

From Rubbish to Riches

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Recycling in Hospitals Outline

- I. Introduction
 - A. 92% of material thrown away in hospitals can be recycled (Bobrow, 2013)
 - B. The waste in hospitals that is often discarded could be put to used to fund more energy efficient hospital buildings
 - C. Hospital waste should be recycled and used to make a more energy efficient facility.
- II. Body
 - A. Background
 - 1. Definition
 - a. Waste- “an action or use that results in the unnecessary loss of something valuable” (“waste,” n.d.)
 - b. Biomass energy- “Renewable organic materials, such as wood, agricultural crops or wastes, and municipal wastes, especially when used as a source of fuel or energy” (“biomass energy,” n.d.)
 - 2. History
 - a. Discuss the recycling program already in place
 - b. Energy efficient hospitals already in place
 - B. Reasons to recycle and create energy efficient hospitals
 - 1. The amount of money made from recycling that could go towards a more energy efficient building vs. the cost spent to dispose of the materials
 - 2. What is working for hospitals that have already started implementing this
 - 3. Things are being discarded that could be recycled
 - 4. Process of recycling and how it would be used to in a biomass facility to create an energy efficient hospital
 - C. Counter Arguments
 - 1. Recycling hospital equipment and supplies could be dangerous in operating rooms
 - 2. Recycling program in Maryland where people are recycling and reusing single use devices and the contamination of people led to a consent form before performing procedures
 - 3. An energy efficient hospital building is expensive and hard to fund
 - D. Implementing a recycling program that would allow the waste to be broken down into cellulosic ethanol could be used to heat and cool the hospital, which would save thousands of dollars annually.
 - E. Hospitals should implement a recycling program that turns municipal waste into cellulosic ethanol
- III. Conclusion

The smell of antibacterial cleaners and seeing the set-up of medical supplies on the silver tray cause the patient's stomach to flutter with trepidation. As he waits for the doctor to enter the room, he cannot help but notice the sharps box and colored trash can. Being the curious person that he is, he sees the containers are nearly full and cannot help but wonder what happens to the supplies once they are discarded. Hospitals discard nearly ten million tons of trash each year, and 92% of the material thrown away could have been recycled (Bobrow, 2013). This means that 92% of the waste could have been used to fund a more energy-efficient hospital facility. Some hospitals may already encourage recycling; however, updating the program already in place could save the hospital thousands of dollars every year. Most people are not even aware that there is a way to recycle biohazard materials. Hospitals should be mandated to implement a recycling program that requires biohazard and municipal waste to be broken down and used to create biomass energy that could regulate the temperature throughout the building.

Before continuing, there are some words that need to be clearly defined. Waste is defined as "an action or use that results in the unnecessary loss of something valuable" ("waste," n.d.), and biomass energy is interpreted as "Renewable organic materials, such as wood, agricultural crops or wastes, and municipal wastes, especially when used as a source of fuel or energy. Biomass can be burned directly or processed into biofuels such as ethanol and methane" ("biomass energy," n.d.). These definitions are important to keep in mind since they are often misinterpreted. Most hospitals already have a recycling program in place. However, most of these recycling programs target materials such as food, paper, cardboard, and plastics. For example, in New York, their recycling program consists of using a decomposition system in the kitchen to cut down on the amount of wasted meals. They feel that this saves money by reducing the number of times their charter truck has to travel through the city to dispose of the wasted food bins, but if the charts provided show that this program only saves the hospital approximately \$950 a year. If this hospital, like many others, would update its recycling

program, it could save up to \$20,000 a year, which would allow doctors to perform more *pro bono* surgeries to help people who cannot afford them (“Our Recycling Program,” 2014). This example is only one of the many reasons hospitals should implement a recycling program.

Next, the many benefits to recycling are endless, but here are few examples. First, depending on the size of the hospital, the cost of waste disposal can be as high as \$100,000 each year (Men, 2012). Steve Reiter, CEO of Shriner’s Hospital for Children in Houston, Texas, makes this statement regarding the costs associated with a more energy efficient hospital building: “The green construction costs 1-7 percent more in initial outlay, but the higher amount will pay off down the road, because green hospitals use up to 30% less energy and tend to have lower life cycle costs” (“Does Green Really Pay Off,” n.d.). This same article also states that an energy-efficient hospital increases the building’s value by 15%. Implementing an intense recycling program that allows hospitals to send their waste off to a biomass facility would save the hospital 38% of the cost associated with the disposal of their garbage (Riedel, 2011). Next, Gail Vittori, Co Director for Maximum Potential Building Systems Committee, states,

Energy-efficient certified healthcare facilities do not necessarily have higher first costs than ‘non green’ buildings, first costs are independent of building size and energy-efficient certification level. Energy-efficient facilities improve patient healing; thereby, reducing length of stay, these buildings reduce operating costs by curbing water and energy expenses, and dollars budgeted for utilities can be redirected towards patient care. (2009)

Aside from the cost associated with going green, many people may feel that the process of creating an energy-efficient hospital is too complicated. However, Mascoma, a cellulosic biofuels company based out of Lebanon, New Hampshire, describes the process of turning municipal waste and recycled goods into biomass energy that can be used to heat and cool hospital facilities. The process

works by taking the garbage and pretreating it with two different types of bacteria and a strain of yeast. Then, the pretreated garbage is mixed with extreme heat and enzymes that break the garbage down into fermented sugar. Other bacteria can turn the glucose into ethanol. All of this can be done at a biomass facility. Currently, biomass facilities can be located in every state except Oklahoma, Mississippi, and North Dakota (“Cellulosic Ethanol on the Cheap,” 2009). These are just some of the ways going green can improve a hospital.

Furthermore, many people may not believe the benefits of recycling and creating an energy-efficient facility will outweigh the initial costs associated with it. A senator from Maryland stated in *The Baltimore Sun* newspaper that he believes using recycled medical supplies and equipment is too dangerous for the operating room. In Maryland, it was brought to light that doctors began sterilizing and reusing “single use only” devices. Recycling these devices saved the hospital nearly \$2,000 per procedure. However, the senator feels that devices like these should not be recycled because there is no way to tell if they have been sterilized properly before being placed into a patient. However, Sharon Snider, a spokeswoman from the Food and Drug Administration (FDA), states that “There is no data to indicate people are being injured,” and that “Only 245 of 300,000 reports of serious device malfunctions received by the agency in the past three years could be tied to reuse of disposable equipment” (qtd. in Wheeler, 2000). In this same article, an industry lobbyist also discusses how manufacturers will put the phrase “For Single Use Only” on medical devices in hopes to increase their sales. Therefore, they are aware that reusing these devices, when cleaned properly, will cause no harm to patients. Doctors have been reusing medical supplies for centuries and are properly trained on how to sterilize and dispose of them correctly. If doctors can be trusted with the lives of others, there is no reason to doubt their ability to recycle and reuse medical supplies; because of the argument brought up regarding the recycling and reuse of medical supplies, the Democrats of Maryland got together and drafted a bill that would keep hospitals from being able to reuse these devices without receiving written consent from

their patients. If a patient was not given this formal consent packet, the hospital could be charged up to \$10,000. However, this packet did not give the patients an option to receive care with different supplies, but it made them aware that the supplies could be sterilized and reused. Instead of finding problems with the recycling programs in hospitals, patients should be grateful for it. If hospitals did not implement these programs, the cost of medical procedures would have to be raised. This means that patients may be expected to pay more “out-of-pocket expenses.”

Next, research shows that most hospitals do not make their facility energy efficient because of the funding required to build a special treatment facility. However, research shows that the increased costs associated with building an energy-efficient facility will be paid off in saved utilities within the first three years. Next, nearly 50 percent of a building’s cost goes to maintenance and repairs. By building an energy-efficient facility, it is likely to save approximately 20% of the cost associated with routine maintenance and occasional repairs (Vittori, 2009).

In conclusion, the large amount of waste in hospitals that could be recycled and turned into energy could save the hospital thousands of dollars each year. The recycling programs in hospitals need to be updated or implemented more strictly, and the municipal garbage and some of the biohazardous materials could be broken down and turned into ethanol, which could be used to heat and cool hospital facilities. These are all reasons why hospitals should be mandated to implement a recycling program that collects municipal garbage and biohazard waste to be broken down and turned into biomass energy that could regulate the temperature in hospitals.

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