

Burned-out nurses linked to more infections in patients

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Getty Images stock Adding extra patients to nurses' already heavy loads, or logging more nurses with high levels of burnout was tied to an increase in two kinds of hospital-acquired infections.

Heavy patient loads and chronic burnout have long been among the top complaints of nurses at the nation's hospital bedsides. But a new study shows that those problems affect not only the nurses themselves, but also the number of infections in the people they care for.

For every extra patient added to a nurse's workload, there was roughly one additional hospital-acquired infection logged per 1,000 patients, according to researchers from the Center for Health Outcomes and Policy Research at the University of Pennsylvania School of Nursing.

For each 10 percent jump in the proportion of nurses who logged high levels of burnout, there was roughly one additional catheter-associated urinary tract infection per 1,000 patients and almost extra two surgical site infections per 1,000 patients, according to a study published today in the *American Journal of Infection Control*.

"One infection is too many," said Jeannie P. Cimiotti, the study's lead author, who directs the Collaborating Center for Nursing at Rutgers University. "If you're really serious about infection control and providing the best care for patients, you have to address these issues."

Cimiotti and her colleagues surveyed more than 7,000 registered nurses working in 161 hospitals in Pennsylvania, and then merged that with data on hospital infections from the Pennsylvania Health Care Cost Containment Council, or PCH4, and with national data on the characteristics of the nation's hospitals.

What they found was alarming, Cimiotti said. More than a third of the nurses reported high levels of job-related burnout. That was measured by the Maslach Burnout Inventory, a recognized scale that tracks factors like emotional exhaustion, depersonalization and whether the nurses feel a sense of personal accomplishment.

"Nurses deal with life and death every day," Cimiotti said, explaining why burnout occurs. "How many people go to their job and say, 'This one died and this one died and this one died?' Often they see as much failure as they see good."

The nurses cared for an average of 5.7 patients apiece, and when even one extra patient was added to that load, the result was an additional 1,351 infections within the hospital population studied.

That could mean additional risk of serious illness or death for patients who catch those infections while in the hospital, Cimiotti said. For people with cancer or other conditions that compromise immune system function, even a low-level bladder infection or a common infection in a surgical wound can tip them into far more serious illness.

"They're associated with morbidity and mortality, no doubt about it," Cimiotti said. "A bloodstream infection can kill someone."

This study is important because it is among scant research to factor in the impact of burnout, she added. When nurses are chronically stressed and feel unsupported by the work environment, it can lead to lapses in infection control

practices.

“If a patient is moaning for help over here and you’re changing the dressing over there, maybe you touch something in the sterile field,” Cimiotti said.

At the same time, the study found that reducing burnout cuts infections – and saves money.

Reducing reports of burnout by 30 percent cut urinary tract infections by more than 4,000 and surgical site infections by more than 2,200, saving between \$28 million and \$69 million per year in estimated costs to treat those infections.

This certainly isn’t the first time that UPenn nursing researchers have found that staffing levels have had direct effects on patient health. A 2002 study found that adding a single patient to a nurse’s caseload increased the risk of dying within a week by 7 percent. Boosting the load from six patients to eight increased the risk by 31 percent over a nurse caring for four patients.

And a 2010 study found that patient deaths would drop by 14 percent in New Jersey and 14 percent in Pennsylvania if those states adopted California’s hard-won mandated nurse-to-patient ratios of 1 to 5 in surgical units. That study was led by Linda Aiken, director of the Center for Health Outcomes and Policy Research at the University of Pennsylvania School of Nursing, who also collaborated on the current study.

Though it may appear very sympathetic to the nursing profession, the controlled study was conducted by experts known for the reliability of their work, said Cheryl Peterson, director of nursing practice and policy for the American Association of Nurses.

“This study does confirm what most of us have been saying within nursing,” Peterson said. “There is a direct link between staffing, the number of nurses providing patient care, and patient outcomes. What we would add is the work environment ... that can have an impact on burnout.”

The issue of nurse-to-patient ratios is hotly debated in the U.S., where no one appears to track nationwide staffing averages. Neither the ANA nor the American Hospital Association keep such statistics, staff members say. Nursing patient loads can vary from as low as one nurse for every one or two patients in intensive care units to far higher than the 1:5 ratio mandated in surgical units in California.

“I don’t have the evidence, but I would believe, yes, some workloads are definitely higher than that,” Cimiotti said.

Some hospitals in the U.S. have worked hard to address those issues. Nearly 400 of the nation’s 5,754 registered hospitals have achieved so-called “Magnet” status, which recognizes health care organizations that achieve structural and clinical practices that empower nurses and lead to good patient results.

But it will take more, the experts agree.

“Now that we see that burnout is playing a role in this relationship, we have to look at more than just the staffing,” said Cimiotti. “We have to look at the system, the organizational structure where the nurses provide care.”

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