

Surgical safety checklists associated with reduced risk of death, length of hospital stay

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The implementation of surgical safety checklists (SSCs) at a tertiary care



hospital was associated with a reduced risk of death within 90 days after surgery, but not within 30 days, according to a study published online by *JAMA Surgery*. Hospital length of stay was reduced after implementation of SSCs.

Inpatients worldwide may expect a 30-day mortality of 1.5 percent after noncardiac surgery, depending on the region where surgery is performed, the surgical procedure, and the patients' other health conditions. Implementation of surgical safety checklists (SSCs) has been found to reduce the incidence of perioperative complications and 30-day mortality. Checklists aim to reduce risk and prevent patient harm by recognizing high-risk situations and optimizing communication, by minimizing the incidence of errors, and by improving latent conditions. The association of the introduction of SSCs with 90-day mortality has been unclear.

Matthias Bock, M.D., of Bolzano Central Hospital, Bolzano, Italy and colleagues examined the outcomes of surgical procedures performed during the 6 months before and after the introduction of SSCs at a public, university-affiliated hospital in Italy. The researchers collected data on 90-day all-cause mortality, 30-day all-cause mortality, length of hospital stay, and 30-day readmission rate among patients undergoing noncardiac surgery. The SSCs for this study included 17 to 24 items.

The total study sample of 10,741 patients included 5,444 preintervention and 5,297 postintervention patients. Ninety-day all-cause mortality was 2.4 percent (129 patients) before compared with 2.2 percent (118 patients) after the SSC implementation. Thirty-day all-cause mortality was 1.4 percent (74 patients) before compared with 1.3 percent (70 patients) after the SSC implementation. Thirty-day readmission occurred in 797 patients (14.6 percent) in the preimplementation group vs 766 patients (14.5 percent) in the postimplementation group. The adjusted length of stay was 10.4 days in the preimplementation group compared



with 9.6 days in the postimplementation group.

"To our knowledge, this report is the first on the association of SSCs and 90-day all-cause mortality, which might be even more important than 30-day all-cause mortality. Thirty-day all-cause <u>mortality</u> might fail to capture intermediate-term complications, such as anastomosis leakage or pulmonary embolism, which occur despite prophylaxis late after trauma or genitourinary and general surgery," the authors write.

"The observed decline in length of stay suggests potential cost savings after the implementation of SSCs. Further trials should address this hypothesis and the effect on quality of care owing to a reduction of the costs of complications or unplanned reoperations."

"Although some investigators question the actual impact of checklists, despite the proliferation of evidence regarding improved patient outcomes and quality of care across countries, these arguments fail to acknowledge fully the difficulty of effectively implementing SSCs in a complex health system," write William Berry, M.D., M.P.H., of the Harvard School of Public Health, Boston, and colleagues in an accompanying commentary.

"A focus on the systems of care and promotion of a culture of safety at the institutional level is necessary to optimize checklist implementation and realize its full potential. Effective implementation is critical to meaningful use of SSCs, which can lead to maximally improved outcomes."

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