

: *When are checklists useful decision aids?*

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Checklists are especially helpful in complex environments, but a poorly designed checklist can hinder decision making and task performance. A checklist is an organized set of features, questions, or attributes that when consulted during task performance or decision making is intended to reduce errors and omissions by compensating for potential limits of human memory and attention. A checklist helps ensure consistency and completeness in carrying out a task. A basic example of a checklist is a "grocery shopping list" or a "to-do list". A checklist may be used repeatedly and refined, it may be created for a less structured task or specific circumstances. A checklist may be refined, tested and validated or it may be based upon anecdotes and experience.

A checklist helps us to remember queries and information needs and it may ensure that a person performs all the "crucial" steps or tasks and in some cases perform steps in an optimal sequence. The website www.examples.com has 55 business checklist examples in Word documents. One can find many general and specific checklists including maintenance checklists, safety checklists, HR checklists, vehicle inspection checklists, program review checklists, project planning checklists, and marketing checklists.

Some checklists are used to help provide constructive feedback and assessments to improve processes and behaviors. Some checklists are used for punitive or disciplinary assessments. Checklists may also be completed and scored for risk assessments. Applying a contingent checklist may lead to a differential diagnosis or recommendation. A checklist can serve a variety of decision making and feedback purposes. The validity of a specific checklist may have been assessed or in many cases, the checklist is based upon expert opinion and rules or regulations. The validity of a checklist and its completeness should be an issue in both adoption and use.

What are the limitations and problems with checklists? Even a well-designed checklist may narrow a person's perception of a situation, create overconfidence in assessing a situation or distort a person's attention and thinking. Checklist fatigue can happen when too many questions are asked, the checklist is too long or too tedious to complete. General checklists may ask too many irrelevant in tangentially applicable questions. A good checklist captures useful information, is perceived as helpful, and has limited negative consequences associated with use.

Organizations accumulate checklists and some are more valid and useful than others. Managers should periodically review the checklists in active use and determine why the checklist is used, when and by whom it was created, and the feelings of users about the checklist's usefulness. Checklists may become outdated or they may be no longer serving a useful purpose. When should a new or

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revised checklist be developed? Three reasons come to mind: 1) new knowledge is available that impacts the content of the checklist, 2) the results from using the checklist are deemed unsatisfactory or even harmful, 3) tasks change and more specific or more general checklists are desired or needed.

Dr. Atul Gawande, the Brigham and Women's Hospital Center for Surgery and Public Health Dissemination Team, and Dan Boorman of Boeing created a checklist designed to assist in the checklist creation process and ensure that a checklist helps instead of hurts, cf., <http://www.projectcheck.org/checklist-for-checklists.html>. The checklist divides questions into 3 areas -- 1. development, 2. drafting, and 3. validation.

1. Development: When proposing and developing a checklist begin the process with the overriding question: *Do you have clear, concise objectives for your checklist?* Then for each item in the proposed checklist ask: 1) is it a critical safety step and in great danger of being missed? 2) is it not adequately checked by other mechanisms? 3) is it actionable, with a specific response required for each item? 4) is it designed to be read aloud as a verbal check? 5) can the item be affected by the use of a checklist? Also, during development ask have you considered adding items that will improve communication among team members? and are you involving all members of the team in the checklist creation process?

2. Drafting: Writing and drafting the actual checklist is a process. The developer should ask does the checklist 1) utilize natural breaks in the workflow (pause points)? 2) use simple sentence structure and basic language? 3) have a title that reflects its objectives? 4) have a simple, uncluttered, and logical format? 5) fit on one page? Are there fewer than 10 items per pause point? 6) minimize the use of color and use readable fonts? and 7) is the date of creation (or revision) clearly marked?

3. Validation: This final task is extremely important. A developer should try the checklist with front line or targeted users (either in a real or simulated situation) and modify the checklist in response to repeated trials. A developer should determine if the checklist fits the flow of work, if it detects errors at a time when they can still be corrected and if the checklist can be completed in a reasonably brief period of time. Also, a developer should make plans for future review and revision of the checklist. The constructive checklist about checklists is intended to improve the quality and usefulness of checklists.

Atul Gawande (2009), in his book **The Checklist Manifesto**, argues experts need checklists, literally written guides, that walk them through the key steps in any complex procedure. Checklists should generally be short, fewer than 9 items and the wording should be simple and exact. Checklists reduce "failures" and establish a higher standard for baseline performance, but they are

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only useful when aiding or assisting a user, otherwise, revise it or stop using it, something is not right. "Under conditions of complexity," Gawande argues "not only are checklists a help, they are required for success. There must always be room for judgment, but judgment aided — and even enhanced — by procedure." He also notes "Checklists may seem like a ridiculously simple concept in a complex world but the evidence is they work. Good checklists get the routine and obvious tasks out of your mind so you can instead focus on the hard stuff.

On Thursday, August 2, 1979, baseball great Thurman Lee Munson (June 7, 1947 – August 2, 1979) died in a plane crash. The United States National Transportation Safety Board (NTSB) investigation into the crash stated that the probable cause was "...the pilot's failure to recognize the need for, and to take action to maintain, sufficient airspeed to prevent a stall into the ground during an attempted landing. ... Contributing to the pilot's inability to recognize the problem and to take proper action was his *failure to use the appropriate checklist ...*" Failure to use the appropriate checklist was a major reason the New York Yankee catcher broke his neck and died. Perhaps poor training or carelessness, perhaps another reason led to the mistake. When I think of the need for checklists, I think of No. 15, NY Yankee All-Star catcher Thurman Munson.

Checklists are useful when they are carefully crafted, serve a clear purpose, and are valid and **actually used**. A good checklist can support and enhance expert judgment. Remember Munson and use appropriate checklists.

References

Gawande, A., *The Checklist Manifesto: How to Get Things Right*, New York, NY: Henry Holt and Company, 2009

Wikipedia, "Thurman Munson," at URL https://en.wikipedia.org/wiki/Thurman_Munson

Gawande (2009) "In a complex environment, experts are up against two main difficulties. The first is the fallibility of human memory and attention, especially when it comes to mundane, routine matters that are easily overlooked under the strain of more pressing events. (When you've got a patient throwing up and an upset family member asking you what's going on, it can be easy to forget that you have not checked her pulse.) Faulty memory and distraction are a particular danger in what engineers call all-or-none processes: whether running to the store to buy ingredients for a cake, preparing an airplane for takeoff, or evaluating a sick person in the hospital, if you miss just one key thing, you might as well

: When are checklists useful decision aids?

not have made the effort at all.

A further difficulty, just as insidious, is that people can lull themselves into skipping steps even when they remember them. In complex processes, after all, certain steps don't always matter. Perhaps the elevator controls on airplanes are usually unlocked and a check is pointless most of the time. Perhaps measuring all four vital signs uncovers a worrisome issue in only one out of fifty patients. 'This has never been a problem before,' people say. Until one day it is.

Checklists seem to provide protection against such failures. They remind us of the minimum necessary steps and make them explicit. They not only offer the possibility of verification but also instill a kind of discipline of higher performance."

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