The Business Case for Nurse Staffing

SNAPSHOT OF SUCCESS
More Registered Nurses Mean Improved Quality of Care, Potential Cost Savings

Findings of a study published in the May 30, 2002 New England Journal of Medicine established a relationship between hospital nurse staffing and patient outcomes. The investigation, led by Jack Needelman, Ph.D., associate professor in the Department of Health Services in the UCLA School of Public Health and Peter Buerhaus, Ph.D., R.N., FAAN, Valerie Potter Professor and senior associate dean for research, Vanderbilt University School of Nursing, found that patients in hospitals with fewer registered nurses stay longer and are more likely to suffer complications, such as urinary tract infections and upper gastrointestinal bleeding, than patients in hospitals with more RNs.

In the initial investigation, researchers analyzed more than six million patient discharge records from 793 hospitals in 11 states during 1997. The investigators examined the relationship between the amount of care provided by nurses—including RNs, licensed practical nurses (LPNs), and nurses’ aides—and patient outcomes, taking into account differences in the patients’ level of risk and the mix of patients being treated. Patients at hospitals with a lower proportion of RNs had significantly higher rates of six complications (longer hospital stays, higher rates of urinary tract infections, pneumonia, shock, cardiac arrest, upper gastrointestinal bleeding, and failure to rescue) when compared with patients in hospitals that had more RNs. Among surgical patients, low RN staffing correlated with increased rates of failure to rescue and urinary tract infections.

Overall, hospitals with high RN staffing had lengths of stay that were 2 to 5 percent shorter, than hospitals with low RN staffing. RN staffing appeared to have a greater impact on quality of care than did staffing by LPNs or aides, positions that require less training and education. The study found no consistent association between outcomes and staffing by LPNs or aides.

In a recent follow-up investigation, Needelman, Buerhaus, et al simulated the effect of three different options to increase nurse staffing to determine if increased nurse staffing costs might be offset by savings from improved quality. These options were:
1. Increase the proportion of hours of care provided by RNs
2. Increase the number of licensed (RNs or LPNs) nursing hours per day
3. Increase both the proportion of registered nurses and nursing hours per day

Costs of increased nursing hours were estimated from the original sample. Estimates of avoided adverse events and hospital days were simulated from the original sample and avoided costs and deaths were estimated using additional regression analysis.

The second analysis found that all three scenarios for increased nurse staffing reduced adverse outcomes, hospital days and death by varying degrees. However, increasing the proportion of care hours provided by RNs offered the greatest potential costs savings, because the costs of changing the RN/LPN mix without changing total nursing hours is relatively low. While the second two options were also associated with reduced costs, these savings were offset by a significant increase in staffing expenses. The authors contend there is a strong business case for the first option, and a strong case based on value for spending more on nursing to realize higher quality, a case that should be subject to widespread discussion and debate.

The researchers initial report placed the nursing shortage prominently in the public’s eye—and on policymakers’ agendas. The findings were widely reported in newspapers, magazines, and radio programs across the country, including a “60 Minutes” episode reporting the results and highlighting multi-national nurse recruiting by hospitals.

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**FACTS**

About half of the RN work force will reach retirement age in the next 15 years. Nurses for a Healthier Tomorrow

Registered nurses make up the largest health care occupation with more than 2 million jobs. Bureau of Labor Statistics

Nominal earnings for registered nurses increased steadily from 1983 until 2000, yet after adjusting for inflation, that growth proved relatively flat after 1991. However, as reported by Buhenus, Stater, and Aurnbach (Health Affairs, 2004), inflation adjusted earnings increased 5.6% in 2003 and 1.8% in 2004. Health Resources and Services Administration

**RELATED INFORMATION**

Dr. Needleman’s follow-up analysis was published in the January/February 2006 edition of Health Affairs. www.healthaffairs.org


The National League for Nursing (NLN) sponsors grants that research nursing education, particularly in one of its six nursing education research priorities. Information on the submission process and past grant recipients is available at nlh.org/about/nn/grants.htm

The September/October 2002 issue of Health Affairs focuses on the nursing shortage in this country and its impact on patient care. Some of the articles in the issue are available online at www.projecthope.org

Linda Aiken and others at the University of Pennsylvania found that, in hospitals with high patient-to-nurse ratios, each additional patient per nurse translated into a 7 percent increase in the possibility of a patient death within 30 days of admission. The research, published in the Journal of the American Medical Association (JAMA), looked at surveys from more than 10,000 nurses and more than 230,000 general, orthopedic, and vascular surgery patients at 168 hospitals in Pennsylvania during 1998 and 1999. The study appears in the Oct. 23/30, 2002, issue of JAMA, and is also available at http://jama.ama-assn.org/ issues/v281n16/full/0cc09547.html

**What is health services research?**

Health services research examines how people get access to health care, how much care costs, and what happens to patients as a result of this care. The main goals of health services research are to identify the most effective ways to organize, manage, finance, and deliver high-quality care reduce medical errors, and improve patient safety.

—Agency for Healthcare Research and Quality

**WEBSITES**

American Nurses Association
www.ana.org

American Association of Colleges of Nursing
www.aacn.nche.edu

American Academy of Nursing
www.nursingworld.org/aan

American Association of Managed Care Nurses, Inc.
www.aamcn.org

American Association of Critical Care Nurses
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1801 K Street, NW, Suite 701-1
Washington, DC 20006
Tel: 202.296.3600 • Fax: 202.296.1800
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