

"I told you so": Examining the impact of the surgical safety checklist

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Your surgical case is about to start. You are busy going through the patient's films, visualizing the procedure and your approach: left kidney, 2 renal arteries, single renal vein; an 8-cm renal mass and you want to try and spare the adrenal gland; you feel you should be able to complete the operation laparoscopically. As you are discussing the approach with your surgical assists and the scrub team is setting up equipment, you hear a somewhat timid request, "What about the surgical safety checklist?"

Your circulating nurse is ready to document the time the checklist was completed, so you go through the questions by rote and the anesthesiologist gets started. You grumble to your surgical team that everything was fine for years before the surgical safety checklist was thrust upon you by the hospital. You've never had a surgical error. You are a very conscientious surgeon, reflecting over the surgical approach and nuances of the case weeks before those "artificial" few minutes prior to the case starting.

Does the above scenario resonate at all for you surgeons reading this in CUAJ? Perhaps you can envision some skeptics in your hospital who continue to lament the mandatory implementation of the checklist. You may also have overheard a few "I told you so" equivalents when the most recent article by Urbach and colleagues¹ concluded that there was no effect on significant outcomes after widespread implementation of the checklist in Ontario. If your hospital has not yet mandated safety checklists, perhaps you can imagine colleagues using this report as evidence to re-think its adoption locally.

Surgical safety checklists have evolved from a campaign by the World Health Organization (WHO) launched in 2008, "Safe Surgery Saves Lives." The campaign addresses the global public health problem of preventable harm around surgical procedures. The goal is to ensure that the entire operating room team has a common understanding of the upcoming procedure, and that evidence-based interventions (antibiotic and deep vein thrombosis prophylaxis) are appropriately given. The WHO study group published its seminal work in 2009,² demonstrating significant improvements in perioperative mortality (from 1.5% to 0.8%) and in-hospital complications (from 11% to 7.0%) with the adoption of checklists. Soon after this article was published, many hospitals quickly implemented checklists and in several jurisdictions a safety checklist became mandatory; the Ontario government mandated checklists in 2010. Surprisingly, there has been a good dose of skepticism towards a policy of checklist implementation, with many citing barriers to effective uptake, lack of high level of evidence for efficacy and a lack of good understanding for the basis of any reported benefits. To us, the reticence is just a little too reminiscent of those that balked at the insistence by Ignaz Semmelweis that physicians practice hand-washing in obstetrical wards to limit puerperal fever over a century and a half ago.³

Since the original WHO publication, there have been several other observational studies investigating the impact of the safety checklist. These studies demonstrated mixed results, with many underscoring the necessity of fostering a culture of safety based on good team dynamics and communication – not simply checking off a box. The most recent article in the *New England Journal of Medicine* exploring the Ontario experience suggests that province-wide mandatory implementation in almost 100 hospitals had no significant reduction in operative mortality or surgical complications. Criticisms of the conclusions have been plentiful. Utilizing administrative health data to capture surgical complications is insensitive and subject to misclassification errors. Despite the large number of procedures undertaken in the before and after cohorts, a 3-month time frame was likely not sufficient to demonstrate its efficacy in Ontario

hospitals, many of which had most likely undergone other surgical safety interventions. Indeed, much of the benefit in the original WHO study was driven by results from centres in low-income nations, presumably where the margins for improvement were greater. Despite the lack of a statistically significant effect on the adjusted risk of death within 30 days (0.71% before and 0.65% after implementation, $p = 0.07$), there was a significant reduction in the length of stay and in the unplanned return to the operating room (from 1.94% to 1.78%).

Criticisms aside, the truth is that this study was unable to capture a dramatic reduction of harm in Ontario after mandated implementation of a safety checklist. One concerning explanation for this apparent gap in effectiveness has been suggested to be the lack of serious physician engagement in the process. The WHO checklist was meant to be completed in 3 separate stages—(1) before induction of anaesthesia, (2) just before skin incision, and (3) before the patient leaves the operating theatre. Items on the sign-in checklist are meant

to be verbally confirmed with the patient and other team members in order to normalize team communication and limit hierarchical decision-making. Despite hospitals reporting 98% compliance of the checklist in Ontario within 3 months of implementation, it is highly likely that the penetration of the safety culture that the checklist represents was not (and is not) optimal. As surgeons we need to take a more proactive role and demonstrate leadership in the operating room, embracing these patient-centred safety initiatives. We need to do better. Let's make Semmelweis proud.

References

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