

# WHAT WOULD I WANT FOR MY SURGERY?



A response to the recent NEJM article “*Introduction of surgical safety checklists in Ontario*” (Urbach et al. (2014).

If you were to have surgery tomorrow, how would you want the surgical team, the people who care for you to perform? If you were in “charge” as the patient, how would the team members of your surgery interact with each other, interact with you as a patient, and perform the technical aspects of your surgery? The answers to your questions are based on the culture of the surgical team, the interdependence of the team members, their resilience and their individual and collective quality.

In British Columbia, many individuals responded to the paper by Urbach et al.<sup>1</sup> that described the minimal impact on patient mortality after implementation of the surgical safety checklist in Ontario, by writing to the Surgical Quality Action Network (SQAN) to express their perspectives. Interestingly, the opinions varied, as some people refuted and others supported the conclusions. Given the strong reaction this recent study created in the surgical community, a number of key stakeholders have come together with a response. This communiqué is meant to serve as another perspective to the article and redirect the discussion to the potential value of the surgical checklist and the culture of the surgical team.

## **A DIFFERENT PERSPECTIVE**

Urbach et al.<sup>1</sup> describe the association of short-term patient outcomes prior to and after implementation of the checklist. They concluded that there was no statistical evidence that the use of the checklist decreased selected morbidity and mortality in the surgical population that they studied.

In the analysis, this study did not address human factor improvements such as teamwork and communication, efficiency, or reductions in near misses. A breakdown in the teamwork and communication is usually at the centre of a poor outcome<sup>2-6</sup>. We have learned that technical initiatives such as the checklist predictably fail if attention is not paid to the contextual culture and human factors in the area where they are implemented. Operating room environments that do not have a strong patient safety culture usually struggle with the adoption of any tool; including the checklist.

## **IMPROVEMENTS IN SURGERY**

This study has stimulated a renewed conversation about the checklist, its role and how it can and should be used. It has served as an excellent reminder as to why we conduct quality improvement work in the first place. It prompts us to consider:

1. The limitations to generalizations of statistical significance when it relates to patient safety,
2. The fine line that exists between the definitions of implementation and team adoption as it relates to culture,
3. The drivers of change, the bias we all have in perceiving we are doing the right thing all the time, and the time required for humans to change,
4. The need for evaluations, assessments, and audits to address our biases and to keep all team members accountable, and
5. The technical and methodological limitations that have been discussed elsewhere

Quality improvement initiatives are commonly challenged and critiqued based on the statistical significance of controlled experiments and empirical evidence. We believe there is a disconnect between the “intuitive benefits” to patient care versus “statistical significance”. For example, limited empirical evidence demonstrates improved outcomes with pulse oximetry and end tidal CO<sub>2</sub> monitoring in the anesthesia domain. Yet few individuals would abandon these tools to rely solely on the vigilant practitioner to monitor surgical patients. To this point, tools that aid the team in providing excellent care in complex systems are useful although they may not be the sole determinant of outcomes.

The study by Urbach et al. had a number of important design limitations that put into question the conclusions that the surgical safety checklist was ineffective. Many people in the surgical domain questioned why the study was retrospective and non-randomized, why a sample size calculation was not performed – particularly in light of an adjusted mortality rate that, compared to previous “positive” studies was low (0.71%) at baseline – and why effectiveness of the checklist was assessed so early (three to six months) after implementation. However, more importantly, many respondents questioned how such strong conclusions on the ineffective use of a checklist could be made with a result that only narrowly missed statistical significance (P value of 0.07% – i.e., just missing the “magic” 0.05 value) for the observed difference in adjusted mortality (post checklist introduction, 0.65%)? When considering a strong patient safety culture, the intuitive benefits to patient care go above and beyond mortality rates and the statistical significance of such findings.

A strong patient safety culture is imperative to the implementation of new tools and guidelines. There is a level of discouragement when an obvious tool or clinical guideline is not adopted. Many of us are still hoping for “flick the switch and a miracle happens” when introducing improvements such as the surgical checklist to the surgical suites. The checklist has challenged the performance of teams and the culture of many organizations in British Columbia. There have been many skeptics and many champions. Effective implementation of a checklist is a cultural process not a technical one<sup>7</sup>.

### **THE CHECKLIST POSSIBILITIES**

The checklist is about starting and framing a conversation with the entire team – patient included. Lucian Leape’s editorial<sup>7</sup> articulately describes the checklist as more than a prescriptive ‘tick box’ activity but rather the performance of the actions it calls for. The checklist (huddle, safety pause, time-out, briefing, or whatever else you may call it) is simply the mechanism or tool to drive a culture change that focuses on communication, teamwork, and leadership. The success of the checklist is tied to changing operating room culture so that all team members have greater situational awareness and are more likely to speak up

if they detect a problem. All members have a common understanding of the patient, his or her needs, the operative plan and the goals to be achieved. It does of course, when properly applied, serve to remind the team members of those things that should be done for every patient.

There is a drastic difference between ‘doing it’ versus ‘doing it like you mean it!’ The value of such an activity is lost if we simply go through the motions, prescriptively answer questions, and forget the patient. As Bosk and colleagues<sup>8</sup> state: “The answer to the question on what a simple checklist can achieve is; on its own, not much”.

### **BC COMPLIANCE WITH THE CHECKLIST**

Compliance scores (self-reported data) of the checklist being documented across BC are approximately 87% with a range across health authorities between 70-98%. Measuring compliance can induce a false sense of security in how well teams are actually performing. Many health authorities acknowledge that direct observations in the OR would likely find a much lower compliance rate. Two health authorities in BC conducted an observational evaluation that identified that team members perceived proper completion of the checklist to be higher than actually completed. With this in mind, how can we move away from the “tick boxes” to change the culture and supporting teamwork and communication in the operating suites?

### **HOW CAN WE HELP ENSURE THE ‘CONVERSATION’ HAPPENS?**

*“I would feel most uncomfortable now not conducting a surgical checklist/pause and verifying with the entire surgical team that we are all in agreement as to what we are doing and how we are going to do it. The prescriptive checklist notion was never the intent (and indeed the WHO encouraged local modifications of the ‘standard’ checklist). Rather the purpose was to change the culture of how we function as a surgical team. This, to me, is the true culture shift that has occurred in our operating rooms. Of course, we have work to do, but we are well on our way...”*

Surgeon, British Columbia

*“My experience in the operating room has never truly been as ‘part of the team’. I’ve had two roles - being a*

*trained observer of non-technical skills in the operating room relating to communication, teamwork and leadership. I have also been a surgical patient. Before my surgery, I asked my surgeon if they would be using the surgical safety checklist for my surgery. The response was “yes, of course” and proceeded to include me in the introductions, explain the procedure, and participate in a comprehensive discussion with the team around the safety critical elements relating to my surgery. This made me feel like I was part of the conversation, a member of my surgical team. I found out the next day from my surgeon that I was the first patient that had asked for the safety checklist.”*

Quality & Patient Safety Leader, British Columbia

In BC, we are seeing increasing interest on how to improve teamwork and communication in the operating room. The request is more than ‘just a checklist’, it is empowering teams with the skills to communicate, to be situational leaders, and to be better prepared to perform as a team so everyone feels respected and accountable<sup>9</sup>. We are proposing to develop teamwork and communication skills, situational leadership, and direct observations to support surgical teams in BC in making this a priority.

Adoption of teamwork and communication skills will require resources and expertise to provide teams with coaching and training. This will take time for teams to ‘get it right’ and to adopt these skills to foster a safety culture where comprehensive communication and teamwork is the norm. In the absence of direct monitoring or observation, understanding the safety culture is truly unknown. Whether you are a surgeon, nurse, anesthesiologist, technologist, administrator or someone else who is a member of the surgical team, we encourage you to become an observer in the environment in which you work. Find an opportunity where it is your sole role to watch a case or procedure. Inevitably, you will see technical components; but more importantly you will see how the team performs.

The checklist is about everyone’s voice being heard and valued. It includes porters, surgeons, housekeepers, nurses, anesthesiologists, technologists, students and patients. This is likely the surgical environment you would want to be treated in.

## **Authors:**

**Allison M. Muniak, M.A.Sc, BSc,**  
*Human Factors Specialist, Vancouver Coastal Health*

**D. Douglas Cochrane MD, FRCSC,**  
*Chair, B.C. Patient Safety & Quality Council*

**Marlies van Dijk, RN, MSc,**  
*Director Clinical Improvement, B.C. Patient Safety & Quality Council*

**Andy Hamilton, FRCP Anesthesia, Canadian Certified Physician Executive,**  
*Medical Director, Surgical Services, Interior Health Authority*

**Stephan K.W. Schwarz, MD, PhD, FRCPC,**  
*Associate Professor, Department of Anesthesiology, Pharmacology & Therapeutics, The University of British Columbia*

**J. Patrick O’Connor, MD, FRCP(C),**  
*Vice-President, Medicine, Quality & Safety, Vancouver Coastal Health*

**Ramesh L. Sahjpaul, MD, FRCSC,**  
*Chief, Department of Surgery and Medical Director, Surgery Program Lions Gate Hospital / Vancouver Coastal Health*

## **References:**

1. Urbach DR, Govindarajan A, Saskin R, Wilton AS, Baxter NN. Introduction of surgical safety checklists in Ontario, Canada. *N Engl J Med* 2014;370:1029-38.
2. Flin, R, Fletcher, G, McGeorge, P, Sutherland, A, Patey, R. Anaesthetists’ attitudes to teamwork and safety. *Anaesthesia* 2003; 58: 233 – 242.
3. Yule, S, Flin, R, Paterson-Brown, S, Maran, N. Non-technical skills for surgeons: A review of the literature. *Surgery* 2006; 139: 140-149
4. Catchpole, K, Giddings, A, Leval, M, Peek, G, Godden, P, Utley, M. et al. Identification of systems failures in successful paediatric cardiac surgery. *Ergonomics* 2006; 49: 567-588.
5. Lingard L, Regehr G, Orser B, Reznick R, Baker R, et al. Evaluation of a preoperative checklist and team briefing among surgeons, nurses, and anaesthesiologists to reduce failures in communication. *Arch Surg* 2008; 143: 12-17.
6. Mishra, A, Catchpole, K, McCulloch, P. The Oxford NOTECHS System: reliability and validity of a toll

- for measuring teamwork behaviour in the operating theatre. *QualSaf Health Care* 2009; 18: 104-108.
7. Bosk, CL, Dixon-Woods, M, Goeschel, CA, Pronovost, PJ. The art of medicine: reality check for checklists. *The Lancet* 2009; 374: 444-445.
  8. Pronovost P, Needham D, Berenholtz S, et al. (2006). An intervention to decrease catheter-related bloodstream infections in the ICU. *N Engl J Med* 2006; 355: 2725-32.

For more information please email: [nsqip@bcpsqc.ca](mailto:nsqip@bcpsqc.ca)