered nurses. *Nurse Educator*, 27(4), 159-61. DOI: 10.1097/00006223-200207000-00005.

- Djukic, M., Stimpfel, A.W., & Kovner, C. (2019, March). Bachelor's degree nurse graduates report better quality and safety educational preparedness than associate degree graduates. *Joint Commission Journal on Quality and Patient Safety*, 45(3), 180-186. DOI: 10.1016/j.jcjq.2018.08.008.
- Estabrooks, C.A., Midodzi, W.K., Cummings, G.C., Ricker, K.L., & Giovanetti, P. (2005, March/April). The impact of hospital nursing characteristics on 30-day mortality. *Nursing Research*, 54(2), 72-84. DOI: 10.1097/00006199-200503000-00002.
- Fagin, C.M. (2001). When care becomes a burden: Diminishing access to adequate nursing. Millbank Memorial Fund, New York, NY. Available at <https://www.milbank.org/publications/when-care-becomes-a-burden-diminishing-access-to-adequate-nursing>.
- Friese, C.R, Lake, E.T., Aiken, L.H., Silber, J.H., & Sochalski, J. (2008, August). Hospital nurse practice environments and outcomes for surgical oncology patients. *Health Services Research*, 43(4), 1145-1163. DOI: 10.1111/j.1475-6773.2007.00825.x.
- Goode, C.J., Pinkerton, S., McCausland, M.P., Southard, P., Graham, R., & Krsek, C. (2001). Documenting chief nursing officers' preference for BSN-prepared nurses. *Journal of Nursing Administration*, 31(2). 55-59. DOI: 10.1097/00005110-200102000-00002.
- Graff, C., Roberts, K., & Thornton, K. (1999). An ethnographic study of differentiated practice in an operating room. *Journal of Professional Nursing*, 15(6), 364-371. DOI: 10.1016/s8755-7223(99)80067-2.
- Harrison, J.M., Aiken, L.H., Sloane, D.M., Brooks-Carthon, J.M., Merchant, R.M., Berg, R.A., & McHugh, M.D. (2019, July). In hospitals with more nurses who have baccalaureate degrees, better outcomes for patients after cardiac arrest. *Health Affairs*, 38(7), 1087-1094. DOI: 10.1377/hlthaff.2018.05064.
- Institute of Medicine. (2010). *The Future of Nursing: Leading Change, Advancing Health*. Washington, DC: National Academies Press. DOI: 10.17226/12956.
- Johnson, J. (1988). Differences in the performance of baccalaureate, associate degree and diploma nurses: A meta-analysis. *Research in Nursing and Health*, 11, 183-197. DOI: 10.1002/nur.4770110307.
- Kendall-Gallagher, D., Aiken, L., Sloane, D.M., & Cimiotti, J.P. (2011, January). Nurse specialty certification, inpatient mortality, and failure to rescue. *Journal of Nursing Scholarship*, 43(2), 188- 194. DOI: 10.1111/j.1547-5069.2011.01391.x.
- Kramer, M. & Schmalenberg, C. (1988). Magnet hospitals: Part I, Institutions of excellence. *Journal of Nursing Administration*, 18(1), 13-24. DOI:10.1024/1012-5302/a000216.
- Kumm, S., Godfrey, N., Martin, D., Tucci, M., Muenks, M., & Spaeth, T. (2014). Baccalaureate outcomes met by associate degree programs. *Nursing Educator*, 39(5), 216-220. DOI: 10.1097/NNE.0000000000000060.
- Kutney-Lee, A., Sloane, D.M., & Aiken, L. (2003, March). An increase in the number of nurses with baccalaureate degrees is linked to lower rates of post-surgery mortality. *Health*

Affairs, 32(3), 579-586. DOI: 10.1377/hlthaff.2012.0504.

McHugh, M.D., Kelly, L.A., Smith, H.L., Wu, E.S., Vanak, J.M., & Aiken, L.H. (2013, May). Lower mortality in magnet hospitals. *Medical Care*, 51(5), 382-8. DOI: 10.1097/MLR.0b013e3182726cc5.

- National Academy of Science, Engineering, and Medicine. (2021). *The Future of Nursing 2020-2030: Charting a Path to Achieve Health Equity*. Washington, DC: The National Academies Press. DOI: <https://doi.org/10.17226/25982>.
- National Advisory Council on Nurse Education and Practice (2000). Report to the Secretary of the Department of Health and Human Services on the basic registered nurse workforce. Washington, DC: United States Department of Health and Human Services, Health Resources and Services Administration.
- National Council of State Boards of Nursing (2002). 2001 Employers survey. Chicago: Author. Available at https://www.ncsbn.org/public-files/RBrief_Employer_053.pdf.
- Phillips, C.Y., Palmer, C.V., Zimmerman, B.J., & Mayfield, M. (2002). Professional development: Assuring growth of RN-to-BSN students. *Journal of Nursing Education*, 41(6), 282-283. DOI: 10.3928/0148-4834-20020601-10.
- Porat-Dahlerbruch, J., Aiken, L.H., Lasater, K.B., Sloane, D.M., & McHugh, M.D. (2022, March). Variations in nursing baccalaureate education and 30-day inpatient surgical mortality. *Nursing Outlook*, 70(2), 300-308. DOI: <https://doi.org/10.1016/j.outlook.2021.09.009>.
- Smiley, R.A., Allgeyer, R.L., Shobo, Y., Lyons, K.C., Letourneau, R., Zhong, E., Kaminski-Ozturk, N., and Alexander, M. (2023, April). The 2022 National Nursing Workforce Survey. *Journal of Nursing Regulation*, 14(Supplement), S16-S17. DOI: [https://doi.org/10.1016/S2155-8256\(23\)00047-9](https://doi.org/10.1016/S2155-8256(23)00047-9).
- Tourangeau, A.E, Doran, D.M., McGillis Hall, L., O'Brien Pallas, L., Pringle, D., Tu, J.V., & Cranley, L.A. (2007, January). Impact of hospital nursing care on 30-day mortality for acute medical patients. *Journal of Advanced Nursing*, 57(1), 32-41. DOI: 10.1111/j.1365-2648.2006.04084.x.
- Tri-Council for Nursing. (2010, May). Educational advancement of registered nurses: A consensus position. Available at <https://www.aacnnursing.org/Portals/42/News/5-10-TricouncilEdStatement.pdf>.
- Yakusheva, O., Lindrooth, R., & Weiss, M. (2014, October). Economic evaluation of the 80% baccalaureate nurse workforce recommendation: A patient-level analysis. *Medical Care*, 52(10), 864-869. DOI: 10.1097/MLR.000000000000189.

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