

MetroWest Medical Center, Natick & Framingham, MA: Rigid Sterilization Containers for Surgical Instrumentation



Demographic Information:

MetroWest Medical Center is a 269-bed regional health care system including two hospitals, and an outpatient diagnostic imaging and rehabilitation center. MWMC is the largest health care system between Worcester and Boston, Massachusetts. MWMC offers training programs that are affiliated with leading medical schools and teaching hospitals in Boston.¹ MetroWest has 16 operating rooms taking up 17,956 square feet, and performed 10,565 surgical procedures in 2010.

Executive Summary Statement:

MetroWest has been slowly growing its sustainability program over the past several years as a result of several passionate employees. In 2010, MetroWest's parent company, Vanguard Health Systems, created a sustainability role for the system. Dr. Amy Collins, a physician at MetroWest and chair of MetroWest's sustainability committee, was named to the role.

Metrowest became interested in the concept of reusable sterilization containers is when the Manager of SPD (Sterile Processing Department) decided to decrease the use of disposable blue wrap as a cost saving measure. After MetroWest's Resource Coordinator returned from the Greening the OR Symposium in April of 2010, the SPD Manager, the Resource Coordinator, and Dr. Collins worked together to implement the containers as a cost savings and green initiative.

After framing the benefits for leadership, \$75,000 dollars in capital was allocated for the purchase of reusable hard cases. 211 containers were purchased with the allocated dollar amount. Projections for savings from the program included a 5-year savings of \$84,000 and a 10-year savings of \$233,000.

The Problem:

Blue sterile wrap is a major contributor to waste generated in Surgical Services and is estimated to comprise 19% of surgical waste.² This wrap product, as indicated by its name, is clean and sterile when it enters the OR. It is typically removed and disposed of during the case set-up and in hospitals where good regulated medical waste (RMW) segregation programs don't yet exist—makes its way into the regulated medical waste stream. RMW is an extremely costly waste

THE PROJECT IS BEING LED BY:

- a supervisor at each campus,
- the organization's sustainability leader,
- the Sterile Processing Department Manager; and
- the Resource Coordinator for Surgical Services.

stream—estimated to cost between 6-10 times more than solid waste to manage.³ MetroWest began looking for opportunities to reduce its environmental footprint in the OR, and as a high volume material and significant supply cost, blue wrap was a natural target. An alternative to sterilization of instruments in blue wrap is the use of rigid reusable containers for sterilization. Instruments are then stored in these hard cases until they are needed for surgery. The containers are then reused for sterilization and storage of the instruments for the next case. After learning about reusable hard cases, the hospitals then had to convince administrators to allocate the capital to purchase the hard cases. The green team leadership and Dr. Collins were able to work with administration to allocate \$75,000 in capital to purchase a set of 211 reusable hard cases.

Strategy & Implementation:

211 cases were purchased in May of 2010 for \$75,000 and another \$66,000 has been allotted for the upcoming fiscal year. As a result of purchasing the hard cases, the operating room has been able to significantly reduce its purchase of blue sterile wrap and the volume of waste it generates. MetroWest Medical Center was able to save an estimated \$29,843, in avoided blue wrap purchase and avoided waste disposal fees, and reduce its waste stream by 5,606 lbs of disposable blue wrap in 2010 as a result of transitioning 66% of its surgical instrumentation to reusable rigid containers in the OR. This represents close to a 40% payback on the containers in just 12 months. Today, almost 66% of surgical procedures at MetroWest utilize reusable hard cases.

Where blue wrap is still required, the organization came up with an innovative solution and partnered with a company to use the collected blue wrap for the manufacture of patient bags. MetroWest worked with BolderPath to manufacture items for patient use made from recycled blue wrap. After producing one batch of the small tote bags, MetroWest did not consider the endeavor profitable. However, the organization still collects the wrap and is looking at other options.

The Sterile Processing Department (SPD) worked with Surgical Services to determine appropriate placement for the reusable hard cases, as they can take up more space than blue-wrapped supplies. They met with the vendor to size the containers and prioritize what kits would go into containers. Once the containers arrived, the SPD staff transitioned the wrapped kits into the containers and sterilized as a complete unit. When the case cart is packed, the hard case is added to the cart. In the OR, instruments are unpacked for procedure set up. The cases go back to Sterile Processing after the case, where instruments are cleaned and repacked and the case re-sterilized for repeat use.

At the same time as the transition, the organization was also working on a Lean project to improve the flow of supplies to the OR. The timing of the two projects was synergistic and hard cases were soon organized in the sterile supply area. The program did not start as a Lean initiative but was incorporated into Lean success. The staff was also able to create sets with the hard cases instead of having single wrapped items, decreasing turnover time in SPD. MetroWest also recognized less missing instruments by having a container to which they needed to return items. MetroWest has a good relationship with its vendor for the rigid cases, contributing to its successful efforts. MetroWest was able to approach its supplier about the program, share its budget, and the vendor was able to recommend an appropriate solution. The containers were purchased all at once. The Lean specialists at MetroWest supported the use of reusable containers since MetroWest realized a better workflow, increased utilization, and realized more efficiency. MetroWest focused on implementing the containers at one campus first, but purchased all the reusable containers for both campuses at once.

Benefits:

- Increased workflow and utilization
- Created new patient products from blue wrap
- Good working relationship with vendors
- Reduced waste volume in the OR
- Cost-savings from avoided waste disposal fees and avoided supply costs for blue sterile wrap

Challenges and Lessons Learned:

The transition to reusable surgical containers has been successful in the OR at MetroWest. Key factors to consider in implementation are container storage and educating staff on the new process. The organization did explore expansion of the program to the emergency department (ED), but experienced significant challenges. Implementing containers in the ED would result in higher costs because the blue wrap serves a dual purpose. In the ED, the blue wrap becomes a drape over the table during procedures. Eliminating the wrap would create an additional cost for the drape and add steps to the current procedure. While the organization is still looking at ways to use these containers in the ED, it has not yet been able to address this challenge.

Endnotes

- 1 "About Us: Metro West Medical Center." *Metro West Medical Center*. Web. 9 Mar. 2011. <http://www.mwmc.com/about-mwmc.aspx>.
- 2 Laustsen, G. *Greening in Healthcare*. Nursing Management. November 2010. Vol. 41, Issue 11. Pp: 26–31. Accessed on March 11, 2011.
- 3 Hospitals for a Healthy Environment. (2004). *Regulated medical waste reduction: 10 steps to implementing a regulated medical waste reduction plan*. Retrieved March 2011, from <http://www.h2e-online.org/docs/h2e10stepmw20103.pdf>

Practice Greenhealth would like to thank intern Ms. Anuja Deo, MBA Candidate in Healthcare Management at George Washington University for her great work in producing this case study.



SPD staff at MetroWest highlight the rigid sterilization containers used in the OR and Sterile Processing.



The new reusable containers meet all of the hospitals' sterilization needs while significantly reducing its use of blue wrap.



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The Greening the OR™ Initiative is defining best practices in the OR to reduce environmental impact, reduce cost, increase efficiency, and improve worker and patient safety. Practice Greenhealth is grateful for the support of a number of sponsors of the Greening the OR™ Initiative. For a complete list, please visit: www.GreeningTheOR.org

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