Checklist In ICUs Reduces Deaths

A new Northwestern Medicine study shows that the mortality rate plummeted 50 percent when the attending physician in the intensive care unit had a checklist and a trusted person prompting him to address issues on the checklist if they were being overlooked. Simply using a checklist alone did not produce an improvement in mortality.

"Attending physicians are good at thinking about big picture issues like respiratory failure or whatever diagnosis brought a patient to the intensive care unit, but some important details are overlooked because it's impossible for one person to remember and deal with all those details," said Curtis Weiss, M.D., the lead investigator and a fellow in pulmonary and critical care medicine at Northwestern University Feinberg School of Medicine.

Weiss conducted the study in the medical intensive care unit at Northwestern Memorial Hospital. The study was published online in the *American Journal of Respiratory and Critical Care Medicine* and will appear in an upcoming print issue. "We showed the checklist itself is just a sheet of paper," Weiss said. "It's how doctors interact with it and best implement it that makes it most effective. That's how we came up with prompting."

For the study, Weiss and colleagues developed a checklist to be used by physicians in the medical intensive care unit. The checklist focused on important issues the researchers believed were being overlooked by physicians during daily rounds. The study was designed to determine whether prompting physicians to use the checklist would affect the decisions they made about managing their patients' care. One team of physicians had face-to-face, frequent prompting by a resident physician to address issues on the checklist, only if the issues were overlooked during daily rounds. The other team of physicians continued to use the checklist without such prompting.

The prompted physician team oversaw the care of 140 patients; the unprompted team oversaw 125 patients. The prompting by a physician not actively involved in the patients' care reduced mortality by 50 percent over three months. The saved lives may have resulted in part from reducing the time patients were on ventilators (thus reducing cases of ventilator-associated pneumonia) as well as reducing the number of days patients were on empiric antibiotics and central catheters. Prompting also cut patients' intensive care unit length of stay, on average, by more than one day.

Researchers also wanted to see if using a checklist alone (without prompting) made any difference. They compared a pre-study group of almost 1,300 patients to patients in the study whose physicians used the checklist alone. The results: a checklist alone did not improve mortality or reduce the length of stay. Having a

subtle approach with the physicians was one key to the success of the prompting, Weiss said.

"We didn't mandate that they had to change their management; it was nuanced," Weiss said. "It was 'do you plan to continue the antibiotics today?' not 'you should stop the antibiotics.'" Weiss concedes hospitals aren't likely to hire physicians just to be prompters, but perhaps nurses or even an electronic version of the verbal prompting could be equally effective, he said. "It should be fresh eyes or someone from the existing team who is assigned to concentrate on these issues," Weiss said. "What matters is that someone is specifically thinking about these issues."

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