

# Review: 'The Digital Doctor' by Robert Wachter Weighs Medicine's Technological Transformation

May 25, 2015 By ABIGAIL ZUGER, M.D.

Janus was the Roman god of doorways and beginnings, the one depicted in sculpture with two faces on a single head. An elderly face gazes backward. (Fondly? Bitterly? Regretfully? Who knows.) A youthful face looks forward, presumably with resolution and hope.

Janus is the god of medicine these days, and it is the great strength of Dr. Robert Wachter's eloquent new book (excerpt) that it has captured every one of these conflicting emotions, all powerfully felt and intelligently analyzed.

"The Digital Doctor" is one of several books over the last few years to address the conquest of medicine by digital technology. X-rays on film, handwritten charts, paper prescriptions, stethoscopes — the familiar tools are disappearing fast as time-honored routines are replaced by digital and virtual alternatives.

Most previous authors have chosen sides, either mourning the old or hailing the new. Dr. Wachter is unusual for his equipoise. He is old enough to remember the way things used to work (or fail to work), young enough to be reasonably technology friendly. A professor of medicine at the University of California, San Francisco, and a past executive for several prominent national medical associations, he still treks around the hospital seeing patients with the resident foot soldiers. He is also an exceptionally good, fluent writer.

The narrative spins off a single anecdote: Two years ago, Dr. Wachter's top-tier hospital was humming along with an expensive electronic system full of safeguards against every possible form of error, when a gigantic error occurred. A teenager on the pediatric ward received a huge overdose of a common antibiotic.

The disaster would never have happened in an old analog hospital, and Dr. Wachter meticulously probes the digital details that enabled it. He interviews the doctor who unintentionally clicked out an order for 38½ pills instead of one, the pharmacist who signed off on the ridiculous dose (packaged in 39 separate plastic envelopes), the nurse who meticulously opened every envelope, and the perfectly cognizant patient who obediently swallowed them.

What could have made them all collude in such a catastrophe? Pretty much every highly celebrated feature of electronic medicine did damage. Some were relatively minor and remediable problems like the software involved, which featured tiny type on a busy screen, defaulted to the wrong unit of measurement, and forced the prescriber to choose among various drug options with no ability to construct an order from scratch.

Some, though, were bigger issues. The system did, in fact, alert the hospital staff again and again that an error was being made. But that is what these systems do, again and again, with red exclamation points on the screens and that iconic "beep! beep! beep!" hospital soundtrack.

Most of the time these panicky alerts mean absolutely nothing: Alert fatigue descends quickly, and everyone learns to tune out the warnings.

The other big problem behind the overdose was more cultural, and even harder to solve. In a setting in which all exchanges are digital, informal chat ("Do you believe the dose they just ordered?") tends to vanish. Instead, everyone sits at an individual monitor, immersed in an individual digital world, tuning out the beeps.

Further, everyone takes it on faith that the computers know what they are doing. "Humans have a bias toward trusting the computers," Dr. Wachter writes, "often more than they trust other humans, including themselves."

To explore these separate threads, Dr. Wachter traces each to its source, interviewing the medical technophiles who are creating digital medicine, the health policy enthusiasts who are nurturing it with funds from the Affordable Care Act, and the practitioners who are valiantly trying to make it work.

The journey finds him everywhere from the IBM labs, home of artificial medical intelligence, to a primary care practice in Dubuque, Iowa, to the cockpit of a 777 simulator — aviation continues to far outdistance health care when it comes to safety.

He is intrigued, but not completely convinced. Back in the corridors of his own hospital, he longs for the days when X-ray interpretations involved discussions with learned colleagues rather than the quick check of a screen.

Dr. Wachter's mood is all over the place: He is hopeful, doubtful, hopeful again. He concludes with the very reasonable epiphany that digitalized health care, still in its very early days, may someday be the success we have dreamt of, rather than the mess we have created.

Eventually, he writes, computers should become servants rather than masters, and do enough of the busywork so that doctors may actually "return to the fundamental work of medicine: diagnosing, treating, comforting, teaching, and discovering."

In the meantime, though, digital doctors are condemned to ride the bucking broncos of suboptimal, intractable systems, still theoretically in charge but no longer entirely in control.

A fine example of this untenable position can be found in the reason that the patient in Dr. Wachter's hospital, who survived the overdose with no lasting damage, should have gulped down handful after handful of pills, far more than he had ever taken.

A reasonably health-savvy teenager with a complicated chronic illness, he was well versed in hospitals and medications, and should have known better. It turns out there were two reasons he didn't. First, his mother had warned him he'd be getting "a lot" of medicine. He had always trusted his mother. And second, of course, he had always trusted his doctors, too.