



## Performance Architecture

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## The Checklist: A Great Equalizer

Performance Architects are big proponents of simple responses to complex challenges. We greatly admire the elegant solution to a performance problem or opportunity. As practitioners, the two of us have long advocated for the job aid as a first response to most requests for performance improvement help. More often than not, we've found that a job aid addresses at least part of the need and makes the requestor open to other ideas.

### The Checklist Manifesto

Within this frame of reference, we were excited to discover Dr. Atul Gawande and his book, *The Checklist Manifesto • How To Get Things Right*.



A checklist is one type of job aid, designed to refresh the user's memory about a task performed infrequently, or to ensure that critical steps in a complex task are correctly completed. Dr. Gawande is an accomplished surgeon and a fine writer. He has led pioneering work with checklists in the operating room, dramatically reducing deaths, surgical errors, and post-operative complications. He details how this important work was accomplished, describing his own learning along the way.

We greatly enjoyed reading *The Checklist Manifesto*. At 8 ½ x 6 inches and 193 pages of fascinating challenges and inspiring stories, this is a fast and compelling read. Gawande relates complex medical issues in accessible language. At the same time, he presents himself, a worldwide proponent of surgical checklists and a highly credible physician, as someone with whom we'd like to have coffee and a chat.

Gawande's book resonated with us for several reasons:

- No magic is required to construct a checklist that will produce desired results
- Checklists are effective worldwide, transcending language, economics, and social conventions
- A checklist points to process changes and improvements
- Checklists spotlight related opportunities for performance improvement

Let's take a closer look at Gawande's work with surgical checklists. In the operating room and in workplaces of all kinds, a checklist can be an effective response to a wide range of performance improvement opportunities.

### No Magic Required

Gawande is a surgeon, not a Performance Architect. With some careful research and extensive consultation with experts in aviation and construction, he learned enough to establish critical principles for constructing checklists. He then applied his learnings to the creation of checklists that ultimately led to the life enhancing and life saving results he sought.

Checklists "...are quick and simple tools aimed to buttress the skills of expert professionals." (Gawande, p. 128). A checklist doesn't teach anything, nor does it tell the user what to do. It is a valuable tool because it helps the user be as smart as possible in every step. "The checklist gets the dumb stuff out of the way, the routines your brain shouldn't have to occupy itself with...and lets it rise above to focus on the hard stuff." (Gawande, p. 177).

As Gawande learned more about aviation and construction he identified three kinds of problems:

- Simple – bake a cake from a mix
- Complicated – send a rocket to the moon
- Complex – raise a child

He classified erecting a building as a complex problem and learned that even a detailed checklist would not be sufficient to account for all the possible challenges that could occur during construction. And, no one person could possibly have the volume of knowledge required to build a commercial building. Gawande discovered that in construction, workers at the project's periphery are given decision-making power, rather than holding that power at the center of the project. With an emphasis on communication and shared decision-making, complex problems can be resolved successfully.

When Gawande applied these learnings to the complex problem of surgery, developing checklists for surgery that could make a difference in lives saved and complications avoided became possible.

### Worldwide Use

The World Health Organization (WHO) exists to solve large-scale public health problems. Gawande was asked to help WHO develop a global program to reduce complications and avoidable death from surgery. His investigation into successful public health interventions led to examples that shared three critical characteristics:

- Simple solutions
- Measurable results
- Replicable benefits

Checklists are used around the globe in familiar situations: flying airplanes, constructing buildings, responding to disasters, buying groceries. Such checklists are simple, measurable, and replicable. Gawande learned that a number of checklists were already in use in a range of hospital settings, cultures, and locales.

Gawande and his WHO team determined that a checklist could systematically address three of the main causes of surgical death: infection, bleeding, unsafe anesthesia. The fourth cause of death, however, is the unexpected, and no checklist can possibly consider all those possible pitfalls. To address the unexpected, then, each surgical team was also required to talk through the patient's case together, before starting the surgery, to identify and address possible critical issues.

### Checklist as Change Agent

Gawande’s team prototyped surgical checklists for use in several countries, in hospitals that ranged from state-of-the-art to bare bones and makeshift, with medical personnel of varying educational levels and experience. Along with the need to translate the checklists in some locations, this pilot phase brought to light invaluable insights into the power of a simple checklist to effect change.

At the most basic level, the act of listing steps on the checklist raised questions about the order of tasks as they were performed. Frequently, procedures were redesigned to be more efficient or to ensure that critical safety checks could be performed at appropriate times.

At a more complex level, the issue of empowerment in the operating room was made visible. As in most workplaces, members of the surgical team adhere to a hierarchy. Some behavioral conventions vary by country, but generally all team members are not equal. This makes it difficult for a person of lesser rank, such as a nurse or a technician, to speak up if the surgeon, for example, misses a step on the checklist.

Since different team members were assigned responsibility for completing sections of the checklists—that is reading them aloud so the appropriate person could respond to an item—all team members were empowered to ask the questions and double check each other. The WHO Surgical Checklist below contains three sections, each used before a critical step in the surgery.

Surgical Safety Checklist
World Health Organization
Patient Safety
A World Alliance for Safer Health Care

Before induction of anaesthesia

Before skin incision

Before patient leaves operating room

(with at least nurse and anaesthetist)
(with nurse, anaesthetist and surgeon)
(with nurse, anaesthetist and surgeon)

**Has the patient confirmed his/her identity, site, procedure, and consent?**

 Yes

**Confirm all team members have introduced themselves by name and role.**

**Confirm the patient’s name, procedure, and where the incision will be made.**

**Has antibiotic prophylaxis been given within the last 60 minutes?**

 Yes  
 Not applicable

**Nurse Verbally Confirms:**

 The name of the procedure  
 Completion of instrument, sponge and needle counts  
 Specimen labelling (read specimen labels aloud, including patient name)  
 Whether there are any equipment problems to be addressed

**Is the site marked?**

 Yes  
 Not applicable

**Anticipated Critical Events**

**To Surgeon:**

 What are the critical or non-routine steps?  
 How long will the case take?  
 What is the anticipated blood loss?

**To Surgeon, Anaesthetist and Nurse:**

 What are the key concerns for recovery and management of this patient?

**Is the anaesthesia machine and medication check complete?**

 Yes

**To Anaesthetist:**

 Are there any patient-specific concerns?

**To Nursing Team:**

 Has sterility (including indicator results) been confirmed?  
 Are there equipment issues or any concerns?

**Is the pulse oximeter on the patient and functioning?**

 Yes

**Is essential imaging displayed?**

 Yes  
 Not applicable

**Does the patient have a:**

**Known allergy?**

 No  
 Yes

**Difficult airway or aspiration risk?**

 No  
 Yes, and equipment/assistance available

**Risk of >500ml blood loss (7ml/kg in children)?**

 No  
 Yes, and two IVs/central access and fluids planned

This checklist is not intended to be comprehensive. Additions and modifications to fit local practice are encouraged.
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Figure 1

When the pre-surgery talk-through was added, and each team member was required to introduce him or herself by name and role, lower level team members were freed to raise issues then and later during the surgery, greatly reducing the threat of the unexpected and enhancing the effectiveness and the results of the surgery.

### Related Opportunities for Performance Improvement

Once we put processes and procedures under a microscope to create a job aid like a checklist, we have an opportunity to, well, re-examine how and why work is done. Surgery is work, and as in any observation of how work is performed, what a subject matter expert says is done and what observers see as we watch a surgical procedure will point to differences and raise questions. These will, in turn, lead to changes in surgical preparation, to questions about post-operative routines and care, and potentially to improvements in other patient safety issues.

### Notable Results from the WHO Surgical Safety Checklist

In his heart, Gawande relates, he didn't believe the checklist would make a difference in his own surgical results. However, since the WHO checklist would be implemented in eight pilot hospitals worldwide, he wisely decided to use it in his operations. Gawande wanted to be sure the checklist would work and, as he says, he didn't want to be a hypocrite.

"To my chagrin, however, I have yet to get through a week in surgery without the checklist's leading us to catch something we would have missed." (Gawande, p. 187) Some examples:

- Prophylactic antibiotic not given
- Missed respiratory problem
- Unrecognized drug allergies
- Equipment problems
- Confusions about medications
- Mislabeled biopsy specimens
- One saved life

### Job Aids Beyond the Checklist

We keep files of clever, unusual, or exceptionally well-designed job aids. They serve as inspiration for us and as examples to show to colleagues or clients. When Barry Booth worked at Caterpillar he developed one we've always admired for its simplicity. It is laminated:

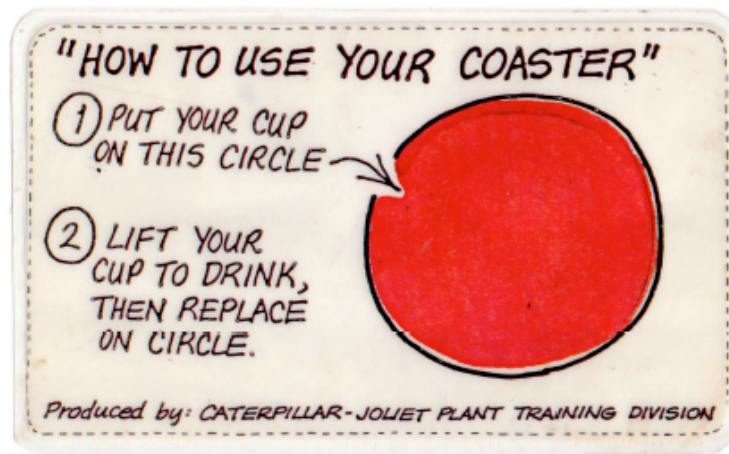


Figure 2

A checklist is just one familiar type of job aid. Others include:

- Labels in the seams of clothing that contain laundering instructions
- Instructions for assembling a new office chair provided completely in pictures
- Interactive instructions on the ATM at the supermarket
- FAQs on websites
- The Help function in a word processing program
- Screen prompts for telemarketers who call your home during dinner

## In Summary

Here's a look at our current [favorite checklist](#) providing the answer to the question you've always wanted to ask.

In conceiving of a job aid to address a performance problem or opportunity, the possibilities are almost limitless. The benefits of leveraging a job aid to take a closer look at a procedure or process with the chance to improve results are compelling, as Dr. Gawande demonstrates. And, a degree in Performance Architecture is not required.

## References

Gawande, Atul. (2010). *The checklist manifesto • How to get things right*. New York, NY. Metropolitan Books.

Rossett, Allison, and Schafer, Lisa. (2007) *Job aids & performance support*. San Francisco, CA. Pfeiffer.

## Sample Checklists

*Checklist for buying a house*. Retrieved from <http://www.ourfamilyplace.com/homebuyer/checklist.html>

*Printable Checklists*. Retrieved from <http://printablechecklists.com>

World Health Organization. (2009). *Surgical safety checklist*. Retrieved from [http://whqlibdoc.who.int/publications/2009/9789241598590\\_eng\\_Checklist.pdf](http://whqlibdoc.who.int/publications/2009/9789241598590_eng_Checklist.pdf)

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