LEAN HOSPITALS

Improving Quality, Patient Safety, and Employee Engagement

Third Edition

Preface

This is a book I feel privileged and honored to write (and update), as it would have been hard to imagine my career would bring me into healthcare after a decade of working in the manufacturing world. My undergraduate education was in industrial engineering, which was always focused on factory production and business issues. In some eerie foreshadowing, my senior group project at Northwestern University was done at a local blood banking and distribution operation, something that seemed like a poor fit for a "manufacturing guy" at the time. Little did I know I would run across blood banks again about 10 years down the road. When I got started in healthcare in 2005, I also didn't know that I'd then spend another 10 years (and counting) working with people to help improve healthcare.

Back in 2005, and even when the first edition of this book was published in 2008, the vast majority of healthcare leaders and professionals didn't know about Lean or were barely aware of it. Conversations in those years were often about convincing people that Lean could work in healthcare. Ten years later, awareness about Lean is much higher, to the point where there are some risks created by Lean being trendy. The risk is that Lean is just a superficially understood buzzword instead of being something that people are studying deeply and putting into practice through structured experiments and reflection. Lean is powerful, but it's not a quick fix or an easy answer for what ails healthcare. There have been many success stories, answering the question of "will Lean work in healthcare?" The key question now is "how do we help as many organizations as possible be successful with Lean?"

My own personal story somewhat parallels the movement of Lean thinking and practices across industries. How did I get to this point, transitioning from manufacturing into healthcare? I hope you'll indulge me in a bit of autobiography, as I hope you might see parallels in your own organizations and career.

After growing up near Detroit, Michigan, I was somewhat skeptical of career paths in the automotive industry, but I took a job with a General Motors plant that said (during college recruiting) it managed under the Deming philosophy. That was a real attraction for me, as I had been exposed to Dr. W. Edwards Deming by my father, and I might have been the only college kid to read Deming's *Out of the Crisis* over a winter vacation for fun. Unfortunately (and ironically), the Deming philosophy was really just a sign hanging on the wall, as the plant management operated under the very traditional auto industry management approach—far from Toyota ideals (which were influenced heavily by Deming).

So there I was, a 21-year-old engineer, working in an environment in which managers yelled and intimidated; employees were not listened to, as they were the source of the problems (being unfairly labeled as "lazy" or "careless") in the eyes of management. I was first introduced to the sad command of "check your brain at the door," as many workers claimed to have been literally told this. Most employees cared about quality and had pride in their work, building premium Cadillac

engines, but management wanted them to keep the line running at all costs. Production quantity trumped quality, and both results suffered under that old management system.

From this experience, I learned that the problems at the plant were not the fault of the workers; it was a management system problem. It was not even that the individual managers were bad people; the problems were in the system they were taught and the expectations they were given. Seeing so many disgruntled employees created a deep empathy in me for those who are mistreated in the workplace, any workplace. Our results in quality, cost, and productivity were lousy, and nobody was sure if our plant had much more than a few years left to live. This old way of managing was not doing much good.

While I had gained some awareness and basic knowledge about Toyota and Deming in college, I learned firsthand from some incredible mentors I had at General Motors. These experts took me under their wing and used the plant, full of its problems and waste, as a teaching opportunity. We observed the process, seeing lots of waste, and talked to the people working in it. My mentors talked about how things should be, and we tried implementing small improvements, but the overall environment was still pretty unwelcoming to any major change.

While the prevailing management method and results left a lot to be desired, our plant manager was finally replaced—as it was more likely the poor results, not the outdated management method that did him in. Our new plant manager, Larry Spiegel, was an outstanding leader who was one of the first General Motors managers to be trained in the Toyota Production System at New United Motor Manufacturing Inc., the General Motors-Toyota joint venture plant in California. You can hear him speak a bit in the "This American Life" radio episode titled "NUMMI" if you search for it online—it's a great listen.

The new plant manager spent much of the time over the first few months just walking and looking through the factory, often alone, stopping to talk with employees. He wanted to see problems firsthand and make sure the employees knew he knew what the problems were. Spiegel stood in front of the entire plant, all 800 employees, and told them the problems were not their fault—it was the management system. The management system was going to change, and everyone, if they participated, would see better results. The old blaming and finger pointing behaviors were ending—slowly.

With the new leadership and the rejuvenated Lean coaches, we conducted a lot of training and started implementing many improvements with the production workers. The plant, over the course of just a few years, went from being the worst auto plant in the United States (or so the plant manager argued, having data to back his claims) to being in the top quartile of its peer group. It was a great transformation story. But, sadly, the plant was closed in the aftermath of the General Motors bankruptcy. It's a cautionary tale that having great Lean operations and a Lean culture can't always protect people from a bad business model and higher-level problems.

Thanks to the urging of one of my General Motors' mentors, Steve Chong, I left to attend the Leaders for Manufacturing program at the Massachusetts Institute of Technology, where I took some courses on Lean and had a chance to first meet Jim Womack, one of the world's leading Lean gurus. Later, after finishing graduate school, I was working in Phoenix, Arizona, and was part of an informal network called the Valley Lean Council, a group of Lean zealots from different companies who met quarterly to compare notes and tour a facility. One of those tours was a hospital in Scottsdale, Arizona, that was using Lean methods to improve its emergency department. That was my first exposure regarding the applications of engineering to healthcare since my senior project, and it really piqued my interest. Shortly thereafter, my wife had a new job offer in Texas, which put me in the job market.

I was very lucky to then receive a phone call from a Johnson & Johnson recruiter, who was looking to fill a consulting position in the ValuMetrix Services group, a consulting arm with Ortho Clinical Diagnostics, which helped hospitals learn and implement Lean and Six Sigma. By far, the Lean work I have done in hospitals has been the most rewarding, most exciting, and most gratifying work I have ever done. It is not always easy, but anything worthwhile has to be a bit of a challenge.

One thing I was surprised to see, and maybe should not have been surprised by, was that the human dynamics in a hospital can be similar to those in a factory. After all, it is just people being people. Medical technologists said things I remembered production associates saying, that their supervisors did not listen to them and never saw what the problems were. Suggestion boxes had locks, and nobody could find the key. I saw people bandaging the process instead of being able to stop to fix the problem so it would not occur again. I saw people who were stressed out and no longer enjoyed their work. The motivation for improving the management system for the sake of the employees was the same, sometimes sadly so.

What is different, however, is the deep and intense passion for helping patients. I mean no disrespect to the medical community when I point out problems and waste, since our physicians and surgeons do amazing work that saves many lives and improves many more. There are many brilliant people, most of whom are trying their hardest in often heroic fashion—yet the system is broken. We need to get the medical practitioners on board and collaborate with them in Lean, since Lean will support them in being able to spend more time doing what they went to medical school for and less time on the problems and the frustrations. The Lean thinkers and the process improvement specialists cannot do it all themselves, but there is amazing potential to improve the healthcare system in ways that the clinicians and caregivers generally have not been doing. We cannot blame them, as most doctors received as much process improvement training as I received anatomy training, and pharmacists received as much training on inventory management as I received on formulating intravenous solutions. For this to work, we all have to partner up, put our egos aside (if need be), and be willing to admit what we know and what we do not know, figuring out how to combine our knowledge in a way that works.

This book is intended to help answer the question "What is Lean?" for an audience of hospital or healthcare leaders, managers, physicians, and employees. One assumption is that hospital readers know what their problems are and are looking for new ideas and approaches. So, I have tried not to be encyclopedic in my documentation of the problems facing patients and hospitals. Rather, I have tried to capture some particular issues that can be addressed with Lean (while highlighting a few that are somewhat out of scope for Lean).

I have tried, also, to summarize some of the key problems for readers who are new to healthcare, including those who are following my career path of transitioning from manufacturing to healthcare improvement. To those readers, I hope you will find confidence that your methods and experiences can be helpful to hospitals, provided you are respectful of how this environment is different. Hospitals are much more mission based, and profit is not usually a priority (of course, before Lean, many factories seemed to have been run as if profit were not a priority).

This book is also not meant to be a comprehensive "how to" guide, as far as the details of how to implement specific Lean tools. There are many existing books, including the Productivity Press Shopfloor and Operator series of books on topics like 5S, *kanban*, and other Lean tools that can be adapted to hospital settings. The tools are the same; the key is why you use them and what you are working to improve, so that is the focus of this book. In recent years, we have seen the publication of healthcare-specific books on Lean tools, as well as new books that share the broader

In many of the years since the publication of the first edition, I have been fortunate to work with the Lean Enterprise Institute, a non-profit education and research institute. I have been honored to be part of the team that has helped build our Healthcare Value Network, a collaboration of North American hospitals that are committed to improving healthcare using Lean thinking as well as sharing their lessons learned with other members and the broader healthcare world. Many thanks go to Helen Zak and Dr. John Toussaint for their leadership and inspiration and to the entire team for the learning opportunities that I have been able to use to advantage. My gratitude also goes to the groundbreaking leaders in these network organizations, including but not limited to Dr. Jack Billi, the late Dr. Michel Tétreault, Dr. Dean Gruner, Dr. Zeev Neuwirth, Barbara Bouche, Paul Levy, Alice Lee, and Amir Rubin.

I thank my parents, Bob and Marlene Graban, for their love and support—in particular, their support of education throughout my life, from preschool to graduate school, and the sacrifices they made to create opportunities for me along the way.

I also thank my in-laws, Charlie and Debbie Gowder, for sharing their daughter and their love with me. To my wife, Amy, thank you for your love and support, which never end. Beyond our love and friendship, I am always inspired by your drive, intellect, and professional success. I am proud to be your husband, and I am very happy you are my wife. Thanks for being my supporting partner in making this book happen.

Mark Graban