

Implementation of a 19-questions check list leads to a significant decrease of mortality in surgical patients

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Surgical procedures are a major part of the medical care provided worldwide. The general mortality of surgery is below 1%, but the risk of major complications related to general surgery can reach 15% overall. However, it is estimated that about half of all surgical-related complications are avoidable.

The Safe Surgery Saves Lives Study, sponsored by the World Health Organization, addressed the hypothesis that the implementation of a 19-question check list in surgical departments will decrease mortality and morbidity at 30 days of follow-up. A free copy of the WHO check list can be downloaded from the New England Journal of Medicine web site at: <http://content.nejm.org/cgi/data/NEJMsa0810119/DC1/1>.

This study collected data from 3733 patients consequently admitted into 8 hospitals from various economic and population backgrounds. This data was compared with data from 3955 consecutive patients admitted in the same

hospitals after the implementation of the check-list. Mortality declined from 1.5% to 0.8%, and morbidity from 11% to 7% after the implementation of the check-list (a 36% relative risk reduction for both death and complications). The reasons for this improvement are likely multi-factorial: changes in the system and surgical team behaviour (implied by the necessity to follow the check-list), higher use of preoperative antibiotics, and the Hawthorne effect (when an individual or a team acts at higher level knowing that they are being observed by others). Importantly, all sites had a reduction of complications. The results were not confined to high or low-income hospitals, and no single site was responsible for the overall results of the study.

In conclusion, the implementation of a simple check-list in surgical departments can lead to a significant reduction of the risk of death and complications, regardless of the socio-economic characteristics of the hospital. ■

Comment on the paper:

Haynes AB, Weiser TG, Berry WR, et al for the Safe Surgery Saves Lives Study Group – A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population. *N Engl J Med* 2009; 360:491-499