



## The Checklist—Part 3

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*(Dr. Shufeldt began a three-part discussion of the importance of procedural checklists in the September issue of JUCM. The first two installments are available at [www.jucm.com](http://www.jucm.com).)*

**B**illy was a cocky, disingenuous, trying-to-be aviator who had a hangar next to mine until he left in the middle of the night to avoid paying his overdue invoices.

I like pretty much everybody, at least initially. Despite trying, I did not like Billy. Among his other dislikable attributes and accomplishments, Billy was the king of “gear-up” landings in aircraft he was piloting.

This is remarkable for many reasons. When a plane goes below certain airspeed, the gear warning horn automatically starts going off. It is so obnoxious and loud that it is impossible to mistake it for anything else and should cause you to lower the gear if for no other reason than to stop the unbearable noise.

After the first crash, he blamed his copilot for the outcome during the FAA inquiry and got off almost scot-free—save for the wrecked aircraft and momentarily damaged (yet still monumental) ego.

Despite that first accident, Billy, defying Darwinism, did not use a checklist prior to his second gear-up landing while piloting a rare, old military plane.

There is an old saying in aviation: “If you have to use full power to taxi off the runway, you did not put your gear down.” Billy’s response to that tongue-in-cheek axiom actually was, “Stay with me, at least I was on the center line!”

Unfortunately, some healthcare organizations are a lot like Billy; they do not hear the “gear warnings” going off. Thus, they refuse to embrace a culture of patient safety fostered by checklists and electronically enhanced clinical decision-making tools. Even worse, they collectively allow themselves to get led down previously trodden paths with little

regard for the outcome of the patient.

Fortunately, some organizations get it right. Following are just a few of the success stories:

**Columbus Children’s Hospital:** After finding that one third of their appendectomy patients received the wrong antibiotic or no antibiotic prior to incision, they implemented a pre-op checklist which dramatically reduced the incidence of post-op infections.

**Barrow Neurological Institute:** Reduced door-to-needle time for stroke patients using a standing orders checklist.

**University of Toronto:** Used a 21-step checklist, of which the staff had to verbally confirm completion prior to incision.

**Michigan Hospitals:** Intensive care units as part of the Keystone Initiative reduced their central line infection rate by 66% and outperformed 90% of the ICUs nationwide, saving more than \$175 million and 1,500 lives.

**Johns Hopkins and Kaiser Health Care System:** Reduced ICU ventilator pneumonias and catheter-related wound infection using checklists and order sets. The occurrence of pneumonia associated with ventilators decreased 25% and the central line infection rate went from 11% to 0%.

**Advocate Hope Children’s Hospital Emergency Department:** Uses standing order sets for children with a variety of disease states, including diabetic ketoacidosis (DKA).

**Christ Hospital and Medical Center:** Has standing order sets for congestive heart failure, acute myocardial infarction, chest pain, comfort care, insulin infusion, thrombolytics, adult DKA, heparin infusion, angina, RSI, and abdominal pain patients.

What do these organizations have in common? They are aware of the tools at their disposal to identify problems



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and use a checklist or standing orders to improve patient outcomes. In other words, they hear the “gear horn.”

How then, if the use of these checklists is so critical to the safety of patients, does an organization start down the path?

As Daniel Boorman from the Boeing Flight Operation Department explained to Atul Gawande, author of *The Checklist Manifesto: How to Get Things Right*, checklists have to be:

- precise (simple English which gets to the point which does not mean “dumbed down”)
- written by and for those in the trenches (i.e., desk jockeys, attorneys, sycophants, and non-clinicians should not be opining on the checklists)
- efficient (hitting the high points)
- able to help people remember a complex set of tasks (or a non-complex set of tasks in an emergency; i.e., lower the landing gear)
- relatively short (five to 10 steps)
- tested in the setting where it will be used.

Checklists can be either DO–CONFIRM (team members perform roles by memory and then stop and run the checklist to ensure they did not miss any steps) or READ–DO (team members carry out the tasks as they check them off).<sup>1</sup>

Here is an example of a checklist or standing order set for an adult patient arriving at an urgent care center with chest and/or shoulder pain radiating to his neck:

1. **CHECK VITALS:** IF PULSE >100 or <60, OR SBP <100 OR RR >16, NOTIFY PROVIDER
2. **EKG:** IF ST ELEVATION, NOTIFY PROVIDER AND CALL 911
3. **LABS:** CBC, TNI, CPK, CHEM-7
4. **IMAGING:** CXR PORTABLE OR BY WHEELCHAIR
5. **MEDS:** ASA 325 CHEWABLE IF NOT ALLERGIC; NITRO PASTE 1” REMOVE IF SBP <100

I am sure that about now, you are saying “DUH!” However, I know of three experiences where had these standing orders been followed, patients would not have died.

This is the rub: The three providers who treated these three patients were all board-certified, competent and caring individuals. Retrospectively, none of them would testify that their care met the standard and all told me (after the case was settled) that they had no idea how they could have missed the proverbial gear horn going off.

Checklists or standing order sets will work in concert with electronic health records (EHRs) and other decision

support tools. Some modern, computerized decision-support features built into EHR systems are demonstrating positive results and beginning to generate interest amongst patient safety gurus.<sup>2</sup>

Many observers believe that the systems will take a giant leap forward when more day-to-day clinical work is documented electronically. Once providers no longer have to input data into the system outside the normal course of documenting care, effective decision-support systems will be able to provide them with meaningful guidance.<sup>3</sup>

As Gordon Schiff and David Bates wrote, health information technology has the potential to improve diagnostic precision in ways other than through computerized decision-support systems.<sup>4</sup> Among the features they call for are improved ways to filter and classify clinical information, functions that enhance communication amongst providers, more robust dynamic problem lists, and the incorporation of diagnostic checklists into the electronic record.<sup>5</sup>

As you may have guessed after reading this and my two previous articles, I am passionate about this topic. Although most medical malpractice carriers have not realized it yet, urgent care medicine is much more risky and much more difficult than emergency medicine. In the urgent care world, we operate with little patient history, rare established relationships, potentially high-risk illnesses, high patient volumes, and scant ancillary imaging or testing.

In short, we fly around in the perfect storm for medical malpractice.

Take advice from our brothers and sisters in other high-risk industries: checklists and standing orders save lives by preventing the highly competent, highly trained professional from a momentary lapse of judgment which in most other occupations, save medicine, would not cause any significant issue. There is simply no excuse not to use these simple, yet life saving tools.

In other words, the gear horn is going off, time to pay attention to the warning. ■

#### References

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