



REDUCING FOOD WASTE at HEALTH CARE FACILITIES in Erie County

The Erie County Department of Environment & Planning partnered with Metz Culinary Management, Leanpath, and the Northeast Waste Management Officials' Association (NEWMOA) to measure food waste and institute reduction strategies in four healthcare settings:

- Two large hospitals: Erie County Medical Center (ECMC) and Buffalo General Medical Center (BGMC)
- A smaller hospital: Millard Filmore Suburban (MFS)
- An assisted living and rehabilitation facility: HighPointe on Michigan (HPM)

FOOD WASTE MANAGEMENT HIERARCHY

The US EPA published a Wasted Food Scale for management of excess food. This Project focused primarily on the “most preferred” side of the scale: Prevent Wasted Food. As discussed later in the case study, diversion to composting might be feasible at the two larger facilities. The strict health code requirements at medical facilities combined with kitchen staffing shortfalls limit the feasibility to divert unused food for donation to feed people, or for animal feed, or anaerobic digestion.

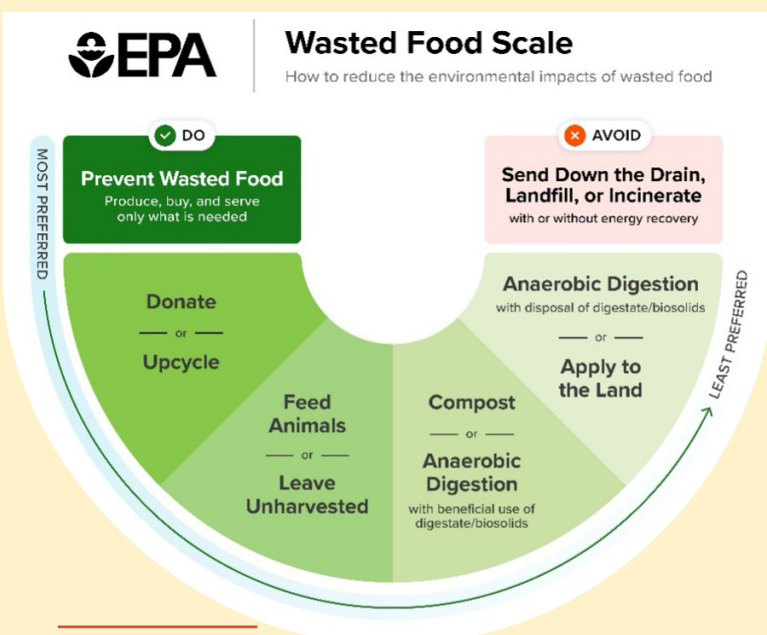
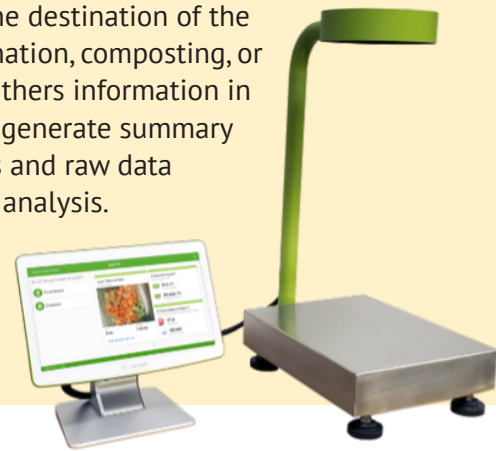


Figure 2: US EPA Food Recovery Hierarchy

LEANPATH 360 TOOL

The Leanpath tool is a sophisticated food waste tracking station with an integrated camera, scale, and display. Users place a container of food waste on the scale and enter some basic information into the attached computer touchscreen using standardized uniform choices for: mealtime and location it was generated, type of food, and the reason it became waste. The system also has the capability to track the destination of the waste, including donation, composting, or trash. The station gathers information in a database that can generate summary and detailed reports and raw data exports for detailed analysis.

Figure 1: Leanpath 360 Tool



The Leanpath scales were installed at the four facilities in April 2021 and the baseline for data comparison was established in May 2021. Due to several factors, the data collected in 2021 cannot be definitively compared with that collected in 2023:

- The facilities were not operating at full-capacity and the retail cafeterias were not open to the public in 2021 due to the Covid-19 pandemic
- Use of the Leanpath scale has not been consistent due to ongoing staff shortages
- Categorization in the Leanpath system has changed since the scales were installed, so food type and loss reasons cannot be directly compared

Despite these shortcomings, the data collected has helped to advise Metz of types and quantities of wasted food and has been used to inform food purchase orders, meal production, and waste reduction strategies. Approximately every two weeks, Metz managers meet with the chefs at the four facilities to review the Leanpath data and discuss food waste and reduction strategies.

FOOD PREPARATION

Each facility has a main kitchen where all meal items for in-patients are prepared, and the trays used to serve them are assembled. The kitchen also prepares the cooked items for the retail cafeteria and catering. When food is removed from storage (freezer, cooler, or stock room), the type and quantity is hand-noted on a form developed by Metz, including where and how it will be used. Generally, chefs must make at least a 1/3 pan of food to justify the time and effort required to prepare the food and this can lead to overproduction.



KITCHEN STAFFING

- Kitchen staff are categorized into four groups who earn hourly wages and are members of a union
 - Food service workers who staff the patient tray line
 - Kitchen culinary staff who assist the chefs in preparing food
 - Hospitality Associates (HA) who interact with patients
 - Staff working in the retail cafeteria
- In addition, there are chefs and operations managers who are salaried and not union members

Generally, the kitchens are chronically short-staffed due to Covid-19 pandemic and continuing hiring challenges, leading to inconsistent use of Leanpath. In addition, due to union contracts, only the non-unionized staff are asked to use the Leanpath system which can lead to throwing away some items without first being entered into Leanpath.

GENERATION OF FOOD WASTE

Food waste in health care settings is mainly caused by:

- **Overproduction:** when too much food is prepared and cannot be used for its original purpose
- **Spoilage:** when food items are not used in food preparation, or purchased in the cafeteria before they start to go bad
- **Health Code Requirements:** any prepared food must be cooled and properly stored within 2 hours and reused within 3-days
 - If either of these time limits are not met, the food must be thrown out

At the four facilities, food waste is generated from:

- In-patient meal preparation
- Uneaten in-patient meal items returned with the tray
- Preparation of food to sell in the retail cafeteria and for catered events
- Unsold cafeteria food that cannot be saved for reuse

Most food waste is categorized and weighed on a Leanpath scale before disposal. However, preparation waste trimmings, such as rinds and peels, are not measured or tracked and are directly thrown into the trash. After leaving the Leanpath scale, food waste is primarily disposed directly into a trash can. At ECMC and BGMC, some of the unusable leftover cooked food is disposed down an in-sink garbage disposal. Prepackaged food items, such as milk and applesauce, that have passed the “best if used by” date stamped on them are weighed on the Leanpath scale and then thrown in the trash. Trash



cans are emptied by Metz staff and trash bags are put in a wheeled tote outside the kitchen in a utility corridor. When totes are full, Metz staff wheel them to the hospital's main trash compactor out in the loading dock. Metz does not pay for trash disposal.

RETAIL CAFETERIA SERVICE

All four facilities have a retail cafeteria that primarily serves staff. The cafeteria at HighPointe is small with limited hot options. The hospitals have larger cafeterias with a salad bar and soup options, deli sandwich and grill stations as well as two or three other hot meal stations with rotating options. All four facilities have a "Grab & Go" section all day with individually packaged items such as yogurt parfaits, fruit cups, and pre-made sandwiches. At each facility, Metz prepares and packages most of the items in the Grab & Go selection.

Waste generated by cafeteria customers (post-consumer) is not measured. It is thrown out in trash bins in the seating area or elsewhere in the facility if not eaten in the cafeteria. Recycling collection of co-mingled recyclables is offered in the cafeterias. As is the case with collection for recycling from consumers in most public and retail locations, there can be significant contamination by food and other non-recyclable materials.



IN-PATIENT MEAL SERVICE

In-patient meals are prepared by the culinary and food service staff. To increase customer satisfaction and reduce uneaten food, each meal is customized for each patient using the five-step sequence shown in **Figure 3**. In addition to the consistent menu items, there is a special of the day that rotates on a 4-week schedule.

At the three hospitals, acute patients are served on reusable, heated plates with covers and use metal flatware, while behavioral health patients require all disposable tableware to minimize their ability to

harm themselves or others. Disposable tableware increases the overall waste generated per meal and poses a challenge for Metz to keep food warm before delivery to the patient.

When trays are returned from patient rooms, the waste generated is not measured or tracked. This is due to health codes that consider all food that may have come in contact with patients to be contaminated. Unfortunately, due to this classification, there is no opportunity to divert any of this waste from disposal.

IN-PATIENT MEAL ORDERS

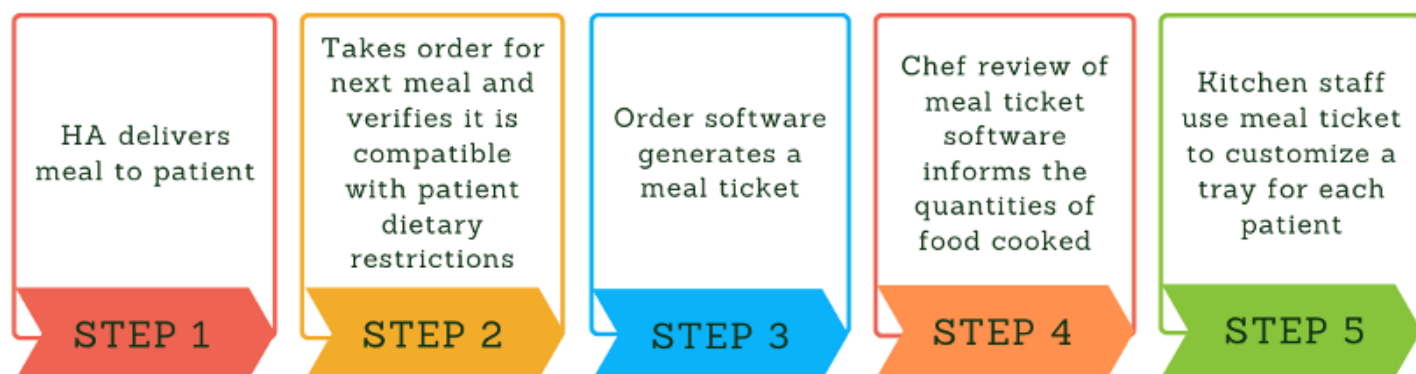


Figure 3: In-Patient Meal Order Process

METZ WASTE MINIMIZATION STRATEGIES

Metz implements several strategies to reduce food waste, including repurposing leftovers and small batch cooking:

Repurpose Leftovers:

Ideally, food that is not used for its original purpose due to overproduction can be properly stored and repurposed the following day as shown in the example in **Figure 4**. If this ideal management does not occur, more waste is generated.

At least once a week, chefs also repurpose retail cafeteria leftovers to make a soup that becomes an option for the lunch salad bar. Metz reports that food waste has decreased from the lunch hot stations and the Grab & Go section because they have learned what sells and what is wasted. However, there continue to be food waste issues with breakfast leftovers and the lunch salad bar due to inconsistent customers and perishability, respectively.



Small Batch Cooking:

To minimize leftovers and be as close to production numbers as possible, Metz institutes small batch cooking to the extent possible. For example, preparing 500 in-patient meal trays takes several hours, therefore chefs do not usually cook entrees for 500 at the start of the shift, but rather cook two trays and then wait to cook another until they start to use the second tray and better understand how much more is needed. However, if the kitchen is short-staffed, they are not always able to stick to small batch cooking and overproduction can result. Ideally, food not used for its original purpose due to overproduction is properly cooled and stored so it can be repurposed within its 3-day time limit as previously discussed.

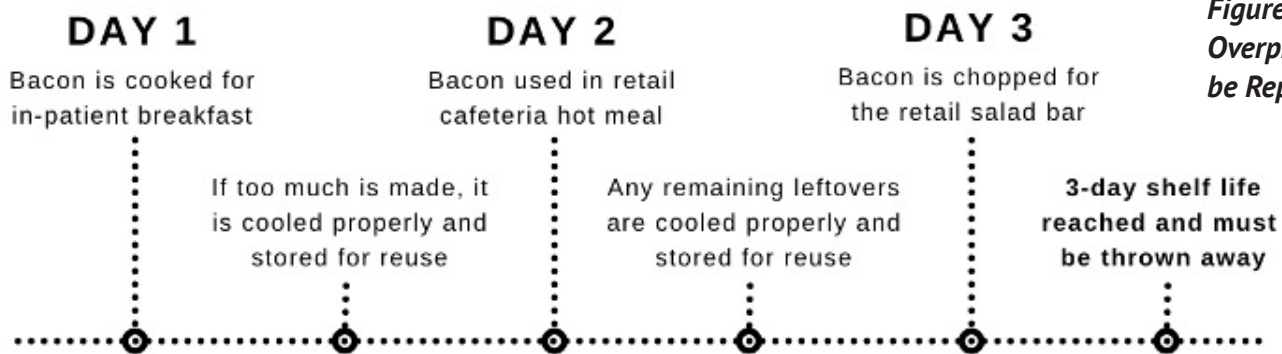


Figure 4: How Food Overproduction Can be Repurposed



HEALTHCARE FACILITY OVERVIEWS & DATA

There are several factors that can influence the quality of the data in the Leanpath system:

- During system set-up, the tare (empty) weight of various containers is input. When weighing food waste, the user must input the type of container put on the scale and sometimes it might not be correct so the wrong weight is recorded
- In addition to entering the type of container, the user must enter the type of food, its source (meal), and the loss reason. If any of these are not entered accurately, the data is impacted. For example, the meal type (breakfast, lunch, or dinner) entered in the system might be due to the time of day the food is disposed, rather than the meal that it was intended for
- If everything is not weighed prior to disposal, the inconsistency ripples throughout, impacting the data related to the meal type, the food type, and the related weight
- The scales and software might not always work correctly and they rely on an internet connection that might not always be stable

The data was examined in an attempt to categorize the waste as related to “buying too much” or “making too much”. Buying too much is reported in the graphs as “Spoiled Before Use” and includes the following loss reasons:

- **Spoiled:** Unprepared food that is unfit for consumption due to rot, mold, or other defects
- **Expired – Never Prepared:** Unprepared food that is discarded due to manufacturer date

Making too much is reported in the graphs as “Overproduction” and includes the following loss reasons:

- **Overproduction:** Prepared food that was never presented or sold to customers and is not saved for reuse
- **Prepared – Past Reuse Date:** Prepared food that is past its 3-day reuse timeframe
- **Presented – Not Sold:** Food presented to customers, for example in the salad bar, but was not taken before service ended
- **Timed or Temp’d Out:** Food presented to customers but exceeded a time or temperature limit

There are three other loss reasons that do not fit into the two overall categories and are reported as “Other”:

- **Equipment failure:** for example, if a freezer malfunctions and the food is not salvaged in time
- **Mishandled:** food that is dropped on the floor or otherwise contaminated
- **Quality:** food that is prepared but cannot be served, for example it is overcooked

CATERING SERVICE FOOD WASTE

Metz provides catering services for meetings and other events in the four facilities - typically one to five events each day Monday through Friday

- Metz prepares and is paid for what is ordered
- The types and quantities of waste generated after the order is delivered to an event is unknown because it is not returned to the kitchen
- There are likely significant opportunities to engage those placing catering orders and managing the waste from catered events in waste reduction and recycling strategies



ERIE COUNTY MEDICAL CENTER (ECMC)

- Variety of medical units including burn care, behavioral health services, transplantation, oncology, rehabilitation, and a level 1 adult trauma center
- 550 in-patient beds at full capacity
- 70% of patients receive acute care and 30% receive behavioral health care
- Approximately 4,500 professional and support staff
- Fully staffed on a weekday, Metz would have a total of approximately 50 hourly and salaried employees working at ECMC for all shifts combined
- Metz prepares food for
 - In-patient meals
 - A retail cafeteria
 - 84 hospital unit pantries (stocked with fruit & prepackaged items)
 - Catering for meetings
- Cafeteria serves approximately 1,000 people each day, including visitors and staff working at the hospital and neighboring health care office buildings, primarily for lunch
- Unionized members of the kitchen staff are members of the CSEA union

The main kitchen at ECMC is large and has a Leanpath scale located in a central area. Much of the cooked food offered in the cafeteria is prepared in the main kitchen and is brought to a separate staging area adjacent to the cafeteria. Some lunch food preparation occurs in the staging area. ECMC has a second Leanpath scale in this staging area.

Figure 5 shows the sources of food waste recorded associated with in-patient meal preparation in the Leanpath system during the 30 days July 17–August 14, 2023. The figure shows the breakdown associated with breakfast (79%), lunch (15%), and dinner (6%) and whether the waste is associated with preparing too much food (85%) or purchasing too much (15%).

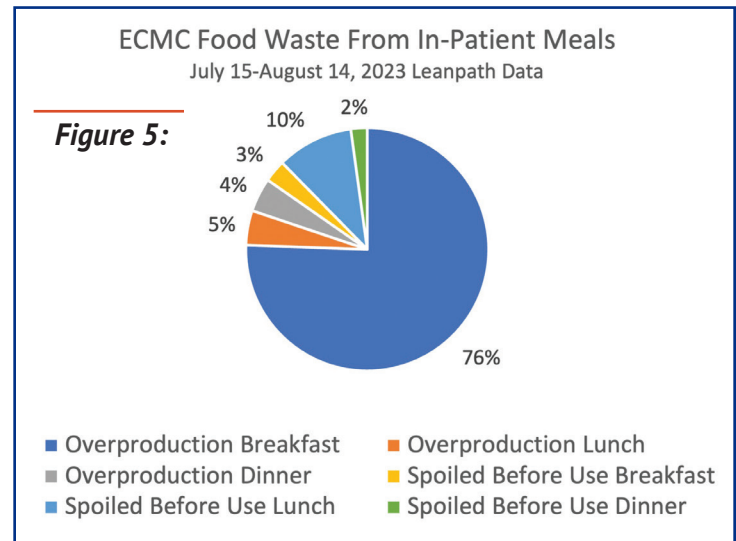
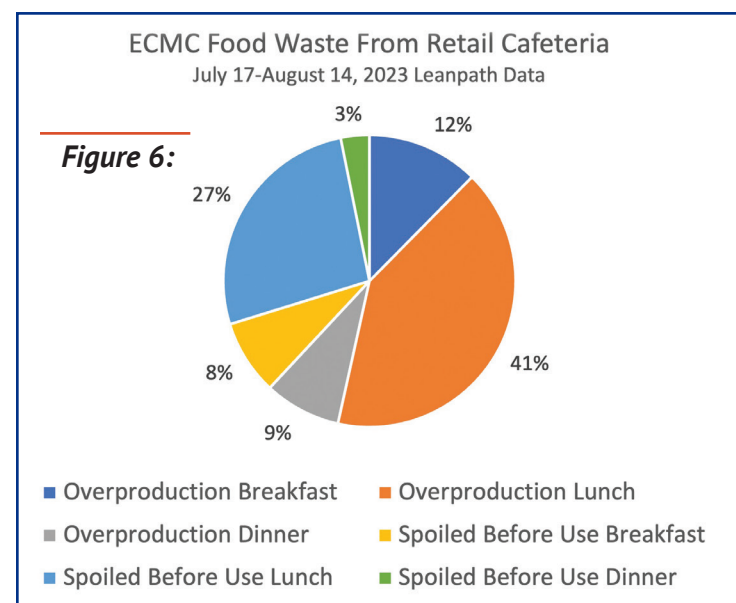


Figure 6 shows the type of food waste recorded associated with the retail cafeteria in the Leanpath system during the July 17 – August 15, 2023 period. The figure shows the breakdown associated with breakfast (20%), lunch (68%), and dinner (12%) and whether the waste is associated with preparing too much food (62%) or purchasing too much so it spoils (38%).

In addition, approximately 14 percent of food waste generated at ECMC during the 30-day period was recorded as from miscellaneous activities such as catering preparation, equipment failure, mis-ordered, and mishandling. Regular staff training could be beneficial and should emphasize minimizing the amount of food waste generated from catering preparation, mis-ordered food and mishandling, and encouraging quality control.



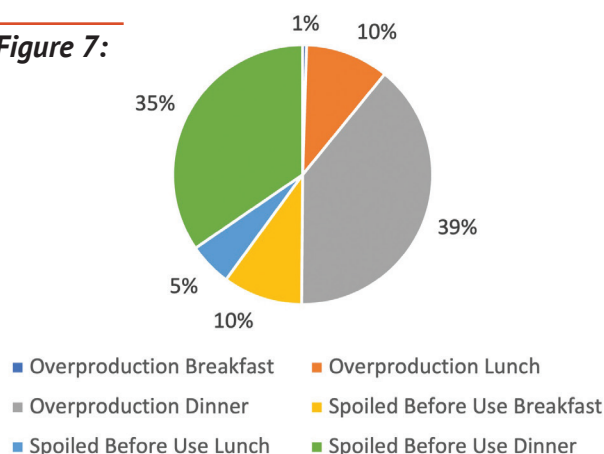
BUFFALO GENERAL MEDICAL CENTER (BGMC)

- Wide range of medical units and specialties including cardiac services, general and robotic surgery, bariatrics, urology, orthopedics, gastroenterology, rehabilitation medicine, and neurology
- 484 in-patient beds at full capacity
- Approximately 3,000 professional and support staff
- Fully staffed on a weekday, Metz would have a total of approximately 50 hourly and salaried employees working at BGMC for all shifts combined
- Metz prepares food for
 - In-patient meals
 - A retail cafeteria
 - 34 hospital unit pantries (stocked with fruit & prepackaged items)
 - 4 doctor's lounges
 - Catering for meetings
- Cafeteria serves approximately 1,250 people each day, including visitors and staff working at the hospital and neighboring health care facilities such as Oishei Children's Hospital and the Gates Vascular Institute, primarily for lunch
- Unionized members of the kitchen staff are members of the Kaleida union

BGMC Food Waste from In-Patient Meals

July 17 - August 15, 2023 Leanpath Data

Figure 7:



The kitchen at BGMC is a spacious, sectioned room. It prepares all meal items and assembles trays served to patients. It also prepares the cooked items for the retail cafeteria. A Leanpath scale is located off to the side in the kitchen on the opposite side from the cleaning and sanitizing portion of the kitchen. BGMC also has a second Leanpath scale for the retail cafeteria food waste and it is located in the small washing station next to the retail cafeteria.

Figure 7 shows the types of food waste recorded associated with in-patient meal preparation in the Leanpath system during the 30 days July 17 – August 14, 2023. The figure shows the breakdown associated with breakfast (11%), lunch (15%), and dinner (74%) and whether the waste is associated with preparing too much food (50%) or purchasing too much (50%).

BGMC Food Waste from Retail Cafeteria

July 17 - August 14, 2023 Leanpath Data

Figure 8:

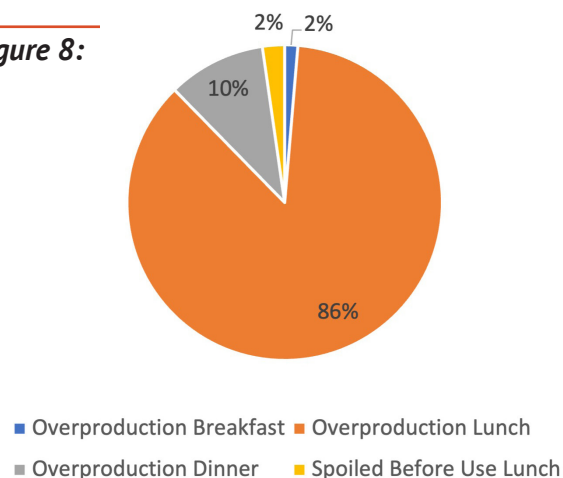


Figure 8 shows the types of food waste recorded associated with the retail cafeteria in the Leanpath system during the July 17 – August 15, 2023 period. The figure shows the breakdown associated with breakfast (2%), lunch (88%), and dinner (10%) and whether the waste is associated with preparing too much food (98%) or purchasing too much so it spoils (2%). There was no data entered into Leanpath for any spoiled food associated with breakfast or dinner meals, likely indicating that the user might be recording disposal associated with the time of day it's occurring rather than the meal the food waste is associated with.

In addition, less than one percent of the food waste measured at BGMC during the 30-day period was recorded as generated from mis-ordering.

MILLARD FILMORE SUBURBAN (MFS)

- Variety of medical units including oncology, comprehensive maternity services with neonatology, and a specialized robotic surgery program
- 265 in-patient beds at full capacity
- Approximately 2,800 professional and support staff
- Fully staffed on a weekday, Metz would have a total of approximately 30 hourly and salaried employees working at MFS for all shifts combined
- Metz prepares food for
 - In-patient meals
 - A retail cafeteria
 - 4 doctor's lounges stocked with some Grab & Go items and pre-packaged meals
 - Catering for meetings
- Cafeteria serves approximately 800 people each day, including visitors and staff working at the hospital, primarily for lunch
- Unionized members of the kitchen staff are members of the Kaleida union

The kitchen at MFS is compact with one large room. It prepares all meal items and assembles the trays served to patients. The kitchen also prepares all the items for the retail cafeteria. MFS has one Leanpath scale and it is located centrally in the kitchen against the wall across from the tray assembly line.

Figure 9 shows the source of food waste recorded associated with in-patient meal preparation in the Leanpath system during the 30 days July 17 – August 14, 2023. The figure shows the breakdown associated with breakfast (30%), lunch (49%), and dinner (21%) and whether the waste is associated with preparing too much food (21%) or purchasing too much (79%). There was no data entered into the Leanpath system for any spoiled food associated with in-patient dinner meals or any overproduction food waste associated with breakfast or lunch meals, likely indicating that the user might be recording disposal associated with the time of day it's occurring rather than the meal the food waste is associated with.

Suburban Food Waste from In-Patient Meals

July 17 - August 14, 2023 Leanpath Data

Figure 9:

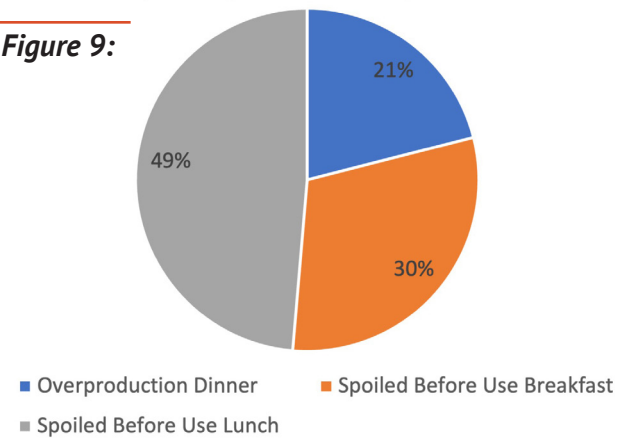


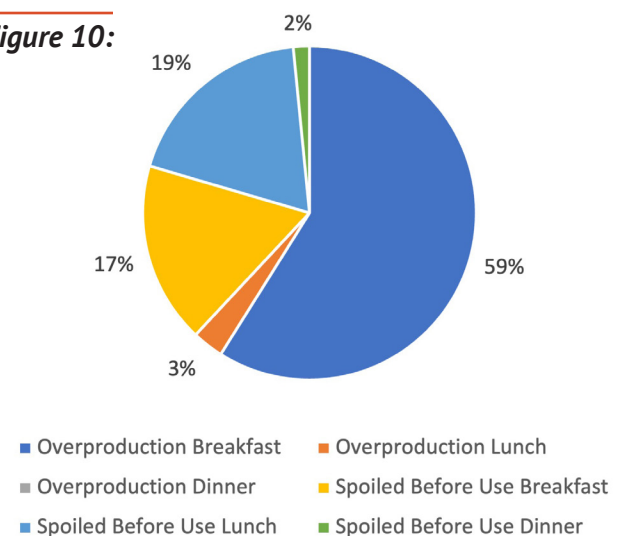
Figure 10 shows the source of food waste was recorded associated with the retail cafeteria in the Leanpath system during the July 17 – August 15, 2023 period. The figure shows the breakdown associated with breakfast (76%), lunch (22%), and dinner (2%) and whether the waste is associated with preparing too much food (62%) or purchasing too much so it spoils (38%). There was no data entered into Leanpath for any overproduction food waste associated with the dinner meal, likely indicating that the user might be recording disposal associated with the time of day it's occurring rather than the meal the food waste is associated with.

In addition, less than three percent of the total food waste measured at MFS during the 30-day period was recorded as generated from mis-ordering and a vendor credit request.

Suburban Food Waste from Retail Cafeteria

July 17 - August 14, 2023 Leanpath Data

Figure 10:



HIGHPOINTE ON MICHIGAN (HPM)

- Pediatric and adult long-term care facility that provides varying levels of care including medically complex care, subacute care, dementia care and traditional long-term care
- Approximately 300 in-patient beds divided into 14 separate pods
- Approximately 1,200 professional and support staff
- Fully staffed on a weekday, Metz would have a total of approximately 30 hourly and salaried employees working at HPM for all shifts combined
- Metz prepares food for
 - In-patient meals
 - A small retail cafeteria
 - Catering for meetings
- Cafeteria is only open for lunch and serves approximately 120 people each day, including visitors and staff
- Unionized members of the kitchen staff are members of the Kaleida union

The kitchen at HPM is compact with one small room. It prepares all resident and retail cafeteria meal items. Resident meals are a mix of trays delivered to patients in their rooms and meals eaten in the upstairs group dining room. All meals are individualized using the same meal order ticket system as the hospitals. In-room meals are prepared in the kitchen and transported to patient floors using steam table carts. For dining room meals, hot food trays and all the other ordered items are brought to a staging area adjacent to dining area and HAs use the individualized ticket to assemble the meal for the resident and brings it to them at their table.

Figure 11 shows the source of food waste recorded associated with in-patient meal preparation in the Leanpath system during the 30 days July 17 – August 14, 2023. The figure shows the breakdown associated with breakfast (54%), lunch (32%), and dinner (14%) and whether the waste is associated with preparing too much food (95%) or purchasing too much (5%).

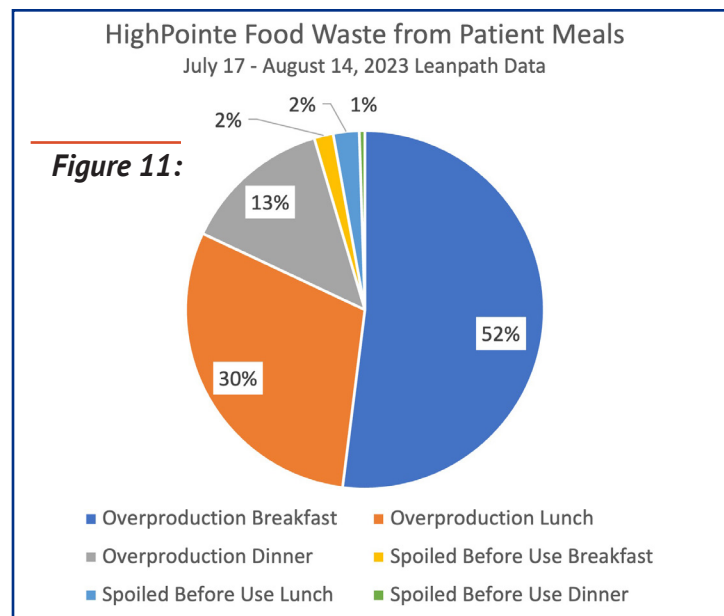
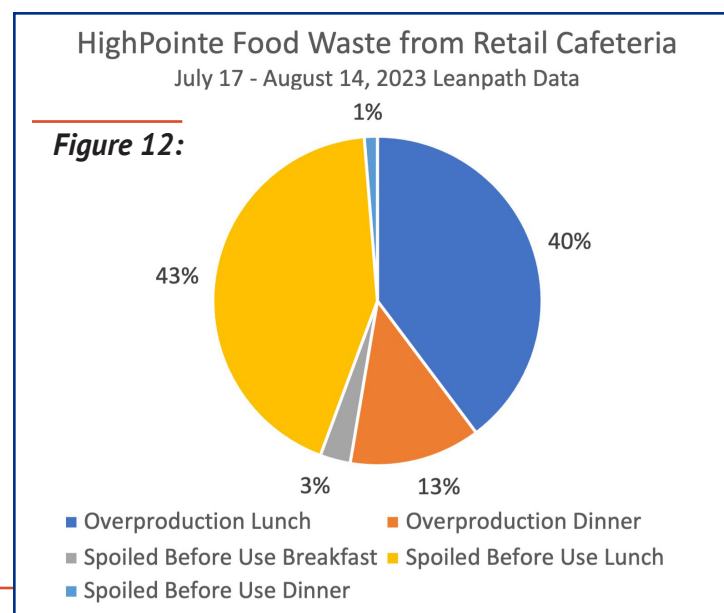


Figure 12 shows the source of food waste recorded associated with the retail cafeteria in the Leanpath system during the July 17–August 15, 2023 period. The figure shows the breakdown associated with breakfast (3%), lunch (83%), and dinner (14%) and whether the waste is associated with preparing too much food (53%) or purchasing too much (47%). There was no data entered into Leanpath for any overproduction food waste associated with the breakfast meal, likely indicating that the user might be recording disposal associated with the time of day it's occurring rather than the meal the food waste is associated with.

In addition, 10 percent of the total food waste measured at HPM during the 30-day period there was recorded as from quality problems, catering, and equipment failure. Regular staff training could be beneficial and should emphasize minimizing the amount of food waste generated from catering preparation and encouraging quality control.



DATA DISCUSSION

Due to the factors mentioned throughout this study, recorded waste reductions cannot be fully attributed to food waste prevention and could also be related to inconsistent and inaccurate use of the Leanpath system.

- The increases recorded in the ECMC and MFS retail cafeteria food waste from 2021 to 2023 shown in **Table 1** demonstrates the effects of the Covid-19 pandemic. In 2021, the retail cafeteria was open only to the hospital staff and working at a fraction of the capacity, but it has since reopened to the public and is back to working at full capacity in 2023

Table 1: Percent Change in Recorded Weight of Wasted Food (June 2021 compared to July 2023)

	ECMC	BGMC	MFS	HPM
In-Patient Meal Preparation	- 45%	- 70%	- 86%	- 34%
Retail Cafeteria Operation	+ 400%	- 10%	+ 39%	- 71%

- Unlike the other health care facilities studied, the HPM retail cafeteria mainly supports its staff. Since there has been a minimal change in customers between 2021 and 2023 and HPM has closely tracked food waste since the beginning of the study, the 71% decrease in retail cafeteria food waste demonstrates immense progress towards reducing food waste
- The number of in-patient meals has been relatively consistent between 2021 and 2023 and all facilities show significant decreases in the waste recorded and can be attributed, at least in part, to waste reduction measures
- Leanpath is dependent on tracking all food waste and as shown in **Table 2**, there is concern that BGMC and MFS are not consistently using the Leanpath scales and there is less confidence in the BGMC and MFS data presented in this case study

Table 2: Percent of Days When Leanpath Data Was Entered (July through September 2023)

Leanpath Scale Location	% Days Tracking
HPM Main Kitchen	97
MFS Production Area	76
BGMC Main Kitchen	77
BGMC Retail Cafeteria	67
ECMC Main Kitchen	83
ECMC Retail Cafeteria	88

OVERALL WASTE REDUCTION RECOMMENDATIONS



There are also several observations and recommendations in relation to overall waste reduction, including:

- Retail cafeterias use disposable serving containers and utensils. Metz should evaluate offering the option for reusable tableware and utensils for patrons that plan to eat in the cafeteria
- For the disposable containers, Metz should ensure that they are recyclable. For example, #6 plastic is polystyrene which is not recyclable. Many clear plastic clam shell containers are now being made from #6 plastic. Metz should only utilize clam shell (and other) containers made from #1 plastic which does have a recycling market
- In general, recycling collection is contaminated by items that are not recyclable. Erie County should work with Metz and the hospitals to institute recycling education and improve signage in the cafeterias and throughout the facility
- Kitchen-generated packaging such as cardboard boxes were observed in the trash. Metz should work to ensure that all recyclables are recycled to the extent feasible

OBSERVATIONS AND RECOMMENDATIONS

There are several observations and recommendations in relation to food waste reduction and tracking, including:

- The data presented in this study represents a short time frame due to the challenges of the Covid-19 pandemic and short-staffed kitchens. While imperfect, Metz reviews the Leanpath data and uses the information about key areas of food waste to make changes in food orders. Therefore, Metz should continue to use the Leanpath scales in all of the kitchens after this study ends
 - Increasing staff involvement in food waste management could lead to more consistent use of a Leanpath scale prior to disposal. When union contracts are renewed, Metz should consider including the ability or requirement to assist with food waste reduction and tracking
- Metz should work with Leanpath to implement ongoing onsite training to promote regular use and correct selections on the Leanpath tool.
 - Metz should explore the full capabilities of the Leanpath tool including setting goals and tracking the destination of the waste if composting is implemented
 - Metz should continue to work with Leanpath to further customize the categories to enable them to gather more precise data
- Erie County should work with Metz and the health care facilities to implement composting of food waste to the extent feasible (see back cover)



- Food preparation scraps and overproduced and spoiled food waste have not come in contact with patients, so there is no regulatory barrier or health risk to composting this food
- Removing food waste from the trash will decrease weight, mess and cost associated with trash management
- Food waste collection in the kitchen can be easy and convenient
 - For prep waste, use smaller collection containers right at the prep counter
 - Locate a compost collection tote at each Leanpath scale in place of (or next to) the trash can
- At a minimum, composting of kitchen-generated food waste should be implemented at ECMC and BGMC which have larger kitchen areas with ample space
- There are many benefits of composting and it can be implemented in partnership with Erie County
- Returned in-patient food waste must be thrown away due to health codes, but kitchen staff could note if certain food items are consistently not eaten and either adjust the serving size or remove them from the menu
- There are likely several strategies to reduce food and other waste resulting from catering operations (see sidebar on page 5). Erie County should work with the hospitals to implement a waste reduction educational program with their staff that organize and hold catered events



COMPOSTING BENEFITS & INTEGRATION

Erie County owns and operates a composting site at the Erie County Alden Correctional Facility. The operation is funded by NYS Department of Environmental Conservation, managed by Erie County Department of Environment & Planning, and operated by the Alden Correctional Facility. Erie County recently implemented food waste collections from outside of the correctional facility, including from the Erie County Holding Center and the Erie County Rath Building. The composting operation has the capacity to accept additional food scraps.

Both ECMC and BGMC have space in their kitchens to accommodate collection for composting.

- Prep waste can be collected in metal pans or plastic buckets right at the kitchen counter to scrape food into and then emptied into a more central larger collection tote. Then the metal pan/plastic bucket can be put in the dishwasher for sanitation.
- A collection tote can be located at each Leanpath scale so instead of putting unpackaged food waste into a trash can after weighing, it could be placed in the collection tote instead.
- The totes could be picked up on a regular basis by the correctional crew at no cost to the hospital or Metz.

There are numerous benefits associated with removing food from the waste stream, including:

- Food waste is heavy and wet. By removing it from the trash, there is much less trash to manage and it is much less messy
- Composting preserves nutrients that are beneficial for soil health and reduces the need for chemical fertilizers
- Removing food waste from landfills has several positive impacts, including reduced:
 - Methane gas generation from organic waste decomposition (methane is a potent greenhouse gas)
 - Quantity of high moisture waste, thereby reduced the quantity of leachate generated and requires management
 - Attraction of unwanted wildlife like rodents and seagulls
 - Quantity of gases that require management after a landfill is capped



Erie County is home to over 950,000 residents. Erie County Department of Environment & Planning's mission is to make Erie County a better place through planning and environmental stewardship. Some of its environmental compliance programs include climate action and sustainability, stormwater and watershed management, brownfield redevelopment, solid waste and recycling, composting, and GIS mapping.

For more information about the project and to access the "Reducing Food Waste From Food Service Kitchens in Erie County" guide visit:
<https://www.newmoa.org/projects/food-waste-reduction-in-erie-county-ny/>



Funding for this project was sponsored by the New York State Department of Environmental Conservation.



NEWMOA is a non-profit, non-partisan interstate association whose membership is composed of the state environmental agency programs that address hazardous waste, solid waste, pollution prevention, waste site cleanup, and related challenges in Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.