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ICU death rates higher on weekends: study

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NEW YORK (Reuters Health) - It's not something you can control, but when you or a loved one is admitted to an intensive care unit may be linked to your survival: Patients treated in an intensive care unit on a weekend may be more likely to die during the hospital admission than those admitted on a weekday, a new study suggests.

The findings, from an analysis of 10 international studies, add to evidence that patients admitted to a hospital during "off-hours" tend to fare worse.

Studies have found, for instance, that heart attack and stroke patients admitted during hospital off-hours -- overnight or on the weekend -- have a higher risk of dying than those admitted on weekdays. There is also evidence of a relatively higher risk of childbirth complications when women deliver at night, though the absolute risk is still quite low.

Researchers suspect that the difference is related to hospitals having a smaller, less experienced staff on duty overnight and on weekends. For the current study, published in the medical journal *Chest*, researchers pooled the results of 10 previous studies from North America, Europe and Asia on the association between off-hours admissions to the intensive care unit (ICU) and patient death rates.

While they found no clear relationship between nighttime admissions and death risk, there was a link seen with weekend admissions.

Among more than 133,000 patients admitted to an ICU on a weekday, 11 percent died. That compared with just under 16 percent of more than 47,000 patients admitted during the weekend.

When the researchers considered other factors, including the severity of patients' illnesses or injuries, patients admitted to an ICU over the weekend were 8 percent more likely to die than their counterparts admitted on a weekday.

It's not clear why weekend, but not nighttime, admissions were linked to an increased risk of patient deaths, according to the researchers, led by Dr. Rodrigo Cavallazzi of Thomas Jefferson University in Philadelphia.

One possibility is the typically greater availability of doctors and other staff during the week, they note.

A limitation of the research is that the 10 studies it analyzed had a number of differences among them, including the way each one defined nighttime and weekend hours.

The studies varied in scope as well; several focused on a single hospital ICU, while one examined 102 ICUs in the UK.

The ICUs themselves also varied. In some hospitals, for example, all ICU patients' cases are managed by board-certified intensivists, physicians who specialize in critical-care medicine. In others, patients primarily receive care from doctors with responsibilities outside the ICU.

Of the studies in the current review, some included ICUs that had a board-certified intensivist on duty overnight or all weekend; in others, intensivists were not on-site during off-hours. That information was lacking in two studies.

Still, Cavallazzi and his colleagues write, weekend staffing structure "likely explains" the relatively higher death rate they found.

The researchers say that a combination of off-hour factors is probably at work -- including a lack of intensivists on-site, a higher patient-to-doctor ratio, staff fatigue and delays in getting complex diagnostic tests and treatments accomplished.

However, it is not yet clear to what extent organizational changes in the ICU would affect patients' outcomes -- or precisely which changes would be most effective, according to Cavallazzi's team.

Some research, for example, has found that ICUs in which intensivists manage all patients have lower death rates than other ICUs. But other studies have failed to show such an advantage.

There are also practical obstacles to all ICUs having an intensivist on duty at all times. Many hospitals may lack the resources -- including money and a large enough local work force to draw from.

Future studies, Cavallazzi and his colleagues write, should try to uncover which other staffing factors -- including the number of nurses or physician assistants on duty -- might affect ICU patients' outcomes during off-hours.

Other proposals for improving ICU care have included consolidating ICUs to larger medical centers, though that has the potential downside of requiring more patient transfers and delaying some people's care. Another idea is to help smaller, community hospitals hook up with experts at larger centers for real-time "telemedicine" consults.

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