



SUSQI PROJECT REPORT

Reducing ECG Electrode Waste Through Sustainable Clinical Practice in McGill Ward

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Background:

This project was undertaken within the 31-bed McGill Ward Medical Assessment Unit at Winchester Hospital to reduce waste, improve sustainability and deliver better value from routinely used clinical consumables. Cardiac monitoring is an essential component of care for many patients admitted to the ward, supporting the timely identification of life-threatening arrhythmias and acute cardiac conditions. Single-use disposable ECG electrodes are used extensively to facilitate this monitoring.

ECG electrodes are supplied in foil packs and arranged in strips of six; however, only four electrodes are typically required for patient monitoring. As a result, the two remaining electrodes are often not returned to their protective packaging, causing them to dry out and become unsuitable for clinical use. These unused electrodes must then be discarded, creating avoidable waste and increasing the demand for replacement stock.

The environmental impact of this waste is significant. ECG electrodes are manufactured from a combination of fossil fuel-derived plastics, conductive materials and adhesive components, making them difficult to recycle and contributing to the NHS carbon footprint. Reducing unnecessary wastage therefore presents an opportunity to lower carbon emissions, minimise clinical waste and support the NHS commitment to delivering high-quality, low-carbon healthcare.

In addition to the environmental benefits, reducing electrode wastage offers a financial benefit through lower procurement costs and more efficient use of NHS resources. The project sought to address this issue through staff education, process improvement and the introduction of simple storage solutions to enable unused electrodes to be retained safely for future use.

Although few published studies have specifically examined the wastage of unused ECG electrodes a growing body of evidence demonstrates the value of reducing waste associated with ECG monitoring

equipment and consumables. Recent work by Erasmus Medical Centre and the Digital Health in the Circular Economy (DiCE) EU project, has explored more sustainable approaches to ECG lead systems, including reuse and reprocessing, highlighting the environmental impact of single-use cardiac monitoring products. Similar NHS sustainability and SusQI projects have successfully reduced waste through staff education, process redesign and improved utilisation of consumables.

The NHS became the world's first health system to commit to reaching net zero and has set two targets to reach net zero by 2040 for direct emissions and 2045 for indirect emissions. The Trust has also published its own Green Plan, setting out aims and objectives for improving sustainability and lowering emissions in line with the NHS England targets.

The project provides a clear and measurable example of how ward-level quality improvement can deliver the aims of the Trust's Green Plan in practice. By improving the storage and use of ECG electrodes, it reduces unnecessary procurement, single-use clinical waste and associated carbon emissions, while maintaining safe and effective cardiac monitoring.

This project directly supports the Green Plan's priorities for Net Zero Clinical Transformation, Medicines and Medical Devices, Waste and Recycling, and Supply Chain and Procurement, including its commitments to optimise resource use, embed sustainability within quality improvement, minimise disposable medical products and measure reductions in consumable use, waste, cost and carbon.

The project also demonstrates the Green Plan's triple bottom line approach by combining environmental benefits with improved staff processes, continued high-quality patient care. Its staff-led approach, supported by education, audit and potential replication in other clinical areas, further contributes to the Green Plan's aims to empower colleagues to innovate and embed sustainable practice into everyday care.

Describe the context in which the change is taking place:

This project was undertaken within McGill Ward, a 31-bed Medical Assessment Unit at Winchester Hospital. The ward receives patients from both the Emergency Department and direct GP referrals, many of whom require continuous cardiac monitoring as part of their care. At any given time, more than 10 patients may be undergoing cardiac monitoring, resulting in the routine and frequent use of disposable ECG electrodes.

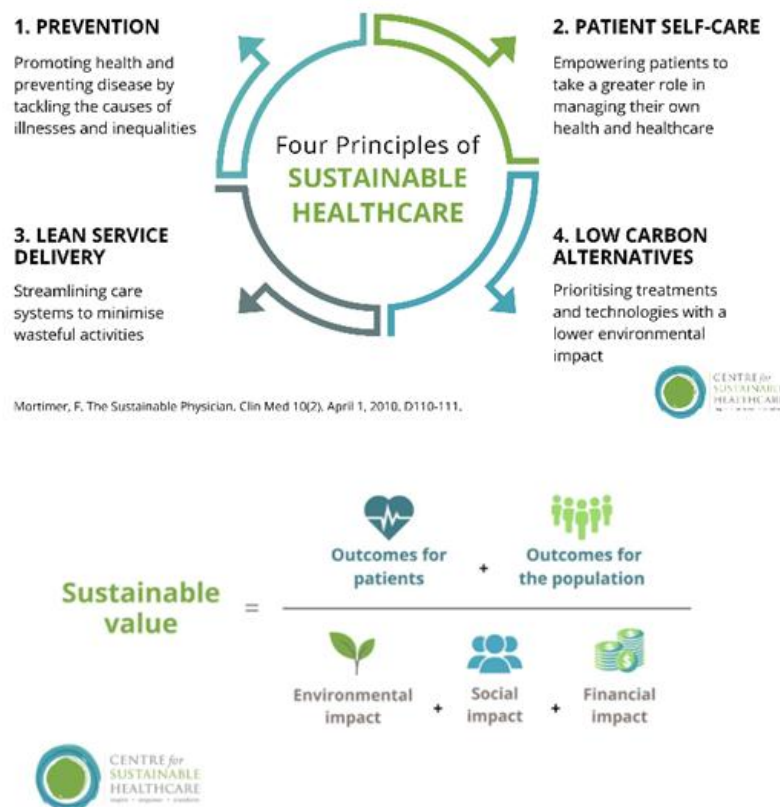
An initial review of current practice identified a significant opportunity to reduce waste, with approximately two out of every six electrodes supplied being discarded unused. This equates to around one-third of all electrodes purchased. The waste was primarily associated with unused electrodes not being returned to their protective packaging after opening, causing them to dry out and become unsuitable for use. Addressing this issue required a combination of staff education, behavioural change and the introduction of practical storage solutions at the point of care.

The project was led by Senior Sister Nadine Clarke and Clinical Matron Mark Badham, with support from key stakeholders including ward staff, procurement colleagues and the Trust sustainability team. Engagement with frontline staff was essential to understand existing practices and develop a solution

that could be easily incorporated into daily workflows, while procurement data helped quantify the scale and cost of consumable use.

The intervention was developed using the principles of sustainable healthcare and lean service improvement, focusing on reducing unnecessary waste while maintaining high-quality patient care (see figure 1). The anticipated benefits include reduced procurement costs, lower levels of clinical waste, a reduction in associated carbon emissions and more effective use of ECG electrodes, helping to ensure reliable cardiac monitoring and better stewardship of NHS resources.

Figure 1. Centre for sustainable Healthcare (CSH) principles of sustainable healthcare.



Specific Aims:

The aim of this project was to reduce avoidable ECG electrode waste within McGill Ward by implementing a simple, sustainable intervention focused on staff education and improved storage practices.

The project sought to lower procurement costs, reduce clinical waste and associated carbon emissions, and ensure ECG electrodes remained effective for safe and reliable cardiac monitoring.

Success was measured through a repeat audit undertaken three months after implementation. In addition, the project aimed to promote a culture of sustainable quality improvement and provide a model that could be replicated across other clinical areas to maximise environmental, financial and operational benefits.

Methods:

Studying the system

To understand the scale of the problem and identify opportunities for improvement, a baseline audit was undertaken to assess the number of ECG electrodes being discarded due to inappropriate storage. Observations during routine ward activity, including the clearance of bed spaces and general housekeeping activities, identified that unused electrodes were frequently being left exposed to the air rather than returned to their protective foil packaging. This was primarily due to a lack of awareness among staff regarding the impact of storage practices on electrode usability and waste generation.

A seven-day audit was conducted to quantify the extent of electrode wastage. During this period, 203 unused electrodes were identified as unsuitable for clinical use and discarded, equating to an average of 29 electrodes wasted per day (see table 1). The audit confirmed that a significant proportion of ECG consumables were being lost through avoidable waste, highlighting an opportunity to improve both resource efficiency and environmental sustainability.

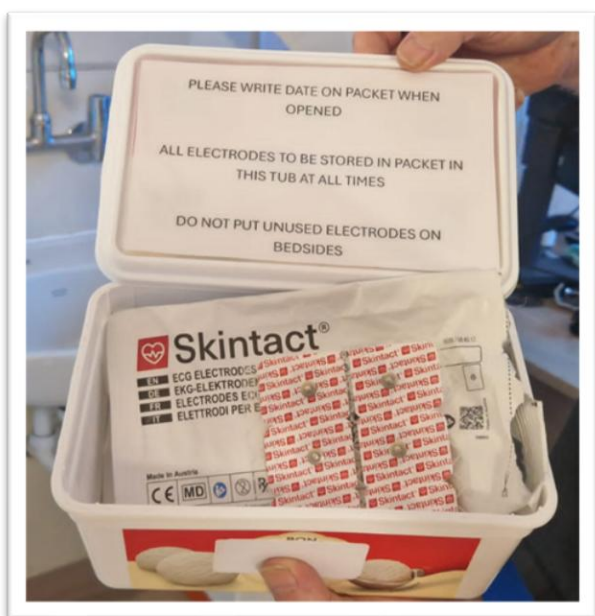
Table 1. ECG electrode wastage audit.

Day	No. electrodes wasted
Day 1	24
Day 2	25
Day 3	28
Day 4	51
Day 5	17
Day 6	32
Day 7	26
Total over 7-day audit	203

Comprehensive stakeholder engagement was undertaken throughout the project, including collaboration with ward staff, the Hampshire Hospitals Foundation Trust (HHFT) Procurement Team, the HHFT Sustainability Team and the Centre for Sustainable Healthcare (CSH). Engagement with frontline staff helped identify practical challenges and informed the development of an intervention that could be easily incorporated into existing workflows. Procurement data provided insight into historical purchase levels and costs, enabling the financial impact of waste to be quantified. This information is presented in Appendix 1.

To evaluate the environmental impact of the project, the team worked with the Centre for Sustainable Healthcare to undertake a carbon footprint assessment of ECG electrode use and wastage. The analysis incorporated the materials, manufacture, packaging, transport and disposal of electrodes, together with the environmental impact of the proposed storage solution. This enabled the anticipated carbon and financial savings associated with reducing electrode waste to be quantified and is detailed in the measurements section of this report.

Implementing change



The key changes implemented were:

- The introduction of a standardised process to ensure that any unused electrodes were stored appropriately within designated containers located in individual patient bays.
- The provision of readily accessible storage containers using repurposed ice cream tubs, which were cleaned, labelled and placed at the point of care. This approach avoided the need to purchase new equipment and aligned with the principles of resource efficiency and waste reduction.
- Delivery of targeted staff education to raise awareness of the environmental, financial and clinical implications of electrode wastage and to reinforce the importance of correct storage practices following the opening of electrode packets.
- Ongoing engagement with ward staff throughout the project to ensure understanding of the rationale for change and to secure clinical ownership of the intervention. Emphasis was placed on the role of appropriate storage in reducing waste, improving resource stewardship and maintaining the effectiveness of cardiac monitoring.
- The project was delivered entirely within existing ward resources and did not require any additional funding or capital investment. Following the education and engagement phase, the new process was implemented across the ward and embedded into routine practice. A repeat audit was subsequently undertaken three months after implementation to evaluate the effectiveness of the intervention and measure its impact on reducing electrode wastage.

Measurement:

The impact of the intervention was evaluated using a combination of procurement and audit data. Procurement records were reviewed to identify the volume of ECG electrodes purchased before and after implementation, providing an indication of changes in consumable use and associated costs. A baseline audit was undertaken over a seven-day period to quantify the number of ECG electrodes that were being wasted due to incorrect storage practices. This established the extent of the problem and provided a benchmark against which improvement could be measured.

To assess the effectiveness and sustainability of the intervention, a repeat audit was conducted three months following implementation. The same methodology was used to measure the number of electrodes discarded due to inappropriate storage, enabling comparison with baseline data and evaluation of the project's impact on reducing waste.

Patient outcomes:

The intervention supports the delivery of safe and effective cardiac monitoring by ensuring that ECG electrodes are stored correctly and remain fit for purpose. Appropriate storage helps maintain the adhesive and conductive properties of the electrodes, reducing the risk of poor-quality traces and monitoring artefact, while supporting reliable clinical decision-making and continued high standards of patient care.

No adverse impacts on patient outcomes are anticipated as a result of this project. The intervention does not alter clinical pathways, or the standard of care provided to patients; rather, it aims to maintain or enhance the effectiveness of cardiac monitoring whilst reducing environmental impact, waste and unnecessary expenditure.

Due to the scope and timeframe of the project, direct measurement of patient outcomes was not undertaken. However, available evidence and clinical rationale suggest that improving the storage and usability of ECG electrodes can support the quality and reliability of patient monitoring.

Population outcomes:

Whilst direct population health outcomes were not measured, reducing unnecessary ECG electrode waste contributes to lower carbon emissions and resource consumption, supporting the NHS Net Zero agenda and wider environmental sustainability goals. When replicated across multiple clinical areas, interventions such as this have the potential to deliver cumulative benefits for both population health and environmental resilience.

Environmental sustainability:

A cradle-to-grave carbon footprint assessment was undertaken in collaboration with the Centre for Sustainable Healthcare to quantify the environmental impact of ECG electrode use within McGill Ward. The analysis included the raw materials, manufacturing, packaging, transport and end-of-life disposal of the electrodes, providing a comprehensive assessment of their environmental footprint.

Data was obtained from previous studies by the Centre for Sustainable Healthcare and other references. Where data was unavailable, calculations were made based on the weight and material of the product. Items were weighed by the team and emissions were calculated using the weight of the items using recognised greenhouse gas conversion factors from the Department for Energy Security and Net Zero (DESNZ) 2026 Greenhouse Gas Reporting Conversion Factors, the ICE v4.0 database and published life cycle assessment data (LCAs), including primary research papers.

Materials

Material emissions are calculated by the weight of the material, emission factor of the material and number of items.

*Total emissions = weight of material * material emission factor*

Transport

Transport emissions per journey are calculated by weight of product, distance travelled and emissions per tonne.km travelled.

*Total emissions = Weight in tonnes per delivery*distance in km*emission factor*

The emission factor for average laden, non-refrigerated HGV is 0.127 kgCO₂e per tonne.km.

Waste

Waste emissions are calculated by amount of waste (tonnes) and the UK emission factor of average emissions by waste stream.

*Total emissions = volume of waste * waste stream emission factor*

The emission factor for clinical waste is 1074 kgCO₂e, infectious waste is 569 kgCO₂e, dry mixed recycling is 172 kgCO₂e and domestic waste is 172 kgCO₂e.

The assessment identified that a single box of ECG electrodes generates approximately 14.8 kgCO₂e across its lifecycle, with the largest contribution arising from the manufacture of the electrodes and packaging, followed by waste disposal. Clinical waste emissions were calculated using an emission factor of 1,074 kgCO₂e per tonne, while transport emissions were calculated using standard freight emission factors for road and sea transport.

Procurement data showed that 800 foil packs (24,000 electrodes) were used within a 12-month period. Baseline auditing identified that approximately 33% of electrodes were being wasted because unused electrodes were not returned to protective packaging and subsequently became unusable. This equates to approximately 8,000 electrodes, or 266 foil packs, being discarded unnecessarily each year.

By introducing improved storage arrangements and staff education, the project aimed to prevent this avoidable waste. The carbon footprint analysis demonstrated that eliminating the wastage of unused electrodes could avoid approximately 88.8 kgCO₂e annually, equivalent to avoiding the procurement, transport and disposal impacts associated with more than six boxes of ECG electrodes. In addition to reducing carbon emissions, the project prevents the unnecessary disposal of approximately 8,000 ECG electrodes per year, reducing demand for replacement stock and supporting more efficient use of NHS resources

Economic impact:

This project demonstrates how a simple change in clinical practice can generate measurable financial benefits while maintaining high standards of patient care. Procurement data showed that McGill Ward used approximately 800 foil packs of ECG electrodes (24,000 electrodes) per year. Each foil pack costs £1.40 equating to a total annual cost of £847.20. Analysis identified that around 33% of electrodes were being wasted because unused electrodes were not being returned to their protective packaging and subsequently became unusable.

Financial savings were identified based on the number of avoidable wasted electrodes packs per year.

Social impact:

Engagement was done across the team to collect verbal feedback from staff on this change.

Results:

Patient outcomes:

No adverse impacts on patient care were identified as a result of this project. Improved storage of ECG electrodes helps maintain their adhesive and conductive properties, supporting reliable cardiac monitoring and reducing the risk of poor-quality traces or monitoring artefact. Whilst direct patient outcomes were not measured within the project timeframe, the intervention supports the continued delivery of safe and effective care.

Environmental sustainability:

ECG electrodes raw materials and manufacturing

The SkinTact FS-RE ECG electrodes were used by the MAU department. They are manufactured by Leonhard Lang GmbH, Archenweg 56, 6020 Innsbruck based in Austria. They are delivered in a cardboard box, with each box containing 40 foil packs. Each foil pack contains 30 electrodes arranged as 5 sheets of 6 electrodes. The weight of the cardboard box was 240g, the foil packaging was 8g, each electrode was 2g, and the plastic backing for 6 electrodes was 4g.

Although a technical data sheet was not available for the FS-RE model, Technical Information for FS-RG ECG electrode which appears similar was found at [653214eac94ea3bb905aea11_10014509_0_FS-RG1_10.pdf](#) and shows the materials used for the electrode and foil packaging. Although precise weights for each component are not available, estimated weights are shown in Table 1. The emission factors for each material are provided and the emissions for the raw materials and production.

Table 1. Inventory for equipment, weights, emissions factors and the carbon footprint for ECG electrodes.

Component	Material	Estimated Weight (g)	Carbon footprint for raw material (kgCO ₂ e /tonne)	Carbon emissions for raw material (kgCO ₂ e)
Backing	PE foam	0.45	2965.1	0.0016
Adhesive	Medical acrylate	0.15	6000.0 (*)	0.0027
Conductive gel	Aqua-Tac solid gel	0.55	2000.0(**)	0.0006
Sensor	Ag/AgCl-coated ABS	0.35	8000.0 (***)	0.0028
Stud/snap	Stainless steel	0.2	2863.9	0.0006
Release liner	Siliconized PET film	0.3	2965.1	0.0004
Total		2		0.0087

(* estimated based on anticipated component parts of medical acrylates [What is the Chemical Composition of Acrylic Adhesives? | Monomers & Formulations](#))

(** estimated based on anticipated composition of 55% water, 25% acrylic hydrogel polymer, 15% glycerol/propylene glycol and 5% salts/additives)

(*** estimated based on anticipated composition of 95% ABS substrate (Acrylonitrile Butadiene Styrene- a type of engineering plastic), 4% silver, 1% silver chloride)

For one electrode, the emissions for raw materials and production are 0.0087 kgCO₂e (8.7 gCO₂e). A plastic backing sheet weighs 4g for 6 electrodes. Using an emission factor of 3,172 kgCO₂e per tonne, emissions are 0.0009 kgCO₂e (0.9 gCO₂e) each. For a pack of 30 electrodes, emissions are ((30 * 0.0087) + (5 * 0.0009)) = 0.2655 kgCO₂e.

Packaging raw materials and manufacturing.

The pouches are made from 3 layers, namely polyethylene, aluminum, and paper. The weight of each part was not provided, so equal distribution of the three was estimated. The emission factors for the packaging raw materials are provided in table 2, along with their emissions based on the packaging weight

Table 2. Inventory for equipment, weights, emissions factors and carbon footprint for electrode packaging.

Materials packaging	Material	Estimated weight (g)	Carbon emission factor for raw materials (kgCO ₂ e /tonne)	Carbon emissions for raw material (kgCO ₂ e)
Pouches	Inner Layer Polyethylene	0.66	2965.1	0.002
	Centre Layer Aluminium	0.66	9115.9	0.006
	Outer Layer Paper	0.66	1345.1	0.001
Boxes	Cardboard	240	1199.7	0.288

Waste emissions per foil pack

Weight

- One cardboard box contains 40 foil pouches.
- Total weight of electrodes per box - one sheet of 6 electrodes on plastic backing weighs 16g. One pouch of five sheets weighs 80g. 40 pouches of electrodes would weigh 3,200g or 3.2kg.
- One empty foil pouch weighs 8g. 40 empty pouches weigh 320g
- The empty cardboard box weighs 240g.

Waste stream

- The electrodes are disposed of in the clinical waste stream, the foil pouch in the domestic waste stream and the cardboard box in the dry mixed recycle stream.

Emissions

- For the electrodes; emissions are 0.0032t * 1074 kgCO₂e = 3.44 kgCO₂e.
- Using the same method, the foil pouches generate 0.055 kgCO₂e and the cardboard box 0.041 kgCO₂e.

Total emissions from waste are 3.51 kgCO₂e per box.

Transport

Weight

- The total weight of a box of 40 packs of electrodes is 3,200g for the electrodes and plastic backing, 320g for the foil pouches, and 240g for the box calculated as, in total, a box weighs 3,760g - 3.76kg.

Distance

- The distance from Leonhard Lang GmbH, Archenweg 56, 6020 Innsbruck, Austria to Calais is 1069km by HGV. The ferry is 33km from Calais to Dover, with the additional HGV drive to Basingstoke hospital RG24 9NA being 202km.

Emissions factor

- The emission factor for average laden, non-refrigerated HGV is 0.127 kgCO₂e per tonne.km. For cargo being shipped, the emission factor is 0.020 kgCO₂e per tonne.km.

Total emissions from transport are 0.0013 kgCO₂e per box.

Summary

Total emissions are shown in Table 3.

Table 3. Emissions from boxes, waste disposal, and transport.

	Emissions (kgCO ₂ e /box)
Electrodes and packaging	11.29
Waste disposal	3.51
Transport	0.0013
Total	14.8

Total emissions (raw materials, production, waste, and transport) = 14.8 kgCO₂e.

Current ordering

In the past 12 months, 800 foil packs of ECG electrodes were ordered, totaling 24,000 individual leads. If current waste is 33%, 8,000 unused electrodes are discarded per year. This equates to 266 full foil packs of electrodes – or just over 6 full boxes.

If electrodes can be stored so each is used to benefit the patient, avoided emissions would be 6 * 14.8 kgCO₂e, totaling 88.8 kgCO₂e saved per year.

Social impact:

The project delivered positive social benefits for staff by simplifying the management of ECG electrodes and reducing the need to retrieve replacement consumables from storage areas. Staff education and engagement increased awareness of sustainable resource use, helping colleagues understand how small changes in everyday practice can reduce waste, lower carbon emissions and make better use of NHS resources. Feedback from staff was positive, with the intervention supporting a greater sense of ownership, engagement and alignment with the Trust's sustainability objectives while making the desired behaviour easy to adopt within routine clinical practice.

Economic impacts:

Procurement data identified an annual spend of £847.20 on ECG electrodes within McGill Ward. By reducing the current wastage rate of approximately 33%, the project has the potential to avoid the unnecessary disposal of around 8,000 electrodes (266 foil packs) per year, generating an estimated annual saving of £372.40. These savings can be achieved without additional investment,

demonstrating how simple process improvements can improve resource efficiency and reduce healthcare costs.

By improving storage practices and reducing avoidable wastage, the project has the potential to prevent the unnecessary disposal of approximately 8,000 electrodes per year, equivalent to 266 foil packs. Based on the procurement cost of £1.40 per foil pack, this would generate an estimated annual saving of £372.40, representing a reduction of approximately one-third of current expenditure on ECG electrodes.

Importantly, the intervention was delivered with no additional capital investment or implementation costs. Storage containers were created using repurposed materials already available within the department, ensuring that the financial benefits were achieved without the need for additional expenditure.

Although the financial saving from a single ward is relatively modest, the project demonstrates how small improvements in resource stewardship can deliver recurring savings year after year. If replicated across other wards and hospital sites where cardiac monitoring is routinely undertaken, the cumulative financial benefits could be substantially greater while simultaneously reducing waste and carbon emissions.

Discussion:

This project demonstrates how a simple change in practice can deliver environmental, financial and operational benefits while maintaining safe and effective patient care. Through improved storage and use of ECG electrodes, the project is expected to reduce unnecessary waste, lower carbon emissions by 88.8 kgCO₂e per year and save approximately £372 per year, while improving staff awareness of sustainable resource use.

The main challenge was raising staff awareness of the impact of electrode wastage and identifying processes to reduce waste. This was successfully addressed through education, engagement and the introduction of simple storage solutions.

Risks associated with the project are low and relate primarily to sustaining staff compliance over time, which can be managed through ongoing communication and periodic audit.

Conclusions:

This project has demonstrated how a simple, low-cost change to everyday clinical practice has the potential to deliver measurable environmental and financial benefits while maintaining high standards of patient care. By reducing unnecessary waste of ECG electrodes, the project has highlighted an opportunity to lower carbon emissions, reduce avoidable expenditure and make better use of NHS resources, supporting both the Trust's Green Plan ambitions and the wider NHS Net Zero agenda. Staff engagement throughout the project was overwhelmingly positive, with colleagues recognising the value of reducing waste and the role they can play in delivering more sustainable healthcare.

The success of the project has been underpinned by effective collaboration between clinical staff, the sustainability team and procurement colleagues. The support provided through access to procurement and carbon footprinting data enabled the team to quantify the environmental and financial impact of the intervention, while ward staff embraced the proposed changes and demonstrated a strong willingness to adopt more sustainable ways of working.

A key learning from this work is that meaningful sustainability improvements do not always require significant investment or complex interventions. Staff education, awareness raising and simple process redesign can achieve tangible benefits when supported by engagement and leadership. Providing convenient storage solutions for unused electrodes not only reduced waste but also improved efficiency by making supplies more accessible at the point of care, embedding a leaner and more sustainable way of working within the ward.

Importantly, this project demonstrates the potential for small-scale SusQI initiatives to act as catalysts for wider organisational change. The learning and outcomes from McGill Ward could be replicated across other wards and clinical areas where cardiac monitoring is routinely undertaken, delivering greater environmental and financial benefits at scale. The next stage will be to share the findings through Trust nursing, midwifery and matrons' forums to promote adoption of the approach and encourage further staff-led sustainability improvement projects.

References and Resources

- Cadena, E., Honkoop, M., Allard, C., & Hayes, K. (2026). [Metadata] Life Cycle Assessment dataset of single-use and reusable ECG lead sets under alternative value chain scenarios [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.21921310>. (Accessed: 27 August 2026).
- Tonino, T. (2025) *Rewiring for sustainability: A circular approach to the redesign of ECG lead sets to improve sustainability in healthcare*. MSc thesis. Delft University of Technology, Faculty of Industrial Design Engineering. Available at: <https://resolver.tudelft.nl/uuid:743ad02b-0b92-477d-b2a7-e40a8d46c407> (Accessed: 27 August 2026).
- MedLinket Clinical Engineering Team (2026) *ECG Electrodes Shelf Life: 2-Year Storage Guide & Inventory Protocol*. MedLinket. Available at: <https://med-linket-corp.com/blogs/ecg-electrodes/ecg-electrodes-shelf-life-storage-guide> (Accessed: 27 August 2026)

Critical success factors

Please select **one or two** of the below factors that you believe were most essential to ensure the success of your project changes.

People	Process	Resources	Context
☐ Patient involvement and/or appropriate information for patients - to raise awareness and understanding of intervention ☒ Staff engagement ☐ MDT / Cross-department communication ☐ Skills and capability of staff ☒ Team/service agreement that there is a problem and changes are suitable to trial (Knowledge and understanding of the issue) ☐ Support from senior organisational or system leaders	☐ clear guidance / evidence / policy to support the intervention. ☐ Incentivisation of the strategy – e.g., QOF in general practice ☐ systematic and coordinated approach ☐ clear, measurable targets ☒ long-term strategy for sustaining and embedding change developed in planning phase ☐ integrating the intervention into the natural workflow, team functions, technology systems, and incentive structures of the team/service/organisation	☐ Dedicated time ☐ QI training / information resources and organisation process / support ☐ Infrastructure capable of providing teams with information, data and equipment needed ☐ Research / evidence of change successfully implemented elsewhere ☐ Financial investment	☐ aims aligned with wider service, organisational or system goals. ☒ Links to patient benefits / clinical outcomes ☒ Links to staff benefits ☐ 'Permission' given through the organisational context, capacity and positive change culture.

Appendix 1 – Procurement information:

- In the past 12 months, 800 foil packs of ECG electrodes were ordered, totaling 24,000 individual leads.
- The total cost of procuring the current stock of electrodes was £847.20 for a rolling 12-month period.
- If current waste is 33%, 8,000 unused electrodes are discarded per year.
- This equates to 266 full foil packs of electrodes – or just over 6 full boxes.
- One foil pack of electrodes costs £1.40. Avoided expenses are £1.40 x 266 or £372.40.