

**Safe  
Staffing**

**SAVES LIVES**

## Decades of Safe Staffing and Current Research

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### [Patient Outcomes And Cost Savings Associated With Hospital Safe Nurse Staffing Legislation: An Observational Study.](#)

[Karen B Lasater](#), [Linda H Aiken](#), [Douglas Sloane](#), [Rachel French](#), [Brendan Martin](#), [Maryann Alexander](#), and [Matthew D McHugh](#), published online, BMJ Journals, Dec. 8, 2021. Featured on the National Institute of Health, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8655582/>.

In this study of Illinois hospitals researchers came to the conclusion that each additional patient in a nurses' workload was associated with 16% higher odds of death and longer lengths of stay. If Illinois hospitals staffed medical and surgical units at the ratio proposed in the legislation, we project thousands of deaths could be avoided each year and patients would experience shorter lengths of stay resulting in hundreds of millions of dollars in cost-savings for hospitals.<sup>i</sup>

### [Associations between Nurse Staffing Levels, Patient Experience, and Hospital Rating](#)

[Kyung Jin Hong](#) and [Sung-Hyun Cho](#), published online [MDPI Healthcare](#), April 1, 2021; Featured on the National Institute of Health, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8066393/>.

This study examined the patient experience score and differences in patient experience based on the region and nurse staffing levels of hospitals. Further, it verified the effect of nurse patient experience score on the overall hospital rating in general hospitals. An adequate nurse staffing level enables nurses to provide sufficient and clear explanations about the process of medication and treatment, which can improve patient satisfaction of nursing care. Hospital managers should consider patient experience as an important factor affecting patient-centered care and nurses as pivotal healthcare providers who can enhance the patient experience.<sup>ii</sup>

### [Hospital Nurse Staffing And Patient Outcomes](#)

Linda H. Aiken PhD, RN <sup>1</sup>, Consuelo Cerón MSC, BSN, Marta Simonetti MSN, Eileen T. Lake PhD, RN, Alejandra Galiano MPH, RN, Alda Garbarini RN, Paz Soto MHA, RN, David Bravo MHA, RN, Herbert L. Smith PhD; published June 2018 Science

Two systematic reviews have concluded that there is strong evidence of a significant association between better nurse staffing and lower mortality [7], [8]. We have found across all the countries we have studied, including the U.S., Canada, England, Belgium, South Korea, and nine countries in Europe, significant associations between lower patient-to-nurse ratios and lower risk-adjusted mortality [5], [9], [10], [11], [12], [13], [14]. Each one patient added to a nurse's workload is associated with a 7 percent increase in risk-adjusted mortality following general surgery.<sup>iii</sup>

## [Effects Of Nurse-To-Patient Ratio Legislation On Nurse Staffing And Patient Mortality, Readmissions, And Length Of Stay: A Prospective Study In A Panel Of Hospitals](#)

[Matthew D McHugh](#), Prof, PhD, [Linda H Aiken](#), Prof, PhD, [Douglas M Sloane](#), PhD, [Carol Windsor](#), PhD, [Clint Douglas](#), PhD, and [Patsy Yates](#), Prof, PhD, *Lancet*. 2021 22-28 May; 397(10288): 1905–1913. Featured on National Institute of Health, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8408834/>

Researchers concluded that having enough nurses with manageable workloads has been shown to be important for good patient care and outcomes. The 2018 International Council of Nurses' Position Statement on Evidence-Based Nurse Staffing recommends that governments should take action to ensure safe staffing levels. The results presented in this study suggest that minimum nurse-to-patient ratio policies are a feasible instrument to improve nurse staffing, produce better patient outcomes, and yield a good return on investment.<sup>iv</sup>

## [Is Hospital Nurse Staffing Legislation in the Public's Interest? An Observational Study in New York State](#)

Lasater, Karen B. PhD, RN; Aiken, Linda H. PhD, RN, FAAN; Sloane, Douglas M. PhD; French, Rachel BSN, RN; Anusiewicz, Colleen V. PhD, RN; Martin, Brendan PhD; Reneau, Kyrani MS; Alexander, Maryann PhD, RN, FAAN; McHugh, Matthew D. PhD, RN, FAAN, *Medical Care* 59(5):p 444-450, May 2021.

Hospital staffing ranged from 4.3 to 10.5 patients per nurse (P/N), and averaged 6.3 P/N. After adjusting for potential confounders each additional patient per nurse, for surgical and medical patients, respectively, was associated with higher odds of in-hospital mortality [odds ratio (OR)=1.13,  $P=0.0262$ ; OR=1.13,  $P=0.0019$ ], longer lengths of stay (incidence rate ratio=1.09,  $P=0.0008$ ; incidence rate ratio=1.05,  $P=0.0023$ ), and higher odds of 30-day readmission (OR=1.08,  $P=0.0002$ ; OR=1.06,  $P=0.0003$ ). Were hospitals staffed at the 4:1 P/N ratio proposed in the legislation, we conservatively estimated 4370 lives saved and \$720 million saved over the 2-year study period in shorter lengths of stay and avoided readmissions.

## **Additional Studies**

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Brooks Carthon et al " Racial Disparities in Stroke Readmissions Reduced in Hospitals with Better Nurse Staffing" 2022

Brooks Carthon et al " Better Nurse Staffing Is Associated with Survival for Black Patients and Diminishes Racial Disparities in Survival After In-Hospital Cardiac Arrests" 2021

De Cordova et al "Effects of Public Reporting Legislation of Nurse Staffing: A Trend Analysis" 2019

Lake et al "A Meta-Analysis of the Associations Between the Nurse Work Environment in Hospitals and 4 Sets of Outcomes" 2019

McHugh et al "Better Nurse Staffing and Nurse Work Environments Associated with Increased Survival of In-Hospital Cardiac Arrest Patients" 2016

Silber et al "Comparing the Value of Better Nursing Work Environments Across Different Levels of Patient Risk" 2016

Leigh, Paul J., "California's Nurse to Patient Ratio Law Reduced Nurse Injuries by More Than Thirty Percent." Economic Policy Institute, March 3, 2015

Aiken, Linda H., et.al, "Nurse Staffing and Education and Hospital Mortality in Nine European Countries: A Retrospective Observational Study," The Lancet, February 2014

Tubbs-Cooley et al "An Observational Study of Nurse Staffing Ratios and Hospital Readmission Among Children Admitted for Common Conditions" 2013

Cimiotti, Jeannie P. et.al, "Nurse Staffing, Burout and Health Care Associated Infections," American Journal of Infection Control 40.6 (August 2012).

McHugh et al "Contradicting Fears, California's Nurse-to-Patient Mandate Did Not Reduce the Skill Level of the Nursing Workforce in Hospitals" 2011

Chan et al "Effect of Mandated Nurse-Patient Ratios on Patient Wait Time and Care Time in the Emergency Department" 2010

Aiken et al "Implications of the California Nurse Staffing Mandate for Other States" 2010

Dall T., Chen Y., Seifert R., Maddox P. & Hogan P. (2009) "The Economic Value of Professional Nursing Medical Care." Medical Care 47, 97-103.

Kutney-Lee, Ann et.al. Nursing: A Key to Patient Satisfaction. Health Affairs. July/August 2009, vol. 28, no. 4 669-677.

Hughes, Ronda G., "Patient Safety and Quality: An Evidence-Based Handbook for Nurses" (Rockville, MD: Agency for Healthcare Research and Quality, 2008.)

Stone, Patricia W. et al., "Nurse Working Conditions and Patient Safety Outcomes," Medical Care, Volume 45, Number 6, June 2007

Kane, Robert L. et.al. "Nurse Staffing and Quality of Patient Care," AHRQ Publication No. 07-E005, Evidence Report/Technology Assessment Number 151, March 2007)

Tubbs Cooley, et al. "Nurses working conditions and hospital readmission among pediatric surgical patients." BMI Quality and Safety in Health Care.

Vahey, Doris C. et al. Nurse Burnout and Patient Satisfaction, Med Care, 2004, February 412 (Suppl) 1157-1166

Aiken, Linda et al. "Hospital Nurse Staffing and Patient Mortality, Nurse Burnout and Job Dissatisfaction." Journal of the American Medical Association, October 23/30, 2002)

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<sup>i</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8655582/>

<sup>ii</sup> <https://www.mdpi.com/2227-9032/9/4/387>; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8066393/#>

<sup>iii</sup> [https://www.sciencedirect.com/science/article/pii/S0716864018300609?ref=pdf\\_download&fr=RR-2&rr=871b115efe9642c2#sec0010](https://www.sciencedirect.com/science/article/pii/S0716864018300609?ref=pdf_download&fr=RR-2&rr=871b115efe9642c2#sec0010)

<sup>iv</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8408834/>