

# Low-carbon emission menu is highly feasible in rehabilitation hospital

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## Introduction

- National Health Service's (NHS) food and catering service contributes ~6% to total NHS greenhouse gas emissions<sup>5</sup>.
- NHS England has developed new low carbon emission recipes to support the NHS to achieve net zero by 2040-2045<sup>5</sup>.
- Mildmay Mission Hospital volunteered to pilot these new recipes.

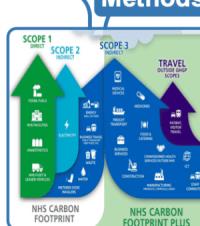


Figure 1: Summary of NHS net zero targets<sup>5</sup>

## Methods

 **Patient Population:** Adults living with HIV, homeless and/or detoxing.

### Cook-Fresh Menu Development

- 3-week cyclical, complete low carbon-emission winter menu.
- Aimed to meet targets for nutritionally vulnerable adults (800kcals, 27g protein per meal)<sup>6</sup>.

- Finalised after 2 months of iterative improvements following patient, staff and catering service feedback.

 **Audit:** Conducted over three patient lunchtimes ( $n=38$  meals) with served portions and plate waste after each meal weighed.

 **Patient Survey:** Adapted from Patient-Led Assessments for Care Environment form<sup>7</sup> with additional questions to assess familiarity with sustainability terms. Survey delivered orally ( $n=11/16$  patients).

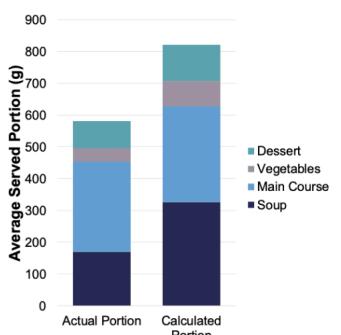
 **Effect on Carbon Emissions:** Pre-post KgCO<sub>2</sub>e analysis of standard menu compared to low-emission menu using Nutritics v6

## Objectives

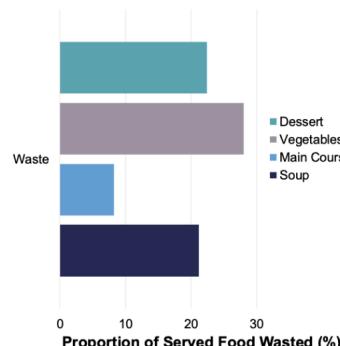
- To assess the impact of a novel whole-menu approach to low carbon emissions on:
  - 1) food portions and plate waste
  - 2) nutritional content of served food
  - 3) estimated impact on greenhouse gas emissions
  - 4) patient mealtime satisfaction and sustainability awareness

## Results

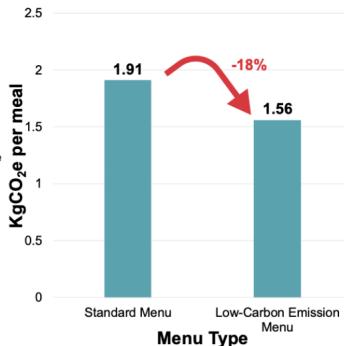
### Served Portions



### Plate Waste



### Impact on Carbon Emissions



### Patient Satisfaction:

- 64% (7/11) "very satisfied" or "satisfied" with meal taste and appearance.
- 45% (5/11) "satisfied" with meal choice and 45% (5/11) "dissatisfied" or "very dissatisfied" with meal choice.

### Patient Awareness:

- 82% (9/11) unaware menu was environmentally friendly.
- 27% (3/11) were somewhat-very passionate about the environment.
- 45-73% (5-8/11) very unfamiliar with terms "sustainable (diet)", "plant-based", "net zero"

Figure 2: Average served portion (g) stratified by meal component after the launch of the low carbon emission menu.

Meals on average provided 719kcals (89.9% of target), 30g protein (112.6% of target).

Figure 3: Average proportion (%) of served food that became plate waste stratified by meal component – conducted after launch of low carbon emission menu.

10.1% total plate waste

Figure 4: Average carbon footprint (KgCO<sub>2</sub>e) per meal pre/post launch of the low carbon emission menu.

## Insights and Future Plans

- Results indicate low carbon-emission menu is highly feasible – supporting consistent portions, ability to meet nutritional targets and limited food waste.
- Patient dissatisfaction with meal choice can be complicated by poor menu awareness and poor engagement with sustainability movement.
- Future advances should balance sustainability aims with maintaining adequate patient choice and ensure concomitant patient education/inclusion.
- Future Plans:** low-carbon emission summer menu; introduce cultural meals, meat-free Mondays, cooked breakfast; scale to larger catering services.

 quantitative menu analysis, patient insights, 18% reduction in carbon emissions

 small sample size, limited applicability to larger hospitals

## References

- (5) NHS England (2022). Delivering a 'Net Zero' National Health Service. NHS England. Available: <https://www.england.nhs.uk/green/nhs/publication/delivering-a-net-zero-national-health-service/> [Last Accessed: 28/05/2024]
- (6) BDA Food Services Specialist Group (2023). The Nutrition and Hydration Digest 3rd Edition. BDA. Available: <https://www.bda.uk.com/static/176907a2-f2d8-45bb-8213c581d3cccd7ba/06c5eecef-fa85-4472-948806c5165ed5d9/Nutrition-and-Hydration-Digest-3rd-edition.pdf> [Last Accessed: 10/01/2024].
- (7) PLACE (2023). PLACE 2023 September – Ward Food Assessment. NHS Digital. Available: <https://digital.nhs.uk/data-and-information/areas-of-interest/estates-and-facilities/patient-led-assessments-of-the-care-environment-place> [Last Accessed: 10/01/2024]