

# Online Research @ Cardiff

This is an Open Access document downloaded from ORCA, Cardiff University's institutional repository: <http://orca.cf.ac.uk/106370/>

This is the author's version of a work that was submitted to / accepted for publication.

Citation for final published version:

Gray, Selena, Orme, Judy, Pitt, Hannah and Jones, Matthew 2017. Food for life: evaluation of the impact of the Hospital Food Programme in England using a case study approach. *JRSM Open* 8 (10) , pp. 1-9. 10.1177/2054270417712703 file

Publishers page: <http://dx.doi.org/10.1177/2054270417712703>  
<<http://dx.doi.org/10.1177/2054270417712703>>

Please note:

Changes made as a result of publishing processes such as copy-editing, formatting and page numbers may not be reflected in this version. For the definitive version of this publication, please refer to the published source. You are advised to consult the publisher's version if you wish to cite this paper.

This version is being made available in accordance with publisher policies. See <http://orca.cf.ac.uk/policies.html> for usage policies. Copyright and moral rights for publications made available in ORCA are retained by the copyright holders.



**Food for Life: evaluation of the impact of the Hospital Food Programme in England using a case study approach Selena Gray, Judy Orme, Hannah Pitt and Matthew Jones<sup>1</sup>**

**Corresponding author: Selena Gray. Email: [selena.gray@uwe.ac.uk](mailto:selena.gray@uwe.ac.uk)**

**Introduction**

Food for Life is a partnership of national charities in England led by the Soil Association, working with Garden Organic, Focus on Food, the Health Education Trust and the Royal Society for Public Health. The programme's overall mission is to promote 'good food culture' by which they mean understanding how food is grown, learning about connections between food and health, and caring about the environmental impact of food production systems.<sup>1</sup> The programme adopts a settings-based approach that extends beyond nutritional and dietary education to encompass wider aspects of the health, social and environmental dimensions of food. Originally developed in schools, where the Food for Life approach has been linked to better pupil diet in primary schools,<sup>2</sup> better school performance<sup>3</sup> and benefits to the local economy and environment through short food supply chains,<sup>4</sup> it was extended in 2013 to other settings including early years, universities, hospitals and care homes for older people.<sup>5</sup> This paper reports in further depth on work undertaken with hospitals.<sup>6</sup>

There have been ongoing concerns about the quality of food provision in hospitals.<sup>7-9</sup> Poor nutrition is an important issue: up to 40% of adults and 15% of children admitted to hospital are reported to be under-nourished.<sup>10</sup> Hospitals have been identified as priority organisations caring for the nutritionally vulnerable, where food is closely related to care, treatment and recovery from illness.<sup>11,12</sup> There have been many attempts to improve the quality of food, and it has been argued that 'since 1992, £54 million has been "wasted" on 21 initiatives to try to raise food standards', according to the Campaign for Better Hospital Food.<sup>13,14</sup> Recent approaches in England have involved the inclusion of hospital food in the 2014/2015 Commissioning for Quality and Innovation framework. The Commissioning for Quality and Innovation framework was introduced by the Department of Health in 2009 as a way for commissioners of healthcare to encourage and reward improvements in service quality. The framework allows commissioners to make some of the healthcare providers' annual income conditional on achieving locally agreed goals to improve quality, and each hospital has a number of national and local goals. Included in the optional 'pick-list' of exemplar Commissioning for Quality and Innovation goals published by NHS England in December 2013 was number 295: Improving Hospital Food by achieving compliance with recommended or best practice standards.<sup>15</sup> Another approach was a recommendation from the Hospital Food Standards Panel report that NHS hospitals should maintain a food and drink strategy which should

include the nutrition and hygiene needs of the patients, healthier eating for the whole community, including staff, and sustainable procurement of food and catering services.

Assessment of the quality of food available to patients in hospitals is limited and is done primarily through the Patient-led Assessments of the Care Environment surveys introduced in 2013.<sup>16</sup> Patient led Assessments of the Care Environment assessments are carried out by teams, half of which are patients. These are done annually and include a detailed assessment of the taste, texture and temperature of the food on offer. Assessing access and quality of food for NHS staff in hospitals is more difficult; this is not part of the core NHS staff survey<sup>17</sup> although the optional health and safety questionnaire does ask staff the extent to which they agree or disagree with the comment 'Food and catering facilities for staff are poor'. Another quality marker is the Food for Life Catering Mark led by the Soil Association. The catering mark involves an independent audit of caterers, providing external independent accreditation for raising food standards. It offers food providers accreditation for taking steps to improve the food they serve, using fresh ingredients which are free from trans fats, a reduction in harmful additives and genetically modified food and higher animal welfare, and cooking more meals from scratch.<sup>1</sup> The mark is recognised as a sign of food quality and sustainability and has been cited by NHS England as a way to improve hospital food.<sup>9</sup>

Hospitals currently operate a variety of different models of food provision for patients, staff and visitors. These vary from on-site cooking to bought-in/ delivered meals and from NHS-employed staff to contract caterers. The different models are described by Edwards<sup>18</sup> as cook-serve – a 'traditional' catering operation where food is prepared and cooked onsite; cook-chill, where food is prepared, chilled and then 'regenerated' (reheated) at local or ward level, and cook-freeze, where food is prepared, then frozen and then regenerated at ward kitchen or trolley level. There has been a trend to move from cook-serve methods to cook-chill and cook-freeze methods for patient food, with a significant reduction in the catering infrastructure in hospitals. Food is provided through external contracts from a limited number of sub-contractors operating at scale in a variety of sectors, including education and care homes. These meals are prepared in large regional centres and then delivered as cook-chill meals to their destination, where they are 'regenerated' (reheated) and served on the ward. There is evidence from Australia<sup>19</sup> that the introduction of cook-chill systems improved the quality of food in hospitals in New South Wales from 1986 to 2003. The scale of provision is substantial, with an estimated 134 million meals served every year by around 300 NHS Trusts/Boards in the UK.<sup>20</sup>

In contrast to patient food, staff and visitor food is usually still provided locally. Depending on what type of provision is available, hospital caterers are well placed to support local producers and suppliers through their food procurement contracts, which are measures that can lead to the creation of local employment, business development opportunities and environmental dividends.<sup>21</sup> There are an estimated

1.5 million people working in the NHS<sup>22</sup> and significant numbers of visitors to hospitals, hence issues of access and quality of food available to staff and visitors are significant. In England, adults are estimated to consume at least one-third of their daily calorie intake while at places of work.<sup>23</sup>

While some work has been done to improve the assessment of nutritional status of patients and on ensuring adequate nutrition and feeding,<sup>24</sup> there is little evidence regarding ‘whole system’ approach to hospital food or initiatives linking sustainability and health. One notable example is from New York City where Moran et al.<sup>25</sup> report on a Healthy Hospital Food Initiative that developed specific nutrition standards for meals for patients, staff and visitors. Using the Healthy Hospital Food Initiative framework, hospitals significantly improved the nutritional quality of regular-diet patient menus. The standards were applied across hospitals of varying sizes, locations, menu types and food service operations, indicating feasibility of this framework in a range of hospital settings. This approach was also used to improve the quality of staff and visitor food and showed an improvement in the nutritional value of meals offered.<sup>26</sup> Another example of a whole system approach is from Maryland<sup>27</sup> where hospitals worked as part of the Balanced Menu Challenge to reduce meat procurement by 20% and re-invest this in higher quality sustainable meat purchases.

Against this background, the Soil Association were keen to explore the applicability of the whole systems Food for Life approach in a hospital setting. They identified three hospital trusts to work with them as Pathfinder Pilots. Two key events in 2011 and 2014, hosted by Prince Charles at Clarence House for invited representatives of NHS Trusts, were pivotal in gaining support within these organisations. The Soil Association worked with these organisations to co-develop a framework for a whole setting approach to healthy and sustainable food tailored for the sector and then supported each organisation as they tried to establish and implement this approach, attending key steering group meetings, and hosting meetings of key individuals between the three organisations. The three organisations were Barts Health NHS Trust (Barts), Calderdale and Huddersfield NHS Foundation Trust (CHFT) and South Warwickshire NHS Foundation Trust (SWFT). Barts is the largest NHS Trust in England, comprising six hospitals across four sites with approximately 15,000 staff. The Trust serves the population of East London, an ethnically diverse population with areas of significant social disadvantage of approximately 2.5 million people. CHFT runs hospitals in Huddersfield (the Huddersfield Royal Infirmary, HRI) and Halifax (the Calderdale Royal Hospital, CRH), plus local outreach services. The Trust serves more than 100,000 inpatients annually, and has around 6000 staff. SWFT includes one main hospital (Warwick), three community hospitals, and a full range of community services. Warwick Hospital has 350 beds and provides a wide range of day care, inpatient and diagnostic services. This study aimed to evaluate the impact and challenges of implementing a Food for Life approach within the three pilot NHS sites.

## **Methods**

The research used a key stakeholder case study design,<sup>28</sup> focusing on the three hospital trusts who had agreed to pilot the Food for Life approach. It was informed by theory of change approach to explore inputs, outputs, outcomes and impact to provide evidence of what works when Food for Life moves into new settings.<sup>29</sup> It used qualitative methods focused on semi-structured interviews and documentary analysis. In each of the three NHS trusts participating in the case study research, a range of staff identified as being involved in the Food for Life Pathfinder Pilots were interviewed (SG and HP). In those hospitals which were operating a Food for Life steering group this was the focus for participation. Interviewees included strategic managers, hotel services managers, matrons, sustainability leads and staff wellbeing coordinators. Where appropriate key contacts from external catering contractors were also interviewed. Seven staff from Barts, nine from CHFT and nine from SWFT were included. Two strategic contacts from the Soil Association were interviewed in relation to their role in developing FFLP's work with hospitals, and partnership with the Pathfinder Pilots. Representatives of the Food for Life Catering Mark team were also interviewed with a focus on their engagement with the case-study hospitals. Confidential one-to-one interviews lasting between 30 and 60 min were audio recorded. Questions were designed specifically to ascertain the perspective of stakeholders dependent on their involvement and role. Additional data were collected through documentary evidence provided within the setting including action plans, meeting notes and communication materials (internal and external). Research data were analysed thematically with analysis cross-checked between two members of the research team. It followed a 'theory of change' approach to evaluation to examine lead informants' interpretation of the programme operation and context.<sup>29</sup> Following Braun and Clarke,<sup>30</sup> each interviewer organised data according to initial themes. The interview team then compared these results to compile dominant themes. This approach allowed movement from raw data to abstraction in the analytical process, without losing the 'voice' of participants.<sup>31</sup> Ethical approval for the study was given by the UWE, Bristol Ethics Committee, and local NHS Research offices were contacted to ensure adherence to local procedures.

## **Findings**

A number of areas emerged as key themes from the interviews: co-development and implementation of the Food for Life framework; influencing contracting processes; measuring quality of patient food; food for staff and visitors; the role of food in hospitals, longer term sustainability and impact. Where thought to be helpful, quotes from those interviewed are included to illustrate specific points.

### *Co-development and implementation of the Food for Life framework*

The Food for Life framework was developed in collaboration between the three Pathfinder Pilot organisations and the Food for Life team and proposes a whole setting approach to food health

promotion in hospitals through activity organised around six themes: leadership for health promoting hospital; staff health and wellbeing; patient food experience; community and partnerships; food retail and vending; and catering quality (Figure 1). The Food for Life framework was seen by participants as a helpful map to the Pathfinder Pilots, and the regular external input from the Food for Life team was seen as important in maintaining momentum. There was a sense that activity around food would have happened without Food for Life and the Pathfinder Pilot process, particularly due to the Commissioning for Quality and Innovation – but that the pilot extended the scope of activity, brought new issues into focus and accelerated progress. It is also important to note that Food for Life had a high-level role in influencing the development of the Commissioning for Quality and Innovation and influencing NHS Trusts to adopt it, and that the SA has also supported the introduction of a new requirement for all NHS Trusts to prepare a food and drink strategy, which stakeholders identified as facilitating engagement with a whole setting approach to food in hospitals.

The research team considered that the evidence from interviewees and documentary analysis in all three case studies demonstrated that a Food for Life approach can be effectively translated into the ‘new setting’ of hospitals, despite the challenges involved. It can under-pin a systems approach in hospital settings, and where supported by appropriate leadership and a multidisciplinary approach can stimulate joined-up thinking about food for patients, visitors and staff, the clinical needs of different patient groups, the dining experience, nutrition for patients at discharge and the development of growing spaces within the estate. A typical quote was:

Food for Life has brought us together on a common goal; so much going on when you put it all together on paper.

However, interviewees felt that the growing element of Food for Life as implemented in schools does not map so clearly onto the main functions of hospitals, although it has been enthusiastically welcomed, primarily in relation to staff wellbeing, and creating therapeutic environments for staff, patients and visitors. There were concerns about the feasibility of ensuring a sufficiently regular supply of food from these sources, and this was perceived to be a limit to the potential for on-site food growing. The notion of growing food for use in hospitals had limited appeal to participants due to problems of the security of food supply needed for large scale catering, but was perceived to have potential to be used to enhance staff health and wellbeing, and to help develop green therapeutic environments for patients, staff and visitors within Trusts – which reflect and support wider NHS commitments to sustainable development.<sup>32</sup> There were also seen to be opportunities to link to the wider community around the hospital through these activities.

*Influencing contracting processes*

Arrangements for food provision differed across the three sites, and included cook-chill services for patient food, and different external contractors running retail outlets for staff and visitors. Patient food was generally part of a suite of externally contracted services such as cleaning, laundry and portering managed by estates departments. These contractors then subcontract patient food provision from one of the small number of catering companies that provide cook-chill plated meals to hospitals, that are then ‘regenerated’, i.e. re-heated on trolleys at ward level. These hospitals have minimal kitchen space and patient food preparation areas in the hospitals are limited to making salads, snacks or soups from scratch. However, the potential to offer high-quality homemade soups and nourishing snacks at local level was increasingly recognised in the pilot sites. In contrast, staff and retail restaurants do have facilities to offer a selection of meals cooked from scratch and prepared on-site. Contracts run for different period of times, with different suppliers and specifications of food quality and standards within the contracts. The complexity of contracts makes identifying key levers to drive change difficult. It is easier to work to change staff and visitor food, which is generally prepared on-site, than to influence those preparing patient food. However, engagement with Food for Life was seen to have been a driver to review this area, and all contracts coming up for renewal had been substantially reviewed and quality measures such as Food for Life Catering Mark added. The Food for Life Catering Mark is seen as an important external quality indicator and this externality was helpful in ‘Trusts’ negotiation with contractors. The tender specifications and monitoring of external contracts frequently rests with estates departments, and there may be little input from catering services into these processes. The complexity of multiple Trust contracts to provide food for patients, staff and visitors in and out of hours, and the limited number of key players in this field offer potential opportunities for the Soil Association for negotiation and influence at national/organisation level rather than individual Trust level.

Obstacles to improving food lie in how contracts are organised and trust reliance on external contractors, and how/when they can be amended.

The Food for Life Programme has stimulated a focus on fresh food and local suppliers for patient and visitors; It has put focus back on food quality and provenance – not just type of food . . . – there is public health demand to know what you are eating.

### *Measuring quality of patient food*

Respondents identified challenges measuring improvements in quality of patient food. Current mechanisms for monitoring food quality for staff and patients are limited, with the PLACE survey being seen as an inadequate reflection of quality. Concerns were expressed that the PLACE results focussed on choice at the expense of quality. As in the previous section, the Food for Life Catering Mark was seen by participants as an important external quality indicator for food. However, because of the way the Food for Life Catering Mark is constructed, with a focus on locally sourced food, it is generally not possible to use this as a measure of quality for food that is not produced locally, to the frustration of several

respondents. This means it cannot be used for patient food generated by centralised cook-chill systems, unless models of delivery change to more locally based production facilities. Several interviewees expressed an aspiration for more – or even all food – to be prepared from scratch on-site, because this was felt to be a way to ensure better quality and more appealing meals. This mirrors Food for Life’s preferred version of public catering. But participants also felt that infrastructural constraints such as kitchen size and staffing mean this is unlikely to happen, so this wish translates into a pragmatic attempt to prepare as much fresh food on-site as possible. There was also recognition that the quality of cook-chill meals is generally very high, and provides excellent choice for specialist diets that are increasingly needed. In contrast, it is not always desirable to rely on in-house production as the quality can be variable and depends on staff ability, and access to trained catering staff. It was noted that patients often mistake bulk bought cook-chill meals for fresh cooked.

#### *Food for staff and visitors*

The quality of food for staff and the limitations of current out of hours offerings emerge as a key issue. These are generally limited to vending services delivered by external contractors, microwave ovens for staff to bring in their own food, and fast food companies who deliver directly to the hospital. The potential role of hospitals as exemplars of healthy eating in their local communities was highlighted, making it important to address the challenge of delivering healthier vending options. Participants were not clear about how this could be delivered at a Trust level, and whether effective levers are available locally. A clear example emerged of vending contracts at one hospital supplied by a catering contract which is sub-contracted on a national arrangement, hence it is not easy for local stakeholders to drive change within the wider system. Food for staff and visitors is more amenable to meeting Food for Life Catering Mark standards because it is at a smaller scale and more directly controlled by the hospital trusts, hence this has been done at all three pathfinder trusts. There are anecdotal reports that this has led to improved food quality and that use of the facilities by staff and visitors has increased.

. . . and now the customers have noticed a difference – a local air ambulance driver commented that ‘I bring my wife here – the food is absolutely fantastic’. There are now patients popping back into the hospital (after they have been discharged) to eat the food and patients attributing their recovery to the quality of the food.

#### *The role of food in hospitals*

Some of those interviewed highlighted the need for a broader discussion about the fundamental issues about the goals and function of food in hospitals. Some of the key goals regarding patients are to ensure sufficient calorie intake, offer choices for special dietary needs (both clinical and cultural) and acceptable



patient experience. The extent to which the food offering is about healthier choices – or providing healthy options – which may be quite different to the retail and food offering outside the hospitals (or on-site retail by external companies) presents challenges. One view strongly expressed was that a visit to a hospital should be an opportunity to model an exemplar food offering, for staff to be role models, and to provide knowledge about how to make those healthier choices. It was considered by others that a visit to hospital can be the point at which to make a difference in lifestyle and to be an education; however, there were acknowledged to be tensions between this and the need to offer foods which people will eat, and to retain choice. There was a clear perception among participants that clinical staff – both medical and nursing – had lost sight of the importance of nutrition as a key part of the care of patients.

nursing staff need to know more about food – if no one is eating or drinking they won't recover despite great operation and great medication. If blind, can't use cutlery; more attention paid to getting food eaten; nursing and facilities working together on ward to help patients eat.

recognition that food is an important part of people getting better – medicine is seen as the key – but hydration and malnutrition need recognition.

Participants reported that engagement with Food for Life had helped thinking about the need to consider food and had led to actions around recreating a focus on mealtimes, with communal dining areas, lost when day rooms were removed, being recreated on wards in all three hospitals. Consideration was also being given to developing discharge food packs for patients;

Food in hospitals is a key element in recovery, and is often the highlight of the day; patients have often lost weight in hospital as patients not helped to eat and the quality of the food is poor.

### *Longer term sustainability*

While NHS Trusts initially committed to Food for Life and the Commissioning for Quality and Innovation for one year, the new requirement to produce a food and drink strategy was seen as providing a longer term organisational focus, and signs that the pilots were making longer term funding commitments to Food for Life. It was recognised that leadership was important in keeping this topic on the agenda:

just the size and pace of a hospital environment, and the fact that food's not always the most important thing; [there are] competing priorities.

### *Impact*

Interviewees in each of the three organisations perceived a number of positive outcomes arising from piloting the Food for Life framework. These included better quality patient food being served and receiving positive feedback from patients; healthier choices for staff and visitor dining and working

towards this for vending; developing nutritional support for patients at discharge; trialling innovative food-focused measures such as ward dining for patients; better co-ordination of food related activity; improved understanding across the organisation of the role food plays in patient care and recovery.

## **Discussion**

A combination of internal commitment and appropriate external drivers is key to driving organisation wide change within NHS Trusts. Those Trusts who have effectively pursued this agenda have generally had a high-level champion with a personal commitment to food, who have to a greater or lesser extent mobilised a multidisciplinary group to look at food issues in a systemic way across the organisation. This has been facilitated by external financial support, from Clinical Commissioning Groups and Directors of Public Health in local authorities. The hospital food Commissioning for Quality and Innovation has provided a useful incentive to improve food, and could support longer term planning if they were agreed beyond an annual commitment. The new requirement to have a Food and Drink Strategy for every Trust should offer opportunities to keep food on the agenda, which is significant given the many competing demands hospitals face.

The current contracting arrangements for patient, staff and visitor food within the NHS are complex, and may have cost and choice as a priority rather than quality and sustainability of food. As the requirement for specialist diets and culturally sensitive meals increases, being able to respond to these needs is important. Staff involved in these processes (often led by estates teams) may not always have the knowledge and skills to negotiate them, particularly given the scale and complexity of the systems involved. However, there is potential significant enthusiasm and interest from those leading contracts to include quality measures such as Food for Life Catering Mark in their contracts; and increased engagement in work as they work with local suppliers. Although hospitals are urged to meet the nutritional standards outlined by Public Health England,<sup>9</sup> it is not clear what mechanisms are in place to audit whether these standards are met. In contrast, the Healthy Hospital Food Initiative<sup>33</sup> in New York City is highly prescriptive about calorie, fat, and salt content of foods for patient, staff, visitor and vending machines.

The current mechanisms used to provide evidence of the quality of patient and staff food in hospitals are limited. The annual PLACE survey focuses on choice availability with a limited focus on food quality. The NHS staff survey core questionnaire does not include a question about food, although this is included within the Optional Health and Safety module where staff are asked to state to what extent they agree or disagree with the statement that 'Food and catering facilities for staff are poor'. It is difficult to ascertain how much this module has been taken up. There is a particular issue for staff who work out of hours such as nursing and junior doctors, and similar issues have been described in the US.<sup>34</sup> The case

studies identified a lack of quality food provision for staff working out of hours with a high reliance on vending machines with items with long shelf life and preponderance of energy dense food and snacks and sugary drinks. There was a recognition that the provision of high-quality food environment for staff can increase staff and visitors eating in canteens/local food outlets and have a positive impact on staff wellbeing.

While the Food for Life Catering Mark has been seen as an external marker of good-quality food in a number of settings, as currently constructed it is limited as a marker of quality for patient food in many hospitals as a significant proportion do not prepare and produce food on-site but use cook-chill systems. The catering infrastructure in hospital estates has dramatically reduced over the past few decades. Patient food services are often provided through external contracts embracing a variety of services including cleaning and laundry, with food often supplied by sub-contractors. Because these meals are prepared in large regional centres and then delivered to their destination, they cannot meet Food for Life Catering Mark standards, irrespective of the nature of the ingredients used in food preparation. Alternative models of local preparation and distribution networks would be required to achieve this. In contrast, Food for Life Catering Mark is widely applicable as a marker of quality for staff and visitor food within hospitals. On the other hand, the dominance of a small number of companies preparing cookchill meals does mean rapid potential for changes to be made rapidly across the sector if piloted and adopted in one part of the organisation. Changes made within contracts in one Trust have the potential for impact across a number of sites if they are adopted throughout the organisation.

Significant investment in hospital facilities to prepare patient food seems unlikely, and there are doubts as to whether there exists sufficient skilled catering staff to provision them. Several interviewees reported that they perceive cook-chill models to offer significant benefits in terms of the range of food offered, and that the quality of food 'regenerated' (re-heated) at ward level is very high. This means many hospitals will wish to continue with this model. It may be possible, however, to improve the content of the food offering, and to supplement it with limited locally prepared food such as soups, sandwiches and salads. Engagement with Food for Life at the pilot sites had stimulated activity in this area.

While the role of good food as a contributor to patient care and recovery can be a strong driver in the setting, given it is directly linked to hospitals' core functions, there is limited recognition of this among nursing and medical staff. To embed this within Trust practices, it is important to emphasise connections between food and the culture of caring for patients within the NHS. A focus on the social aspect of dining may be helpful in recovery, and improving the dining experience with communal dining areas within wards to encourage food intake and socialisation. However, many patients now have a very short stay in hospital and the nutritional impact of hospital food may be very limited.

Some of the key goals for patients are to ensure sufficient calorie intake, ensuring choice for those with dietary needs and acceptable patient experience. There are opportunities for a visit to a hospital to provide exposure to an exemplar food offering, and to provide education about making healthier choices, making a visit to the hospital the point at which to influence lifestyles. However, the extent to which the food offering should focus on healthy choices or removing unhealthy options is open to debate, particularly as healthy food may be quite different to those ordinarily preferred by patients and staff. There are also tensions between recognised models of healthy eating within a healthcare setting, and in providing the 'normal' diet of both staff and patients who are at a vulnerable stage. However, the opportunity to model best practice in diet and nutrition is important, and may be more important for staff and visitors.

Improving the sustainability of patient hospital food is challenging with current models of centralised food preparation and delivery. Although this centralised model provides opportunities for change at scale, and advantages in terms of food quality, consistency, choice and reduction in waste, identifying the key levers may be difficult for single organisations. For example, replication of the Balanced Menus Challenge, a US-based effort to bring sustainably produced meat available into healthcare settings whereby participating hospitals reduce meat purchases by 20% of their budget, then invest the savings into purchasing sustainably produced meat,<sup>27</sup> could be effectively implemented at scale should the right drivers be identified. One respondent suggested that local place-based central meal preparation facilities working across sectors might be a way forward.

Moving from a focus on catering and quality of patient food to one that looks at the impact of the food system as a whole, with a focus on overall sustainability, impacts on local businesses from procurement and carbon emissions from food production and included subsequent transport to the hospitals would require a radical reframing, but has potential for significant gains.

## **Conclusion**

Interviewees in each of the three organisations perceived a number of positive outcomes arising from piloting the Food for Life framework. Key areas identified needing action include healthier choices for staff and visitor dining particularly out of hours, improving understanding particularly among clinical staff in the role food plays in patient care and recovery, developing nutritional support for patients at discharge and trialling innovative food-focused measures such as ward dining for patients. However, hospitals face many competing priorities, and without continued support and clearer performance measures, this area of work may lose focus and impetus. Current models of centralised cook-chill meals for patients may offer opportunities to influence specifications at national level to improve nutrition, quality and sustainability.

## References

1. Food for Life Partnership. What is FFLP?, [www.foodforlife.org.uk/aboutus](http://www.foodforlife.org.uk/aboutus) (accessed 2 August 2017).
2. Jones M, Dailami N, Weitkamp E, Kimberlee R, Salmon D and Orme J. Food sustainability education as a route to healthier eating: evaluation of a multi-component school programme in English primary schools. *Health Edu Res* 2012; 27: 448–458.
3. Orme J, Jones M, Kimberlee R, et al. Food for life partnership evaluation: full report. Bristol: University of the West of England, 2011.
4. Kersley H and Knuutila A. The benefits of procuring school meals through the Food For Life Partnership: An economic analysis. London: NEF, 2011.
5. Salmon D, Gray S, Jones M, Means R and Pitt H. Intersectoral transfer of the food for life whole settings framework. *Health Promot Int*, <https://doi.org/10.1093/heapro/dax017> (2017, accessed 26 July 2017).
6. Gray S, Means R, Orme J, Pitt H, Jones M and Salmon D. Improving hospital food: evaluating the impact of the UK Food for Life Partnership. *Eur J Public Health* 2015; 25: 380.
7. Age UK. Still hungry to be heard: the scandal of people in later life becoming malnourished in hospital. London: Age UK, 2010.
8. Sustain. You fund it, government buys it and we all pay, [www.sustainweb.org/pdf/YouFundIt\\_LowRes.pdf](http://www.sustainweb.org/pdf/YouFundIt_LowRes.pdf) (2010, accessed 26 July 2017).
9. Hospital Food Standards Panel. Summary cost benefit analysis, [www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/399349/hospital-food-cbanalysis.pdf](http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/399349/hospital-food-cbanalysis.pdf) (2014, accessed 26 July 2017).
10. National Institute for Clinical Excellence. Managing nutrition in hospital – a recipe for quality. London: NICE, 2000.
11. Francis R. Report of the mid Staffordshire NHS Foundation Trust public inquiry, [www.midstaffspublicinquir.com/report](http://www.midstaffspublicinquir.com/report) (2013, accessed 26 July 2017).
12. Russell C and Elia M. Nutrition screening surveys in hospitals in the UK 2007–11 Redditch. BAPEN, [www.bapen.org.uk/pdfs/nsw/bapen-nsw-uk.pdf](http://www.bapen.org.uk/pdfs/nsw/bapen-nsw-uk.pdf) (2014, accessed 26 July 2017).
13. Dalmeny K and Jackson A. A decade of hospital food failure: a review of ten years of failed voluntary initiatives to improve hospital food. Sustain, [www.sustainweb.org/pdf2/GFFOM\\_voluntary\\_initiatives\\_fail\\_hospital\\_food\\_Dec09.pdf](http://www.sustainweb.org/pdf2/GFFOM_voluntary_initiatives_fail_hospital_food_Dec09.pdf) (2009, accessed 26 July 2017).
14. Cockcroft S. Meals on wheels! Fleet of robots now provide food for 1,000 patients at £430m super hospital (but will it make the food taste any better?). *Daily Mail*, 2 September 2014, <http://www.dailymail.co.uk/news/article-2740911/Meals-wheels-Fleet-robots-providingfood-1-000-patients-430m-super-hospital-open-doorsuse-lifts-t-washing-up.html> (2014, accessed 2 Aug 2017).

15. Commissioning for Quality and Innovation (CQUIN). NHS England, [www.england.nhs.uk/nhs-standardcontract/cquin/cquin-17-19/](http://www.england.nhs.uk/nhs-standardcontract/cquin/cquin-17-19/) (accessed 26 July 2017).
16. NHS England. PLACE survey, [www.england.nhs.uk/ourwork/qual-clin-lead/place/](http://www.england.nhs.uk/ourwork/qual-clin-lead/place/) (2013, accessed 26 July 2017).
17. NHS Staff Survey, [www.nhsstaffsurveys.com/Page/1058/Survey-Documents/Survey-Documents/](http://www.nhsstaffsurveys.com/Page/1058/Survey-Documents/Survey-Documents/) (2015, accessed 26 July 2017).
18. Edwards JSA and Hartwell HJ. Hospital food service: a comparative analysis of systems and introducing the 'Steamplicity' concept. *J Hum Nutr Diet* 2006; 19: 421–430.
19. McClelland A and Williams P. Trend to better nutrition on Australian hospital menus 1986–2001 and the impact of cook-chill food service systems. *J Hum Nutr Diet* 2003; 16: 245–256.
20. Hospital Estates and Facilities Statistics 2010-11 Main Findings. [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/216684/dh\\_130733.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216684/dh_130733.pdf) (accessed 2 Aug 2017).
21. Morgan K and Morley A. The public plate: harnessing the power of purchase. In: Marsden T and Morley A (eds) *Sustainable food systems: building a new paradigm*. London: Routledge, 2014, pp. 84–102.
22. NHS Choices. About the NHS, [www.nhs.uk/NHSEngland/thenhs/about/Pages/overview.aspx](http://www.nhs.uk/NHSEngland/thenhs/about/Pages/overview.aspx) (2016, accessed 26 July 2017).
23. NHS. NHS choices, work place health. NHS, [www.nhs.uk/Livewell/workplacehealth/Pages/workplaceoverview.aspx](http://www.nhs.uk/Livewell/workplacehealth/Pages/workplaceoverview.aspx) (2015, accessed 26 July 2017).
24. Weekes CE, Spiro A, Baldwin C, et al. A review of the evidence for the impact of improving nutritional care on nutritional and clinical outcomes and cost. *J Hum Nutr Diet* 2009; 22: 324–335.
25. Moran A, Lederer A and Johnson Curtis C. Use of nutrition standards to improve nutritional quality of hospital patient meals: findings from New York City's Healthy Hospital Food Initiative. *J Acad Nutr Diet* 2015; 115: 1847–1854.
26. Moran A, Krepp EM, Johnson Curtis C and Lederer A. An intervention to increase availability of healthy foods and beverages in New York City Hospitals: the healthy hospital food initiative, 2010–2014. *Prev Chronic Dis* 2016; 13: E77.
27. Ranke TD, Mitchell CL, St George DM and D'Adamo CR. Evaluation of the Balanced Menus Challenge: a healthy food and sustainability programme in hospitals in Maryland. *Public Health Nutr* 2015; 18: 2341–2349.
28. Yin RK. *Case-study research: design and methods (Applied social research methods)*. London: SAGE Publications, 2013.
29. Connell J and Kubisch A. Applying a theory of change approach to the evaluation of comprehensive community initiatives. In: Fullbright A, Kubisch A and Connell J (eds) *New approaches to evaluating community initiatives: theory measurement and analysis*. USA: Aspen Institute, 1998, pp.15–44.
30. Braun V and Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology* 2006; 3:77–101.

31. Ritchie J, Spencer L and O'Connor W. Carrying out qualitative analysis. In: Ritchie J and Spencer J (eds) Qualitative research practice. London: Sage Publications, 2003, pp.295–346.
32. Sustainable development strategy for the health and care system 2014–2020, <http://www.sduhealth.org.uk/policy-strategy/engagement-resources.aspx> (2014, accessed 2 August 2017).
33. Healthy Hospital Food Initiative, [www1.nyc.gov/site/doh/health/health-topics/healthy-hospital-foodinitiatives](http://www1.nyc.gov/site/doh/health/health-topics/healthy-hospital-foodinitiatives). page (2015, accessed 26 July 2017).
34. Hamidi MS, Boggild MK and Cheung AM. Running on empty: a review of nutrition and physicians' wellbeing. *Postgrad Med J* 2016; 92: 478–481.



Figure 1 Food for Life: hospital leaders framework developed by Soil Association.