

during a 2004 commencement speech at Yale, “I chose surgery because I thought that perhaps this would make me more like the kind of person I wanted to be.”

He is far from the stereotype of the surgeon who thinks he is God, and this emerges in his writing. When he tackles thorny political issues, his arguments do not have polarizing overtones, and he does not use words to browbeat. When he takes a position, it often comes with an admission that the other side has merit.

There is nuance, and a good dose of neurotic self-doubt. In a chapter of his 2007 book *Better: A Surgeon's Notes on Performance*, he chronicles the soul-searching he went through in deciding what his policy would be about asking patients to undress (or not) and asking a female “chaperone” (a nurse or other health professional) to come into the room when he was examining female patients. He paints an endearingly awkward, fumbling picture of himself as a newly minted doctor, having decided to examine patients in their street clothes in most cases:

If a patient with gallstones wore a shirt she could untuck for the abdominal exam, this worked fine. But then I'd encounter a patient in tights and a dress, and the next thing I knew, I had her dress bunched up around her neck, her tights around her knees, and both of us wondering what the hell was going on.

In fact, it is his habit of acknowledging uncertainty that makes his writing so refreshing. “It's the kind of ambiguity that is uncomfortable, and that other writers want to zip out of the picture, that he gravitates toward,” says his *New Yorker* editor, Henry Finder. Often this willingness to face the unknown leads to striking cultural insights. Toward that chapter's conclusion, Gawande says he suspects that having a female “chaperone” in the room

helps more than it hurts. But we don't know; the study has never been done. And that itself is evidence of how much we've underestimated the importance and difficulty of human interactions in medicine.

IF GAWANDE IS AN UNLIKELY SURGEON, envisioning a career in medicine, more generally, was easy. He grew up in Athens, Ohio, the son of a urologist father and a pediatrician mother, and he has often said that following them into the field seemed so inevitable that he tried every way he could think of to avoid it. Careers he considered along the way included philosophy and politics; they did not include writing.

His first published writing for a popular audience, in 1996, came at the invitation of Jacob Weisberg, a friend from Gawande's time at Oxford as a Rhodes scholar. Despite Gawande's lack of writing experience, Weisberg, who helped found the online magazine *Slate* and later edited it, had a hunch that his friend would be good at explaining medicine to a lay audience. Besides, he was encouraged

A CHECKLIST FOR LIFE

Atul Gawande's research centers around the idea he raised with the Brigham's chief of surgery back at his residency interview in 1995: envisioning surgery as a public-health issue, and improving its safety record. Viewing surgery as an exceptional experience is archaic, he is fond of saying, now that one person out of 25 undergoes a surgical procedure in a given year. In fact, there are more surgeries worldwide each year than births—yet surgery carries a risk of death 10 to 100 times higher than that of childbirth.

In the quest to make surgery safer in the developing world and everywhere, Gawande leads a research team of professors, graduate students, and postdoctoral fellows from Harvard Medical School (HMS), affiliated hospitals, and the Harvard School of Public Health (HSPH). Funding sources include the World Health Organization (WHO), for whom Gawande leads an initiative on surgical safety. Like Gawande himself, the research team has a full plate—the agenda for a recent weekly meeting, which runs three hours, listed 31 different projects—but a principal focus is the medical checklist.

It's a simple concept that had been used when taking vital signs and in nursing. Donald M. Berwick, a professor at HMS and HSPH who is also president and CEO of the Cambridge-based, nonprofit Institute for Healthcare Improvement, started promoting the checklist. Then Johns Hopkins Hospital critical-care specialist Peter Pronovost picked it up, developing a checklist

for preventing central-line infections. (Used to provide patients with intravenous nutrition or medication, and to monitor vital signs or draw blood, a central venous catheter is threaded into the vena cava, the main blood vessel to the heart. Such lines commonly become infected, and because their route into the bloodstream is so direct, an infection is life-threatening.)

Pronovost's results with the checklist were more than encouraging. After he implemented the checklist at his hospital in 2001, just two central-line infections occurred in the next 15 months. Judging from previous infection rates, the checklist prevented 43 infections and eight deaths. Two years later, the state of Michigan decided to try Pronovost's checklist in intensive-care units statewide. In the first 18 months, they saved an estimated 1,500 lives and \$175 million.

Gawande and colleagues decided to develop a similar checklist for surgery and to test it at eight hospitals worldwide—one each in the United States, Canada, New Zealand, England, the Philippines, India, Jordan, and Tanzania. Although the checklist includes mostly rudimentary tasks such as confirming a patient's identity, the procedure to be performed, and the site of the surgery (so as not to operate on the wrong knee or the wrong side of a patient's brain), none of the eight pilot hospitals was routinely performing every task on the list. One of the eight performed none of them at the pre-study evaluation. After a year using the checklist, the

rate of complications from surgery at those hospitals had fallen by more than a third; surgical-site infections by half; and deaths of surgical patients by nearly half.

Seven countries and more than two dozen U.S. states now require use of the surgical checklist. Hospitals may also opt in independently, and in all, roughly 600 in the United States and an equivalent number outside have registered with the WHO as users of the checklist. Gawande's team is also developing checklists for perinatal care, emergency care, trauma care, burn care, and for managing a particularly troublesome type of bacterial infection. Team members are developing materials to help other groups develop their own checklists (a “checklist handbook”).

Far from boasting about these results when discussing the checklist, Gawande strikes a tone of frustration that nobody did this sooner. He wrote in the *New Yorker*:

These are...ridiculously primitive insights. Pronovost is routinely described by colleagues as “brilliant,” “inspiring,” “a genius.” He has an M.D. and a Ph.D. in public health from Johns Hopkins, and is trained in emergency medicine, anesthesiology, and critical-care medicine. But, really, does it take all that to figure out what house movers, wedding planners, and tax accountants figured out ages ago?