



UW Medical Center using surgical checklist to improve safety

By [Carol M. Ostrom](#), Seattle Times, 6/26/08

Darrell McDonald, being prepped for surgery last week at the University of Washington Medical Center, didn't seem surprised to learn that his **surgical team would be using a checklist** to make sure they hadn't forgotten anything before — or after — they opened up his belly. Flying a Piper Super Cub into remote areas of Alaska for nearly 30 years, McDonald routinely depended on a checklist to stay out of trouble. Before every flight, the bush pilot checked fuel, flaps, landing gear, oil level and more. "Your checklist keeps you from making mistakes," said McDonald, who now lives in New Mexico.

McDonald's surgeon, Dr. E. Patchen "Patch" Dellinger, thinks so, too. Due in large part to Dellinger's enthusiasm, the UW is one of eight hospitals worldwide test-driving a surgical checklist the World Health Organization (WHO) unveiled Wednesday. The checklist also includes items from a statewide project, the Surgical Care and Outcomes Assessment Program (SCOAP), led by Dellinger's colleague, Dr. David Flum. **With \$1.35 million from the state Life Sciences Discovery Fund, Flum is signing up hospitals to collect and share details about what surgeons do in operating rooms and how patients do afterward, and to use checklists to improve.**

Aviation's example

Developed by test pilots after a fiery test-flight crash of the Boeing B-17 "Flying Fortress" in 1935, **checklists are now an accepted and necessary part of aviation**, and they have helped transform a once dicey, dangerous endeavor. Flum fervently believes they can do the same for surgery. Patients may be more varied than planes, but **using a standardized checklist in surgery can catch little mistakes that can cascade into disastrous outcomes**, he believes. In the operating room last week, the "known allergy" box on the checklist helped remind the team that McDonald is allergic to metal, so Dellinger couldn't use staples to close the incision. The checklist includes verifying the surgical site, noting if heavy bleeding is expected and making sure nothing is left inside the patient.

Wednesday, WHO officials said preliminary results show **the checklist nearly doubled patients' chances of receiving proven standards of surgical care and substantially reduced complications and deaths**. "It seems totally obvious," Flum says. "They've been doing this in aviation for four decades, yet it's been totally absent in health care because there's no system to make sure it happens." The idea of checklists was jump-started in 2001 by Johns Hopkins Hospital critical-care specialist Peter Pronovost, who showed that checklists dramatically reduced infections in an intensive-care unit.

Late last year, surgeon-essayist **Dr. Atul Gawande popularized the notion in an article titled "The Checklist" in The New Yorker**. Gawande now heads the World Health Organization initiative to improve worldwide surgical safety, including adopting checklists. In his essay, he

noted Pronovost's many impressive credentials. "But, really," he asked, "does it take all that to figure out what house movers, wedding planners and tax accountants figured out ages ago?"

Fixing mistakes

"Let me ask you something," Dellinger begins. "Would you be more willing to get on a United flight to Chicago than to have surgery?" Dellinger and Flum already know the answer. Historically, aviation has done much better than health care in discovering the causes of "crashes" and preventing recurrences. "One of the soft spots in medicine is that doctors have not done a good job of policing themselves," says **Dr. Terry Rogers, executive director of the Foundation for Health Care Quality**, SCOAP's home. "Frankly, our track record has been abysmal."

But **knowing how to improve requires knowing where you went wrong**. And there's long been a "disconnect between what docs think they're doing, and what's actually happening," Flum says. "[All surgeons] assumed that everybody they operated on had gotten antibiotics, and that we never operate on the wrong patient," says Dr. Michael Florence, a Swedish Medical Center surgeon who works with SCOAP. "But as you know, that's not true." In fact, there is tremendous variability in surgical care by hospitals and doctors. But there's been little specific, comparative feedback. "I have been practicing over 15 years," Flum says. "I have never received a report about my performance, whether I'm doing a good job or a bad job."

Signing up for SCOAP allowed hospitals and doctors to see how their work compared to others' and to national standards. For example, on average, one of every five patients on high-blood-pressure medications before surgery wasn't getting the pills later — tripling heart-attack risk. Three years ago, Flum, who considers himself a "good doctor," made that mistake. The patient survived, but a checklist could have averted a close call.

Before the UW started using the comprehensive checklist about six months ago, the UW had an "unacceptable level" of such mistakes, Dellinger said. Since then, Flum said, there hasn't been a "miss." Last week, Flum signed up the 30th hospital for SCOAP; he's aiming for all 46 hospitals in the state by the end of 2009. The Washington State Hospital Association's Carol Wagner said a survey of hospitals found "a lot of excitement" about using checklists to improve care.

Getting surgeons on board, however, required finesse. "**Right now, it's still acceptable for a surgeon to say, 'You know what? I don't do it that way in my room,'**" Flum says. "There is a very autonomous streak in American health-care leaders. It's led to tremendous innovation, but it's also led to many problems." When Dellinger first proposed the checklist idea to his colleagues, not everyone was enthusiastic, he recalled. One said, "I guess that's OK — as long as I don't have to do anything I'm not doing now." Having detailed, surgeon-specific data has helped Flum sell the checklist as a way to make sure everything is done. "[The surgeons] say, 'We always do that,'" Flum said. "Then I bring up the SCOAP report and say, 'Well, actually, *not*.'"

In the OR

In the UW operating room, the surgical team scurries about, hooking up McDonald to various monitors, draping him and sterilizing his belly as they prepare to repair his hernia. Soon, someone pulls over an IV pole holding the 2-by-3-foot laminated checklist. Led by Dellinger, the team goes through the list, beginning with team introductions. "Hi, I'm Patch, I'm the surgeon," he begins. Knowing names can save time in an emergency, he says, and good communication is linked to fewer complications. They continue, describing the procedure, anticipated difficulties and blood loss. They confirm that antibiotics were given at the right time, that McDonald is being kept warm, and that he's not diabetic. By Wednesday, McDonald was out of the hospital, and "feeling great" despite a 12-inch incision.

Like many other hospitals, the UW previously used various parts of a checklist, says Dellinger, "but it wasn't really organized or coordinated in any particular fashion." Now, its surgeons are testing a comprehensive checklist. "Do I think everybody's going to give me a big hug and a kiss to thank me? I have no illusions," he says.

But if he were a patient, he'd insist on a checklist in surgery. Now, teams check off items in about two minutes, he said. "Two minutes seems like a pretty modest investment in safety."

The WHO/SCOAP Surgical Safety Checklist (see: [Medical Checklist](#))

Now being used by UW general surgeons in a pilot program, **the checklist** divides items into sections: Before anesthesia, before skin incision, before wound closure and before patient leaving the operating room. Some items are reviewed by the surgeon, some by the anesthesia team and some by the nursing team.

A few of the items on the checklist are:

- xDoes patient have a known allergy? Difficult airway/aspiration risk?
- xSurgeon, anesthesia professional and nurse verbally confirm patient name, ID band, site, procedure, position
- xBrief overall description of procedure and any anticipated difficulties
- xNeed for instruments or others supplies beyond those normally used for the procedure
- xAntibiotic prophylaxis given in last 60 minutes
- xGlucose checked for diabetics; insulin started for glucose less than 125
- x(After surgery) Nurse confirms instrument, sponge and needle counts correct

For more information:

World Health Organization's "Safe Surgery Saves Lives" initiative:

www.who.int/patientsafety/safesurgery/en/index.html

Surgical Care and Outcomes Assessment Program (SCOAP):

www.surgicalcoap.org/about.html

The complete WHO/SCOAP checklist being tested at the UW Medical Center:

www.seattletimes.com/localnews

