

Wednesday's Words of Quality

Lesson #4

Waste Elimination, Less is More.

Redesign Lessons from Lean

Most work systems are fraught with process inefficiencies and wastes that dominate the total time of human effort compared to the actual fraction of time involved in creating value. The fact that even well-intentioned business systems are not “Lean” was well articulated 91 years ago by Henry Ford who recognized in his own operations that:

“We still waste more than we use. We waste men, we waste materials, we waste everything, and consequently we have to work too hard and too long to accomplish what in the end amounts to very little. But at least we are learning that we cannot get anywhere without the kind of management which extends from the smallest detail to the whole purpose of what you are about.”

This is especially true in the business of healthcare where process defects may readily escalate to medical errors that currently account for the number 3 cause of death in the US. The Joint Commission recognizes the culture of Lean as a component of “robust process improvement” that should be pursued for healthcare to be effective in achieving high reliability exhibited by consistent excellence in quality and safety.

We all desire more reliability, consistency, efficiency, productivity and better patient satisfaction! The answer is not more people. In fact, that’s highly unlikely in the current economic environment. One solution is to redesign the nature of the work so that it is more efficient, that is to say, less wasteful of human and consumable resources.

What does efficient work design look like?

For starters, consider these Opportunities in work redesign

- Standardized work activities, connections, pathways
- Posted Standard Work Checklists or Job Aides
- Continuous flow and pull
- Reduction of cycle times (throughput)
- Front loading work in the paths of workflow
- Elimination of loops and forks
- Reduction of steps
- Work simplification
- Maintenance of sequence
- Load leveling across hours and shifts
- Batch size reduction
- Mistake-proofing
- Visual workplace to surface defects that workers can address in real-time
- Color-coding and visual controls
- Agreed “Playbook” to trigger team cross-coverage to maintain flow and throughput
- Daily metrics of performance and deviations

Lessons from Lean manufacturing production also tell us that there are several cardinal sins to drum out of our current work and some goals to continually strive toward.

Variation is bad. Matched only by poor communication.

The remedy to these cardinal sins is adhering to 4 simple rules of work that promote **standardization** and **continuous improvements in how the work is done**. The 'fixes' should be contributed by empowered workers who are engaged as the 'experts' in doing the actual work best and seek quality at the source. This approach creates engagement, accountability and ownership of the improvement process where the actual work takes place.

The Rules of Work

This is essentially forcing you and your team to take the time to work through best practices resulting in standardization of activities, connections and pathways and your approach to data-driven continuous improvements.

Rule 1- STANDARD ACTIVITIES. Specifications document all work processes to include the content, sequence, timing, location & expected outcome (how do you do your work)

Rule 2- STANDARD CONNECTIONS. Connections with clear YES/NO signals (e.g. received, not received) directly link every customer & supplier (requests & responses)

Rule 3- STANDARD PATHWAYS. Every product & service travels a predefined, single, simple & direct flow path (no looping returning to sender or forking to 2 different places)

Rule 4- IMPROVEMENT & WORKER EMPOWERMENT. Workers at the level where work is done, guided by a teacher, improve their own work, using data (PDCA).

Rule 4 is also referred to as the Improvement Kata. One of the opportunities for a leader intent on work redesign is to include those who actually do the work in its redesign.

Work Rule #4 as defined by Steven Spear, states that any improvement must be made in accordance with the scientific method, that is to say using PDCA (plan, do, check, act), under the guidance of a teacher, at the lowest possible level in the organization. That is to say that changes or pilot “experiments” are suggested and carried out by those actually doing the work. This approach also facilitates worker buy-in (empowerment) to change and increases compliance with the new work standard.

From our own experiences with Lean management in the laboratories of HFHS, we know that when a lab employee contributes to the change, they are more likely to experience ownership. Change then, is not made by, but facilitated by the

teacher who is defined as an internal expert, knowledgeable and experienced in the area taught. This also promotes worker accountability.

In this approach, empowered workers see their daily work in the context of continually making effective process improvement changes that are designed and tested by the scientific method. To convert to and foster this latter culture, it is important to acknowledge that your workers are the 'experts' and hold the knowledge that can result in continually improving the work toward the agreed goal.

This approach is a paradigm shift meant to optimize the overall system of work, across usual silos of control, rather than local optimization. Success in Lean therefore is promoted by the management systems and culture that facilitates trained, empowered employees and leaders to work in team structures with defined work rules and applying strategies and 'tools' to reduce 3 forms of work inefficiencies.

3 Types of Waste Inefficiencies to Address

I depart here from our convention of describing all things in English and use several Japanese terms in italics because each word is invested with much meaning and this is where these concepts are derived from. These 3 types of wastes contribute to **Work Inefficiencies** described in this fashion:

Muda describes 7 types of waste identified retrospectively within existing processes under the present work conditions. This is the non-value-added work of employees that the "customer" doesn't care about. (*see below*)

Mura relates to work design implementation, scheduling and operations inefficiencies. This creates unevenness (lack of flow or smoothness) of workflow and gums up throughput.

Muri is derived from poor proactive preparation and planning for the new work design resulting in overburden of work imposed by management because of this poor preparation or planning.

The 3 define the opportunities within the system of work that members of the workforce at all levels have a hand in coordinating and continually improving.

These wastes are sources of variation and inefficiency that if identified and eliminated will allow the system of work to be more efficient and productive, in effect doing more with less.

The 7 Types of Waste in the Work

1. Overproduction, in excess of what's required
2. Waiting, downstream process inactivity
3. Transport, material & work-in-progress
4. Extra Processing, due to defects, overproduction or excess inventory
5. Inventory, excess requires additional handling and space
6. Motion, personnel & equipment
7. Defects, don't conform to specification or customer's expectation

Weaving Lean Thinking into Your Management

We have found that a focus on the 'rules of work' as described by Spear and Bowen (***attached***), sensitizes the workforce in recognizing gaps they experience in light of the 3 forms of wasteful work inefficiencies- 1) within existing work processes, 2) how processes relate to each other in the flow of connected work and 3) in the subsequent design proposals of new work processes. These 'rules of work' define the expectation and key characteristics that the standardized, redesigned work should have.

Problem Resolution by Team Members in a Lean Management System

Continuous problem resolution is dependent on a worker-driven 'bottom up' approach rather than the conventional management driven 'top down' approach to problem solving. By leveraging the quality improvement organizational structure defined in a manner that aligns team members with their team leader by “workstations” into small teams, we can foster

worker identification of the nature and scope of defects and wasteful work, and stimulate and guide the discussion of possible solutions that can be tested.

This cooperative approach is predicated on a 'no blame but all accountable' sense of process ownership. Through an empowering structure that continually informs the workforce about the quality of their work product and charges them with improving it, workers more readily assimilate the mantra- "never pass a defect, never accept a defect".

Transforming the culture of work, or more correctly the employees' incentive to relate to each other and work differently, must occur to obtain success in a Lean enterprise. The role of leadership is to establish the shift in work expectations, structures and realignment of incentives so that workers can relate to and interact with each other horizontally across the path of workflow and contribute collaboratively toward work process redesign across historical silos of control.

To be effective in fostering change from the bottom-up, so to speak, the people-focused strengths of a Lean culture must be reproduced- namely:

- Employees in charge of the successful outcomes of their own jobs
- Employees contributing to the design of the standardized work procedures
- Employees working to continually improve the work, piloting changes and effectiveness assessed by the customer-focused PDCA cycle

I leave you with the thought that engagement of the work team is most important in work redesign, broadened to include those within and external to the process in question (internal and external customers) in order for change to be successfully sustained. In a Lean culture the further expectation would apply that the work would be continuously improved by those who own and are accountable for that work.

The Main Lesson of Lean for Managers

Lean, then, is not the 'tools', which are work-arounds employed by the workers for specific situations, but the continuous focus on these aspects of waste reduction as the work is continuously redesigned to be more efficient by those who do it.

Next WWQ: Lesson #5 – Standard Work