Fact Sheet 2010

THE COSTS AND BENEFITS OF SAFE STAFFING RATIOS

The United States is experiencing a severe shortage of nurses that will intensify as baby boomers age and the need for health care grows. Registered nurses (RNs) are expected to generate 581,500 new jobs between 2008 and 2018, the largest number of new jobs for any occupation during this time period.[1] According to a projection from *Health Affairs*, the shortage of RNs is expected to increase to 340,000 by the year 2020.[2] While this is lower than past projections, the nursing shortage remains the longest-running occupational shortage in the United States. This is a national epidemic and in April 2006, the Health Resources and Services Administration projected that all 50 states will experience a nursing shortage by 2015. Nurses are also one of the few occupations the Department of Labor has "determined there are not sufficient U.S. workers who are able, willing, qualified and available."[3]

A study by Peter Hart and Associates found one in five nurses is quitting patient care. Most are leaving because of inadequate staffing. There are insufficient nurses to do what needs to be done on any given shift and those who are on duty are exhausted and stressed.[4] Moreover, the Nursing Management Aging Workforce Survey found that 55% of nurses, predominantly managers, claim they will retire between 2011 and 2020.[5]

More nurses are needed in hospitals. In 2006, the American Hospital Association found that hospitals need approximately 118,000 RNs. With 49% of hospital CEOs reporting that they have difficulty recruiting nurses, it is no wonder that the national vacancy rate has risen to 8.5%. By 2020, the Health Resources and Services Administration, Bureau of Health Professions estimates, based on present nursing statistics, that 800,000 RN positions (29% of RN positions) will go unfilled creating a massive nursing shortage.[6]

Although the need for hospital nurses is increasing, some nurses are leaving hospitals to work in less stressful environments. In Massachusetts, a study found that although Massachusetts has more nurses per capita than any other state, only 50% of them work in hospitals and nearly 60% of hospital nurses are only working part-time. A 2005 survey of Massachusetts nurses found that 65% of RNs would return to work in hospitals if the Patient Safety Act was passed. This act would limit the nurse-to-patient ratios and ban mandatory overtime.[7]

Adequate nurse staffing is key to patient care and nurse retention, while inadequate staffing endangers patients and drives nurses from their profession. From 54% of nurse respondents in Pennsylvania to 34% in Scotland, nurses reported burnout scores above published norms for medical personnel.[8] One study in the United States found that 49% of RNs under the age of 30 and 40% of RNs over 30 experienced high levels of burnout.[9]

Inadequate staffing levels increase burnout. According to a study in the *Journal of the American Medical Association*, each additional patient per nurse carries a 23% risk of increased burnout and a 15% decrease in job satisfaction.[10] Some hospitals have had success in retaining their nurses by raising nurse-to-patient ratios, involving nurses in decision-making and providing nurses with opportunities to further their education. Turnover dropped from 15.3% in 2000 to

10.3% in 2002 at New York Presbyterian Hospital, a hospital which now has a safe staffing clause in its contract.[11] Not coincidentally, a November 2003 study by the Institute of Medicine of the National Academy of Sciences calls for better nurse-to-patient ratios, limits on mandatory overtime and nurse involvement at every level to protect patients.[12] A 2010 study of the impact of California's state mandated minimum nurse staffing requirement found that only 29% of nurses in California experience high burnout. This is compared to the 34% of nurses in New Jersey and 36% of nurses in Pennsylvania who experience high burnout, where neither state has mandated minimum staffing ratios. The study also found that nurses in California are less likely to be dissatisfied with their jobs (20%, compared with 26% and 29% in New Jersey and Pennsylvania, respectively).[13]

Understaffing Endangers Patients' Lives

- The Institute of Medicine (IOM) concluded that the environment in which nurses work is a breeding ground for medical errors which will continue to threaten patient safety until substantially reformed. The study finds increased infections, bleeding, and cardiac and respiratory failure associated with inadequate nurse staffing.[14]
- A 2002 report by the Joint Commission on Accreditation of Healthcare Organizations stated that the lack of nurses contributed to nearly a quarter of the unanticipated problems that result in death or injury to hospital patients.[15]
- A 2006 study by Heather K. Spence Laschinger, PhD, RN, and Michael P. Leiter, PhD, found that patient safety outcomes are related to the quality of the nursing practice work environment. Strong correlations exist between low staffing levels and increased emotional exhaustion, which leads to more patient complaints, nosocomial infections (infections received from hospital care such as urinary tract or staph infections) and medication errors.[16]
- Another study found that patients at hospitals with staffing ratios of four patients to one nurse or higher suffered from cardiac arrest or shock 9.4% more often than patients at hospitals with ratios of 2.5 patients to one nurse or lower. They also had 9% more urinary tract infections, 5% more gastro-intestinal episodes, and 6.5% more cases of pneumonia acquired in the hospital. Surgery patients in short-staffed hospitals were 6% more likely to die from complications like shock or sepsis.[17]
- Linda Aiken, PhD, FAAN, FRCN, RN, and her coauthors cite in their 2010 study of the California state mandated minimum nurse staffing requirement that the effect of adding an additional patient to hospital nurse workloads increases the odds on patients dying by a factor of 1.13 in California, 1.10 in New Jersey, and 1.06 in Pennsylvania. The effects of increased workloads on failure to rescue were similar with odds ratios of 1.15 in California, 1.10 in New Jersey, and 1.06 in Pennsylvania. When using the prediction probabilities of dying from the study's adjusted models to estimate how many fewer deaths would have occurred in New Jersey and Pennsylvania hospitals if the average patient-to-nurse ratios in those hospitals had been equivalent to the average ratio across the California hospitals, the study finds 13.9% fewer surgical deaths in New Jersey and 10.6% fewer surgical deaths in Pennsylvania.[18]
- In 2005, more than 50% of hospital RNs and MDs who participated in a national survey reported that the quality of patient care, time for patients, and effectiveness has decreased because of shortages.[19]

- Another study in 2005 found that greater time with nurses per day also benefited patients in long-term situations. Specifically, patients at risk for pressure ulcers who spent more time per day with nurses had fewer pressure ulcers, fewer urinary tract infections and less weight loss.[20]
- Higher rates of staffing led to lower incidence of bloodstream infections in infants according to a 2006 study.[21]
- A 2005 study showed that low nurse staffing increased incidence of methicillin resistant Staphylococcus aureus (MRSA), the so-called 'superbug'.[22]
- A survey of Massachusetts doctors in 2005 revealed that over three-quarters think nurse staffing levels are too low and over half believe that this inadequate staffing has led to injuries or deaths.[23]
- A 2006 study in the U.K. indicated that hospitals with the most favorable nurse staffing ratios had consistently better outcomes than those with higher nurse staffing ratios. In fact, the study found that patients in hospitals with the highest patient-to-nurse staffing ratios had 26% higher mortality rates and patients were 29% more likely to die following complicated hospital stays than those patients in hospitals with lower patient-nurse ratios.[24]
- A study by the Centers for Medicare and Medicaid Services (CMS) suggests that short-stay patients in skilled nursing care facilities with staffing levels in the bottom 30% were more likely to be among the worst 10% of facilities for transfers for acute hospitalizations due to acute heart failure, electrolyte imbalances, sepsis, respiratory infection, and urinary tract infections. Facilities with staffing below 2.78 hours of aide time and 0.75 hours of RN time (per patient, per day) had a greater probability of poor outcomes for long-stay patients. Patients in these facilities were more likely to suffer from pressure ulcers, skin trauma, and weight loss.[25]
- In a study of long-term care facilities, patients in facilities with more direct RN time (30 to 40 minutes per patient a day) had fewer pressure ulcers, acute care hospitalizations, urinary tract infections, urinary catheters, and less deterioration in their ability to perform daily living activities.[26]
- A 2003 study in *Nursing Research* found a correlation between nurse staffing levels and adverse events. Patients experienced an 8.9% decrease in contracting pneumonia when given one hour more RN care per day. Also increasing the nurse-to-patient ratio by 10% is associated with a 9.5% decrease in contracting pneumonia. The study also found a correlation between adverse events and increased medical costs. The occurrence of pneumonia was associated with an increase of 5.1 to 5.4 days in a patient's length of stay, an increase of 4.67–5.55% in the probability of death, and an additional $22,390–$28,505 in costs.[27]

While the most important results related to inadequate nurse staffing are unanticipated patient complications and deaths, other costs include longer hospital stays, higher rates of occupational injury and stress among nurses, more turnover among nurses, and more liability for hospitals. In 1999, the IOM estimated that preventable medical errors cost the economy from $17 to $29 billion annually, of which half are health care costs.[28] A recent study by Health Grades estimates that between 2004 and 2006 patient safety incidents alone cost $8.8 billion in additional costs.[29]

Understaffing Endangers Nurses

- Working long hours and with inadequate staffing also affects nurses' health, increasing their risk of musculoskeletal disorders (MSDs—back, neck, and shoulder injuries), as well as causing hypertension, cardiovascular disease, and depression. MSDs are common among health care workers due to the cumulative effects of frequent lifting and repositioning of patients. Nurses' aides and orderlies sustain the most MSDs of any occupation and registered nurses rank eighth among all other workers.[30] Cases of MSD in nurses can affect nurse retention. In a 2003 study, 6% of RNs reported changing jobs because of neck problems, 8% because of shoulder problems, and 11% because of back problems.[31]
- Nurses working 12 or more hours per day and 40 or more hours per week are 50% more likely to get a back, neck, or shoulder injury. Nurses working nights or weekends also significantly increased their risk, while nurses working rotating shifts had twice the number of reported accidents as those working day or night shifts only.[32]
- Nurses' cardiovascular health also suffers from working long shifts. There is a greater risk of hypertension and cardiovascular disease from long working hours, including higher blood pressure among workers completing over 60 hours of overtime per month and increased risk of acute myocardial infarction among those working more than 11 hours per day.[33]
- Conversely, as the nursing staff is increased the number of injuries sustained by nurses and nursing aides decreases. A 2005 study found that this held true across the three states studied.[34]
- Other work-related injuries, like needle sticks, can occur. A 2002 study in the *American Journal of Public Health* showed that nurses working with less adequate resources, lower staffing levels and less leadership, and higher levels of emotional stress were twice as likely to report risks of needle stick injuries.[35]
- Nursing can also be mentally strenuous. In a 2005 study at a Swedish hospital, researchers found that more than half of registered nurses stated that they intended to change their jobs. The most common reason for intending to quit was salary; however, the study also found that stress and exhaustion played a factor in their decision to leave. One-third of the nurses who intended to quit said that they found their job to be psychologically strenuous and stressful and they also found that work tempo increased stress and decreased the quality of patient care.[36]

Adverse outcomes associated with low nurse staffing lengthen patients' hospital stays

- Low staffing levels are associated with higher adverse outcome rates. Common adverse outcomes sensitive to nurse staffing, like urinary tract infections, pneumonia, pressure ulcers, and falls, can all lead to longer hospital stays and increased costs for hospitals.[37]
- For example, an Agency for Healthcare Research and Quality study found that the cost of care for patients who developed pneumonia while in the hospital rose 84%, raised total treatment costs by $22,390–$28,505, and increased the length of stay by 5.1–5.4 days.[38] Pressure ulcers and other adverse events associated with low staffing ratios are estimated to cost $8.5 billion per year.[39]
- In 2007, 70% of hospital executives were concerned about financial challenges and 36% were concerned about personnel shortages.[40]

- A 2007 study in *Medical Care* found that an increase of one RN per patient day was associated with a 24% reduction in length of stay in the Intensive Care Unit and a 31% reduction in length of stay for surgery patients.[41]
- The Institute for Health and Socio-Economic Policy projects annual savings of about $2 billion a year for California hospitals just from the shorter patient stays that result from better RN staffing. The findings are based on an examination of 21.7 million patient discharges in California from 1993–98 and hospital charges per patient day.[42]

High Nurse Turnover Is Expensive

Nearly 90% of nurses say that there is a shortage of nurses in the facility where they work. Seven in 10 nurses said that their facility had a severe or moderate problem retaining and recruiting qualified nursing staff. Staffing levels were cited as the most common reason for dissatisfaction among nurses planning to leave the profession, as well as the most severe problem facing the nursing profession.[43]

Nursefinders, Inc., which conducts a quarterly nurse staffing survey, estimates the average cost per RN turnover at $65,000 in 2005. Given their survey findings that many healthcare facilities may lose 25 to 60% of their nurses in 2005 alone, the financial impact of this turnover on affected facilities could range from $1.6 million to nearly $4 million a year.[44]

- Organizations with high annual RN turnover rates (22–44%) had 36% higher costs per discharge than hospitals with turnover rates of 12% or less. Hospitals with low turnover had lower risk-adjusted scores as well as lower severity-adjusted length of stay compared to hospitals with 22% or higher turnover rates.[45]
- Hospitals with low RN turnover (4–12%) averaged a 23% return on assets compared to a 17% return for those with high turnover rates.[46]
- Over 40% of hospitals offer bonuses to new hires, according to the American Hospital Association. Most offer packages of between $1,000 and $5,000, but some offer even more compensation.[47] This policy does nothing to reward and retain experienced nurses and can also create resentment.
- Hospitals also recruit nurses from other countries, which removes badly needed health care providers from poor countries, while also depressing nurses' wages here.

These solutions do nothing to address the underlying reason why so many qualified nurses leave the profession. Better nurse-to-patient ratios would, however. The *Nursefinders* survey finds 57% and 56% of nurses, respectively, citing work-related stress and patient care loads/staffing as having a major impact on turnover, above the impact of compensation.[48]

Temporary or Supplemental Nurses

Supplemental nurses are nurses brought into hospitals to temporarily fill gaps in nurse staffing. Temporary nurses are more likely to be concentrated in hospitals with poor staffing rates and inadequate resources.[49]

- Supplemental staff nurses are similar to permanent staff with respect to age but are more likely to be male (13% vs. 6%) and less likely to be married (53% vs. 72%). Supplemental nurses are slightly more likely than permanent nurses to hold baccalaureate or higher degrees (46% vs. 40%) and more likely to have received their education in the last 10 years (57% vs.

48%). Supplemental nurses are more likely to work in intensive care units (35%) whereas only 20% of permanent nurses work in that unit.[50]

- Supplemental nursing staffs are expensive for nurse managers and executives, especially when they are brought in from outside agencies. Nationally, hospitals spent $7.2 billion on temps and travelers in 2000.[51]
- Temps and traveling nurses earn as much as $100 an hour, while staff nurses typically earn less than $25 per hour.[52] These wage differences can create resentment amongst permanent nursing staff who earn less despite being more efficient and needing less staff support.[53]
- The American Hospital Association reported that 56% of hospitals used agency per diem or traveling nurses in 2001. More recently, the Community Tracking Study found that 75% of participating hospitals used supplemental nurses. Two-thirds of the U.S.'s $6 billion annual market for externally contracted nurse services is spent on per diem or local agencies accounts, while the remaining third is spent on traveling nurse services.[54]
- A study in the *Journal of Nursing Administration* found that the proportion of nurse turn-over costs represented by vacancy costs had increased from 35% to 75% between 1988 and 2002 due in large part to a greater reliance on the use of temporary nurses to fill nurse turnover vacancies.[55]
- In hospitals where less than 5% of nurses were temporary workers, staff reported fewer nosocomial infections. Patient falls and verbal abuse were less commonly reported in hospitals with between 5% and 15% staff of temporary nurses. Also the percentage of nurses reporting work-related injuries was significantly higher in hospitals which employed more than 15% supplemental nurses.[56]
- Nurses in hospitals with 15% or more nonpermanent RNs were more likely to be dissatisfied with their jobs. They were also more likely to have plans to leave their current positions within a year and to show signs of burnout above the norm for healthcare workers.[57]

What Will Safe Staffing Ratios Cost Hospitals?

- A 2003 study in the *Journal of Health Care Finance* found that while increasing nurse staffing increased operational costs for hospitals, it **did not** decrease the hospital's profitability. Improving nurse staffing ratios is cost-effective, in part, because high turn-over rates and high levels of non-nurse staffing increase operating costs, average costs per discharge, and cause a decreased return on assets.[58]
- A University of California (UC) at Davis study estimates it will cost California hospitals $1.1 billion annually to implement a ratio of four patients to one nurse in medical/surgical units, the standard approved by the SEIU Nursing Alliance, United Nurses' Associations of California, and Kaiser Permanente.

  Berliner, *et. al.*, criticized the UC Davis study on several methodological grounds, pointing to assumptions which inflate the estimate by 35% to 40%, as well as data collection issues, placing the estimate below $500 million.[59] The assumptions include failing to distinguish between for-profit and non-profit hospitals, although for-profit hospitals have the leanest staffing ratios and can best afford to implement improved staffing ratios; assuming that nurses cannot be transferred from a unit where there is a surplus of staff to a unit which is short; assuming that only full-time nurses would be hired, when 35% of nurses in California

work part-time; and defining the cost of hiring a new nurse at the average nurse salary, when it is plausible that many will be entry-level or part-time.[60]

- Although the validity of the UC Davis study is questionable, even if the estimate of $1.1 billion is accurate, the cost is only a 2.3% increase for California's $40 billion industry divided among 500 hospitals.[61] Moreover, inadequate nurse staffing is costly; safe staffing ratios allow hospitals to save on costs associated with patient complications and liability, nurse turnover, temp agency fees, and recruiting.
- A 2002 report by Blue Cross Blue Shield Association found that California hospitals could save over $331 million if all hospitals performed at the level of the best hospitals in the state in terms of these quality indicators: adverse events, wound infection, pneumonia after surgery, and urinary tract infections.[62] These indicators are well-established measures of nurse staffing quality.

If Berliner and colleagues' estimate of $500 million as the cost of safe staffing levels is accurate, the direct costs of complying with the California safe staffing law would be almost completely offset by the benefits of improved nurse staffing quality.

- A 2005 national study in the journal *Medical Care* found that reducing nurse-to-patient ratios was cost-effective in improving patient outcomes. The authors found that the cost of a life saved by improving nurse-to-patient ratios is considerably less than by using other basic safety measures, such as routine cervical cancer screening or thrombolytic therapy for heart attack patients. The authors found that limiting the nurse-to-patient ratio to 4:1 never cost more than $449,000 per life saved. These cost estimates don't even include the additional savings from reduced length of hospital stays which are associated with lower staffing ratios; the study estimates these savings may offset fully half of the added labor costs.[63]
- A 2006 study in *Health Affairs* examined costs and benefits of increasing nurse staffing. The study examined three policy options: option 1 – raise the proportion of RNs to licensed practical nurses (LPNs), without changing the total number of hours of care, to the same level as the top 25% of hospitals; option 2 – increase the number of licensed nursing hours per day without changing the proportion of RNs to LPNs; option 3 – raise the proportion of RNs and licensed nursing hours per day to that of the top 25% of hospitals.[64]
    - Option 1 would require hospitals not in the top 25% to replace 37,000 LPNs with RNs at the cost of $811 million. This approach would provide a net savings of $242 million over the short-term and $1.8 billion over time through shorter hospital stays, fewer deaths, and decreased complications. Most of the reduction in costs would come from shorter hospital stays, which under this model would be decreased by 1.5 million days.[65]
    - The second option would require hospitals not in the top 25% to hire an additional 114,456 RNs and 13,000 LPNs at the cost of $7.5 billion. In this approach, short-term costs would increase by $5.8 billion. While this is a large amount of money, it would only account for about 1.5% of annual hospital expenditures. Over time these expenses would further reduce the decrease in days of care, which under this approach would amount to a decrease of 2.6 million days. Due to the decrease in days of care, the cost of this policy option would only account for 0.8% of annual hospital expenditures.[66]
    - The third option would require hospitals not in the top 25% to hire 158,000 more RNs and decrease the number of LPNs at the cost $8.5 billion. The short-term costs would be $5.7 billion, accounting for approximately 1.5% of annual hospital expenditures. Like

option 2, the policy option's costs can be reduced by the decrease in days of care, which under this option is estimated to be 4.1 million less days of care. The reduction in days of care would reduce the option's costs to only 0.4% of annual hospital expenditures.[67]

- The study estimates that 90% of decreases in the hospitals' fixed costs over the long term will be the result of shorter hospital stays.[68]
- All of the options would result in a decrease in patient mortality. The study estimates that 6,700 patient deaths can be avoided by increasing nurse staffing. Under the first option, 4,997 of these deaths can be prevented. Under options 2 and 3 more deaths can be prevented but at a higher cost. Under option 2 and option 3 the short-term cost of each death avoided would be $3.23 million and $846,000, respectively. In the long-term, cost per death avoided for options 2 and 3 would be $1.8 million and $231,000 respectively.[69]

More States are Pursuing Safe Staffing Legislation

In January 2004, California became the first state to implement mandatory nurse-to-patient ratios. State labor and nurses' organizations fought successfully to keep the legislation in its original form (requiring one nurse per six patients starting in January 2004, increasing to one nurse per five patients by January 2005), despite an attempt by California Governor Arnold Schwarzenegger to block the second increase.[70] Preliminary studies on the effect of this legislation indicated that staffing levels increased significantly in California hospitals, and that contrary to concerns, hospitals did not seek to meet the new requirements by increasing their use of licensed vocational nurses (LVNs).[71]

- In 2010, Linda Aiken, PhD, FAAN, FRCN, RN, and her coauthors published a comparative review of the California mandated minimum nurse staffing requirement. The study found that not only were patient outcomes better in California than in the other states surveyed without such legislation, but that both nurses and nurse managers agreed that the ratio legislation achieved its goals of reducing nurse workloads, improving recruitment and retention of nurses, and having a favorable impact on quality of care.[72]
- The California minimum staffing legislation has a direct impact on many of the most vulnerable patients, those who are poor or uninsured. The Journal of Hospital Medicine study found that hospitals with a high proportion of Medicaid and uninsured patients were significantly more likely than hospitals with low proportions of Medicaid patients to be below minimum nurse staffing ratios. The hospital types with the highest percentage of hospitals below the 1:5 ratio were those with a high proportion of Medicaid/uninsured (21.7%), government-owned (21.1%), nonteaching (12.0%), urban (11.9%), and in more competitive markets (11.7%).[73]

Meanwhile, several other states have enacted or put into motion legislation addressing safe staffing levels. For instance:

- In 2004, New Jersey passed legislation requiring hospitals to disclose staffing information. An as-yet unsuccessful bill requiring staffing ratios is expected to be reintroduced.
- In 2005, Rhode Island enacted legislation requiring hospitals to annually submit a staffing plan.[74]

- In 2005, Oregon updated and strengthened its 2001 legislation requiring hospitals to appoint a staffing plan committee and take other measures to ensure timely filling of vacancies.[75] In 2002, Texas put in place similar regulations to the original Oregon staffing plan legislation.[76]
- Fourteen states (California, Connecticut, Illinois, Maryland, Minnesota, Missouri, New Hampshire, New Jersey, New York, Oregon, Rhode Island, Texas, Washington, West Virginia) have enacted laws or regulations on mandatory overtime for nurses, most prohibiting hospitals from requiring overtime except in the event of a public health emergency. Mandatory overtime legislation or regulation has been considered in another eight (Arizona, Florida, Maine, Nebraska, Ohio, Vermont, Washington (to extend existing protections to the public sector), Wisconsin).[77]
- On the federal level, the "Nurse Staffing Standards for Patient Safety and Quality Care Act of 2007" (H.R. 2123) introduced by Representative Jan Schakowsky (D-Illinois) would restrict mandatory RN overtime to times of emergency and establish minimum nurse-to-patient ratios.[78]
- More recently, the "National Nursing Shortage Reform and Patient Advocacy Act" (S. 1031) was introduced by Senator Barbara Boxer (D-California) in the 111th Congress and would amend the Public Health Service Act to establish direct care registered nurse-to-patient staffing ratio requirements in hospitals, and for other purposes.[79]
- Other initiatives in Illinois and Tennessee attempt to counter shortages and bolster the workforce. In Illinois, the Illinois Center for Nursing was created to assess the current statewide nursing economy and develop a plan to educate, recruit, and retain nurses. In 2007, Governor Philip Bredesen (Tennessee) launched the Graduate Nursing Loan Forgiveness Program to raise $1.4 million in scholarship money to help nurses earn degrees.

Nurses Return to Nursing When Safe Staffing Ratios Are Implemented

- The California Board of Nursing reports being inundated with RN applicants from other states because of the nurse-to-patient ratio regulations that went into effect in January 2004. With a more than 60% increase in applications for licenses it now takes six or more weeks to get a temporary license and as much as three or four months to get a permanent one.[80]

California has experienced more interest in nursing since the nurse ratio legislation was passed in 1999.

- The number of actively licensed RNs in California increased by more than 60,000, from 246,068 on June 30, 1999 to 306,140 on December 30, 2005.[81]
- Kaiser Permanente voluntarily enacted ratios before the California law went into effect in July 2001. As a result, the Northern California branch of Kaiser hired 71% more new nurses and the number of nurses quitting declined by 47% from January to October 2002, a net increase in RNs of 570% over the previous year.[82]
- Testimony from California RNs confirms the benefits of staffing ratios. A study by UC San Francisco's Center for Health Professions found that nurses from California express concern about staffing more than any other topic, regardless of whether they work for for-profit or non-profit healthcare organizations or whether they belong to a union. Staffing ratios have been required in critical care units in California hospitals and nurses consistently cite ratios

as a draw to work in these units because they know they will be able to provide high quality care to their patients.[83]

- A UC San Francisco study estimated that in 2004, 11,000 "travelers"—U.S.-trained nurses who bounce from hospital to hospital on short contracts—moved to California in the wake of the staffing-ratio legislation, along with 3,700 foreign-trained nurses.[84]
- Vacancies for registered nurses at Sacramento hospitals have plummeted 69% since early 2004, according to the January 11, 2008 *Sacramento Business Journal*.[85]

The nurse crisis is a global phenomenon. In 2000, the Australian state of Victoria implemented staffing ratios as part of a strategy to recruit and retain nurses in their state and met with remarkable success.

- Six months after the ratios were fully implemented, 3,300 nurses returned to work full-time.[86]
- A preeminent technical institute in Victoria reported that the number of graduating students planning to study nursing increased by 144%.
- One major hospital reported that its costs for temp agencies fell by 83%. Another hospital reported that its costs for temp agencies fell by 83%; while yet another major hospital now has 19 nurses on a waiting list to work in its emergency department.

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Source: DPE Research Department
815 16th Street, N.W., 7th Floor
Washington, DC 20006

Contact: Alexis Spencer Notabartolo
(202) 638-0320, extension 119
anotabartolo@dpeaflcio.org

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