

Patient Safety Tip of the Week

November 20, 2018

Checklist Implementation

A recent survey of pediatric surgeons regarding surgical safety checklists (SSCs) revealed some disturbing, but not really surprising, results ([Roybal 2018](#)). While 93.6% of respondents use SSCs and 62.6% would want one used in their own child's operation, only 54.7% felt that checklists improve patient safety.

Reasons for checklist skepticism included the length of the checklist process, a distraction from thoughtful patient care, and lack of data supporting use. Literature review shows that checklists improve communication, promote teamwork, and identify errors, but do not necessarily decrease morbidity. Staff perception is a major barrier to implementation.

Checklists are incredibly valuable safety tools in healthcare and many other industries. But their implementation encounters all the barriers that implementation of any change project encounters. Like almost any change project, things that are imposed from the outside are doomed to failure. And, when you don't encounter some "noise" early during implementation, you are also likely doomed.

Some of the comments in the Roybal pediatric study are particularly insightful.

"Checklists only work if they are short." That is a point we've made several times. In our recent October 30, 2018 Patient Safety Tip of the Week "[Interhospital Transfers](#)", we broke down a long checklist into several shorter checklists to facilitate use.

"There are generic elements to all surgical procedures that have some applications in the generic checklists currently available. What would be far more effective would be computer generated checklists SPECIFIC for the procedure scheduled." A good point. You wouldn't want a checklist designed for a 747 if you were flying an airbus. So why would you want to use a checklist designed for a cholecystectomy when you are doing a total hip replacement? But some checklists may apply to all types of surgery. For example, malignant hyperthermia might occur in almost any surgical procedure, so a checklist specific for malignant hyperthermia could be used during any surgical procedure if malignant hyperthermia were suspected.

"All this devotion to checklists and process has become a form of fetishism, and often is a distraction from the task at hand." In our May 2015 What's New in the Patient Safety World column "[The Great Checklist Debate](#)" we discussed "checklist fatigue".

“There may be one case in 10,000 in which it makes a difference. I personally haven’t seen it.” Failure to make a compelling case as to why a particular checklist is needed is one of the biggest barriers to checklist adoption.

“The surgical checklist is highly ineffective in modern Western hospitals. This was shown, but ignored, in the original paper. It is a meme, a trend, and a fad. It does not actually improve real mindfulness, and often distracts from it.” Perhaps a little bit of truth and a lot of chutzpah in that statement! See our What's New in the Patient Safety World columns for April 2014 [“Checklists Don’t Always Lead to Improvement”](#) and May 2015 [“The Great Checklist Debate”](#).

Fortunately, there is now a terrific resource available to help with meaningful implementation of checklists. The [OR Emergency Checklist Implementation Toolkit](#), from Ariadne Labs, Emergency Manuals Implementation Collaborative (EMIC), and Stanford University School of Medicine, takes you through all the steps necessary in successful checklist implementation.

Researchers involved in development of that toolkit used data gathered through a Web-based survey to examine factors that might be related to success in implementing OR cognitive aids ([Alidina 2018](#)).

Completing more implementation steps was significantly associated with more successful implementation. In fact, each implementation step completed was associated with just over 50% higher odds of more successful implementation. Leadership support and dedicated time to train staff were other factors associated with successful implementation. Small facility size was also associated with a fourfold increase in the odds of a facility reporting more successful implementation. Previous quality improvement experience was associated with success in OR cognitive aid implementation: the greater its number of quality improvement initiatives, the more likely a facility was to successfully implement OR cognitive aids. More successful implementation was associated with the use of the tool in emergency drills, in preparation for complex cases, and in debriefing after a critical event.

Factors associated with less successful implementation were resistance among clinical providers to using cognitive aids, absence of an implementation champion, and unsatisfactory content or design of the cognitive aid,

The following were associated with more successful implementations:

- the tool was presented at staff, physician, or departmental meetings
- a multidisciplinary team was established to review the tool
- the tool was customized to fit the local context
- the tool was pilot-tested
- providers were trained in the use of the tool
- ongoing/routine training was provided on the tool
- the use of the tool was monitored

- the use of the tool was expanded to additional areas in the facility outside the OR where anesthesia was administered

So the [OR Emergency Checklist Implementation Toolkit](#), recommends the following strategies:

- Identify a clinical champion
- Get buy-in from clinical and administrative leadership and front-line clinical staff
- Create a multidisciplinary team
- Select, customize and test the checklists
- Train staff
- Start using the checklists
- Monitor use
- Spread beyond the OR

The toolkit tells you to expect to spend 6-12 months or more for implementation and training.

The need for a clinical champion speaks for itself. In getting buy-in, it's important to get support of clinical and administrative leadership. Early communication and outreach to staff is essential. Key hospital leaders need to be engaged in a multidisciplinary implementation team. Get the word out about the project at department meetings and joint conferences.

A key feature of any successful change project is also to identify key people who are likely to resist the change and meet with them 1-on-1 and invest time in educating them about project. In-house marketing (videos, other promotional materials, periodic announcements and updates, etc.) can be helpful.

Since this toolkit is specifically about OR checklists, you need to establish a multidisciplinary team that is representative of all perioperative personnel. Best team members are thoughtful, respected, reliable, collaborative, able to participate, and experienced in quality improvement. They don't have to be titled leaders.

After you've selected checklist(s), customize them to fit your clinical setting. The toolkit provides good recommendations about the pros and cons of printed vs. electronic checklists and provides practical recommendations about best format, visual design, writing style, etc. Test your checklists in team simulations and revise them as necessary. Train your staff on use of the checklists and utilize any of several simulation techniques described in the toolkit. One key success factor is ensuring that time is provided for training of staff.

Phase in your checklists. Don't roll them out to all areas at once. Get them up and running in a few key areas, learn from them, tweak them, and test them again.

Monitor the use of the checklists. Which ones are being used? Encourage their use and provide feedback on both their use and usefulness.

Share your successes with other areas of the organization (emergency department, ICU's, labor & delivery, etc.) so they can model similar checklist implementations.

You've heard us over and over use the phrase "**stories, not statistics**". At each stage where you are training or promoting a checklist, try to give a personal story of how a use of a checklist was important. If, for example, you just say something like "we have not had a wrong site surgery since we implemented..." you won't get the same enthusiasm as if you tell a story about how, in a specific case, the checklist actually helped avert a near-miss.

When we've seen successful projects using checklists, we always wonder whether success was due to the checklist itself or to the teamwork and culture changes that were involved in implementing the checklist. We suspect the latter are probably as or more important than the checklist. So never be hasty in pushing out checklists. Follow the steps outlined in the toolkit and you'll likely find that your checklists result in the improvements you were looking for.

Some of our prior columns on checklists:

- June 5, 2007 "[Patient Safety in Ambulatory Surgery](#)"
- July 24, 2007 "[Serious Incident Response Checklist](#)"
- March 11, 2008 "[Lessons from Ophthalmology](#)"
- July 1, 2008 "[WHO's New Surgical Safety Checklist](#)"
- September 23, 2008 "[Checklists and Wrong Site Surgery](#)"
- November 18, 2008 "[Ticket to Ride: Checklist, Form, or Decision Scorecard?](#)"
- November 25, 2008 "[Wrong-Site Neurosurgery](#)"
- January 20, 2009 "[The WHO Surgical Safety Checklist Delivers the Outcomes](#)"
- January 19, 2010 "[Timeouts and Safe Surgery](#)"
- June 2010 "[WHO Checklist for Radiological Interventions](#)"
- June 8, 2010 "[Surgical Safety Checklist for Cataract Surgery](#)"
- July 6, 2010 "[Book Reviews: Pronovost and Gawande](#)"
- September 14, 2010 "[Wrong-Site Craniotomy: Lessons Learned](#)"
- November 30, 2010 "[SURPASS: The Mother of All Checklists](#)"
- December 6, 2010 "[More Tips to Prevent Wrong-Site Surgery](#)"
- February 2011 "[SURPASS Checklist Reduces Malpractice Claims](#)"
- March 2011 "[Michigan ICU Collaborative Wins Big](#)"
- June 6, 2011 "[Timeouts Outside the OR](#)"
- August 16, 2011 "[Crisis Checklists for the OR](#)"
- July 2012 "[VA Checklist Reduces Suicide Risk](#)"
- July 2012 "[WHO Safe Childbirth Checklist](#)"
- October 2012 "[Another PCA Pump Safety Checklist](#)"
- February 2013 "[Checklists for Surgical Crises](#)"

- April 2014 “[Checklists Don’t Always Lead to Improvement](#)”
- May 2015 “[The Great Checklist Debate](#)”
- August 25, 2015 “[Checklist for Intrahospital Transport](#)”
- September 1, 2015 “[Smarter Checklists](#)”
- September 15, 2015 “[Another Possible Good Use of a Checklist](#)”
- September 13, 2016 “[Vanderbilt’s Electronic Procedural Timeout](#)”
- November 2016 “[Oxygen Tank Monitoring](#)”
- November 1, 2016 “[CMS Emergency Preparedness Rule](#)”
- January 10, 2017 “[The 26-ml Applicator Strikes Again!](#)”
- May 2017 “[Another Success for the Safe Surgery Checklist](#)”
- May 2, 2017 “[Anatomy of a Wrong Procedure](#)”
- June 2017 “[Another Way to Verify Checklist Compliance](#)”
- August 22, 2017 “[OR to ICU Handoff Success](#)”
- November 28, 2017 “[More on Dental Sedation/Anesthesia Safety](#)”
- December 12, 2017 “[Joint Commission on Suicide Prevention](#)”
- December 19, 2018 “[More on Overlapping Surgery](#)”
- February 2018 “[Oxygen Cylinders Back in the News](#)”

References:

Roybal J, Tsao K, Rangel S, et al. Surgical Safety Checklists in Children’s Surgery: Surgeons’ Attitudes and Review of the Literature. *Pediatr Qual Saf* 2018; 3: e108; Published online October 16, 2018

https://journals.lww.com/pqs/Abstract/latest/Surgical_Safety_Checklists_in_Children_s_Surgery_.99907.aspx

Ariadne Labs/EMIC/Stanford. The Operating Room Emergency Checklist Implementation Toolkit. 2018

<https://www.implementingemergencychecklists.org/>

Alidina S, Goldhaber-Fiebert SN, Hannenberg AA, et al. Factors associated with the use of cognitive aids in operating room crises: a cross-sectional study of US hospitals and ambulatory surgical centers. *Implement Sci* 2018; 13(1): 50

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