



# FRESH, HEALTHY, AND SUSTAINABLE FOOD

**BEST PRACTICES  
IN EUROPEAN HEALTHCARE**

## ACKNOWLEDGEMENTS

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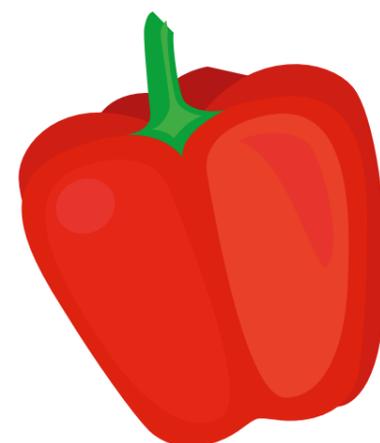
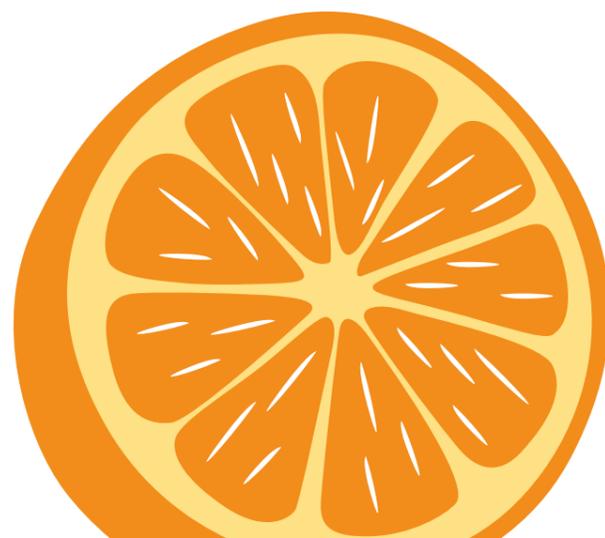
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## CONTENTS

<b>LIST OF PARTICIPANTS</b> .....	3
<b>INTRODUCTION</b> .....	6
<b>CHAPTER 1: WHY HEALTHY AND SUSTAINABLE FOOD IN HEALTHCARE?</b> .....	8
<b>CHAPTER 2: THE POLICY FRAMEWORK FOR HEALTHY AND SUSTAINABLE FOOD IN THE HEALTHCARE SECTOR</b> .....	16
The international and European policy framework .....	16
National and local policies on healthy and sustainable food in European healthcare .....	18
Conclusions .....	22
<b>CHAPTER 3: CASE STUDIES OF FRESH, HEALTHY AND SUSTAINABLE FOOD IN EUROPEAN HOSPITALS</b> .....	24
Austria .....	26
Belgium .....	28
Denmark .....	36
France .....	40
Italy .....	44
Spain .....	50
Sweden .....	58
Switzerland .....	60
United Kingdom .....	62
Conclusions .....	68
<b>CHAPTER 4: HCWH EUROPE RECOMMENDATIONS</b> .....	70
Healthcare institutions .....	70
European Union policy makers .....	71
<b>REFERENCES AND NOTES</b> .....	72
<b>ANNEX 1: SURVEY ON SUSTAINABLE AND HEALTHY FOOD IN EUROPEAN HOSPITALS</b> .....	78



## INTRODUCTION

Food is a central and essential component of our lives: not only does it provide nourishment, it is a hugely important part of every economy and has deep links with people's cultural identity. The food that we produce, consume and waste, however, has a major impact on the environment and on people's health.<sup>1</sup>

For the healthcare sector, alongside nutritional aspects, food provision is often about controlling economic costs, but a more holistic view is beginning to emerge. There are those who advocate for improvements in catering standards, arguing that better meals contribute to speedier recovery. The wider educational role of hospitals is being acknowledged with attempts to improve diets of patients even after they leave a care facility. There is realisation that food production methods contribute to a deteriorating environment with consequent health impacts and long-term threats to earth systems (see Box 1). Food waste is obviously a waste of economic resources for a hospital, but can also be recognised as wasting wider environmental resources and adding to environmental damage. Inequitable access to food is a further factor that partly arises out of a dysfunctional food system.

Given the threats that our food system poses to the environment, the economy, and society as a whole, it is imperative that all sectors move towards healthier and more sustainable food production, procurement, preparation, consumption, and disposal practices.

Aware of the importance of these issues for the healthcare sector, Health Care Without Harm (HCWH) Europe decided to produce a second sustainable food report to follow up from its 2007 Report, *'Fresh, local, and organic: A successful recipe for improving Europe's hospital food'*. This second report takes a look at some of the progress made towards providing healthy, local, and seasonal food in healthcare facilities.

The main aim is to highlight the common challenges in implementing healthy and sustaina-

ble food policies in some European hospitals, and to provide some examples of leading institutions that could inspire and encourage others to follow suit. At the heart of this report are a number of case studies which demonstrate the awareness and progressive practices at 22 healthcare facilities or associated kitchens in the EU. This report also provides an introduction to the European policy context that is supposed to favour sustainable food practices.

A further aim of the work is to alert policy makers to the fact that conscious efforts to provide healthy and sustainable food are growing because it can also be economically feasible, particularly if the wider benefits to society are taken into account. European legislators should therefore work towards a legislative framework that will ensure a common understanding of healthy and sustainable food in order to facilitate the implementation of harmonised sustainable food strategies across sectors and across the EU.

Some final recommendations are presented, reflecting the learning of leaders in this field and the views of some hospitals and health systems that are already engaged in promoting sustainable and healthy food policies at their institutions.

### Box 1

## Some threats of modern agricultural systems

A leading European Union advisory committee on the future of agriculture - the EU Standing Committee on Agriculture Research (SCAR) – has identified the following threats that modern agricultural systems pose:<sup>2</sup>

- the compromising of the Earth's capacity to produce food in the future due to the environmental damage caused by agriculture itself (such as depletion of resources, land degradation, greenhouse gas emissions and climate change, loss of biodiversity);
- the increasing inaccessibility of food to the poor due to price volatility, globalised markets, access restrictions, vulnerability to climate change, and loss of agro-biodiversity;
- the health risks of the Western diet, with high intakes of meat, fat and sugar, with diet-related diseases such as obesity, type 2 diabetes, hypertension, osteoarthritis, and cancer.

SCAR also highlighted the need for *"coherence across food, energy, environment and health policies"* to help the transition to *"more sustainable and equitable food systems"*.



## CHAPTER 1: WHY HEALTHY AND SUSTAINABLE FOOD IN HEALTHCARE?

The benefits of implementing healthy and sustainable food policies in all food service sectors, including healthcare, are considerable and span from environmental and health to economic and social benefits. In the healthcare sector there is growing awareness of the importance of serving sustainably produced and healthy food to patients and of the need to prevent and reduce food waste. As a consequence sustainable food policies in European healthcare facilities are growing, although these best practices are still somewhat isolated.

Despite a number of policy measures to encourage sustainable food procurement and the reduction of food waste, the EU still lacks a comprehensive legislative framework that properly tackles all of the environmental, health, social, and economic issues linked to food.

### WHAT DOES HEALTHY AND SUSTAINABLE FOOD MEAN?

There is no legal definition of ‘sustainable food’ at either the international or European level. Various organisations and institutions have taken quite broad interpretations of sustainable food systems, and in practice facilities may use only certain elements when developing and implementing an actual strategy for provision of meals. Some terms that constitute at least part of such an approach, such as ‘organic’ or ‘Fairtrade’, are more clearly defined and have well-developed certification systems (see Boxes 2 and 3). This report does not attempt its own definition but summarises a number of working definitions to give an indication of the scope (see Box 4). The report also recognises that healthcare facilities that are taking concrete steps to supply sustainable food are – understandably given the complexities of food chains and financial limitations – using varying subsets of considerations to formulate their plans.

In regard to ‘healthy food’, there is also no definition at the European level but there is a Regulation on the use of nutrition and health claims for foods.<sup>3,4</sup> One of the key objectives of this Regulation is to ensure that any claim made on a food label or in advertising is clear and substantiated by scientific evidence, protecting consumers from misleading information.

Because of the lack of a legal framework, a number of organisations in Europe and internationally have provided their own working definitions of healthy food, sustainable food, sustainable food systems, and sustainable agriculture. Some of these working definitions are highlighted below (see Box 4).

Health Care Without Harm US & Canada started the *Healthy Food in Health Care* programme in the United States more than 10 years ago. In this programme, healthy food was defined as that based on an environmental nutrition approach that understands that our health is not only determined by the quantity and quality of the food we eat, but must also come from a food system that conserves natural resources, advances social justice and animal welfare, builds community wealth, and fulfills the food and nutrition needs of all consumers now and in the future.<sup>5</sup> HCWH US & Canada defines sustainable products as those that carry at least one of a number of third party certifications or label claims (e.g. USDA Certified Organic, Food Alliance Certified, or Animal Welfare Approved) or that meet the following definition of ‘local’ products: grown/raised and processed within 250 miles of the facility.<sup>6</sup> For processed foods with multiple ingredients, including breads and other bakery items, only products with a majority of ingredients (over 50% by weight) from within a 250-mile radius may be considered local.

### Box 2

## Organic food

Organic food is food produced by methods that comply with the standards of organic farming. These standards actually vary worldwide in their detail, but organic farming in general features practices that strive to recycle resources, maintain high standards of animal welfare, promote ecological balance, and conserve biodiversity. According to the European Commission, organic farming practices include crop rotation, a ban on the use of genetically modified organisms, and very strict limits on the use of synthetic pesticides and fertilisers, antibiotics, and food additives.<sup>7</sup>

Currently, the European Union, the United States, Canada, Mexico, Japan, and many other countries require producers to obtain special certification in order to market food as organic within their borders. The EU certification system lays down standards for every aspect of the production, processing, importation, labelling, and verification of organic food.<sup>8,9</sup>

### Box 3

## Fair trade

The concept of fair trade is a broad one, incorporating ethical and more equitable trading relationships between producers, traders, and consumers, and promoting sustainable development. Fair prices are just one aspect of this, helping some of the most disadvantaged growers to benefit from trade. Workers’ rights, attention to health and safety, and capacity building are other issues that are encouraged by the movement. Within the EU, consumers will be familiar with the ‘Fairtrade’ consumer label on goods and foodstuffs. Such products have been certified by Fairtrade International as meeting internationally-agreed social, environmental (but not necessarily organic), and economic standards.<sup>10</sup>

## Box 4

# Some definitions of sustainable food

Nearly 30 years ago, the **Food and Agriculture Organization of the United Nations** (FAO) defined sustainable agricultural development as:

*“the management and conservation of the natural resource base, and the orientation of technological change in such a manner as to ensure the attainment of continued satisfaction of human needs for present and future generations. Such sustainable development (in the agriculture, forestry and fisheries sectors) conserves land, water, and plant and animal genetic resources, and is environmentally non-degrading, technically appropriate, economically viable and socially acceptable.”<sup>11</sup>*

The FAO vision for sustainable food and agriculture is that of:

*“a world in which food is nutritious and accessible for everyone and natural resources are managed in a way that maintain ecosystem functions to support current as well as future human needs. In our vision, farmers, pastoralists, fisher-folks, foresters and other rural dwellers have the opportunity to actively participate in, and benefit from, economic development, have decent employment condition and work in a fair price environment. Rural women, men, and communities live in security, and have control over their livelihoods and equitable access to resources which they use in an efficient way.”<sup>12</sup>*

The **European Commission** provides this interpretation of sustainable food:

*“For food, a sustainable system might be seen as encompassing a range of issues such as security of the supply of food, health, safety, affordability, quality, a strong food industry in terms of jobs and growth and, at the same time, environmental sustainability, in terms of issues such as climate change, biodiversity, water and soil quality.”<sup>13</sup>*

**SUSTAIN** – the alliance for better food and farming<sup>14</sup> – defines sustainable food as:

*“food that should be produced, processed, distributed and disposed of in ways that:*

- *contribute to support local economies and sustainable livelihoods - both in the UK and, in the case of imported products, in producer countries;*
- *protect the diversity and welfare of both plants and animals and the welfare of farmed and wild species;*
- *avoid damaging and wasting natural resources or contributing to climate change;*
- *provide social benefits such as high quality and healthy products and educational opportunities.”<sup>15</sup>*

In the UK, the **King’s Fund** (a think-tank that undertakes research and policy analysis on health issues) undertook a study for the (former) Better Hospital Food Project. Their vision of a sustainable food system very clearly joins up environmental, economic, and health issues.<sup>16</sup>

*“Environmental:*

- *agricultural methods that protect biodiversity and soil and water quality, and minimise the use of pesticides and antibiotics*

- *reduced energy intensity of production*
- *less waste and more reliance on reducing, reusing and recycling waste*
- *high standards of animal welfare on farms, in transport and at abattoirs*
- *greater reliance on locally produced and seasonal food.*

*Economic:*

- *greater reliance on more diverse and smaller suppliers*
- *reduced food miles*
- *fair and ethical trade and supply chain*
- *fair, safe and legal conditions of employment*
- *assurance codes that evaluate environmental impacts.*

*Health:*

- *high level of food safety promoted through traceability of food ingredients and food products, transparent labelling and better regulation*
- *diets based on higher intake of fruit and vegetables, and less meat and dairy produce*
- *healthier ready-made meals with lower saturated fat, sugar and salt content and more restricted use of additives*
- *more consumer awareness of the health consequences of how food is grown and manufactured*
- *better nutritional standards in public sector institutions*
- *high levels of food hygiene and safety.”*

## WHAT DOES FOOD WASTE MEAN?

As with sustainable food, food waste itself also has no legally binding definition at the international or European level. But many working definitions of sustainable food and food systems incorporate the idea of the optimal use of resources and therefore a consequent reduction in food waste.

At the European level, the EU-funded FUSIONS project (Food Use for Social Innovation by Optimising Waste Prevention Strategies) defines food waste as:

*“any food, and inedible parts of food, removed from the food supply chain to be recovered or disposed (including composted, crops ploughed*

*in/not harvested, anaerobic digestion, bio-energy production, co-generation, incineration, disposal to sewer, landfill, or discarded to sea)”<sup>17</sup>*

HCWH Europe agrees with the FUSIONS definition and would like to see it becoming legally binding in the EU. The FUSIONS definition is very broad in scope as it also includes drinks and liquid waste, fish discarded to sea, and waste of any materials that are ready for harvest, but which are not harvested. FUSIONS also considers inedible parts of food (e.g. skin, bones) as food waste and defines food loss and food wastage in addition to food waste.

In hospitals and other healthcare facilities, where plate waste is higher than in other food service sectors, food waste can range from 6%

to 65% of food purchased.<sup>18</sup> However, this percentage changes depending on the methodology used to measure food waste. A clear definition of food waste would allow facilities to have a common understanding of what constitutes food waste and harmonise its measurement across the European healthcare sector.

## ENVIRONMENTAL AND HEALTH BENEFITS OF SUSTAINABLE FOOD

The environmental and health impacts of all the stages of the food system, from food production and preparation, through to distribution, consumption, and disposal, are numerous and significant. For example, exposure to chemicals in food and the spread of antimicrobial-resistant bacteria found in food have profound implications for human health. And as noted above, the carbon footprint of food, the depletion of resources, and the loss of agro-biodiversity are set to jeopardise the future availability of food itself.

### CHEMICALS IN FOOD

A variety of toxic chemicals can contaminate food. For example, chemicals that are carcinogenic, mutagenic or reprotoxic (CMR) or that are endocrine-disrupting (EDCs) can be found in foodstuffs. Agricultural pesticides, bisphenol-A (found in food contact materials), and hormone growth promoters<sup>19</sup> are just a few of the chemicals of concern that may cause hazard to humans and the environment. About 400,000 tonnes of agricultural pesticides were sold in the European Union in 2014.<sup>20</sup>

The healthcare sector treats the downstream health burden of agricultural pesticide use. A growing body of evidence links certain classes of pesticides to cancers, neurodevelopmental disorders, reproductive disorders, asthma, birth defects, acute poisoning, and Parkinson's Disease.<sup>21</sup>

The European Food Safety Authority (EFSA) has published the results of the monitoring of pesticide residues in fruits and vegetables for the year 2013.<sup>22</sup> Again the level of toxic mixtures

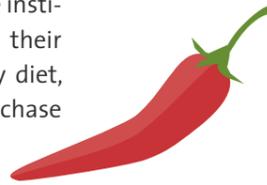
in the food available on the market appears to have increased: 27.3% of all fruit and vegetables analysed contained more than one pesticide, up from 26.1% in 2012. The products with the highest percentage of samples with multiple residues were strawberries (63%), peaches (53%), apples (46%), and lettuce (36%). Whilst legal limits exist for individual pesticide residues in food, no such limits exist for multiple residues so it is worthwhile noting that people in Europe are not necessarily protected from health effects.

Healthcare institutions have an important duty to protect the health of their patients, employees, and visitors, and could take the opportunity to also protect the health of the environment, of agricultural workers, and farming communities by sourcing and serving organic food. Their large purchasing volume can have a significant impact by creating new markets for organic producers and supporting more farms to become organic. In addition, healthcare institutions have the opportunity to educate their patients and employees about a healthy diet, in order for them to eat healthily and purchase organic food when at home.

### ANTIMICROBIAL RESISTANCE (AMR) IN FOOD

Historically, antibiotics have been used to promote growth in food animals – a practice now banned in the EU since 2006.<sup>23</sup> Antibiotics, however, are still widely used in some countries for disease prevention – often in order to help animals endure crowded, dirty, and stressful conditions in farms. This routine and non-therapeutic use of antibiotics in intensive livestock farming and aquaculture may cause an increase in harmful antibiotic-resistant bacteria, including *E. coli*, *Salmonella*, and *Campylobacter*. These bacteria can make their way from the farm to our supermarkets (as recently reported in the United Kingdom<sup>24</sup>) and dinner plates, leading to increased exposure and subsequent infections, which may not be treatable.

It is not only animal-based products that can be contaminated with antimicrobial resistant (AMR) bacteria and/or antimicrobial resistance



genes. Other ingredients that are intentionally added during food processing – such as starter cultures, probiotics, bioconserving microorganisms, and bacteriophages – can spread antimicrobial resistant bacteria.<sup>25</sup> Such bacteria can also be spread through cross-contamination (for example when raw food is mixed with other ingredients). Raw food products hold a substantial risk for the transfer of antimicrobial resistance to humans, while cooking processes often kill bacteria.

Hospitals and health systems are on the front line when it comes to treating infections, yet they purchase large quantities of meat annually, increasing the exposure of their food service workers and, more broadly, farm workers in the community to antibiotic-resistant bacteria. A solution would be to encourage hospitals to purchase animal-based products produced without routine and non-therapeutic antibiotics, to serve organic meat as much as possible, and to educate staff and patients on AMR. Another strategy that hospitals should adopt is to reduce the amount of meat served, by serving smaller portions of red meat and poultry, and increasing the availability of healthy plant-based foods. Meals could be enriched with larger portions of fruits, vegetables, and grains, and fish and pulses could provide other forms of protein.

The problems associated with AMR have been known for a while. The EU has adopted important policies and pieces of legislation to tackle this issue from both human and animal perspectives.<sup>26,27,28</sup> Further efforts are needed, however, to tackle this growing problem. One important step in the fight against AMR is to ensure that the public is aware of the use of antibiotics in food animals and understand that healthier food choices could be delivered in hospitals and other public institutions across Europe.

### FOOD AND CLIMATE

The Intergovernmental Panel on Climate Change estimates that agriculture and associated land use changes are responsible for 24% of global greenhouse gases (GHGs) driving climate change.<sup>29</sup> Climate-related health risks in-

clude increases in respiratory and cardiovascular diseases, heat-related illnesses and deaths, outbreaks of infectious diseases, food and water insecurity (with subsequent increases in food prices), occupational health impacts, and mental illness and stress associated with environmental damage. A World Health Organization (WHO) assessment foresees that climate change will cause approximately 250,000 additional deaths per year between 2030 and 2050, as a collective result of consequences of climate change's adverse effects, such as heat strokes, increased cases of malaria, water-borne diseases, diarrhoea, respiratory diseases, etc.<sup>30</sup>

More sustainable food production and changes in diets could help mitigate carbon emissions. Livestock production alone contributes 18% of the world's GHG emissions. Beef and cheese have the highest climate impact of all foods because of the sheer quantity of feed consumed by cows, and the production of the GHG methane in their digestive systems. Reducing or eliminating the amount of meat consumed would greatly contribute to reducing GHG emissions.

Food waste also has a considerable carbon footprint. When food is discarded, the waste embodies all the emissions associated with its production, and when decomposing in landfill, it generates considerable quantities of methane and carbon dioxide. It is estimated that approximately 100 million tonnes of food (generating about 227 million tonnes of carbon dioxide equivalents<sup>31</sup>) are wasted annually in the EU across all stages of the food chain from production to consumption.

### FOOD AND DEPLETION OF RESOURCES

According to the report of the UN Millennium Ecosystem Assessment in 2005,<sup>32</sup> food production is a major source of ecosystem degradation and biodiversity loss. Therefore, when food is disposed of, the resources used to grow, produce, process, and transport food are also wasted. It has been estimated that the production of food that is wasted worldwide is equivalent to 24% of total freshwater resources, 23% of global cropland, and 23% of global fertiliser use.<sup>33</sup> The depletion of resources like fresh water, the

soil degradation associated with food production, and the chemicals used on crops represent environmental problems that are particularly concerning. As the population continues to rise worldwide, and consumption patterns shift, this will lead to higher global demand for food and consequently amplified environmental pressure.

### **ECONOMIC AND SOCIAL BENEFITS OF SUSTAINABLE FOOD**

Healthy, sustainable food, and in particular the local sourcing of food, has a positive effect not just for local economic prosperity but also for the general well-being of the populations that hospitals serve. Healthy food avoids malnutrition and facilitates faster recovery of patients;<sup>34</sup> and procuring local and sustainable food contributes to the prosperity of local communities and also reduces local unemployment, which is known to be a factor contributing to ill-health. Therefore local food procurement helps boost the local economy in such a way that communities thrive and there is less pressure on health services.<sup>35</sup>

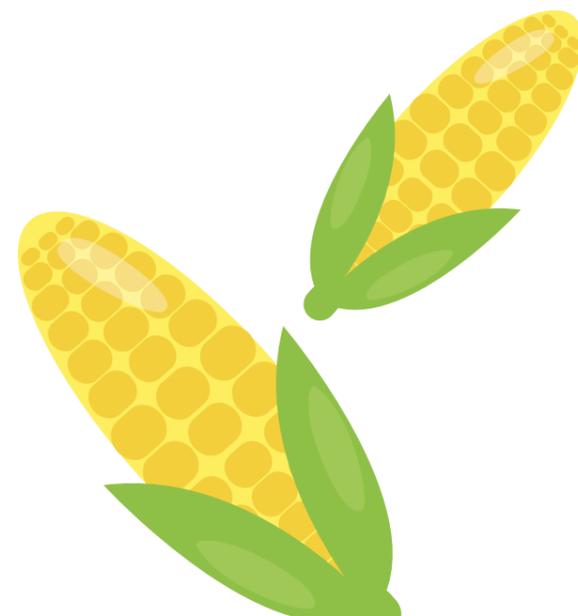
In addition to supporting local economies, hospitals in Europe can help support sustainable livelihoods for a growing number of communities in developing countries by choosing Fairtrade certified products when they source imported commodities such as tea, coffee, and tropical fruits. As outlined in Box 3 above, Fairtrade standards, monitored through audit and inspection, prevent discriminatory and exploitative labour practices, require that small-scale producers are paid better prices, and ensure that workers enjoy decent pay and working conditions.

There are further social benefits to be gained by improving the long-term diets of people. Whilst this report mainly focuses on food in hospital settings, partly as a welcome step towards better health, effecting long-term changes in individual eating habits and food culture could have a significant impact on problems such as obesity and diet-related diseases such as cardiovascular diseases.

Hospitals have the opportunity to use the food they serve as a tool to educate patients, their families, and employees about healthy eating. In consulting with patients to improve menus, they are able to open a positive dialogue about nutrition, food preferences, and eating habits. In introducing menu changes, they are able to communicate with patients and their families about the nutritional issues associated with food, and in forming new supplier relationships, they are able to give patients better information about the origin and quality of their food. In serving up more appetising food, they are making it more likely that sceptical patients will be receptive to messages about healthy eating.

### **PRACTICAL STEPS ARE POSSIBLE**

Through implementing healthy and sustainable food policies, healthcare facilities have the opportunity not only to protect the environment and the health of the communities they serve, but also to support the local economy and educate employees, patients, and their families about healthier eating. A number of the hospitals featured in this report have found it possible to do all the above as a result of their efforts towards sustainable procurement and food waste prevention and reduction. They provide leading examples for all European hospitals to follow in the quest for environmental, social, and economic sustainability.



## CHAPTER 2: THE POLICY FRAMEWORK FOR HEALTHY AND SUSTAINABLE FOOD IN THE HEALTHCARE SECTOR

### THE INTERNATIONAL AND EUROPEAN POLICY FRAMEWORK

The need to develop an ambitious programme of truly sustainable development has been recognised at a global level. On 25<sup>th</sup> September 2015, building on the Millennium Development Goals, the Sustainable Development Goals (SDGs) were adopted by 193 world leaders.<sup>36</sup> The SDGs comprise a 17-point agenda (with 169 targets) aiming to end poverty, combat climate change, and fight injustice and inequality. Although many of the goals have a direct or indirect relationship with food production, two of the goals specifically refer to food systems. The second of the 17 SDGs is to:

*“end hunger, achieve food security and improved nutrition, and promote sustainable agriculture”,*

providing a clear link between the need for healthy nutrition and sustainable agriculture. In particular SDG 2.4 aims

*“by 2030 [to] ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters, and that progressively improve land and soil quality”.*

In addition, SDG 12 relates to:

*“ensuring sustainable consumption and production patterns”.*

And, in particular, SDG 12.3 aims to:

*“by 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses”.*<sup>37</sup>

Despite the worldwide governmental recognition that food production and consumption have an important role to play in protecting the environment, only about one third of all coun-

tries in the world have so far issued guidelines on healthy diets to their citizens. And a mere handful of countries have food guidelines promoting diets and food systems that are not only healthy but also sustainable, incorporating environmental considerations. These are some of the conclusions of a recent study, *‘Plates, pyramid, and planet’*, published in May 2016 by the Food and Agriculture Organization (FAO) of the United Nations and the Food Climate Research Network (FCRN).<sup>38</sup> The study further emphasises that, to have a significant impact on food consumption, dietary guidelines need to have clear links to food policies that are actually implemented at the national or sectorial level – for example, policies defining standards for school and hospital meals.

*“Governments have few sources of leverage over increasingly globalised food systems – but public procurement is one of them. When sourcing food for schools, hospitals, and public administrations, governments have a rare opportunity to support more nutritious diets and more sustainable food systems in one fell swoop.”*

Olivier de Schutter, UN Special Rapporteur on the Right to Food, 15<sup>th</sup> May 2014.<sup>39</sup>

The EU has recognised the problem of the environmental impact of food production and consumption in a number of studies and policy papers. In 2011, the European Commission’s Standing Committee on Agricultural Research published a report on *‘Sustainable food consumption and production in a resource-constrained world’*, which argues that:

*“Globally, and in many regions including Europe, food production is exceeding environmental limits or is close to doing so. Nitrogen synthesis exceeds the planetary boundary<sup>40</sup> by factor of four and phosphorus use has reached the plan-*

*etary boundary. Land use change and land degradation, and the dependence on fossil energy contribute about one-fourth of greenhouse gas emissions. Agriculture, including fisheries, is the single largest driver of biodiversity loss. Regionally, water extracted by irrigation exceeds the replenishment of the resource”.*<sup>2</sup>

In 2013, a stakeholder consultation was launched by the European Commission on the sustainability of the food system, exploring how the EU could move towards a more resource efficient and sustainable food system.<sup>41</sup> A sustainable production and consumption strategy proposal was expected to follow in 2014 to address a number of issues that are not yet regulated in the EU, such as:

- ➔ identifying the ‘true cost’ of food production, in particular including its environmental footprint;
- ➔ emphasising more sustainable food production through shorter supply chains and phasing out unfair trade practices which negatively affect farmers in developing and other countries;
- ➔ revising the guidelines for public purchasing of food and food services;
- ➔ supporting the debate on sustainable consumption;
- ➔ setting objectives for food waste reduction in all member states;
- ➔ supporting capacity building programmes for farmers in developing countries to enable them to use more sustainable agricultural practices.

Unfortunately, such a proposal for a sustainable consumption and production strategy was never adopted by the European Commission. In its place, the Commission adopted a Circular Economy Package which, amongst proposals for revision of old Directives, includes a proposal<sup>42</sup> to revise the Waste Framework Directive (2008/98/EC). Regrettably the proposal does not provide clear targets for food waste reduction along the lines of the SDG 12.3

target, or clear definitions of sustainable food or food waste, so these are still missing in the EU legislative framework. However, the proposal does commit the European Commission to developing a methodology for preventing and reducing food losses and food waste in order to contribute to the achievement of the SDG 12.3 target. In August 2016, the EC set up a platform (the Platform on Food Losses and Food Waste) for this purpose, which convenes twice a year with all EU member states, other EU and UN institutions, selected industry associations, academics and NGOs.<sup>43</sup>

The European Commission had started addressing the issue of food waste in a Communication on bio-waste management in 2010.<sup>44</sup> One year later, following the FAO report *‘Global Food Losses and Food Waste’*,<sup>45</sup> which highlighted the food losses occurring along the entire food chain at a regional and global scale, the Commission published a *‘Roadmap to a Resource Efficient Europe’*.<sup>46</sup> This roadmap proposed incentives for healthier and more sustainable food production and consumption in order to halve the disposal of edible food waste in the EU by 2020. In addition, specific guidelines have been prepared to address food waste through national waste prevention programmes,<sup>47</sup> as required by the 2008 Waste Framework Directive. So far the governments that have been active in carrying out national and local awareness campaigns on food waste are the governments of Belgium, France, Ireland, The Netherlands, and the United Kingdom.<sup>48</sup>

In parallel to the policy initiatives mainly focusing on food waste, the EU has also addressed healthy and sustainable food production and consumption through the legislative framework on public procurement.

Directives 2004/17/EC and 2004/18/EC created the European framework for the procurement of public contracts, clarifying how purchasers can integrate environmental dimensions into tendering processes, including those concerning the procurement of food products.<sup>49</sup> The same year, the Commission launched the handbook *‘Buying green!’*<sup>50</sup> (currently in its



third edition), which aimed to provide guidelines on how to use the new rules to conclude green public contracts. In 2010, the EC produced a guide called *'Buying social'*<sup>51</sup> which takes into account social considerations in public procurement to stimulate greater social inclusion and ensure equal access for all European citizens. In 2014, the new Public Procurement Directives<sup>52</sup> provided new opportunities to promote social inclusion through procurement processes, in addition to simplifying the procedures and making them more flexible.

In addition, the (EC), has developed Green Public Procurement (GPP) criteria in a number of areas. The GPP criteria are a policy framework that sets voluntary standards for national, regional, and local authorities to achieve public procurement that is ecologically sustainable. Currently the EC, in collaboration with the Joint Research Centre, is revising GPP criteria for food and catering services.<sup>53</sup> The new GPP criteria are currently being debated by Member States and a group of stakeholders and will be published in 2017. The criteria will provide voluntary instruments for public authorities, including schools and hospitals, to procure healthy and sustainable food. The criteria set the procurement of organic products, seasonal products, fair trade products, and others, as well as key aspects such as menu planning, staff training, waste sorting and disposal, and fleet transport and delivery planning.

### NATIONAL AND LOCAL POLICIES ON HEALTHY AND SUSTAINABLE FOOD IN EUROPEAN HEALTHCARE

A few European countries and regions are implementing policies for healthy and sustainable food including management of food waste in healthcare facilities. Here we provide some examples of national policies as well as local initiatives.

#### AUSTRIA

Austria has one of Europe's largest proportion of organically managed land, and big supermarket chains have special organic brands with

a large selection of products. This has resulted in an increase in demand for organic food. In 2015, the Federal Ministry of Agriculture, Forestry, Environment and Water Management wrote a Mission Statement<sup>54</sup> with which the Ministry aims to:

- design a sustainable and environmentally sound agricultural and food policy for farmers and consumers;
- safeguard and promote the highest possible standards and the best possible quality of food, paying particular attention to fair production and species appropriate animal husbandry;
- endeavour to ensure that future generations, too, will have access to sufficient, high-quality water resources and to guarantee security of supply in all regions.

With regard to food waste, the Ministry promoted a Federal Waste Management Plan (2011)<sup>55</sup> in order to implement the objectives and principles of the Waste Management Law of 2002. This plan aims to reduce food waste generated by households and companies by 20% by 2016.<sup>56</sup> It also sets out policy initiatives, such as:

- the inclusion of food waste prevention within training programmes (for chefs and other restaurant and catering staff, hotel management schools, nutrition experts, etc.);
- the exchange of best practices;
- the establishment of a system of incentives for companies;
- the release of official food donation guidelines; and
- the adoption of specific guidelines for public procurement.

Vienna has the most successful initiative in Austria on sustainable public procurement with its programme *ÖkoKauf Wien (EcoBuy Vienna)*, established in 1999 as part of the Vienna Climate Protection Programme (*KliP Wien*). Public procurement of food for hospitals, schools,



and nursing homes for the elderly contributes to the climate change mitigation goals. While there was a strong early focus on ecological aspects – i.e. public canteens should use at least 30% organic ingredients – other aspects of sustainability are now being considered, including Fairtrade certified food, and healthy, locally sourced and seasonal food.<sup>57</sup>

#### BELGIUM

For several years, food waste has been on the Belgian policy agenda, specifically in Flanders. The Flemish government, in close collaboration with food supply chain partners, the national government and a number of other stakeholders, has committed to implementing the following six actions in a *'Declaration of Commitment: Together against Food Losses'*:<sup>58</sup>

- preparation of a Food Supply Chain Roadmap 2020, with the aim of reducing food losses and food waste as much as possible;
- the building of a solid knowledge base on food losses in all sectors of the food supply chain;
- awareness-raising in every step of the food chain, from the primary producer up to consumers;
- an invitation to all companies and organisations in the food supply chain, as well as all relevant societal stakeholders, to join a Food Losses Coalition and endorse the Declaration of Commitment in Flanders;
- awareness-raising on this topic amongst consumers; and
- the management of food surpluses through enduring partnerships with social initiatives delivering food aid.

In addition, the municipality of Ghent has launched the *Ghent en Garde* programme (within the city's Climate Plan 2015-2019), which has set up a first broad framework for realising a more sustainable local food system. This programme consists of five overall objectives:<sup>59</sup>

- pushing for a shorter and more visible food chain;
- stimulating sustainable food production and consumption;
- creating added social value regarding food initiatives;
- reducing food waste; and
- collecting and processing food waste to convert it into energy.

In addition, the city of Ghent was the first city in the world to institutionalise a meat-free day per week – the Veggie Day (*Veggedag*) on Thursdays. This campaign is now being supported by other Belgian cities, such as Brussels and Ostend.<sup>60</sup>

Despite these important actions no targets for food waste at a federal level have been established yet.

#### DENMARK

Organic food has been on the policy agenda in Denmark for some decades as part of the country's sustainable food strategy. This initiative started with the adoption of the *Dogme Charter* in 2000, which was based on an inter-municipal collaboration between the cities of Albertslund, Ballerup, Fredericia, Herning, and Copenhagen. Today the network has been renamed as *Green Cities*.<sup>61</sup> A common goal was agreed: the procurement of at least 75% (by weight) of organic food. In 2012, Copenhagen met this goal and is now working towards a 90% goal.<sup>62</sup>

In 2015, the Danish government came up with a plan – *Økologiplan Danmark* (Organic Action Plan for Denmark) – earmarking almost €54 million to increase organic production and supply.<sup>63</sup> The aim is to double the agricultural land cultivated with organic and biodynamic methods by 2020, both through supporting and investing in this sector and increasing use of new technologies and encouraging new producers. The plan also announced a 60% target for organic food to be served in public institutions (i.e. schools, hospitals, and non-private cafeterias) to demonstrate their commitment. Consid-

ering that the nation's public institutions serve around 800,000 meals per day, the impact will be highly significant.

With approximately 80% of household waste being incinerated, the resource strategy '*Denmark without waste*'<sup>64</sup>, launched in 2013 by the government, sets goals for the separation and biological treatment of 50% of food waste from households, commercial kitchens, shops, and restaurants by 2018, and for the recycling of 50% of household waste by 2022.

## FRANCE

At the French national level, Decree number 2012-144 concerning the quality and quantity of food in health institutions is in force.<sup>65</sup> This decree imposes some important goals on hospitals. For instance, hospitals need to take into account the wishes of patients by offering four choices of menus. Certain rules for the size of the meals, as well as the frequency of the meals, have to be respected, and at least 20% of the food should be seasonal or have low environmental impact. This decree allows hospitals to offer not only more sustainable food but also fresh and appetising food coming from local suppliers.

Furthermore, after the approval of the energy transition bill in August 2015,<sup>66</sup> a new and well-received law was adopted in 2016, forbidding French supermarkets from throwing away or destroying unsold food and obliging them to donate it to charities and food banks.<sup>67</sup>

With regards to food waste, in February 2016 the French Senate unanimously passed a law on food waste,<sup>68</sup> which entered into force that summer. The law consists of four articles and provides a hierarchy of actions to be put in place in order to avoid food waste: prevention, recovery of unsold food products for human consumption, animal feed, and energy use. It also forbids supermarkets from throwing away or spoiling unsold food. It proposes educational activities for raising awareness about food waste at school. Finally, the law will apply to any supermarket with a footprint of 400 m<sup>2</sup> or more, which will be obliged to sign a deal with char-

ities in order to donate unsold food. However, this law does not take into account the fact that food banks and other charitable organisations will be obliged to invest in adequate facilities to comply with hygiene and food safety rules. Moreover it does not provide any funding for supporting such future efforts that will be required by non-profit organisations.

At the local level, the most remarkable initiative is that of the regional authority for food, agriculture and forestry in the Rhône Alpes. Since 2007, the authority has developed a plan to encourage provision of local food in the canteens of public institutions. This has included a guide with information to help procurers to buy local food using a short food supply chain.

The plan also takes into account the quality of food, drawing attention to EU quality logos: Protected Designation of Origin (PDO) and Protected Geographical Indication (PGI). It is recommended that food carrying these logos should represent 20% of the overall food expenditure. In addition, public market rules have been adapted in order to give priority to the procurement of local food. In order to facilitate the supply of local food a virtual platform that puts public authorities and producers in contact with each other has been created. A similar platform has also been implemented in the northern region of Picardie.

## ITALY

Since 2011, GPP criteria have been implemented for the procurement of food for public schools and hospitals in Italy. Schools and hospitals have an obligation to serve only fresh, seasonal fruits and vegetables, 25% of produce should be certified PDO or PGI, and 15% of meat should be organic.<sup>69</sup>

Italy has also adopted a law,<sup>70</sup> in force as of September 2016, which provides a strategic approach to the issue of food waste, focusing in particular on the donation of food and pharmaceutical products to social NGOs who pass them on to people in need.



In the Piedmont Region about 40% of the food served in hospitals is wasted. This figure prompted the use of the old Italian framework for food donation, the so-called 'Good Samaritan' law (155/2003),<sup>71</sup> to push the collection of fresh and cooked food from the canteens of public institutions for donation to people in need. Three health systems in Turin – Presidio Ospedaliero Torino Nord Emergenza San Giovanni Bosco, Asl TO 2, and l'Ospedale Molinette della Città della Salute e della Scienza di Torino – have signed an agreement with a food bank to collect food that has not been eaten during the day and distribute it among the community. Of course hygiene considerations are very strict. This project involves only three health systems for the moment but the public authorities hope that similar schemes will be put in place in the majority of the hospitals in the region, and eventually will spread across the country.<sup>72</sup>

## SPAIN

Spain is known for its healthy Mediterranean diet,<sup>73</sup> which is reflected in the Spanish dietary guidelines for children, adolescents, and the general population, a part of the "*Strategy for Nutrition, Physical Activity and the Prevention of Obesity*" developed by an agency of the Ministry of Health, Social Services and Equality. One of the most remarkable aspects of the guidelines is the division of classes of food into groups for daily, weekly, and occasional consumption.<sup>74</sup> The guidelines include recommending five portions of fruit and vegetables every day and advise the consumption of 'good fats', such as unsaturated fatty acids found in olive oil.

Concerning food waste, apart from various awareness-raising campaigns carried out by non-profit organisations, and the Spanish '*More food, less waste*' strategy,<sup>75</sup> little work has been done to set specific targets for food waste prevention and reduction at the national or regional level. On the other hand, due to the economic crisis, food banks have increased significantly in most cities. However, hospitals in Spain are not yet donating food waste to food banks.

## SWEDEN

In Sweden, consumers are well informed about sustainable food and eating habits that respect the environment. Sweden has increased funding to help farmers develop small-scale food cultivation and promote the development of voluntary industry agreements.<sup>76</sup> In 2015, Sweden published dietary guidelines entitled '*Find your way: to eat greener, not too much and be active*'<sup>77</sup>, promoting consumption of more organic and plant-based products, and less than half a kilo of meat and meat products per week. This is an important step towards environmental sustainability and promoting climate-friendly food choices.

One of the most progressive Swedish cities is Malmö, where a policy has been put in place to decrease greenhouse gas emissions relating to food by 40% and to ensure that all food served in the city's institutions will be certified organic by 2020.<sup>78</sup>

Country-wide, reducing food waste is a key element of the Swedish Waste Management Plan 2012-2017, the Swedish Waste Prevention Programme and the general environmental policy in the country. The Waste Management Plan has introduced a national target to reduce food waste from households, canteens, shops, and restaurants by at least 50% by 2018. In 2013, the Swedish Environmental Protection Agency also set goals for food waste reduction throughout the entire food value chain (with the exception of primary production which will have its own specific action plan) – food waste shall be reduced by at least 20% by 2020 (as compared to 2010 figures).<sup>79,80</sup>

## SWITZERLAND

Switzerland has implemented a law obliging all public institutions, including hospitals, to offer at least one high-quality vegetarian or vegan option in the menu, to promote plant-based diets. In addition, the city of Basel has also committed to training professionals to improve their plant-based cooking skills. Similarly, the cities of Zurich and Lucerne support the promotion of sustainable, vegetable diets in the cater-

ing facilities of public institutions.

Moreover, in 2012, the Swiss Federal Procurement Commission produced a document with recommendations for sustainable public procurement taking into account environmental, social, and economic considerations. Food is barely mentioned in this guide, but organic food is used as an example of a technical specification.<sup>81</sup>

## UNITED KINGDOM

The United Kingdom has put considerable effort into sustainable and healthy food in hospitals. A guide developed by the Department of Health in 2009 explains why sustainable food is important, and what hospitals can do to improve food provision to patients, staff, and visitors.<sup>82</sup> In addition, the *'Great British Food and Farming Plan'* foresees the development of Government Buying Standards for food and catering services to support a healthier future for people, farmers, and food services by simplifying and making more consistent public procurement processes and purchasing criteria.<sup>83</sup> The Department of Health and the Department for Education are closely involved in this work. Similarly the *'Plan for Public Procurement'* launched in 2014 sets out four goals:<sup>84</sup>

- supporting farmers and food producers and rightly rewarding them for operating to high animal welfare and production standards;
- building training opportunities into contracts, to ensure a well-skilled food and farming sector for the future;
- tackling health issues by enabling people to eat well across the public sector, including in hospitals, and contributing to wider societal well-being; and
- helping school children to learn how to cook healthy meals, and to value their food by understanding where it comes from.

In 2014, the Department of Health set up a Hospital Food Standards Panel.<sup>85</sup> The panel has advised on standards covering the nutritional con-

tent of patients' meals and healthy eating for staff, visitors, and patients as appropriate. It has also addressed sustainability issues, including local and sustainable procurement, food waste, and animal welfare. In 2015, official Government Buying Standards for food and catering services were published.<sup>49</sup>

With regards to food waste, the United Kingdom has a large waste prevention programme,<sup>86</sup> as part of the requirement of the Waste Framework Directive (2008/98/EC), in collaboration with the Waste and Resources Action Programme (WRAP). For example, the programme aims to cut food and associated packaging waste by 5%, and increase the overall rate of food and packaging waste that is being recycled, sent to anaerobic digestion, or composted to 70%.<sup>87</sup>

Additionally, a voluntary agreement – known as Courtauld 2025<sup>88</sup> – aims to make food and drink production and consumption more sustainable, including in hospitals. Within this agreement, the aim is to cut waste and greenhouse gas emissions associated with food and drink by 20% (on a *per capita* basis) from 2015 to 2025, as well as reducing the impact on water resources, resulting in cumulative savings of around £20 billion. To achieve these goals, the Soil Association<sup>89</sup> and Sustain's Campaign for Better Hospital Food<sup>90</sup> (see Box 5) are encouraging governments and hospitals to adopt these guidelines.

## CONCLUSIONS

A few policy measures exist at the EU level and a few healthy and sustainable food strategies have been adopted at the national level in Europe to support sustainable and healthy food practices in healthcare. The most progressive countries that have taken a strong stand towards fresh, local, seasonal, and organic food are Denmark, Sweden, Switzerland, and Austria. However, in other countries many local and regional initiatives exist to encourage public institutions such as hospitals to implement healthy and sustainable food policies and projects. Some of the remarkable best practices in the European healthcare sector that HCWH Europe has investigated over a period of two

years are presented in Chapter 3, showing the strong commitment of the catering managers and health professionals involved.

## Box 5

# UK sustainable food initiatives in hospitals: Sustain's Campaign for Better Hospital Food

Sustain's Campaign for Better Hospital Food represents a coalition of organisations calling on the UK government to introduce mandatory nutritional, environmental, and ethical standards for food served to patients in NHS hospitals in England. Sustain is a British not for profit organisation that promotes better and more sustainable food and farming practices. For the past ten years it has been working to educate hospital managers in the United Kingdom on sustainable and healthy food for hospital patients. In 2009, Sustain realised that best practices were quite isolated and that sustainable food had not become mainstream in British hospitals. Sustain started a campaign to advocate for national legislation requiring compulsory food standards in hospitals.

The standards that Sustain has developed are based on simple but important principles:

- **Animal Welfare Standards:** To ensure that hospital meat, dairy products, and eggs are produced in a way kind to animals. These standards can be inexpensive and easy to implement. For instance chicken and pork meat should meet the welfare standards of the Royal Society for the Prevention of Cruelty to Animals,<sup>91</sup> and egg-laying hens should be cage-free. These standards respect an animal's well-being. Antibiotics should not to be used prophylactically with animals.
- **Kitchen Standards:** To place kitchens back at the heart of hospitals, enabling cooks to prepare fresh meals using the best produce. This more homemade-style of food should also ensure more appetising meals for patients (many British hospitals outsource their food services and therefore offer processed meals).
- **Health Standards:** To certify that hospital meals are nutritious and help patients to recover. In addition, healthy meals will also inspire hospital visitors and staff to eat better, thereby taking care of their health too.
- **Environmental Standards:** To guarantee that hospital food is produced without the excessive use of agricultural chemicals and without causing water pollution or other harmful environmental impacts.
- **Fish Standards:** To protect the future of our seafood, and ensure that hospital patients will have delicious fish to eat for generations to come.
- **Fair Trade Standards:** To give assurance that farmers in poor countries who produce hospital food are provided with good working conditions and fair pay.<sup>92</sup>

Unfortunately these standards are not mandatory and compliance with them is not monitored or controlled.

## CHAPTER 3: CASE STUDIES OF HEALTHY AND SUSTAINABLE FOOD IN EUROPEAN HOSPITALS

This chapter features 22 healthcare institutions, in nine European countries, which have implemented healthy and sustainable food programmes. The work covers 19 hospitals, one hospital association, one healthcare procurer, and one public catering enterprise.

In the first instance, 320 hospitals and health systems were contacted with a questionnaire (see Annex I) available in four different languages (English, French, Italian, and Spanish). Using the responses to the questionnaires, the participating institutions were selected on the basis of their high level of engagement in providing fresh, seasonal, local, and organic food to their patients and employees and (with one exception) the presence of an on-site central kitchen. The information presented in this chapter was gathered through desk research, questionnaires, telephone interviews, and face-to-face interviews with hospital catering managers and/or food procurers.

A characteristic shared by most of the hospitals featured in this chapter is that they have an on-site working central kitchen. This gives catering staff more direct control over menus and food quality and quantity.

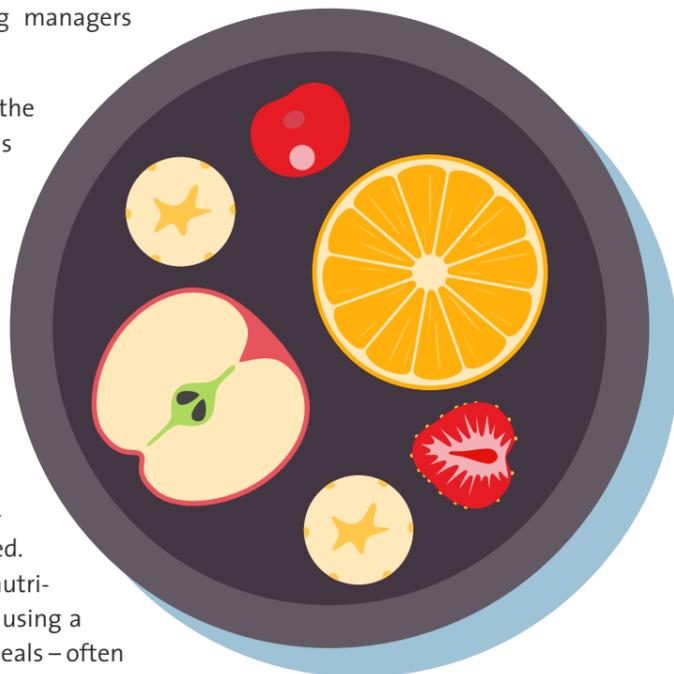
The survey also looked at the food delivery systems that hospitals use, i.e. whether it is bulk food delivery or a plated food delivery, because this can be an indication of the food waste generated. Levels of food waste and of malnutrition tend to be lower in hospitals using a bulk food delivery system where meals – often more individualised as to choice and quantity – are served onto plates actually in the wards.<sup>18</sup> The alternative system is of pre-plated meal delivery (where food is plated before arriving in the wards).

The results of the survey are presented below by presenting a number of case studies in offer-

ing healthy and sustainable food in European healthcare. Hospital managers and procurers explain their efforts and the challenges in providing such food to their patients, employees, and visitors, while contributing to the reduced environmental impact of food provision.

From the survey results it can be argued that providing healthy and sustainable food means providing more appetising food that will reduce food waste, give patients and kitchen staff greater satisfaction, and may shorten the recovery period of patients.

Our thanks go to all the hospital catering managers, environmental managers, and procurers who have kindly participated in our survey, and for their passion and dedication in making European healthcare healthier and greener.



# AUSTRIA

## THE VIENNA HOSPITAL ASSOCIATION

The Vienna Hospital Association (Wiener Krankenanstaltenverbund, KAV) is a group of 11 hospitals, nine geriatric centres, and six care homes, totalling 30,000 employees and with 400,000 inpatients and 3.5 million outpatients per year.<sup>93</sup> The association serves 30,000 meals per day, and 32% of the food served is organic, coming mostly from local suppliers.

### THE SUSTAINABLE FOOD POLICY

The sustainable food policy of the KAV has four main objectives for the food served in its hospitals:

- 30% has to be organic and pesticide-free;
- it has to be seasonal and fresh, not processed;
- it has to be healthy and contain a high level of vitamins; and
- it has to be reasonable in terms of cost.

Several hospitals of the KAV share a central kitchen, have combined their suppliers, and are participating voluntarily in an accompanying project called *Natürlich Gut Teller*<sup>94</sup> (which translates as 'a naturally good plate'). This is defined as a plate that contains fresh and seasonal food, little meat or fish, and uses little packaging. No bottled water is served – very high quality water (from the Northern Calcareous Alps) is provided directly from the tap.

This project is embedded in the City of Vienna's green public procurement programme - ÖkoKauf - and it has an educational component that relays healthy recipes and information about organic products to patients and staff.

The direction of the sustainable food policy at the KAV is overseen by ÖkoKauf, which sets a (lower) 25% target for organic food and a general 50% reduction target in associated green-

house gas emissions by 2020 for all products procured. It is worth noting that other Austrian hospitals have to comply with the national action plan (*Nationaler Aktionsplan für nachhaltige öffentliche Beschaffung*), which also sets a target of 25% for organic food – a target that the KAV hospitals have already achieved and surpassed.

With the aim of reducing food waste and costs, the KAV uses both a bulk food service and a plated food service and have changed the menus so that servings per meal are smaller. The meal delivery system has been changed, with shorter term ordering and faster delivery, adding extra orders if needed.

Staff education also plays an important role. Hospital employees are being trained in food safety and waste management. The KAV has addressed food waste, particularly waste of bread, by carrying out a communications campaign showing images of bread stockpiles. New machines that compress food waste have been purchased, resulting in lower volume of food waste produced.

Food waste is collected by the Vienna Municipal Department for Waste Management, Street Cleaning and Vehicle Fleet, and organic waste is used to generate biogas that can be used for cooking and heating.

### LESSONS LEARNED AND CHALLENGES AHEAD

It is a challenge to maintain the target of 30% for organic produce, particularly because the KAV procurers have a higher target than the City's ÖkoKauf target (25%), but are pressured to keep their budget within limits. One way to reduce costs would be to increase the volume of certain products, such as milk and bread. In 2010, the percentage of organic food - which applies completely or partially to bread and bread products, milk products, fresh eggs, fish (with Marine Stewardship Council certification), orange

juice (which is also Fairtrade), flour, and frozen vegetables - was up to 36%, but it has gone down since then due to rising costs. Despite the budget limitations, the KAV tries to maintain a high proportion of organic food. At the same time, Austria has a high rate of organic food production, which needs domestic markets. The KAV, as a large buyer supporting national agriculture, is setting a good example for restaurants and catering businesses, as well as the wider food service industry, and should continue to do so.



Recipe for preparing vegetarian hamburgers with herbs and yoghurt sauce



# BELGIUM

## AZ NIKOLAAS HOSPITAL, SINT NIKLAAS

The AZ Nikolaas hospital in Sint Niklaas in Belgium consists of seven hospitals located between Ghent and Antwerp. In total, the complex counts 810 beds and 2,300 employees, and more than 230 doctors. In addition to around 800 hospital patients, a central kitchen serves 600 patients in five senior homes, and 1,000 meals to staff and visitors at the three cafeterias, for a total of 4,000 meals per day. With the philosophy that good food is important for the healing process of patients, and with the aim to improve the quality of food and to decrease food waste, in 2009 the hospital moved its kitchen to the outskirts of the city from the hospital site which is in the city centre to improve the distribution system. The entire process, from kitchen to patients and staff, relies on trucks going between kitchen and hospital (and other care homes) three times a day for the three main meals (breakfast, lunch, and dinner).

### THE SUSTAINABLE FOOD POLICY

The hospital's food policy includes combining traditional cooking methods with modern techniques. Some food (especially soups, puddings, and sauces) is pasteurised at high temperatures and then conserved in plastic bags in various quantities for up to six weeks.

A six-week menu cycle has been established in which the use of fresh and seasonal food ingredients is key. As part of their new sustainable procurement strategy, they are incorporating more local and sustainable food products from suppliers in the region. For example, the meat comes from Flanders, and the vegetables and fruits carry the Flandria label that ensures the traceability and quality of their products. In addition, attention is given to the amount of salt, sugar, and fats on the menus. Different menus are offered according to a patient's needs and demands, and a meal-on-wheels system is used

in the paediatric department and in their care centres, where the food can be chosen from a tray.

Although reducing food waste was not one of the initial goals of the hospital, it has developed as a goal through various small interventions. These include the use of standardised recipes, the introduction of an automated ordering system controlled by the head chef, the daily monitoring of surplus production in order to know what can be used the following day, preparing the right amount of trays by improving the communication between the kitchen and the wards, and better planning of how much food will be needed to the number of users. A large number of procedures and controls make sure that the amount of waste is reduced to a minimum. In addition, most vegetables are procured already washed and chopped in plastic bags. This has decreased food waste in the kitchen but has increased packaging waste. The hospital has managed to reduce food waste from 25% to 5-7% overall.

AZ Nikolaas uses both a bulk food service and a plated food service. Trays made of plastic are used, but food is served in ceramic plates closed by a lid. Water is provided directly from the tap. Staff, in particular kitchen staff and nurses, receive training in waste management. At the end of the food service, containers are washed and used again and leftovers, even untouched food, is not donated since Belgian law prohibits it, but disposed of as solid municipal waste which is converted afterwards into biogas. The hospital also separates other types of waste, such as paper, cardboard, and glass.

### LESSONS LEARNED AND CHALLENGES AHEAD

Continuing to improve the efficiency of the hospital food service is a key challenge for David Van der Steichel, current Catering Manager, Didier Windey, former Head of Catering and Koen Neve, Facility Director. In the future, they plan to reduce the carbon footprint of the trucks that transport the food from the kitchen to the hospital. In regard to sustainable procurement, they are willing to incorporate more green and social criteria in their tenders, not only in terms of food and catering services, including vending machines, but also for other products and services the hospital procures. Measuring food waste in terms of weight and cost is still a challenge on which they are currently working, with the aim of continuing to improve the quality of the meals that are served in the wards and staff canteens while saving money and staff time.



Make your own salad at the canteen



Preparing dinner trays for patients in the kitchen



Meals on wheel at wards

## CENTRE HOSPITALIER DU BOIS DE L'ABBAYE

The Centre Hospitalier du Bois de l'Abbaye (CHBA) in Belgium consists of four hospital sites: in Seraing, Waremme, Flemalle, and Nandrin.<sup>95</sup> For over 20 years, the site of Seraing has been a model for sustainable food in Belgian healthcare. The initiator, Mr Gérard Filot, Director of the Catering Department, has been working towards implementing sustainable food policies in hospitals and beyond for over 40 years. With 500 short stay beds and 750 beds for longer-term patients, CHBA has a very large central kitchen (serving a wider community) with around 250 employees (170 full time). The average meal costs €2.30 for short stays and €1.85 for longer ones. The average patient stay is 4 days. Since July 2014 the central kitchen has started serving other hospitals (such as the Centre Hospitalier Universitaire Notre Dame des Bruyères), the town's schools, the city hall, some enterprises, the meals-on-wheels programme, and the nutrition assistance programme of the city. In doing so, this has created the first sustainable food programme in Belgium that has originated at a hospital and then reached out to the community. The addition of the new clients increased their daily meal output to approximately 8,000 meals per day (3 million per year).

Mr. Filot and his kitchen team receiving the Gault Millaut Catering Award in 2015



## THE SUSTAINABLE FOOD POLICY

The main priority of the hospital in Seraing is to provide fresh, local, and seasonal produce exclusively from Belgian farmers. Although organic food (with the exception of pasta and tomato sauce) is not served to the hospital's patients due to food safety and traceability problems, organic food is, along with some Fairtrade products, served to the hospital's employees. Due to the many hygiene rules in the hospital, it is even a challenge to serve organic food to employees, particularly because (in order to be more resource efficient and avoid water usage) organic food is delivered unwashed with soil present. As a result, organic food has to be washed with extra care to eliminate insects and soil. Organic food also often has an irregular appearance compared to conventional food and it is thought that some patients might refuse to eat it as a result.

Since 2007, when HCWH Europe first interviewed Mr Filot<sup>96</sup>, a new and bigger kitchen has been installed in the hospital of Seraing. This allows the hospital to meet the challenge of providing for the entire city's public services and preparing 3 million meals per year (since 2014), with a focus on healthy food and a high proportion of vegetables. The new kitchen also helps to offer more variety to the hospital's patients. Every day the hospital gives patients a choice of

meals from a lunch and dinner menu that varies every week. This system aims to reduce food waste as much as possible, with the kitchen workers serving the meals to patients so that they can monitor any complaints and quantities of food waste. Unfortunately, this procedure will soon change, as the nurses will by law (according to the Belgian Arrêté Royal concerning nursing duties) have the sole responsibility of serving meals to patients. It is expected that feedback from patients will no longer be gathered as regularly and as a consequence poorer control of food waste is predicted.

The CHBA uses both a bulk food service and a plated food service, and open containers with uneaten food are disposed along with household waste. The hospital staff have received training in relation to waste management, in collaboration with Intradel, an association of 72 municipalities in the province of Liège that provides waste management services to the municipalities that belong to the association.

In 2015 the kitchen of the hospital in Seraing received a prestigious Gault & Millau award for the food they serve.

## LESSONS LEARNED AND CHALLENGES AHEAD

The main challenge of the sustainable food programme in the hospital is to continue supporting a sustainable food community in Seraing, a project Mr Filot has been striving to realise for the past 20 years. Mr Filot would like this project to serve as an example for other cities in Belgium and to support the education of the general public to prepare high quality meals with fresh, locally produced, and organic ingredients. Mr Filot is working towards organising roundtables with food retailers in order to share understanding of what a sustainable food community means and tackle the problem of food waste.

MENU SANTÉ DIÉTÉTIQUE (répond par la diététique)	
5. Lundi :	Protège œuf blanc Blancquette de veau sauté sauce légère au curry - Haricots verts à l'huile d'olive - riz légèrement beurré Fruit frais du jour ou salade d'un fruit
5. Mardi :	Protège poulet Pain de viande avec sauce sauce bouquet de Provence - chicons poêlés au beurre - pain saupé Fruit frais du jour ou salade d'un fruit
5. Mercredi :	Protège saumon Cuisse de poulet sans peau sauce légère - tomates au four à l'huile d'olive et épices - pâtes à l'huile d'olive Fruit frais du jour ou salade d'un fruit
5. Jeudi :	Protège bœuf Bistec de dinde 100 % filet blanc sauce bruno légère - endives à l'huile d'olive - pain saupé Fruit frais du jour ou salade d'un fruit
5. Vendredi :	Protège saumon Doe de cabillaud sauce légère à l'ail et citron - brunoise de légumes frais aux fines herbes - purée de pain maison Fruit frais du jour ou salade d'un fruit
5. Samedi :	Protège chou-fleur Fougère + 100 % par bœuf et veau - sauce légère à l'estragon - courgettes poêlées à l'huile d'olive Pâtes maison à l'huile d'olive Fruit frais du jour ou salade d'un fruit
5. Dimanche :	Protège légumes Légumes de saison 100 % filet blanc - sauce légèrement citronnée Pain et carottes légèrement beurrés - pain saupé Fruit frais du jour ou salade d'un fruit
REPAS DU SOIR	
MENU TERROR (répond par la cuisine contrôlée)	MENU DIÉTÉTIQUE (répond par la diététique)
6. Lundi :	6. Lundi :
6. Mardi :	6. Mardi :
6. Mercredi :	6. Mercredi :
6. Jeudi :	6. Jeudi :
6. Vendredi :	6. Vendredi :
6. Samedi :	6. Samedi :
6. Dimanche :	6. Dimanche :
8. Autres alternatives proposées	8. Autres alternatives proposées
A. Jambon cuit B. Fromage C. Coiffeur-petit sauté - salade de fruits D. Alimentation méditerranéenne du jour	A. Jambon cuit B. Fromage C. Coiffeur-petit sauté - salade de fruits D. Alimentation méditerranéenne du jour

The menu offered at The Centre Hospitalier du Bois de l'Abbaye (CHBA) in Belgium

## LES CUISINES BRUXELLOISES, BRUSSELS

Les Cuisines Bruxelloises<sup>97</sup> (The Brussels Kitchens) is a public enterprise of the City of Brussels. Founded in 2005, Les Cuisines Bruxelloises combines the food services of the City's Health and Youth Departments which serve care homes, hospitals, schools and kindergartens. Users of the service are located in the Brussels capital region, and include the municipalities of Evere, Saint-Josse, Jette, Anderlecht, and Berchem, as well as Brussels itself. Over 24 million meals have been served since the association was founded, and of the 4 million meals prepared annually, 1.75 million are served in hospitals and care homes.

Care homes account for more than 3,600 of the total meals served per day, whilst the number of meals served to hospital patients (not including staff) is over 4,500 daily.

## THE SUSTAINABLE FOOD POLICY

All meals are cooked in the three kitchens owned by Les Cuisines Bruxelloises. A main priority is to use fresh, local, and seasonal produce as much as possible. Canned food is kept to a minimum, and only used for tomato sauce. As well as some Fairtrade produce, the fruits and vegetables served by Les Cuisines Bruxelloises mainly come from sustainable agricultural practices such as organic and integrated pest management techniques (IPM).<sup>98</sup> Currently, Les Cuisines Bruxelloises offers 70% seasonal produce (40% of their vegetables and all of their fruits are local) and 20% organic produce.

Although there is a clear intention to serve mainly organic and Fairtrade produce, experience has shown that it is not always easy. Hospitals request a large variety of vegetables for their menus (having a menu cycle of 28 days), for an average cost per meal of €5.17. This cost

is particularly difficult to achieve with organic and locally grown vegetables, in addition to the fact that organic produce tends to be smaller and less attractive to patients. Therefore, when a large variety of vegetables and fruits is required, the preference is for fresh, local food rather than organic or Fairtrade products which often have to be imported from other countries and contribute to a high carbon footprint. Neither are the financial issues negligible, as serving mainly organic food would incur a 25% increase in total costs. Nevertheless, Les Cuisines Bruxelloises aims to increase organic food consumption and reduce meat consumption in hospitals, whilst achieving an overall decrease in price and an increase in environmental sustainability.

Les Cuisines Bruxelloises purchases ingredients on open markets, and do not yet contact local farmers directly. They have to adhere to clear rules when purchasing ingredients, aiming as much as possible to buy healthy and high quality products. For example, they prefer meat without antibiotics and Marine Stewardship Council (MSC) certified sustainable seafood.<sup>99</sup> By serving smaller portions of their meals, they offset the higher cost of the antibiotic-free meat.

The enterprise has been able to identify how much food is wasted through evaluation of returned dishes and from frequent feedback from nursing staff. This showed that about 30% of food is wasted. According to Mr José Orrico, Director of Les Cuisines Bruxelloises, giving patients a choice of meal would significantly decrease food waste in hospitals. Adopting an *à la carte* system could work with a fortnightly food purchasing plan but not with the four-week plan in place at the moment.

The staff of Les Cuisines Bruxelloises are informed and trained by the Health, Safety and Environment Department in relation to chemicals in food contact materials, although they are not additionally trained in waste management. However, empty open containers and open containers with uneaten food are recycled, and food that has not been served is donated to the organisation Samusocial, which is an important step towards reducing food waste.

## LESSONS LEARNED AND CHALLENGES AHEAD

The main lesson learned is that hospital catering is a very specific sector where it would take some time to establish a new food culture and trigger a change in mindset. Nevertheless, the Director of Les Cuisines Bruxelloises thinks that it is possible to implement such changes. To improve the environmental impact of the organisation, goals have been set to minimise food waste and stop using frozen food. In the long term, Les Cuisines Bruxelloises would like to increase the amount of ingredients coming from local and organic production. However, in order to do this, hospital authorities will need to accept a wider range of produce that is not so perfectly shaped or of such uniform colour as conventional produce.

### Care homes served by Les Cuisines Bruxellois

CARE HOME	NUMBER OF RESIDENTS
<i>Institute Pacheco</i>	150
<i>Care Home Heysel</i>	120
<i>Les Eglantines Care Home</i>	190
<i>Les Ursulines Care Home</i>	120
<i>Sainte-Gertrude Residence</i>	160
<i>Care Home Roger Decamps</i>	80 residents as well as a social restaurant for patients at home
<i>Care Home Van Hellemont</i>	165
<i>Care Home Iris</i>	90
<i>Centre le Soleil d'Automne</i>	Daycare home with 18 patients

### Hospitals served by Les Cuisines Bruxellois

HOSPITAL	MEALS SERVED DAILY
<i>Brugmann - Horta Hospital</i>	c. 2,190
<i>Saint Pierre Hospital</i>	c. 900
<i>Brien Schaerbeek Hospital</i>	c. 300
<i>Astrid Military Hospital of Neder-Over-Hembeek</i>	c. 240
<i>Bordet Hospital</i>	330
<i>César de Paepe Clinic</i>	300
<i>University Children's Hospital Reine Fabiola</i>	c.180



Staff preparing food at the central kitchen of Les Cuisines Bruxelloises



More than ten years delivering quality food to schools, nurseries, hospitals, and home care centers

## THE CENTRE HOSPITALIER REGIONAL DE LA CITADELLE, LIÈGE

The Centre Hospitalier Regional (CHR) de la Citadelle<sup>100</sup> is located in Liège, one of Belgium's largest cities. It is a medium-sized hospital comprised of three sites - Citadelle, Sainte Rosalie, and Château Rouge. With a total of 1,036 beds, the hospital receives approximately 37,000 patients per year for an average stay of 4 days and serves 955,000 meals each year for staff, visitors, and patients. Small sandwiches are also served. All meals are prepared in an on-site central kitchen at a cost of €4.70 a day for three meals and drinks.

### THE SUSTAINABLE FOOD POLICY

The hospital aims to serve homemade style food and to autonomously manage the food provided to the hospital's patients, employees, and visitors. The hospital's sustainable food programme promotes working with fresh and locally grown/produced food as much as possible, particularly fruits, vegetables, and cheese from farmers in the region. The purchased meat comes from Belgian Blue-White Breed cattle.<sup>101</sup> Whilst the hospital follows the public procurement rules of competition for food providers, they have also established their own food procurement criteria. They use a detailed description of the produce they intend to buy, using a price-quality ratio in their procurement process instead of selecting produce only on the basis of price.

The hospital also tackles food waste by carefully analysing patients' needs and their eating capabilities. When patients stay in the hospital for several weeks (as compared to the average stay of four days), patients are asked to choose their meals from a trolley. This service is only available for breakfast at the moment, as it requires greater logistical organisation, but it has already decreased food waste whilst improving patients' meals both in taste and portion control.

Although the main goal of the sustainable food policy is to provide fresh, local and seasonal food, the hospital is also keen on introducing

organic produce. A working group of catering employees and medical staff has been established to evaluate how organic food could be introduced into the hospital menus, taking into consideration the price, availability, and traceability of organic produce.

### LESSONS LEARNED AND CHALLENGES AHEAD

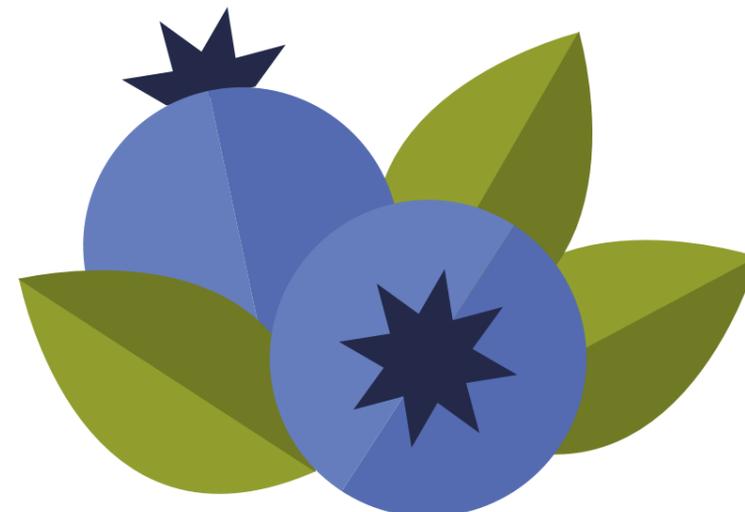
Mr Frédéric Dhondt, Catering Manager at the CHR de la Citadelle in Liège, stresses that working with fresh, local, and seasonal food has not proven to be more expensive. Even if more employees are needed to make homemade meals, the higher cost has been offset by the right purchasing choices and good organisation of the work, meaning that staff strive to be as efficient and effective as possible in terms of time management, without compromising the attention given to patients.

Mr Dhondt also believes that a hospital should become a place where people are educated to eat healthy and sustainable food. However, this is not that easy to put into practice since catering staff, who are knowledgeable about healthy and sustainable food, do not necessarily have direct contact with patients and healthcare workers.

Mr Dhondt also mentioned that implementing a healthy and sustainable food programme has not been particularly challenging, thanks to a step-by-step approach that has helped him avoid critical issues. Mr Dhondt initially set the goals he wanted to reach, and then took the time to explain and carefully stage every step in order to convince the management of the hospital of the long term benefits. In the future, Mr Dhondt hopes that he will be able to continue progress with fresh and sustainable food, despite unavoidable cuts that are taking place in the public service sector in Belgium due to the current financial crisis.



Fruits and vegetables are one of the cornerstones of a healthy diet at Gentofte Hospital



# DENMARK

## GENTOFTE HOSPITAL, COPENHAGEN

The Gentofte Hospital<sup>102</sup> has 2,400 staff members and 227 beds, welcoming approximately 20,000 inpatients and 200,000 outpatients per year, and serving about 328,500 meals annually.<sup>103</sup> By purchasing fresh, organic (up to 80%), and seasonal food produced exclusively in Denmark, and by preparing meals on-site, the hospital kitchen is practising a sustainable food policy.

### THE SUSTAINABLE FOOD POLICY

The hospital focuses on handmade meals prepared on-site, including marmalades, bread, and cakes. Having a baker and a butcher in the hospital kitchen allows for provision of high quality food. In addition, the hospital procures 81% of organic food and serves water from the tap as Denmark has some of the world's purest tap water.

The hospital has put in place a very advanced programme to minimise food waste. Food leftovers from the wards are placed in a tank for temporary storage, and the bulk is then converted into gas in a bioreactor. Ms Sisse Hørup Larsen, Head Dietician at Gentofte Hospital, stresses that they pay close attention to serving the right quantity of food, and that preparing fresh food on-site every day allows them to decrease food waste as much as possible. Another method that helps minimise food waste is to allow the kitchen staff, instead of nurses, to serve meals to patients, and to establish 'protected' meal times which allow patients to eat undisturbed and to receive help if unable to eat on their own. The presence of kitchen staff in the wards provides a better understanding of food requirements for each patient, and of how to adapt patients' portions day by day.

Staff also receive training in waste management. This training is necessary to help implement the hospital's biowaste solutions using

uneaten food from open containers.

Thanks to all these measures, the hospital has decreased food waste by 10% in two years (2013-2015).

Another important element of the sustainable food programme is the reduction in packaging and plastic used in the hospital. This is achieved by serving meals in ceramic containers, which also makes the dish more aesthetic. The food is sent to the wards in a heated trolley and is later served on a hot plate or a small bowl covered with a lid.

According to Ms Hørup Larsen, part of the success of the sustainable food programme is given to the holistic approach given to the entire process, and to the willingness to implement innovative technologies (such as the biogas process). Ms Hørup Larsen also believes that the programme has a positive impact on patients:

*"If the meal is fresh and stimulates the appetite, then the patient will eat more and thereby recover more effectively. If the hospital sends the signal that it is prioritising food and patients' meals, it will be seen on the side of the patients' recovery."*

Finally, by focusing on fresh, high quality, handmade meals, the programme is reducing costs because meals are made directly from raw ingredients. They expect to reduce costs to approximately €100,000 per year within the next few years.

### LESSONS LEARNED AND CHALLENGES AHEAD

There are no laws specific to the healthcare sector in Denmark that oblige hospitals to implement sustainable and healthy food programmes in healthcare. However, some sector recommendations have been published recently, offering a number of approaches to increase the focus on sustainable food in Danish hospitals. However, hospitals still have to buy their

foodstuffs from the same suppliers, and the main criteria for food purchasing is the price, according to the current public procurement rules.

Nevertheless, Ms Sisse Hørup Larsen is committed to continue making progress with the hospital's sustainable food programme, particularly in relation to their recent merger with the Herlev hospital-kitchen, which means the two kitchens have to combine production. The hospital is, for example, interested in analysing cooking methods to see how energy use can be decreased, and would like to focus even more on minimising food waste and the quantities of water used in cooking.



Dessert is served



Food tray at the Gentofte Hospital in Copenhagen

Kitchen employees preparing salads



## WEST ZEALAND COUNCIL, COPENHAGEN

This large local authority oversees five hospitals situated in the west part of the Danish capital with 2,000 beds and 17,000 staff members in total.<sup>104</sup> Across their hospitals, the region welcomes about 1.2 million patients per year, and the average stay is four days. They have two central kitchens where the food is prepared whilst produce is sourced from private suppliers and local communities in the town. The food service for the whole day consists of three meals and drinks and costs the Council around 130 million Danish krone (€18 million) per year.

### THE SUSTAINABLE FOOD POLICY

The sustainable food policy is currently focusing on avoiding food waste. For two years the Council has been monitoring food waste in their hospitals. In particular, the Council has been analysing the reports from the wards, and has decided to sell the food by weight in the staff canteens, to encourage people to only take what they intend to eat.

In 2015, an IT tool was implemented to allow patients to order their food from a menu 24 hours a day. Thanks to this new tool, the hospitals have been able to better manage the quantity of food served, thus avoiding unnecessary waste. Any remaining leftover food is not completely wasted as it is transformed into biogas.

Although the Council strives to be as sustainable as possible, it cannot purchase only local Danish food due to the quantity they need all throughout the year. Nevertheless, all the ingredients come from the EU, and 90% of the raw material is fresh (not frozen) as well as seasonal. A future aim is to purchase exclusively Danish produce.

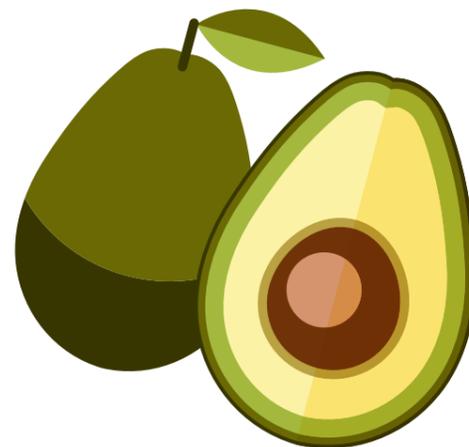
### LESSONS LEARNED AND CHALLENGES AHEAD

The Council used to have up to 78% of its food supplied by organic producers but, due to

budget restrictions, this percentage has unfortunately dropped from 78% to only 10% over the past five years. Although the Council would like to purchase more organic products, Mr Mogens Fonseca Pedersen, the Council Kitchen Chef, considers that this is not the most important element in terms of improving patients' health. The priority is to make food that is fresh and appealing in order to avoid patients being undernourished in hospitals.

Since 2015 the most important challenge the Council has faced concerns working with local food suppliers. The Council would like to work more with local producers that are aware of hospitals needs. In addition, it would like to focus on undernourished patients, giving them a choice of food to stimulate appetite. *"This is a key element for sustainability and health"*, says Mr Mogens Fonseca Pedersen.

*...a choice of food "is a key element for sustainability and health"*



Serving meals in small ceramic containers to make dishes more attractive

# FRANCE

## CENTRE HOSPITALIER DE GONESSE, PARIS

The Gonesse Hospital<sup>105</sup>, located in the northern suburbs of Paris, is a medium-sized hospital with 1,000 beds accommodating approximately 12,000 patients per year in the wards and 30,000 patients using the emergency services. On average, a patient's stay lasts 2.5 days. The hospital serves 1 million meals each year, including regular and light meals, all prepared in the hospital's central kitchen.

### THE SUSTAINABLE FOOD POLICY

Since its foundation in 1969, the Gonesse Hospital has always prepared meals in its own kitchen. This has not always been the trend in France, as most hospitals have decided over the years to outsource their meal preparation. Using an external food service often lead to more industrial, processed food being served in hospitals, and hospitals might have difficulty in managing specific meals related to particular diets. For these reasons, French hospitals are returning to the use of on-site central kitchens that prepare all types of meals.

The sustainable food policy in the Gonesse Hospital is based on both fresh and frozen seasonal food, including mainly fresh fruits, vegetables, and meat cooked on-site. Meals are appetising and satisfy 85% of patients, as the hospital's kitchen staff strive to take into consideration patients' taste, religious requirements, and provide vegetarian/vegan options. In the case of special food prescribed by the doctors, the hospital dieticians are in charge of deciding the meal requirements and informing the central kitchen.

Since 2012, the Gonesse Hospital has also started tackling the waste of whole meals, rather than food leftovers – meals can be wasted because of a lack of communication between health professionals, the administration, and the kitchen. One cause is the preparation of a

meal when the kitchen does not know that a particular patient has already been discharged. According to Mr Rachid Touil, the Hospital's Catering Manager, this is one of the most important challenges in minimising food waste in the hospital, and which will also help address unnecessary spending. The kitchen needs to know in advance the exact number of meals to be served, and this is only possible with better coordination and communication between all departments involved.

The Gonesse Hospital uses a plated food service, but does not use trays to keep the food warm. In some cases water is served in plastic bottles, but generally tap water is served. The hospital does not train its staff in waste management and disposes of its open empty containers and open but uneaten containers along with the regular domestic waste

However, the kitchen has started to serve smaller portions and increased the meals served per day from three to four. The consequent reduction in food waste has had a positive financial impact. The Gonesse Hospital has seen a 2.5% reduction in their food expenses, which is significant and useful, given that the hospital has to justify its spending to public authorities.

### LESSONS LEARNED AND CHALLENGES AHEAD

The most important problem is the lack of a budget to purchase even healthier and more sustainable food, in particular organic produce. However, the biggest lesson is to understand the important role of the hospital in the community, as Mr Touil emphasises. The hospital is located in a deprived region, which means that patients often do not have the financial means to purchase the same healthy and high quality food products that they are served in the hospital. Although the hospital is unable to monitor or control patients' diets at home, which could improve their recovery, it has an important role

to play in educating patients and their families about eating more vegetables and fruits, even when they leave the hospital.

*...[the hospital] has an important role to play in educating patients and their families about eating more vegetables and fruits...*

## CENTRE HOSPITALIER DE NIORT

The Centre Hospitalier de Niort<sup>106</sup> is a general hospital in the mid-west of France that offers a complete range of medical, psychiatric, and surgical services in the Deux-Sèvres region.

The hospital has approximately 1,300 beds, accommodating 75,000 patients per year, with a budget of approximately €240 million. The hospital serves over 900,000 meals per year, which are prepared and cooked in an on-site kitchen.

For over five years, the hospital has included their food and catering services in their sustainable development approach. This approach is based on a 21-point agenda that includes the following goals: to include sustainable development criteria in procurement, to reduce food waste, to improve food quality, and to improve the general well-being of the patients and the 3,000 hospital employees.

### THE SUSTAINABLE FOOD POLICY

One of the objectives of the hospital is to protect the environment and support the local economy whilst fulfilling its obligations to provide high-quality and healthy meals on a daily basis. To achieve this objective, menus are developed in consultation with the hospital's dietary department in a four-week cycle, and include seasonal products.

Centre Hospitalier de Niort does not currently serve organic meals. The introduction of organic products would represent a significant additional cost of about €2 million per year (excluding staff costs).



Preparing food at the kitchen of The Centre Hospitalier de Niort



Exterior view of The Centre Hospitalier de Niort

In order to pursue its sustainable food policy while controlling its costs, the hospital is currently conducting a study on various actions, including looking at how to improve:

- the supply of fresh and seasonal produce;
- the introduction of organic produce in the medium/long term on progressive and planned basis; and
- food waste reduction.

In order to develop these actions, the hospital must first of all ensure there is more awareness amongst the various stakeholders (i.e. staff, patients, and visitors) about organic produce, the benefits of reduced meat consumption, the benefits of vegetables and seasonal produce, and the need to reduce food waste.

Like some other hospitals, Centre Hospitalier de Niort has been able to identify different levels of food waste (e.g. waste during preparation

and service), and implement better management of expiry dates. The hospital is currently considering a number of actions that would reduce food waste.

#### LESSONS LEARNED AND CHALLENGES AHEAD

Today, the biggest problems the hospital faces are those linked to budget constraints and the limitations of public procurement in terms of introducing organic food. Food waste can be reduced through balancing local production capacity with consumption rates at the hospital.

With the support of the Hospital Director, combined with the expertise of Mr Bernard Jourdain, Head of Sustainable Development at Niort Hospital, the hospital strives to continue improving its sustainable food project.

### CENTRE HOSPITALIER DE PERPIGNAN

The Hospital Centre of Perpignan,<sup>107</sup> located in the south of France, is a medium-size hospital with 1,183 beds caring approximately 340,000 patients per year. The average hospital stay is three days.

The hospital serves 740,000 meals per year, including employees' meals. These meals are all produced in the Hospital Central Unit of Food Production. This Unit allows the development of varied and more appetising dishes, which contributes to the improved nutrition of patients and a reduction in food waste.

#### THE SUSTAINABLE FOOD POLICY

The main objective of the hospital sustainable food policy is to fight against patients' malnutrition, although this objective also fits into a broader objective to favour sustainable consumption and reduce food waste.

The hospital started its programme by more carefully matching the number of meals to the number of patients. Also the hospital realised that food quality, variety of menus, and small

*...the hospital realised that food quality, variety of menus, and small portions were key aspects of reducing food waste*

portions were key aspects of reducing food waste.

This led to a number of actions that improved the overall meal quality without increasing expenses:

- preparing meal trays only for the number of patients actually present in the hospital;
- devising a new menu planning system over a three-week cycle adapted to the majority of patients' diets;
- planning menus in communication with dieticians and patients to propose new dishes and new recipes;
- improving recipes, including the addition of spices and aromatic herbs, revising the cooking methods, and favouring the slow-cooking method;
- reducing quantities to improve quality;
- grouping vegetables and starchy food onto one tray to add colour and taste.

#### LESSONS LEARNED AND CHALLENGES AHEAD

The main challenge foreseen by the hospital for the next years is the training of nurses who serve meals to patients. The nurses' behaviour is key as they are seen as the ambassadors of the catering service and are at the end of a long chain of actors going from the grower to the

patient, via the procurer and the distributor.

The procurement of products in the hospital falls under the rules of public markets, which can be local, according to the nature of the purchased products and the capacity of the supplier to meet the hospital demand. As yet, there is no direct contact with local producers because it is difficult for a local producer to commit to a large amount of produce to be supplied continuously. The hospital usually works with a distributor that groups together various producers who are not necessarily local.

However, the hospital has decided to work with local distributors with respect to the purchase of fruits and meat. Other products still come from national and international distributors.

In the future, the hospital is committed to allowing patients to choose their meals at the time of admission from a list of dishes. This is to respect patients' tastes as much as possible while still considering their dietary needs, and to reduce food waste. As Mr Stéphane Lasseur, responsible for catering and logistics at the hospital, mentioned the aim is that *"at the Hospital Centre of Perpignan even the chefs will treat you!"*

*"at the Hospital Centre of Perpignan even the chefs will treat you!"*



# ITALY

## L'AZIENDA OSPEDALIERO-UNIVERSITARIA MEYER, FLORENCE

The Meyer Children's Hospital<sup>108</sup> is a paediatric hospital with 220 beds and an average stay of 4.5 days. Based in Florence, it is a small hospital that for the moment does not have the space to host a central, on-site kitchen. Nevertheless, this does not prevent them from offering about 160,000 fresh and sustainable healthy meals every year. According to Ms Fina Belli, Head Dietician, the hospital's meals are homemade style, cooked from scratch using organic fruits, vegetables, oil, and meat, bought locally and following the seasonal calendar.

### THE SUSTAINABLE FOOD POLICY

Given that this is a children's hospital, food is extremely important, and is essential and influential in development. Children also tend to be more fussy than adults. Therefore, having appealing food is a priority. The use of organic food is particularly important for neonates and infants, as it limits exposure to harmful endocrine (hormone) disrupting chemicals (EDCs)<sup>109</sup> at a critical time of development.

The hospital's sustainable food programme is based on a two-week menu turnover instead of four weeks, which reduces costs and does not compromise the variety of the meals provided, as the average hospital stay is only 4.5 days. For patients staying longer the hospital provides a more personalised menu. In addition, since 2007, patients have had the choice between the suggestions of the day and a number of fixed options. The hospital also has a well-developed vegetable garden that is used for therapy.

It is worth noting that the hospital, since its opening in 2007 (and since 2002 in their former building) has been committed to environmental sustainability, not only in terms of provision of food but also in terms of energy provision and use.

### LESSONS LEARNED AND CHALLENGES AHEAD

In the future, the hospital would like to grow further in terms of its sustainability and ethical policies. Although organic food is very important for young children and it will continue to be served to them, the hospital believes that the central focus of its sustainable food programme should be locally sourced food, avoiding the purchase of organic food coming from far away. The hospital is keen on buying fruits and vegetables grown with integrated pest management methods, which use less pesticides than conventional methods.

In addition, the hospital would like to start working on food waste minimisation but has not yet started a programme. A central kitchen will probably open soon in a new building recently bought, although they have already started preparing meals for the youngest patients on-site. Finally, the hospital would like to develop a programme that would educate parents on the importance of giving healthy and sustainable food to their children once they return home from hospital.



Promoting the consumption of fruits and vegetables among children and staff



The hospital vegetable garden that is used for therapy

## OSPEDALE CARDINAL MASSAIA, ASTI

Asti Hospital<sup>110</sup> is a medium-sized Italian hospital with 600 beds and approximately 585,000 patients per year (both inpatients and outpatients). The hospital serves about 547,000 meals per year to patients and staff, with an average cost to the hospital of €6 per meal or €13 for all meals served in a day, including breakfast and bottled water.

### THE SUSTAINABLE FOOD POLICY

The hospital ran a sustainable food policy from 2008 to 2011, although there was no specific funding for this programme. However, in 2005 the hospital moved to a new site, and their new premises made a sustainable food project possible by acquiring a new on-site central kitchen. This kitchen was used to prepare high quality meals with fresh and local produce that was certified by the ICIM.<sup>111</sup> In addition, an internal IT tool was developed to facilitate the ordering of meals according to patients' tastes while in agreement with medical prescriptions. Hostesses with tablets presented several menu choices to each patient, based on the doctors' prescriptions. This tool allowed the hospital to evaluate patients' satisfaction as well as to count the number of patients requiring meals. Moreover, within the project, it was possible to set a quality-price ratio when purchasing food. The rules concerning the choice of ingredients in the hospital was based on quality for 70% and price for 30%. Most successfully, according to Dr Maria

Luisa Amerio, Director of the Complex Operational Structure in the Dietary and Nutrition Clinical Department, evaluation showed that, over the time of the project, the recovery period decreased for 5,000 hospital patients, thanks to the high-quality, fresh, and local food served.

Unfortunately, this sustainable food programme did not continue beyond 2011 because of a new law that came into force: the decree 1/2012 art. 62 concerning the spending review of sanitary caterings.<sup>112</sup> This law obliges hospitals to buy their products from a unique platform created by a central purchasing authority (CONSIP) and they are no longer allowed to purchase fresh and local food directly. Nevertheless, there are still some positive elements that continue to be implemented from the time of the project: the use of a computer programme for the ordering of meals, and the analysis of patient satisfaction. The hospital still provides a balanced, innovative, and seasonal menu, decides on the dishes to be served, and still employs a dietician from the time of the project.

Asti Hospital has been involved in a food waste measurement programme coordinated by the Piedmont Region. In 2014 and 2015, the Region created a workforce of doctors and dieticians to measure food waste for 48 weeks in 13 hospitals of the Region. A total of 39,545 measurements were carried out looking at 8,627 meals in the 13 hospitals. Asti Hospital carried out measurements in 14 wards by weighing the food waste from 709 plates. The results obtained indicated that 20% of the food served was wasted.

The staff of the hospital are trained in a hazard analysis and critical control point (HACCP) system, as well as on allergies, specifically in respect to gluten and nickel intolerance. However, they are not trained in waste management although a recycling stream exists and empty, open containers are placed in recycling bins. If ceramic plates are used, they are washed. Uneaten food is thrown away.

### LESSONS LEARNED AND CHALLENGES AHEAD

When the hospital was required to use the CONSIP central platform for their purchasing decisions, the healthy and sustainable food programme was put on hold. Nevertheless, Dr Amerio considers that the project had a positive impact on patients, improving nutrition by raising the quality of the food served to patients.

Dr Amerio stresses that the hospital management as well as policy makers often do not understand the importance of food for patients;

neither do nurses and doctors take this into account and so the role of food in the recovery of the patients is overlooked. These factors do not support the hospital in offering healthy and sustainable food, while poor nutrition is not clearly recognised and tackled by the medical staff. Although food quality in hospitals has clear implications for the average stay length, health complications, and mortality of patients, Dr Amerio sees very little improvement in giving the right value to healthy and sustainable food in the Italian healthcare sector. The biggest challenge is to educate healthcare professionals and hospital managers about the correlation between high-quality food and the patient recovery path.



## POLICLINICO SANT'ORSOLA-MALPIGHI, BOLOGNA

The Policlinico Sant'Orsola-Malpighi is the university hospital of Bologna.<sup>113</sup> The hospital counts 1,535 beds and 5,379 employees, covering a 1.8km<sup>2</sup> site in the centre of the city. The hospital serves 1.1 million meals annually, approximately 3,100 per day. The hospital has been operating a central kitchen since 2010 enabling control over the meals served to patients. The kitchen opened as part of a new sustainable food policy, costing approximately €10 million and with the intention of having an on-site food team consisting of 115 food operators and chefs, and 15 nutritionists and hygiene specialists.

### THE SUSTAINABLE FOOD POLICY

Thanks to a dedicated, innovative restructuring project launched in 2012, the hospital has already saved €3 million in three years.

As part of this project, the sustainable food programme of the hospital started with the opening of the central kitchen. Subsequently, the food operating team was reorganised, a plan for waste reduction was created, and all the menus for patients and staff were reviewed with the involvement of the Dietary Department Director.

Dr Marco Storchi, Director of Human Care Facility Services, is one of the team members responsible for the Catering Unit. Dr Storchi defines the healthy and sustainable food concept that has been applied in the hospital as *“food that is accessible to all, that embeds the culture and the traditions of the territory, without over-exploiting the resources of the land and the animal stock, whilst contributing to health and wellbeing”*.

Since the appointment of Dr Storchi as Director, there has been more attention to the food served to staff, patients, and visitors at the hospital, without losing sight of the budget. Greater attention has been given to the kitchen staff who have been trained and evaluated. This personalised attention has contributed to reducing overtime and, consequently, staff ab-

sences have dropped. In addition, the hospital is the first Italian hospital to implement a specific disbursement plan for employees. This has distributed about 40% of the savings achieved due to better organisation and involvement of employees to those staff members involved. Finally, an agreement has been made with the University of Gastronomic Sciences (commonly called The Slow Food University) in Pollenzo<sup>114</sup> to host courses for kitchen staff and workshops on sustainable food (the first one took place in the spring of 2015) for the entire staff of the polyclinic.

Staff are trained and taught about food safety, food hygiene, diet, and personal safety. However, staff do not receive any technical training and only have a general knowledge of waste management.

As regards to food waste, the hospital uses a bulk food service. The food is then served to patients on plates. At the end of the food service open containers are washed and re-used; the contents of open but non-eaten containers are sent for bio-gas production. Food that has not been served is donated to a charity that redistributes it to people in need.

The hospital has vending machines that provide coffee and tea, but these are not yet fully Fairtrade. A project to introduce Fairtrade coffee and tea sold in vending machines has recently started at the end of 2016.

### LESSONS LEARNED AND CHALLENGES AHEAD

The hospital has participated in a national research project with the intention of measuring the effects of a Mediterranean diet on the hospital's staff. This project has involved 1,500 staff

Policlinico Sant'Orsola-Malpighi defines healthy and sustainable food as *“food that is accessible to all, that embeds the culture and the traditions of the territory, without over-exploiting the resources of the land and the animal stock, whilst contributing to health and wellbeing”*.

members who eat in the hospital's canteen. This is a first step towards providing more sustainable and healthy food for staff with the aim of reducing cardiovascular diseases. New clinical studies will be launched in 2016 at the hospital to investigate the relationship between food and illness, with specific focus on cancer diseases.

The Sant'Orsola restructuring project is linked to the implementation of the Monti Decree. Italy's Monti Decree (a wide ranging reform package of 2012) created an opportunity to invest part of the hospital's savings into rewards for personnel, by increasing salaries and giving other benefits. More challenging projects will start soon and will aim at providing a wider range of facilities to the 20,000 people that populate the hospital grounds every day. Some of these projects will focus on food, with new cafes and restaurants. Other projects are of a more cultural nature and will include a library, bookshops, commercial stores, and wellness services, as well as hosting cultural events. These are all examples of leadership within the community.



Dr Marco Storchi, Director of Human Care Facility Services, with the catering staff at The Policlinico Sant'Orsola-Malpighi in Bologna



# SPAIN

## THE LOZANO BLESIA UNIVERSITY HOSPITAL, ZARAGOZA

The Lozano Blesia University Hospital in Zaragoza<sup>115</sup>, with 805 beds and 3,200 staff members, welcomed around 28,000 patients in 2015. The clinic serves 925 meals per day, including meals for on-call medical staff, representing around 338,000 meals annually. All of these meals are prepared in their on-site central kitchen.

### THE SUSTAINABLE FOOD POLICY

Although the hospital does not have a healthy and sustainable food programme as such, the Lozano Blesia University Hospital provides fresh, local, seasonal, and sustainable products.

While shifting to local and fresh products, the hospital has not witnessed any significant change in costs. However, they have estimated that the purchase of Fairtrade products will slightly increase their costs. Nevertheless, they are planning to serve Fairtrade coffee in their vending machines. These are mostly located in emergency waiting areas, and serve a selection of sandwiches and fresh fruit, in addition to the usual products found in vending machines such as biscuits, pastries, and sugary drinks.

The hospital has created a menu that covers all dietary and nutritional requirements. The menu orders can also be changed between order and delivery to adapt to the changing number of patients.

The hospital serves food on plates covered with a lid. Water is served from the tap with additional carbon filtration in individual, reusable thermos flasks, which are washed between use and packaged to preserve cleanliness until the next use.

All staff are trained in hygiene and food safety standards, and specific training is given on allergenic products, which must be declared when served. Staff are also taught about the waste

management plan at the hospital, and, consequently, contribute to sorting waste according to the plan. The plates that are used can be washed (at 85°C with a special product) and used again. For food safety reasons, leftover or untouched food cannot be donated and so it is disposed of as solid municipal waste. Products that have not left the kitchen, however, are kept and conserved in ovens until they can be served.

### LESSONS LEARNED AND CHALLENGES AHEAD

According to the clinic's Director of Nursing, Ms Elena Altarribas Bolsa, *"The Dietetics and Nutrition Unit should be more involved when it comes to the development of the menus and catering for different dietary needs, ensuring that we serve the necessary nutrients in each meal."*

In addition, Ms Altarribas highlights the need to change the habits of people. This will require a lot of time and considerable awareness-raising activity, but will be extremely beneficial in proving the positive effects of good dietary practices on patient recovery rates and a reduction in post-treatment complications, along with environmental and economic benefits.



Preparing the trays for patients in the kitchen of The Lozano Blesia University Hospital in Zaragoza



Time to test the different dishes for the next menu



External view of The Lozano Blesia University Hospital in Zaragoza



## THE UNIVERSITY HOSPITAL COMPLEX OF GRANADA

The University Hospital Complex of Granada, Spain, is comprised of the University Hospital San Cecilio and the University Hospital Virgen de las Nieves.<sup>116</sup> With a total of 8,000 employees, 1,500 beds, and 900,000 patients per year, they serve around 8,000 meals daily (breakfast, lunch, snacks, and dinner) only to admitted patients and patients who attend day hospital or haemodialysis treatment. The complex has its own Clinical Nutrition and Food Science Unit for technical supervision and control of their two kitchens. Approximately 60% of the meals cover normal diets, while the other 40% provide for 32 therapeutic diets as necessary.

### THE SUSTAINABLE FOOD POLICY

The University Hospital Complex is a good example of a Spanish health provider replacing conventional products with local products without incurring major additional costs. At present, 60% of all of the products served are from local and sustainable sources. Special attention is also given to seasonal and organic products, such as some exotic fruits like mango and avocado.

The Sustainable and Healthy Food Programme at the Complex started in 2006, and is still ongoing. The major challenge has been to identify their need for local products and to find suppliers that could provide the amounts required at a reasonable cost. This has been particularly difficult when sourcing dairy products, some vegetables (such as mushrooms or peas), and breakfast products in small containers (such as jam, sugar, coffee, and oil).

Some of the goals set by the hospitals in their sustainable and healthy food programme are:

- to promote diets which have been linked to shorter stays for patients;
- to encourage local economic development; and
- open up innovative research areas.

Patients are given a menu (where the nutritional and allergenic information is included) with a choice from three starters, three main dishes, and three side dishes. Dessert is, in most cases, fresh fruit. The orders are taken 24 hours in advance. Plates are often washed and used again, although, for food safety reasons, leftovers or untouched food are not donated.

### LESSONS LEARNED AND CHALLENGES AHEAD

The biggest challenge for the hospitals is to identify suppliers that can provide the right quality and quantity of local and organic products. The Complex is also working towards reducing food waste, helped by the menu options.



## THE UNIVERSITY HOSPITAL COMPLEX OF SANTIAGO DE COMPOSTELA

The University Hospital Complex of Santiago de Compostela is one of four public hospitals belonging to the Galician network.<sup>117</sup> With a total of 1,300 beds, 5,600 staff (primary care physicians and urgent medical staff), and 450,000 patients per year, they serve approximately 7,100 meals per day and in 2015 served 2.6 million meals. As well as breakfast, lunch, and dinner, they serve snacks before and after dinner, for a total of five services per day. The Complex operates its own central kitchen and four satellite kitchens.

### THE SUSTAINABLE FOOD POLICY

The hospital strives to procure high-quality products from local producers. They work to reduce meat consumption, serve meat that is antibiotic-free, and serve fish coming from sustainable sources. Meat often carries a Protected Designation of Origin mark, such as Ternera Gallega. Pork is sourced from a cooperative of farmers located in Oresne, which also provides eggs to the hospital. Being in close proximity to the sea, the hospital procures fresh fish, such as hake, haddock, sardine, mackerel, and tuna, from a local supplier that uses traditional fishing techniques. The hospital even has its own vegetable garden where they grow lettuce, pepper, zucchini, and beans.

The hospital pays specific attention to the origin of the produce, including looking at the source of wheat that is used in the flour for the bread they consume, and the feed eaten by the poultry served to the patients. Defining the acceptance criteria of the produce was the first step of the sustainable food programme. Later these criteria were applied to the hospital's public procurement procedures, which have to respect Spanish legislation on public sector contracts (law 30/2007).<sup>118</sup> Having to find suppliers who could meet the hospital's requirements and expectations, without losing sight of the economic constraint, was challenging.

The sustainable food programme is ongoing and developing further. The programme is focusing also on packaging and on minimising food waste. In 2000, a cook-chill system was implemented which reduced food waste. This system allows last-minute changes as food is kept refrigerated until it is served or until it reaches the use-by date. Another advantage of this system is its flexibility to cope with unscheduled admissions of patients or outpatient services.

In addition, patients' food consumption is spread throughout the day as a way to increase variety and reduce portion size (e.g. a reduced serving and a reduction in the amount of bread served). The hospital complex is also exploring a partnership with dairy companies. Currently, yoghurt is served in 125g portions but this partnership will allow more appropriate portions for each patient according to their needs (some patients might need just 50g). The partnership would consequently generate less food and plastic waste. Indeed, one of the hospital's targets for the next two years is to reach zero plastic waste.

The hospital uses both a self-service food system for the 20% of patients who eat at the psychiatric hospital canteen, and a plated food system for the rest of the patients. The plated food system uses individual plates covered with a lid, which can be washed and reused. Water is filtered from the tap and served cold.

### LESSONS LEARNED AND CHALLENGES AHEAD

The biggest challenges of the hospital are the constraints coming from the implementation of the government contract laws, which favour price over quality. Another challenge is the price difference between some produce, such as between frozen and fresh fish. Despite this, the quality and diversity of the products has increased while keeping the cost steady at €4.50 per patient per day thanks to an efficient food waste management strategy. In the future the hospital would like to increase the amount of organic food and Fairtrade products served. Currently Fairtrade coffee from Nicaragua is

served. Improved communication with patients via TV or mobile phones and adjusting portion sizes are some other developments the hospital hopes to make in the future.

For Javier Vidal Iglesias, Catering Service Manager at the hospital, food service should be an important part of the patient recovery scheme, not only because of its health benefits, but also for economic reasons.



A salad at The University Hospital Complex of Santiago de Compostela



From the kitchen to wards: trays almost ready!



Preparing the trays for patients in the hospital kitchen

## HOSPITAL DE LA SANTA CREU I SANT PAU, BARCELONA

The Hospital of Santa Creu i Sant Pau<sup>119</sup> in Barcelona is a University hospital with the most prominent research activity in Spain. The hospital counts 650 beds, around 3,000 employees and about 35,000 patients, and more than 145,000 ER patients annually. In addition, the hospital has a day centre that welcomes more than 75,000 patients a year.

The hospital has its own kitchen and a Human Nutrition and Dietetics service that includes both parenteral and enteral nutrition. From the kitchen, every meal (breakfast, lunch, snacks, and dinner) is prepared for both patients and hospital staff, but also for users of the day centre and other establishments around the hospital. This totals 2,500 meals a day.

Meals are made with fresh, seasonal, and local produce as much as possible, as the hospital applies different contract procurement criteria to different product categories. They serve only a small percentage of organic products due to economic reasons.

### THE SUSTAINABLE FOOD POLICY

The hospital carries out a healthy and sustainable food policy aiming to offer high quality products within the budget and using products that can be adapted to all types of patients. For this reason, they have started to offer whole wheat bread, non-dairy milks, a daily vegetarian dish, and a fresh and balanced vegetable buffet that respects the seasonality of the products.

In addition, a cook-chill system and a change in the trolley cleaning process (from washing with a water hose to using a washing tunnel), has led to energy efficiency gains and a reduction in water use. Energy efficiency is also improved thanks to the availability of a trolley with induction trays that allow patients to eat their dishes, whether cold or hot, at an optimal temperature.

Another important aspect is the hospital commitment to provide environmental training for all hospital employees, through face-to-face

and virtual training, and the use of posters and competitions. The hospital reports the percentage of waste generated from glass, paper and cardboard, plastic, and organic waste in order to try to reduce waste production. In the kitchen as well as in the wards, employees make sure that the segregation of waste is carried out correctly through a conveyance system that goes from each ward to a collection point. In the kitchen, uneaten food is separated manually from the trays, then crushed and dried with special equipment for composting purposes.

In order to reduce waste, kitchen staff ask suppliers to take back boxes, containers, and pallets once they have unloaded their food products. In the kitchen, other strategies to reduce waste have been devised, such as replacing disposable containers with re-usable metallic ones, eliminating paper from the trays in the hospital dining room, or replacing individual water bottles with water from mineral water sources. As Ms Gemma Navarro, responsible for Dietetics, Nutrition and Food, Cleaning, Laundry and Waste Management Services, has pointed out, all these measures have contributed to a significant reduction of waste and a considerable reduction in costs.

In addition, Ms Navarro's department works to increase patient satisfaction with the food service. Satisfaction surveys are carried out at least once a year for long-stay patients (mainly cancer patients). Patients are asked to rate quantity, quality, temperature, and presentation of food, in addition to being asked about the schedule of the three main meals (breakfast, lunch, and dinner). They are also asked which dishes they like or dislike from the menu and which dishes they would like to have on the menu. Through this system the department has managed to increase the degree of acceptance of the menus, has increased the satisfaction of patients, and has reduced food waste in the wards.

## LESSONS LEARNED AND CHALLENGES AHEAD

The main challenges that the hospital faces are to increase the supply of organic products and continue reducing waste. Both aspects require time and resources that are not always available, but which are essential for serving healthy, sustainable, and appetising meals. Thanks to the recent improvement in communication between nurses and kitchen staff and a greater choice of dishes made available to patients, it has been proven that reduction of food waste is possible.

Nevertheless, much more needs to be done, particularly in terms of training of staff and raising awareness, to encourage staff to change their behaviour towards food waste in their daily lives in a systematic way.



External view of The Hospital of Santa Creu i Sant Pau in Barcelona

# SWEDEN

## KAROLINSKA UNIVERSITY HOSPITAL, STOCKHOLM

The Karolinska University Hospital<sup>120</sup> is comprised of two main sites: Huddinge and Solna. The hospital is the largest in Sweden with 1,700 beds and 15,000 staff members. The hospital cares for 1.5 million outpatients and 105,000 inpatients per year, serving 582,000 meals in addition to 200,000 meals to staff. The average cost per meal is 70 Swedish Krona or about €7.70.

### THE SUSTAINABLE FOOD POLICY

The hospital's sustainable food programme focuses on patients first, by providing the right food in the right amount, and at the right time. The ingredients procured are also very important: 30% of the food served comes from organic sources and sources with integrated pest management (IPM) systems, but the ingredients are not necessarily local or seasonal. The biggest challenge of organic and IPM food has been to find reliable suppliers that are able to continuously provide the hospital the necessary ingredients for the amounts needed. The hospital's goal is to reach 30% organic food, but the finances are an issue since sustainable food is more expensive. This also applies to Fairtrade products, which are usually more expensive.

The hospital strives to influence the market through their procurement, and to evaluate and monitor the alignment between the expectations of their orders and the quality of the received goods.

One company supplies the food for patients from an off-site kitchen and the hospital receives chilled and frozen portions that are then heated in microwaves. An on-site kitchen is foreseen to become operational in 2018 at the New Karolinska University Hospital in Solna, but will be run by an outside company.

Mr Gustav Eriksson, Head of the Environmen-

tal Department, underlined that the hospital also focuses on minimising the impact of their food services on global warming, but the first step is to find out how to measure this impact. Nationally, several studies have been undertaken on which type of food has the least impact, but in practice it is difficult to measure the carbon footprint of the food that is procured. Another important goal is to reduce food waste. A study was undertaken at both hospital sites in the spring of 2016, whereby food waste was weighed every day for one week in 20 wards. A survey with interviews and visits was conducted, resulting in figures that showed that food waste was even greater than had been previously estimated. From this study an action plan was developed with a number of recommendations for implementation, such as:

- ➔ not serving more food than needed;
- ➔ not automatically throwing away food at the expiry day but checking the quality;
- ➔ reducing the storage of food in all wards;
- ➔ reducing the availability of bottled water and bottled nutritional drinks; and
- ➔ differentiating between food for patients, relatives, and staff.

The Karolinska University Hospital uses a plated food service: plates are sat on a plastic tray and covered with a lid. Nurses and the personnel responsible for patient food service (including kitchen staff) receive training on food safety and basic waste management training. Environmental service workers receive further training on waste management and inform their co-workers in the wards. Empty open containers and open containers with uneaten food are either recycled or collected for biowaste solutions.

Currently waste food is sent for treatment to produce gas, which is then used as fuel for public buses.

### LESSONS LEARNED AND CHALLENGES AHEAD

In the future, the hospital would like to improve its sustainable food policy by cutting down on the amount of beef served and replacing meat with other sources of protein. This measure would have a positive environmental impact and would reduce costs. Nevertheless, Mr Eriksson thinks that an attitude change towards meat consumption is necessary in the hospitals and in society at large. Finally, it is important to invest in training and education of staff in addition to engaging them in their day-to-day tasks.



Patient room at the Karolinska University Hospital

Interior view of the hospital



# SWITZERLAND

## BASEL UNIVERSITY HOSPITAL

With approximately 700 beds and up to 1.3 million meals served per year, Basel University Hospital is the smallest of the five Swiss University Hospitals.<sup>121</sup> Nevertheless, it is a medium-sized hospital, considering the population of the country, with 6,700 staff members - two-thirds of whom are doctors. The hospital accommodates 230,000 patients per year - 195,000 outpatients and 35,000 inpatients. The average patient's stay is six days.

### THE SUSTAINABLE FOOD POLICY

Basel University Hospital has a sustainable food programme, but this is quite common in Swiss healthcare facilities. Mr Manfred Roth, Head of

the Food Services Department, highlighted the Swiss expression: *“Excellent medicine deserves excellent food.”*

Fresh produce is central to the food served in the hospital. In addition, seasonal produce is served as much as possible, mainly coming from the local region. The hospital has established a privileged relationship with its suppliers by knowing each one of them personally, and agreeing long-term contracts that are renewed annually. This close relationship is regarded as key to procuring the best ingredients.

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*“Excellent medicine deserves excellent food.”*

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External view of Basel University Hospital



Vegetarian menus are one of the main characteristics of the hospital's sustainable food programme. The vegetarian option is based on a Mediterranean diet, rich in vegetables and with more vegetable fat than animal fat. In order to support a well-balanced diet, one of the hospital's four restaurants offers to visitors and patients a large salad buffet.

The hospital avoids frozen food as much as possible and buys mainly IPM-grown fruits and vegetables. Unfortunately, buying organic products – particularly organic meat – on a regular basis is still too expensive, although some meals with organic ingredients are already provided. It was highlighted that it is still difficult to get the same quality and quantity of products when purchasing organic ingredients.

The hospital's sustainable food programme strives to avoid food waste; the right amount of food portions per day is calculated. Patients are asked in advance for their choices of salad, soup, and dessert, so that kitchen staff can avoid preparing unwanted food. This has resulted in a reduction of food waste at the hospital, which is routinely sent for processing into biogas.

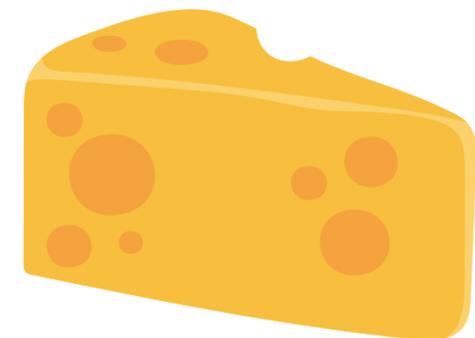
The hospital uses a plated food service, using plates covered by a lid. Food containers are washed and re-used.

### LESSONS LEARNED AND CHALLENGES AHEAD

According to Mr Roth, there is no doubt that high quality and appetising food supports a patient's fast recovery. For this reason, the hospital's food programme is important in attracting patients, as many want to be assured that they will eat well during their stay, and regionally grown food is an attractive prospect.

Mr Roth argues that sustainable and healthy food is part of the Swiss culture and that all Swiss hospitals carry out a sustainable food programme on a voluntary basis. Therefore, a national policy in this sense would not add much to the current practices.

In the future, Mr Roth stresses that the hospital will strive to communicate better with patients about the quality of the food they provide. They would like to offer cooking classes, to both patients and visitors, with nutrition specialists and doctors. As the educational role of the hospital is highly regarded, classes can be an opportunity to teach patients how to prepare healthy, well-balanced, and tasty meals at home, whilst allowing patients and doctors to improve the quality of their interaction.



# UNITED KINGDOM

## NOTTINGHAM UNIVERSITY HOSPITALS NHS TRUST

With over 1,800 beds and up to 1.94 million meals served per year, the Nottingham University Hospitals NHS Trust (NUH)<sup>122</sup> is the fourth largest hospital in the United Kingdom with 11,000 staff members. The average stay for patients is four days, and three meals are served per day, including drinks, costing collectively between £7.00 - £9.00 (€8.20 - €10.50).

### THE SUSTAINABLE FOOD POLICY

NUH has a sustainable food programme that has been accredited by the *Food for Life programme* of the Soil Association (see Box 6 below) with the hospital acquiring the Gold Standard in 2014. The hospital purchases fresh and locally sourced food, which is cooked in an on-site kitchen. The local producers also have to be accredited by the *Food for Life Programme*: the producers are kept in regular contact with the programme through yearly monitoring visits, with perfect traceability ensured.

The main focus of the hospital's sustainable food programme is to provide fresh and locally produced food. For example, 95% of meat served comes from a local processor sourcing from farmers in the East Midlands. This switch to local suppliers has saved food miles and has also contributed to the socio-economic growth of the region. The hospital does offer organic meals, but the organic supply chain is too small to provide all the hospital's meals on a regular basis.

NUH has also developed a food waste policy. In common with other interviewed hospitals, the main problem is knowing the number of patients present at each mealtime. It is therefore crucial to receive patients' orders as closely as possible to mealtimes. With a tablet available in each patient's room, patients will be allowed to order meals directly from the bedside just two hours before mealtime.

Mr John Hughes, Head of the Catering Department, believes that the hospital is not the right setting to educate the general public - he believes his sustainable development lectures at the Cambridge University Sustainability Programme make a greater impact. He also believes that another way to spread education is by sharing best practices and advertising the NUH Sustainability Programme as an example to other hospitals in UK.

### LESSONS LEARNED AND CHALLENGES AHEAD

The biggest challenge has been to find the local suppliers able to provide the right amount of produce for the different meals and to convince the hospital's administration and partners that locally-sourced food was the right choice. These challenges were overcome as the programme has incurred only a 2% increase in the budget.

In the future, NUH would like to establish a closer relationship with local farmers - in fact a long-term goal is to sign contracts directly with the farmers in order to give them more security. Currently, regular visits to farms allow NUH to keep in contact with the farmers and demonstrate the interest in purchasing fresh local ingredients in the long term. At present, however, NUH buys produce from different farmers every month without relying on long-term contracts.

## ROTHERHAM NHS FOUNDATION TRUST

Situated in the North of England, the Rotherham NHS Foundation Trust<sup>123</sup> is responsible for the delivery of a wide range of healthcare services. Its main site is Rotherham Hospital which has approximately 500 beds, providing services to around 66,000 day care patients and inpatients and 295,000 outpatients per year. A total of 4,300 staff work for the Trust, of whom around 3,000 work on the hospital site.

ISS Healthcare, a private company, is contracted to provide meals to inpatients at Rotherham Hospital and run the hospital's Rooftop Restaurant, which is popular with visitors, patients, and staff. Around 508,000 meals are served annually, all of which are cooked in the on-site kitchen facilities. As part of its sustainable and healthy food programme, ISS offers seasonal and fresh ingredients, addresses animal welfare issues, and employs innovative methods to reduce food wastage. In March 2014, ISS received the Bronze Catering Mark from the Soil Association and achieved the Gold Standard in September 2016.

### THE SUSTAINABLE FOOD POLICY

The main priority of the Trust is to provide fresh, seasonal, and non-industrial food. They have a one-week menu cycle, which is changed twice yearly, and a seasonal one-week menu cycle with daily 'chef specials'. This is an innovative, integrated solution for the provision of high quality patient meals that are enjoyable, attractive, and which support patient recovery through choice and service.

The key elements of the Trust's sustainable food programme are:

- A cost-effective, patient-centred, and low carbon catering solution.
- A service that is effective, efficient, and flexible. (The service model seeks to distinguish between different patient groups, in order to provide more focused, nutritionally-appropriate meals and suitable service delivery, rather than the current method of 'one size fits all'.)
- A service that demonstrates best value/ best practice with ward-based hostess staff, who provide full breakfast service, lunch, and supper, with support from nursing colleagues. They also assist patients with ordering their meals using handheld tablets that also allow the collection of data on the most popular dishes, meal size, and food wastage.
- Creation of solutions that are capable of operating effectively in the NHS environment by, for example, reducing food waste, or turning off unnecessary lights and equipment.

Staff communication is key at The Rotherham NHS Foundation Trust



## Key elements of the sustainable food programme at the Rotherham NHS Foundation Trust

PATIENTS	STAFF / VISITORS	TRUST
<ul style="list-style-type: none"> <li>• More modern, patient centered, and flexible service.</li> <li>• Portion size control at ward level, e.g. patients choose size of meal required, with each course being served separately.</li> <li>• Ability to order food -through an electronic meal ordering system - outside of normal meal service times via an à la carte cook/chill menu.</li> <li>• Patients will receive the meal they ordered every time - provisions (bread, milk, etc.) are ordered and controlled by ward based hostess staff.</li> </ul>	<ul style="list-style-type: none"> <li>• Access to 24/7 hot food through the cook/chill menu.</li> <li>• Improved hot and cold “grab and go” options. Introduction of re-usable “eco boxes” enables colleagues to receive a discount for re-use.</li> <li>• Loyalty cards, promotional and seasonal offers for staff.</li> <li>• Improved vending machine options.</li> </ul>	<ul style="list-style-type: none"> <li>• Better patient experience by offering a flexible and responsive approach to patient feeding.</li> <li>• A reduction in carbon emissions during the lifetime of the contract. A contract period of 5 + years promotes both continued innovation and partnership working.</li> <li>• A financial saving to the Trust over the first 5 years of approximately £800,000.</li> <li>• New catering equipment provided by the contractor.</li> </ul>

The Trust uses a fresh cooked bulk meal delivery: food is plated at ward level onto pre-heated crockery. In addition, chilled water and hot drinks can be obtained through a hydration trolley.

A selection of healthy snacks and water are offered as an alternative to the standard vending machine confectionery, and a range of Fairtrade products are offered to staff and visitors in the restaurant.

ISS controls food waste by monitoring at the point of ordering. The turnaround is carried out in the shortest possible time (approximately 1.5 - 2 hours), which helps reduce food waste significantly.

The hostesses receive training in relation to food hygiene and waste management as part of the overall training programme from ISS Healthcare. Any uneaten, unused, or wasted food is recycled using an off-site anaerobic digestion process via a company named ReFood.

### LESSONS LEARNED AND CHALLENGES AHEAD

Debbie Stevens, Dietician at The Trust, stated that:

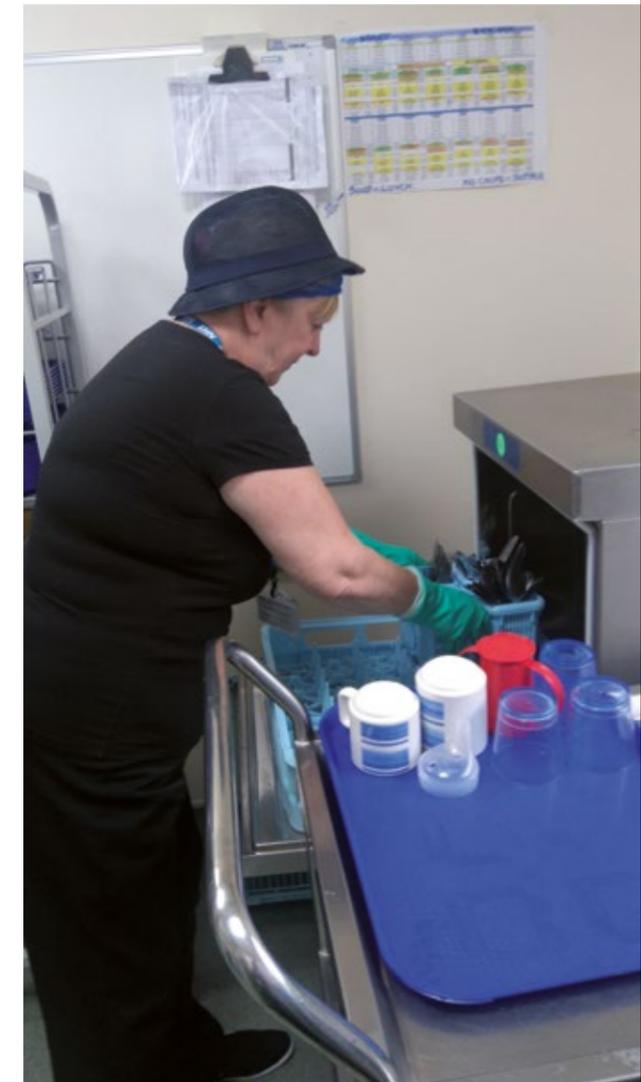
*“Whilst healthy eating has a place in hospitals and should be encouraged where possible, it needs to sufficiently meet patients’ nutritional needs. A well balanced diet including good sources of protein, fats, and adequate vitamins and minerals has a role to play in recovery and maintenance of health in primary care to help prevent future dependence on the NHS; however, this will vary for patients dependent on their clinical condition and needs. The evidence clearly shows benefits to being well-nourished pre-surgery/medical intervention, improving outcomes post intervention, but there is a definite increase in the number of patients attending hospitals already malnourished and then at further risk of malnutrition.”*

Specific policies and initiatives have been im-

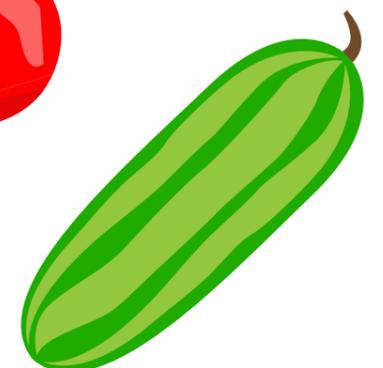
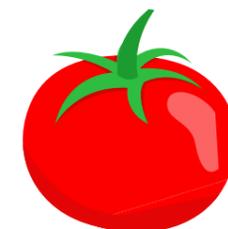
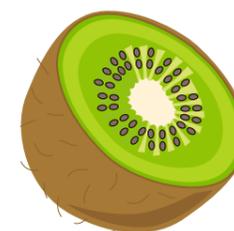
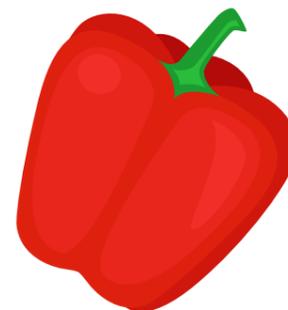
plemented in the United Kingdom to tackle the problem of malnourishment, such as the Hospital Food Standards Panel, established by the Department of Health.<sup>124</sup>

Additionally, the Trust is looking at self-sufficient food sources, for example a herb garden and a vegetable patch (although they are aware it can increase food costs), and at increasing the number of local suppliers. Finally, for the future they are seeking more involvement of stakeholders in the decision-making processes.

*“A well balanced diet including good sources of protein, fats, and adequate vitamins and minerals has a role to play in recovery and maintenance of health in primary care to help prevent future dependence on the NHS...”*



Kitchen staff cleaning dishes after lunch service



## THE ROYAL BROMPTON HOSPITAL, LONDON

The Royal Brompton Hospital is located in London with 300 beds and 1,300 staff. The hospital prepares 96,800 meals per year in their internal kitchen for a cost per meal of £5.16 (€6.33). Their former catering manager, Mr Mike Duckett, retired in 2012; however, Mr Duckett had spent over 11 years at the hospital developing an ambitious sustainable food programme. He was determined to keep the kitchen in the hospital, despite proposals to out-source the service.

### THE SUSTAINABLE FOOD POLICY

Upon his appointment at the hospital, Mr Duckett started the sustainable food programme gradually. One of the first changes he made was to stop buying powdered potatoes and milk in favour of fresh ingredients, considering them an essential part of hospital meals. He also believed that to eliminate food waste and patients' undernourishment, it was absolutely essential to consider patients' wishes – both in terms of what they wanted to eat and when.

Increasing the proportion of sustainable food at the hospital was also a gradual process, first buying organic strawberries, then increasing local supplies by visiting farms and signing contracts directly with the farmers. For example, one farm in Kent was able to supply several types of fruits and vegetables. Farmers also



Mike Duckett and Prince Charles at The Royal Brompton Hospital in London

work with the hospital to develop seasonal menus, including soups, to make the best use of local produce.

Organic food represents between 5% and 8% of the hospital's food purchases. Milk and yoghurt are 100% organic from a farm in Bedfordshire, and organic meat is on the menu at least once a week. In addition, the hospital tries to purchase fresh bread from local bakeries although it is not always possible because of the cost. The hospital also tries to educate patients and staff to use less fat, sugar, and salt, and offers whole wheat bread instead of white bread.

The Royal Brompton has also started to buy meat from local butchers, which allows the preparation of dishes using mainly low-fat meat. The food costs have gone up, but prices were negotiable due to the bulk quantity ordered and a long-term contract with the suppliers.

The satisfaction rate of the patients has been very high thanks to these new meals. Despite some critics, meals at the hospital are usually well-received by the vast majority of patients. Although it is difficult to prove a causal link, Mr Duckett believes that patients recover more quickly thanks to the hospital's sustainable food programme.

The catering staff have tackled food waste mainly through monitoring and being closer to patients' wishes. This strategy has allowed them to reduce food waste from 10% to 2.5% in five years, and the waste that is still produced is used for compost used in the hospital's gardens.

### LESSONS LEARNED AND CHALLENGES AHEAD

Mr Duckett believes it is crucial to listen to patients and offer them fresh 'homemade' food that will make them feel better. In terms of sustainability, the most important challenge has been to get in touch with the right local suppliers and negotiate a price that suits both parties. Mr Duckett also thinks that in the future the hospital's food will be more local, more sus-

tainable, and will ensure greater food chain security. Furthermore, Mr Duckett believes in the educational role of hospitals; he has organised meetings to inform and educate patients on changing their food habits, encouraging them to eat in a healthier and more sustainable way.

## Box 6

# The Soil Association's Food for Life Catering Marks

The Soil Association is a not for profit organisation. It was founded in 1946 by a group of farmers, scientists, and nutritionists who observed a direct connection between farming practices and plant, animal, human, and environmental health.

Today, they are the UK's leading membership-based charity campaigning for healthy, humane and sustainable food, farming and land use. They have over 150 staff based in Bristol and Edinburgh and have inspectors working across the country.<sup>125</sup>

The Soil Association has developed a project called *Food for Life Catering Marks*.<sup>126</sup> The Catering Marks provide an independent endorsement that food providers are taking steps to improve the food they serve, using fresh ingredients which are free from industrially processed trans fats, harmful additives, and genetically modified organisms (GMOs), along with higher animal welfare standards. Caterers are audited to ensure they meet high standards of provenance and traceability, providing reassurance to customers that meals are freshly prepared using environmentally sustainable and seasonal ingredients.

The Catering Marks are at three levels:

- The Bronze Catering Mark has fixed standards. These focus on removing harmful additives, trans fats and GMOs from the menu, and ensuring that the majority of food on the menu is prepared freshly on-site.
- The Silver and Gold levels are assessed on a points system, rewarding ethical, environmentally friendly and local ingredients.

Whether caterers serve food in hospitals, care settings, workplaces, schools, universities, nurseries, visitor attractions or other venues, the Catering Mark helps improve food whilst reducing costs, engaging the catering staff, and adding value to the catering offered.

In 2017 the Catering Mark will be rebranded as *Food for Life Served Here* because of a general lack of awareness from consumers, although the Catering Mark is well-recognised within the industry. The standards will remain the same, but it is hoped the new name and messaging will raise the profile of the programme and help the achieving caterers promote their commitment to fresh, local, and healthy food.

## CONCLUSIONS

The case studies featured in this chapter are the outcome of a survey carried out by HCWH Europe among 22 healthcare institutions in Europe. It has highlighted a number of challenges in the implementation of a healthy and sustainable food policy in European hospitals, mainly looking at institutions with a fully operational on-site central kitchen.

The **first challenge** concerns short supply chain strategies to procure fresh, seasonal, local and organic produce. Procuring and serving fresh, seasonal, local and, whenever possible, organic food produce should be a priority for hospitals, helping to promote a healthy diet among patients, staff, and visitors, while meeting higher environmental standards.

Many hospitals highlighted the fact that more time is required to identify suppliers/farmers that can provide the right quality and quantity of products for hospital menus, typically to a four-week cycle. In addition, local and organic farmers are often not able to provide the large amount of ingredients needed by healthcare facilities on a regular basis. A further disadvantage of using fresh and organic products cited by some hospitals is the extra preparation time (and resources) needed to prepare food – for example, to eliminate the presence of insects and soil in lettuces or leafy vegetables.

Another drawback is the cost of organic products. Some hospitals would like to serve organic and even Fairtrade products, but because finances are a major issue at public hospitals, they feel that they cannot afford them. The extra costs, however, are seen as an investment by some hospitals, as increasing spending on better food can be regarded as a means of reducing costs elsewhere – for example in shortened stays, reduced risk of complications, and reduced malnutrition and mortality rates.

The **second challenge** highlighted by the hospitals that participated in our survey is to create an all-purpose menu to cover all dietary and nutritional requirements of patients, particularly given that some patients need personalised diets because of their condition and treatment.

Hospitals also serve a large number of people on a daily basis, including hospital staff and visitors. Taking on board patient and staff feedback, and using this to forecast what meals will be requested/needed, hospitals can adjust menus, shorten the menu cycle and potentially reduce the price of ingredients due to better planning and lower transport, storage, and packaging costs.

The **third challenge** that has been identified by the hospitals interviewed is to rely less on animal-based products. The protection of biodiversity levels and ecosystems (aquatic and terrestrial), and a reduction in the use of unnecessary antibiotics and pesticides in the food chain should all be taken into consideration. Some hospitals are reducing the use of animal-based products as an opportunity to address these important environmental issues, but also as an opportunity to save money. Meat and fish purchases are substituted with plant-based alternatives – vegetables, fruit, pulses (such as beans, lentils, and chickpeas), nuts, seeds, and wholegrain foods that are high in fibre, minerals, and vitamins. This shift in diet also helps reduce the risk of heart disease and diabetes.

The **fourth challenge** concerns staff training and awareness raising, along with patient satisfaction surveys. These are key aspects that underline the educational role that hospitals can play. Staff and patients can be introduced to the importance of a healthy and sustainable diet and shown how to change their food habits, in order to continue preparing healthy meals at home.

The **fifth challenge** is the wider community outreach. The leadership role of the Centre Hospitalier du Bois de l'Abbaye (CHBA) in Belgium serves as an important example to be followed by other hospitals. The CHBA acts as a central food-service provider for the municipality – cooking and providing meals for other public institutions, such as other hospitals, schools, civic offices, and meals-on-wheels schemes. As well as generating additional revenue for the hospital, these activities have an additional knock-on effect as they inspire the local community to eat more healthily and more sustainably.

The **sixth challenge** is reducing food waste. This has several benefits. Obviously less waste saves money in disposal costs (that might be reinvested in healthy and sustainable food procurement) but can also reduce malnourishment by providing the right quantity of appetising food at the right time. There is also a major environmental benefit from demanding less quantity of food and in avoiding the need for disposal methods. Reducing food waste requires a more efficient meal planning, ordering system, and food delivery system, while improving communication between the wards and the kitchen staff.

Considering the challenges highlighted above, a number of recommendations are presented in the next chapter to guide hospital catering and environmental managers in implementing a healthy and sustainable food policy. In addition, recommendations are presented for policy makers to improve the legislative framework that regulates sustainable food procurement and food waste in Europe.



## CHAPTER 4: HCWH EUROPE RECOMMENDATIONS

This survey on food provision and waste, carried out between 2014 and 2016, has outlined key best practices across the European healthcare sector. From these experiences HCWH Europe has formulated recommendations for both healthcare institutions and policy makers to develop, promote, and implement strategies for healthy and sustainable food procurement, and for the reduction and prevention of food waste.

### HEALTHCARE INSTITUTIONS

#### KEY ELEMENTS FOR A HEALTHY AND SUSTAINABLE FOOD PROCUREMENT STRATEGY

There are still many issues and challenges that need to be addressed in European hospitals with respect to the provision of sustainable and healthy food. As experience grows, and as the shift towards improvements gains pace and supply chains adapt, new guidelines and norms are expected to develop. But as a start, we propose the following recommendations:

1. Install a central operating kitchen in hospitals and implement a sustainable procurement policy giving priority to fresh, local, seasonal, and organic produce.
2. Support local, regional, and small-scale farmers, and rural communities when purchasing products for the hospital kitchen. This will reduce reliance on more expensive processed foods, and make it easier to source fresh, local, seasonal, and organic produce.
3. Procure healthier and Fairtrade snacks and drinks for hospital vending machines, instead of snack foods and fizzy drinks high in fat, salt, and sugar.
4. Reduce meat portions, and/or substitute with fresh fish and plant-based products that are high in protein content from organic or sustainable sources.

5. Offer more plant-derived foods (fruits and vegetables, whole grains, pulses, and nuts), and make sure fresh fruit is always available on the dessert menu.
6. Embrace the educational role of hospitals by showing both staff and patients how to change their food habits, and encourage them to prepare meals in a healthier, more appetising and more sustainable way at home (for example, by using herbs and spices to season food and reducing the use of salt and sugar).

#### KEY ELEMENTS FOR A SUCCESSFUL FOOD WASTE PREVENTION AND REDUCTION STRATEGY

In hospitals and healthcare systems, food waste reduction has become an obligation because of the environmental and economic cost. To help hospitals reduce food waste, we propose the following:

1. Carry out regular satisfaction surveys so that the food served better meets patients' preferences and dietary habits. If needed, change menus to remove the most unpopular items or dishes.
2. Establish a simplified and flexible food-ordering procedure with opportunities for meal cancellations.
3. Ensure that patients are offered different portion sizes (large, standard, or small portions) on menus and assist patients to make informed decisions about the appropriate portion size, nutritional content, and any alternative meals available.
4. Establish protected meal times to allow patients to take their time to eat without being interrupted.
5. Provide help to patients who have limited manual dexterity or strength with tasks such as opening containers, cutting meat, or peeling fruit.

6. Raise awareness among staff, visitors, and patients about how much food is wasted and what types of food are most discarded by using transparent waste bins.
7. Train and inform kitchen and ward staff about the different stages of food waste management, such as efficient storage, the use of standard-sized serving utensils, and alternatives to disposal.
8. Organise working groups (involving patients, administrative staff, healthcare professionals, and kitchen staff), to discuss and test different culinary innovations, such as adjusting the meals to suit certain patients' specific requirements, the presentation of dishes, and for sharing information about the hospital's food waste strategy.
9. Monitor and measure food waste (both in terms of weight and cost); evaluate which foods are wasted most and where (i.e. kitchen, canteen, and wards) in order to optimise the production of meals, taking into account patient preferences, choices, and needs.
10. Explore alternatives to redistribute surplus food – for example, donating it to food banks (or other charitable schemes) or converting it into energy.<sup>127</sup>

### EUROPEAN UNION POLICY MAKERS

European policy makers should work towards facilitating the implementation of healthy and sustainable food policies in all food service sectors including healthcare. To this end they should:

- Provide an EU-wide definition of healthy and sustainable food, including food that is fresh, organic or produced with integrated pest management (IPM) methods, locally produced, seasonal, containing high levels of vitamins, minerals and essential fatty acids, and low levels of animal-based saturated fats. In addition, the definition should give priority to food that carries a low environmental footprint (low emissions of greenhouse

gases and resource efficient).

- Define ambitious green public procurement (GPP) criteria for food and catering services, encouraging the procurement of fresh, seasonal and organic or IPM produce coming from local and small-scale producers. In addition GPP criteria should encourage the purchase of antibiotic-free meat and fish.
- Provide a legally-binding definition of food waste along the lines of the definition produced by the EU FUSIONS Project on food waste: *“Food waste is any food, and inedible parts of food, removed from the food supply chain to be recovered or disposed (including composted, crops ploughed in/not harvested, anaerobic digestion, bio-energy production, co-generation, incineration, disposal to sewer, landfill or discarded to sea)”*.<sup>128</sup>
- Set legally binding targets for EU food waste to meet the commitment to reach a 50% reduction by 2030, in line with the UN Sustainable Development Goal 12.3.<sup>129</sup>
- Provide a legally binding food waste hierarchy encouraging the use of food waste for recovery processes such as donation of unused food to charities or its use for animal feeding or composting, without undermining prevention efforts and avoiding landfill and incineration.
- Provide clear guidelines for measuring and monitoring food waste (tonnage and cost), enabling use of the data for comparisons between countries and sectors. Sector-specific guidelines should address different types of food waste (e.g. in the healthcare sector: unserved food, untouched food, and uneaten plate waste), demonstrate preventable types of food waste, and show what food is wasted the most and why, whether in the kitchen, wards or canteens by patients, staff, and visitors.

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**98.** Various definitions of IPM exist. As defined by the US Environmental Protection Agency, IPM can be described as an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programmes use monitoring methods and comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with a range of available pest control methods, is used to manage crop damage economically and with the least possible risk to people, property, and the environment.

**99.** The Marine Stewardship Council runs a programme to transform the world's seafood markets and promote sustainable fishing practices. The MSC has developed standards for sustainable fishing and seafood traceability. Both standards meet the world's toughest best practice guidelines and are helping to transform global seafood markets.

**100.** Website at: [www.chrcitadelle.be/fr/index.html](http://www.chrcitadelle.be/fr/index.html)

**101.** The Belgian Blue (BB or BBB for Blanc Bleu Belge), is a breed of cattle raised mainly for meat. The breed occurs mainly in central and upper Belgium, but can be found throughout the whole world. The cattle are known for their size and the quality of the meat.

**102.** Website at: [www.gentoftehospital.dk](http://www.gentoftehospital.dk)

**103.** Figures from 2013. At: [www.gentoftehospital.dk/topmenu/om\\_hospitalet/noegletal/](http://www.gentoftehospital.dk/topmenu/om_hospitalet/noegletal/)

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**106.** Website at: [www.ch-niort.fr](http://www.ch-niort.fr)

**107.** Website at: [www.ch-perpignan.fr/](http://www.ch-perpignan.fr/)

**108.** Website at: [www.meyer.it](http://www.meyer.it)

**109.** A number of pesticides are suspected of having harmful endocrine disrupting properties; residues may be present in fruit and vegetables grown using such chemicals. More information at: [www.disruptingfood.info](http://www.disruptingfood.info)

**110.** Website at: [portale.asl.at.it](http://portale.asl.at.it)

**111.** ICIM SpA (Istituto di Certificazione Industriale per la Meccanica) is an independent Italian Certification Body established in Milan in 1988 which promotes the development of the culture of quality. At: [www.icim.it/en/](http://www.icim.it/en/)

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**113.** Website at: [www.aosp.bo.it](http://www.aosp.bo.it).

**114.** Slow Food (Italy). At: [www.slowfood.it](http://www.slowfood.it)

**115.** Website at: [www.hcuz.es/web/guest](http://www.hcuz.es/web/guest)

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**120.** Website at: [www.karolinska.se/en/](http://www.karolinska.se/en/)

**121.** Website at: [www.unispital-basel.ch](http://www.unispital-basel.ch)

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## ANNEX I: SURVEY ON SUSTAINABLE & HEALTHY FOOD IN EUROPEAN HOSPITALS

HCWH Europe is conducting a survey to investigate best practices around sustainable and healthy food in healthcare systems across Europe.

If you are a healthcare procurer or a hospital catering manager and would like to share your experience, please fill in the questionnaire below.

Your Name .....

Name of Institution / Organisation / Hospital .....

Address .....

Your Email Address .....

Your Telephone Number .....

### PART 1: YOUR HOSPITAL

How many beds? .....

How many patients per year? .....

How many staff? .....

How many meals served per year? .....

Do you provide sustainable and healthy food in your hospital?

Yes

No

If yes, please explain what type of sustainable food is served. If no, please explain why not.

Does your hospital have a kitchen?

Yes

No

Is your hospital implementing a meat consumption reduction policy?

Yes

No

Is your hospital implementing an antibiotic-free meat/seafood consumption policy or sustainable seafood policy?

Yes

No

### PART 2: YOUR VIEWS

Please select 3 criteria which best define sustainable and healthy food.

Seasonal

Local

Fresh

Without chemicals and pesticides (i.e. EDCs, nanomaterials, etc.)

Organic

Not industrial /processed

Minimise food waste

Do you agree with HCWH Europe's definition of healthy and sustainable food:

*"Healthy and sustainable food is fresh, organic or produced with integrated pest management methods, locally produced, and contains high levels of vitamins, minerals and essential fatty acids. In addition, the minimisation of food waste is also important to reduce the environmental impact of food production and consumption."*

Yes

No

If not, what definition of sustainable and healthy food do you apply to your hospital?

### PART 3: YOUR EXPERIENCE

What were the main steps taken in achieving a sustainable and healthy food programme in your hospital?

What are the project's goals?

Have the goals been reached?

Yes

No

Is the project still on-going?

- Yes  
 No

What lessons have you learned in the process?

What was the greatest challenge in providing sustainable and healthy food in your hospital?

Do you have any experience with minimising food waste in your hospital?

If yes, please describe the actions you have taken and the outcomes. (Please provide data, if available)

#### **PART 4: OUTCOMES**

Has switching to a sustainable and healthy food programme in your hospital had an impact on costs/finances?

If yes, how? (Please provide data, if available)

What are the policies, laws and incentives in place in your country to motivate hospitals to implement sustainable and healthy food programmes?

What would you like to do in the future in terms of healthy and sustainable food in your hospital?

Do you have an estimate of how much the foreseen changes would cost?

In addition to the positive environmental impact, do you think that sustainable and healthy food might have a positive effect on patients in terms of recovery rate, less complication after operations etc.?

Please explain your answer.

Do you have anything else to add concerning sustainable and healthy food in hospitals?

#### **PLEASE ANSWER THE FOLLOWING ADDITIONAL QUESTIONS:**

**1. What type of food service do you use in your healthcare facility?**

- Bulk food service  
 Plated food service

**2. Do you use trays to keep the food warm?**

- Yes  
 No  
 Sometimes

**3. What type of material are the trays made of?**

- Plastic with film  
 Plastic without film  
 Aluminum  
 Carton with film  
 Carton without film  
 Compostable material  
 Melamine  
 Other (please specify)

**4. How are they closed?**

- Thermostealing  
 Lid  
 Other (please specify)

**5. How do you serve food to patients?**

- On preheated multi-portion trays  
 On plates  
 Other (please specify)

**6. Do staff receive any training or have any knowledge of food safety in relation to chemicals in food contact material and chemicals migration? If yes, please specify.**

**7. Do staff receive any training or have any knowledge of waste management? If yes, please specify.**



**8. At the end of the service, where do you place empty open containers?**

- Household waste
- Recycling bin
- Biowaste solution
- Plunges to wash them (reusable containers)
- Others (please specify)

**9. What do you do with open but non-eaten containers?**

- Household waste
- Recycling bin
- Biowaste solution
- Plunges to wash them (reusable containers)
- Others (please specify)

**10. What do you do with the non-eaten food?**

- Do you donate it? Please specify.
- Do you throw it out?
- Do you recycle it? Please specify.
- Other (please specify)

**11. How do you serve water to patients?**

- Glass bottled water
- Plastic bottled water
- Tap water
- Other (please specify)

**12. Does your hospital have vending machines with fair trade coffee or tea?  
If so, please give details about these products.****13. Does your hospital have vending machines with cookies, sweets or sugary drinks?  
If so, what is your opinion about it?****14. Do you serve fair trade products to your patients or employees?**

- Yes. Please, specify which ones.
- No. Please, explain why not.
- Sometimes. Please, specify which ones.

**15. In regard to the food waste management in your institution:**

- a.** In your opinion, how bad is the problem of food waste in your hospital?  
How much food is wasted? How do you know this?
- b.** What are the main reasons for food waste in your hospital?
- c.** How is food waste managed in your hospital?  
What is the process for controlling and/or monitoring it?
- d.** What foods are most likely to be wasted in your hospital? Why?
- e.** How does this food waste occur? Describe what you know about the circumstances.
- f.** What strategies for reducing food waste have been attempted in your hospital?  
Which have succeeded, which have failed, and why?
- g.** What are the barriers to reducing food waste at your hospital?  
What factors do you think would help reduce food waste? Why?



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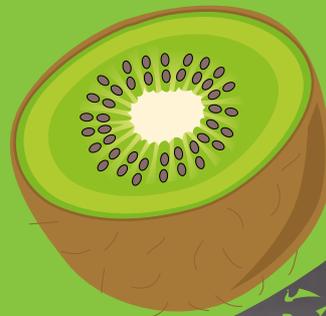
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Health Care Without Harm (HCWH) Europe is the European arm of a global not for profit NGO whose mission is to transform healthcare worldwide so that it reduces its environmental footprint, becomes a community anchor for sustainability and a leader in the global movement for environmental health and justice. HCWH's vision is that healthcare mobilises its ethical, economical, and political influence to create an ecologically sustainable, equitable, and healthy world.

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