



CONTACT:

Robert J. Rosseter, 202-463-6930, x231
rosseter@aacn.nche.edu

Fact Sheet:

Creating a More Highly Qualified Nursing Workforce

Quality patient care hinges on having a well educated nursing workforce. Research has shown that lower mortality rates, fewer medication errors, and positive outcomes are all linked to nurses prepared at the baccalaureate and graduate degree levels. The **American Association of Colleges of Nursing (AACN)** is committed to working collaboratively to create a more highly qualified nursing workforce since education enhances both clinical competency and care delivery. This fact sheet looks at today's nursing workforce; highlights research connecting education to outcomes; and outlines the capacity of four-year colleges to enhance the level of nursing education in the U.S.

Snapshot of Today's Nursing Workforce

- According to the National Center for Health Workforce Analysis within the Health Resources and Services Administration (HRSA), approximately 2.8 million registered nurses (RNs) are currently working in nursing (HRSA, 2013). This count reflects an increase from the last *National Sample Survey of Registered Nurses* conducted by HRSA in 2008 which found that 2.6 million RNs were employed in nursing (out of a population of more than 3 million licensed RNs).
- HRSA's 2013 report, titled *The U.S. Nursing Workforce: Trends in Supply and Education*, also found that 55% of the RN workforce held a baccalaureate or higher degree. In a separate study conducted by the National Council of State Boards of Nursing and The Forum of State Nursing Workforce Centers in 2013, the percentage of nurses in the U.S. with a baccalaureate or higher degree was 61%.
- Graduates of entry-level nursing programs (baccalaureate degree, associate degree and diploma) sit for the NCLEX-RN[®] licensing examination. The fact that new nurses pass the licensing exam at the same rate does not mean that all entry-level nurses are equally prepared for practice. The NCLEX tests for *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 programs, measure performance over time, or test for all of the knowledge and skills developed through a baccalaureate program.
- In October 2010, the Institute of Medicine released its landmark report on *The Future of Nursing*, initiated by the Robert Wood Johnson Foundation, which called for increasing the number of baccalaureate-prepared nurses in the workforce to 80% and doubling the population of nurses with doctorates. The expert committee charged with preparing the evidence-based recommendations contained 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 March 2005, the American Organization of Nurse Executives (AONE) released a statement calling for all for registered nurses to be educated in baccalaureate programs in an effort to adequately prepare clinicians for their challenging and 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 providing enhanced nursing care.

Research Linking Nursing Education to Patient Outcomes

AACN and other authorities believe that education has a strong impact on a nurse's ability to practice, and that patients deserve the best educated nursing workforce possible. A growing body of research reinforces this belief and shows a connection between baccalaureate education and lower mortality rates.

- 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.
- Posting online in August 2014 by the *International Journal of Nursing Studies*, a team of researchers from several nursing schools in South Korea and the University of Pennsylvania found that a 10% increase in baccalaureate-prepared nurses was associated with a 9% decrease in patient deaths in South Korean hospitals. The authors concluded that increasing the number of nurses with the BSN would significantly reduce the number of in-hospital deaths.
- Published in *The Lancet* in May 2014, authors of the study titled “Nurse Staffing and Education and Hospital Mortality in Nine European Countries: A Retrospective Observational Study” found that that patients experiencing complications after surgery are more likely to live if treated in hospitals with adequate nurse staffing levels and higher numbers of BSN nurses. Following a review of more than 420,000 patient records in 300 hospitals spanning nine European countries, findings show that a 10% increase in the proportion of nurses holding a bachelor's degree in an acute care setting is associated with a 7% decrease in the risk of death in discharged patients following common surgeries.
- 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 which 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 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.

- 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 their landmark 2003 study (see below) which show a strong link between RN education level and patient outcomes. The noted 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 of 46,993 patients conducted by researchers at the University Toronto found that hospitals with higher proportions of baccalaureate-prepared nurses tended to have lower 30-day mortality rates. The 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 *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, *The Impact of Hospital Nursing Characteristics on 30-Day Mortality*, confirmed the findings from Dr. Aiken's landmark study from 2003.
- In a study published in the September 24, 2003 *Journal of the American Medical Association*, 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. A 10% increase in the proportion of nurses holding BSN degrees decreased the risk of patient death and failure to rescue by 5%.

For more information on the link between nursing education and patient outcomes, see <http://www.aacn.nche.edu/media-relations/fact-sheets/impact-of-education>.

Moving Towards a More Highly Educated Nursing Workforce

AACN stands ready to work with the larger nursing community and representatives from associate degree and diploma programs to expand awareness of degree completion options, facilitate the establishment of articulation agreements, and enhance the educational preparation of the nursing workforce.

- In February 2015, a new study published in *Nursing Economics* found that the percentage of BSN-prepared nurses in acute care hospitals is increasing while the employment of associate degree nurses in these settings is decreasing. This study is titled *Do Associate Degree Registered Nurses Fare Differently in the Nurse Labor Market Compared to Baccalaureate-Prepared RNs?*
- Employers are recognizing that education makes a difference and are moving to hire the best educated entry-level RNs possible. According to AACN's survey on *Employment of New Nurse Graduates and Employer Preferences for Baccalaureate-Prepared Nurses* released in October 2014, more than 79% of employers are now requiring or expressing a strong preference for nurses with a baccalaureate degree. See www.aacn.nche.edu/leading_initiatives_news/news/2014/employment14.
- 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 National 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. This statement represents the shared view that nursing students and practicing nurses should be supported in their efforts to pursue higher levels of education. www.aacn.nche.edu/aacn-publications/position/joint-statement-academic-progression

- In March 2012, the Robert Wood Johnson Foundation funded the Academic Progression in Nursing (APIN) program to advance state and regional strategies to create a more highly educated nursing workforce. A total of \$4.3 million in funding was awarded to the Tri-Council for Nursing to steer this initiative. Tri-Council members include the American Association of Colleges of Nursing, National League for Nursing, American Nurses Association and the American Organization of Nurse Executives.
www.aone.org/membership/about/press_releases/2012/032312.shtml
- 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 by 2013. 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. www.nursecredentialing.org
- In its October 2010 report on *The Future of Nursing*, the Institute of Medicine states "an increase in the percentage of nurses with a BSN is imperative as the scope of what the public needs from nurses grows, expectations surrounding quality heighten, and the settings where nurses are needed proliferate and become more complex." <http://thefutureofnursing.org>
- In May 2010, the Tri-Council for Nursing, a coalition of four steering organizations for the nursing profession (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."
www.aacn.nche.edu/Education/pdf/TricouncilEdStatement.pdf
- 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.
www.carnegiefoundation.org/elibrary/educating-nurses-highlights
- In the July/August 2009 issue of *Health Affairs*, Dr. Linda Aiken and colleagues call for adapting federal funding mechanisms (i.e. Title VIII and Medicare) to focus on preparing more nurses at the baccalaureate and higher degree levels. This policy emphasis is needed to adequately address the growing need for faculty and nurses to serve in primary care and other advanced practice roles. The researchers reported that new nurses prepared in BSN programs are significantly more likely to complete the graduate level education needed to fill nursing positions where job growth is expected to be the greatest. <http://content.healthaffairs.org>
- Currently, 679 RN-to-Baccalaureate programs are available nationwide, including more than 400 programs that are offered at least partially online. These programs build on the education provided in diploma and associate degree programs and prepare graduates for a broader scope of practice. In addition, 209 RN-to-Master's degree programs are available which cover the baccalaureate content missing in the other entry-level programs as well as graduate level course work.

- Articulation agreements support education mobility and facilitate the seamless transfer of academic credit between associate degree and baccalaureate nursing programs. In addition to hundreds of individual agreements between community colleges and four-year schools, statewide articulation agreements exist in many areas including Florida, Connecticut, Arkansas, Texas, Iowa, Maryland, South Carolina, Idaho, Alabama, and Nevada to facilitate educational advancement. See www.aacn.nche.edu/media-relations/fact-sheets/articulation-agreements.

References

Aiken, L. (2014, October). Baccalaureate nurses and hospital outcomes: More evidence. *Medical Care*, 52(10), 861-863.

Aiken, L., Sloane, D.M., et al. (2014, May 24). Nurse staffing and education and hospital mortality in nine European countries: a retrospective observational study. *The Lancet*, 383(9931), 1824-1830.

Aiken, L.H., Cheung, R.B. & Olds, D.M. (2009, June 12). Education policy initiatives to address the nurse shortage in the United States. *Health Affairs* Web Exclusive. Accessed June 22, 2009 at <http://content.healthaffairs.org/cgi/content/abstract/hlthaff.28.4.w646>.

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.

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.

American Association of Colleges of Nursing (2013). 2012-2013 Enrollment and graduations in baccalaureate and graduate programs in nursing. Washington, DC: Author.

American Organization of Nurse Executives. (2005). Practice and education partnership for the future. Washington, DC: American Organization of Nurse Executives.

Auerbach, D.I., Buerhaus, P.I., & Staiger, D.O. (2015, January-February). Do associate degree registered nurses fare differently in the nurse labor market compared to baccalaureate-prepared RNs? *Nursing Economics*, 33(1), 8-12, 35.

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.

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.

Budden, J.S., Zhong, E.H., Moulton, P., & Cimiotti, J.P. (2013, July 13). The National Council of State Boards of Nursing and The Forum of State Nursing Workforce Centers 2013 National Workforce Survey of Registered Nurses. *Journal of Nursing Regulation*, 4(2), S1-S72.

Cho, E., Sloane, D.M., Kim, E., Kim, S., Choi, M., Yoo, I.Y, Lee, H.S. & Aiken, L. (2014, August). Effects of nurse staffing, work environments, and education on patient mortality: An observational study. *International Journal of Nursing Studies*. In Press. DOI: <http://dx.doi.org/10.1016/j.ijnurstu.2014.08.006>

- 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.
- 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.
- Health Resources and Services Administration, National Center for Health Workforce Analysis. (2013, April). The U.S. nursing workforce: Trends in supply and education. Accessible online at <http://bhpr.hrsa.gov/healthworkforce/reports/nursingworkforce/index.html>.
- Institute of Medicine. (2010). *The Future of Nursing: Leading Change, Advancing Health*. Washington, DC: National Academies Press.
- 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 postsurgery mortality. *Health Affairs*, 32(3), 579-586.
- McHugh, M.D., Kelly, L.A., Smith, H.L., Wu, E.S., Vanak, J.M. & Aiken, L.H. (2012, October). Lower Mortality in Magnet Hospitals. *Medical Care*, Publication forthcoming (published ahead of print).
- National Council of State Boards of Nursing (See Budden, et al. reference above)
- 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.
- Tri-Council for Nursing. (2010, May). Educational advancement of registered nurses: A consensus position. Available online at <http://www.aacn.nche.edu/Education/pdf/TricouncilEdStatement.pdf>.
- Van den Heede, K., Lesaffre, E., Diya, L., Vleugels, A., Clarke, S.P., Aiken, L.H. & Sermeus, W. (2009). The relationship between inpatient cardiac surgery mortality and nurse numbers and educational level: Analysis of administrative data. *International Journal of Nursing Studies*, 46(6), 796-803.
- 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.

Last Update: March 19, 2015