

## Nurses' Long Work Hours, Scheduling Can Increase Patient Mortality

A new study has found that patient deaths from pneumonia and acute myocardial infarction were significantly more likely in hospitals where nurses reported schedules with long work hours.

The finding was just one of several revelations from a study of nurses' work schedules, patient outcomes, and staffing led by University of Maryland [School of Nursing](#) researchers in collaboration with researchers at the Johns Hopkins University School of Medicine.



The study is the latest in ongoing research on nurse scheduling and staffing funded by the National Council of State Boards of Nursing. In the current study, **Alison Trinkoff, ScD, MPH, RN, FAAN**, professor at the School, and co-authors Meg Johantgen, PhD, RN; Carla Storr, PhD, MPH, RN; Yulan Liang, PhD; Ayse Gurses, PhD; and Kihye Han, MD, RN shifted their focus from the effects on nurses in previous studies to patient well-being.

The team linked patient outcome and staffing information from 71 acute care hospitals in two representative states (Illinois and North Carolina) with the survey responses of 633 randomly selected nurses who worked in these hospitals. Their findings are published in "Nurses' Work Schedule Characteristics, Nurse Staffing, and Patient Mortality," in the January/February issue of the journal *Nursing Research*. Most U.S. hospitals use 12-hour nursing shifts exclusively, as opposed to eight-hour shifts, a trend begun during nursing shortages nationwide in the 1980s. "Although many nurses like these schedules because of the compressed nature of the workweek, the long schedule as well as shift work in general lead to sleep deprivation," says Trinkoff.

"Alertness and vigilance required for providing good nursing care depend upon having an adequate duration of quality sleep and rest," says Trinkoff, "and long work hours can impact the quality of nursing care and can increase the potential for error."

"Nursing work hours may also be increasing to compensate for decreasing physician work hours in hospitals because the medical profession has taken steps to limit the hours a physician in training may work, whereas nursing has not taken similar steps," says Trinkoff.

In the new study, the work schedule component that was most frequently related to mortality, along with long work hours, was lack of time off the job. Trinkoff and colleagues previously found that lack of time off was also an important factor contributing to nurse injury and fatigue. Nurses need time off to rest and recuperate to protect their health and similarly, the lack of recovery time may affect performance on the job, she says.

"The finding that work schedule can impact patient outcomes is important and should lead to further study and examination of nursing work schedules," says Trinkoff.

In a previous paper, Trinkoff and co-authors reviewed evidence to challenge the 12-hour shift paradigm, which can result in sleep deprivation, health problems, and greater chance for patient errors. In another paper, they described barriers that keep nursing executives from moving away from the practice, and they offered strategies to help mitigate possible negative effects of 12-hour shifts. The strategies were based on the authors' extensive research, surveying, and experience in the nursing profession.

"Now that we have data that these conditions affect the public adversely, there is even more reason for providers in each hospital and clinic to look at the situation and find solutions," says Trinkoff.

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