Greeks, Chinese, Persians, and Egyptians. Verghese, an internist and professor at Stanford University School of Medicine, has been quoted previously as saying he renews his vows to medicine every year at commencement, to "swear by Apollo and Hygieia and Panaceia to be true to her, for she is the source of all … I shall not cut for stone."

Most of the story takes place at Missing Hospital in Addis Ababa, Ethiopia. Verghese finds the delicate balance between sufficiently describing medical procedures and terminology while offering ample explanations to foster the reading enjoyment of medical professionals and nonprofessionals. For a medical professional, it is both interesting and informative as the author describes the hospital's internist's (Ghosh) classic examination findings, such as "the head bobbing in tune with the pulse" of aortic regurgitation and "the high pitched notes, like water dripping on a zinc plate" of a volvulus. Ghosh even constructs for Marion a homemade Corrigan water hammer to illustrate the pulsatile findings of aortic regurgitation. (Ghosh resembles Verghese in this regard because the author is renowned for demonstrating the wealth of knowledge and information that can be gleaned from physical examination of a patient.)

Verghese's writing style throughout the book is graceful, detailed, and engrossing. He skillfully incorporates medicine into the novel without letting it overtake the narrative, instead making it a complementary part of the story and crucial to the development of each character. Each character's development is affected by events throughout the story. In addition, all the characters have personal flaws that make them more believable and lovable. For instance, Shiva, the other identical twin, is a one-dimensional character throughout the book—a savant in certain aspects, such as rote memorization, math, and dancing. However, he is socially awkward and inept, with an inability to understand the consequences of his actions toward other characters. Marion is the outgoing, outspoken twin, who is more in tune with others' thoughts, but his work-comes-first tendencies permit life's pleasures to pass him by. Despite their different personalities, the twins have in common a passion for medicine. Clearly, medical professionals aren't all alike.

Verghese draws on his own experiences to help the reader understand the Ethiopian culture and surroundings by eloquently describing the country's social unrest, class divisions, customs, traditions, and daily lifestyle. Historical figures, such as Emperor Haile Selassie, dictator Mengistu Haile Mariam, and coup leaders, were real figures actively involved in the Ethiopian revolution. Their actions weigh heavily on each character as the book progresses.

The story line moves at a steady pace, and characters are seamlessly transitioned into the story without interrupting the overall flow of the novel. Likewise, the author blends seemingly benign daily events, such as the twins and their family playing bridge with friends, into crucial turning points in the story.

This book is a must-read. It has all of the plot twists a reader expects in a well-written novel and will hold one's attention regardless of one's interest in medicine. The story flows naturally, a tribute to human nature's triumph over hardships. You will not want to put this book down.

Joseph B. Hinton, M.D., Wake Forest University Baptist Health, Winston-Salem, North Carolina. jhinton@wfubmc.edu

(Accepted for publication August 25, 2011.)

The Checklist Manifesto: How to Get Things Right. By Atul Gawande, M.D., M.P.H. New York, Metropolitan Books, 2011. Pages: 240. Price: $15.00.

We healthcare providers are not the primary audience for *The Checklist Manifesto: How to Get Things Right*. Arguably, the concepts discussed are a good fit for the medical profession, but the definition of a manifesto includes the concept of a public declaration of policy and aims. Dr. Gawande's popular nonfiction books about medicine and surgery educate the masses about us and what we do right or wrong, good or bad; this book is no exception.

Wearing his nonfiction book author and *New Yorker* staff writer hats, Dr. Gawande has produced a work with a premise that has the appeal of apple pie and motherhood. What patient or healthcare provider doesn't want to get things done right in the delivery of health care? In the first chapter, The Problem of Extreme Complexity, Dr. Gawande introduces a challenge that resonates with all healthcare providers. He lays the groundwork for the rationale for checklist use in any complex endeavor, whether banking, building skyscrapers, churning out large numbers of complex gourmet dishes in a restaurant, flying aircraft, or operating on patients. To the chagrin of all healthcare providers, failures have remained an all-too-frequent occurrence despite our healthcare educational system having produced providers with exceptional expertise in all disciplines. According to Dr. Gawande, "the volume and complexity of what we know has exceeded our individual ability to deliver its benefits correctly, safely, or reliably." Medical checklists offer an alternative, nontraditional strategy to overcome the failures of the healthcare system and to reduce the consequent complications and avoidable deaths. Dr. Gawande points out that although checklists augment memory and attention, they cannot replace mastery of a profession or practice experience.

In chapter 2, The Checklist, Dr. Gawande reviews how checklists saved the life of the Boeing Corporation, its B-17 Flying Fortress, and the B-17's future flight crews. The prototype of the B-17 crashed shortly after taking off on its test flight. Crash analysis revealed that a minor error had doomed the flight, and that the airplane was simply too complex for one person to fly. The crew checklist developed for flying the B-17 simplified the preflight check of the B-17, permitting the fleet of B-17s to fly the next 1.8 million miles without an accident. Used in this manner, the checklist acts as a forcing function (an engineering term) that forces necessary behavior.

In medical practice, the use of checklists can help make sure that people "get the stupid stuff right," thereby avoiding the never errors of wrong patient, wrong operation, wrong surgical site.

The building trades have come to the realization that the complexity of building projects, such as the construction of skyscrapers, exceeds the capacity of a master builder to execute without multiple checklists and frequent communication with all involved parties (chapter 4, The End of the Master Builder). As a technogeek, I yearn to see the control room Dr. Gawande describes, the three-dimensional drawings of the plumbing pipes, and the heating/ventilation/air conditioning and electrical systems, and to witness the computer-based coordination of the procurement and timely delivery of voluminous materials necessary for the complex services of the various trades as they erect large structures. As a surgeon, I empathize with the master builder. Dr. Gawande shows us that checklists, together with a team approach rich in communication between the trades, is mandated by the complexity of these projects to get them done right. He has set the stage for application checklists in a medical professional environment rich in communication.

Next, Dr. Gawande takes us on a tour of small things that have made big differences in health care around the world in chapter 5, The First Try. "Surgery has, essentially, four big killers wherever it is done in the world: infection, bleeding, unsafe anesthesia, and what can only be called the unexpected. For the first three, science and experience have given us some straightforward and valuable preventive measures we (healthcare providers) think we consistently follow but don't." Infection, bleeding, and unsafe anesthesia are situations that provide the opportunity for the checklist to be of value. The use of checklists and purposeful pauses empowers the nonphysicians in the operating room to communicate freely. He explains that pause points, as they are called in aviation, are mandatory times at which the team must stop to run through a set of checks before proceeding. Checklist creation and implementation are daunting tasks for healthcare providers worldwide, and "good checklists … are efficient, to the point, and easy to use even in the most difficult situations. … Good checklists are, above all, practical."

As we all know, change in medicine does not come easily or quickly, especially when it involves a major cultural change as well, *i.e.*, a shift in authority from the surgeon centric culture to a spreading-out of the responsibility for critical elements in the patient's care. Dr. Gawande, his colleagues, and the World Health Association initiated their testing and implementation of checklists designed to catch at least the stupid stuff in 2008. By 2009, the word was out regarding the value of checklists.[1] But the jury is still out on whether the culture of medicine can seize the full opportunity of benefit to patient care afforded by the creation, customization, universal utilization, and collateral communication and staff empowerment benefits of the checklist mentality.

Speaking of forcing functions, the publication of this checklist as a manifesto for the masses will surely put public pressure on all medical professionals to get their act together by genuinely and universally adopting safety checklists. The demands of patients may accelerate favorable change in the safety of health care delivery in less than the one or two decades that it usually takes to incorporate major change into the culture of health care delivery.

Richard M. Vazquez, M.D., F.A.C.S., R.V.T., R.P.V.I., The Feinberg School of Medicine, Northwestern University, Chicago, Illinois. drv@veincare.com

Reference

1. Haynes AB, Weiser TG, Berry WR, Lipsitz SR, Breizat AH, Dellinger EP, Herbosa T, Joseph S, Kibatala PL, Lapitan MC, Merry AF, Moorthy K, Reznick RK, Taylor B, Gawande AA, Safe Surgery Saves Lives Study Group: A surgical safety checklist to reduce morbidity and mortality in a global population. N Engl J Med 2009; 360:491–9

(Accepted for publication August 29, 2011.)