

# Quality Progress

September 2003 • [Table of Contents](#)

HEALTHCARE QUALITY

## ***Healthcare's Need For Revolutionary Change***

by Martin D. Merry, M.D.

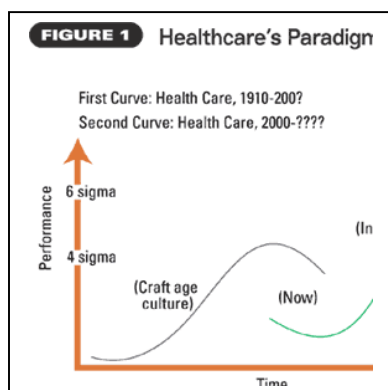
### **In 50 Words Or Less**

- U.S. healthcare is currently locked in a craftperson model rooted in the 18th century.
- The 20th century brought wonderful technical capability and innovation that now has created complexity, fragmentation and the ability to harm.
- Improvement demands a paradigm shift to a patient centered system of care.

Thomas Kuhn's *The Structure of Scientific Revolutions*<sup>1</sup> first brought to widespread attention the notion of paradigm shift--a change in thinking, structures and processes so radical as to make before and after appear to have little, if any, relationship to one another.

Ian Morrison's *The Second Curve: Managing the Velocity of Change*<sup>2</sup> picks up on this concept of sudden transformation, offering a compelling metaphor for contrasting 20th century healthcare (the first curve) with an entirely new, second curve healthcare paradigm that is now in its infancy.

A key element of a true shift of paradigms is the change from before to after isn't linear or incremental. A sudden shift of assumptions and beliefs giving birth to the second curve dictates it will not be a simple transition or evolution, but instead a discontinuous, dramatic reforming likely to be experienced as revolutionary.



As such, it is likely to be experienced as traumatic to those caught between the death of the old and the viability of the new paradigm. [Figure 1](#) represents how such a shift might appear for healthcare.

### **The First Curve**

For purposes of this article, healthcare's first curve might be dated to 1910, the year Abraham Flexner published his now famous report on the state of American medical education. His report almost single-handedly rid America of diploma mill medical education in favor of the academic medical education

model established by William Osler and colleagues at Johns Hopkins University in the late 19th century.

The Flexner Report ushered in a truly glorious blossoming of the technical capability of American healthcare. The 20th century witnessed a marvelous series of medical and surgical innovations that have vastly increased our ability to cure or relieve.

### **Paralytic Complexity**

But this marvelous technological accomplishment of American healthcare has brought with it a nearly overwhelming complexity, fragmentation and, as the Institute of Medicine has starkly demonstrated, the ability not just to cure, but also to harm.<sup>3</sup>

As the millennium emerges, it is increasingly evident the development of modern healthcare has left out a now obviously vital component: a systems infrastructure that can support complexity that now borders on being paralytic.

Healthcare is now a \$1.5 trillion industry--the largest of our society--built essentially around a craft model still rooted not in the 20th or even the 19th century, but in the 18th.

That means we have this enormously complex system still largely formed on a preindustrial revolution craft model: Train the craftspersons (physicians, nurses and so on), license them, supply them with resources, then let them alone as they care for patients. This model--leaving much of the design of actual patient care up to the craftspeople--arguably worked, probably up until the mid-20th century.

Medicine was then still quite limited in its capability, care was defined by individual encounters between patients and clinicians, and costs were both moderate and covered by affordable health insurance. But we are now paying a huge price for having isolated medical and nursing practice from the management of resources. In particular we must now devote massive creative resources to thoughtfully and comprehensively designing the physical and information infrastructures that are now absolutely essential.

Until this conscious redesign is under way, we and those we serve will continue to suffer the pain of healthcare's first curve death agony, and we will be blocked from the promise of healthcare's nascent second curve.

### **Assumptions and Beliefs**

True to a genuine paradigm shift, the move from first to second curve will not be continuous. What does this really mean? It signifies an entirely different set of assumptions and beliefs distinguishing the second curve from the first.

[Table 1](#) (p. 34) is a work in progress sampling some of these assumptions and beliefs. We cannot yet fully visualize what even an adolescent second curve will look like, to say nothing of a fully mature one.

But I also believe by beginning to place our problem solving and systems innovation in the context of second curve assumptions and beliefs, we will begin to create a more coherent early vision of a future, mature second curve healthcare system. By applying such thinking to our actions, we might begin pieces of healthcare's second curve, pieces that will someday coalesce into a recognizable whole.

**TABLE 1** Key Assumptions and Beliefs

First curve preindustrial age	Second curve postinformation age
1. Believes quality capability of 2 to 4 sigma is satisfactory.	1. Believes quality capability of 5 to 6 sigma is essential.
2. Organized around needs of providers.	2. Designed around needs of those served, including those of all caregivers.
3. Asks community to come to provider.	3. Providers reach out to where community lives.
4. Reacts only to individual (a diabetic, for example), relatively blind to needs of population (diabetics, for example).	4. Plans for population, reduces need for individual care but retains ability to respond to needs of the individual.
5. Providers define quality in terms of morbidity and mortality and resist publication of actual data because "our patients are different."	5. Users add to definition of quality, including satisfaction with service, functionality and value, insist on information to choose, using appropriately case mix adjusted information.
6. Conceives quality capability almost solely in terms of professional skills, with virtual blindness to importance of support systems.	6. Understands that carefully designed quality infrastructure is absolutely essential to reduce risk and optimize skills of professionals.
7. Assumption: "First, do no harm." Provider intentions impeccable.	7. Assumption: Humans are inherently fallible, and harm occurs despite providers' best intentions.
8. Reality: Human error generates harm, with threat of punishment as a deterrent.	8. Reality: System is error tolerant, accepting human error as inevitable. Designs error proofing.
9. Complexity makes it easy to do things wrong, hard to do things right (Institute of Medicine).	9. Well-designed latent workplace conditions make it easy to do things right and hard to do things wrong.
10. Solution to problems translates to retraining or censuring professionals and provider institutions.	10. Solution to problems translates to redesigning systems to become more error tolerant and human supportive.
11. Ultimate definition of quality endlessly debated, thus avoiding adequate measurement, management and improvement.	11. Consensus exists regarding a variety of key measures, including access to care, clinical outcomes, functionality, satisfaction and value received.
12. System is fragmented. Patient fends for her or himself, moving from silo to silo.	12. System is seamless. Coordinates needs of complex patients, using case managers for those that are especially difficult.
13. Medical record is fragmented and idiosyncratic to particular silo. Individual caregivers work off entirely unconnected, often contradictory scripts.	13. Medical record is electronic and instantly updated and available for all relevant caregivers; all caregivers read from precisely the same script.
14. Information is centralized and hierarchical. Physician is supreme source of knowledge and dictator of therapy.	14. Information is dispersed. All caregivers and patients have direct access. Physician is integrator and facilitator of choices.
15. Insurance is monolithic, not enrollee sensitive, with perhaps a few choices for individuals.	15. Insurance is mass customized. Web based options are chosen by individuals based on specific needs.
16. Billing and payment systems are arcane, confusing and virtually impossible to understand.	16. Coverage and co-payments are clear, web facilitated and easy to navigate.
17. Payment system is blind to quality and value, and rewards volume, even that generated by poor quality and error.	17. Payment system is fine-tuned to value, and rewards superior performance as defined by value equation ( $V = Q/S$ ).
18. Huge resources are consumed in reimbursing inefficient systems, human error, litigation and cost-plus models.	18. Huge resources are freed up for innovation and quality improvement, with cost plus, value blind reimbursement a distant memory.
19. Healthcare is an isolated, quirky, high-tech, organizationally primitive industry, a throwback to pre-18th century human organizational development.	19. Healthcare is a vibrant participant in the best that learnings from the industrial and information revolution can offer.
20. Crashes are common, and medical error death and injury headlines are regular, predictable occurrences.	20. Crashes are rare, with medical error death equivalent to airline performance.
21. As of 2003, trust in the system increasingly shaky and falling.	21. As of ????, trust in the system is high and rising.
22. Extremely high, probably incalculable cost of poor quality exists.	22. Minimal cost of poor quality exists.

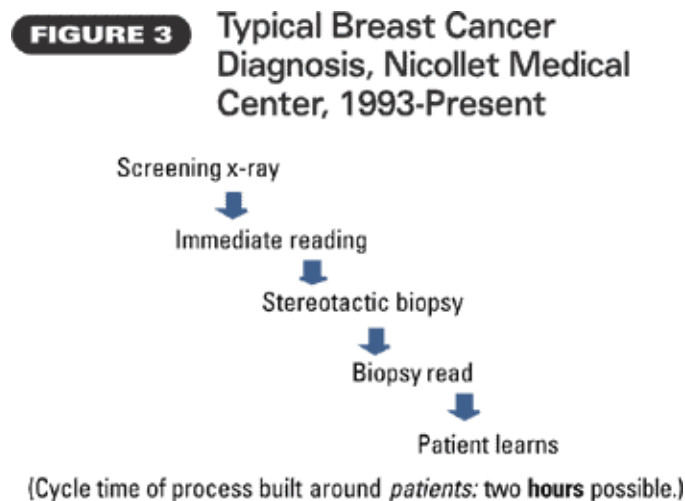
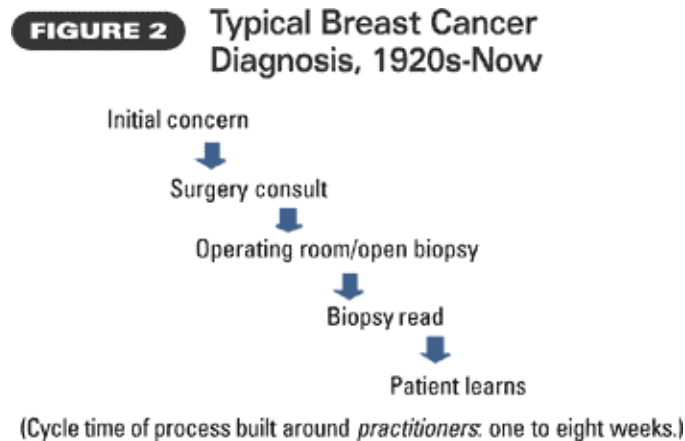
We are in desperate need of leaders who can begin thinking in terms of first and second curve. We will need to bring the best values of the first curve along, even as we design new systems with second curve assumptions and beliefs.

Measuring new ideas and efforts against the beliefs and assumptions for the curves will help. Is our effort truly innovative, truly consistent with second curve assumptions and beliefs, or are we trying to tinker marginally with ideas based on

first curve assumptions? Are we truly creating the future, or are we continuing to rearrange the deck chairs of the first curve's Titanic?

### A Glimpse at the Second Curve

Glimpses of second curve healthcare are out there. We must become alert to them, replicate them where possible and learn from them always. Figures 2 and 3 represent concrete examples of first and second curve thinking, design and, ultimately, systems.



[Figure 2](#) is how I practiced medicine in the 1970s--and how it was practiced in the 1920s and is practiced in most places in the United States today. It is a system built around the needs of physicians. It asks an anxious woman with possible breast cancer to go from doctor to doctor, place to place, healthcare silo to healthcare silo before she learns whether or not she has cancer.

The process depicted in [Figure 2](#) can consume anywhere from a few days to more than one month in some locations. When I was in the clinical practice of internal medicine, I had no idea how long this process took to complete. The thought of how long my patient was in transit among my colleagues never crossed my mind. Our job was to diagnose and treat--not to create patient centered systems of care that maximally attended to our patients' broader, human needs.

At least we've made progress. More patient centered approaches are teaching us to ask the right questions. And we now have data based on such thinking.

Let's turn now to this same process designed from the perspective of second curve thinking. [Figure 3](#) represents how the Park Nicollet Medical Center, a Midwest multispecialty group practice, dealt with this sleepless-night issue for its patients--in 1993!

It is not simply a process, like [Figure 2](#). [Figure 3](#) represents a thoughtfully conceived and interlinked system. Furthermore, it is a system carefully designed around the patient--with the dual goals of clinical excellence all caregivers seek and maximum ease of use and comfort for patients.

By carefully designing and coordinating all elements from beginning to end, this true system allows a woman to move from mammogram to definitive diagnosis not in time frames of days or weeks--but in two hours.

The examples in [Figures 2](#) and [3](#) allow us just one small glimpse of healthcare's second curve. Albert Einstein once suggested we cannot create solutions for today's problems if we remain embedded in the thinking that generated them. He was talking about paradigms. First curve assumptions and beliefs are now so deeply embedded in our present healthcare system and its resident culture that we are largely unconscious of them. While the first curve brought wonderful progress in healthcare's ability to cure, its now staggering complexity and fragmentation are bringing far too much pain to virtually all stakeholders.

First curve culture is healthcare's seemingly inextricable problem. Much as so many physicians and nurses--in fact, all healthcare people--long to break free of the constraints our first curve now imposes, the culture that emanates from this first curve continues to entrap them via many assumptions that no longer can sustain the complexity and promise of modern healthcare's capability.

We all want to do something to alleviate this pain, and we are in need of far more collaborative approaches as we pursue second curve systems innovation. Those wanting to change the healthcare system need to ask the following questions:

- As much as I want to help, does my thinking still trap me into tweaking failed first curve processes?
- Am I able to examine deeply and question my own assumptions and beliefs?
- Is the veil that still shrouds healthcare's second curve beginning to lift for me?
- Am I willing to explore with others and truly engage the building of an American healthcare second curve that might be even more spectacular in its ability to serve all stakeholders than the first?

## What the Future Holds

The Robert Wood Johnson Foundation, following a national survey of quality initiatives, recently said there is no Toyota in healthcare. What this foundation meant is that no healthcare organization has yet developed a comprehensive approach to world-class quality that quality pioneers and achievers such as Toyota and their firms outside healthcare have achieved.

As the Park Nicollet example in [Figure 3](#) illustrates, healthcare can boast many fine initiatives in specific areas, such as breast diagnosis. In the SSM Health System in St. Louis it now even boasts a Malcolm Baldrige National Quality Award winner. But the industry as a whole is only beginning its journey toward institutional six sigma--that is near perfection on such important measures as those relating to patient harm.

The bad news is that due to healthcare's present lack of adequate quality and safety infrastructure, patient harm will continue for the foreseeable future--as illustrated by the recent nationally publicized example of a heart-lung transplant catastrophe caused by a failure of so mundane a process as blood type matching at a deservedly famous medical center.

The good news is that healthcare's second curve toward six sigma quality is well under way. The opportunity is for all healthcare organizations to embrace this second curve--to pursue quality science to its fullest potential.

A fully mature second curve healthcare system will be better than we can presently imagine--as measured by the balanced scorecard of clinical outcomes, patient satisfaction and financial performance. As difficult as are the challenges our industry now faces, the best in healthcare is yet to come.

## REFERENCES

1. Thomas Kuhn, *The Structure of Scientific Revolutions*, third edition, University of Chicago Press, 1996.
2. Ian Morrison, *The Second Curve: Managing the Velocity of Change*, Diane Publishing, 1996.
3. Institute of Medicine, "To Err Is Human: Building a Safer Health System," [http://nap.edu/catalog/9738.html?onpi\\_newsdoc121499](http://nap.edu/catalog/9738.html?onpi_newsdoc121499).

**MARTIN D. MERRY, M.D.**, is a clinician, educator and medical organization improvement consultant. He is also associate clinical professor of health management and policy at the University of New Hampshire. Dr. Merry earned his doctorate in medicine from McGill University in Montreal. He is a member of ASQ.