

CHAPTER 1

An Open Letter to Healthcare Leaders

WHEN I FIRST began consulting in 1999, after retiring with 21 years at Boeing and another 20 as an Army officer during the Cold War and Vietnam War, I was warned by consulting veterans to avoid three areas: government, education, and healthcare. Because these areas were so inwardly focused, they said, large-scale change would be a “nightmare.” Furthermore, they added, “Healthcare as an industry is probably the least capable of changing because of its cottage-like structure” (i.e., fragmented among many independent medical providers and facilities).

So, as I began my consulting work helping organizations successfully and profitably apply the Toyota Production System (TPS) model—often called “Lean production” or just “Lean”—to their own operations, I avoided these three areas. As fate would have it, however, I happened to sit next to a farsighted healthcare president on a plane headed for Atlanta in October 2000. He became a captive audience as I presented my laptop PowerPoint® presentation on Lean. He shared his enthusiasm with his boss, and he and I eventually got together and started Lean operations at Virginia Mason Medical Center (VMMC) in Seattle, Washington. Soon I was “knee deep” in healthcare consulting thanks to the healthcare president on that historic flight, Mike Rona, and his perceptive and visionary boss,

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Lean production: “Lean production,” based on the Toyota Production System, is a term applied to the production methods pioneered in Japan after World War II by Kiichiro Toyoda and Taiichi Ohno of the Toyota Motor Corporation. Lean is a production strategy in which all parts of the production system are focused to eliminate waste while continuously increasing the percentage of value-added work. The term was coined by John Krafcik of the International Motor Vehicle Program at Massachusetts Institute of Technology. It was first published in the book *The Machine that Changed the World: The Story of Lean Production* by James P. Womack, Daniel T. Jones, and Daniel Roos (1991).

Virginia Mason’s chief executive officer (CEO), Dr. Gary Kaplan.

What has my experience shown me? First, healthcare organizations are indeed resistant to change, but no more so than many other organizations (especially if the CEO commits to the change). For example, surgeons are no more (or less) resistant to change than aerospace engineers. Second, Lean thinking (cutting waste by half over and over again) is applicable to any organization—and can pay off big for the healthcare industry in particular.

DRAMATIC IMPROVEMENTS IN HEALTHCARE ARE POSSIBLE!

I’m writing this book for you, the healthcare leader. I’m writing it because our healthcare system needs an overhaul and

because I know you would like to improve your own operations— increase patient and staff satisfaction; cut waste, clutter, and confusion; eliminate defects (errors); lower costs; raise profitability; and more.

My main message to you is that dramatic improvements in healthcare are not only possible, but inevitable—if you commit to change and diligently apply Lean thinking, principles, and tools. The real-life examples and case studies in these pages will demonstrate that. To pique your interest, here are some of the benefits the Virginia Mason Hyperbaric Clinic has gained since starting its “model line” (Lean implementation in one part of an organization) in 2005 (Kaplan and Rona 2006):

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- Staff workday length has shortened from up to 14 hours to 8 hours, a 42 percent reduction. A second shift is no longer needed.
- Number of patients per attendant in the hyperbaric chambers has increased from an average of 2.4 in the old facility to 5.4 in the new one.
- Treatment hours are up 18 percent.
- Patient wait times have basically disappeared.
- Emergencies are treated simultaneously with routine treatments.
- Ergonomic complaints have been eliminated.
- Transportation by ambulance from the main hospital to the previous facility across the street was eliminated, saving \$50,000 a year.
- Margins per patient are up 308 percent.

You'll learn more about this remarkable success story in Chapter 10, but I'll bet you'd like to achieve results like these in your organization. This book is dedicated to helping you do it.

NOT FOR THE FAINT OF HEART

I must advise you from the start, however, that the journey to becoming a world-class healthcare organization isn't quick or easy, or for the impatient or faint of heart. As I have always told my clients, "If you are going uphill and taking one step at a time, you are headed in the right direction." This is not to say that you cannot achieve some quick results within parts of your organization.

It's only to point out that implementing large-scale, synchronistic change within the entire organization takes time because, although you may not realize it, you're deep in *muda* (a word the Japanese use to describe waste, meaning any activity, service, or supply that consumes time, money, and other resources, but creates no value).

Muda: Waste, meaning any activity, service, or supply that consumes time, money, and other resources, but creates no value

Toyota has been engaged in its change effort for decades and hasn't run short of improvement ideas yet. The relentless pursuit

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Kaizen: Continuous incremental improvement

of continuous incremental improvement is called *kaizen* in Japanese, and it is essential not only to achieving world-class operational performance, but to staying ahead of the competition as well.

PEOPLE ARE KEY

Another important thing to keep in mind is that while technology may sometimes play an important role, the key to success will be your *people*. Organizations often leverage this resource least effectively. The principles I've outlined above are aimed at gaining the greatest possible return from the skills and ideas of the people who do the work. They are the experts who can identify improvement opportunities and they comprise the creative powerhouse necessary for success. So if you think your organization can achieve the kind of results I've indicated by sitting back and hoping consultants will lead and do the work, think again. Both you and your people must be committed and deeply involved—especially you, the healthcare leader.

Perhaps you're still asking yourself, "How can a manufacturing model apply to healthcare? Patients aren't products put together on an assembly line." That's certainly true and is a perspective you should never forget. Indeed, patients aren't the products—they're the *customers*. Speaking broadly, there's just one product you're trying to provide—*high-quality, defect-free healthcare*. Fortunately, healthcare is susceptible to the same improvement methods as other products or services—providing healthcare is no different, as you will learn, from building cars or airplanes.

THREE GREAT REASONS TO IMPROVE

If becoming a world-class organization isn't enough of a stimulus to get you to embrace Lean, then let me offer three more reasons:

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1. *Patients deserve better.* At present, most healthcare delivery is plagued by excessive waiting and other non-value-added time spent by, and paid for by, patients (or their insurers). The patient should only pay for *value-added* activities and time rather than receiving a bill for services that contain as much as *95 percent* non-value-added activities or time. Offering patients an efficient, smooth-flowing, defect-free, and hassle-free experience respectful of their time means greater patient satisfaction and a competitive advantage in the healthcare marketplace.

Additionally, delayed care tends to be *poor* care. A longer hospital stay, extra waiting time for diagnosis or treatment, or additional procedure time in surgery, for example, correlates with increased rates of infection and other errors. Reducing wasted time, a key Lean strategy, also means reducing the number of handoffs when mistakes are more likely to occur.
2. *Employees deserve better.* There's a direct correlation between high employee satisfaction/morale and productivity. Healthcare employees who work in environments with high percentages of non-value-added activity or idle time grow frustrated, stressed, and angry, especially when they feel the system is broken and not being fixed. Happy workers are much more likely to provide high levels of patient satisfaction than unhappy ones. The employees at Toyota are satisfied, enthusiastic, and highly motivated because they work in a system that rewards problem solving and continuous improvement. Can we say the same about the average healthcare worker?
3. *Our nation deserves better.* The cost of healthcare in the United States is becoming increasingly unaffordable for a growing number of citizens, and is rendering American businesses less competitive in the global marketplace.

Unfortunately, the cost is projected to reach 20 percent of the entire U.S. economy by 2014 (National Coalition on Health Care 2007). Economists say increases like this are not sustainable. However, if the healthcare industry as a whole were to adopt proven concepts of Lean operations to reduce wasted

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patient and staff time, as well as other resources, thereby creating new capacity, it could spread costs over greater patient volumes and reduce per-patient costs.

But this book isn't about helping you improve the entire U.S. healthcare system. It's about helping you improve your own organization. Hopefully, the kinds of improvements I've indicated that are available through Lean are ones you'd like to achieve. You're probably wondering exactly what implementing Lean entails. What are the elements? How does one apply them?

THREE ESSENTIALS FOR SUCCESS

That's what the rest of the book is about. You can think of the book as a tutorial on applying these methods to your operations. However, I need to stress three things at this point:

1. You have to commit to personally lead the charge and the change (otherwise it won't happen).
2. A master *sensei* (Japanese for a personal trainer with the mastery of a body of knowledge, in this case Lean production) is almost essential to guide you through the improvement process (your typical American-oriented consulting process wrapped around organizational development or Six Sigma principles will not work).
3. You must be willing to commit to a long-term "slog" through the swamp of waste and defects that lies hidden beneath the surface of your daily operations.

Sensei: Personal trainer with the mastery of a body of knowledge, in this case Lean production

Without an understanding that real change is hard and takes time and commitment, your improvement effort will not survive the first year.

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LEAN PRODUCTION

Now, let me briefly explain what I mean by Lean Production, or simply Lean, which is based upon the Toyota Production System.

Lean basically focuses on driving waste from the system. You'll learn more in Chapter 2 about the seven kinds of waste, but two obvious ones are *waste of time* and *waste of inventory*. What Lean continually asks is whether a product or service is *value-added*. If not, it is waste. One of Lean's goals is to reduce by half such costs as time spent performing a task, space requirements, and investment in tools—and then repeat this again and again. Gains may become smaller and smaller, but the organization gets closer and closer to *world class*, which we will define as *waste free*.

Although Lean has many elements, its two main pillars are:

1. Just-in-time production: consistently delivering only the healthcare service that is needed, in just the required amount, where it is needed, and when it is needed.
2. *Jidoka*: the intelligent use of both people and technology, with the ability (even obligation) to stop any process at the first sign of an abnormality; in other words, a system that keeps the patient safe, not that gets them harmed or killed.

THE SEVEN HEALTHCARE FLOWS

You'll learn more about the application of these principles to healthcare as we proceed through the book. You'll also see how they relate to the seven flows in a healthcare environment. The seven flows are:

1. Flow of patients,
2. Flow of clinicians,
3. Flow of medication,
4. Flow of supplies,

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5. Flow of information,
6. Flow of equipment, and
7. Flow of process engineering.

These flows are described in detail in Chapter 7. Suffice it to say for now that *flow* is a very important concept in Lean production. “Toyota’s system is primarily about flow—information flow, physical flow of parts, overall production flow—via standardized processes and continuous improvement” (Bohmer and Ferlins 2006). The idea is to eliminate delays and obstacles along the line of production or, in the case of healthcare, in delivering a service.

Efficient flow minimizes *lead time*, or the total time a customer (patient) must wait to receive a product (or service) after placing an order (requesting a service). The more lead time is compressed, the more efficient the use of resources and the more satisfied the customer. As you’ll see later, one way to reduce lead time is for the

Pull production: System where parts, supplies, information, and services are pulled by internal and external customers exactly when they are needed

patient to “pull” himself through the system (go at his own pace without being “pushed” by staff, known as “pull production”). Through the application of Lean, Virginia Mason was able to reduce overall patient lead time by 53 percent, or the equivalent of 708 days of patient time (Bohmer and Ferlins 2006).

FACING REAL CHANGE CAN BE INTIMIDATING

If what I’ve said so far seems both daunting and strange to you, don’t worry. Real change usually appears that way. That’s why it’s often avoided, even when needed.

Remember, though, that knowledgeable people are available to help (see the Afterword) and also that the process proceeds one step at a time. The most critical factor in success is your commitment and

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personal stewardship of the process as the healthcare leader, because successful, large-scale improvement efforts such as those I've been discussing always occur from the *top down*. The first step is a change in *mind-set*. It's believing that dramatic improvement is possible and that you can lead the change. I have always maintained—as Bill Conway, CEO of Conway Quality, used to tell us at Boeing—that “If you have the will, the belief, and the wherewithal, then you can do it.”

If you're still with me, let's get started.

CHAPTER TAKEAWAYS

- Healthcare organizations are no more resistant to change than other organizations.
- Lean thinking (cutting waste by half over and over again) is applicable to any organization.
- Dramatic improvements in healthcare are possible with Lean.
- The journey is not for the impatient or faint of heart. Real change is hard and takes time and commitment.
- The relentless pursuit of continuous incremental improvement (*kaizen*) is essential to achieving world-class operational performance.
- The assistance of a Japanese master *sensei* (teacher) or a consultant trained by a *sensei* is recommended.
- People are your most important resource.

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