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## **The American Health Care System: A WASTELAND OF OPPORTUNITY**

J. Michael Rona, *Principal, J. Michael Rona Consulting, LLC*

There is no question that miraculous things happen in medicine in the United States every day. But for all of the wonders of medicine, the number one domestic issue for Americans—now widely discussed in the current presidential debates—is health care.

Invariably, this debate centers on the themes of cost, access, and quality and who's to blame for the current state (insurance companies, lawyers, drug makers, the government, etc.). Michael Moore's movie "Sicko" has fanned the flames of this complicated issue and helped to push it to new heights in mainstream consciousness.

But for all the criticisms of health care in the United States, there is nowhere near enough focus on the industry itself and its woefully poor effectiveness at solving the problem. The most common excuse offered by hospitals is a lack of resources, but the real culprit lies in today's health care management paradigm. The truth is plenty of money exists in the health care system to implement all reasonable changes needed. Unquestionably there is money available in more efficient methods of managing health care benefits; easily 10% of total health care costs currently adminis-

tered by the private insurance industry could be liberated through a single payer system. Beyond this, the private purchasers of health care (employers and health plans) could buy more prudently, as does Medicare. But more important is recent data on small-scale

applications of new methods for managing health care delivery systems. Extrapolated nationwide, this data shows there are millions, likely billions, more in dollars available through the elimination of defects and waste in actual health care delivery. In 2003, the senior executives of the Virginia Mason



Medical Center in Seattle, Washington reported early findings on applying the Toyota Production System (TPS) to its health care processes. It reported an average of 50% improvement in access, cost reduction, throughput, waits, and delays. It showed dramatic improvements in defect reduction, safety, and clinical outcomes.

Despite predictions of unsustainability, four years later the results continue to be validated and expanded within Virginia Mason and in several large health care systems in the United States. Today, there are few reputable organizations in health care which are not testing, or at least considering, what Lean could do for them.

This work has shown that quality can be dramatically improved and costs significantly reduced. It has shown that customers and staff can be much happier and that eliminating waste can free vast resources.

**It is not true that there is a scarcity of dollars for health care – the truth is that there is abundance.**

The implications of this work on a broad scale are enormous. In the pursuit of perfect (zero defect) health care, one can improve the quality and safety of the product, improve access, improve customer and staff satisfaction, reduce costs, and improve margins; all without adding resources or additional costs. It is not true that there is a scarcity of dollars for health care – the truth is that there is abundance. What is missing in health care is a widespread shift to this TPS-inspired management paradigm.

In 2000, when I was the President of Virginia Mason, I had the luck of meeting a TPS expert who showed me the wonders of what can happen when processes are perfectly designed to meet the needs of the customer. Toyota's principles, commonly called "The Toyota Way," are based upon two pillars: continuous improvement and respect for people.

Toyota's respect starts with the customer. It is obsessed with the needs and wants of the customer and cannot imagine providing a product that is untested and unsafe. Beyond this, however, Toyota tries to get into the mind of the customer to anticipate what they will need and want. Its respect continues to the workforce. Toyota is committed to making sure that its workers are

## Through its implementation of Best Practices in critical care, Virginia Mason Medical Center:

### Reduced

Ventilator Associated Pneumonia (VAP) by 92%

*This meant 37 less patients contracted this illness, a cost reduction of \$1.5 million and no one dying of complications related to this illness.*

## Through its implementation of Continuous Improvement:

### Increased

procedure room throughput in Gastroenterology by 50% as well as its margins, all without adding additional capacity

### Improved

its claims turnaround time with a major payer by over 60%

### Improved

nurse time at the bedside of the patient from 35% to nearly 90%



well appreciated and that they have the training, skills, equipment, and environment in which to excel. The company relies on its people to constantly improve their work and methods.

At the center of Toyota's DNA is the concept of standard work. It is the discipline of designing and implementing repeatable processes. This concept in particular has massive potential for our industry.

At Virginia Mason and at the Park Nicollet Health Care System in Minneapolis, Minnesota, standard work was initially resisted until it became obvious that it was precisely the lack of standard work that led to errors, defects, waste, poor performance, poor morale, high cost, and customer dissatisfaction. As Virginia Mason adopted the Toyota Production System and systematically trained its leaders and staff, it began to see the dramatic elimination of waste and remarkable improvements in processes. It saw changes that it had never deemed possible (see sidebar) and began its journey to zero defects in all of its processes.

The core issue in health care delivery is not the absence of resources to care for customers. It isn't even the lack of knowledge about what practices would be best. If all the best practices known in American health care were uniformly implemented, quality and safety would soar and costs would drop dramatically. The core issue is leadership and having the courage to shake free of the current health care paradigm and embrace a new concept that is customer driven, employee validated, morally astute, and constantly pushing forward.

In the July-August 2007 Harvard Business Review, Mr. Katsuaki Watanabe, President of Toyota, is interviewed and asked about his vision for Toyota. He replies, "I want Toyota to come up with the dream car – a vehicle that can make the air cleaner than it is, a vehicle that cannot injure people, a vehicle that prevents accidents from happening, a vehicle that can make people healthier the longer they drive it, a vehicle that can excite, entertain and evoke the emotions of its occupants, a vehicle that can drive around the world on

just one tank of gas. In my vision for the future, the most important themes are the environment, energy, safety and evoking emotions and comfort.”

What a remarkable vision...from a man who makes cars. What would that vision look like from a health care leader? Perhaps, “I want to create a health care system that knows so much about its customers that it is more concerned with their health than they are. It will provide perfect health care for patients when they are ill and does all it can to make sure that they become more healthy, even when they do not need it. From birth, the system would “adopt” them, providing a road map for a long and healthy life. I want to provide health care that is affordable to anyone who wishes to have it. I want to make a system in which my workers can excel every day, not worried about making errors nor being exhausted when they go home. I want people

coming to the United States from all over the world to learn how we do things and I want long lists of people who cannot wait to work with us.”

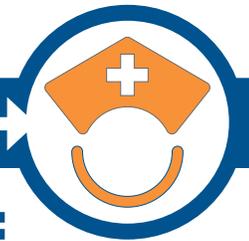
Perhaps this sort of vision will lead us to adopt a management system that works successfully in a wide variety of industries. When Toyota started making cars, they were not very good at it. In fact, they were plagued with problems. Customers often complained about being the testing grounds for Toyota’s unfinished products. By the end of 2007, Toyota is poised to overtake General Motors as the largest vehicle manufacturing company in the world. How have they done it? Watanabe explains, “We just do whatever we believe is right, trying every day to improve every little bit and piece. But when 70 years of very small improvements accumulate, they become a revolution.”

Our health care system is too expensive and offers poor products, making America a testing ground for non-standardized and sometimes deadly practices.

Now is the time for a revolution.

**J. Michael Rona** is a principal with J. Michael Rona Consulting LLC. The firm consults with the health care industry and industries which purchase health care on the application of the Toyota Production System to achieve zero defects and reduce costs.

Before starting his consulting company in 2007, Mr. Rona worked for 26 years at the Virginia Mason Medical Center (VMMC), a \$650 million tertiary health care system in Seattle, Washington. For the last 16 years, Mr. Rona served as President of VMMC. He can be emailed at: [j.michael.rona@gmail.com](mailto:j.michael.rona@gmail.com).



## Improving Quality of Care: TPS at Work in Lawrence and Memorial Hospital

Tim Cavanagh’s job is like that of many lean professionals. Take a business filled with waste and complex processes and make it streamlined, productive, and cost efficient. But unlike many manufacturing plants, the products and services in his environment deal with life and death. Mr. Cavanagh is the Director of Process Innovation for the Lawrence & Memorial Hospital in New London, CT.

In a recent interview with Stiles Associates, he discussed how the principles of TPS translate to a hospital setting and talked about the challenges and rewards of his job.

**Stiles Associates:** You have a background as a manufacturing engineer and your experience spans streamlining shop floors and supply chains to improving administrative processes in government organizations. What were some of your initial challenges in bringing TPS to a health care setting?

**Tim Cavanagh:** The same tools used in manufacturing apply here and likewise the same challenges. In manufacturing, management often does not truly under-

stand the processes and blames production for problems. When you drill down, however, you find those problems have roots not just on the manufacturing floor, but reach out to materials management, design, service – the full life cycle of the product. The same philosophy and tools apply to health care. The manufacturing floor is analogous to each department in the hospital. For example, problems in the Emergency Room extend out to the laboratory, admittance, the nursing units –

these departments all contribute to patient flow in the hospital.

**SA:** You started working at the hospital last August. What were some of the first things you did in your new position?

**TC:** I spent several weeks just observing and shadowing nurses, personal care assistants, and other staff members. I started collecting data, prepping, sitting down with people and figuring out how we could get results.

The first two events we held helped to generate staff excitement. Lean thinking is a major culture change. I wanted to show the staff that they were our front line. They understand the processes better than anyone else and can determine root causes and create improvements.

The first Rapid Improvement Event (RIE) was held in October and focused on increasing the availability of resources at point of care. Nursing staff and Personal Care Attendants (PCAs) had to make frequent trips in and out of a patient's room to locate resources (medicine, linens), which decreased patient care time. In addition, the lack of available resources decreased staff efficiency and the resource locations were not standardized, resulting in wasted time searching for items.

We put together a team of employees and documented the current conditions. We had the nurses and PCAs wear pedometers and determined they were traveling up to five miles each per shift. Then we brainstormed about what innovations we could implement for greater efficiency and patient and staff satisfaction. Alcoves were not being utilized, so we decided to install a nursing workstation with a locked mobile unit that could be easily replenished, reducing time and travel distance spent by the staff during each shift.

We used an assessment tool known as 6S, which stands for sort, straighten, shine, sustain, standardize, and safety. It measured activities both before and after the implementation of the new processes. Scores for efficiency climbed from 18 percent to 96 percent (their goal had been 75 percent). With the mobile unit and standardization, the travel distances to resources also showed remarkable improvement with decreases by 47 percent for nurses and 44 percent for PCAs.



**SA: You mentioned a second initial event. Talk a little bit about what happened here.**

**TC:** In the second RIE, I worked with employees from first and second shift in Environmental Services. We noticed house-keeping carts and closets were frequently short on necessary materials and the supply closets were set up differently at every location. Often tasks took much longer than necessary because a cart would be missing pertinent items, so the employee had to return to the first floor to the main office. A task that should have taken 10 minutes took an hour.

**Scores for efficiency climbed from 18 percent to 96 percent (their goal had been 75 percent).**

We snapped digital pictures of the carts and closets for reference and used the 6S's for safety. Then we recorded pictures of what the carts and closets should look like. The team realized that consistency would make their job better and improve their performance and that is exactly what occurred.

**SA: What areas in the hospital are you innovating now?**

**TC:** Recently we did some work in the Operating Room. We found it was taking 20-30 minutes to change a room. With a new method, we reduced the time to nine minutes. We filmed the process and are working on training people and making sure they have the resources they need.

We also did some work with employees in Occupational Health to help improve admissions. There are so many places to improve processes and the staff is not at all resistant. We're having two to three events a month and the results are significant.

**SA: Why do you think effective TPS deployment delivers significant results versus other management strategies?**

**TC:** TPS attacks processes, not people. One of the main tools we use at Lawrence

& Memorial is value stream mapping. This is where we identify all the detailed activities or processes that occur to provide a specific service and eliminate any unnecessary steps. It helps us recognize which steps are value-added and which are non value-added (wasted time, wasted steps, redundancies). This process allows us to remove waste and deliver better interdepartmental collaboration and flow.



**SA: What is the most rewarding part of driving the process innovation at Lawrence & Memorial?**

**TC:** The most rewarding part is that, in my own little way, I know we're improving the quality of care. I say we, not me. The staff is driving the improvements and they are extremely dedicated to the patients and families they serve. When the lights come on for the staff, their eyes light up, they take control with the tools, and I simply step out of the way.

Future State published by: **Stiles Associates, LLC** for limited national distribution.

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## ENTERING THE LEAN BLOGOSPHERE

Filled with helpful information, blogs prove to be yet another resource for lean leaders. This column will review blogs featuring commentary on lean, TPS, and Six Sigma.

Someone performing a search on Google for lean blogs, will repeatedly see the term, “Gang-of-Seven.” What this refers to is seven bloggers, each an expert in kaizen, project management, or innovations, who blogged together on the theme of “Kaizen for Project Teams” back in December, 2005. Labeled Project Kaizen, the writers’ insights were then put together into a helpful handbook and the blogs are still available on the Web.

These individuals maintain their own postings, but continue to contribute to each other’s blogs and widen the discussion about project management. The Gang-of-Seven bloggers, and the title of their Web blogs are listed to the right. Any of these sites are a good place to check out lean commentary and start testing the blogging waters.

**Next issue:** A closer look at individual blogs and a review of the increasing appearance of Podcasts on the Web.



Lean insights and news available at [www.gembapantarei.com](http://www.gembapantarei.com)

## BLOG SPOTS:

**Norman Bodek, Kaikaku**  
[kaikaku.typepad.com](http://kaikaku.typepad.com)

**Joe Ely, Learning about Lean**  
[joelylean.blogspot.com](http://joelylean.blogspot.com)

**Chuck Frey, Innovation Weblog**  
[www.innovationtools.com/weblog/innovation-weblog.asp](http://www.innovationtools.com/weblog/innovation-weblog.asp)

**Mark Graban, Lean Manufacturing Blog**  
[www.leanblog.org](http://www.leanblog.org)

**Hal Macomber, Reforming Project Management**  
[www.reformingprojectmanagement.com](http://www.reformingprojectmanagement.com)

**Jon Miller, Gemba Panta Rei**  
[www.gembapantarei.com/](http://www.gembapantarei.com/)

**Bill Waddell, Evolving Excellence**  
[superfactory.typepad.com](http://superfactory.typepad.com)

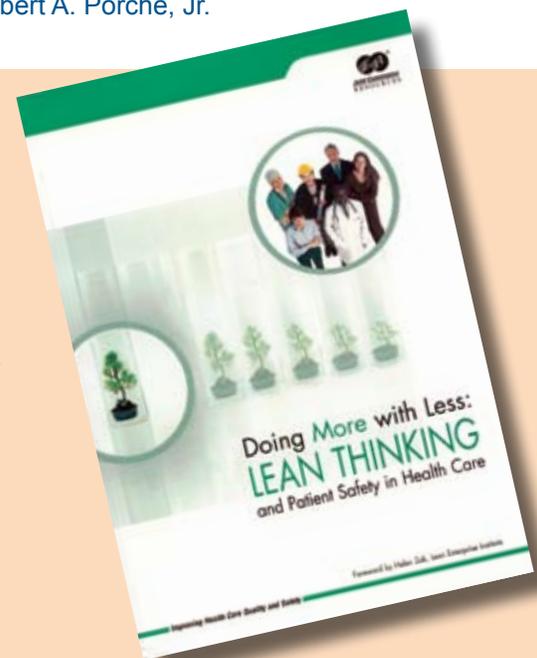
## LEAN BOOKSHELF:

**Doing More with Less: Lean Thinking and Patient Safety in Health Care**, Edited by Robert A. Porché, Jr.  
Published by Joint Commission Resources, 2006

**Doing More with Less: Lean Thinking and Patient Safety in Health Care** is a look at the ways and means of adapting the lean manufacturing process to America’s health care environment. The book offers readers a step-by-step introduction to how health care organizations can incorporate lean principles, and as Helen Zak from the Lean Enterprise Institute writes in her foreword, it provides specific examples of “how leading hospitals are using the concepts to improve safety by eliminating the root causes of problems.”

Beginning with the basics (such as W. Edwards Deming’s 14 points for Management as well as a look at the origins and leaders of lean thinking and the Five Steps of Lean), **Doing More with Less** quickly moves into the nuts and bolts of applying lean thinking to the service-based health care industry. This book offers a number of charts, checklists, and timelines to help readers analyze basic principles and relate them to their own situations. It also gives a number of real-world case studies from organizations such as Theadacare and the Pittsburgh Regional Healthcare Initiative. A helpful glossary of terms is included in the Appendix as well as an extensive list of Selected Resources guiding readers where to turn for more information.

**Doing More with Less** is a slim volume and not intended to be a workbook for change in a health care setting. But for those in the position of deciding if lean is appropriate for their health care business, this book is a very good introduction to the principles and practice of lean thinking.



# LEAN EVENTS

## **Design for LeanSigma September 17-21 | Durham, NC**

This one-week hands-on workshop combines instruction and simulation to teach the basics of rapid, team-based product and process design within a Lean framework. Participants will learn how to generate results that are a quantum leap from traditional or concurrent engineering approaches. For more information, visit [www.tbmcg.com](http://www.tbmcg.com).

## **Lean Six Sigma Improvement Week September 18-21 | Las Vegas, NV**

This valuable workshop showcases innovative strategies, methodologies, and leadership techniques to help Lean Six Sigma practitioners achieve faster results within their organization. Topics include how to determine the best projects to meet business objectives and how to bridge the communication gap between management and employees. For more information, visit [www.sixsigmasummit.com](http://www.sixsigmasummit.com).

## **Lean Purchasing Seminar October 4-5 | Philadelphia, PA**

This seminar teaches new measurements for purchasers and suppliers focused on price, delivery, cost reduction, and quality. It also discusses techniques to improve on-time delivery by as much as 60%. Participants learn from companies who have used lean to better their business results. For more info, call 224-232-5980.

## **LeanSigma® Fundamentals for Healthcare Workshop October 24-25 | Phoenix, AZ**

A two-day introductory workshop on LeanSigma® tools and techniques for all levels of the health care industry that are looking to streamline their processes. This workshop teaches how to quickly deploy substantial improvements in order to develop a clear business implementation road map. For more information, visit [www.guidonps.com](http://www.guidonps.com).

## **Kaizen Breakthrough Experience November 5-9 | Pella, IA**

Participants in this workshop receive hands-on learning in recognizing and driving improvements across their operations. The power of teamwork and collaboration is explored as well as the ability to use Lean/Six Sigma tools to accelerate improvement potential and keep costs low. For more information, visit [www.tbmcg.com](http://www.tbmcg.com).

## **Lean Accounting Seminar November 7-8 | Boston, MA**

Jean Cunningham, co-author of **Real Numbers: Management Accounting in a Lean Organization**, demonstrates how to launch lean accounting and host an interactive kaizen event via the accounts payable process. Other topics discussed include lean factory simulation, material flow, and reduced inventory. For more information, please visit [www.ame.org](http://www.ame.org) or call 224-232-5980.

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