



A Utica, New York-based manufacturer of medical devices uses LeanSigma® to improve customer-centricity and reliability of supply.

> **client** | ConMed is a global medical technology company, based in Utica, New York, that specializes in the development and sale of products and services that allow physicians to deliver high-quality care and enhanced clinical outcomes for their patients. The ConMed name is recognized across the world as a technological leader for their medical devices and instruments for surgical procedures.

> **challenge** | ConMed recognized that the operations group was a limiting factor for sales growth due to the reliability of supply which created high backorders. In order to better service customers and enhance sales growth and profitability, the company needed to improve reliability on the production floor.

> **solution** | Take an outside-in approach to the lean journey, focusing on the customers' pain points to determine where to conduct kaizen work, with an ultimate goal of becoming a more reliable supplier of medical instruments.

> **results** | As a result of its lean efforts, ConMed has been able to increase productivity by more than 20 percent, decrease floor space by 66 percent, and reduce line-side work-in-process (WIP) by 85 percent. Additionally, the company went from a \$1.3 million backorder on one product to having 1,400 cases in stock, and was able to improve production reliability to allow for a 24-hour turnaround from the time the order is received to the time the instrument is shipped.

Improving on Success

ConMed is a global medical technology company, based in Utica, New York, that specializes in the development, manufacture and sale of products that enable physicians to deliver high-quality care and enhanced clinical outcomes for their patients. The ConMed name is recognized across the world as a technological leader for their medical devices and instruments for surgical procedures.

ConMed has experienced great success through the integration of strategically selected acquisitions. Traditionally, the company has moved acquired product lines into its facilities in their current state. As a result, ConMed inherited a number of manufacturing processes that were often very inefficient and wasteful. Rapid growth and servicing the customer took priority over improvement, and the acquired products were brought on line "as is." ConMed ended up with large quantities of work-in-process (WIP) inventory, low productivity, and excessive safety stock to try to guarantee timely delivery to customers.

The situation was ripe for examining processes, with an eye to removing wastefulness and increasing productivity. ConMed chose to embark on its lean journey as a means to grow the business, enhance customer service, and expand profitability for their employees and shareholders.

Lessons Learned: Where To Begin

Many companies take a standard approach to their lean journeys, starting with the shop floor and branching out to other areas once operational excellence has been achieved. More recently, a number of companies have decided to take a more accelerated approach, realizing that greater benefits will accrue more rapidly if they are willing to dive in deep from the start.

But that deep dive takes commitment. According to Dave Johnson, Vice President of Global Operations for ConMed, a lean journey needs to be driven from the top down, but executed from the bottom up. Says Johnson, "It's leadership first and accountability second, and then it's execution with metrics."

"I tell other companies that this isn't a program, it's a cultural change," he adds. "And if you really want to do that, then you must get buy-in from your senior management team, put your best people into a continuous improvement (CI) function, and then, as the senior champion, you must start walking the talk on the shop floor on a daily and weekly basis."

“ . . . with an eye to removing wastefulness and increasing productivity. ConMed chose to embark on its lean journey as a means to grow the business, enhance customer service, and expand profitability for their employees and shareholders.”

Another lesson Johnson learned early on is the need to integrate the Finance Department from the start. Without their buy-in, it's difficult to show improvements in a meaningful way. "Our finance team can provide reports that show productivity at the cell level, and can differentiate between kaizen and non-kaizen lines," notes Johnson. "We're showing an 18-to-20-point spread in productivity between kaizen and non-kaizen lines. And what's being reported out in our Friday kaizen debriefings is being corroborated by the monthly reports generated out of Finance."

"A common mistake companies make is not aligning their financial metrics and reporting structure to highlight the results you get out of lean," he adds. "We've taken our financial reporting to the point where we can capture variances in output, material, labor, rate, yield, and other items right down to the cell level."

According to Johnson, although the whole process of starting on a lean journey sounds simple, many companies do not perform it well. The foremost complaint he's heard in his travels

is that many companies just throw a lean function together and don't give it any teeth, dooming it to failure, or at least, not great success.

"My philosophy is that, as the senior leader, I must lay out the vision to the staff, put our 'A' players in charge of it, and then walk the talk every day," says Johnson. "Walking the lines every morning creates high visibility and is a means of holding your people accountable. We didn't do a push onto the organization—the results spoke for themselves which actually created a pull with people wanting to get involved because they could see and feel the positive results."

“My philosophy is that, as the senior leader, I must lay out the vision to the staff, put our 'A' players in charge of it, and then walk the talk every day.”

— Dave Johnson

It's that sort of passion from the top, the willingness to walk, to talk, and to hold everyone accountable that will start a lean journey off on the right foot. At ConMed, it not only started the journey, but accelerated its acceptance.

When deciding where to actually begin kaizen work, ConMed took an outside-in approach, looking for its customers' pain points and focusing on products with supply problems or abnormally high backorders. "We weren't trying to get faster or save money; we were trying to become more reliable," says Johnson. "Our execution was unpredictable and not aligned with customer demand."

Johnson spent time with his management team, and with the people in the Sales and Marketing Department, to find out where the pain points were. As a result, many of the events conducted over the past 18 months have been focused on products where a 24-hour turnaround on orders is expected. He notes that, from a strategic standpoint, once the Sales and Marketing people saw what a difference the kaizen events made, they became "instant zealots." They recognized how great an impact lean had on reliability of supply, reduced costs, and improved quality. "My Operations team bought in because they had to, but I didn't have that luxury with Finance or Sales and Marketing," says Johnson. "I had to convince them through execution and results."

Clear and Consistent Results

In their first year, ConMed successfully completed 33 week-long kaizen events, including 23

shop floor kaizen breakthrough events, six single-minute exchange of dies (SMED) events, three business process kaizen events, and one managing for daily improvement (MDI) event.

For all events, the company established a set of standard objectives:

- Improve productivity by 20 percent
- Reduce floor space by 40 percent
- Reduce line-side WIP by 75 percent

Characteristically, those objectives were not only met, but exceeded, with productivity being improved by 22 percent, floor space reduced by 66 percent, and WIP reduced by 85 percent. More specifically, through its lean activities, ConMed freed up 38 seasoned employees, who were then available to staff new initiatives. Considering a cost of \$150 per square foot for clean room space, the 16,868 square feet of space that the company opened up translated not only into a savings of more than \$2 million, but also represented space that the company could then fill with new production. Likewise, WIP reduction represented nearly \$1 million in savings. Increased efficiencies created through lean allowed the company to remove nearly half a million dollars' worth of small equipment and fixtures. But all of these gains were just another way of improving reliability for ConMed's customers.

Real Commitment

Often, companies struggle with a lean transformation because their associates don't see a firm commitment from company leadership that clearly indicates the changes are for real and will be lasting. This is the "initiative of the month" syndrome that colors the expectations and actions of so many members of any manufacturing workforce. ConMed leadership recognized the problems these attitudes can engender and took proactive steps to ensure that everyone would see the company's commitment to the process.

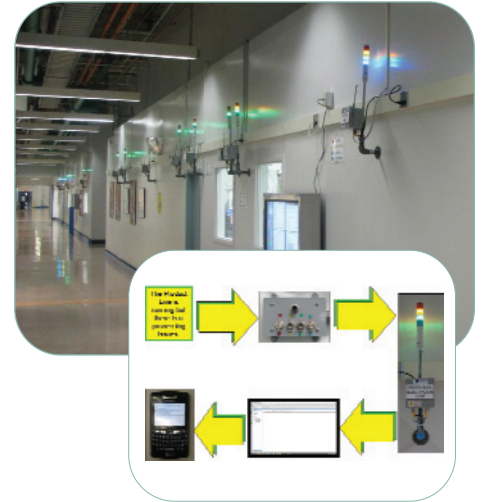
To that end, the company built an 8,000-square foot Continuous Improvement Center, which includes four CI team rooms and a presentation room with seating for 120 people. Don Keeler is the manager of ConMed's Continuous Improvement Office, and along with his staff of five, provides the key ingredients required for a rapid and effective transformation:

- Strong, committed leadership
- A robust CI Office
- Extremely aggressive implementation
- Visual management and modern technology
- Dedicated employees

Committed leadership is already in place in the form of Dave Johnson and his management team, which includes Keeler. Keeler notes that he has a top-notch staff of his own—the same "A" players that Johnson feels are fundamental

World-Class Visual Management

Abnormality Response



To help drive accountability, ConMed has installed a state-of-the-art visual management system, which includes Andon lights for abnormality management and electronic messaging to responsible parties.

Line-side Kiosks



Line-side kiosks allow individual work cells to keep track of their performance metrics at the cell.

SQDC Training



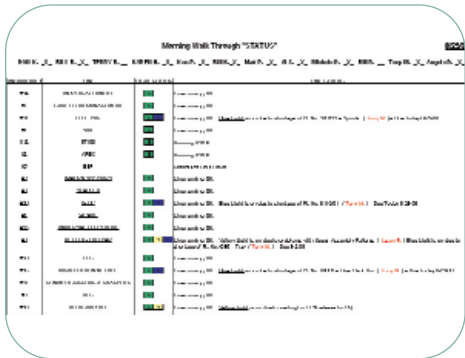
By placing clear explanations of basic lean topics where anyone can easily view them, ConMed has helped ensure a higher level of understanding of basic lean principles among all employees.

Touch-Screen Displays



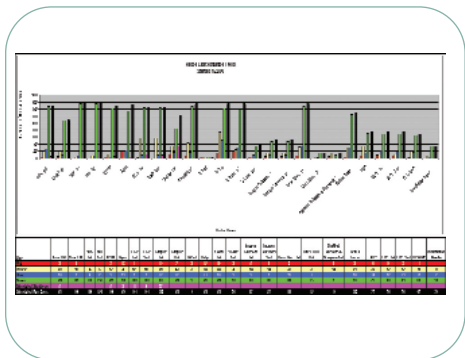
Touch-screen SQDC wall monitors keep morning walk-through activities outside of the clean rooms where production takes place and they enable any employee throughout the plant to monitor any production line within the plant.

Morning Walk-Through “Status”



Keeler created a spreadsheet that he uses as part of his morning walk-through. The sheet lists each production line, the Andon status of that line, an area for explanation of the Andon lights, and the person responsible for that line. This is another example of accountability management at ConMed. At the end of the morning walk-through, the updated sheet is e-mailed to Johnson.

Andon Implementation Trends



The Continuous Improvement Office also keeps track of Andon light implementation trends. By doing so, they can keep track of what lines have recurring problems, and they can use the trend data to be proactive in addressing potential problems.

The company also installed touch-screen wall monitors, which allow anyone to review the performance of any line in the plant. "That's where we, the senior management team, do our walk-through every morning at 8:00 a.m. without fail," says Keeler. "We review safety, quality, delivery, and cost for every line on these touch screen displays."

The wall monitors offer several advantages. First, it's a way of keeping SQDC activities outside of the clean rooms where production takes place. It also enables any employee throughout the plant to monitor any line within the plant. Anyone can go to a screen, select a line, and walk through every chart to see where that line stands currently, as well as view trend sheets for the entire year.

The data displayed on the monitors is entered into preset templates at the end of each shift by the supervisor or lean coordinator. It takes about ten minutes. Then, Keeler and his staff deploy that information in a content manager so that all charts are updated before the 8:00 a.m. walk-through.

Keeler also has created a spreadsheet that he uses as part of his morning walk-through. The sheet lists each production line and the Andon status of that line. It has an area for explanation of the Andon lights and lists the person responsible for dealing with the problem, as well as a date by which the problem will be corrected. "By 8:15 a.m., I've completed this sheet, and no matter where Dave is, the sheet is e-mailed to him and he knows the status of the walk-through," notes Keeler. And that's just another link in the accountability chain.

Another area where ConMed truly shines is with standard work. Check any line and you will see the standard work for that station clearly delineated in charts above the line.

The standard operation sheets include text and photos to make clear the step-by-step procedures that are to be followed for a particular process, with a chart below that lists the steps, their takt time, and the tools and equipment needed for each step.

Powerful Ingredients

ConMed has taken a multipronged, aggressive approach to its lean transformation. As a result, the company has achieved impressive results at a much faster rate than normal. It's not an easy task, but as ConMed has discovered, the results are well worth the effort, and as Johnson notes, "It's all about results."

"If you don't have the metrics in place and you aren't holding yourself accountable, and you aren't executing and course correcting when you need to, then it's just an exercise," he adds. "And that's where most companies fail—because they can't measure it; they can't explain it."

Johnson goes on to say, "I think another mistake companies make is that all too often the operations people do it for their own benefit, instead of looking at the process from the customer's

perspective. Lean is often viewed as a cost-reduction opportunity, but we very much took the approach that it was a growth strategy. It's a big philosophical difference because people look at lean and say 'I can take money out of the system,' whereas for us it's a form of reliability. I don't think we've ever emphasized cost as much as we have supply."

Keeler adds, "If you don't have the senior executive backing, it will not work. I've put my heart and soul in this for many hours every day—leadership is the key to the whole thing."

It's clear that ConMed lacks neither leadership nor commitment. Combined with clear objectives, discipline, and accountability; strong visual management that helps to maintain both sustainability and accountability; and dedicated people throughout the organization, ConMed has found the right ingredient mix to create the kind of results it seeks in order to be reliably responsive to its customers and remain a premier provider of medical and surgical devices.

Tour ConMed at the LeanSigma® Vision Tour

> April 30, 2008 • Utica, NY <

Learn from the best and see what ConMed has done to create a culture committed to continuous improvement. See how they leverage lean to generate dramatic operations results that drive profitable growth while remaining focused on the highest levels of customer responsiveness. Take a deep dive into an enterprise-wide lean transformation, understand how they drive accountability, discipline, standard operations, standard work, visually identify abnormality and track performance for improvements and sustainability.

Go to www.tbmcg.com/lsvt for more information.



TBM Consulting Group, Inc.
4400 Ben Franklin Blvd.
Durham, NC 27704
800.438.5535
www.tbmcg.com