



SUSQI PROJECT REPORT

Project Title: Reusable safe cutleries and plates at John Howard Centre

Start/End date of Project: November 2022 - present

Date of Report: August 21st, 2023

Team Members:

- Jeffrey Sham, Sustainability & Net Zero Officer
- Adam Toll, Assistant Director of Estates
- Henna Beegun, Clinical Nurse Manager

Background:

It is estimated that England uses 2.7 billion items of single-use cutlery — most of which are plastic — and 721 million single-use plates per year, but only 10% are recycled¹. A range of polluting single-use plastics (including plastic cutlery, plates and polystyrene trays) will be banned from October 2023 following the Government's consultation.

NHS England estimate a switch from single-use inpatient meal sets to a reusable service could save the average NHS hospital 50-100 tonnes CO₂e a year, equivalent to around 185,000 car miles, and £30k a year². In January 2023, NHS England launched a practical how-to guide for catering consumables for the NHS system to support transitions to more sustainable mealtimes.

Within East London NHS Foundation Trust, we provide mental health services, including care to patients in forensics wards. A forensic mental health ward provides intensive support for adults and young people with mental health needs in a secure setting. To maintain patient and staff safety during mealtimes, it is not possible to switch to standard metal cutlery. As a team we therefore needed to work together with our forensics wards to move towards sustainable mealtimes and lowering our carbon footprint while improving patient dining experiences, maintaining patient and staff safety and reducing procurement costs.

Specific Aims:

To safely replace single use cutlery and plates with reusable alternatives in forensics wards.

Methods:

John Howard forensic centre in Hackney has 11 wards. We identified Clerkenwell Ward, a learning disability unit, as suitable to trial our changes.

Stakeholder engagement

We engaged with the clinical staff in the unit to review and test suitable items of cutlery and plates to ensure patient safety. We confirmed the equipment we would like to swap to are non-breakable,



non-ligature and no risk to service users. Cups were excluded from the current project as some were already reusable and others recyclable.

We considered how service users (patients) may engage in the change and with clinical staff considered which patients may like to be involved. Patients will be encouraged to take active roles in mealtimes, such as bringing reusables to the dishwashing area. An incentive of a small payment will be offered to patients who take part in this task.

Logistics

Once safe options had been identified, each individual item changed is required to go through an approval process with the ward manager, infection control team, and the Director of John Howard Centre. Once approved, the estates team ordered the reusable alternative. Volumes required were determined in collaboration with the clinical team, accounting for a risk that some items may become lost and need replacing,

The unit already had a dishwasher in place. We confirmed the process for reuse and sterilisation with our catering suppliers OCS who gave the clearance to use the dishwasher as it meets temperature standards. This was confirmed by infection and prevention control (IPC).

Close monitoring of product inventory and designated patient washing and storing of reusables will be required on an ongoing basis which requires ongoing collaboration between the estates and clinical team. In the first year, the sustainability team will assist with this process. After that, it will be handed over to the Clerkenwell staff to manage long-term, with information of procurement and standard operating procedures agreed.

Progress and next steps

At present, plate ware has been approved and silicone cutlery is still under approval processes.

We are in the process of identifying suitable staff and/or patients to consistently manage the cleaning of reusable products to ensure the change is embedded into daily practice.

Measurement:

Patient outcomes:

We have collaborated with clinical staff to identify safe cutlery options and don't anticipate negative outcomes. Any unintended negative impacts, such as patient harm via reusable cutlery, would be monitored via Datix incident reporting.

Environmental sustainability:

It is estimated that Clerkenwell uses 55,080 items of single use cutlery per year based on 15 patients and 12 staff members eating three meals per day (Table 1).

Item	Monthly usage	Annual usage
Disposable fork	1,530	18,360
Disposable knife	1,530	18,360
Disposable fork	1,530	18,360

The carbon footprint of disposable and reusable cutlery was estimated using a cradle-to-grave process-based carbon footprinting analysis, looking at the extraction and manufacturing of raw materials, transport, waste and dishwashing for the reusable items. Carbon emission factors were taken from the UK Government Greenhouse gas report: conversion factors 2023 database.

The carbon footprint of the reusable items were estimated per use. It was assumed that each reusable item has a lifespan of 7,300 uses, however this was reduced to 5,110 uses to account for a 30% loss rate. For the carbon emissions associated with washing the reusable cutlery, the energy and water consumption per dishwashing standard cycle was taken from the Dishwasher manual and divided by the number of items in a full dishwasher load. It was assumed that each dishwasher would be full load per cycle.

Item carbon footprints estimated per use:

Item	Carbon footprint per use (kgCO ₂ e)
Disposable fork (paper)	0.020
Disposable knife (paper)	0.020
Disposable spoon (paper)	0.020
Reusable spork (plastic)	0.004
Reusable knife (plastic)	0.004

It was assumed that a reusable spork would replace both 1 disposable fork and 1 disposable spoon per use.

Economic sustainability:

Item costs from procurement team:

- Reusable cutlery item: £1.50 per
- Single use knife: £0.0814 per
- Single use fork: £0.0915 per
- Single use spoon: £0.1012 per

Based on 15 patient and 12 staff members eating three meals a day, Clerkenwell is roughly spending £5,112.48 per year on disposable cutlery. This includes the small additional cost of waste disposal.

Investment cost for reusable equipment

Each batch order of reusable is £660 (consists of 20 pieces of: bowls and plates, 20 pieces of spork and knives). The first year it is estimated we will need to buy 2-3 sets (£1,320-£1,980) of reusable cutlery and crockery due to accidental disposal of them into general bin.

Cost comparison and financial trade off of single use vs reusable, tracked over time.

Due to data unavailability, waste disposal costs (£/tonne) and electricity and water costs used for washing (£/kWh, £/litre) have been taken from another NHS Trust.

Social sustainability:

We will continue to collate feedback from staff and service users and have detailed anticipated impacts in the results section.



Results:

Patient outcomes:

We do not anticipate any changes to patient clinical care. Any unintended negative impacts, such as patient harm via reusable cutlery, would be monitored via Datix incident reporting.

Environmental sustainability:

It is estimated that Clerkenwell will save 976.1 kgCO₂e per year by switching from disposable to reusable cutlery. This is equivalent to driving 2,883 miles in an average car.

Item	Carbon footprint per year (kgCO ₂ e)
Disposable cutlery (knife, fork spoon)	1,106.5
Reusable cutlery (spork and knife)	130.5
Savings	976.1

Economic sustainability:

*Financial savings have been estimated using a different method to carbon savings. Financial savings are based on upfront investment costs.

It has been estimated that washing a year's usage of reusable cutlery in the dishwasher will cost ~£90. A conservative estimate based on electricity and consumption of a standard efficient cycle.

Annually, we anticipate savings between £3,042.48 - £3,702.48 depending on whether 2 or 3 cutlery sets are required.

Social sustainability:

We plan to collate patient and staff survey feedback following the trial phase.

There have previously been patient complaints on the amount of single use equipment and waste produced from their care, and therefore we anticipate positive patient feedback on the change improving their experience in hospital. By offering patients a responsibility (with a small financial incentive) in the new mealtime process may also provide benefits of patients being involved in their daily routine whilst an inpatient.

The project is also supporting to build relationships between non-clinical and clinical teams and to increase awareness of the environmental impacts and actions that can be taken by clinical teams.

Discussion:

Barriers and Challenges:

- Sourcing of appropriate and safe products. The original samples sent were deemed unsafe because they were able to be cracked or snapped, which led to potential harmful use.
- Sterilisation: There was initial Infection control concern on the suitability of the wards existing dishwasher. This was resolved when OCS catering manager (facilities management) gave the clearance to use, stating it met temperature standards.
- Individuals to sustain change: We are in the process of finding a dedicated individual to monitor the cleaning of reusable products. The only patient engaged in the initiative so far has unfortunately declined to continue at present due to the financial incentive being delayed.

Conclusions:

Eliminating single use cutlery and plates has potential to provide benefits across the sustainable value equation by keeping patients safe and improving patient dining experience, saving the Trust money long term, and lowering the Trusts carbon footprint. With success of the trial, there would be opportunity to scale for further savings, where the John Howard Centre alone spends approximately £60,000 per year on single use cutlery (excluding waste disposal cost).

References and Resources

1. [Far-reaching ban on single-use plastics in England - GOV.UK \(www.gov.uk\)](https://www.gov.uk)
2. [Catering consumables how-to guide](#): Available via the Future NHS catering hub (only available for NHS staff). Please email england.ccf@nhs.net if you have difficulty accessing Futures.

