Perspectives on Lean Manufacturing, Part II

Lean manufacturing can help companies eliminate waste, reduce costs, and improve timeliness. However, is it a critical key to success in medical device manufacturing? In this month's Perspectives, industry leaders share their thoughts on lean manufacturing and also share their own experiences with this concept.

Is lean manufacturing a primary key to success for medical device manufacturers and what has been your company's experiences with it?

Lothar Koob
Partner, Extera Partners

Lean manufacturing is a key to the success of any company doing business in a competitive environment, including medical devices. In medical activities, like imaging and therapy, hospitals and healthcare providers are driving more and more workflow optimization. In order to reach their productivity goals, they must be demanding when it comes to expectations around equipment and services. Any downtime in the system or modality is extremely disruptive and needs to be avoided or kept to a minimum.

Many people associate lean manufacturing with reduced human resources and low manufacturing cost. However, there are several other drivers that need to be in place in order to achieve a truly "lean" model, which can also lead to increased

competitiveness and customer satisfaction. For this to happen, the product needs to be produced to meet high standards–from product specification and design to product engineering and testing and finally, in the handoff to manufacturing. Proper product design enables short manufacturing cycle time with high first-pass yield, which inherently leads to better product quality–a prerequisite for better performance and uptime during the product lifecycle. From a manufacturing and management point of view, lean manufacturing avoids excess inventory and obsolescence of parts, and puts the company in a favorable cost position important to compete in today's environment.

Murtaza Fidaali
Director of Business Development, Medical and Industrial Markets, ITT Interconnect Solutions

While we cannot speak for medical OEMs, lean manufacturing principles are certainly a key to the success of medical component manufacturers. In the design and development of connectors for medical equipment, such as equipment for diagnostic imaging and robotic surgery, lean manufacturing principles are integral to streamlining the entire process from design concept through production.

We employ lean process execution incorporating Six Sigma principles as well as the Kanban system. We target 2% of our total headcount in certified lean Six Sigma roles–1% full time and 1% functional. Our lean management system elements include visual metrics, daily status review meeting, accountability board, A3 project management, weekly Gemba walk and 5S activities, leader standard work, and card improvement system.

Lean manufacturing principles have been integral to the success of our medical programs, particularly in the development of our micro-miniature connectors and cables for robotic surgery equipment. Through our lean manufacturing processes, we were not only able to increase our manufacturing capacity, but we improved the

process flow as well, reducing production times and, in turn, minimizing costs.

Al Pulver
Division Lean Manager, Precision Fluidics Division, Parker Hannifin Corp.

The Precision Fluidics Division of Parker Hannifin Corp. has been refining the manufacturing processes for several years by using the basic lean tools of 5S, elimination of waste, macro and micro material flow concepts, and quality improvement. The operations team has created U-shaped cells and provided components at point-of-use for the cell operators to reduce inventory and travel while increasing productivity. The team has worked diligently with the suppliers to improve communication and reduced the need for stock piling large amounts of materials. In the transformation, internal and external quality metrics have improved dramatically (by 35%) and customer service (on time delivery) has improved from 93% to 98%.

The division has more recently started the journey of refining and reducing the waste associated with the design and development of new products to reduce lead times and improve the quality of the design process by implementing the use of FMEA, PFMEA, and a host of problem solving tools. The sales, design, and marketing teams are working together with the objective to improve the upfront information gathering and to provide better information to provide better solutions for the customer and the better business opportunities for the company.

Art Bennert
VP, Operations, GW Plastics Inc.

Staying competitive in today's economy is a constant challenge for all of us. Here at GW Plastics, by continuously looking for ways to reduce our medical device manufacturing costs, we help ensure our customer's long-term success, as well as

our own sustainability as progressive contract manufacturers.

We have standardized our lean practices throughout all of our U.S., Mexico, and China facilities to include such things as:

- Cellular manufacturing with single piece flow
- Robotic molded part removal
- SMED (Single Minute Exchange of Die) quick mold changeover system
- 5S (Sort, Straighten, Sweep, Standardize, and Sustain) housekeeping culture
- Visual Plant emphasis, including product storyboards
- Pull inventory management using Kanban principals where possible
- Energy efficiency programs for our molding machines and auxiliary equipment
- Green initiatives to regrind and/or recycle plastic materials
- Poka Yoke error-proofing assembly methods
- Cycle time reduction managed with scientific molding technology

These lean initiatives have helped GW to reduce waste and improve our operational efficiencies. Lean manufacturing allows us to pass cost savings onto our customers, and helps us remain competitive on current and future healthcare contract manufacturing projects.

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