

## Program at a glance

- Styrofoam reduction program follows success of aluminum and plastic recycling efforts
- Hospital greatly reduces Styrofoam use by staff and most patient care areas
- Inexpensive mug offers employee discounts on beverages
- Staff encouraged to eat meals with reusable plates and flatware
- New pricing structure discourages Styrofoam use
- Outright ban on Styrofoam not practical – for now

## Challenges

- Styrofoam alternatives are still costly (including biodegradable options)
- More reusable products require higher capacity and greater expense for washing
- Overcoming perceptions of, and in some cases, facts about Styrofoam's "sterility"

## Styrofoam reduction latest in Catawba Valley Medical Center's 'green' efforts

It is a well-documented fact that many environmentally



sustainable program successes in hospitals begin with a series of small victories. The more "wins" that are notched, the more sustainability and environmental stewardship becomes the norm.

Building upon its recycling and waste reduction efforts in recent years, the "Green Team" at Catawba Valley Medical Center (CVMC) in Hickory, NC, decided in Fall 2011 to set its sights on reducing, and in some cases, eliminating the use of Styrofoam®. This is one of the most widely used foodservice materials. However, because of its sheer volume, it also poses an environmental disaster.

Polystyrene, more commonly known as Styrofoam, does not biodegrade in landfills and is hazardous if eaten by wildlife. Some of the chemicals used to make Styrofoam have been shown to leach into foods and pose health hazards to humans as well.

To build awareness of the problem, the CVMC Green Team sold high-quality tumblers at a modest price to employees, offering them discounts on beverages in exchange. The program was a resounding success, and CVMC is making additional inroads in reducing and eliminating the use of Styrofoam in its foodservice program.

### Building on recycling program success

"Catawba Valley Medical Center (CVMC) has had a successful paper and corrugated recycling and waste reduction program for several years, just as it has practiced environmentally preferable purchasing," says Harriet James, CMRP, Director of Materials Management at CVMC.

Several years ago, the facility implemented its first

Green Team to oversee environmentally sustainable programs across the organization. “We’ve been building on each success, one program at a time,” said James, who now chairs the Green Team.

### **Aluminum and plastic recycling underway**

In April 2011, CVMC began implementing a program for recycling aluminum cans and plastic bottles, and its impetus came from the employees themselves. “We have an e-mail address in our Groupwise (a proprietary messaging and collaborative software platform) called ‘green team’ that employees use to send us questions, concerns or suggestions. We received a lot of emails asking when we are going to start recycling aluminum cans and plastic bottles,” says James. “It’s been a major logistics issue for us, but we finally implemented a program.”

James and the Green Team placed recycling bins for aluminum and plastic all over CVMC and supported the efforts through a facility-wide staff education program. “Employees are fairly compliant with it now,” says James. “The bins are filling up. Now, we’re monitoring our solid waste stream for poundage, which is slowly decreasing.”

For various reasons, recycling bins aren’t practical in the nutrition care prep areas, but the bins are a common sight on the nursing floors, break rooms, meetings rooms and in the cafeteria.

The second phase of the aluminum and plastic recycling effort has begun with implementation at CVMC’s offsite practices and other entities.

### **Targeting Styrofoam**

Fueled by their success with aluminum and plastic, the Green Team then looked at Styrofoam, a material that is as ubiquitous as latex gloves in any hospital.

“The Styrofoam problem has long been a headache,” says James. “Until recently, when you’d go into our cafeteria, you would primarily see people eating off of Styrofoam plates and drinking from Styrofoam cups. That was an eye opener for us.”

At first, James and the team looked at the volume of Styrofoam use; and, like any hospital, it was substantial. However, to her grateful surprise, the facility appeared to at least be standardized on the kinds of Styrofoam products in nutrition care. “We use the 12- and 20-ounce cups, a 9-inch plate, an 8-ounce cup (for soup, etc.) and a 4-ounce bowl,” she said.

James knew an outright ban on Styrofoam was not practical, given how much its use was imbedded in nutrition care. So, the Green Team first considered disposable alternatives to Styrofoam. Paper-based materials were immediately ruled out because they lack the durability and thermal properties Styrofoam offers. Next, the team looked at biodegradable disposable alternatives.

The cost of biodegradable products was astronomical,” James said. “A spreadsheet provided by our nutrition care staff showed that if usage of disposable dinnerware did not change and we

went to one of the biodegradable alternatives, the additional cost would be \$133,000 per year.”

### **Decision time: Styrofoam reduction vs. outright elimination**

James and the Green Team decided to table the biodegradable option in favor of a Styrofoam reduction plan.

“Before we decide on or try to source alternative products, we’re trying first to *reduce* the amount of Styrofoam we use,” she said. For example, CVMC’s nutrition care department is now buying more reusable dishes and, when practical, encourages staff to use them.

### **Custom employee thermal mugs replace Styrofoam cups**

No reduction effort thus far has hit a resounding positive note more than CVMC’s program that allows employees to buy a high-tech mug and receive 10-cent discounts on most beverages. James and the Green Team discovered the Tervis Tumbler®, a high-quality thermal mug that has a lifetime warranty, is sweat-free, and is microwave and dishwasher safe.



**The Tervis tumbler**

The 24-ounce mug, emblazoned with CVMC’s logo and a reminder that use of the mug prevents 520 Styrofoam cups from ending up in landfills each year, was a smashing success. James also received administration support behind the effort, agreeing to underwrite the difference in the cost (\$12.91 per mug) and the \$10 employee cost for the mug, which can be paid for through payroll deduction.

CVMC staff have the option of purchasing a handle separately (see photo) for five dollars. “We told everyone that with the 10-cent discount on beverages, their mugs would pay for themselves after just 100 uses,” James said. “That kind of return on investment hit home with employees.”

The mugs “sold like hot cakes,” says James, noting that 300 mugs sold out quickly in just one day, and another 300 went almost as fast. “It was like sale day at Macy’s or Filene’s Basement. I had to reserve a case so that mugs would be available for sale during the 5p.m. to 8 p.m. shift. By 6 p.m. on the first day, the mugs were all sold out.”

Dine-in cafeteria customers, both staff and visitors, get a free beverage refill, regardless of the kind of container they use. This presented a bit of a challenge when it came to Styrofoam cups, however. “One of the things that concerned us was when the cafeteria closes between meal times, the cups were still outside the locked area, so anyone could walk up and get a Styrofoam cup,” says James. “Nutrition Care now houses those cups in a more secure area that is inaccessible when the cafeteria is closed. This has also help cut down on the number of cups being used.”

### **Reusable mugs replace Styrofoam cups, pitchers on patient floors**

James and the Green Team made big inroads by replacing Styrofoam cups and plastic Styrofoam-lined pitchers with plastic reusable cups on nursing units and patient floors – mugs that nurses can write names and room numbers on and that patients can take home after their stay.

“For non-isolation patients, nurses can take the mug out of the room and fill it with ice and water because it has a place to write the patient’s room number, name, etc.,” James said. “The \$20,000 annual cost for the plastic reusable cups may eventually be offset by the reduction of the Styrofoam cups and plastic Styrofoam-lined pitchers.”

### **New pricing plan discourages Styrofoam use**

On September 1, 2011, CVMC implemented a new pricing plan that only provides free water and ice for people who supply their own mug or Tervis Tumbler. People who choose water and ice in Styrofoam cups have to pay 10 cents. Earlier, CVMC began charging 25 cents extra for “to go” Styrofoam food boxes.

“The pricing change was met with little or no resistance, since many convenience stores and fast food restaurants already charge for water and ice,” says James. The plan only has one small hitch: ensuring cashiers remember to charge for ice and water in the Styrofoam cups. “We’ve given away water and ice for free for so long now that it’s ingrained in most people,” she said. “If anything, this will make people start thinking about the advantage of opting for reusable products.”

## **CHALLENGES**

Any change has its challenges, and CVMC’s Styrofoam reduction efforts have met each one head-on.

### **Challenge 1: Funding**

While CVMC’s administration enthusiastically supported the Tervis Tumbler rollout, its offer may be limited. “To date, we have ordered 900 Tervis Tumblers that are being sold at the subsidized price. We may not get future tumbler purchases subsidized, so the mugs may cost slightly more,” says James. “But, I really don’t see that being a major impediment, given the wide acceptance these mugs have already received by our staff. In any case, our program to reduce Styrofoam use among staff will eventually fund itself given the reduction in Styrofoam cups we were giving away for free.”

### **Challenge 2: Expanding the list of Styrofoam alternatives**

While the manufacturing sector works on finding attractively priced alternatives to Styrofoam that also provide its coveted thermal and durability properties, it’s nearly impossible to completely eliminate its use, as James has discovered. Nowhere is this more evident than in biodegradable substitutes. “We looked at biodegradable Styrofoam, and it would cost over \$100,000 at the usage rate we had before our current reduction efforts,” says James. “That’s

why we backed off and said, ‘Let’s try to reduce our usage before we ask permission to go to a biodegradable alternative such as paper.’ James said she continues to work with U.S. Foodservice, CVMC’s foodservice vendor, to explore alternatives.

### **Challenge 3: If it weren’t so cheap**

“The problem is Styrofoam is so cheap,” says James. “That makes it very difficult in these tight budget times to switch to a more expensive alternative. We’ve yet to find an attractively priced substitute that has Styrofoam’s thermal properties. So for now, we’re trying our best to *reduce* our waste.”

### **Challenge 4: Public perception**

Will staff and patients, as well as visitors, ever truly embrace a return to reusable products, or drink beverages from materials of unfamiliar origin? That remains to be seen. “It’s hard to change the mindset of people who’ve lived in a disposable world,” says James. “People tend to look at Styrofoam as sterile and ceramic or china plates as contaminated. It’s all just a perception issue. We have some employees who will only use the plastic silverware because they feel it’s clean and fear the reusable silverware wasn’t cleaned properly.”

### **Challenge 5: In some areas, Styrofoam is the only practical solution**

“Until a reusable solution provides the same level of sterility as Styrofoam, it will continue to be the material of choice for dietary products in areas such as isolation units,” says James. “In CVMC’s isolation areas, Styrofoam cups and plates are still used. Moreover, if an employee has a reusable mug and fills it with water, they likely will still opt for a Styrofoam cup if they also want coffee or tea.”

### **Challenge 6: Be careful what you ask for**

As most hospitals have discovered, a wholesale elimination of disposable beverage containers, dinnerware and flatware may be good for the environment, but it also means one thing — greater capacity needed to wash the reusable dinnerware.

Starting out in its Styrofoam reduction plan, James and the Green Team were quick to consider the impact any change would have on CVMC’s Nutrition Care Department. “We have been looking at the efficiency and capacity of our dishwasher, since we would like to insist that cafeteria dine-in customers use real china and silverware rather than Styrofoam and plastics,” says James. “But that’s not entirely feasible right now. Our nutrition care staff could not handle the increased volume of dishware on top of what they already wash.” James sought price quotes on larger units to replace CVMC’s existing dishwasher, and was quickly discouraged. Her requests for quotes included a unit that would cost around \$150,000 with a payback of approximately five years in energy and water savings.

“Administrators and the director of nutrition care looked at the information and found that it would cost \$200,000 to get the dishwasher, as well as the extra plates and silverware they’d need,” says James. “On top of that, they found it would cost an additional \$50,000 per year for

full-time employees over the next four years to handle the larger capacity, and the return on investment (ROI) was at as high as six to seven years.”

“We were hoping the energy and water savings, as well as detergent savings from a higher efficiency unit would offset the cost or improve the ROI, and we were hoping that we wouldn’t need to hire any additional staff to handle the additional volume, but we’re not there yet.”

### **Building on success**

With all the little steps CVMC has taken on its road toward environmental sustainability, the hospital hopes to one day make that giant leap toward being a fully “green” hospital – a vision shared by so many hospitals today.

In the meantime, it will continue building upon the kinds of successes it has had with Styrofoam.

“We are just taking the first steps to protect our health and the health of the environment and it’s difficult to put a number on what we’ve achieved with the program simply because it’s still relatively new,” says James. “The important thing is everything we do is having a positive impact and, in this case, less Styrofoam in our waste stream. Once we have reduced our Styrofoam usage as much as possible, we may be able to justify the cost of moving to a biodegradable substitute.”

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