

About Being a Green Hospital



Introduction

The purpose of this paper is to outline and note important opportunities in becoming a green hospital. A green hospital can be defined as a hospital that is seeking to reduce their overall waste by pursuing more environmental means of waste disposal, such as recycling and composting. There is a lot of information on how to achieve this goal and only what is felt significant to Peterborough Regional Healthcare Centre (PRHC) is summarized here. Before any final decisions are made the PRHC will have had its current recycling program assessed and thus be more able to choose the best alternatives and improvements for their situation. In this paper we will present what some of these possible changes and improvements should be according to a resource that is hard at work helping hospitals reduce their waste and become greener.

The resource profiled for this study is called “Healthcare Without Harm.” This particular resource ties in very closely with several other associations that provide information and guides to cutting back on solid waste in hospitals and thus is why it was selected. Healthcare Without Harm works nearly in conjunction with Hospitals for a Healthy Environment, or H2H, in helping hospitals achieve their environmental goals. These resources are based in the United States and provide many links to other countries’ success stories of hospitals cutting back on solid waste quantities. These two associations are very closely related and refer to each other greatly in their endeavours. In addition to using information provided by Healthcare Without Harm this paper will also include two case studies of hospitals that have undergone major recycling changes to becoming a green hospital. The first case study will be that of Cambridge Memorial Hospital in Cambridge, Ontario and the second Norfolk General Hospital/Norfolk Hospital Nursing Home in Simcoe, Ontario. Both of these hospitals are close to the same size as PRHC, bed-wise.

Throughout this paper it is important to note that the information being presented serves to act as an introduction to the potential for waste reduction in hospitals. It is not the actual recommendations for the PRHC, but only a gentle guide to present the opportunities available in reducing waste and improving recycling programs. The information is provided to be taken into consideration before the PRHC recycling assessment to get the wheels turning and enabling us to see where improvements can be made as we assess the current situation. In follow up to this paper there will be a baseline assessment of the hospital’s current state of recycling and then, with both documents under hand, we can take the steps to making appropriate changes in recycling at PRHC.

Healthcare Without Harm has outlined several helpful courses of action to pursue in becoming a greener hospital. In this section we will look at waste minimization, environmentally preferable purchasing (EPP), re-usable products and compost.

Waste Minimization

Healthcare Without Harm has found that to make waste minimization most effective the following techniques should be practiced; segregation, source reduction and resource recovery and recycling. Segregation means to separate different types of waste before they get to the recycling or garbage pick up point. By having bins for each type of waste, such as paper, compost, plastics etc... sources of waste are easier to handle and manage for you and for the collection agency. A system as such makes for more efficient waste collection and recovery. Source reduction ties into the concept of environmentally preferable purchasing which will be discussed in its own section of this paper. Essentially it means to purchase goods that are re-usable and that produce little to no waste. By buying more durable products costs are cut in materials as well as in collections of wastes. Lastly is the recovery and recycling of goods. Hospitals have similar waste to that of hotels or businesses, paper, cardboard, plastics etc...therefore these goods can be easily diverted from the solid waste stream by implementation of recycling programs.

To begin working towards cutting back on solid waste and improving recycling Healthcare Without Harm has a quick guide of 6 easy steps to follow.

1. establish a green team
2. conduct a waste audit
3. implement a waste segregation program/system
4. education is a top priority
5. recycling
6. purchasing practices

The first two steps have already been implemented at PRHC which is great because this means they are on the right road to becoming green. The PRHC does have some recycling stations; however their effectiveness is yet to be determined. According to Healthcare Without Harm hospital solid waste consists of 53% paper, 17% food and organic waste, 15% plastic, 3% metal and 12% other. Accordingly these would be the main waste segregation categories. However in order to best place bins for separation we need to determine where most of each of these materials is generated and locate bins in those areas. For example, the cafeteria would require several food bins whereas the ER admittance desk would require many paper bins.

Education *is* a top priority because without teaching the staff how to recycle properly the effort will be wasted upon arrival at the recycling facility. Often things placed in the recycling bin may be contaminated or broken thus posing health risks to workers in the recycling facility and causing those goods to be thrown out as they are no longer recyclable. Fortunately in this case, there is a team working on developing a

communications and educational plan to disclose the results of this research to the hospital's human resources. In our situation this step will take place closer to the end of this project as we have yet to decide on what to improve about the current recycling program at PRHC.

When it comes to the recycling itself there are many possibilities to choose from. We can follow examples set by other hospitals, or set our own. We need to explore our options.

Recycling options:

There are three major forms of waste minimization according to Healthcare Without Harm; those being environmentally preferable purchasing (EPP), pursuit of re-useable products or beginning a composting program. Another means to being green is also how the building is structured. Because PRHC plans on construction of a new building some information on building a green building has been included as future forecasting.

Environmentally Preferable Purchasing (EPP):

EPP is the purchasing of goods that result in less environmental impact and harm to human health than their competitors. It is as simple as buying recycled paper and as complicated as tracking the life cycle of a product from "cradle to grave." Purchasing is a key driver of how much or how little waste will be produced down the road from when the products enter the hospital. Therefore it is important to pursue the best environmental purchasing practices that are available to you to reach your green goal.

To do this, Healthcare Without Harm provides the following action steps.

- Establish a team to run the program
- Plan your approach by identifying your environmental goals and which ones can be met by EPP
- Examine the options available to you (local vendors) that can help you reach your environmental goal
- Evaluate and prioritize your options/alternatives according to the needs of your hospital. Test it.
- If it is successful then pursue full implementation and keep it monitored to see how the people react to it and how it reacts to your hospital's working environment

Healthcare Without Harm suggests the creation of a team because each department can then have input and therefore provide for a diverse field of opinions and questions. The team should ideally be made of at least representative from each department so they can each state their point of view and share purchasing needs. The team also helps to narrow down the broad spectrum of all the different departments and their purchasing needs. Also the variety allows for shared expertise in what products would be suitable and which ones could not be feasible.

Let it be noted that the above information is merely a brief introduction to the concept of EPP. It should not be considered to be a complete guide to pursuing EPP but

merely noted as a very important part in reducing overall waste at the hospital and something worth finding more about should it be appropriate to the hospital's goals.

Re-usable Products:

The initial cost of re-usable products is sometimes more than disposable products initially. The long term costs of re-usable products are less because in the long term there is less waste to be collected and fewer products to be purchased. Re-usable products often last longer and require less maintenance so in the end tend to be more cost effective. Also re-using products is one the nest ways to cut back on waste; saving goods from being garbage means a healthier environment all around.

Composting:

Composting is the collection of food wastes for re-use as fertilizers. By pursuing a composting program a hospital can greatly reduce the amount of waste being sent to landfills as food and organic wastes make up a large percentage of solid waste, the amount depending on individual hospital sizes. The compost can also become a source of income for the hospital as it can be sold to farms or garden centres. Another alternative is to develop a pick up service with pig farmers where they take the compost for slop for their pigs. This aids the local pig farming industry in cutting their food costs and solves the problem of what to do with the compost. If these options are not thought to be viable for PRHC then the compost can always be used on the landscape for the vegetation.

All food wastes from patients and cafeteria should most definitely be selected for compost. This can be easily enough by placing a few collection bins in the cafeteria area as well as on the carts that collect items form the patients' rooms. By making the compost process part of the everyday routine in the hospital it should be able to become a successful addition to the waste reduction program.

Due to the expected high volume of compostables a hospital can collect it is important to choose the type of composting best suited for PRHC. Vermicomposting is a method that can be done indoors, year round. All that is needed is a bin and some red wiggler worms. Put them together along with the compostables and you have efficient and valuable compost. The type of composting best suited for PRHC will be discussed and chosen after an assessment has been done on recycling and food waste in the hospital.

Future Considerations for the new Building:

Not only is it important to reduce, re-use and recycle in the hospital, it is also very important to be aware of how to make the actual building itself a safe and environmental structure. By following in the examples set by Healthcare Without Harm we can begin to learn what kinds of actions should be pursued to reduce the impact of the building and how to build in an environmentally friendly manner. Healthcare without harm has provided much literature on how to build hospitals with materials that are healthy. We will take a general look at what some of these guidelines are in order to consider them in the future development of the new PRHC.

Some key considerations when designing a new hospital are things such as design based on a key environmental issue providing multiple benefits. Also important is to use materials that are readily available in your area instead of pursuing materials in which

costs of import and transport become larger and larger. These materials should also be chosen based on their proven environmentally friendly effect. Considering the long term effect of materials is a good way to avoid problems down the road, for example avoid use of products containing PCVs, formaldehyde. By avoiding materials that have potential to be harmful or have been found to be un-friendly the hospital can attain a more environmentally sound facility from the start.

Materials however should not be the only factor in deciding on the new design of the hospital. It is important to consider how the air will move through the building, design means for water usage efficiency and also incorporate energy efficient equipment into the new building.

Case Studies

Cambridge Memorial Hospital, Cambridge, Ontario

Located in Cambridge, Ontario this 232 bed hospital was the first to become ISO-14001 certified in North America. The steps to reach certification began with approval from the hospital's board of directors to pursue an environmental management system (EMS) modeled after ISO-14001. The hospital sets yearly objectives and goals for environmental management in specific areas. The Cambridge Memorial Hospital has been awarded the 1999 Recycling Council of Ontario's Outstanding Institutional Award as well as the 2000 Region of Waterloo Sustainability Award. In their first year of certification (1999) they were able to divert 27.5 tonnes of white paper from waste and increase their recycling by 40% by placing 22 new recycling stations throughout the hospital. As of 2000 these results grew to become 60 tonnes of white paper diverted and another 20% increase in recovering recyclables. They also work to be green by participating in programs such as "intravenous bag recycling," which has diverted 1.5 tonnes of polyethylene from waste; they work with other companies/suppliers in a take back program, or "stewardship initiatives," to cut back on the amount of office products/packaging leading to waste. For example, suppliers of printer ink cartridges take them back upon delivery of more. One of the most noteworthy programs, however, is the "minimized use of disposables in the operating room," where disposable products have been greatly replaced with re-usable gore materials (for table covers/drapes, for example).

The fruit of this labour comes in the form of a 28% decrease in total waste volume and economic savings. The Cambridge Memorial Hospital's biomedical waste reduction program has saved the hospital \$5000 since implementation in 1999. Also part of this was the shutting down of the incinerator which has saved 5% in energy costs. The staff of the hospital is now more environmentally aware and holds event days such as "Garbage Free Lunch" and "Green Transportation."

Norfolk General Hospital / Norfolk Hospital Nursing Home, Simcoe, Ontario

This hospital has 121 beds for the community hospital and 80 beds for a nursing home so it is close in size to PRHC. The Norfolk General Hospital/Nursing Home (NGH/NHNH) has been awarded with an honourable mention from the Recycling Council of Ontario in 1998 and in 1999. Long before this, in 1995, they received the

“Outstanding Achievement in Energy Management Award” from the Task Force on Energy Management in Health Care Facilities in Canada.

They are noteworthy to us, however, because of their composting program. They collect food from patient trays and from the Food Services department and process it through a garburator along with paper napkins, paper towels, milk cartons and cardboard. It is stored in 64 gallon tubs that are collected and taken to a plant to be recycled into high protein animal supplement. Composting has gotten rid of problems such as odours, pests and spread of disease from waste.

NGH/NHNNH has been able to keep its 40% waste diversion growing by ensuring they do all they can in waste minimization. Their costs associated with waste has been on the decline since 1996; a major factor being that of the closure of their incinerators. The cost of \$0.30/ M3 (on average) has saved NGH/NHNNH an approximate \$32,000!! Prevention now means lower costs later and thus waste minimization pays off.

Conclusion

To become a greener hospital is one of the most relative changes occurring in the health care sector at this time. Our next step in reaching a green goal is to assess the current recycling productivity at PRHC. By re-viewing some of the options available to us we can enter this task with more awareness on what to look for and what to pay special attention to. Now that we have some resources under our belt and have a bigger picture of green hospitals we can begin our own process.

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