PATIENT SAFETY BLOG

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Posted On: **November 16, 2010** by Patrick A. Malone

Checklists for surgery safety cut death and injuries, new Dutch study shows

Any lingering doubts about the positive effects of comprehensive surgical checklist intervention should vanish following the release of a study conducted in the Netherlands and published in the New England Journal of Medicine.

The Dutch study evaluated the effects of a comprehensive surgical checklist intervention in six regional and tertiary care centers in the Netherlands and involved 11 distinct checklists applied during different phases of preoperative, intraoperative, and postoperative care completed by surgeons, anesthesiologists, nurses and other staff.

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The checklists included nearly 100 items that address the availability of imaging information, equipment and materials, patient and operative site verification, communication of postoperative instructions between caregivers and discharge instructions. Outcomes improved substantially as a result of this intervention. The proportion of patients with one or more complications fell from 15.4 to 10.6%, while mortality dropped from 1.5 to 0.8%.

A large international study supported by the World Health Organization (WHO) released last year reported similar results, showing that checklists cut surgical morbidity and mortality almost in half. However, not everybody was convinced by the findings of the WHO study, because:

1. The pre-intervention/post-intervention study failed to control for confounding factors, such as the the "surgical Hawthorne effect," which states that outcomes tend to improve rapidly when surgeons know they are being evaluated.

2. The study's operating room checklist consisted primarily of common-sense items and processes of care that seemed unrelated to the most common serious complications of surgery, making it implausible for some that improved compliance with these practices could lead to such drastic reductions in morbidity and mortality.

3. Compliance of the eight study hospitals with the checklists had no bearing on the extent of improvement in outcomes. Overall compliance with processes of care on the checklists improved negligibly even in the two hospitals with the greatest reductions in morbidity and mortality, while conversely, the two hospitals with the greatest increase in compliance showed no change in outcomes.

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The Dutch study avoided these pitfalls by including hospitals that had already been tracking their surgical outcomes with the same detailed registry for many years, so the results cannot be attributed to the effects of performance feedback.

It also documented a strongly positive relationship between checklist compliance and outcomes, in that patients with incomplete checklists had significantly more complications than those for whom checklists were more fully completed.

Finally, the study included a control group. At five similar hospitals that did not implement the checklist intervention, morbidity and mortality were unchanged during the study period.

An editorial published with the article concluded that surgery checklists now have advanced from a good idea to "standard of care."

Source: New England Journal of Medicine

You can view an abstract of the Dutch study here.

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