Safe Staffing Literature Review

Recurring Themes

- Safe staffing saves lives and improves patient outcomes.
- Safe staffing improves job satisfaction and retention of healthcare professionals.
- Broader measures of nurse work environment such as the Practice Environment Scale of the Nursing Work Index (PES-NWI) impact outcomes for patients and nurses.
- Safe staffing can reduce costs by reducing readmissions.

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1. "Is Hospital Nurse Staffing Legislation in the Public's Interest? An Observational Study in New York State," 2021. (PDF)

Authors: Lasater, Karen; Aiken, Linda; Sloane, Douglas; French, Rachel; Anusiewicz, Colleen; Martin Brendan; Reneau Kyrani; Alexander, Maryann; McHugh, Matthew

Top Line: A 4:1 ratio in medical-surgical units would save thousands of lives and hundreds of millions of dollars annually.

Study Overview

The authors sent an email survey to RNs in New York state with detailed questions about inpatient care workloads. They used data from this survey, data from the American Hospital Association Annual Survey, and Medicare claims data to evaluate the impact of nurse staffing on healthcare costs and outcomes over a two-year period. The data covers 116 acute care general hospitals in New York and 417,861 patients.

Results and Conclusions

The data showed that over the two-year period studied, nurse patient loads in the medical-surgical (med-surg) unit ranged from 4.3 to 10.5 with an average of 6.3.

The authors found that with an average of 4:1 staffing in med-surg compared with the current average, there would have been 4,370 fewer in-hospital deaths. With this staffing level, the authors estimate a cost savings of $720 million annually. Estimated cost savings come from a projected reduction in hospital days annually and fewer 30-day readmissions.

2. "Effects of Public Reporting Legislation of Nurse Staffing: A Trend Analysis," 2019. (PDF)

Authors: de Cordova, Pamela; Rogowski, Jeannette; Riman, Kathryn; McHugh, Matthew

Top Line: Public reporting is a good tool for accountability, but consumers do not generally use this data. Staffing improved in New Jersey after public reporting was mandated, but not necessarily because of the law.

Study Overview

In 2008, New Jersey began requiring hospitals to report staffing levels quarterly. The authors use these quarterly reports from 2008 to 2015 for all (72) hospitals in New Jersey and data from the American Hospital Association Annual Survey to determine if hospitals are in compliance with this law and to evaluate its impact on staffing levels.

Results and Conclusions

The authors found that hospitals were compliant with the public reporting requirements in New Jersey. They also found that staffing levels have improved since implementation of the law but were not able to conclude this was a result of the law or if other factors, such as the national upward trend in staffing, contributed to this improvement. Additionally, they maintain the usefulness of public reporting requirements for policymakers to hold hospitals accountable and for other health professionals to make recommendations but point to evidence that consumers generally do not use this data when choosing a hospital.

3. "Contradicting Fears, California's Nurse-to-Patient Mandate Did Not Reduce the Skill Level of the Nursing Workforce in Hospitals," 2011. (PDF)

Authors: McHugh, Matthew; Kelly, Lesley; Sloane, Douglas; Aiken, Linda

Top Line: Mandated staffing ratios in California did not decrease skill mix.

Study Overview

The authors set out to address the question of whether mandated nurse-to-patient ratios in California have reduced the skill level of the nursing workforce as critics feared. They used data from the American Hospital Association Annual Survey from 1997 to 2008 and designed multiple comparison groups for a longitudinal analysis of staffing ratios and skill mix. The universe of hospitals surveyed is about 6,000 with an average response rate of 85 percent annually.

Results and Conclusions

The data showed that the mandated ratios in California did have the intended impact of increasing nurse staffing and that it did not decrease the skill mix of the nursing workforce in the state. Skill mix is calculated by dividing the number of RNs by the number of total nursing staff. A higher skill mix (i.e., more RNs) is associated with better patient outcomes.

Nurse staffing increased nationally from 1997 to 2008 but increased more rapidly in California. Evidence suggests that these ratios resulted in about an additional half-hour of nursing per adjusted patient day. From 2002 to 2008, skill mix in California hospitals increased at an identical rate (+0.006 annually) to other hospitals.

4. "Implications of the California Nurse Staffing Mandate for Other States," 2010.
([PDF](#))

Authors: Aiken, Linda; Sloane, Douglas; Cimiotti, Jeannie; Clarke, Sean; Flynn, Linda; Seago, Jean Ann; Spetz, Joanne; Smith, Herbert

Top Line: Mandated ratios in California save patient lives and improve job satisfaction for nurses.

Study Overview

The authors used survey data from 22,336 hospital staff nurses and state hospital discharge databases to compare staffing ratios and associated outcomes in California, New Jersey and Pennsylvania. Patient outcomes were measured using 30-day inpatient mortality and failure to rescue (FTR) rates.

Results and Conclusions

In the period studied, nurses in California cared for one less patient per shift on average than nurses in New Jersey and Pennsylvania. In the medical-surgical unit, California nurses care for two fewer patients per shift on average than their peers in the other two states.

The better staffing ratios in California corresponded with better outcomes for nurses and for patients. Compared with nurses in New Jersey and Pennsylvania, nurses in California are significantly less likely to report experiencing burnout. Two-thirds of staff nurses in California say the law makes nurses more likely to stay at their jobs, and 74 percent agree that the law has improved quality of care in the state.

If the average staffing ratio in New Jersey and Pennsylvania were equivalent to that in California in the studied time period, the study's model estimates it would have reduced surgical deaths by 13.9 percent in New Jersey and by 10.6 percent in Pennsylvania.

5. "A Meta-Analysis of the Associations Between the Nurse Work Environment in Hospitals and 4 Sets of Outcomes," 2019. (PDF)

Authors: Lake, Eileen; Sanders, Jordan; Duan, Rui; Riman, Kathryn; Schoenauer, Kathryn; Chen, Yong

Top Line: Extensive existing research supports the conclusion that hospitals with better nurse work environments have better outcomes for patients and staff.

Study Overview

The authors conducted a meta-analysis of 17 articles using 21 independent samples. These cumulatively represented data from 2,677 hospitals, 141 nursing units, 165,024 nurses, and 1.36 million patients in 22 countries. All studies were conducted between July 2002 and September 2018 and used the Practice Environment Scale of the Nursing Work Index as an independent variable to predict health or nurse job outcomes in hospitals. The PES-NWI evaluates nurse work environment in six areas: nurse participation in hospital affairs; nursing foundations for quality of care; nurse manager ability, leadership, and support of nurses; staffing and resource adequacy; collegial nurse-physician relations; and nurse-nurse interaction scale.

Results and Conclusions

In this analysis, there was a consistent significant association between nurse work environment (PES-NWI) and outcomes in all four categories studied (nurse job outcomes, safety and quality ratings, patient outcomes and patient satisfaction).

Nurses in better work environments had a 28-32 percent lower probability of job dissatisfaction, burnout or intention to leave. Patient satisfaction was 16 percent more likely in better nursing work environments, and the odds of an adverse event or death were 8 percent lower.

The authors suggest that PES-NWI be used more widely at hospitals to identify areas of weakness to improve outcomes for staff and patients. They also advocate that these measures and the characteristics of a healthy workplace be incorporated into nursing education.

6. "Better Nurse Staffing and Nurse Work Environments Associated with Increased Survival of In-Hospital Cardiac Arrest Patients," 2016. (PDF)

Authors: McHugh, Matthew; Rochman, Monica; Sloane, Douglas; Berg, Robert; Mancini, Mary; Nadkarni, Vinay; Merchant, Raina; Aiken, Linda

Top Line: Patients are more likely to survive in-hospital cardiac arrest with safe staffing levels and in good nurse work environments.

Study Overview

The authors used data sets from the American Heart Association, University of Pennsylvania and the American Hospital Association in a logistical regression model to determine the relationship between the Practice Environment Scale of the Nursing Work Index scores and in-hospital cardiac arrest mortality. The data covers 11,160 adult patients in 75 hospitals in California, Florida, New Jersey and Pennsylvania from 2005 to 2007.

Results and Conclusions

Each additional patient per nurse in medical-surgical units was associated with a 5 percent lower likelihood of surviving an in-hospital cardiac arrest (IHCA). In hospitals with poor work environments, patients had a 16 percent lower likelihood of IHCA survival.

The authors suggest that the link between staffing and IHCA mortality specifically might be so strong because of the importance of quick intervention. When bedside nurses have fewer patients to monitor, they are more likely to be able to identify and intervene in an IHCA quickly. In discussing solutions, the authors caution against exclusively investing in staffing without addressing other factors of the work environment. Their data shows the relationship between staffing and outcomes can depend on having a good work environment.

7. "Comparing the Value of Better Nursing Work Environments Across Different Levels of Patient Risk,"2016. (PDF)

Authors: Silber, Jeffrey; Rosenbaum, Paul; McHugh, Matthew; Ludwig, Justin; Smith, Herbert; Niknam, Bijan; Even-Shoshan, Orit; Fleisher, Lee; Kelz, Rachel; Aiken, Linda

Top Line: Hospitals with nationally recognized good nurse work environments have lower rates of patient mortality and ICU usage than other hospitals.

Study Overview

The authors created a group of 35 "focal" hospitals and 298 "control" hospitals. The focal hospitals are recognized nationally as having good nursing work environments and nurse-to-bed (NTB) ratios greater than or equal to one. The "control" group does not have that national recognition and has NTB ratios of less than one. All hospitals are in Illinois, New York and Texas. The authors note that the focal hospitals were on average larger, had more technology, and were more likely to be teaching hospitals than those in the control group.

Using Medicare Fee-For-Service claims for elderly patients admitted for general surgery between 2004 and 2006, the study compares the cost and value of care between focal and control group hospitals. The primary measures used are 30-day cost and 30-day mortality.

Results and Conclusions

The authors found that better nurse work environments were associated with lower patient mortality rates while maintaining similar costs to other hospitals, thus providing a better overall value of care. The focal group of hospitals had an average 4.8 percent 30-day mortality rate compared with an average of 5.8 percent at hospitals in the control group. Focal hospitals also had significantly lower rates of ICU usage. Patients in focal group hospitals had a 32.9 percent likelihood of ICU usage compared with a 42.9 percent likelihood in control group hospitals.

The authors acknowledge that other factors the study did not control for could impact mortality at these hospitals, but conclude that at minimum a good nurse work environment at a hospital "provides a strong signal to patients and referring physicians for better quality, lower cost and higher value."

8. "Effect of Mandated Nurse-Patient Ratios on Patient Wait Time and Care Time in the Emergency Department," 2010. ([PDF](#))

Authors: Chan, Theodore; Killeen, James; Vilke, Gary; Marshall, Jean; Castilla, Edward

Top Line: When nurse patient loads in two California EDs were higher than state-mandated ratios, wait times were 21 minutes longer and patients were in the ED 37% longer.

Study Overview

This study was conducted by embedding electronic tracking systems with electronic medical records (EMRs) of two emergency departments (EDs) to monitor real-time nurse-to-patient ratios over one year, recording data every 10 minutes. "Hospital A" is an academic, urban, teaching medical center, and "Hospital B" is a suburban community hospital. The two hospital EDs saw 45,660 patients in the studied period.

Under California law, EDs must be staffed at the ratio of one nurse to four patients (1:4) or better. For critical care patients, the ratio must be 1:2 or better; and for critical trauma patients, the ratio must be 1:1 or better. The study results are summarized by times when emergency departments and individual nurses were within these ratios and times when they were not.

Results and Conclusions

ED wait times as well as the total amount of time a patient spent in the ED were significantly lower when nurse-to-patient ratios were in compliance with state law. When staffing was within the mandated ratios, wait times averaged 42 minutes, compared with a 63-minute average when they were out of compliance. The average emergency department care time (EDCT), which measures the time a patient spends in the ED after admission, was 37 percent longer for patients cared for by a nurse with a patient load higher than the mandated ratio.

9. "Public Reporting of Nurse Staffing in the United States," 2019. (PDF)

Authors: de Cordova, Pamela; Pogorzelska-Maziarz, Monika; Eckenhoff, Myra Emma; McHugh, Matthew

Top Line: As of 2019, eight states (Illinois, Massachusetts, Minnesota, New Jersey, New York, Rhode Island, Vermont and Washington) publicly reported levels of nurse staffing. The methods of calculation and reporting varied widely.

Study Overview

The authors examined regulations and reporting on nurse staffing in all 50 states. The study is intended to be a qualitative review of the existing reporting landscape and not an analysis of its impacts.

Results and Conclusions

As of 2019, eight states publicly reported levels of nurse staffing. In Illinois, New Jersey, New York, Rhode Island and Vermont, this reporting was mandated by state law. In Massachusetts and Minnesota, the data is voluntarily reported by the state hospital association. In Washington, staffing plans are legally required to be posted in facilities, but the public reporting is voluntary.

The way staffing levels are calculated and reported varies widely by state. Some states additionally report staffing levels for other job titles. The authors suggest that for this data to be meaningful to the public, there should be a national standard for which job titles are reported, how staffing is calculated, and how it is reported.

10. "Nurse Staffing and Education and Hospital Mortality in Nine European Countries: A Retrospective Observational Study," 2014. ([PDF](#))

Authors: Aiken, Linda; Sloane, Douglas; Bruynell, Luk; Van den Heede, Koen; Griffiths, Peter; Busse, Reinhard; Diomidous, Marianna; Kinnunen, Juha; Kozka, Maria; Lesaffre, Emmanuel; McHugh, Matthew; Moreno-Casbas, M T; Rafferty, Anne Marie; Schwendimann, Rene; Scott, P Anne; Tishelman, Carol; van Acterberf, Theo; Sermeus, Walter

Top Line: The increase of one patient per nurse increases the likelihood of 30-day in-hospital mortality by 7 percent. A 10 percent increase in the share of nurses with a bachelor's degree decreases the likelihood of 30-day in-hospital mortality by 7 percent.

Study Overview

The authors analyzed discharge data for 422,730 patients age 50 and over who underwent common surgeries. They analyzed data from 300 hospitals in nine European countries. They additionally used data from surveys of 26,516 nurses practicing in these hospitals for self-reported measures of staffing and education.

Using these data sets, the authors evaluated the impact of nurse staffing and nurse education on 30-day in-hospital mortality risk, controlling for multiple other variables.

Results and Conclusions

Using odds ratios, the study indicates that each increase of one patient per nurse is associated with a 7 percent increase in the likelihood of a surgical patient dying within 30 days of admission. The data also shows that each 10 percent increase in the share of nurses with a bachelor's degree is associated with a 7 percent decrease in the likelihood of 30-day in-hospital mortality.

The authors note that the requirements of a bachelor's degree vary in each of the nine European countries included in this study and that this measure is self-reported by nurses.

11. "Nurse Staffing, Burnout, and Health Care-Associated Infection," 2012. ([PDF](PDF))

Authors: Cimiotti, Jeannie; Aiken, Linda; Sloane, Douglas; Wu, Evan

Top Line: Reducing nurse burnout can reduce the rate of common hospital-acquired infections, saving lives and money.

Study Overview

This study uses data from the Pennsylvania Health Care Cost Containment Council report on hospital infections, the American Hospital Association Annual Survey, and a 2006 survey of 7,076 registered nurses in Pennsylvania to analyze the relationship between nurse staffing and burnout and healthcare-associated infections.

The authors measured nurse burnout through the emotional exhaustion subscale of the Maslach Burnout Inventory-Human Services Survey. In keeping with methods used in previous research, any score above or equal to 27 on this scale was considered "high burnout." The authors specifically analyzed the relationship between this measure on a hospital-wide level and the rate of catheter-associated urinary tract infections and surgical site infections.

Results and Conclusions

The authors found that there was a statistically significant relationship between the rate of hospital-acquired infections and both nurse staffing and nurse burnout, but that the impact of nurse burnout was more significant.

In the 161 acute care hospitals in Pennsylvania included in the study, nurses cared for an average of 5.7 patients, and the average number of patients per hospital was 9.76. Overall, 16 patients per 1,000 acquired some type of infection while hospitalized; 8.6 per 1,000 acquired a urinary tract infection; and 4.2 per 1,000 acquired a surgical site infection.

The data collected indicates that an additional patient assigned to each nurse is associated with an increased risk of urinary tract infection of about 1 per 1,000. The data also indicates that every 10 percent increase in nurses with high burnout increases the rate of urinary tract infection of 1 per 1,000 patients and the rate of surgical site infection by more than 2 per 1,000 patients. If the hospitals in Pennsylvania that were analyzed reduced the average level of nurse burnout by 30 percent, it would prevent more than 6,000 infections and save between $28 million and $69 million annually.

12. "An Observational Study of Nurse Staffing Ratios and Hospital Readmission Among Children Admitted for Common Conditions," 2013. ([PDF](#))

Authors: Tubbs-Cooley, Heather; Cimiotti, Jeannie; Silber, Jeffrey; Sloane, Douglas; Aiken, Linda

Top Line: A one-patient increase in a pediatric nurse's workload increases the likelihood of the child being readmitted to the hospital within 30 days by 48 percent. Children are 63 percent less likely to be readmitted within 30 days at a hospital with staffing levels in line with California state law.

Study Overview

The authors reviewed hospital discharge data from 225 acute-care hospitals that had at least 50 pediatric discharges per year for a set of common conditions of interest. Hospitals were only included if at least 10 nurses from the facility had also responded to a survey asking for the number of patients cared for on their last shift. This method of nurse-reported staffing levels is considered the most reliable indicator of actual workload. The authors used these reports to estimate hospital-level averages of nurse workloads both for general direct patient care and for pediatric care specifically.

Results and Conclusions

In all, the study reviews data from 14,194 RNs (an average of 63 RNs per hospital included in the study) and 90,459 pediatric patients (ages 1-17): 1.2 percent of patients were readmitted within 14 days, and 0.7 percent of patients were readmitted between 15 and 30 days of discharge.

The data showed that for each one-patient increase in a hospital's average pediatric staffing ratio, the odds of readmission within 14 days increased by 11 percent and the odds of readmission within 15-30 days increased by 48 percent.

The authors theorize that a longer readmission timeline could be a better quality indicator for pediatric patients because they generally have an adult caregiver after discharge assisting with recovery, unlike a typical adult patient.

The authors also note that in hospitals that met the staffing limit requirements of California state law (4:1 for pediatrics), the risk of readmission was reduced by 63 percent.

13. "Nurse Burnout and Patient Satisfaction," 2004. ([PDF](#))

Authors: Vahey, Doris; Aiken, Linda; Sloane, Douglas; Clarke, Sean; Vargas, Delfino

Top Line: Nurses in poor work environments are two to three times more likely to experience burnout than nurses in good work environments. Patients are half as likely to report satisfaction with care in units with high levels of emotional exhaustion among nurses.

Study Overview

The authors analyzed the relationship between nurse working environment and patient satisfaction and nurse burnout using data collected in 1991 as part of a study originally designed to analyze the impact of nurse staffing on outcomes for patients with AIDS. The study includes data from 820 nurses and 621 patients from 40 hospital units in 20 urban hospitals in the U.S. This study includes both RNs and LPNs in the definition of nursing staff.

They measured nurse work environment using the Nursing Work Index, which contains three subscales analyzing staffing quality, administrative support and nurse-physician relations. Using averages of each of these measures, hospital units were characterized as good environments, mixed environments or poor environments: 12 units were good, 16 were mixed, and 12 had poor work environments.

Nurse burnout was measured using the Maslach Burnout Inventory, which takes into account three dimensions of burnout: emotional exhaustion, depersonalization and personal accomplishment. Patient satisfaction was measured using an adapted version of the La Monica-Oberst Patient Satisfaction Scale, modified to include more questions pertinent to the population sampled.

Results and Conclusions

The data showed that nurses in poor work environments are between two and three times more likely to exhibit symptoms of burnout than those in good work environments. Patients cared for in units with higher than average levels of emotional exhaustion among nurses were only half as likely to report being highly satisfied with their nursing care compared with patients cared for in units with lower than average levels of emotional exhaustion among nurses.

It should be noted that this data was collected in 1991 and represents only urban hospitals and patients who are mostly assigned male and birth.

14. Better Nurse Staffing Is Associated with Survival for Black Patients and Diminishes Racial Disparities in Survival After In-Hospital Cardiac Arrests, 2021 ([PDF](PDF))

Authors: Brooks Carthon, Margo J.; Brom, Heather; McHugh, Matthew; Sloane, Douglas; Berg, Robert; Merchant, Raina; Girotra, Saket; Aiken, Linda

Top Line: Better nurse staffing reduces the disparity of survival rate of in-hospital cardiac arrest between Black and white patients.

Study Overview

Using a risk-adjusted logistic regression model, the authors analyzed data from the American Heart Association, the University of Pennsylvania Multi-State Nursing Care and Patient Safety Survey, and the American Hospital Association to determine the relationship between nurse staffing levels and survival to discharge for Black and white patients.

The study includes 75 hospitals in four states: California, Florida, New Jersey and Pennsylvania. To measure staffing, researchers used survey responses from staff nurses indicating the number of nurses and patients on the unit in the last shift they worked. Researchers aggregated these reports for each hospital's ICU and medical-surgical unit, and divided the average number of nurses on the unit by the average number of patients reported. The outcome of an in-hospital cardiac arrest was represented by a binary variable indicating whether the patient survived until discharge.

Results and Conclusions

After controlling for variables, including underlying health conditions, the data showed that in hospitals with better staffing (lower nurse-to-patient ratios), not only did both Black and white patients see higher rates of survival for in-hospital cardiac arrests (IHCA), but also that the disparity in survival rate between Black and white patients decreased.

Specifically, the authors found that in hospitals where nurses cared for an average of seven patients, Black patients had a 13 percent likelihood of IHCA survival compared with 19 percent for white patients. In hospitals with better staffing, this disparity narrowed. Where nurses cared for an average of four patients, Black patients had a 17 percent likelihood of IHCA survival compared with 21 percent for white patients. In hospitals with worse staffing, this disparity widened. Where nurses cared for an average of nine patients, Black patients had a 11 percent likelihood of IHCA survival compared with 17 percent for white patients.

15. Racial Disparities in Stroke Readmissions Reduced in Hospitals with Better Nurse Staffing, 2022 ([PDF](#))

Authors: Brooks Carthon, Margo J.; Brom, Heather; McHugh, Matthew; Daus, Marguerite; French, Rachel; Sloane, Douglas; Berg, Robert; Merchant, Raina; Aiken, Linda

Top Line: Better nurse staffing levels reduce, and in some cases eliminate, disparities in readmission rates between Black and white ischemic stroke patients.

Study Overview

The authors used data from the 2015-2016 RN4CAST-US survey of registered nurses, administrative patient discharge records, and the American Hospital Association's annual survey of hospitals to investigate the relationship between nurse staffing and rate of seven- and 30-day readmission for Black and white ischemic stroke patients. Average hospital staffing levels were determined by dividing the average number of patients reported by nurses by the average number of nurses on the unit for the same shift.

The sample included 98,150 patients covering 542 hospitals. Patients were included in the analysis only if they were over age 65, either Black or white, had a primary diagnosis of ischemic stroke, were not transferred to another hospital and did not die while in the hospital. Researchers controlled for potentially confounding variables at both the hospital and patient levels.

Results and Conclusions

The authors found an average of four patients per nurse in the sampled hospitals. In hospitals with the average staffing level, Black stroke patients had a 14 percent likelihood of 30-day readmission while white patients had an 11 percent likelihood. In hospitals with worse staffing, these disparities widened. In hospitals with an average of seven patients per nurse, the odds of 30-day readmission for Black stroke patients increased to 19 percent but remained at 11 percent for white patients. However, in hospitals with the best staffing, with an average of two patients per nurse, Black and white stroke patients had equal odds of 30-day readmission at 11 percent.

The authors suggest that rates of readmission for Black stroke patients may be more impacted than the same measure for white patients because Black patients may have higher clinical complexity, including higher rates of certain comorbidities and access to fewer economic resources and community-based services. The authors theorize that because excessive patient workloads may lead to omitting essential nursing care to address these complexities, Black patients may benefit more from higher staffing levels.

16. "Top Factors in Nursing Ending Health Care Employment Between 2018 and 2021," 2024. ([PDF](#))

Authors: Muir, K. Jane; Porat-Dahlerbruch, Joshua; Nikpour, Jacqueline ; Leep-Lazar, Kathryn; Lasater, Karen B.

Top Line: Between 2018 and 2021, RNs of all ages cited burnout, insufficient staffing and unsafe working conditions as top contributing factors to their decision to leave healthcare employment.

Study Overview

This study analyzes survey data from registered nurses with an active license in New York or Illinois from April-June 2021. RNs who indicated they left healthcare employment were given a list of potential contributing factors to their decision to leave and were asked to "select all" that applied. Focusing only on the 7,887 RNs who left healthcare employment between 2018 and 2021 and who reported their age and previous employment setting, the authors analyze the leading factors contributing to RNs exiting the nursing workforce.

Results and Conclusions

For all the nurses included in this study, the leading factors for leaving healthcare employment were planned retirement (39 percent), burnout or emotional exhaustion (26 percent), insufficient staffing (21 percent), family obligations (18 percent) and concerns related to COVID-19 (17 percent).

Notably, only 59 percent of retired nurses cited a planned retirement as a contributing factor to their departure, meaning 41 percent of retired nurses entered retirement unplanned due to other contributing factors.

The survey data also show that younger nurses are more likely to cite burnout and insufficient staffing as contributing factors to leaving healthcare employment. Among nurses under age 30 who left healthcare employment between 2018 and 2021, 43 percent cited burnout or emotional exhaustion as a contributing factor, and 40 percent cited insufficient staffing.

In the discussion and conclusion sections of the study, the authors say that improving the nurses' working environment, including by improving staffing standards, is a critical solution for nurse retention. They write, "More than two decades of evidence, including data generated during the COVID-19 pandemic, consistently finds that the most promising solution, endorsed by physicians and nurses, to reducing clinician burnout and ensuring high-quality, safe patient care is to ensure safe nurse staffing ratios."

aft CODE RED
Understaffing = Patient Care Crisis

17. "Physician and Nurse Well-Being and Preferred Interventions to Address Burnout in Hospital Practice," 2023. (PDF)

Authors: Aiken, Linda H.; Lasater, Karen B.; Sloane, Douglas M.; Pogue, Colleen A.; Fitzpatrick Rosenbaum, Kathleen E.; Muir, K. Jane; McHugh, Matthew D.

Top Line: Hospitals with lower rates of nurse burnout have lower rates of both nurse and physician turnover. To address burnout, physicians and nurses prioritize improvements to working conditions, such as improving nurse staffing, over initiatives focused on clinician well-being.

Study Overview

This study analyzes survey responses from 5,312 physicians at 53 Magnet hospitals and 15,738 registered nurses at 60 Magnet hospitals collected from January to June 2021.

The survey included commonly used questionnaires to measure emotional exhaustion, generalized anxiety disorder, depression and post-traumatic stress disorder. Respondents were also asked to evaluate quality of care and patient safety in their workplaces and were asked to select which interventions would be most effective for alleviating burnout and improving clinician well-being.

Results and Conclusions

Across all hospitals studied, an average of one-third of physicians and one-half of nurses reported high levels of burnout. Researchers emphasize that we should expect rates of burnout to be lower than average at Magnet hospitals, which, in part, receive the Magnet designation by being deemed a positive work environment for clinicians.

In each hospital studied, an average of 28 percent of physicians and 54 percent of nurses said there were not enough nurses to care for patients. An average of 42 percent of physicians and 47 percent of nurses in each hospital also said they were not confident management would act to resolve patient care problems identified by clinicians.

The authors found that in hospitals with higher rates of nurse burnout, nurse dissatisfaction, and nurses' intention to leave their current job, physician turnover was up to 5 percent higher and nurse turnover was up to 8 percent higher.

In ranking the efficacy of suggested interventions for burnout and clinician well-being, physicians and nurses prioritized interventions that improved working conditions over those that focused on clinician wellness. Notably, 45 percent of physicians and 87 percent of nurses prioritized improved nurse staffing in the list of potential interventions.

**18. "Chronic Hospital Nurse Understaffing Meets COVID-19: an Observational Study," 2021.
([PDF](#))**

Authors: Lasater, Karen B.; Aiken, Linda H.; Sloane, Douglas M.; French, Rachel; Martin, Brendan; Reneau, Kyrani; Alexander, Maryann; McHugh, Matthew D.

Top Line: Hospitals in New York and Illinois were critically understaffed in the months leading up to the first COVID-19 surge in the U.S. Staffing levels are linked to nurse burnout, measures of patient safety, and patient satisfaction.

Study Overview

In response to the COVID-19 pandemic and pending staffing legislation in New York and Illinois, researchers analyze the relationship between staffing levels of direct care RNs in medical-surgical and intensive care units, nurse burnout, patient safety and quality of care, and patient satisfaction. The study sample includes 4,298 RNs working on medical-surgical units in 254 hospitals and 2,182 RNs working on ICUs in 179 hospitals.

Results and Conclusions

Results showed 53.1 percent of med-surg RNs and 46.9 percent of ICU RNs reported high levels of burnout; 49.1 percent of med-surg RNs and 46.7 percent of ICU RNs rated patient safety unfavorably at their facility; 65.3 percent of med-surg RNs and 54.4 percent of ICU RNs reported that their work was frequently interrupted or delayed by insufficient staffing. The authors found a statistically significant relationship between staffing levels and *every* reported measure of nurse burnout and patient satisfaction.

In discussion, the authors frame these findings and crucial evidence that many hospitals in New York and Illinois were critically understaffed in the months immediately prior to the initial surge of COVID-19 in the United States. They note that New York City, with an average med-surg RN patient load of 6.5 compared with the 5.4 non-NYC average, was particularly vulnerable to the patient and healthcare worker safety risks posed by the pandemic.

Rebutting common arguments against staffing legislation, the authors note that California, which at the time was the only state with minimum nurse staffing requirements, has fewer RNs per capita than most other states and far fewer RNs per capita than New York and Illinois. Simply put, they state: "Differences in hospital nurse staffing by state have little to do with the supply of nurses." Addressing concerns about the financial impacts of safe staffing measures, they also state: "There has been no evidence of hospital closures in California as a result of the staffing legislation."