

Strategies to reduce waste in patient food services



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Abstract



OBJECTIVES: As an environmental initiative, the objective of the study is to determine strategies to reduce waste in patient food services (PFS), and to develop a communication tool to share the strategies with hospital food service managers (FSM).

METHODS: An evaluation of waste reduction strategies was performed by completing a literature review, communicating with FSMs and environmentalists across Canada, developing and distributing an online survey for hospital FSMs in Ontario, and initiating a waste separation program. Data from all sources was combined to develop a communication tool containing strategies for waste reduction in PFS.

RESULTS: 49 completed surveys were analysed (a response rate of 41%). Of the Ontario hospitals surveyed, only 4% base purchasing decisions on products with the least amount of packaging, 55% never perform waste audits on non-food waste returned on patient trays, and approximately 70% dispose recyclable and compostable wastes from returned patient trays into regular waste. A pilot waste separation program in a hospital dishroom stripping station resulted in a 50% reduction in regular waste, and a doubling in the amount of recycled waste at the station e.g. by recycling milk cartons and juice containers. There were no additional costs to initiate the program aside from better utilizing labour. The communication tool consists of three focus areas for waste reduction: waste audits, source reduction and prevention, and waste separation programs.

IMPLICATIONS & CONCLUSIONS: FSMs are interested in environmental options for their facilities, but time, cost and labour are barriers that affect the implementation of waste reduction strategies in PFS. The tool developed in this study provides practical cost-effective options for FSMs to improve their environmental impact by reducing waste produced in PFS.

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Introduction



Increasingly, there are requests for ‘greener’ practices by hospitals and long-term care facilities. There are some central reasons why green initiatives are encouraged and essential in healthcare.

Firstly, hospitals have a large impact on the natural environment including waste generation and disposal (including toxic materials), excess energy and water usage, and the release of greenhouse gases through incineration and pollution. Hospitals consume a lot of resources to meet a particular standard of care; however, the broader impact of a hospital’s consumption can adversely affect the environment and the health of humankind. Hospitals have a duty to ‘do no harm’, and provide a healthy and healing environment for patients, staff and visitors – and greener practices support this mission.

Secondly, there is potential cost savings associated with switching to more environmentally friendly options. For example, waste disposal can be extremely expensive; the Ontario Ministry of the Environment predicts that Ontario hospitals produce 136 million kilograms of solid waste annually (15) with an average of 0.22 to 0.67 kg of food and packaging waste discarded per meal served in food service operations. Approximately 90% of food service waste can be diverted, and savings can be produced through decreased disposal costs, by recycling and composting.

The Ontario Ministry of the Environment predicts that Ontario hospitals produce 136 million kilograms of solid waste annually.

And lastly, it’s popular. To be considered leaders in their field, healthcare organizations must demonstrate a genuine commitment to green behaviours. Healthcare organizations (e.g. The Canadian Coalition for Green Healthcare, Health Care without Harm, and ARAMARK with its Green Thread environmental stewardship initiatives) that promote minimizing the adverse environmental impacts that results from healthcare delivery, are respected as socially responsible leaders.

To support the environmentally responsible delivery of healthcare services, the objective for this study was to determine low-cost, easy to implement, strategies to reduce waste in patient food services and to develop a tool to share the strategies with hospital food service departments.

Research Methods



This report is supported by qualitative research that involved gathering information and ideas from various sources to compile a list of the best strategies (i.e. low-cost and easy to implement) for hospitals to reduce waste in patient food services. Strategies were obtained from literature, case studies, online environmental listservs (Canadian Coalition for Green Healthcare), environmentalists, and interviews with ‘green’ leaders in food services. Kent Waddington, a leader of ARAMARK’s environmental stewardship initiatives, provided examples of strategies and contact information for several people who provided green strategies.

Additionally, a survey (the “Survey”) was distributed to food service managers (“FSMs”) throughout the Province of Ontario. It was entitled, **Environmental Strategies to Reduce Waste in Patient Food Services** (see **Appendix A**). Survey Monkey was used to distribute and analyze the survey. It was sent to 120 hospital FSMs and 49 responses were obtained. Closed-ended questions on the Survey gathered information on source reduction techniques, waste separation programs, waste audits and waste stream analyses. Open-ended Survey questions asked managers to provide information regarding the barriers faced when trying to introduce waste reduction strategies, and for any waste reduction strategies that would be beneficial to other FSMs (see **Appendix B**).

Additionally, a ‘no-additional-cost’ waste separation program was implemented and studied at Toronto Rehabilitation Institute’s (“Toronto Rehab”) Hillcrest Centre, a 60-bed facility. The program involved adding a recycling container at the tray stripping station in the dish room. Dietary staff were to separate waste from returned patient trays into regular waste, organic waste, and recyclable waste (mostly milk cartons, juice containers, and hot beverage/cereal plastic lids). The implementation of the program involved the development of signs, education sessions with staff , a reference tool for food service managers, and a discussion with hospitality services to ensure proper removal of the increased load of recyclable waste.

Data gathered from the above research activities is discussed in the **Results and Discussion** section of this document.

Results & Discussion



Waste reduction strategies, identified through primary and secondary research fell under one of three categories: (1) waste stream analyses/audits, (2) source reduction techniques, or (3) waste separation and effective disposal. This section of the report has been structured to reflect each of these categories. To implement one or more of these strategies, FSM Survey respondents indicated that it is very important to identify environmental champions within the food services department, to encourage others to cooperate and follow through, leading by example. In the **Communications Tool** (see **Appendix A**), the strategies described below have been narrowed down to only those considered low-cost and easy to implement.

Waste Stream Analyses and Audits

A waste stream analysis is defined by Health Facilities Management as, “the simultaneous collection, separation, and determination of volume and weight of all waste generated and disposed of in all production and service areas for a certain period (such as five days or a week). Wastes are sorted according to type of packaging material (e.g. corrugated cardboard, plastic, paper, or food), and weight and volume of each material collected is recorded at different times throughout the day. The total weight and volume is then computed per day and per week” (1). The information gathered from a waste stream analysis is extremely beneficial in determining the composition of waste, providing insight as to what items can be changed or decreased in order to limit overall waste produced.

49% of hospital food service managers do not perform waste stream analyses.

A waste audit is similar to waste stream analysis but is not as detailed. It determines food and non-food waste (such as packaging) from production and patient tray service. It can help increase the accuracy of forecasting by providing information on items left over as waste. The information gathered from this analysis is extremely beneficial in determining the material of which the waste is composed, and therefore, provides insight into which items can be decreased in order to limit the overall waste produced (14, 18).



Results and Discussion

Results from the Survey reported that 49% of hospital food service managers do not perform waste stream analyses (for reasons such as: never investigated, not a priority, cost, resources, not sure if this is part of my job).

A study by Hackes and Shanklin, involving the completion of a waste stream analysis in the food service department of a continuing care retirement community showed that packaging composed of 28.2% of the total waste stream by weight and 85.9% by volume, and that production and service food wastes consisted of 81.8% and 14.0% of the total waste stream by weight and by volume, respectively. Equipped with this information, researchers could identify where changes in their production system could limit waste (for example, more accurate forecasting, improved portion control, discontinuing the use of Styrofoam) (14).

For organizations with limited internal resources, it is possible to outsource waste stream analyses to waste management companies, or to organizations such as the Recycling Council of Ontario (RCO). RCO has a waste audit program whereby they review a facility's operations to determine the best strategies to reduce waste for the organization or department, plus they teach staff how to complete audits in the future. RCO develops plans for facilities that show them how to reduce waste, properly dispose of waste, and evaluate suppliers – providing suggestions for purchasing that will have the least impact on waste production (26).

Regarding performing daily waste audits, results from the Survey indicated that almost 45% of Ontario hospitals completed them on food left over after portioning, but audits of food returned on patient trays occurred less frequently (23% monthly, 23% quarterly, and 23% annually). Waste audits of food left over after portioning are beneficial in determining if forecasted demands are higher than necessary and waste audits on food returned on patient trays help FSMs recognize specific food items that are not well liked by patients. For example, Jennifer Mercer, Food Service Manager of Aberdeen Memorial Hospital in New Glasgow NS reported that a waste audit of food returned on patient trays signalled that most patients were not eating their desserts (sweeter items, such as cakes and squares). This helped her to recognize what items could be eliminated from the menu, which resulted in decreased costs (not purchasing the returned item) and decreased waste. Her recommendation was to perform a waste audit on food returned on patient trays monthly, or bimonthly (19).

Because the majority of wastes coming from patient trays are normally non-food items such as milk and juice containers, paper menu cards, condiments,

and napkins or straws, it was remarkable to see from the Survey that 55% of hospitals' food service departments never complete a waste audit for non-food waste items returned on patient trays (see **Appendix D: Tables From Survey - Table 1**).



Irene Zlupko, Director of Nutrition Services of Burlington's Joseph Brant Memorial Hospital, performed returned tray audits and found that over 95% of the straws placed on trays in her facility were being returned unused. This information allowed Irene to stop placing straws on trays (or to provide straws only to those that required them), which reduced the wastage and cost of straws – thereby reducing the environmental impact caused through manufacturing and landfill disposal (34).

Margaret Clarke, Food Service and Environmental Manager of Haldimand War Memorial Hospital, explained that they don't have the proper amount of staffing to complete thorough waste audits. For situations like hers, a way to perform waste audits, without being extremely laborious, is to investigate the waste generated in a specific area (e.g. a salad station in production, or tray stripping area). Staff collect waste, sort it, and record its weight and volume throughout the day. This less rigorous method is easier, as the quantity of waste analyzed is much smaller and familiar to staff working in the area (3).

55% of hospitals' food service departments never complete a waste audit for non-food waste items returned on patient trays.

By regularly monitoring amounts of food and non-food waste via waste stream analyses and audits, FSMs should be able to better forecast and control portions and evaluate decisions related to product packaging and types of ware used. Waste stream analyses and audit strategies and tactics considered to be low-cost and easy to implement have been summarized in a **Communications Tool** (see **Appendix C**).

Source Reduction Techniques



Source reduction strategies are designed to limit the amount of product (including packaging, food, and service ware) that enters a facility, and ultimately the amount of waste leftover after preparing or serving patients. Strategies include purchasing practices that decrease the amount of material used in packaging, purchasing items in bulk, re-using products, purchasing biodegradable or biobased wares, and using a precise forecasting system to determine accurate quantities for production.

Results and Discussion

A notable outcome from the Survey was that only 4% of Ontario FSMs base their purchasing decisions on products with the least amount of packaging. In contrast, a study by Hackes, B. et al. found that 37% of FSMs do not base purchasing decisions on products with the least amount of packaging (14). The fact that so many FSMs do not base their decision on packaging is understandable, as FSMs typically purchase predetermined products through buying groups and cost is usually the primary factor when determining items to purchase. Nevertheless, FSMs should be conscious of packaging when buying product. Encouraging manufacturers and suppliers to redesign products and packaging so that weight and environmental impact are minimized is a valid source reduction strategy, but it's not easy to succeed. Manufacturers are often restricted in how many different ways they can afford to package products;

A redesigned 2-litre pop bottle resulted in a 30% reduction in mass thereby saving 131,000 tonnes of carbon dioxide per year in Canada.

typically they have different packaging quantities for large and small-scale facilities. Despite these sorts of challenges, successes have happened. For example, Campbell's switched their packaging of large quantities of soup from cardboard boxes to shrink-wrap, which significantly decreased the volume and weight of packaging left over in food services (34). In addition, numerous packaging plastics have been redeveloped to be thinner, such as the 2-litre pop bottle, which resulted in a 30% reduction in mass thereby saving 131,000 tonnes of carbon dioxide per year in Canada (equivalent to 35,000 vehicles being taken off the road) (7). Other examples include conversion of the 95 gram milk jug in the early 1970's to a 60 gram jug, which resulted in a 40% reduction in mass; and the reduction of the plastic grocery bag from 2.3 to .7 mils thickness (7).



Kady Cowan, Energy Steward of University Health Network, suggested that FSMs ask for product to be shipped in recyclable packaging that can be shipped back to the supplier (milk crates, bread crates, pails from fresh fruit, etc.) or ensure that the packaging is composed of recyclable or sustainable materials (6). Survey results indicated that some of this behaviour already existed, as most FSMs responded that they already used reusable containers for products such as milk (buying in crates), fruits and salads (come in pails that are reused by staff or by the department), bread crates, and Coke/Pepsi crates.

The reuse of products, especially food service ware, is an effective way to reduce waste in patient food services (14). Further, it can decrease or eliminate the use of Styrofoam and plastic polystyrene based ware. Polystyrene is a form of inexpensive plastic that is used to manufacture disposable food service ware. Polystyrene food service ware can have a severe impact on the environment by accumulating in landfills, producing toxic chemicals during disposal, and contributing to global warming. Disposable ware are usually composed of non-renewable virgin (not recycled) material, such as fossil fuels, and may take tens to hundreds of years to disintegrate, or may never completely deteriorate in any environment (21). Polystyrene manufacturing facilities can use polystyrene

Biodegradable food service ware is composed in whole, or in part, from renewable materials such as corn, potatoes, sugar cane waste and perennial grasses.

to make other plastic products such as CD jewel cases or hangers (23), however, the recycling of polystyrene foodservice products is considered an open-loop system, whereby a product made from virgin material is manufactured, recovered for recycling and manufactured into a new different product that is generally not recycled (23). Therefore, the elimination of service ware can reduce the amount of waste produced in patient food services, and prevent the negative environmental impacts of polystyrene production and disposal.

Biodegradable or biobased food service ware can be suggested as an alternative to some of the disposable food service ware. Biodegradable food service ware is composed in whole, or in part, from renewable materials such as corn, potatoes, sugar cane waste and perennial grasses. These items can be composted, as opposed to fossil fuel-based plastics that are not biodegradable or compostable (16). It may be economically feasible to replace disposable food service ware with biodegradable ones when used in small quantities; but a cost analysis will be required, as biodegradable products are much more expensive than foam based disposable wares. Regardless, the use of biodegradable products is a valid waste reduction strategy, even if only used in small quantities (e.g. isolated or violent patients).



Purchasing certain items in larger sizes, or in bulk eliminates waste produced from packaging and can be less expensive (32). A case study report from Itasca Medical Centre in Minnesota reported that the conversion to using a bulk milk dispenser instead of individual milk cartons resulted in a 7% volume reduction and a 32%, or 336kg/year, weight reduction in total hospital solid waste production (they were disposing of almost 75,000 milk cartons per year). This change included an overall cost increase of 1% or \$98 per year, which was inclusive of the cost of reusable glasses and single-use cup lids, but excluded additional labour expenses for time spent portioning (20).

The majority (98%) of Survey respondents used individual milk and juice containers to serve patients. The single portions were easier for staff (no portioning or cleaning of glasses involved) and saved on labour, but they significantly contributed to the total weight and volume of waste. A menu ticket count at three Toronto Rehab sites showed that 55,000 milk cartons and 50,000 juice containers from two different 60 bed facilities, plus 184,000 milk cartons and 57,000 juice containers from a combined 208 and 103 bed facility, were used annually. This is a total of 239,000 individual milk cartons and 107,000 individual juice containers that are used and disposed each year from the three sites. These large numbers could be reduced if these items were portioned from bulk.

Aberdeen Hospital in Nova Scotia has reduced a significant amount of waste by asking patients whether they would like milk or not and, if they do, pouring it at the bedside from a bulk container into reusable cups (19). Purchasing product in this format is less expensive than providing each patient with individual milk containers, but it does require extra time for staff to pour. Unfortunately, using bulk versus individual packaging rarely seems feasible after considering labour constraints, expense, time, and cost of additional reusable ware (including ware-washing), so this strategy is not considered low-cost and easy to implement. Based on this finding, it is recommended that each facility, at minimum, try to properly dispose of milk cartons and juice containers by recycling; this would have a significant impact, as Survey data showed that only 20% and 30% of hospitals recycled their milk cartons and plastic juice containers, respectively.

Another strategy to reduce waste is to stop providing food and other items that are returned on patient trays. By determining items that patients won't eat, it is possible to limit the amount of waste returned on patient trays. Lori Zdebiak, District Manager, ARAMARK Healthcare for Manitoba/Saskatchewan and Jennifer Mercer, Food Service Manager of Aberdeen Memorial Hospital in Nova Scotia use a room service menu which allows patients select the menu



option they'd like to eat (19, 33). They have found that this style of service has decreased the amount of food returned on patient trays. The **Communications Tool** in **Appendix C** provides suggestions for how to determine what patients would like on their trays (e.g. visiting patients during meals for meal observations, marked menus, food preference questionnaires, COW (computer on wheels), a choices menu, or room service style of service). This approach is supported by a study conducted by Hackes et al. which found that allowing a patient to determine the quantity of food served and the type of food served resulted in less food leftovers after meal service (14).

Additionally, the use of a forecasting system/software assists in controlling food waste after portioning and returned on patient trays by helping to determine accurate production quantities. It can provide specific information for forecasting production demands, and organizing food preferences, restrictions, diets, etc. The Survey demonstrated that most facilities (60%) were using a forecasting software system (CBORD, Computrition, PICIS), 14% used a physical tally from menu tickets, 21% estimated from experience, and 5% used a room service style menu to forecast production demands. Further, 79% of the respondents had a program in place that allowed patients to choose the menu items they would like, and 67% had a program in place to allowed patients to choose the quantity of food they desired.

Another strategy proposed for source reduction is ensuring proper portion control. Food waste is generated from over-portioning. Doris Foster, ARAMARK's Director of Nutrition Services at Toronto Rehab, commented that staff often over portion the entrée plate. Hospital trays have appetizers, main courses and desserts, yet most patients have decreased appetites due to illness, lack of activity, etc. Continually reinforcing portion control and explaining to staff the energy needs of patients is one way to control waste (13). Other suggestions to ensure proper portion control include: performing random audits of portioned food on plates, regularly auditing portions obtained per package (e.g. servings of vegetables per bag), and ensuring correct serving utensils are used during service.

Some of the source reduction strategies and tactics described above are not low-cost and easy to implement. **Appendix C** filters them out and summarizes those strategies considered to be best.

Waste Separation and Proper Waste Disposal



Waste separation includes the division of all items disposed into separate compartments for recyclable material, compostable material / organic waste, and residual material / regular waste. Composting is a natural process that converts organic material, such as food waste, into a humus-like product called compost. Humus refers to the point when organic matter cannot be further broken down. The decomposition process of composting is an aerobic process, in which microorganisms (such as bacteria or fungi) use oxygen to decompose organic matter into simpler substances (4). Items that can be composted include all food scraps, paper napkins and towels, paper, tea bags, as well as coffee grinds and filters. Paper products can be composted or recycled, but they are more valuable when they are recycled. Soiled paper (such as soiled menu cards) cannot be recycled but can be composted (4). The composting council of Canada states that approximately 50% of the waste stream is organic matter, so composting can play a very important role in reducing the amount of waste produced in hospital food service departments. In contrast, 'recycling' is the reprocessing of material into new products. It prevents useful material resources from being wasted; it reduces the consumption of raw materials and reduces energy usage and therefore greenhouse gas emissions. Recycling reduces the volume of garbage that is sent to disposal (22). Recyclable products include newspapers, cardboard, plastic, aluminium, steel, glass, and polystyrene (depending on the municipality).

65% of Ontario hospitals surveyed disposed of food, milk cartons, plastic juice containers, aluminium foil, napkins and tea bags in the regular waste stream.

Results and Discussion

65% of Ontario hospitals surveyed disposed of food, milk cartons, plastic juice containers, aluminium foil, napkins and tea bags in the regular waste stream, and 68% of survey respondents indicated that they do not have a system in place to send all compostable / organic items to a major composting site. Instead, they are disposing of these items with regular waste. This adds a significant amount of weight to regular waste that can lead to other problems, such as housekeeping staff injury (related to lifting or throwing heavy garbage bags). Respondents lacking a system stated that their municipality does not have a major composting site (not available locally), that they are not able to store food waste for pick-up, or that the start-up would be very time consuming and greatly increase labour costs.



Of the 32% of Survey respondents that indicated they did have an organic waste stream, 70% of them said that they disposed of their after portioning organic leftovers, and 75% disposed of their food scraps from production in the organic stream. Interestingly, the majority of Ontario hospitals are not disposing of paper towels and napkins with organic waste (30% disposed of paper towels and compostable / biodegradable food service ware in an organic waste stream, 45% disposed of paper napkins in an organic waste stream). Naturally, then, it is suggested that all food waste from production areas and from returned patient trays be composted.

Most Ontario hospitals are recycling recyclable products such as cardboard boxes or packaging, plastic containers, metal cans and glass jars or bottles, but only 50% of Ontario hospitals are recycling foil pans from outsourced prepared products. This is an area that could be further assessed, as these items can be recycled (or reused), but labour is involved, as they need to be completely emptied before they can be recycled or reused.

Survey data showed that most of the leftover food and non-food waste on returned patient trays were disposed of in the regular waste stream (65% dispose of food, 60% dispose of plastic food service ware, 70% dispose of milk cartons, 68% dispose of juice containers, 83% dispose of napkins, and 80% dispose of tea bags in the normal waste stream, when they could have placed these items in the recyclable or the organic waste streams (see **Appendix D: Tables From Survey – Table 2**). Fuelling these high numbers was the fact that a high percentage of hospitals used disposable ware on patient trays (68% use soup/hot cereal bowl lids and hot beverage cup lids, 50% use cold beverage cups, 63% use cold beverage lids, and 48% use condiment cups/plates).

Most leftover food/non-food waste on patient trays were disposed in the regular waste stream, when they could be placed in recyclable or organic waste streams.

During this study, the Nutrition Services staff at Toronto Rehab's Hillcrest Centre (60-bed facility) began a waste separation program; recycling and composting in the dish room (e.g. recycling all milk cartons, juice containers, soup/hot cereal bowl lids, and hot beverage lids). Production lists were used to count the daily quantities of each item. When properly separated into the correct containers, it was determined that Toronto Rehab's Hillcrest Centre could prevent 33,000 milk cartons, 24,000 juice cups, 44,000 small beverage lids, and 48,000 soup bowl lids from accumulating in landfills each year. In addition, the amount of regular waste that came from Toronto Rehab's Hillcrest Centre kitchen was reduced by 50%, which caused a doubling in the recycling



quantity from the kitchen (filled four large recycling containers daily, instead of the usual two). This initiative decreased the weight of regular garbage produced, as heavy items such as full milk cartons and juice containers were emptied and recycled by staff. There were no additional costs to initiate the program aside from better utilization of labour. The garbage collection cost to Toronto Rehab's Hillcrest Centre was approximately \$50 per-pick up (with three pick-ups per week) totalling approximately \$7,800 per year. As a result of the waste separation program, the reduction in garbage produced was expected to save Toronto Rehab \$2,600 per year (or 33%), by reducing regular garbage pick-ups by one per week.

Patient food service is a significant contributor to the waste stream. For example, a 1990 audit of the Ottawa General Hospital found that 5.5 kg of waste was produced per bed per day, and food services contributed to the top four categories of paper, food, plastic, and liquids that made up the total waste stream (15). However, a large impact can be made through waste separation and proper waste disposal. In 1990, The Hospital for Sick Children had a waste management expenditure of \$1.2 million with no recycling programs in place but by 1998, the hospital had introduced a recycling program that increased the amount of material recycled by 78%, and had a 6.7% overall reduction in the weight of material going to landfills; reducing annual waste management costs from \$560,000 in 1992/3 to \$107,097 in 2000/1 (15).

By dividing waste items into separate compartments for recyclable material, compostable material / organic waste, and residual material / regular waste, hospitals can make a big difference, reducing the weight, volume, and potentially the costs of waste in food services.

Other Initiatives

Other ideas for waste reduction that were not included in this study include redesigning packaging (packaging made of sustainable materials), on-site composting for rural areas, eco-friendly dish-washers (reuse rinsing water for the next washing cycle), and to the use of other energy or water efficient equipment. Additional areas in food services where waste can be minimized include energy, water, fuel (buying locally so items aren't transported as far), and purchasing sustainable materials.





Conclusion

There are many easy, cost effective strategies to limit waste in patient food services. Each strategy varies in the amount of staff, time and resources required for implementation; therefore it is essential to weigh the costs and benefits of implementing strategies suggested in the **Results and Discussion** section and **Appendix C** of this document. Healthcare facilities do have a large impact on the environment, and although some strategies appear simple or common sense, the Survey for this project showed that many of these strategies are not occurring. Any small initiative plays a role in reducing the environmental impact of a facility, and helps to meet the demands of clients expecting environmental improvements from their food service company/department. The “**Strategies to reduce waste in patient food services**” **Communications Tool** in **Appendix C** can help food service managers to identify and implement easy, low cost strategies for waste reduction in patient food services.

Postscript

Following Christina Mior’s work at the Hillcrest Centre of Toronto Rehab, another dietetic intern, Wendy Pak, implemented a similar strategy at the University Centre of Toronto Rehab. Wendy and the University Centre staff were able to divert an additional twelve bags of garbage from landfill to recycling daily. They did this by recycling more in the dish room, in production areas, and in retail areas e.g. juice containers, milk cartons and foil containers. About 86% of patient and retail waste at the University Centre now goes into recycling rather than landfill, a significant improvement from 32% before this project. Wendy’s work illustrates that this strategy can be replicated in other locations. The Toronto Rehab Nutrition Services Department was awarded the “Green Role Model Recycling Award” in recognition of this work.

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Appendix A – Survey Questions

Environmental Strategies for Waste Reduction in Patient Food Services



- 1) When determining food or supply purchases, how often are your purchasing decisions based on products with the least amount of packaging?
 - a. Always
 - b. Sometimes
 - c. Never

- 2) Have you ever purchased products packaged in reusable containers (for example, purchasing diced fresh fruit in pails, or individual milk cartons in milk crates), which are then returned to the manufacturer to be reused?
 - a. Yes. If so, which products? _____
 - b. No. If not, why? _____

- 3) Plastic and foam based disposable food service ware are composed of a synthetic substance called polystyrene. Does your facility use polystyrene based food service ware (such as foam or plastic cups, plates, cutlery, etc.) for patient food services?
 - a. Yes
 - b. No

- 4) If yes, please select all the polystyrene based items you currently order for patient services at your facility.
 - a. Plates
 - b. Hot beverage cups
 - c. Cold beverage cups
 - d. Cutlery
 - e. Other. Please specify _____

- 5) Please review the items below and consider how they are served to patients at your facility. Select whether your facility purchases the following items in bulk or in individual containers.

	Bulk	Individual
a. Milk	•	•
b. Juice	•	•
c. Cold cereal	•	•

- 6) Please select the option that describes how your facility forecasts production demands.
 - a. Software (CBORD, Computrition)
 - b. Physical tally from each menu ticket
 - c. Estimate from experience (past trends)
 - d. Other, please elaborate.

- 7) Do you have a program in place for patients to decide
- | | Yes | No |
|-------------------------------------|-----|----|
| a. What menu items they'd like | • | • |
| b. The quantity of food they'd like | • | • |
- 8) Does your food service department have a system in place to send all organic waste (such as food, paper towels, napkins, tea bags, coffee filters) to a major composting site?
- a. Yes
- b. No. If not, why? _____
- 9) (Will be part 2 of Question 8) If yes, please select all options that are disposed through an organic waste stream.
- a. Leftovers after portioning
- b. Food scraps from production
- c. Paper towels
- d. Paper napkins
- e. Biodegradable or compostable food service ware
- f. Other _____
- 10) Many foods are packaged in recyclable containers. Please select all items that are recycled from patient food preparation in your kitchen.
- a. Cardboard boxes or packaging
- b. Plastic containers
- c. Foil pans
- d. Metal cans
- e. Glass jars or bottles
- f. Other. Please specify _____
- 11) Picture an assembled patient tray from your facility. Please mark whether the following items provided on patient trays are reusable, disposable plastic or foam (single-use), biodegradable service ware (single-use), or not applicable.
 OPTIONS: reusable, disposable plastic or foam, bio service ware, n/a
- a. Tray
- b. Plates
- c. Plate dome
- d. Soup/hot cereal bowls
- e. Soup/hot cereal bowl lid
- f. Hot beverage cup
- g. Hot beverage cup lid
- h. Cold beverage cup
- i. Cold beverage cup lid
- j. Utensils
- k. Condiment cup/plate

12) Picture a returned post-patient tray. Please select how your facility disposes of each of the following items from post-patient trays.

OPTIONS: Reg. Waste, Recycled Bottles/cans/plastics, Recycled Paper, Organic Waste, NA

- a. Food
- b. Tray Liners
- c. Plastic service ware
- d. Biodegradable ware
- e. Milk cartons
- f. Plastic juice containers
- g. Aluminum Foil (covering plastic drink containers)
- h. Plastic Wrap
- i. Cans
- j. Menu cards
- k. Napkins
- l. Tea bags

13) How often does your facility perform a waste audit for:

OPTIONS: Quarterly, Semi-Annually, Annually, Biannually, Never

- a. Food leftover after portioning
- b. Food returned on patient trays
- c. Non-food waste returned on patient trays

14) "A waste stream analysis involves simultaneous collection, separation and determination of volume and weight of all waste generated and disposed of in all production and service areas of a facility for a certain period. Wastes are sorted according to the type of packaging material" (Byers, 1997. Health Facilities Management). Has a waste stream analysis been completed on your facility to identify the amount and type of waste produced?

- a. Yes. When? _____
- b. No. If not, why? _____

15) What do you feel are barriers/challenges that prevent you from implementing environmental practices in your facility?

Open-ended _____

16) Are there any waste reduction strategies in patient food services that you'd like to share with other food service managers in Ontario? Please elaborate.

Open-ended _____

Thank you for your time and suggestions! The results of this survey will be used to create a list of green strategies to reduce the environmental impact of hospital food service operations throughout Ontario. To receive the final list of best green strategies for your operation, please provide your email address.

Appendix B – List of Barriers/Other Strategies to reduce waste



Barriers or challenges identified regarding improving environmental practices in patient food services include:

- Staffing/labour (and cost of)
- Time (to separate and to implement such a program)
- Cost (cost constraints – budget)
- Distance to recycling facility or not having a recycling or composting facility in the area.
- Work involved in setting up a recycling or composting system
- Concerns of cross contamination
- Space to implement proper recycling system – cause too much congestion, i.e. Layout of facility
- High cost of biodegradable products
- Getting all employees to cooperate. This does involve a team effort that is not seen as a priority to all staff.
- Not being sure that separated recyclables/compost are actually being disposed of properly. (Dietary staff separate, but concerned that housekeeping mixes them in with regular waste).
- Too confusing for staff. Difficult to tell if staff is adhering to the procedures. Changing the current behaviours of staff (especially those doing one task for a number of years).
- Not enough awareness
- Not having a refrigerator to store food waste
- Cost of biodegradables due to lack of pressure on manufacturers
- Handling different collections
- Availability of products (not always available from suppliers)

Other strategies to reduce waste include as reported by respondents from the survey:

- Recycle all things that can be recycled.
- Room service program has significant reduced food waste from patient trays
- Garburator – has reduced waste in the dish room, decrease waste that goes to landfill by 75%, speeds up stripping process and therefore, saves on labour
- Monitor production/leftovers and ensure you are forecasting is as close as possible
- Annual waste audit
- Pulper – compact waste into fewer bags.
- Communicating new programs to all dietary staff, and not to assume that everyone is taking part in the process. Use visual on the process. Use visual aids to demonstrate sorting.

Appendix C – Communication Tool

Easy and Low-Cost Strategies to Reduce Waste in Patient Food Services



Please contact the Director of Marketing for ARAMARK Healthcare for more information or to receive this tool.

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Appendix D – Tables from Survey



Table 1 - Frequency of Waste Audits

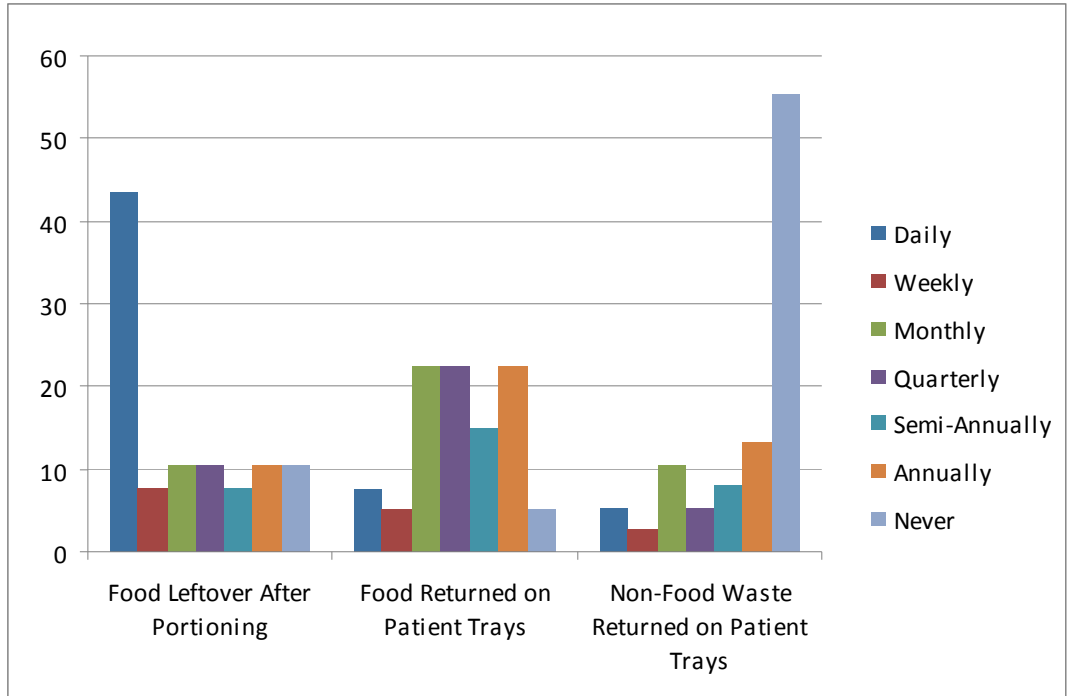


Table 2 – How Facilities Dispose of Items Returned on Patient Trays

