



FOOD IN HEALTHCARE REPORT

Making Plant-Based Meals the Default: For A Healthier, More Sustainable NHS

Isabelle Sadler and Dr Shireen Kassam



Cover photos:

Top @Nattakorn Maneerat, Getty Images

Central @Kate Dunbar, NLMC 2024

Bottom @Unchalee-khun, Canva

Acknowledgements

We are grateful to members of the Plant-Based Health Professionals team and the Plants First Healthcare initiative for their feedback. We are also grateful to Greener by Default for inspiring and supporting this work.

Table of Contents

06	Introduction
11	What is a Sustainable Diet?
16	Global Examples
23	Learnings for Success
26	Public Attitudes
34	Where is the NHS Now?
39	Summary and Recommendations
42	Appendix
44	References



“Everyone has a vision in their minds when they think of hospital food – and it is rarely positive, so it is certainly time the food had a refresh. Plant-based dishes not only offer health, financial and climate benefits, but they are also colourful and flavoursome, and inclusive of all cultures.”

**Dr Shireen Kassam,
Founder of Plant-based Health Professionals UK and a
Consultant Haematologist and Honorary Senior Lecturer at
King’s College Hospital, London.**

Executive Summary

Healthcare institutions urgently need to adopt sustainable food practices that align with both health and environmental goals. Food production is a major contributor to greenhouse gas emissions and biodiversity loss; 70% of food-related emissions in the UK come from red meat and dairy alone. Increasing the consumption of plant-based meals, which have a 75% lower environmental impact, is essential for reducing these emissions and mitigating the effects on climate change.

For the UK's National Health Service (NHS), which has committed to achieving net-zero emissions by 2045, food and catering contribute 6% of its total emissions. Shifting to plant-based meals within the NHS offers a significant opportunity to reduce its carbon footprint, improve public health, and inspire patients to take healthy eating habits back into their own lives.

Evidence in this report suggests that such a transition could lower food costs and reduce the burden of diet-related chronic diseases, aligning with the NHS's sustainability and health objectives. The food currently offered in UK hospitals is highly variable and often does not meet the guidelines for sustainable diets. Survey data indicates that the public is largely neutral or supportive of a shift towards more plant-based meals, offering a significant opportunity for change. The report advocates for a "Plant-Based by

Default" strategy, where plant-based meals are the primary menu option but does not restrict choice. This approach has been successfully implemented in various settings, including NYC Health + Hospitals, which saw a 36% reduction in food-related carbon emissions within one year of implementation, as well as significant cost savings and high patient satisfaction. In Germany, 12 hospitals implemented the Planetary Health Diet, reporting minimal complaints and positive feedback from patients. Similar initiatives in Vancouver and other USA hospitals have demonstrated the health and environmental benefits of transitioning to plant-rich menus.

To achieve a more sustainable and health-focused food environment, the report recommends that UK hospitals and healthcare organisations commit to transitioning to plant-based menus as the default option for both patients and staff. Additionally, it calls for education on plant-based nutrition within healthcare institutions and the integration of plant-based catering for meetings and events. It proposes a collaborative approach that involves healthcare professionals, institutions, and broader community engagement. By implementing these recommendations, the NHS can lead the way in promoting a healthier, more sustainable future, contributing to global efforts to mitigate climate change and enhance population health.



**Food in
Healthcare: Plant-
Based by Default
for Human and
Planetary Health**

Unhealthy diets are now the leading cause of chronic ill health and premature death globally. In addition, the food system is a major driver of climate change and biodiversity loss. The National Health Service (NHS) in the UK was the first healthcare system in the world to declare a climate emergency and has committed to achieving net-zero emissions by 2045 [1]. The current global food system is responsible for more than a third of greenhouse gas emissions with animal agriculture contributing more than half of these emissions [2,3]. In the UK, 70% of our total food-related emissions come from red meat and dairy production alone [4]. Furthermore, industrial animal farming practices are associated with the rise of antibiotic-resistant infections [5], the development of zoonotic diseases with pandemic potential [6] and increases in particulate air pollution and ground level ozone [7]. Without addressing food, the UK will not be able to meet its climate and nature commitments [8]. Just eliminating beef and

dairy would reduce food-related emissions by half [3]. Plant-based meals have up to a 75% lower environmental and biodiversity impact across several metrics compared to meat-based meals, regardless of where and how the food is produced [9].

Six per cent of emissions in the NHS come from food and catering [10]. With over a million employees and 140 million meals served to hospital patients each year, increasing the proportion of plant-based meals served could have a significant impact on the carbon footprint of the NHS. £633 million is spent on inpatient food provision, yet studies have shown that a healthy, plant-based diet would cost a third less in the UK [11]. In addition, modelling studies have shown that any shift to more plant-based eating in healthcare and within wider society could bring significant financial benefits to the NHS by reducing the burden of chronic conditions, lowering the environmental impact of food provision, and directly lowering food costs [12,13].



The food provision within healthcare settings in the UK is highly variable and often does not meet guidance on healthy and sustainable diets [14,15]. There is a huge opportunity to positively influence both health and environmental goals by shifting diets away from meat and dairy and normalising plant-based meals as the default option. This approach aligns well with international recommendations to adopt a ‘One Health’ approach to healthcare, the definition of which is *‘a collaborative, multisectoral, and transdisciplinary approach with the goal of achieving optimal health outcomes recognising the interconnection between people, animals, plants, and their shared environment’* [16].

The recently published Independent Investigation of the NHS in England by Lord Darzi reiterates the importance of prioritising a ‘Greener NHS’ and meeting carbon reduction goals [17]. In addition, the report highlights the

need for the NHS to significantly increase its focus on health promotion and disease prevention. It also makes the connection between poverty, food insecurity and access to healthy food and its direct impact on health inequalities and health outcomes. A focus on healthy, nutritious, sustainable diets within healthcare, including hospitals, could go a long way to addressing some of these key issues.

This report brings together the evidence supporting a shift to plant-based meals as the default option in healthcare, shares survey data documenting current attitudes towards plant-based meals and assesses the current state of hospital food provision. It concludes with recommendations for rapidly transitioning to a plant-based food environment within healthcare. We hope this report ignites enthusiasm amongst those within healthcare to act, since time is short to secure a liveable future for all.



What is Plant-Based by Default?

"Plant-based by default" is a strategy rooted in choice architecture, that uses default nudges to promote more sustainable and healthier food choices. Choice architecture refers to the design of the environment in which people make choices, where nudges subtly influence behaviour without restricting options [18,19]. The default nudge is an effective tool that presents plant-based meals as the preselected choice option [20], encouraging diners to choose these meals while still allowing them the choice to opt for meat if they prefer. Therefore, Plant-Based by Default menus offer and incentivise plant-based meals as the primary menu option without restricting choice – meat and other

animal products remain on the menu. This approach leverages the human tendency to stick with the default, which is often chosen through automatic and habitual processes, or perceived as the easiest or the recommended option [21]. Research has shown that defaults can successfully influence dietary behaviours, shifting choices towards plant-based meals and reducing meat consumption in various settings such as universities and institutional events [21,22]. By making plant-based options the norm, institutions like hospitals can nudge individuals toward healthier and more sustainable eating habits without limiting their freedom of choice. If this was to happen throughout NHS hospitals, it could scale to have a significant health and environmental impact.



Benefits and Adherence to a Plant-Based Diet in the UK

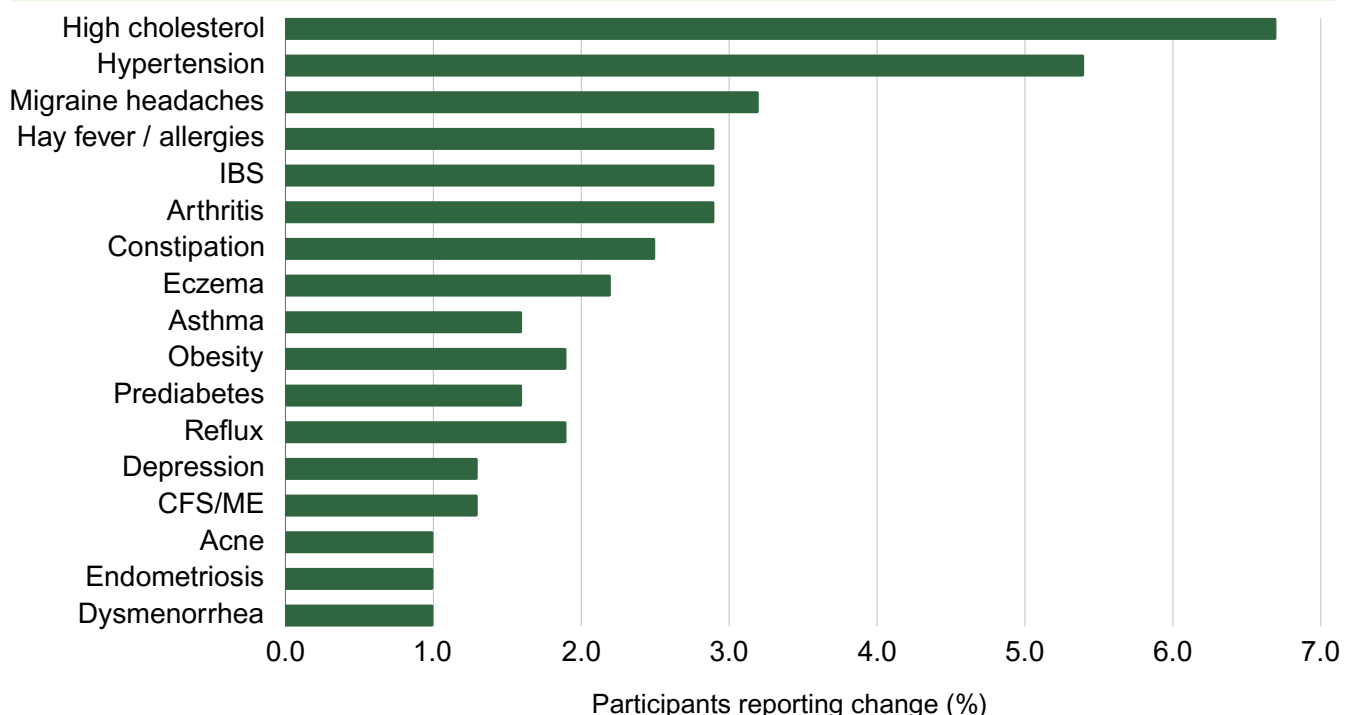
Our study published in the *Journal of Human Nutrition and Dietetics* reinforces the potential of plant-based diets to promote health and sustainability. The research surveyed 315 health-conscious adults following various plant-based diets. Most participants (61%) adhered to a whole food plant-based (WFPB) diet, and 28% followed a vegan diet [23]. Median time on a WFPB diet was 5 years (range 6 months to 50 years).

Weight loss was reported by 50% of participants, with a median loss of 6.4 kg. Participants also reported improvements in chronic conditions such as high cholesterol, high blood pressure, and IBS (Figure 1). Among the WFPB and vegan participants, medication use was reported by 28%. Polypharmacy (5+ medications) was reported in 1% of participants. Among the 50 participants aged 65 and over, polypharmacy

was reported in 2% of participants. Participants were consuming nutritionally sound diets, with a high consumption of fruits, vegetables, whole grains, and legumes, and lower intake of ultra-processed foods. 85% of vegans and WFPB dieters consumed meat alternatives once a week or less. Many used fortified plant-based milk alternatives and took essential supplements such as vitamin B12 (93%) and vitamin D (61%).

These findings suggest that plant-based diets, when well-planned, are sustainable and promote long-term health in community settings, offering significant potential for broader application in healthcare systems, including hospitals. By focusing on whole plant foods, these diets not only support individual health but also align with planetary health goals. The evidence from this study strengthens the case for incorporating plant-based options into hospital menus, as part of a wider shift toward promoting sustainable and health-optimising dietary patterns.

Figure 1 | Percentage of participants reporting health condition improvement with a plant-based diet





**Sustainable Diets:
What Are They
and How do we
Promote Them?**

The Food and Agriculture Organization (FAO) of the United Nations defines Sustainable Healthy Diets as "dietary patterns that promote all dimensions of individuals' health and wellbeing; have low environmental pressure and impact; are accessible, affordable, safe and equitable; and are culturally acceptable." [24]

Sustainable Dietary Patterns

Various sustainable dietary patterns have been developed and promoted in recent years. Research consistently shows that these diets are more environmentally sustainable than conventional diets, with significant reductions in greenhouse gas emissions and land use [25, 26]. The environmental benefits of these diets

generally correlate with a reduction in animal-sourced foods [26]. Additionally, sustainable diets are associated with positive health outcomes [25]. These include significant reductions in cardiovascular diseases, type 2 diabetes, certain cancers, and premature mortality [27–29]. While the specific content of these diets may vary, they typically emphasise higher consumption of plant-based foods and lower intake of animal-based and processed foods. One diet that has gained significant attention is the Planetary Health Diet, developed by the EAT-Lancet Commission, a leading authority on this topic. See Box 1 for different definitions and Box 2 for details on the Planetary Health Diet.

Box 1 | Definitions of different sustainable dietary patterns [30, 31].

Whole foods, plant-based: Focused on minimally processed plant foods such as fruits, vegetables, whole grains, legumes, nuts, and seeds, while avoiding refined and processed ingredients like sugars, oils, and artificial additives.

Vegan: A diet that excludes all animal products, including dairy, eggs, meat, fish, seafood, and honey, and only includes plant-sourced foods. This is sometimes used interchangeably with plant-based in research and food marketing, but this does not always mean strictly vegan.

Lacto-ovo-vegetarian: Excludes red meat, poultry, fish, and seafood but includes dairy products, eggs, and honey.

Pescatarian: Excludes red meat and poultry, but includes fish, seafood, dairy products, eggs, and honey.

Flexitarian: Mostly focused on plant-sourced foods, but occasionally includes meat, fish, and other animal-sourced foods. This also overlaps with terms such as plant-rich and plant-forward where plant foods make up most of the diet, but animal foods are not completely excluded.

Mediterranean: A plant-rich diet based on the traditional dietary patterns of countries bordering the Mediterranean Sea. It varies between regions but typically emphasises consuming a high intake of fruits, vegetables, whole grains, legumes, nuts, and olive oil, with moderate consumption of fish, poultry, and dairy and limited intake of red meat, and highly processed foods.

Box 2 | The Planetary Health Diet

The Planetary Health Diet is a reference diet that aims to feed and nourish 10 billion people by 2050 whilst keeping within planetary boundaries. Developed by the EAT-Lancet Commission, it emphasises a diet focused on fruits, vegetables, greens, and whole grains, with a reduced consumption of meat, fish, eggs, refined cereals, and tubers [32]. Based on global food system modelling, the adoption of this dietary pattern could reduce GHG emissions by 50% in 2050 [32]. Higher adherence to the Planetary Health Diet is also associated with lower risk of several conditions including total and cause-specific mortality [33], cardiovascular disease [34], and depression and anxiety [35]. The model is flexible, so that it can be adapted to traditional and regional diet patterns. Therefore, it does not prescribe an exact diet for the global population but provides wide ranges of food intakes for country-specific adaptations. Figure 2 shows the reference diet amounts; the ranges can be seen in the original report by EAT-lancet. In practical terms, this requires more than 85% of energy

to come from plant foods and if animal-sourced foods are consumed, this should be no more than one portion of red meat (98g), two portions of poultry (200g), 3 eggs and two portions of fish (198g) per week. Dairy is considered optional and should be limited to 250g per day [36].

Current food-based dietary guidelines for the UK (the Eatwell guide) are not compatible with these sustainability goals [37]. For the typical UK diet to be compatible, meat consumption would have to be reduced by up to 70%, dairy and egg consumption by 25% and 32% respectively, whilst increasing consumption of fruit, vegetables, and legumes by 50% [38]. Various healthcare organisations and institutions have begun to implement the Planetary Health Diet as a model for healthier, more sustainable food services, aiming to align their practices with global sustainability goals and improve patient and community health outcomes. Some of these examples are discussed in the next section of this report.

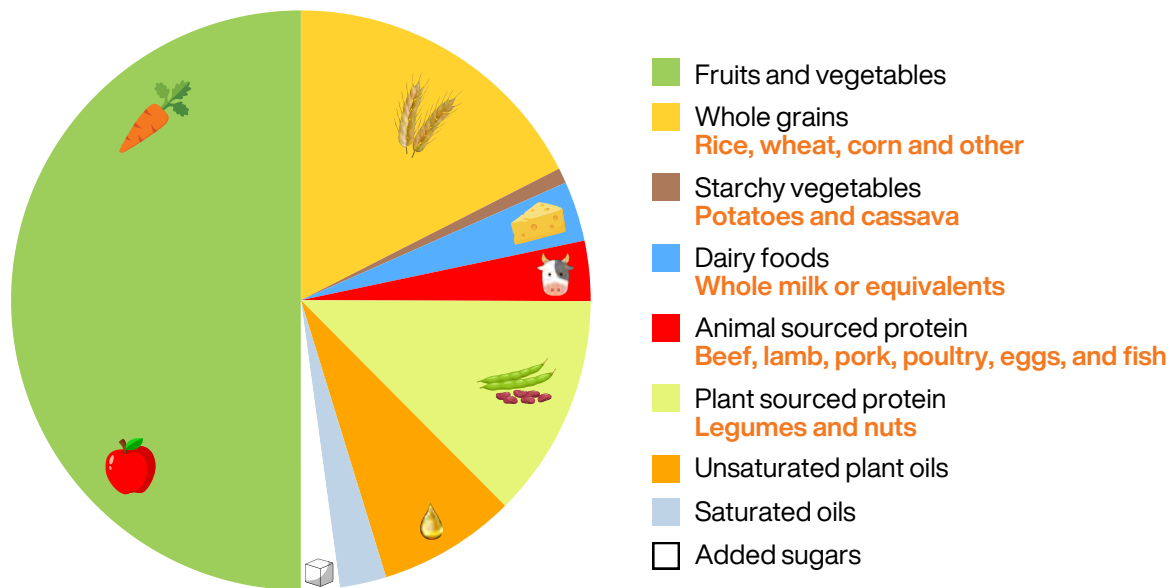


Figure 2 | An overview of the planetary health plate. By volume half of the plate is filled with fruits and vegetables. The other half is represented as contribution to caloric intake, and consists mostly of whole grains, plant protein and unsaturated plant oils. Reproduced from the Eat-Lancet report [32].

Strategies to Shift to a Sustainable Diet

In recent years, research has focused on how to shift dietary behaviour towards sustainable choices. Most guidance on how to create a low-carbon food environment comes from ‘The food service playbook for promoting sustainable food choices’, by the World Resources Institute (WRI) [31]. This resource guides players in the food service industry, both public and private, to create a food environment that fosters low-carbon food choices. Across 6 categories, 90 behaviour change techniques are presented as the most effective and most feasible to encourage consumers to choose more plant-rich dishes and less meat. This includes 18 priority techniques that are the primary recommendations to adopt as soon as possible. The techniques in the playbook are relevant for hospital canteens, and some can also be applied to hospital inpatient menus, especially given the overlap with recommendations made in the British Dietetic Association (BDA) Nutrition and Hydration Digest [39]. Examples of techniques from each category are outlined in Table 1.

In the US, a trial conducted at universities demonstrated that shifting to a plant-based by

default system can significantly impact food choices [21]. On days when plant-based options were the default in cafeterias, the average rate of students choosing plant-based dishes increased by 58.3 percent, accompanied by a 57.2 percent reduction in meat dishes. The study also found a 26.1 percent reduction in total servings on plant-based default days, which may suggest that some diners opted for meat dishes from other stations. But even in the worst-case scenario— assuming 100 percent of these patrons opted for meat dishes elsewhere—the intervention still led to a minimum 21.4 percent reduction in meat servings, demonstrating the effectiveness of the plant-based default in reducing meat consumption.

The results of this study come alongside the rollout of a DefaultVeg Pilot across nearly 400 university and college campuses across the USA, serving approximately 1 million students [40]. The plant-based by default approach is embedded in the menu design at Sodexo dining halls unless the school actively opts out. Every dining hall includes two stations that encourage students to choose plant-based meals: one that is entirely plant-based and one that alternates plant-based and animal-based meals as the main offering each day.

KEY FINDINGS

58.3% ↑ plant-based dishes

57.2% ↓ meat-based dishes









Category	Description	Example(s) of priority techniques
 PRODUCT	Techniques that involve modifying the food being served.	Improve the flavour and texture of plant-rich dishes; Increase the ratio of plant-rich to meat-based dishes available; Increase the variety of plant-rich dishes on offer.
 PRESENTATION	Techniques that involve modifying the language, imagery, and layout of menus, signs, and labels.	Remove unappealing language describing plant-rich dishes from menus (e.g., meat-free, vegetarian); Use indulgent language on menus to describe plant-rich dishes.
 PEOPLE	Techniques that target food service employees.	Train chefs and food preparation staff how to cook and prepare appealing plant-rich dishes.
 PROMOTION	Techniques that include communication, marketing, advertising, and campaign approaches.	Publicise the environmental benefits, local benefits, and/or the taste and flavour benefits of plant-rich dishes using marketing materials (e.g., posters, social media, leaflets, table tents, or television screens)
 PRICE	Techniques that involve modifying the cost of food or otherwise incentivising or disincentivising specific choices.	Run cross-product promotions (e.g., meal deals, set menus) on plant-rich dishes and selected drinks, side dishes, or desserts.
 PLACEMENT	Techniques that involve modifying food displays and the physical food service environment	Integrate plant-based meat alternatives into meat sections in a display (e.g., buffets, shelves, food carts, or stations); Introduce a dedicated plant-rich food section (e.g., buffet section, shelf section, food carts, or stations).

Table 1 | Key strategies from the WRI playbook to encourage diners towards more sustainable food choices, categorised by the focus area of intervention [31].

A shift towards predominantly plant-based meals in UK hospitals may seem ambitious. However, many organisations are already leading the way, adopting plant-rich menus that address both environmental and health concerns. In the following section, we'll explore real-world examples of hospitals around the globe where plant-forward initiatives have been successfully implemented.

A close-up photograph of several fresh green asparagus spears. The spears are vibrant green and have a textured, scaly appearance at their tips. They are arranged in a cluster, with some spears in the foreground and others slightly behind. The background is a plain, light-colored surface.

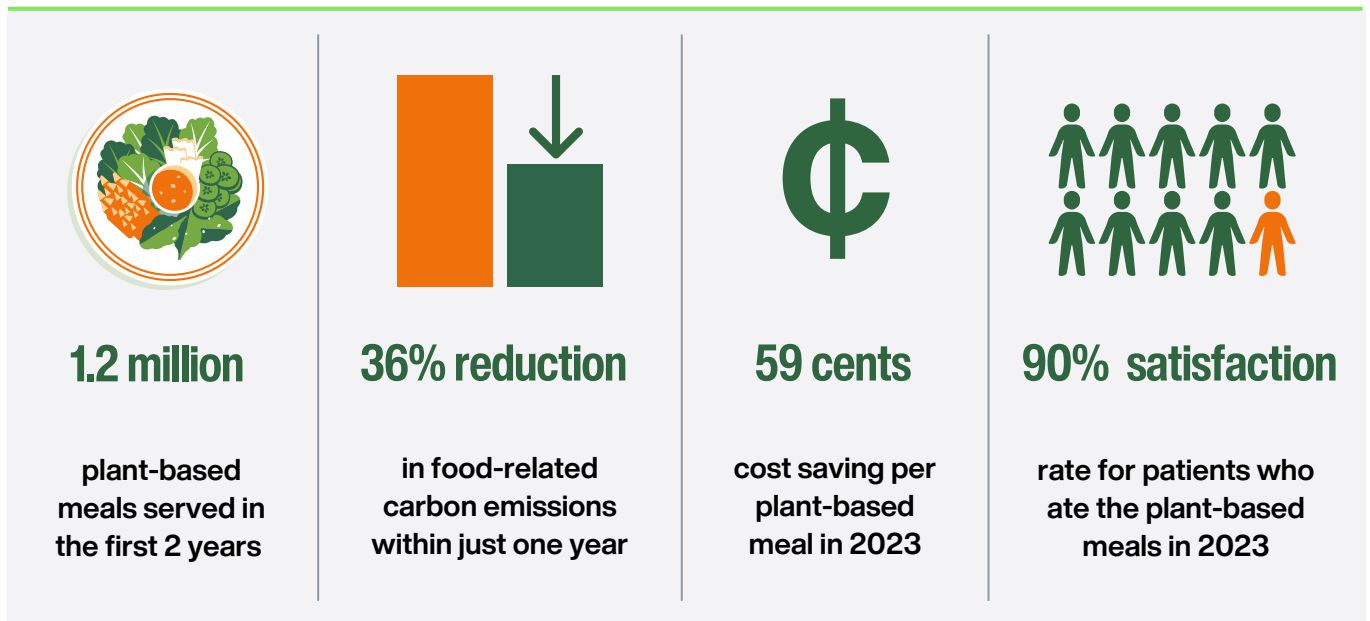
Global Examples of Plant-Based Menus in Healthcare

Plant-Based by Default in NYC Health + Hospitals

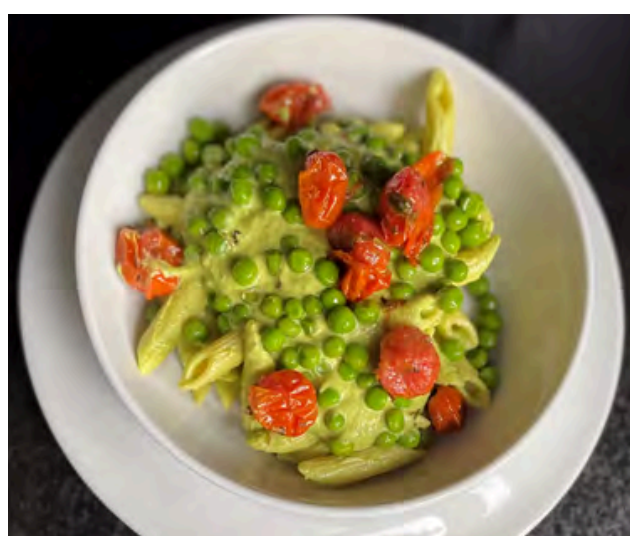
In New York City, the Mayor's Office of Food Policy, NYC Health + Hospitals, and Sodexo successfully implemented plant-based menus as the default option in all 11 public hospitals, with support from Greener by Default. [41, 42]. These culturally diverse plant-based meals are served

as the primary option for inpatients across all meals. The menu is offered to patients verbally, starting with the plant-based chefs special. If patients don't want this, they can request a meat-based option. Therefore, choice is not taken away from patients, yet it's easier to make a sustainable food choice. Since the program was implemented, it has been highly successful [43].

Figure 3 | Results from the first two years of the plant-based by default program in NYC Health+Hospitals



The meals below are examples of the plant-based meals offered to patients in NYC Health + Hospitals.



Photos from the NYC Health + Hospitals Plant-Based by Default menu

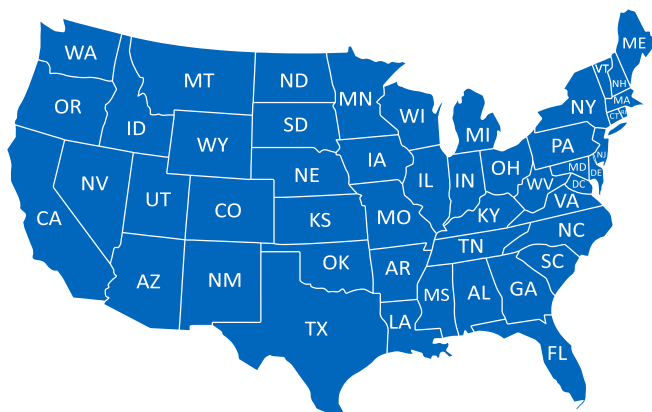
Expanding Plant-Based Initiatives in USA Healthcare

NYC Health + Hospitals is not the only institution in the USA making positive changes. To improve patient health outcomes and promote

sustainable dietary practices, several hospitals in the United States have successfully implemented plant-based meal initiatives. These examples provide valuable insights and case studies that can guide the transition of UK NHS hospitals towards plant-based by default menus.

Initiatives from hospitals in the USA [44]:

- Montefiore Health System has implemented “Meatless Mondays” in the hospital cafeterias, and an intensive Saturday outpatient plant-based immersion program.
- NYC Health + Hospitals/Bellevue launched an intensive plant-based lifestyle program to improve cardiometabolic health in high-risk patients [45], implemented a “Meatless Monday”, and offer an annual plant-based healthy eating challenge for hospital staff.
 - In the first 3 months since the program launched, early clinical successes include significant reductions in haemoglobin A1c (HbA1c), diastolic blood pressure, and body weight [46]. Patients have also reported improved energy, sleep, and motivation to cook healthy meals at home. This lifestyle program is being expanded to 6 new NYC Health + Hospitals sites spanning all 5 NYC boroughs [45].
- National Jewish Health and Saint Joseph Hospital worked together to implement intensive plant-based cardiac rehabilitation programs.
- United Medical Centre hosted plant-based lunch buffets accompanied by nutrition lectures, offered taste tests to patients, and replaced processed meat with meatless options.
- University of Florida launched an intensive outpatient prevention program to lower cardiovascular risk, which includes education around eating more plant-based foods.
 - The program was highly successful, with a follow up analysis showing patients that enrolled in the program had greater weight loss, and mean reduction LDL-cholesterol, total cholesterol, and triglycerides at both initial and last follow-up (median time 6 and 16 months) [47].



Montefiore
HEALTH SYSTEM, INC.

NYC
HEALTH+
HOSPITALS

UFHealth
UNIVERSITY OF FLORIDA HEALTH

UMC
UNITED
MEDICAL CENTER



National Jewish
Health
Breathing Science is Life.

Plant-Rich Trial Vancouver Coastal Health

At Vancouver General Hospital, patients have been receiving nutritious and environmentally sustainable menu items as part of the Planetary Health Menu Pilot Project [48]. The project is supported by Nourish, and Greener by Default, and involves an interdisciplinary team including food services staff, dietitians, clinicians, planetary health experts, and chef and sustainable food champion Ned Bell. It's led by Dr. Annie Lalande, surgical resident and PhD student, and Tiffany Chiang, Director, Food Service Transformation and Strategic Projects at VCH.

As part of the pilot, over 20 new menu dishes,

including Creamy Coconut Chickpea Curry with Cauliflower and Cashews, Korean Gochujang Bowl, and Steelhead Trout with Tomato Miso Dressing were created to cater for patient preferences while minimising environmental impact. Patient partners provided feedback on their appeal during illness, and those receiving favourable reviews were trialled with inpatients at the hospital.

Further feedback was gathered through interviews, surveys, and food waste analysis. With the program now concluded, data analysis will determine the preferred menu items, which will be incorporated into menus across Vancouver Coastal Health.



Photo by [Daniela](#) on [Unsplash](#)

Implementing Plant-Rich Menus in German Hospitals

In Germany, 12 hospitals serve plant-rich dishes in line with the Eat-Lancet Planetary Health Diet [49]. Across the dozen hospitals, the team serve



13,000 meals per day, including coconut milk dal and semolina dumpling stew. Since the hospitals made the planetary health switch, staff said they have received very few complaints, while patients praise the choice of meals on offer.

“The fact it was so uncomplicated came as a surprise to us,”

Bernd Quöß, Hospital Director at Waldfriede hospital

Key findings

Savings– Cutting down on meat freed up money in the budget to buy fresh, local ingredients, says Janine Briese, the head of catering at Johannesstift Diakonie.

Branding and relevance– food needs to feel familiar and enjoyable to patients. For example, the team pitch trendy “bowls” to younger patients, but with older people they talk about Haferflockensuppe, an oatly soup that can feel nostalgic for some. In fact, recent evidence shows that to progress towards more healthy and sustainable diets, it’s crucial that efforts are made to provide culturally appropriate versions of the Planetary Health diet, tailored to local and regional preferences [50, 51].

Micronutrient intake concerns– Despite the fact that plant-based meals can meet nutrient requirements, some doctors are concerned over the levels of certain micronutrients in the diet.

Meat alternatives are key– finding a good replacement for meat makes the transition easier, “Without advancements in alternatives made from soy, pea and wheat, the menu’s success would not have been possible,” said Janine Briese, the head of catering at Johannesstift Diakonie.

Other examples of plant-based menus in healthcare includes the Hayek Hospital in Beirut, Lebanon, which has been a fully plant-based hospital since March 2021 [52]. Additionally, in Taiwan, all institutions of the Tzu Chi Medical

Mission serve vegetarian meals and advocate for vegetarian diets among the patients and their family members. This includes seven Tzu Chi Hospitals and one clinic [53,54].



During a GP conference in London, March 2024, the organisers provided plant-based catering on day one and non-plant-based catering on day two.

A follow-up survey was conducted to understand more about the attendees' satisfaction with the food.

Key Findings:

- Satisfaction levels were marginally higher for the plant-based day compared to the non-plant-based day (Table 2).
- The organisers reported, "We had not one single complaint" about the plant-based menu.

Table 2 | Comparing feedback from plant-based catering and non plant-based catering at a GP conference.

	Attendees (n)	Respondents (n) (%)	Score (1-5)	Score (1-100)	Comments
Plant-based 	108	67 (62%)	4.67	93.4	"Good food!" "It's fine good food"
Non plant-based 	163	96 (59%)	4.60	92.0	"Turkey and ravioli not much to choose between" "Not as many options" "Great hosts, good food." "Lovely food!" "Nice food" "Great food!!!"



Photos: food provided on the day with plant-based catering.



What Makes an Initiative Successful?

Based on the examples explored in the previous section, several components can be identified as important for successfully implementing a plant-based meal initiative in hospitals.









	PHYSICIAN ADVOCACY	Healthcare providers, especially physicians, can provide education and advocacy that helps drive the adoption and acceptance of plant-based diets.
	KNOWLEDGEABLE STAFF	Other staff also have an important role to play. Nursing and dietary staff can motivate and educate patients to improve interest in and compliance with eating the plant-based menu.
	EDUCATION AND TRAINING	Providing education about the benefits of plant-based diets to both staff and patients is critical. Hospitals have used educational materials, cooking demonstrations, and nutrition counselling to enhance understanding and acceptance.
	POLICY INTEGRATION	Incorporating diet-related questions and guidelines into patient care routines, such as asking about daily servings of fruits and vegetables, ensures that nutrition is prioritised in patient care.
	MENU ACCESS	Making the plant-based options and separate plant-based menus readily available to patients is important to ensure menu uptake of these options.
	COMMUNITY ENGAGEMENT	Engaging the wider hospital community, including staff and visitors, through programs like farmers' markets and healthy eating challenges fosters a culture of health.
	INSTITUTIONAL SUPPORT	Comprehensive policies that eliminate unhealthy food options and prioritise plant-based meals demonstrate institutional commitment to healthful eating.
	LEGISLATIVE SUPPORT	In some cases, state mandates requiring the availability of plant-based meals have provided a regulatory framework that supports these initiatives.

Table 3 | Key considerations when implementing menu changes in hospital settings.

Box 3 | An overview of the 6-step plan used to devise and implement the program at the Montefiore Health System. The full details of the program can be read in their paper [55].

1 Interdisciplinary Team Development

This should include a physician and high-level administrator to drive the initiative; the Director of Food Services and the Director of Nutrition who oversee the hospital's food system and ensure meals meet necessary standards. Some may require evidence of the diet's potential health and fiscal benefits. For hospitals that outsource their inpatient meals, include a liaison with the outsourcing company.

2 Meal Development

Develop all meals with nutrition staff, give special consideration for patients' therapeutic diets (e.g., "low" potassium) and allergies (e.g., nuts or gluten). Refine meals and recipes through team meetings with the Director of Nutrition, Director of Food Service, Head Chef(s), Head of Food Purchasing, and other relevant groups. Establish a diet name and a simple ordering and delivery system, with a final date to start serving patients.

3 Patient Education

Educate patients about plant-based diets to help them understand the benefits and what to expect from their inpatient meals. During the initial nursing assessment, inform patients that the medical team supports a plant-based diet for their care. Education can include handouts in the inpatient packet, a documentary film, reinforcement from the patient's physicians about the benefits, and small handouts to take away with key points and website resources.

4 Staff Education

Educating staff about the plant-based diet program is essential for building support and ensuring consistent patient messaging. Inform medical and food service personnel about the diet's benefits and how to order compliant meals through talks, small group sessions, and required videos. Utilise internal communication for regular updates and consider involving an outside speaker at Medical Grand Rounds. Additionally, implement Meatless Mondays or offer plant-based options in the cafeteria and hold tastings for key personnel.

5 Program Rollout

Piloting on the Hospital Floor

This approach allows for quicker staff education and real-time feedback. Testing on a single floor, such as cardiology, enables rapid evaluation and modification of the meals, patient education, and staff training. This helps to identify and address system issues before broader implementation.

Hospital-Wide Rollout

This approach can be challenging due to the need to orient a large number of staff simultaneously. However, it allows for widespread dissemination of information and may enable specialised consultative services like cardiology to recommend the diet across multiple floors throughout the hospital.

6 Evaluation of the Program's Effectiveness.

Track the number of plant-based meals ordered and patients re-ordering these meals; the number of patients who watch the documentaries and the overlap with diet adherence; investigate why certain floors or shifts may struggle with implementation; survey patients upon discharge about their likelihood of continuing a plant-based diet. Track long-term adoption by following up with patients after 30 days to assess diet adherence and support from outpatient physicians. Supplementing with food frequency questionnaires, blood tests, and readmission rates can inform future research, but would require dedicated researchers.

A young woman with long dark hair, wearing a white hospital gown with a small floral pattern, is sitting up in a hospital bed. She is smiling and looking towards the right. In front of her is a meal tray with a glass of milk, a bowl of soup, and some bread. The background shows a hospital room with another bed and medical equipment.

Current Attitudes Towards a Plant- Based Menu

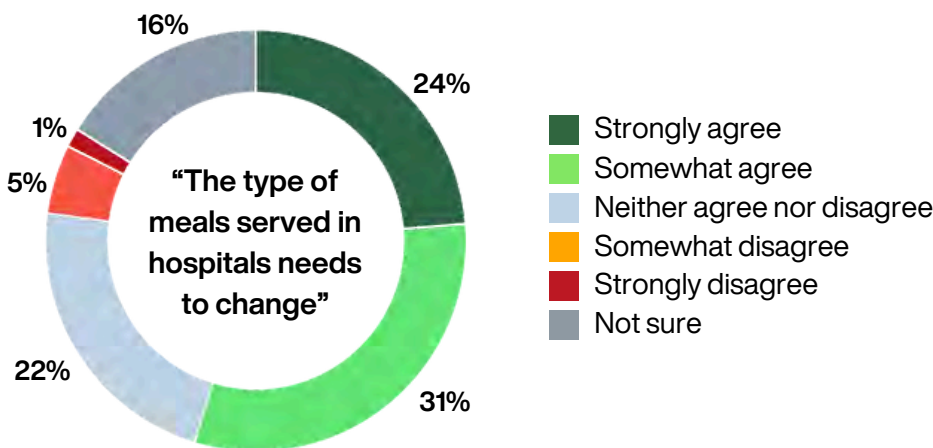
The Public are Ready for Change

An independent consumer research survey was commissioned in June 2024 by Plant-Based Health Professionals UK to gauge the general public's attitudes towards changes in NHS hospital menus. A representative sample of 2,000 people from across the UK participated in the survey. Most participants

(72%) followed an omnivorous diet. Only 2% followed a vegan diet, and 7% adhered to a vegetarian diet. Overall, participants felt that hospital menus need a change (Figure 4).

The survey collected data on participants feelings around current NHS hospital food and the support for switching to plant-based menus.

Figure 4 | Participant responses to, "The type of meals served in hospitals needs to change."



Key findings

- The overall perception of hospital food is more negative than positive. 40% of respondents believe that meals served in NHS hospitals are unappetising, and 32% feel that the meals lack flavour. Only 7% perceive them as delicious.
- The majority (78%) of participants agreed that NHS hospitals should offer both plant-based and meat-based meal options, and 61% said they would be annoyed if they couldn't eat meat during a hospital stay. A "plant-based by default" approach would meet this preference, as meat options would still be available upon request, ensuring that consumers don't feel their choices are restricted.
- Only 11% of participants consider hospital meals to be healthy. However, almost two-thirds (64%) believe that hospitals should prioritise offering healthy meals.
- The majority (74%) of respondents believe it is important to make dietary and lifestyle changes to reduce the risk of developing chronic health conditions.
- Most participants (78%) feel sympathetic towards the current state of the NHS and the challenges it faces.

Public Attitudes Towards Plant-Based Menus in Healthcare.

Key findings

- Despite only 2% of the surveyed population following a vegan diet, 35% support the switch to plant-based menus.
- 69% support or feel neutral towards plant-based milks and yoghurts being served in hospitals instead of dairy milks and yoghurts (Figure 5).
- 32% would be interested in trying an entirely plant-based diet themselves, with 31% having decreased their meat intake in the last two years.
- Certain barriers have been identified but they can be overcome with the right approach. People are still concerned about protein intake, and micronutrient intake through plant-based meals (Figure 7).
- Certain strategies can be used to encourage people to choose plant-based options while in hospital, to support the transition to plant-based by default. Participants said taste, looking better than the other options, and being healthier would make them more likely to choose the plant-based meal during their hospital stay (Figure 8)

Figure 5 | Participant attitudes towards plant-based menus in healthcare.

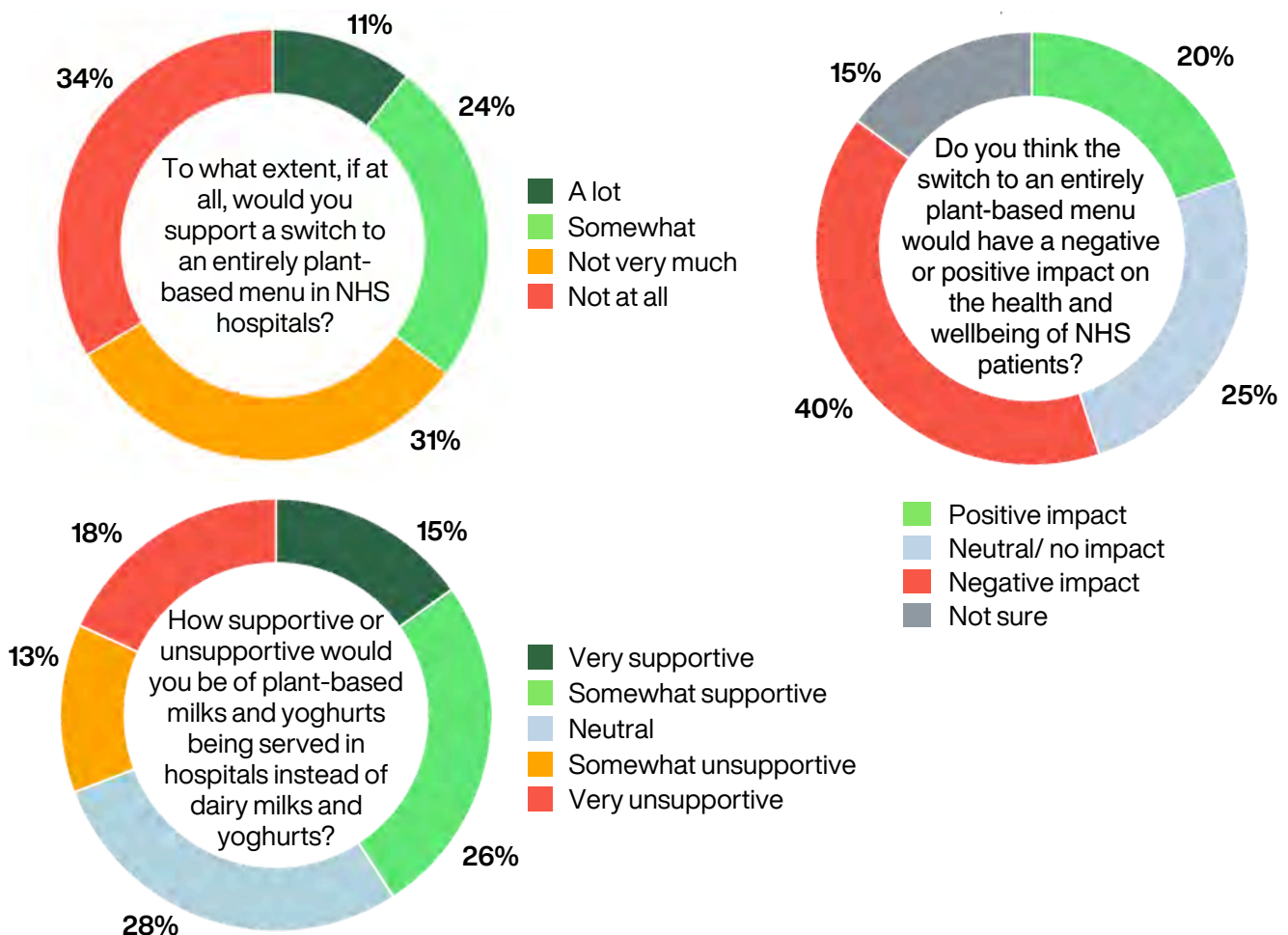


Figure 6 | What benefits do the public perceive for meat-free meals?

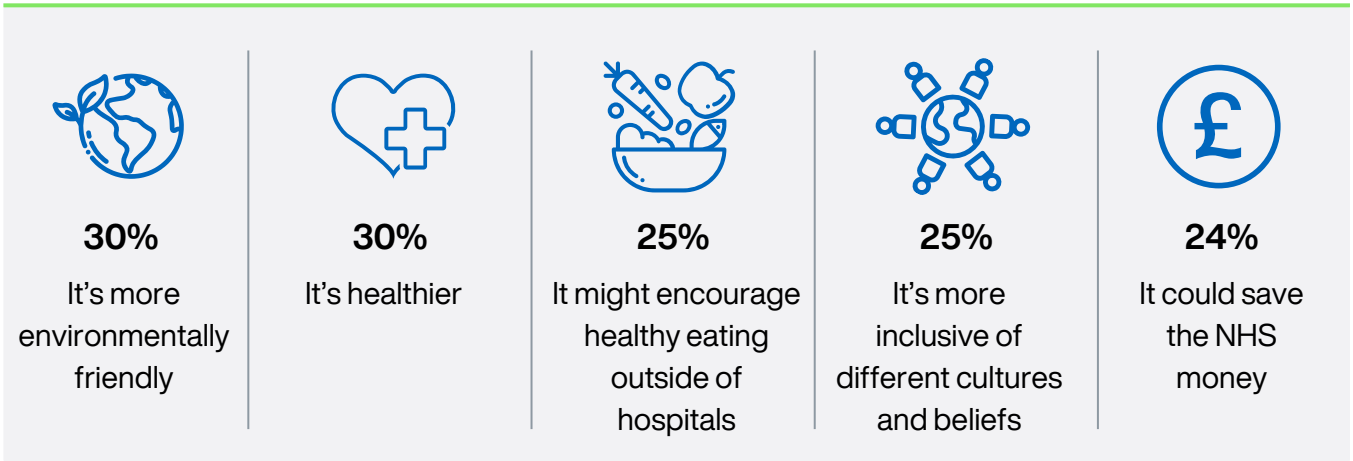


Figure 7 | Public perceived barriers for hospitals serving mostly plant-based dishes.

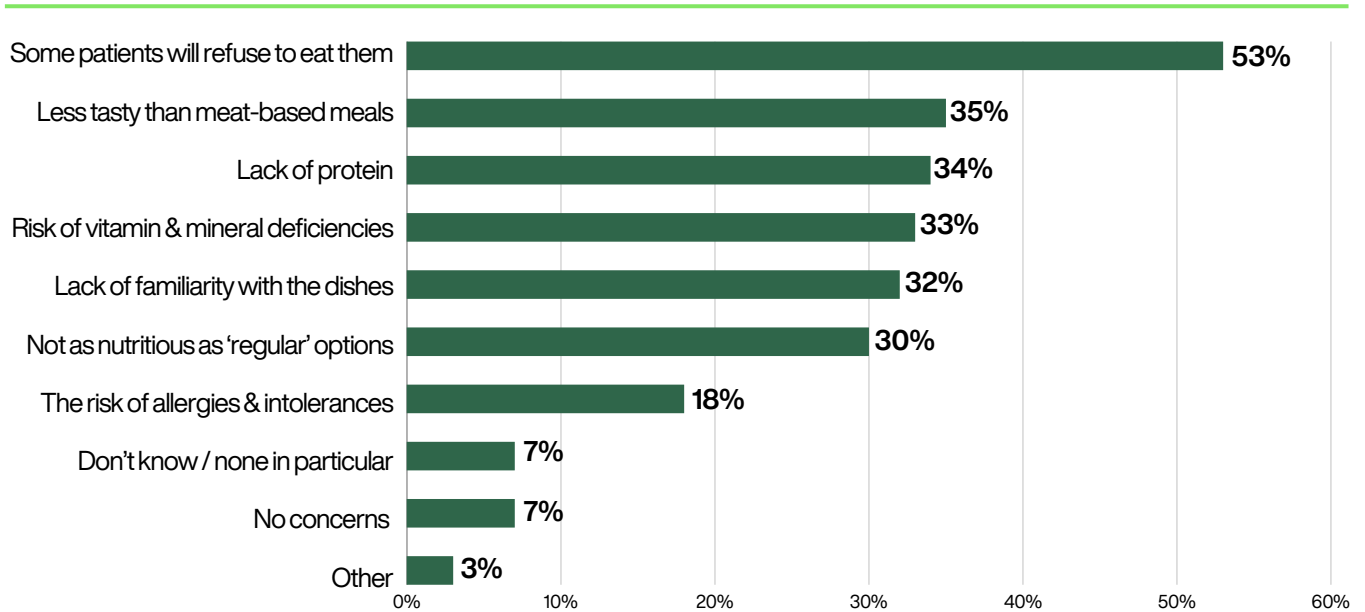
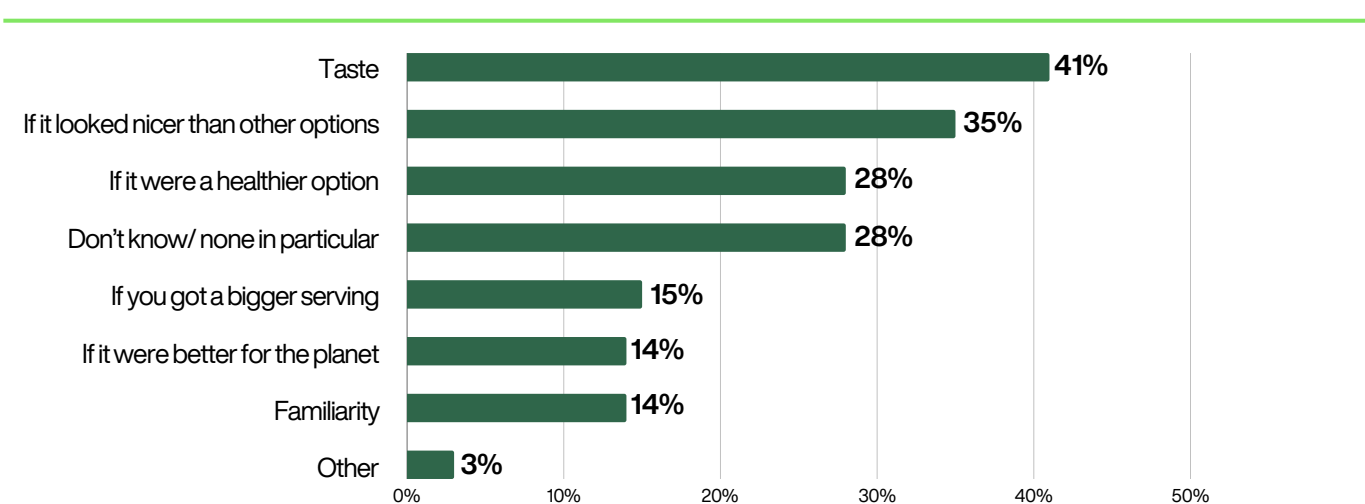


Figure 8 | What would make the public more likely to choose a plant-based meal during a hospital stay?



Patient Attitudes Towards Removing Red and Processed Meat from Hospital Menus.

Red meat consumption in particular poses negative impacts to both individual and planetary health, making its removal from hospital menus a critical step toward meeting health and sustainability goals. Despite their differences, all the sustainable diets discussed in this report recommend a significant reduction in red meat and the elimination of processed meat consumption. Processed and unprocessed red meat are classified as Group 1 and Group 2A carcinogens, respectively, and their consumption is associated with an increased risk of chronic conditions such as obesity, type 2 diabetes, cardiovascular disease, and dementia [56].

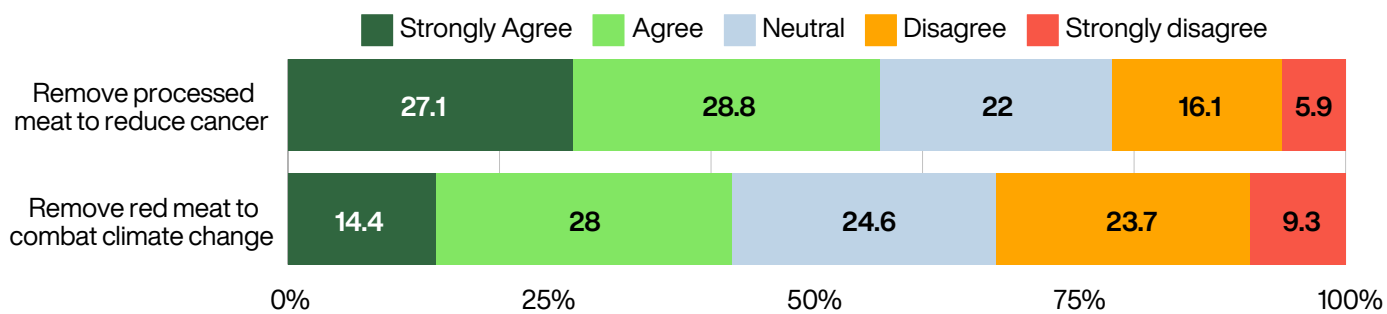
These foods also carry the largest environmental burden, so their removal from hospital menus offers the greatest potential for positive environmental impacts.

At King's College Hospital NHS Foundation Trust in London, researchers conducted a survey of 118 patients in May 2022 to better understand patient attitudes towards the removal of processed and unprocessed red meat from menus and their dietary preferences [57]. Overall, most of the participants agreed or felt neutral toward removing red meat from hospital menus (Figure 9). The key findings are summarised on the next page.

An important finding in this survey is that most patients would choose chicken or fish as their main, if red and processed meats were removed from the menu. While these options may have lower GHG emissions compared to red meat, moving to 'lower carbon' animal food like chicken and eggs presents trade-offs that should be considered. For example, to produce a ton of protein, more than 100 times as many chickens than cows need to be slaughtered [58]. Switching to plant-based foods would have a significantly better impact on climate, nature, and animal welfare.



Figure 9 | Patient attitudes towards removing red and processed meat from hospital menus, n=118 (%)



Key findings

- 75% of participants did not consider it important to eat processed red meat during their hospital stay.
- 66% of participants did not consider it important to eat unprocessed red meat during their hospital stay.
- 78% agreed or felt neutral that all processed meat should be removed from hospital menus to reduce the risk of cancer (Figure 9).
- 67% agreed that red meat should be removed from hospital menus to combat climate change (Figure 9).
- If red and processed meats were removed from the menu, 72% would choose another animal-based dish (chicken or fish), 10% would choose a meat alternative, 7% would choose tofu or soya mince, and 10% would choose beans and lentils.



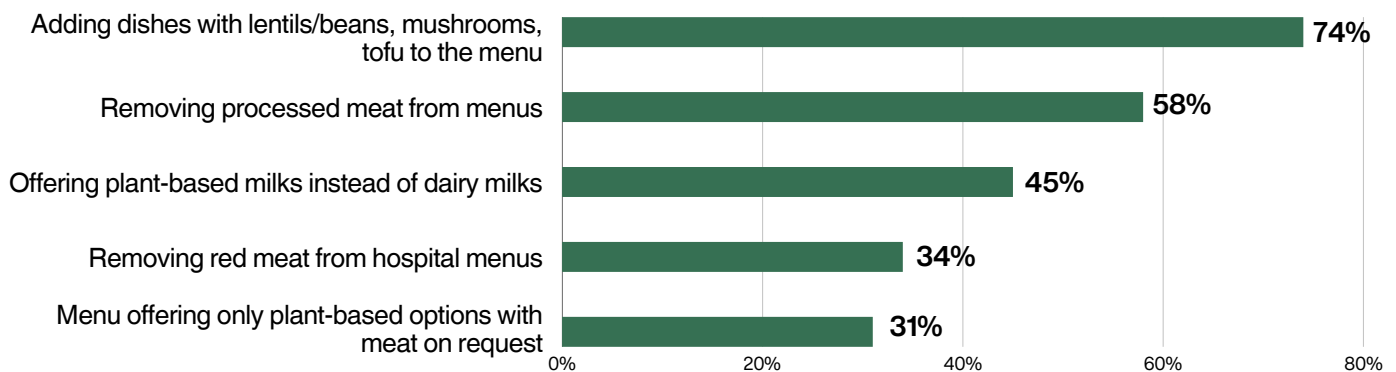
Source: Attitudes of hospital patients regarding removal of processed and unprocessed red meats from menus to support sustainable healthcare targets: A single-centre survey.

Staff Survey on Food Choices and Sustainability

A survey was conducted in May 2024 at King's College Hospital to understand the attitudes of staff toward hospital food choices and their understanding of food sustainability. The survey had 109 respondents, predominantly female (85%), and aged between 25 and 64 (94%). Half followed an omnivorous dietary pattern. Twenty-one percent were flexitarian, and 17% were vegetarian, vegan, or plant-based.

From this small sample, the results indicate support among hospital staff for a more plant-based menu, with the majority supporting a removal of processed meat and the introduction of more plant-based dishes such as lentils, beans, and tofu (Figure 10). There was however also evidence of significant educational needs. One such need related to nutrition, as some staff has concerns about plant-based options being able to supply sufficient vitamins and minerals. Another related to the lack of awareness of the EAT Lancet Planetary Health Diet.

Figure 10 | What changes would NHS staff support on hospital menus?



Key Findings

- One third would support removing red meat from hospital menus, while 31% would support a menu offering plant-based options with meat available on request (Figure 10).
- The majority believe that cutting down on meat consumption is beneficial for the environment (62%) and for personal health (62%).
- The main concern about adopting a predominantly plant-based diet, shared by 47% of participants, was the risk of vitamin and mineral deficiencies, such as B12 and iron (Figure 13).
- When choosing food in the hospital, 59% of respondents said the environmental impact of food affected their choices sometimes or more often.
- When asked what foods they would choose more of to reduce the environmental impact of their diet, the most common choices were plant foods, including vegetables (70%), fruits (61%), whole grains (63%), and beans (51%). Additionally, 32% said they would choose meat alternatives, while 19% indicated they would choose chicken.
- Notably, 81% had not heard of the EAT-Lancet Planetary Health Diet.

Figure 11 | Which of the following do you think is good for the environment?

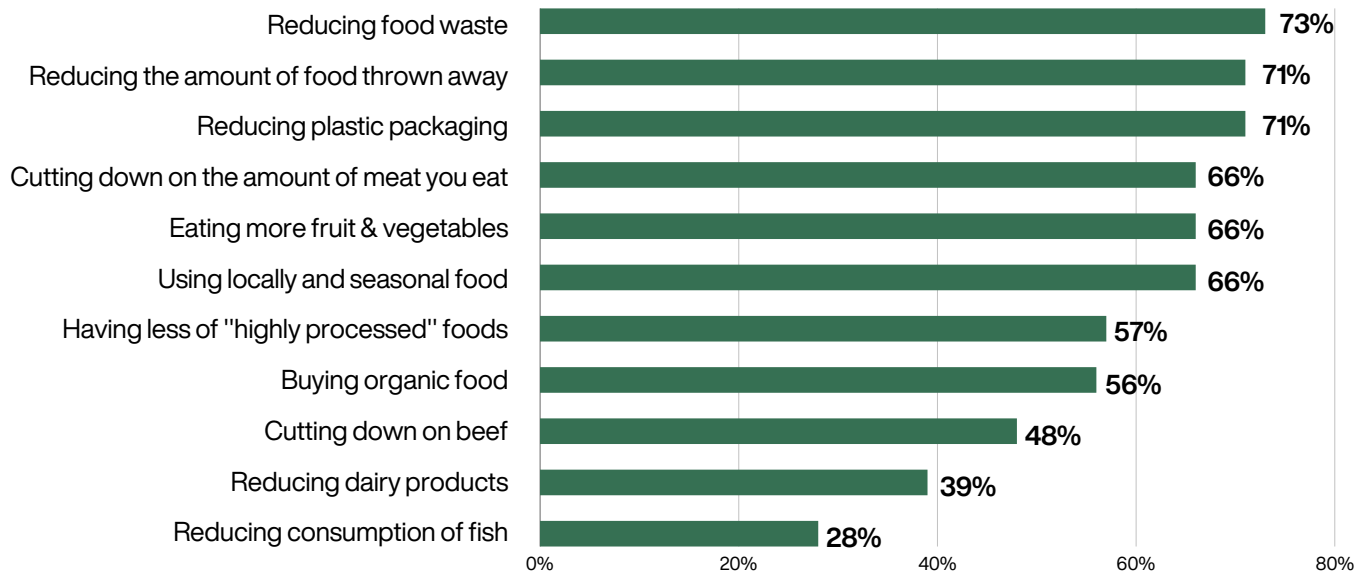


Figure 12 | What is the most important factor in deciding what you eat in the hospital?

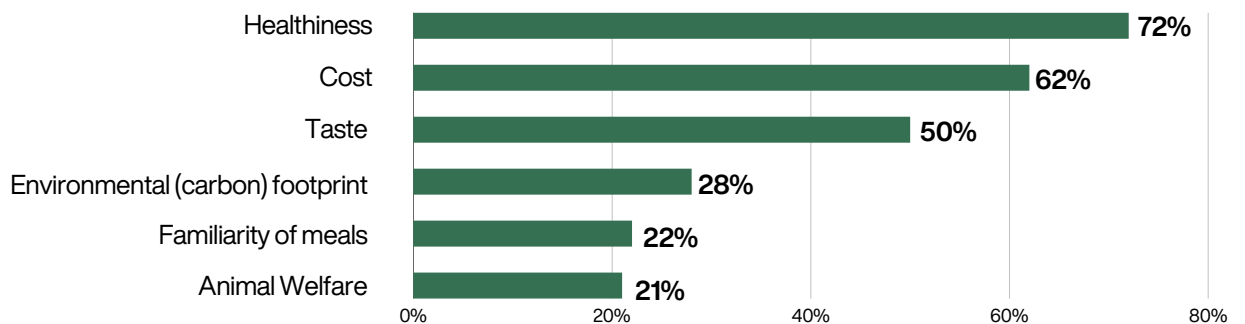
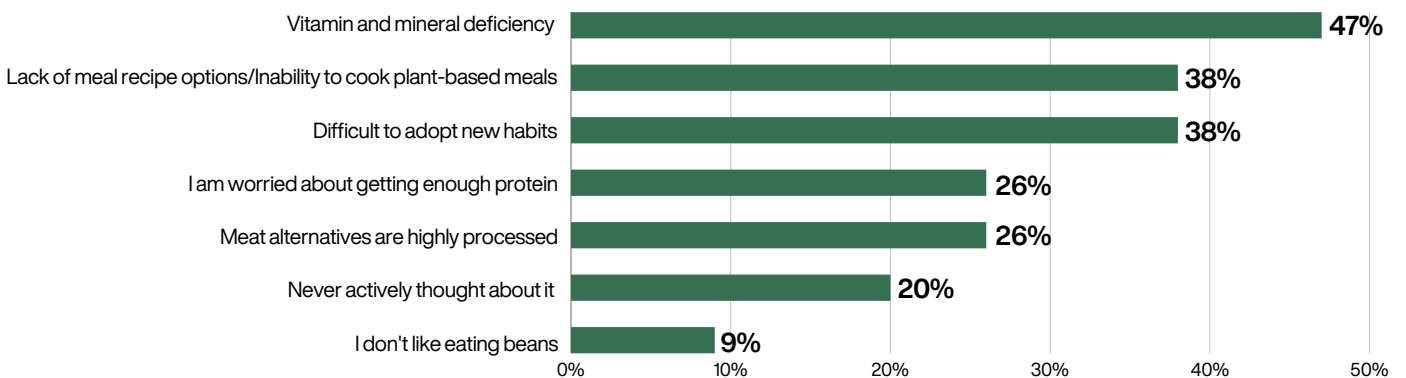


Figure 13 | Is there anything that concerns you about adopting a predominantly plant-based diet?





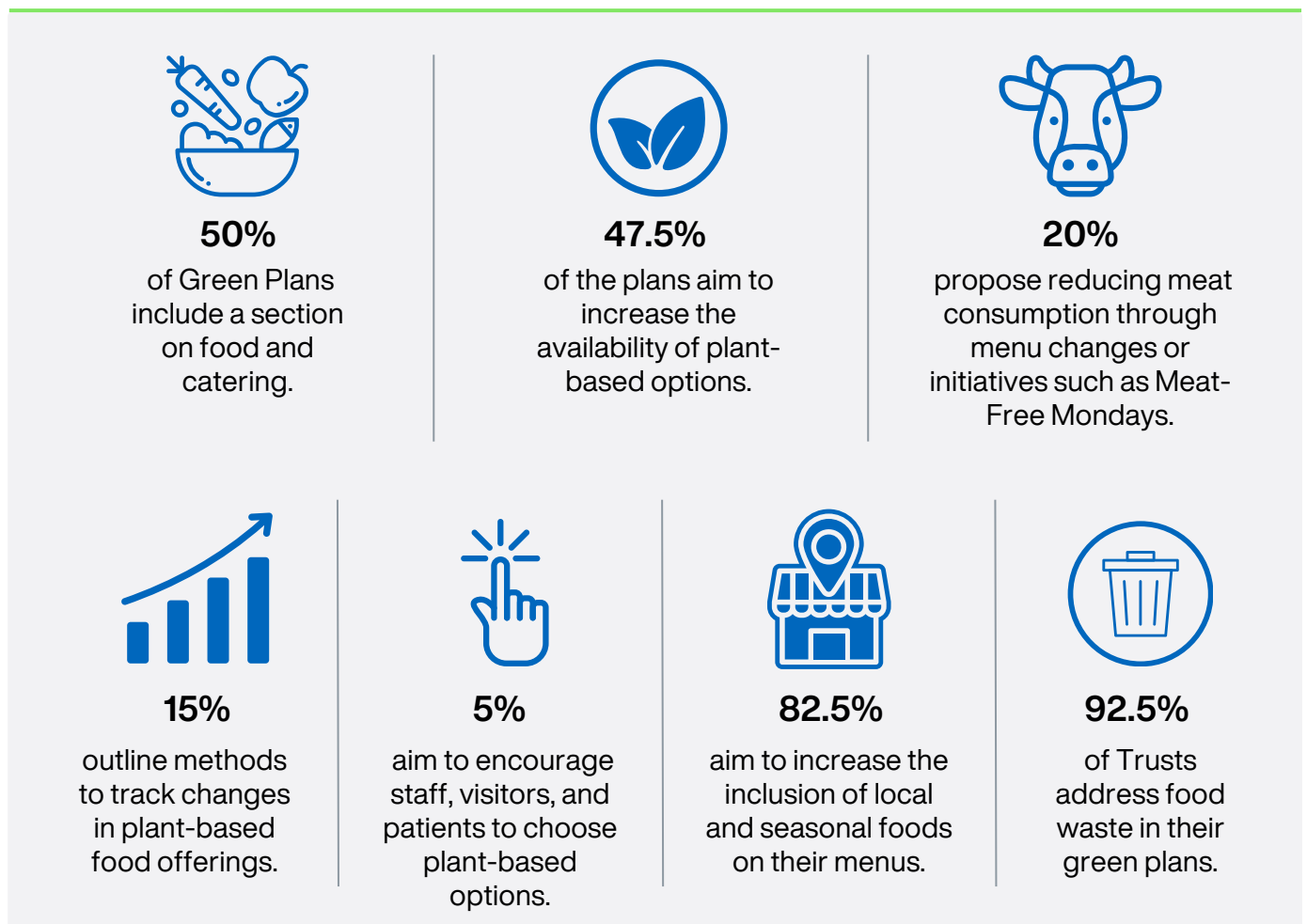
**Where is the
NHS Now?**

Assessing NHS Trusts' Commitments to Sustainable Catering

To evaluate NHS Trusts' commitments to greener menus, we analysed Green Plans from 40 NHS Trusts, representing 40 of the 42 Integrated Care Systems across England. The aim was to understand their specific commitments to developing more sustainable menus and contributing to net-zero efforts. The focus was England because each Trust is required to have its own Green Plan, unlike Wales and Scotland, where health boards typically follow national plans set by NHS Wales and NHS Scotland. Green Plans were examined for details on plant-based offerings, strategies to promote these options, and other catering commitments. Despite the significant

environmental benefits of plant-based foods, the commitment from Trusts to implementing these changes was limited (Figure 14). Overall, NHS Trusts' Green Plans indicate a limited commitment to increasing plant-based food options as part of their Net Zero strategies. Trusts were more likely to focus on reducing food waste and increasing local and seasonal food options rather than expanding plant-based offerings or removing highly polluting foods like red meat. This approach contrasts with evidence showing that the environmental impact of what we eat generally outweighs the impact of where it comes from [3,59]. While food waste remains a major focus due to its substantial contribution to emissions, plant-based meals should be integrated into a comprehensive strategy to reduce food-related emissions.

Figure 14 | Overview of the sustainable menu commitments in NHS Trust green plans



Preliminary Findings from an Analysis Assessing NHS Menus for Sustainable Food Options.

As part of a project that is currently ongoing, researchers from PBHP UK have collected NHS menus from Trusts across England, Wales, and Scotland to evaluate the current availability of sustainable offerings on standard NHS menus. They have measured sustainable offerings by looking at 100% plant-based, vegetarian, and ruminant (beef and lamb) meat-based mains and small dishes as key representatives for the

plant- or meat-based character of a menu. They have also analysed the use of nudging techniques recommended by the WRI playbook and the BDA Nutrition and Hydration Digest. Results will be shared in the paper, but below are some preliminary findings.

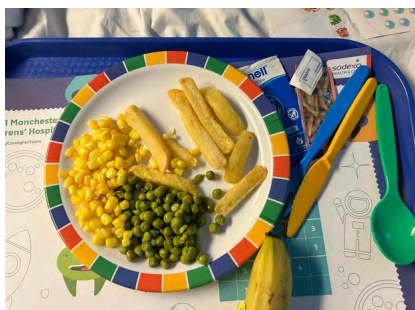
The researchers are developing a novel scoring system to analyse the menus based on these offerings, which could be used going forward to measure changes in hospital menus as they increase their sustainable offerings.

Results

- A total of 21% (n=7) of hospital menus provided a fully plant-based main dish for dinner every day, whereas 39% (n=13) provided a red meat main dish daily.
- On average, hospital menus included 1.5 plant-based evening main meals per week, compared to a median of 6 red meat mains.
- 9% (n=3) of menus offered dairy alternatives (yoghurt, cheese, and other dairy products excluding milk) and 67% (n=22) included meat alternatives.
- Nudging techniques to promote plant-based choices were underutilised. Only 9% (n=3) of menus listed plant-based options first, and 24% (n=8) avoided labelling dishes with terms like “vegan” or “meatless.”
- Currently guidance allows for a “heart healthy” symbol to be placed by beef dishes which undermines efforts to promote sustainable diets.

Plant-Based Food Options Vary Significantly Between NHS Hospitals.

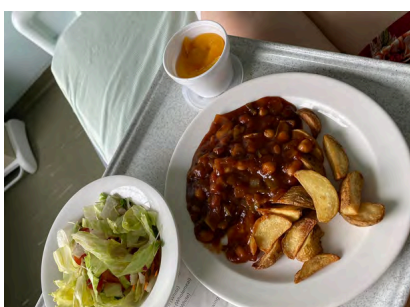
📍 Royal Manchester Children's Hospital



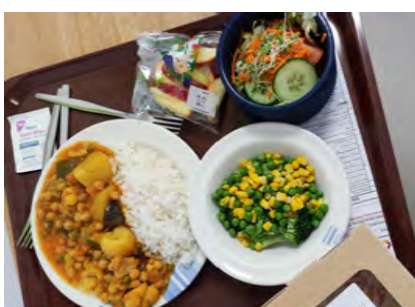
📍 Royal Lancaster Infirmary



📍 Lincoln County Hospital



📍 Kettering General Hospital

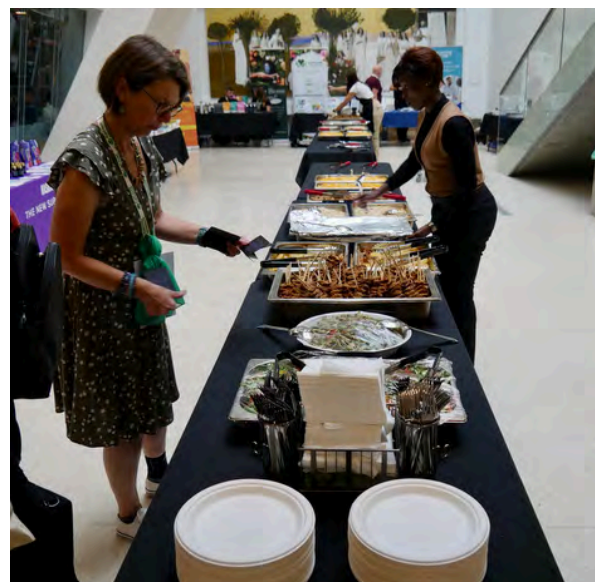


Source: photos used with permission from the 'Vegan Hospital Food Network' Facebook Group

Progress is Expanding Across NHS Trusts Towards More Sustainable Menus

In various NHS Trust's across England, progress is being made to serve more plant-based meals and reduce meat dishes, in an effort to meet sustainability targets:

- At King's College Hospital, London, they have committed to meat-free catering for all internal meetings.
- The Royal College of General Practitioners annual conference on 3rd and 4th October 2024 served a meat free menu with the vast majority of the menu being completely plant-based.
- Newcastle upon Tyne Hospitals Trust, Sussex Community NHS Foundation Trust, Hampshire Hospitals and Great Ormond Street Hospital have all signed the Cool Food Pledge which commits them to reduce their food emissions by 25% by 2030.
- Several other hospital trusts such as Leicestershire and Rutland have committed to a 'low carbon menu' and others such as Leeds Teaching Hospital NHS Trust and Queen Victoria Hospital are reducing reliance on high carbon foods such as beef and lamb.





Summary and Recommendations

There is an urgent need for UK hospitals and healthcare institutions to adopt sustainable catering practices for patients, staff, and visitors as part of the broader shift toward sustainable diets.

This transition is critical for the healthcare system to continue operating within planetary boundaries while also improving public health outcomes. Evidence from countries leading the way in plant-forward hospital menus shows that adopting a "plant-based by default" approach is both feasible and impactful. Key learnings from global examples highlight how such initiatives can be successfully implemented, offering valuable insights for UK hospitals.

Survey results indicate that the UK public is ready for this shift in hospital food, with many people expressing support or neutrality towards the removal of meat from menus. However, despite the NHS's net-zero goals and the recommendations from organisations such as the British Dietetic Association, UK hospitals have made limited progress in offering healthy and sustainable food options. At present, it remains difficult for patients and staff to make environmentally conscious food choices in hospitals, signalling the need for a stronger commitment to sustainable menus.



Hospitals in the UK should commit to transitioning towards a plant-based food environment and implement plant-based meals as the default option for staff and patients.

- Healthcare institutions and curricula should incorporate education on plant-based nutrition to bring the profession up-to-date on the health benefits and to allay concerns about macro- and micronutrient sufficiency.
- Healthcare organisations, such as Royal Colleges, medical and nutrition societies should implement fully plant-based catering for meeting, events, and conferences and take the opportunity to educate attendees as to why it's important.
- All healthcare organisations are invited to work with Greener by Default, for free, to operationalise these initiatives.
- Education of healthcare professionals and the public around the benefits of a plant-based diet and how to adopt a healthy plant-based diet is key. At Plant-Based Health Professionals UK we provide numerous free resources including factsheets, articles and live webinars whilst also teaching in Universities and medical schools.
- Health professionals and the public need education and practical skills particularly relating to alternative healthy proteins such as beans, pulses, and soya foods, when reducing meat consumption.

Recommendations for individuals

- Take the time to educate yourself on how to transition to a plant-based diet.
- Sign up to a free challenge such as the 21-day plant-based health challenge from Plant-Based Health Professionals UK or international campaigns such as Veganuary or No Meat May.
- Organise a plant-based lunch and learn, advocate for meat free days.
- Join a group of like-minded individuals, such as Plant-Based Health Professionals UK, who can support you.
- Support the Plants First Healthcare initiative by raising awareness in your workplace and with your Royal College or professional society.

Organised action

- Organise groups where you work. Do you have a sustainability group? Ask them to support your desire to shift menus to one that is more plant-based. Work on making plant-based dishes that are culturally appropriate to the audience.
- Ask your organisation to contact the Greener by Default team who can support the implementation of plant-based defaults. They work with healthcare organisations for free.
- Talk to key stakeholders in your hospital about making changes to the food on offer.

To take further action to support a plant-based food transition in healthcare visit plantsfirsthealthcare.com.



PLANTS FIRST HEALTHCARE CAMPAIGN

Plants First Healthcare is a campaign led by a coalition of NHS health professionals who are increasingly concerned about the impacts of the food system on climate change, land use and biodiversity loss. They are committed to taking action to minimise these harms through evidence-based strategies that will benefit individual, population, and planetary health. The aim of the campaign to normalise plant-based meals within healthcare settings by making plant-based food the default option, without restricting choice.

This approach has already been successfully implemented in 11 hospitals in New York City. By making delicious, culturally appropriate plant-based options the default, NYC Health + Hospitals empowered more than half of all eligible patients to opt into the plant-based meals. They've now reduced their food-related carbon footprint by a third while maintaining very high patient satisfaction and saving approximately \$500,000 annually.

If you have any questions please see the [FAQ section](#) on the Plants First Healthcare website: plantsfirsthealthcare.com/faq/

The campaign team is now working with Greener By Default to bring their ground-breaking work to healthcare in the UK.



GREENER BY DEFAULT

Greener by Default is a consultancy organisation that works with institutions such as universities and hospitals to promote sustainable food systems through behavioural science. Their mission is to nudge diners towards plant-based choices by designing food policies that make plant-based meals the default option, while still preserving freedom of choice. By applying the concept of "choice architecture," Greener by Default helps institutions lower the barriers to making sustainable food decisions.

Their approach is rooted in science and sustainability, and aims to reduce the demand for industrial meat production while normalising plant-based eating. Through collaboration and partnerships, Greener by Default seeks to create a food system that supports both community health and environmental well-being.



PLANT-BASED HEALTH PROFESSIONALS UK

Plant-based health professionals UK is a Community Interest Company dedicated to providing education and advocacy on whole food plant-based nutrition and lifestyle medicine for prevention and treatment of chronic disease, as well as for supporting planetary health. In addition to practicing conventional medicine, they are passionate about promoting health and well-being using a plant-based, lifestyle approach. There is no doubt that conventional medicine has resulted in some astonishing advances in patient care. However, the current model of healthcare in the UK focuses primarily on treating established disease, rather than emphasising interventions that could prevent or reduce the burden of chronic disease.

They provide resources for the education of healthcare professionals and the general public alike and aim to empower individuals to take control of their own health and share this information with patients, friends and their families.

Learn more at plantbasedhealthprofessionals.com

References

- [1] Husain SA, Sidhu M. Realist evaluation of the implementation and impact of the NHS carbon reduction strategy in the UK. *BMJ Open* 2021;11:e044259. <https://doi.org/10.1136/bmjopen-2020-044259>.
- [2] Crippa M, Solazzo E, Guizzardi D, Monforti-Ferrario F, Tubiello FN, Leip A. Food systems are responsible for a third of global anthropogenic GHG emissions. *Nat Food* 2021;2:198–209. <https://doi.org/10.1038/s43016-021-00225-9>.
- [3] Poore J, Nemecek T. Reducing food's environmental impacts through producers and consumers. *Science* (1979) 2018;360:987–92. <https://doi.org/10.1126/science.aag0216>.
- [4] Evans R, Brookes F, Fredriksson G, Pattnaik A. The Lancet Countdown on Health and Climate Change Policy brief for the UK. 2023.
- [5] Cella E, Giovanetti M, Benedetti F, Scarpa F, Johnston C, Borsetti A, et al. Joining Forces against Antibiotic Resistance: The One Health Solution. *Pathogens* 2023;12:1074. <https://doi.org/10.3390/pathogens12091074>.
- [6] Clifford Astbury C, Lee KM, Mcleod R, Aguiar R, Atique A, Balolong M, et al. Policies to prevent zoonotic spillover: a systematic scoping review of evaluative evidence. *Global Health* 2023;19:82. <https://doi.org/10.1186/s12992-023-00986-x>.
- [7] Springmann M, Van Dingenen R, Vandyck T, Latka C, Witzke P, Leip A. The global and regional air quality impacts of dietary change. *Nat Commun* 2023;14:6227. <https://doi.org/10.1038/s41467-023-41789-3>.
- [8] Clark MA, Domingo NGG, Colgan K, Thakrar SK, Tilman D, Lynch J, et al. Global food system emissions could preclude achieving the 1.5° and 2°C climate change targets. *Science* (1979) 2020;370:705–8. <https://doi.org/10.1126/science.aba7357>.
- [9] Scarborough P, Clark M, Cobiac L, Papier K, Knuppel A, Lynch J, et al. Vegans, vegetarians, fish-eaters and meat-eaters in the UK show discrepant environmental impacts. *Nat Food* 2023;4:565–74. <https://doi.org/10.1038/s43016-023-00795-w>.
- [10] NHS England. Delivering a 'Net Zero' National Health Service 2022.
- [11] Springmann M, Clark MA, Rayner M, Scarborough P, Webb P. The global and regional costs of healthy and sustainable dietary patterns: a modelling study. *Lancet Planet Health* 2021;5:e797–807. [https://doi.org/10.1016/S2542-5196\(21\)00251-5](https://doi.org/10.1016/S2542-5196(21)00251-5).
- [12] The £2 billion NHS windfall: Why meat reduction matters. 2024.
- [13] Sampson C, Henderson N. Could Plant-based Diets Transform Health Care Spending? Office of Health Economics 2024.
- [14] Report of the Independent Review of NHS Hospital Food. 2020.
- [15] Jaworowska A, Rotaru G, Christides T. Nutritional Quality of Lunches Served in South East England Hospital Staff Canteens. *Nutrients* 2018;10:1843. <https://doi.org/10.3390/nu10121843>.
- [16] One Health. World Health Organization 2023. <https://www.who.int/news-room/fact-sheets/detail/one-health> (accessed July 10, 2024).
- [17] Darzi A. Independent Investigation of the National Health Service in England. 2024.
- [18] Thaler RH, Sunstein CR. *Nudge: Improving decisions about health, wealth and happiness*. . Amsterdam Law Forum 2008.
- [19] Vandenbroele J, Vermeir I, Geuens M, Slabbinck H, Van Kerckhove A. Nudging to get our food choices on a sustainable track. *Proceedings of the Nutrition Society* 2020;79:133–46. <https://doi.org/10.1017/S0029665119000971>.
- [20] Meier J, Andor MA, Doebbe F, Haddaway N, Reisch LA. Can green defaults reduce meat consumption? *SSRN Electronic Journal* 2021. <https://doi.org/10.2139/ssrn.3903160>.
- [21] Ginn J, Sparkman G. Can you default to vegan? Plant-based defaults to change dining practices on college campuses. *J Environ Psychol* 2024;93:102226. <https://doi.org/10.1016/j.jenvp.2023.102226>.
- [22] Boronowsky RD, Zhang AW, Stecher C, Presley K, Mathur MB, Cleveland DA, et al. Plant-based default nudges effectively increase the sustainability of catered meals on college campuses: Three randomized controlled trials. *Front Sustain Food Syst* 2022;6. <https://doi.org/10.3389/fsufs.2022.1001157>.
- [23] Sadler I, Bauer A, Kassam S. Dietary habits and self-reported health outcomes in a cross-sectional survey of health-conscious adults eating a plant-based diet. *Journal of Human Nutrition and Dietetics* 2024;37:1061–74. <https://doi.org/10.1111/jhn.13321>.

- [24] FAO, WHO. Sustainable healthy diets – Guiding principles. Rome: 2019.
- [25] Jarmul S, Dangour AD, Green R, Liew Z, Haines A, Scheelbeek PF. Climate change mitigation through dietary change: a systematic review of empirical and modelling studies on the environmental footprints and health effects of ‘sustainable diets.’ *Environmental Research Letters* 2020;15:123014. <https://doi.org/10.1088/1748-9326/abc2f7>.
- [26] Aleksandrowicz L, Green R, Joy EJM, Smith P, Haines A. The Impacts of Dietary Change on Greenhouse Gas Emissions, Land Use, Water Use, and Health: A Systematic Review. *PLoS One* 2016;11:e0165797. <https://doi.org/10.1371/journal.pone.0165797>.
- [27] Laine JE, Huybrechts I, Gunter MJ, Ferrari P, Weiderpass E, Tsilidis K, et al. Co-benefits from sustainable dietary shifts for population and environmental health: an assessment from a large European cohort study. *Lancet Planet Health* 2021;5:e786–96. [https://doi.org/10.1016/S2542-5196\(21\)00250-3](https://doi.org/10.1016/S2542-5196(21)00250-3).
- [28] Segovia-Siapco G, Sabaté J. Correction: Health and sustainability outcomes of vegetarian dietary patterns: a revisit of the EPIC-Oxford and the Adventist Health Study-2 cohorts. *Eur J Clin Nutr* 2019;73:968–968. <https://doi.org/10.1038/s41430-019-0427-8>.
- [29] Springmann M, Wiebe K, Mason-D’Croz D, Sulser TB, Rayner M, Scarborough P. Health and nutritional aspects of sustainable diet strategies and their association with environmental impacts: a global modelling analysis with country-level detail. *Lancet Planet Health* 2018;2:e451–61. [https://doi.org/10.1016/S2542-5196\(18\)30206-7](https://doi.org/10.1016/S2542-5196(18)30206-7).
- [30] Mediterranean Diet Foundation. What’s the Mediterranean Diet? n.d. <https://dietamediterranea.com/en/nutrition/> (accessed August 23, 2024).
- [31] Pollicino D, Blondin S, Attwood S. The Food Service Playbook for Promoting Sustainable Food Choices. World Resources Institute 2024. <https://doi.org/10.46830/wriipt.22.00151>.
- [32] Willett W, Rockström J, Loken B, Springmann M, Lang T, Vermeulen S, et al. Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. *The Lancet* 2019;393:447–92. [https://doi.org/10.1016/S0140-6736\(18\)31788-4](https://doi.org/10.1016/S0140-6736(18)31788-4).
- [33] Bui LP, Pham TT, Wang F, Chai B, Sun Q, Hu FB, et al. Planetary Health Diet Index and risk of total and cause-specific mortality in three prospective cohorts. *Am J Clin Nutr* 2024;120:80–91. <https://doi.org/10.1016/j.ajcnut.2024.03.019>.
- [34] Ye Y-X, Chen J-X, Li Y, Lai Y-W, Lu Q, Xia P-F, et al. Adherence to a planetary health diet, genetic susceptibility, and incident cardiovascular disease: a prospective cohort study from the UK Biobank. *Am J Clin Nutr* 2024;120:648–55. <https://doi.org/10.1016/j.ajcnut.2024.06.014>.
- [35] Lu X, Wu L, Shao L, Fan Y, Pei Y, Lu X, et al. Adherence to the EAT-Lancet diet and incident depression and anxiety. *Nat Commun* 2024;15:5599. <https://doi.org/10.1038/s41467-024-49653-8>.
- [36] EAT-Lancet Commission Brief for Healthcare Professionals. 2019.
- [37] Springmann M, Spajic L, Clark MA, Poore J, Herforth A, Webb P, et al. The healthiness and sustainability of national and global food based dietary guidelines: modelling study. *BMJ* 2020:m2322. <https://doi.org/10.1136/bmj.m2322>.
- [38] Halevy S, Trewern J. Eating For Net Zero. 2023.
- [39] British Dietetic Association. The Nutrition and Hydration Digest 3rd Edition 2023.
- [40] Sodexo Launches Massive Expansion of DefaultVeg Pilot, Making Plant-Based Meal Service a Norm at Campus Eateries Across USA. Sodexo 2024. <https://us.sodexo.com/newsroom/2024/sodexo-defaultveg-expansion> (accessed September 6, 2024).
- [41] NYC Health + Hospitals Now Serving Culturally-Diverse Plant-Based Meals As Primary Dinner Option for Inpatients at All of Its 11 Public Hospitals. NYC Health + Hospitals 2023. <https://www.nychealthandhospitals.org/pressrelease/ny-c-health-hospitals-now-serving-plant-based-meals-as-primary-dinner-option-for-inpatients-at-all-of-its-11-public-hospitals/> (accessed July 10, 2024).
- [42] Morgenstern S, Redwood M, Herby A. An Innovative Program for Hospital Nutrition. *Am J Lifestyle Med* 2024. <https://doi.org/10.1177/15598276241283158>.
- [43] NYC Health + Hospitals Celebrates 1.2 Million Plant-Based Meals Served. NYC Health + Hospitals 2024. <https://www.nychealthandhospitals.org/pressrelease/ny-c-health-hospitals-celebrates-1-2-million-plant-based-meals-served/> (accessed July 10, 2024).
- [44] Aggarwal M, Grady A, Desai D, Hartog K, Correa L, Ostfeld RJ, et al. Successful Implementation of Healthful Nutrition Initiatives into Hospitals. *Am J Med* 2020;133:19–25. <https://doi.org/10.1016/j.amjmed.2019.08.019>.

- [45] Babich JS, McMacken M, Correa L, Polito-Moller K, Chen K, Adams E, et al. Advancing Lifestyle Medicine in New York City's Public Health Care System. *Mayo Clin Proc Innov Qual Outcomes* 2024;8:279–92. <https://doi.org/10.1016/j.mayocpiqo.2024.01.005>.
- [46] Albert SL, Massar RE, Correa L, Kwok L, Joshi S, Shah S, et al. Change in cardiometabolic risk factors in a pilot safety-net plant-based lifestyle medicine program. *Front Nutr* 2023;10. <https://doi.org/10.3389/fnut.2023.1155817>.
- [47] Elzeneini M, George J, Ashraf H, Xu K, Petersen J, Anderson RD, et al. Impact of a preventive cardiology clinic focusing on lifestyle and nutrition counseling: A pilot analysis. *American Heart Journal Plus: Cardiology Research and Practice* 2021;6:100032. <https://doi.org/10.1016/j.ahjo.2021.100032>.
- [48] Vancouver General Hospital pilots new plant-rich menu items for health of patients and planet. Vancouver Coastal Health 2024. <https://www.vch.ca/en/press-release/vancouver-general-hospital-pilots-new-plant-rich-menu-items-health-patients-and> (accessed July 26, 2024).
- [49] Niranjana A. 'People mustn't feel meat is being taken away': German hospitals serve planetary health diet. *The Guardian* 2024. <https://www.theguardian.com/environment/2024/mar/28/planetary-health-diet-meat-plants-germany> (accessed September 2, 2024).
- [50] Ye B, Xiong Q, Yang J, Huang Z, Huang J, He J, et al. Adoption of region-specific diets in China can help achieve gains in health and environmental sustainability. *Nat Food* 2024. <https://doi.org/10.1038/s43016-024-01038-2>.
- [51] Loken B, Dhar M, Rapando NP. Healthy and sustainable diets must be culturally acceptable too. *Nat Food* 2024. <https://doi.org/10.1038/s43016-024-01042-6>.
- [52] Roland. Hayek Hospital, The very 1st Hospital in the world to serve exclusively plant-based vegan food! Hayek Hospital 2021. <https://hayekhospital.org/2021/06/14/hayek-hospital-the-very-1st-hospital-in-the-world-to-serve-exclusively-plant-based-vegan-food/> (accessed September 16, 2024).
- [53] Shih-Chun L. About the Cognition and Experiences of Vegetarian Diet of Nurses in Tzu Chi Hospitals. 2023.
- [54] Suh SY. The Case of Vegetarian Hospital Diets in Taiwan. *Korean Journal of Oriental Physiology & Pathology* 2014;28. <https://doi.org/10.15188/kjopp.2014.10.28.5.548>.
- [55] Ostfeld RJ, Pappo M, Graf L, Allen KE, Rivera A, Deenihan-Gruber N, et al. Creation of an Inpatient Plant-Based Program. *International Journal of Disease Reversal and Prevention* 2019;1:8. <https://doi.org/10.22230/ijdrp.2019v1n2a73>.
- [56] Wolk A. Potential health hazards of eating red meat. *J Intern Med* 2017;281:106–22. <https://doi.org/10.1111/joim.12543>.
- [57] Truman M, Smith L, Kassam S. Attitudes of hospital patients regarding removal of processed and unprocessed red meats from menus to support sustainable healthcare targets: A single-centre survey. *Lifestyle Medicine* 2023;4. <https://doi.org/10.1002/lim2.87>.
- [58] Waite R, Zionts J, Cho C. Toward "Better" Meat? Aligning Meat Sourcing Strategies with Corporate Climate and Sustainability Goals. World Resources Institute 2024. <https://doi.org/10.46830/wrirpt.22.00006>.
- [59] Ritchie H. You want to reduce the carbon footprint of your food? Focus on what you eat, not whether your food is local. *Our World in Data* 2020. <https://ourworldindata.org/food-choice-vs-eating-local> (accessed July 26, 2024).