

FOOD WASTE IN HEALTHCARE

How to prevent



Inhoud

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Colophon

This manual was written by FoodWIN on commission from the City of Bruges and the Public Waste Agency of Flanders (OVAM), with the collaboration of the Department of Welfare, Public Health, and Family.

A special thank you goes to AZ Sint-Jan, AZ Sint-Lucas, vzw de Kade - campus Het Anker, Riddersstove, WZC Van Zuylen and WZC Hallenhuis for the relentless efforts they have made in successfully completing this project.



Preface

The world population will soon hit the 9 billion mark. The population growth strongly affects the current food system, which is why preventing food waste has become a top priority. Today, more than 30% of the worldwide food production is wasted or lost ...

Food waste is an important element in the City of Bruges 'Bruggesmaakt' food strategy. One of the strategic priorities of Bruggesmaakt is 'the reduction of surplus food in public organizations'.

The food waste programme by the City of Bruges focused on healthcare institutions. OVAM granted a 50% subsidy, which allowed the City of Bruges and FoodWIN to start up the project 'Innovation for the reduction of food waste in healthcare' in 2017.

The aim of this project is to:

- raise public awareness
- save costs in healthcare institutions
- reduce greenhouse gas emissions (resulting from wasted food).

Food waste is a major source of CO₂ emissions. Growing, processing, transporting, preparing and throwing away food accounts for an amazing 8% of worldwide CO₂ emissions. That is why this project is very important in order to reach the 'Bruggeklimaatneutral 2050' (Bruges climate neutral by 2050) goals.

The participating healthcare institutions are AZ Sint-Jan, AZ Sint-Lucas, vzw de Kade - campus Het Anker, Riddersstove (central kitchen OCMW Brugge) and the residential care facilities.

This document presents an overview of the lessons learnt and a plan of approach for the reduction of food waste in healthcare.

Dirk De fauw
Burgomaster
City of Bruges

Minou Esquenet
Alderman for the
Environment, City of Bruges

In order to tackle the problem of food waste in healthcare, action point 22 was included in the 'Food waste roadmap'. This action point brings together all the relevant players and explores the cooperation and the awareness-raising campaigns about food waste in the welfare and healthcare sectors. On 10 October 2016, a study day was organized by Departement WVG (the Department of Welfare, Public Health and Family).

Bruges has been in the forefront when it comes to food waste initiatives in healthcare. Food waste has been on the Bruges agenda for a long time. The Grant decision allows OVAM to financially support local authorities in the implementation of their policy. In Bruges, OVAM supported the 'Food waste in healthcare' project. FoodWIN was responsible for the implementation. You can find more information in enclosure A.

The policy set out by the Flemish government, and more specifically by OVAM, will take into consideration the results of this project. Food waste is and remains a significant issue for OVAM. Too much food is thrown away. For this reason, the 'implementation plan for household waste and comparable commercial waste' tackles this specific theme. In order to support local authorities in their efforts to prevent food waste, a learning network has been set up and a practical guide on food waste has been written, with information about actions local authorities can undertake. The 'Food waste in healthcare' project is perhaps the best example of such an action.

This manual contains an overview and a short presentation of how various political authorities and healthcare centres, both in Belgium and abroad, tackle the problem of 'food waste in healthcare'. We are convinced that this information will be useful for hospitals and (residential) care facilities and local authorities wanting to deal with this issue.

Luc Goeteyn
Department manager Waste and
Materials Management, OVAM

Stad Brugge

Urban food systems should address problems related to the population growth, to the effects of the climate change and to complex socio-economic situations. That is why the City of Bruges (in collaboration with Brugs Food Lab, Coduco and FSe Network and within the framework of the European Food Smart Cities for development project) has developed a sustainable food strategy entitled 'Bruggesmaakt'. The City also sets up projects to support this strategy in various fields: urban agriculture, short chain, fair trade, food waste, education. Consisting of a diverse group of members, the Brugs Food Lab has become an independent, overarching platform that advocates initiatives and partnerships in the field of sustainable food (systems). The Food Lab connects policy makers, the midfield, and the public. More information: <https://foodlab.brugge.be/>

OVAM, the Public Waste Agency of Flanders, has been an advocate for an efficient waste, materials and soil management in Flanders for many years. The joint efforts of OVAM, citizens, the private sector and local authorities have made Flanders a leading European region in this domain. To minimize our environmental impact and to maintain our position as a pioneer, we must continue and even intensify our efforts. Our ultimate goal is a true circular economy, in which a sustainable management of waste, materials and soil makes new resources, materials and space available for current and future generations.
www.ovam.be
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FoodWIN supports towns, companies and organizations in their efforts to reduce food waste. This document describes how the organization operates in healthcare institutions. Having trouble implementing your plan or organizing a workshop? FoodWIN will be glad to help.
info@foodwin.org
www.foodwin.org

Het Departement Welzijn Volksgezondheid en Gezin (WVG)

Welfare, Public Health and Family is a Flemish Government department and in this capacity, it encourages the welfare and health sector to reduce food waste. The department holds awareness-raising campaigns offering tools and techniques, organizes or helps organize study days and info sessions, stimulates networks and cooperation between different organizations and works together with different coordinating healthcare organizations. The Department of Welfare, Public Health and Family believes that all initiatives great and small can help obtain our goal to reduce food waste in Flanders by 15% by 2020.

Food waste: problem or opportunity?



Providing healthcare is the primary task of any healthcare institution*. But the role of the healthcare institution as a caterer should not be underestimated. After all, Flemish hospitals and elderly care institutions prepare about 300,000 meals daily.

*The 'healthcare' sector is very diverse. It contains for instance general and specialized hospitals, residential care facilities and smaller institutions. Sometimes, food waste challenges are connected to a specific singularity of an institution. Some institutions use an external caterer, others have their own kitchen. The solutions are therefore not always transferable. The overarching approach to tackling food waste is, however, the same for every healthcare institution.

PROBLEM

Food waste in healthcare* is a bigger problem than food waste in regular catering.

The Flemish government's monitoring tool for food waste estimated that 15,240 tonnes of food go to waste in healthcare (Source: Monitor, Ketenplatform, 2017).

The pilot project for food waste in Bruges revealed food waste percentages of 25 to 40%.

A great deal of challenges are unique to the sector:

- Patients or residents in healthcare institutions do not consume their food voluntarily. In some cases, their health interferes with their appetite.
- Patients are often admitted unexpectedly to hospitals and the date of their release is unsure as well. This means that the number of meals cannot be predicted.
- Communication between healthcare and kitchen personnel turns out to be a major challenge.
- Donating or reusing surplus food is hindered by the sector's strict hygiene prescriptions.

OPPORTUNITY

Pioneering healthcare institutions prove that it is possible to halve food waste.

Throwing away food is expensive. In the pilot project in Bruges, the cost for hospitals was estimated at up to 170,000 euros a year, whereas for residential care facilities, this was 25,000 a year. By battling food waste, means become available that can be used for personnel and better, more sustainable or healthier meals!

Food that is not eaten by patients or residents is one of the main causes of food waste. Patients are not hungry, did not get what they ordered or did not receive their meals at the right moment.

When these problems are addressed and the money is invested in better meals, the patients' food intake will improve. Well-fed patients and residents recover more quickly, which reduces their chances of renewed hospitalization. Eventually, this leads to lower (welfare) costs.

Getting started!

Food waste is a major problem but it also offers a lot of opportunities. There is no time to lose, but ... how do you get started?

We have tested it in Bruges! For the pilot project in Bruges, we drew up a simple step-by-step plan. This document shows you how the Bruges healthcare institutions dealt with their food waste in three steps. It not only describes each of the steps and their outcome, but also provides you with tips given by FoodWIN and other experts in food waste prevention in the healthcare sector.

LET IT INSPIRE YOU
TO GET STARTED!



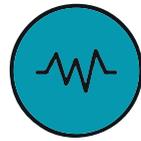
STEP 1 Assess before you address

Assess the levels of food waste in your institution before taking action. Benchmarks will help you identify problem areas. Moreover, they will help you calculate your potential savings resulting from food waste initiatives.



STEP 2 Find solutions

Use the benchmark measurements to identify problem areas in your healthcare institution. Look for solutions for these challenges as a team. Draw up a plan of action for the following months.



STEP 3 Test, monitor and share your results

Start by testing your solution on a small scale. Evaluate the effects of your test. Are you happy with the results? Share them with your patients, personnel and visitors and keep up the good work! Think of new solutions and reduce food waste even more.



TIP: EXPRESS YOUR COMMITMENT!

Are you convinced and planning on taking action? Sign the declaration of intent of the Department of Welfare, Public Health and Family. You will be added to the list of organizations who are committed to tackling food waste together. Furthermore, you will be kept up to date on campaigns and get-togethers. For more information please go to:
www.departementwvg.be/engagementsverklaring



TIP: WORK AS A TEAM!

Battling food waste is best done as a team. Both the problem and the solutions require a cross-departmental approach. You can only create an overall plan of action if you put all the input and ideas coming from each separate department together. Set up a working group of kitchen staff, healthcare personnel, dieticians and board members. Teamwork will result in a project that is supported by all departments!

Step 1: assess before you address

Assess the food waste problem in your institution. You will not only discover the scale of the problem, but also find out the causes of the waste.

There are several different methods to assess food waste, ranging from rough estimates to scientific and detailed analyses. Each method has its pros and cons.

METHOD	PROS	CONS
Rough estimates	<ul style="list-style-type: none">+ Simple+ Can be repeated often	<ul style="list-style-type: none">- Inaccurate- Do not clearly identify the source of the problem
Detailed analyses	<ul style="list-style-type: none">+ Problem areas can be tracked down precisely+ Accurate data about weight and costs are more convincing towards the management and staff	<ul style="list-style-type: none">- Time-consuming- If you don't assess continuously, the results are a snapshot.- Seasonal variation is not taken into account.



THE METHOD YOU CHOOSE DEPENDS ON YOUR NEEDS AND ON WHICH STAGE OF THE FOOD WASTE PROJECT YOU ARE IN



Inspiration on how to assess food waste

FoodWIN's assessment method is based on the method developed by the Wageningen University. It focuses on gathering sufficient information linked to a feasible timing. For each institution in Bruges, the method was adapted to the specific situation and kitchen type. However, the principles remain unchanged.

How did we proceed? Below are the five concrete steps we went through.

STEP 1: Identifying types of food waste

In healthcare institutions, the food goes through a trajectory from kitchen to plate (and back). In this trajectory, food is wasted at several stations. The cause of waste is different at each station. If you measure how much food is wasted at each station and why, you will be able to find targeted solutions.

WASTE FROM INCORRECT PORTIONING

or leftovers at the food portioning station. In this case, the kitchen prepares more food than is actually ordered. If your institution works with a central kitchen or with a contractual caterer, the food is wasted there and not in the institution itself.

UNEATEN PLATE WASTE

or leftovers on the plates of residents, visitors and patients. If these leftovers are significant, less food is consumed than was expected.

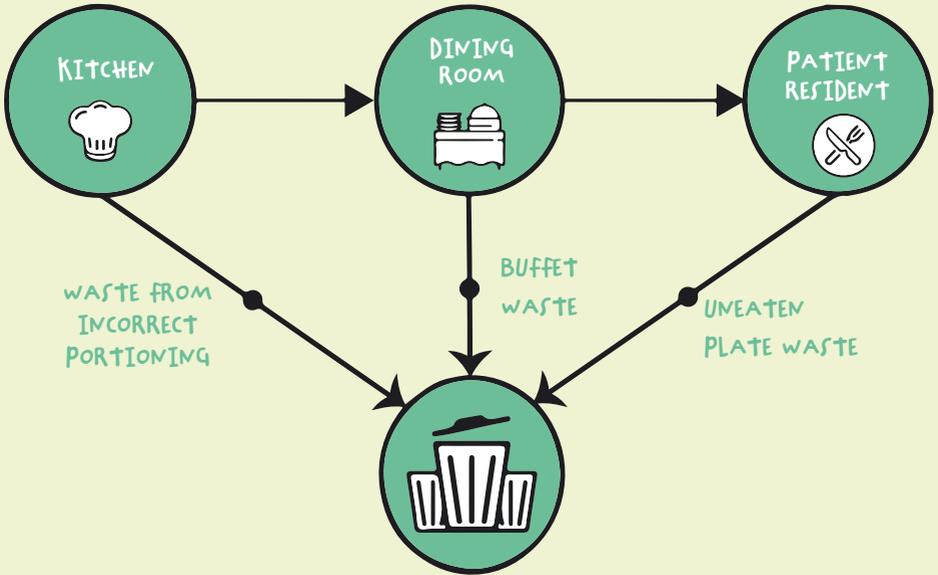
BUFFET WASTE

or leftovers in food pans or pots after all the residents have been served at the buffet.

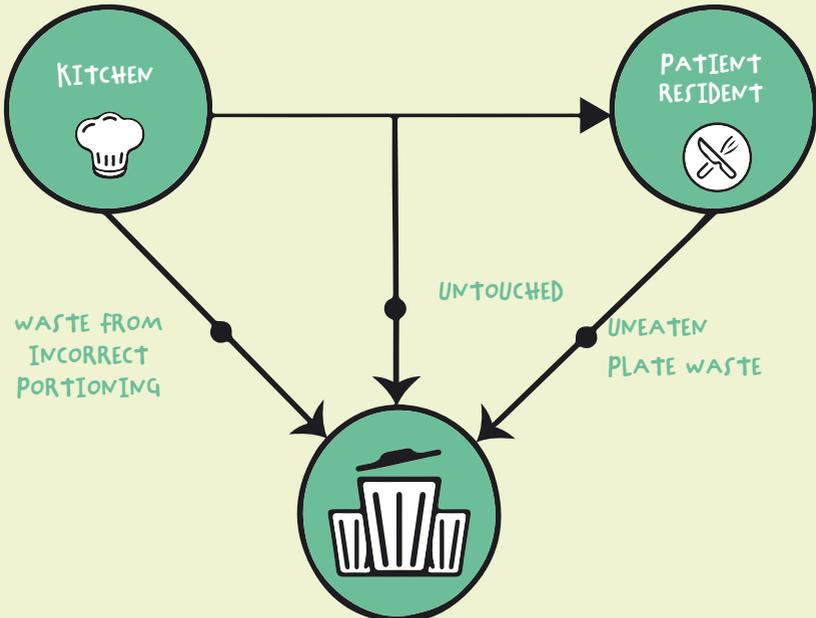
UNTOUCHED MEALS

or complete meals that never reach the patient or resident. These meals were ordered for absent patients or residents.

Example 1



Example 2



STEP 2: Product categories

Dividing products into categories gives you extra insights about food waste as well as about food intake. Which category has the most leftovers? Does this result from incorrect portion sizes? Do patients or residents consume enough of each food category?

For hot meals, we use the following food categories:

- starches, e.g. rice, potatoes, pasta
- vegetables, e.g. peas and carrots, cauliflower, broccoli
- meat/fish/substitutes, e.g. (veggie) burgers, fish sticks, chicken filet
- soup

STEP 3: Additional data

The weight of wasted food alone does not give you much information. To be able to interpret this information, you will need additional data such as the number of patients or residents, the production weight by product category and the number of absentees.



STEP 4: Execution

It is important for the measurements to be done by the healthcare institution's own personnel. Carrying out the assessment will raise the personnel's awareness. By repeating the process, they will also see the results of their actions first hand. Healthcare institutions received the necessary training and assistance to do this.

Even though teamwork is important to tackle food waste, it is best to put someone in charge of the assessment. This person maintains an overview.

STEP 5: Results

By interpreting the weight of wasted food in light of the additional data above, you can estimate the results and calculate indicators. Waste percentages should be compared with the total production and with the daily food waste for each patient or resident. The cost of the wasted food is an important indicator as well.



TIP

Every initiative great or small is a step in the right direction! You do not always have to measure every plate in the entire institution. Sample measurements in a number of departments will already give you a lot of information. Following-up on hot meals is a good start.

The WVG Department stimulates healthcare institutions to participate in the European Week for Waste Reduction by benchmarking their food waste. During this week, tools are offered to register daily food waste for a week.

For more information, please check www.voedselverlies.be/en

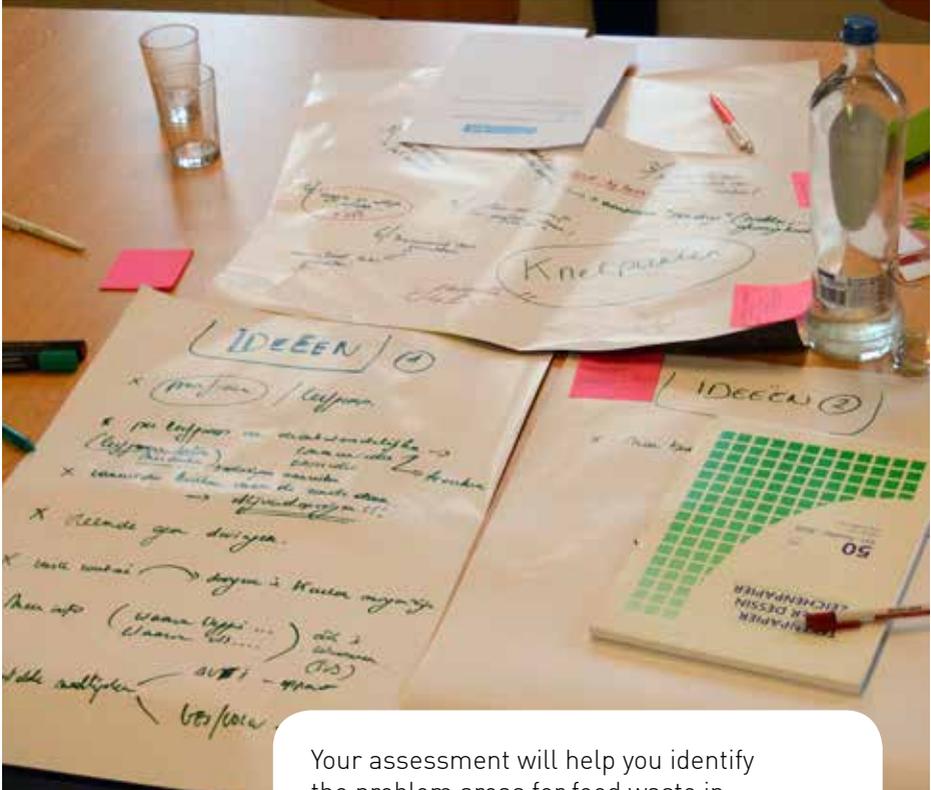


EXPERT TIPS

- Think carefully before you start assessing. What exactly do you want to find out? Where does food get wasted and how can you measure this?
- Inform everyone involved that a food waste assessment will be carried out. This way, everybody will be on board! Tell the kitchen and healthcare staff why and when the assessment will take place and what role you expect them to play.
- Make sure the assessment period is long enough to be representative. The Wageningen University carried out measurements for 14 days, on weekdays as well as on weekends.
- Measure more than just the weight of the wasted food, which is only significant if it can be compared to your total production and to the number of patients. The cost of the wasted food is an important indicator as well.
- Do not compare waste percentages from different healthcare institutions if different measuring methods have been used. Do you want to benchmark your institution? Then use a standard method, e.g. the one applied in the Bruges healthcare institutions (see above).
- A handful of companies (e.g. Wastewatchers, Winnow and Leanpath) offer continuous data analysis and monitoring, with or without smart scales. Curious? Contact FoodWIN!

These tips were given by food waste experts of the Wageningen University, UCLL and FoodWIN.

Step 2: find solutions



Your assessment will help you identify the problem areas for food waste in your institution. The more detailed your measurements, the easier it will be to identify causes and challenges!

Your measurements will reveal both quick wins and more complex problems. Quick wins are waste sources that are easy to identify and easy to solve. The solutions to more complex problems are not that obvious and require a cross-departmental approach. That is why you will not only need kitchen staff, but also healthcare personnel, dietitians and even patients, family members or residents in your team.



Out of the box: an innovation workshop

The more complex problems need an out-of-the-box approach. In the pilot project with healthcare institutions in Bruges, an innovation workshop was organized. During this workshop, the participating organizations go through a creative process consisting of the following steps:

- Experiencing the problem: the results of the assessment are presented in a simple way
- Getting inspired: pioneering institutions and experts share their plans and methods to battle food waste
- Coming up with solutions: the teams brainstorm different solutions
- Developing solutions: teams work out their solutions. Specific questions help them turn big ideas into workable plans of action.
- Presenting solutions and plans of action: the workshop ends with a presentation of the solutions and plans of action. This gives every team a specific goal.



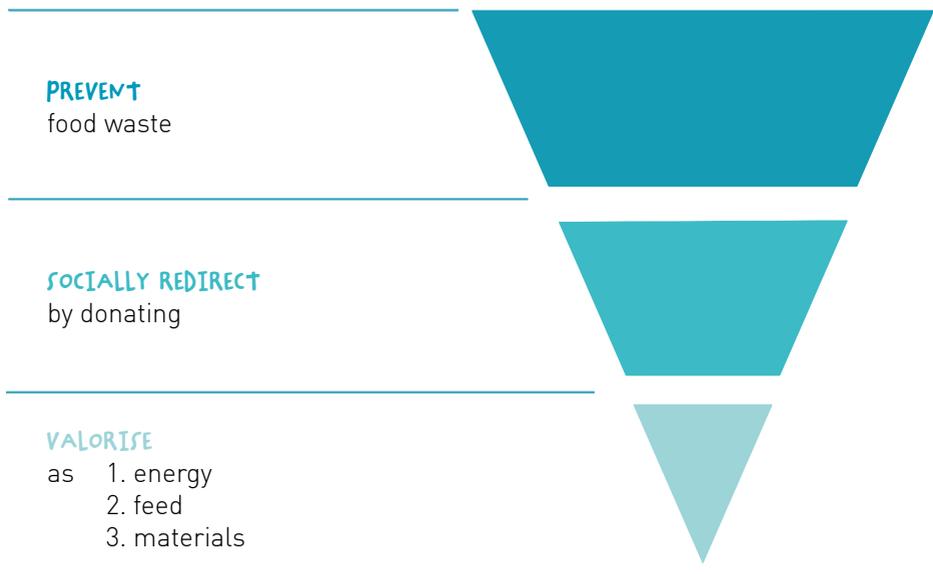
FOODWIN'S TIP

Make sure your plan of action describes which actions you will undertake, who is responsible and what your goal is. Make your objective as quantifiable and verifiable as you can. By what percentage do you want to reduce food waste? By when?

GET INSPIRED BY THESE GOOD PRACTICES

Several Bruges-based and other healthcare institutions have taken big steps in food waste management. Below is an inspiring list of best practices. Not all solutions are transferable from one institution to the other. However, the listed ideas may inspire you, since healthcare institutions often struggle with similar issues. Taking a peek over the wall will help you find solutions tailored to the needs of your organization.

An inverted pyramid diagram divides the best practices in different levels of result achievement. This diagram is used by the Flemish government as a general guideline for food waste management (Roadmap Voedselverlies, 2015). The higher up your solution is in the pyramid, the better its results will be. The best way to prevent food waste is at its source. Not only will the food preserve its value, it is also the economically most interesting solution. If the food waste cannot be avoided, try to recycle by donating leftovers to social organizations. If that is not possible, try to valorise it or reuse it as food for animals, materials and/or energy.



PREVENT

THE PROBLEM

Imprecise ordering system for patients and residents

One of the main causes of food waste in healthcare. The communication from kitchen personnel to healthcare staff to patients or residents and back is often flawed. This problem occurs in all types of healthcare institutions, from hospitals to residential care facilities and specialized day care institutions. The problem is noticeable from the big amount of leftovers on plates or food pans and pots (unserved food waste) in canteens.

GOOD PRACTICES

AZ Sint-Jan (Bruges)

The hospital invited its logistics staff to participate in a workshop (organized in cooperation with FoodWIN) to identify the problems related to the ordering system. The problems are solved with the implementation of a new meal ordering system.

WZC's Hallenhuis, Van Zuylen (Bruges), St Eligius (St Eloi)

In these residential care facilities or WZC's, there is an indirect ordering system based on residents' profiles. The profiles are updated regularly. An evaluation system is currently being developed.

Vzw De kade (campus Het Anker) (Bruges)

Counsellors who know how the ordering system works train counsellors from other groups in this youth counselling centre.

Sodexo

This contract caterer experiments with an 'à la carte' system, allowing physically and mentally able patients to order what they want through a digital console. This replaces the previous ordering system.

THE PROBLEM

Inefficient menu design

A badly thought-out menu leads to food waste. On the one hand, the composition of the menu may interfere with the ordering or serving process (see adjoining column). On the other hand it may prevent patients or residents from making the 'right' decision, for example if there is something on the menu they do not like.

This problem is noticeable from the large amount of uneaten plate waste or the large amount of leftovers in pots and food pans (unserved food waste) in communal dining rooms.

GOOD PRACTICES

👉 AZ Sint-Lucas (Bruges)

The hospital has switched to a clever system with a set dish of the day and an extensive choice of predefined options. The old system was aimed at satisfying its users by offering 2 set menus. However, there were a lot of leftovers in the kitchen and the staff had difficulty in proposing the entire menu. As a result, a lot of food was leftover on the plates. The new system is equally customer-friendly and enables better food portioning.

👉 VVK Oostende

On top of the day's special, this residential care facility now offers daily seasonal dishes and classic Flemish meals. The residents choose instants before having their meal, so that the food they order is to their taste.

👉 Vzw De Kade (campus Het Anker) (Bruges)

The number of combined meals (lasagna, oven dishes...) has been reduced. The combined meals were not always to the liking of young people with autism spectrum disorders.

👉 O.L.V. van Lourdes Ziekenhuis (Waregem)

A new form has reduced the margin of error when ordering.

AZ Nikolaas (Sint-Niklaas)

This hospital offers a different service to each of the target groups. In paediatrics for example, they use a cart on rollers while in the 'brugzorghuis', a care facility where patients who are discharged from the hospital can stay until they feel ready to go home, there is a buffet for breakfast and dinner. Moreover, the admission meal for new patients in this hospital is made with kitchen leftovers from the previous day.

Overportioning

Large portions cause overconsumption or food waste. However, simply reducing portion sizes is not always the correct solution. Perception and communication are important.

This problem is noticeable from the large amounts of uneaten plate waste.

AZ Sint-Jan (Bruges)

Portion sizes of the cold dish in the cafeteria have been reduced. By way of compensation, visitors can take as much as they want from the salad bar.

Radboud UMC (Netherlands)

The size of plates size strongly affects portion control. By using smaller plates, people will eat and waste less food.

Cooking too flexibly

Cooking without a recipe causes food waste.

This problem is noticeable from the large amounts of portioning waste.

O.L.V. van Lourdes Ziekenhuis (Waregem)

The kitchen in this hospital now uses stricter portioning standards.

Measuring cups and standardized preparation methods are used to prepare the correct number of meals.

SOCIALLY REDIRECT

THE PROBLEM	GOOD PRACTICES
<p>Too many meals The unpredictability of the number of patients leads to food waste. Especially if the meals are planned or prepared one or more days in advance.</p>	<p> Ruddersstove (Bruges) This central kitchen serves several assisted living centres. Any meals left over after delivery to the assisted living centres are gifted to Kaba vzw, a local social grocer.</p>



TIP

If you are unable to avoid leftovers, look on the Schenkingsbeurs (a website that links organizations who have leftover food with organizations who need food) if you can gift it to social and food help organizations. If you have questions or need additional information, please contact us through info@foodsavers.be

VALORISE

<p>Leftovers that cannot be prevented and/or gifted, are best valorised. Selective collection is recommended.</p> <p>The implementation plan 'Domestic waste and comparable corporate waste' prescribes an obligatory selective collection of organic-biologic corporate waste from 2021.</p>

Step 3: test, monitor and share your results



Have you found the ultimate solution for food waste? Even if you have, do not change course abruptly. Start by testing your solution on a small scale. Are you trying out a new system? Then test it for example for one week or in one department. Are you testing new equipment? Try renting it from somewhere before purchasing it. A test will allow you to optimize your system even more.

Evaluate the following matters while testing:

- **Is the solution effective?**

Does the solution actually reduce food waste? Be sure to do a follow-up or impact assessment to measure the exact results of the change.

- **How is the solution received?**

It is important for the system to be well received by kitchen personnel, healthcare staff, patients and residents alike.

- **Is the solution attainable?**

A test will prove whether your solution is attainable in terms of timing and costs.

Share the results of your test and the impact assessment with personnel, patients or residents and visitors. The food waste assessment has a huge awareness-raising impact. Once everyone understands how big the problem is, they will not only put their best foot forward, but they may even come up with solutions. Involve your personnel in your project as much as you can. They are the ones who have to cope with daily problems in the workplace and they are going to implement the solutions. Their cooperation is crucial.

Do not only communicate the benchmark results, but also the solutions and the results you achieved. This ensures further engagement and pride in the project.



TIP

When communicating your results, choose a positive message of encouragement! Instead of saying: “you are not doing well”, say: “we’ll solve this together”. It is a serious matter, but try to keep a light tone, perhaps by inserting an element of play.



After the innovation workshop, AZ Sint-Lucas (Bruges) chose to switch to a clever menu ordering system with a set dish of the day and an extensive choice of predefined options. This involved a big organizational change, not only for patients but also for kitchen personnel and for the ordering process. By testing the system for a few days, the hospital gathered information that allowed them to further optimize the new system

Enclosure A: Pilot project in Bruges



Being involved in the Food Smart Cities For Development project (FSC), Bruges had the opportunity to facilitate a bottom-up process to let a sustainable food strategy unfold. This led to the establishment of the Bruges Food Lab in 2015. This platform drew up the Bruges food strategy and developed actions on this theme.

The sustainable food strategy 'Bruggesmaakt' develops initiatives around the following themes: short chain, fair trade, urban agriculture, food waste and education.

Within that strategy, the City of Bruges and FoodWIN, supported by OVAM, have started up the project: 'Innovation for the reduction of food waste in healthcare'. In 2017-2018, the food waste problem was tackled in various Bruges healthcare institutions. This manual describes the lessons learned and gives a plan of action for food waste in healthcare. Bruges has 19 healthcare institutions (4 hospitals and 15 residential care

facilities). The following institutions took part in the project:

- AZ Sint-Jan (909 beds, own kitchen)
- AZ Sint-Lucas (412 beds, own kitchen)
- WZC Hallenhuis (110 beds) and WZC Van Zuylen (130 beds), both working with Rudderstove, the central kitchen of the OCMW (the Public Welfare Centre)
- Vzw De Kade (campus Het Anker) (158 patients, 112 of whom are children, own kitchen)

This way, healthcare institutions of different sizes and with different types of kitchens (hot and cold line cooking) were represented.

The project consisted of the following steps:

- STEP 1** Gathering challenges, measuring and documenting (June- Nov. 2017): the health-care institutions were assisted in creating their benchmarks.
- STEP 2** Innovation workshop (Nov. 2017): in teams, the healthcare institutions looked for solutions for their challenges and translated them into plans of action.
- STEP 3** Testing and developing innovations (Dec. 2017- Apr. 2018): the healthcare institutions tested their solutions. The lessons learned were shared during a second workshop.
- STEP 4** Impact assessment (May- July 2018): the impact of the solutions was measured.
- STEP 5** Dissemination (Sept. 2018): this manual was drawn up and distributed during the workshop
- STEP 6** Evaluation and conclusion (Oct. 2018)



Some benchmark results:

- The healthcare institutions have measured waste percentages of 25%-40%.
- The equivalent costs are estimated to 170,000 euros a year for the hospitals and around 25,000 euros a year for residential care facilities.
- 174 to 526 grams of every hot meal were thrown away per patient per day.
- The healthcare institutions presented different percentages for each type of leftover (uneaten plate waste, waste from incorrect portioning, untouched meals and unserved food waste).
- The waste percentages were biggest in hot meals (not all institutions have measured breakfast and dinner).
- If we assume that an average of 287 grams of each hot meal is wasted, at least 318 tonnes of food is lost in Bruges each year (only counting hot meals)
- If we extrapolate this number to the whole of Flanders, we can conclude that at a yearly minimum of 12,638 tonnes of food is lost in healthcare!

The results of the impact assessment were not yet available at the moment of printing this manual.

Co2 reduction

Food waste is a substantial source of CO2 emissions. As much as 8% of the world wide CO2 emissions is linked to growing, processing, transporting, preparing and throwing away food that is never eaten. That is why food waste is an important issue for Bruggeklimateutraal 2050 (a climate neutral Bruges by 2050). It is assumed that the CO2 emission of food is around 3.2 kgs per kg of food. This indicator stems from the Sherhauser et al study (2015), see below. This study forms the conclusion of the EU FUSIONS research.

<http://eu-fusions.org/index.php/about-fusions/news-archives/355-european-project-fusionsmeasures-the-environmental-and-socio-economic-impacts-of-food-waste>

The lessons learned from the project can be found in this manual.

THE PROJECT IN THE SPOTLIGHT

- ✓ The City of Bruges received a prize for this innovative project at the Milan Urban Food Policy Pact (MUFPP), an international pact for the development of a sustainable and honest urban food system. So far, MUFPP has been signed by 176 cities. The City of Bruges won the Special Mention Award in the 'Food Waste' category at the third MUFPP in Spain (Valencia). (<http://www.milanurbanfoodpolicypact.org/>)
- ✓ The City of Bruges was among the final competitors in the 2018 Food Waste Awards
- ✓ This project is one of MUFPP's 50 selected practices (2018): www.milanurbanfoodpolicypact.org/2018/07/27/role-cities-transformation-food-systems-lessons-milan-pact-cities/



Enclosure B: example of a results table

Calculated overall results	Benchmark	
	(kg)w	%
Yearly total food production		
Yearly total food waste (in kgs)		
Food waste: uneaten plate waste		
Food waste: waste from incorrect portioning		
Estimated yearly cost resulting from food waste (euro)		

Average during a period of X days per patient/resident per day in grams				
	Vegetables	Starches	Meat	Combined
Meal weight				
Uneaten plate waste				
Waste from incorrect portioning				
Intake				

Calculated results per category				
Van Zuylen	Vegetables	Starches	Meat	Combined
Yearly food production (kg)				
Yearly food waste (kg)				
Food waste in %				

Want to know more?

Sustainable food strategy in Bruges

<https://foodlab.brugge.be/> (In Dutch only)

Food waste project: <https://foodlab.brugge.be/voedselverlies>

Food waste in healthcare in Flanders

The platform of commercial chains against food waste (Ketenplatform Voedselverlies) estimated the food waste at 15,240 tons in 2015.

The following organizations took action:

- **Departement WVG (Department of Welfare, Public Health and Family)**

For the 'chain roadmap', the department of Welfare, Public Health and Family set up actions against food loss in healthcare. It organizes meetings and has awarded the 2018 Food Waste Award for healthcare institutions. These actions were set up in collaboration with a core team of experts and pioneers.

www.departementwvg.be/voedselverlies

- **Rikolto**

Together with UZ Gasthuisberg (the academic hospital in Leuven), Rikolto went through a trajectory to make its catering operations more sustainable. Food waste was one of the project themes.

- **UCLL (college of higher education in Leuven-Limburg)**

UCLL's Expertise Unit for Healthy Living set up a project entitled 'door meten beter (w) eten' (roughly translated: to measure is to know (what you eat)) to compare different systems for measuring food waste in residential care facilities.

- **FoodWIN**

FoodWIN supports healthcare institutions and catering companies in their battle against food loss, for example during the pilot project in Bruges and in an innovation trajectory for food waste in healthcare in the Zero Food Waste Flanders project.

<https://www.youtube.com/watch?v=EBAHT2h7pbk&feature=youtu.be>

<https://foodwin.org/portfolio/bruges-health-care-institutions/>

Food waste in healthcare: actions and research abroad

Food waste in healthcare has only been getting the international attention it deserves for a few years now.

- **Wageningen University (Netherlands)**

A pioneer in food waste assessment. You can find more information about their approach in the following publications:

Soethoudt, H., and J. Snels. Voedselverspilling in Nederlandse ziekenhuizen: deel 1: hoe kun je een meting opzetten en wat kun je aan voedselverspilling doen? No. 1637. Wageningen UR Food & Biobased Research, 2016.

Soethoudt, H., and J. Snels. Voedselverspilling in Nederlandse ziekenhuizen: deel 2: Inzicht in typen en hoeveelheden voedselverspilling in een Nederlands ziekenhuis maakt benchmark vergelijking mogelijk. No. 1681. Wageningen UR Food & Biobased Research, 2016.

<https://www.wur.nl/en/Research-Results/Themes/Nutrition-Health/Food-innovation/Food-waste-in-hospitals-and-care-homes-1.htm>

- **Health Care Without Harms (Europe)**

noharm-europe.org/sites/default/files/documents-files/4336/HCWHEurope_FoodWaste_Flyer_Oct2016.pdf

- **WRAP (UK)**

www.wrap.org.uk/sites/files/wrap/Healthcare.pdf

- **Cork Institute of Technology (Ireland)**

www.epa.ie/pubs/advice/green%20business/Reducing-food-waste-in-Irish-healthcare-Facilities-foodwaste-guidance-booklet-reduced-size.pdf

Food waste in Flanders

- **The Department of Welfare, Public Health and Family (WVG)**

www.departementwvg.be/voedselverlies (in dutch only)

www.voedselverlies.be/en

- **Chain roadmap food waste**

lv.vlaanderen.be/nl/voortlichtinginfo/publicaties/studies/voedselverlies

www.voedselverlies.be/en

OVAM

www.ovam.be/voedselverlies (In Dutch only)

Practice book food waste

https://www.ovam.be/sites/default/files/atoms/files/20180613_Praktijkboek%20Voedselverlies_def_0%281%29.pdf (In Dutch only)

CO2-reductie

It is assumed that the CO₂ emission of food is about 3.2kg per kg of food. This indicator stems from the Sherhauffer et al research (2015). The research forms the conclusion of the EU Fusions research.

www.eu-fusions.org/index.php/about-fusions/news-archives/355-european-project-fusionsmeasures-the-environmental-and-socio-economic-impacts-of-food-waste



SAMEN MAKEN WE
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