Commentary: Checklist fatigue? A unique opportunity in cardiac surgical care. The impact of a voluntary, cardiac surgery-specific safety checklist

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Surgical safety checklists are now engrained in our daily lives and considered a standard in perioperative care. It has been over a decade since the World Health Organization developed the first edition of the 19-point checklist that was shown to reduce morbidity and mortality in patients undergoing noncardiac surgery in a diverse group of hospitals around the world.¹ Since that time, adoption and implementation of checklists, using the aviation industry as an example, have become not only a standard but an obligation and have flooded the entire health care spectrum with significant emphasis in procedural areas of care. The most recent and largest meta-analysis² on this subject included more than 44,000 patients from 497 hospitals in 27 countries and demonstrated that patients exposed to surgical safety checklists experience better postoperative outcomes.

Although the impact of safety checklist implementation is clear, the essential inherent benefit comes from providing a specific tool to engage a team and ensure minimal standards are met, avoid ambiguity, and encourage participation of all team members. Unfortunately, the real meaningful use has occasionally been tainted by “checklist fatigue” and “just checking a box” behavior, as we add more and more checklists to the daily routine to safely navigate with the patient through the multiple stages of perioperative care. Despite these challenges, checklists are here to stay.

In this issue of the *Journal*, Spanjersberg and colleagues³ evaluate the addition of a voluntary, specific pre-incision safety checklist in cardiac surgical patients in a large prospective, observational, multicenter cohort study. The study was performed in the Netherlands and evaluated close to 6000 consecutive patients over a period of 1 year. To be clear, all hospitals already had a standard surgical time out of 11 safety checklist items that was an expectation in all centers since 2009. This was an additional 5-step cardiac

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Central Message

A cardiac surgery-specific check list in addition to a standard time out that includes patient risk factors, TEE findings, and adapting the operative plan is a simple, powerful tool that reduces mortality.

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surgery-specific checklist that provided individual patient risk factors and incorporated transesophageal echocardiography (TEE) findings with the option of an adapt procedure or change of plan.

Some key aspects of this initiative included the fact that it was voluntary and specific to the particular patient at hand. The centers had the option to opt out. This feature ensured team engagement, fomented discussion and communication, minimized the “just clicking the box” behavior, and maximized the power of the checklist. Moreover, it incorporated specific pre-incision TEE findings with chance of operative modification or adapting the procedure, such as change in cannulation strategy, clamping location, or insertion of intra-aortic balloon pump. As the adherence to the pre-incision-specific checklist was voluntary, there was expected variability in each institution per month, with a progressive increase in implementation by the end of the study. As a result from its use, 16% of patients had adaptations to the original surgical plan. More importantly, the 30-day and 120-day mortality was reduced with the use of the added specific checklist. This effect persisted after correction for age, sex, left ventricular function, renal function, participating hospital, emergency surgery, and type of surgery.

The study has some inherent limitations that the authors describe eloquently. It's important to highlight that outcome

data are usually dependent on reporting from participating institutions, and as complications tend to be under-reported, there is always the possibility of selection bias.

Regardless of the limitations, this is a great example how a simple intervention that engages the team and foments a collaborative approach to patient care has had an impact in mortality. Moreover, cardiac surgery provides a unique opportunity for this initiative, as TEE findings can occasionally change the plan.

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