



## Why Toyota Production System/Lean Healthcare is Not Assembly-Line Medicine

by Cindy Jimmerson

As far back as the early 1990s, Jim Womack and colleagues began demonstrating the applicability of Toyota Production System (TPS) concepts to the U.S. manufacturing industry, coining the term “lean manufacturing.”<sup>1</sup> Today, TPS/Lean Healthcare concepts and tools have proven a good fit with efforts to increase the quality of patient care. This “odd couple” pairing of manufacturing process and healthcare delivery may not seem—to put it bluntly—very patient-centered. However, the TPS approach has direct applicability to improvement in care quality in the community cancer care setting with the patient always the focus of improvements.

Consider the following scenario. A patient arrives at a local cancer program for scheduled medication administration. She is asked first to sit in the waiting room (13 minutes). She then moves to the next available medication administration chair and waits while the nurse gathers paperwork and waits for the medication to arrive from the pharmacy (11 minutes). The medication arrives and the nurse recognizes a change in dosage that is not noted on the chart. The nurse leaves the patient to call the doctor and confirm the correct prescription (7 minutes). The doctor gives a verbal order for the medication which the nurse notes on the chart (3 minutes). Medication administration proceeds normally thereafter; a total of 34 minutes has elapsed.

In this example, it's easy to see the delay in care and waste of the patient, nurse, and doctor time. Not so obvious or easy to measure are the opportunities for error. We have become accustomed to recognizing a “good” caregiver as one who catches errors before they happen. A TPS/Lean Healthcare approach to this scenario would not assign blame to an individual for a near-miss event, but would instead ask the following

questions: *Why did the order not match the medication preparation? What about the way we do this work now allows errors in medication prescribing/preparation? What happened in this situation that may happen again if we don't fix it?*

By answering these types of questions, the TPS/Lean Health approach gathers the detailed information that lays the groundwork for designing a process to ensure that the opportunity for errors is reduced or eliminated and that the work happens in a continuous flow, rather than starting and stopping.

The above example is just one of many “process” issues that crop up countless times each day in healthcare settings across the country. These “small” events may seem too insignificant to attract problem-solving attention. Yet one of the lessons Lean Healthcare borrows from Toyota's manufacturing success is the realization that if you take care of the small problems, the big problems go away.

The main objective with the TPS is simple: define and revise processes that support the worker in doing his/her job to make them reliable and consistent. Transferred to the community cancer care setting, the TPS approach would begin by understanding those processes and view problems *through the eyes of the patient*.

The Lean Healthcare starting point is identifying the “IDEAL,”<sup>2</sup> the standard against which all work is measured. IDEAL, patient-centered healthcare includes:

- Exactly the care that patient needs, defect free
- One-by-one care, customized to each patient
- On demand care, exactly as requested
- Immediate responses to problems or changes
- Care that is safe for patients, staff, and physicians—physically,

emotionally, and professionally

- No waste.

An important step in the Lean Healthcare approach is gaining a clear understanding of how the work in the healthcare setting happens. This is achieved by direct observation and by asking the people who do the work. “*What is not “IDEAL” about the way the work happens now?*” And, as process improvements are made, by asking, “*Are we moving the work closer to “IDEAL?”*” To establish where failures to deliver “IDEAL” care are occurring, the Lean method focuses on the “process” and *not* on the individual worker. These “failures” in “IDEAL” care delivery are often defined in terms of “waste” in the system—waste of the patient's time, waste of the caregiver's time and efforts, and waste of the capacity to care for other patients.

TPS/Lean Healthcare thinking and methodologies are simple to learn, easy to apply immediately in the course of work, and can be applied in any department of a hospital, clinic, or physician office practice environment. Removing work obstacles by establishing consistent and reliable processes will make our care delivery more defect-free, reduce worker and fiscal waste, and create a more satisfying work environment. Hospitals and clinics save money while the quality of care increases and worker frustration decreases. 📌

---

*Cindy Jimmerson is president of Lean Healthcare West in Missoula, Mont., and partner to Healthcare Performance Partners in Nashville, Tenn.*

### References

- <sup>1</sup>Womack J and Jones D. The machine that changed the world. Macmillan/Rawson Associates: 1990.
- <sup>2</sup>Spear S and Bowen K. Decoding the DNA of the Toyota production system. *Harvard Bus Rev.* 1999;77:96-106.