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Hospitals' graveyard shift can be peril for patients

Deaths most common after 11 p.m., study finds

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Many hospitals call it "code blue," a signal sent over the intercom when a patient's heart has stopped. When code blue works well, a team speeds to the bedside and revives the patient.

The graveyard shift is the most dangerous time to call code blue, a new study has found. Patients are more likely to die if they go into cardiac arrest in a hospital after 11 p.m., when staffing might be lower or patients watched less closely.

"Our findings should be a pretty big wake-up call to urge hospitals to critically evaluate how they are performing resuscitation," said the study's lead author, Dr. Mary Ann Peberdy of Virginia Commonwealth University Health System in Richmond. "It may well be possible that there is a less effective and less efficient response at night."

The study, appearing in today's Journal of the American Medical Association, didn't examine why results during day shifts and overnight shifts differed. But researchers found among the late-night cases a higher proportion of instances in which patients were found to have no heart electrical activity, when it was too late to deliver a potentially lifesaving shock.

The reason could be that staff members are fatigued, less experienced or too few, researchers speculated. Weekends had lower survival rates than weekdays, but the difference wasn't as pronounced as it was between late-night and daytime hours.

Only in the emergency room was there no difference in survival between the day and night shifts.

The study was based on an analysis of more than 86,000 cardiac arrests in more than 500 hospitals over seven years.

During the day or evening, 58,593 patients went into cardiac arrest, and 11,604 of them, almost 20 percent, survived to leave the hospital. During the shift that began at 11 p.m., 28,155 patients went into cardiac arrest, and 4,139, fewer than 15 percent, survived for discharge.



After taking into account other factors associated with survival, the researchers found that the chances of surviving until discharge were 18 percent lower if the cardiac arrest occurred from 11 p.m. to 6:59 a.m.

Past studies have found that overall, 80 percent to 85 percent of patients who suffer cardiac arrest in the hospital die in the hospital.

"Everyone who works in a hospital is going to look at this and say, 'Are we doing everything we should be?'" said Dr. Charles Porter, a cardiologist at the University of Kansas Hospital in Kansas City, Kan. There, automated external defibrillators are readily available and any staff member, even a custodian, can summon a rapid-response team if a patient appears to be in trouble.

A study last month found that being in the hospital was no guarantee of getting prompt treatment for cardiac arrest. In that study, published in the New England Journal of Medicine, researchers found that one-third of patients don't get a potentially lifesaving shock within the recommended two minutes.

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