BEST PRACTICE GUIDE

Food Waste Reduction

This guide outlines actions to reduce the quantity of food waste generated in healthcare facilities. The information has been gathered through work with a number of Green Healthcare Programme (GHCP) facilities, who were observed to operate best practice measures.

The nature of a hospital setting is such that some food waste is inevitable. For example, a patient feeling poorly who does not touch the meal they had ordered, or a patient is discharged early so that a meal already prepared is now surplus to requirements.

However, the EPA's Green Healthcare Programme has found that there is always scope for reducing food waste, regardless of the type of patient food system in operation (bulk or centrally plated), and in many instances before the food even reaches the patient.

Nutrition and food waste – two sides of the same coin

Nutrition, as well as presence of malnutrition among patients, are very important considerations in the overall treatment and care of a patient. If something is not being eaten, i.e. if it is being wasted, it is not contributing to nutrition.

"Serving larger portions is not a valid strategy to improve energy intake" – (Plate waste in Hospitals and Strategies for Change, P.G. Williams et al., University of Wollongong, Australia, 2011)

All food waste reduction measures, that affect portion size, should be undertaken in consultation with hospital nutritionists.

The cost of food waste

Until relatively recently food waste was essentially unseen, as it was disposed of in the general waste or using macerators. With the advent of the Food Waste Regulations, managers began to see the volume of food waste generated and the cost to take brown bins away. The true cost of food waste dwarves waste management costs and lies in the purchasing of the food itself, and the fuel and staff costs needed to prepare it.

The price to buy a kilogramme of food varies from high values for meat and fish to lower prices for foods like porridge and bread. On average, the cost to purchase food is €2 per kilogramme, so valuable food waste (see later), costs a minimum of €2 per kg.

Measure and monitor

Monitoring the quantity of food waste generated in your facility and comparing this with other facilities, will allow you to assess how good or bad your food provision system is in terms of waste generation.

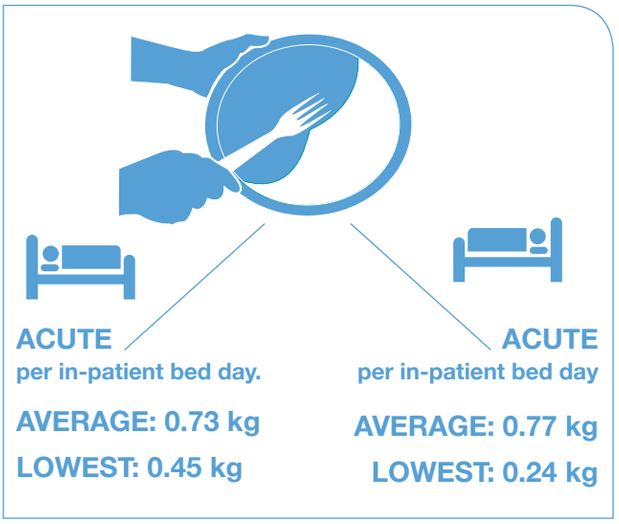
Quantity of waste generated:
Ensure you monitor the quantity of food waste generated in your facility on a monthly basis. Obtain this information from your facility's waste manager/accounts or waste contractor. Monitoring this information will allow you to see any trends in waste generation.

If the level of food waste generated has decreased it shows that your waste reduction measures have been successful. If the level of food waste generated has increased, and the hospital activity has remained the same, you should assess the reasons for the increase.

Waste benchmark – waste generated per patient or inpatient bed day:
Obtain the total number of in-patient bed days per month in your facility (available from your facility's bed manager). Dividing the total food waste generated in your facility per month (or per annum) by the number of in-patient bed days for that month (or year), you will generate a waste benchmark for your facility.

Compare your benchmark with the GHCP benchmark, shown below, which indicates the average level of waste generated in those facilities involved in the programme.

If you produce more waste than the benchmark you should consider why. Can you reduce the level of food waste generated in your facility by implementing some of the measures outlined in this Best Practice guide?



Types of food waste

Certain types of food waste have no value, for example meat bones, onion skins, etc. However, much of it does have value, and this is the type of food waste which should be focussed on for reduction. It is referred to as **Valuable Food Waste** in this guide. Valuable food waste is generated in both the service of patients and canteens.The types of valuable food waste that can arise include:

Unserved food waste - food provided in bulk, that is not served to patients, and left in containers at the end of service. This food waste is usually disposed of straight from the container. Where bulk food systems are used the unserved food waste is generated in the wards. For centrally plated systems it is generated in the main kitchen.

Plate waste - this is the food remaining on plates after a meal is finished.

Untouched food waste – this is plated food that was never touched or consumed in any part. For example, a patient is absent from the ward for a procedure, a patient is discharged, or a patient refuses a tray as feeling unwell, etc.

How to reduce food waste in wards

Timing of meals
If you operate a mid morning soup round, consider its effect on the amounts of food that will be consumed at lunch and size accordingly. Patients can fill up on soup, which often has a low nutritional content, and eat less of their lunch. This can result in overall reduced nutritional intake.

Focus your efforts on lunch
The programme has found that generally, the highest quantity of food waste is generated at lunch. Is this the case in your facility? Try to determine the reasons for this and focus your waste reduction measures on this meal.

Protected meal-time policy
Consider implementing a protected meal policy in your facility. This requires that visiting hours, treatment and other activities, where possible, do not take place during mealtimes. Patients can concentrate on eating without disturbance.

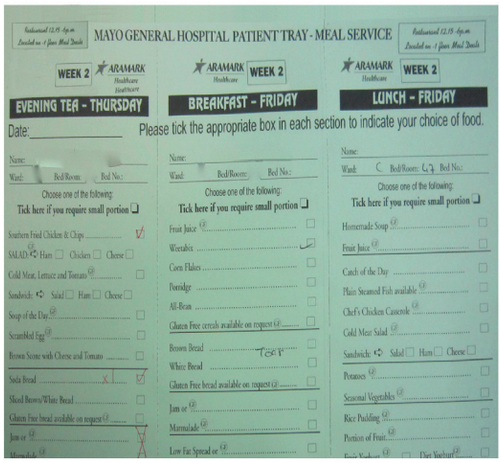
Some GHCP facilities involved in the programme operate a protected meal policy, and commented that when the policy was introduced, the level of food consumed increased, and the level of food waste generated reduced.

How to reduce food waste in wards

Ordering system - check it in practice

Every hospital knows in theory how their patient meal ordering system should work. But it is important to check how it ACTUALLY works. **Important aspects to look at include:**

- How are numbers of each meal required actually determined at the ward?
- In the kitchen, how:
  - is the amount of food to be cooked forecast (i.e. how do staff determine how much food is cooked)?
  - are the numbers of portions ordered by each ward translated into the quantity of food sent to each ward (bulk system)?


MAYO GENERAL HOSPITAL PATIENT TRAY - MEAL SERVICE

WEEK 2 | EVENING TEA - THURSDAY | BREAKFAST - FRIDAY | LUNCH - FRIDAY

Date: Please tick the appropriate box in each section to indicate your choice of food.

Extra portions of food can often be added "to be safe" - sometimes by the ward and/or the kitchen. Try to prevent this happening.

If you have a menu system (verbal or paper), it is important to assess how it is being used. Important aspects to look at include:

- Are the menus actually used to generate the number of meals required? Surprisingly, the programme has observed facilities where filled out menus are ignored.
- Is there enough assistance for patients, particularly elderly patients to correctly fill in paper menus?
- For centrally plated systems, do staff check that paper menus are properly filled in, before being sent to the main kitchen?
- If there are options for portion size on the menu, do staff adhere to these when plating?

Think about the portion size!

Meat portion – look specifically at this expensive, nutrient rich food. Suppliers can provide specified pre-sized portions. For carved meat, the weight and size can be examined.

Potatoes and vegetables – consider using a scoop (e.g. ice cream scoop) to provide your potatoes and vegetables. These scoops provide a set portion, are less open to over-filling and can be easier to use than regular spoons. Where a spoon is used Where a spoon is used try to demonstrate to staff what a typical portion size is.

Elderly patients or those with poor appetite – consider providing a smaller portion with fortification, rather than a large portion. During survey work these patients commented that when presented with large portions of food they quickly lose their appetite.

Special meal options (e.g. vegetarian) – these were often observed to be oversized, especially when side vegetables are provided, as often is the case. Try to anticipate **environmental factors** that can reduce the food eaten by patients. Hot foods (e.g. soup, curry, etc.) are unpopular in hot weather while salads are more popular.

Size option on menu - if you operate a paper menu do you include an option for portion size? Is it visible and regularly filled in? If you operate a verbal menu system do staff ask patients if they require a small portion? Also does the menu sheet have space to record the required portion size?

Ensure staff are aware of what is the correct portion size and ensure regular training of staff is undertaken.

Talk to serving staff - they see it all

Talk to staff who serve patient meals and collect trays about popular and unpopular items. For example, in one hospital, a ward kitchen staff member quipped *"hardly anyone ever eats turnip when its on".* Consider if it is possible to remove these items from the menu cycle and replace with more appealing, nutritionally equivalent foods.

How to reduce food waste in wards continued

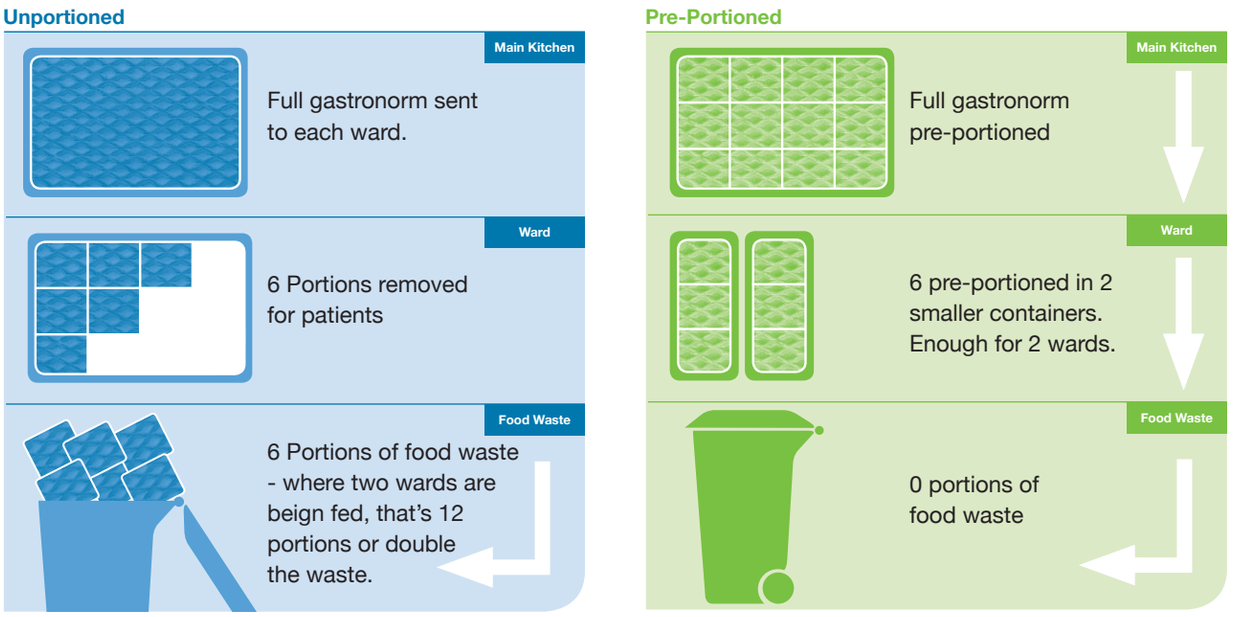
Bulk food systems

For bulk food systems, unserved food (food remaining in the bulk containers after serving) is the first thing to focus upon. It is important to **pre-portion** meal components. This not only ensures that just the required food is provided, but that the correct portion size is given, assisting serving staff. Even a cheap item like porridge should be portioned.

For **solid food** like lasagne and cottage pie, the contents of the tray (gastronorms) should be pre-portioned (cut into a set number of portions) in the main kitchen.

For less popular food, a small number of portions may be ordered by a ward. Food is usually prepared in large trays (gastronorms) that fit ovens, and often a whole tray is provided to each ward. Instead **provide the required number of portions in a smaller container**. Overall, the time and cost saved in producing less food, will more than make up for the time needed to portion the food.

6 PORTIONS REQUIRED PER WARD



How do you fill bulk containers with only the number of portions needed?

A high level of wastage is often observed for food, such as porridge and soup, that is provided in bulk containers. These foods are usually provided in bulk, even if a menu system is used in the ward.

These foods are often seen as being low cost, so a high wastage is acceptable, but consider how much you spend each year on these foods, and you will soon see the savings that can be achieved.

Surveys have shown that generally all bulk containers are filled to the same level, with random sized containers sent to each ward, even though the number of patients in the wards can vary significantly. Try to determine the number of portions (X) of these foods generally used in each ward and assign a specific sized container to it (by labelling). Then apply one of the following options to help staff accurately provide the correct number of portions:

- Note the volume of the container that X number of portions should occupy, and mark on the container.
- Note the weight that X portions of the food would represent. Place the container on a small scales and fill the container to the appropriate weight.

Food with a high sauce content

For food with a high sauce content (e.g. stew, porridge, etc) the number of portions per container size should be determined e.g. full large container is 12 portions, half container (depth) is 6 portions, etc. Make sure to communicate the number of portions provided in thecontainer to staff, so they don't provide extra large portions and run out of food.

How to reduce food waste in canteens - both public and staff

For some hospitals, canteens can be a significant source of food waste. Important things to concentrate on include:

Food that is prepared but not served: For a period, ideally a full menu cycle, measure the quantity of each type of food that is unserved at each meal, to determine trends. Looking at these trends a more accurate estimate of the quantity of each food that should be prepared can be made.

Cold counter food - salad bar & desserts: These can be a significant source of waste. Look at the amounts of such food that is prepared and provided. Consider putting out less food at the start and replenishing more often. Where food is not used, some facilities dispose of such foods on the same day as it is prepared; others have a number of days shelf life.

Preparing food close to the end of service:
Don't prepare food too close to the end of service - encourage people to purchase what is already prepared. In particular consider cooking smaller batches of sides such as rice, chips, etc., towards the end of service. One hospital stopped preparing food an hour before they stopped serving lunch and observed a large reduction in food waste.

Where high levels of plate waste are generated:
- Use smaller plate sizes
- Use smaller scoop sizes
- Offer a small portion size, with a lower price
- In smaller canteens consider providing a smaller portion size and encourage staff to ask for free seconds if they are still hungry

Food waste remaining after service:
If you do end up with unserved food after service, consider the following:

- Donations to charitable organisations (e.g. Meals on Wheels, St. Vincent De Paul, Crosscare food banks, Bia Food Bank)
- Chilled vending machines, with reheating capacity, for selling meals to night staff

"Using up" unserved food from a central plating system:
Unserved food after plating patient meals can be sent to the canteen to be "used up". As the quantity of this type of food generated each day will be unknown, since the number of patients eating may change, the amount of food prepared for the canteen should accommodate this. Otherwise, the food from the plating process may still end up getting disposed of later. In other words, by keeping a track of the typical quantities and types of food not served to the patients, the amounts cooked for the canteen can be adjusted.

Ward provisions - condiments, bread, and milk.

Condiments

Condiments can be perishable (butter) or non-perishable (sugar, salt, pepper, jam, ketchup, etc.). In many GHCP facilities multiples of each condiment are automatically placed on trays. In general, for infection control reasons, any unused condiments cannot be reused and are automatically disposed of when the trays are returned for cleaning. Though each individual condiment may be inexpensive, when the number of condiments disposed of over an entire year is determined, the disposal of unused condiments can be an expensive practice. To reduce the number of unused condiments disposed of, consider the following:

- Issue condiments on request from the food trolley, where possible
- Use individual containers for non-perishable condiments (as shown in picture to right). These containers can be left on trays and re-stocked as required. Ideal for facilities with long-term patients or residents. System passed by infection control in a number of facilities.
- Consider reducing the number of condiments automatically issued with each tray.

Example of an individual condiment container holding sugar sachets and jam.

In one GHCP facility surveyed five sugar sachets were automatically included on each tray when tea is provided. On average, three sachets were returned unused on each tray, indicating the number provided could be reduced without impacting on patient requirements.

Bread

Plates of bread are often provided to patients at breakfast and/or tea, sometimes automatically. Surveys have observed this practice to generate significant quantities of uneaten bread. Consider providing bread on request, from a bread trolley or by menu request. At least review the number of slices provided.

Perishable Stock

Over provision of perishable stock e.g. bread, milk, yoghurts, etc., can be a significant source of food waste, particularly in wards. The excess food whcih cannot be used in time is disposed of as out-of-date food waste. The following points may help to prevent the generation of this type of food waste:

- In most facilities the stock is generally provided on a daily basis. So ensure staff only order enough stock for one day.
- Make sure staff rotate stock to ensure the oldest food is used first. Excess quantities of food in cupboards and fridges impedes the rotation of stock, as it makes is difficult to place new food behind existing foods. Another reason to keep stock to a minimum.
- Monitor and track the stock provisions to the different wards in your facility. Compare wards with similar bed numbers to highlight those wards that are over-ordering food.
- In one GHCP facility, any bread approaching its use-by-date is sent to the main kitchen for re-use (e.g. bread crumbs). This re-use will be dependent on your hospital's infection control policy regarding movement of food around the hospital.

Milk

Milk is often provided in individual jugs to patients for tea/coffee, but significant volumes can be wasted. The picture to the right shows the amount of milk left over after tea in one ward. The disposal of quantities of milk to drain, can also have an effect on waste water discharge limits. Consider the following:

- Are jugs of different sizes used?
- Do staff have a habit of automatically filling jugs, particularly large jugs?
- Could smaller jugs be used?