Nurse Burnout Linked To Surgical Site Infections

Nurse burnout leads to higher healthcare-associated infection rates (HAIs) and costs hospitals millions of additional dollars annually, according to a study published in the August issue of the *American Journal of Infection Control*, the official publication of the Association for Professionals in Infection Control and Epidemiology (APIC).

Researchers from the Center for Health Outcomes and Policy Research at the University of Pennsylvania School of Nursing analyzed data previously collected by the Pennsylvania Health Care Cost Containment Council, the American Hospital Association Annual Survey, and a 2006 survey of more than 7,000 registered nurses from 161 hospitals in Pennsylvania to study the effect of nurse staffing and burnout on catheter-associated urinary tract infections (CAUTI) and surgical site infections (SSI), two of the most common HAIs.

Job-related burnout was determined by analyzing the emotional exhaustion subscale from the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) that was obtained from nurse survey responses. The MBI-HSS filters 22 items on job-related attitudes into emotional exhaustion, depersonalization and personal accomplishment, identifying emotional exhaustion as the key component to burnout syndrome. More than one-third of survey respondents got an emotional exhaustion score of 27 or greater, the MBI-HSS definition for healthcare personnel burnout.

Comparing CAUTI rates with nurses' patient loads (5.7 patients on average), the researchers found that for each additional patient assigned to a nurse, there was roughly one additional infection per 1,000 patients (or 1,351 additional infections per year, calculated across the survey population). Additionally, each 10 percent increase in a hospital's high-burnout nurses corresponded with nearly one additional CAUTI and two additional SSIs per 1,000 patients annually (average rate of CAUTIs across hospitals was nine per 1,000 patients; for SSIs it was five per 1,000 patients).

Using the per-patient average costs associated with CAUTIs ($749 to $832 each) and SSIs ($11,087 to $29,443 each), the researchers estimate that if nurse burnout rates could be reduced to 10 percent from an average of 30 percent, Pennsylvania hospitals could prevent an estimated 4,160 infections annually with an associated savings of $41 million.

"Healthcare facilities can improve nurse staffing and other elements of the care environment and alleviate job-related burnout in nurses at a much lower cost than those associated with healthcare-associated infections," conclude the authors. "By reducing nurse burnout, we can improve the well-being of nurses while improving the quality of patient care."

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