

Integrating sustainability into organisational improvement approaches - Sharing learning from 2 NHS Trusts

Background

The climate and ecological crisis present the biggest threat to human health and wellbeing of the century ⁽¹⁾⁽²⁾. **The healthcare sector has a significant carbon footprint** ⁽³⁾. In England, the NHS accounts for 4% of the country's greenhouse gas emissions⁽⁴⁾ with the way we deliver clinical care impacting hugely on this. Despite this, **sustainability efforts still too often remain separate from the core mission of healthcare** – delivering high-quality patient care. Whilst healthcare professionals are increasingly motivated⁽⁵⁾ to reduce the harmful environmental and social impact of our health systems, **there remains a gap in knowledge and skills among healthcare professionals in how to deliver more sustainable healthcare.**

If sustainability is to be prioritised among competing pressures, **we must consider it central to the core mission of providing and improving healthcare.** Continuous Quality Improvement (CQI) methodologies are evidence based and the accepted way to inform change in the NHS ⁽⁶⁾ and can be leveraged to achieve sustainability goals. Furthermore, by enhancing knowledge, skills, and engaging clinical leads, we can integrate sustainability into CQI ensuring it is a key driver and metric in broader improvement programmes.

The Sustainability in QI (SusQI) framework⁽⁷⁾ outlines the steps fundamental to any improvement process where sustainability can be considered, providing individuals and organisations practical guidance and tools to easily integrate sustainability principles into their existing CQI methods and practice.

Through viewing all improvements and change processes through the sustainable value lens, we can drive improvements that improve patient and population outcomes while also addressing environmental, financial, and social impact.

$$\begin{array}{c} \text{Sustainable} \\ \text{value} \end{array} = \frac{\text{Outcomes for patients and populations}}{\begin{array}{c} \text{Environmental} + \text{social} + \text{financial impacts} \end{array}}$$


Fig 1. Sustainable value in healthcare ⁽⁷⁾

Case studies



Midlands Partnership University NHS Foundation Trust (MPFT) is a large organisation that covers a wide geographic area with over 9,000 staff covering a population of over 1.5 million. These services are predominantly based across Staffordshire, Stoke-on-Trent and Shropshire Telford and Wrekin, with specialist services across England.

Why embedding sustainability into improvement is important to the organisation

MPFT are committed to achieving Net Zero emissions by 2040. We believe that human health is inextricably linked to a healthy environment. The challenges facing the environment are numerous, and as an organisation, we recognise the need to identify, prevent, and plan for these challenges, including constraints on natural resources, climate change, water scarcity, and their impacts on human health. This means that to create healthier societies, we must have an unwavering commitment to protecting the natural resources upon which we all rely, today and in the future. MPFT recognises the importance of sustainability within the NHS and are focused to drive positive change within our Trust, our ambition is to embed sustainability and Net Zero principles in all clinical services, recognising the environmental benefits that will come from existing priorities such as 'care closer to home' and 'virtual wards', and through systematic lower carbon dioxide interventions such as reducing bed days, reducing presentations, and addressing health inequalities. Embedding sustainability into our Quality Improvement offering is an important tool to ensure all staff have the knowledge, skills and opportunity to make positive change.

Our improvement culture, training and processes

MPFT has small Quality Improvement team that sits under a wider Continuous Improvement umbrella. The QI team was formed back in 2013 so there is a well-established quality improvement methodology, with strong senior leadership support. The team provide training, support, guidance and facilitation in improving the quality of services and to enable teams to sustain changes by the delivery of lean across the organisation, based upon the Virginia Mason Production System (VMPS). Over 2,500 staff have been trained in QI which is about 25% of the organisation, with different levels of training available depending on role. QI projects range from large-scale changes involving multiple agencies to individual or team-level initiatives.

The team also host the Quality Award scheme for the organisation which is a points-based awards scheme that is focused on the recognition of teams who are continuously working to improve their service offer and quality within their area. There are bronze, silver and gold awards

depending on number of points. Points can now be achieved for SusQI initiatives as well, we integrated this into the points system to reach a bigger audience and raise the profile of sustainability work done within the teams.

Our sustainability culture, training and processes

MPFT has a small Green Team established in 2022 to execute MPFT's Green Plan and Strategy and enable MPFT to become a Net Zero Trust by 2040. Prior to the Green Team, MPFT established a Sustainability Champions Group which still today is part of an integrated, organisation-wide framework to support improvement. The group provides opportunities to improve, standardise, and share learning.

Training is promoted across the Trust, with Building a Net Zero NHS being recommended awareness for all staff to complete. Other sustainability training promoted as an add-on such as Environmental Sustainability, Air Pollution & Climate Change. This is all part of our pathway to educate our workforce about sustainability in healthcare. MPFT now have processes embedded to evaluate the sustainable impact of projects, initiatives, SOPs/policies. As well as a Green Recognition Award scheme to recognise the sustainable impact and commitment of teams & individuals who are continuously working to improve sustainability in their area.

What we did to integrate sustainability and QI

- Improvement team and Green Team collaboration

The strategic decision was made to have improvement and sustainability teams sit together under one directorate. We discussed how the QI team linked with the Green Team to embed sustainability within QI practices. The QI team needed to learn from the sustainability team, but it was also important for the sustainability team to undergo our leading quality improvement training. This allowed them to provide valuable input on integrating sustainability information into our training programs. Together, QI and sustainability leads delivered training to district nurses at Keele University. Initially, we conducted separate sessions on QI and net zero, but quickly realised the need to merge these topics. This collaboration was a valuable early learning experience, effectively diving into the integration of sustainability within QI.

- Partnership with Centre for Sustainable Healthcare (CSH) - upskilling a core team and embedding sustainability into our own in-house training.

In autumn 2022, we formalised our relationship with CSH to integrate sustainability into all our QI training through their SusQI Academy programme. Key actions included:

- Training core members of the QI and Green Team in sustainable healthcare, Sustainability in QI (SusQI), and carbon foot-printing
- Embedding SusQI elements into all in-house QI training, tools and templates
- Developing a standalone session for previously trained staff to update their sustainability knowledge without revisiting basic QI concepts

We utilised the educator maturity assessment and SusQI Beacon site criteria to guide and support these initiatives.

- Establishing a Strategic Sustainability Group

Led by an executive director, we formed a strategic sustainability group to address feedback and concerns. Initially, there was some resistance within the QI team due to a lack of confidence and understanding of how to integrate sustainability. We reviewed our training materials at all levels and engaged in extensive team discussions to build confidence. The Green Team also undertook their own QI projects to practice and measure progress in a supportive environment.

- Established Beacon site status helped us gain recognition and acknowledgement



What have been the enablers

A well-established quality improvement methodology, with strong senior leadership support.

The leadership around our Green Plan and Strategy and goal for MPFT to become a Net Zero Trust by 2040.

The integration of the newly established Green Team under the wider Continuous Improvement umbrella.

Our Partnership with Centre for Sustainable Healthcare (CSH), upskilling of the core team and embedding sustainability into our own in-house training.

What have been the challenges

The need to better understand the carbon footprint of services and the impact of QI projects on it. An initial barrier was confidence in using new tools and unfamiliarity with carbon measurements.

Next steps

We recognise there's still much to do and ensure everyone understands our goals. We're conducting a continuous improvement stocktake to assess our progress and refine our approach based on organisational needs and feedback.

Key steps include:

- Raising broader staff awareness and communicating our objectives effectively.
- Developing senior leadership understanding through the strategic sustainability group to ensure everyone knows their role.
- Influencing QI networks within Shropshire, Telford, and Wrekin ICS, promoting the green agenda and embedding sustainability in QI beyond MPFT.
- Connecting with various clinical practice networks within the organisation to integrate these efforts.

Our Top Tips...

- **Connect with your sustainability / Green Team** - they can be a great asset to help and support you, you are better together. Some organisations aren't lucky enough to have a green team but there might be somebody within estates and facilities for example that's leading on this in your organisation.
- **Taking ownership early on** - Initially, it was challenging to get everyone on board and taking ownership. We were concerned about balancing our ethos of putting patients first with the 'triple bottom line', which includes a financial element as well as environmental. However, once we started discussing it, we realised staff care about not wasting taxpayers' money and embraced the concept. This shift in perspective helped us align our principles with the new approach.
- **All QI needs to include sustainability** - Every QI project should include a sustainability element, rather than separating QI and SusQI projects. Integrate environmental aspects into core QI training to avoid the need for separate sessions, saving time and ensuring a cohesive approach. Once familiar, the integration is seamless and effective.
- **Our action tracker** - It helped us break down big tasks into manageable chunks and share the workload, ensuring it wasn't all on one person. By chipping away at the small tasks, we eventually completed the big ones.
- **Keeping asking the same questions** - The importance of repeatedly asking questions until you understand, seeking different perspectives if needed. This approach aids any learning process. Additionally, involving key stakeholders in the journey from the beginning prevents difficulties later.

Translation into improvement practice and initiatives

All improvement projects now consider sustainable value. To support data collection, we introduced an improvement tracker in February 2024, so over time we will be able to assess and track the environmental, social and financial impact of all improvement initiatives.

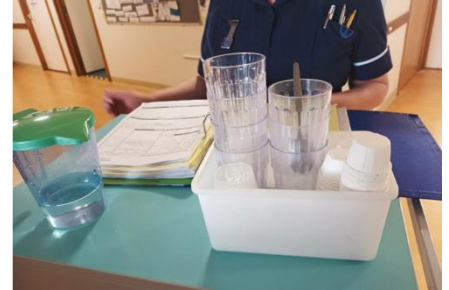
Case study

Eliminating single-use plastic items in the eating disorder ward

Finalist in the Green Wards category at the Royal College of Nursing 2023 Awards

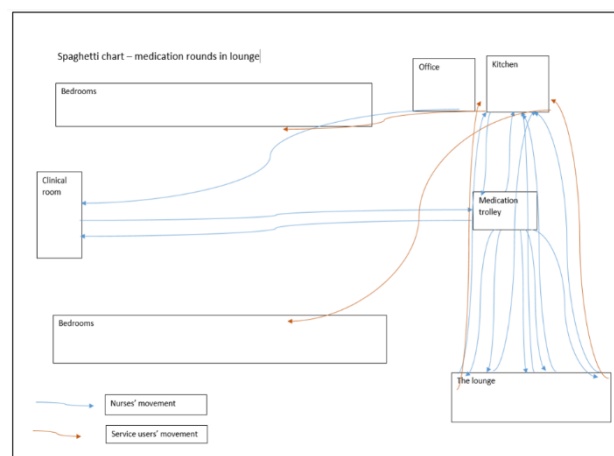
Problem: Healthcare is responsible for 4.4% global plastic production. Single use plastics contribute to air pollution which is a public health concern. Reducing single use plastic pollution is a priority within MPFT's Green Plan. On this 12-bed eating disorder ward there are medication rounds four times per day resulting in:

- 29,200 single use plastic cups and spoons used annually
- Approximately 146kg of single use plastic cups and spoons disposed of annually



Aim: Eliminate single-use plastic items in the eating disorder ward

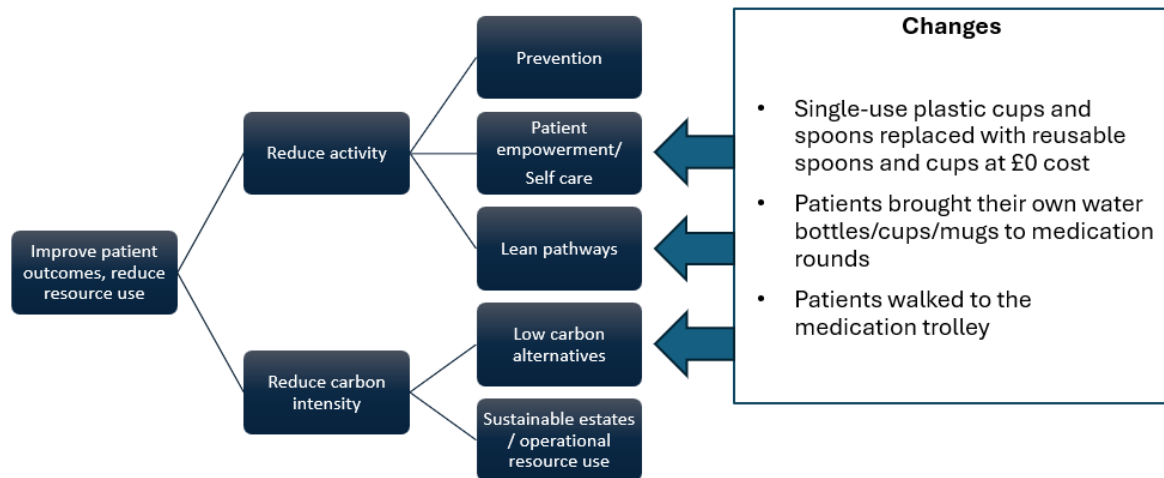
Studying the system: The ward was visited, and an observation audit and spaghetti chart were conducted. It was observed that patients have access to reusable mugs, water bottles, reusable clear plastic cups, reusable spoons, and reusable pots. All of which can be washed in a dishwasher.



Areas of waste identified:



Driver Diagram:



Changes:

- Single-use plastic cups and spoons replaced with reusable spoons and cups at £0 cost
- Patients brought their own personal water bottles/ cups/ mugs to medication rounds
- Patients walked to the medication trolley

Outcomes:

Impact	Metric	Baseline measure (pre change) per day	Outcome measure (post change) per day	Annual savings
Environmental	GHG emissions (energy, water, material and waste)	8.75 kgCO ₂ e/day	5.5 kgCO ₂ e/day	1,186.25 kgCO ₂ e
Financial	Energy consumption, water cost and purchase of single use plastic cups and spoons	£7.8/day	£2.2 per day	£842 per year
Financial	Inventory	£543.65 annually	£102.73 annually	£440.92 annually
Social	Staff time	6.25 minutes per 1 medication round	3.8 minutes per 1 medication round	45 hours (6 shifts)
Social	Staff walking distance	32 metres per patient	0	87 miles



Why embedding sustainability into improvement is important to the organisation

Our improvement culture, training and processes

At SWFT, our ethos is that improvement is everyone's responsibility, empowering those closest to the work to identify ideas to improve the lives of our patients, those living within our communities, and our workforce. To enable this, we deliver the Quality Service Improvement and Redesign (QSIR) programme, designed by NHS England, and now owned by AQUA (Advancing Quality Alliance). QSIR uses the Model for Improvement methodology (an evidence-based framework), enabling staff to make structured improvements through small tests of change. The QSIR programme offers participants a suite of improvement tools, facilitated by a team of accredited faculty members, to enhance their improvement work. The aim of delivering the programme is to ensure that improvement work is focused on problem-solving, is measurable, and achieves long-term success. This training is complemented by internally developed workshops and a monthly improvement forum to share and spread the impact of changes across the organisation.

Our Sustainability culture, training and processes

As a large organisation within the community, we recognise the role we need to play in tackling the climate crisis by achieving net zero carbon for our Carbon Footprint by 2040 and our Carbon Footprint Plus by 2045. Our Green Plan 2022-2025 addresses further environmental and social dimensions. It focuses on eleven areas of work, including procurement, estates, capital projects, medicines and travel. The Plan's delivery is supported by a senior lead for each Green Plan workstream and a network of over seventy green champions. Training on sustainability is provided at induction.

What we did to integrate sustainability and QI

SWFT joined the Centre for Sustainable for Healthcare (CSH) SusQI Academy for support in aligning improvement to sustainability. Each SWFT improvement specialist completed Sustainability in QI training via CSH which helped us to consolidate our knowledge and skills in sustainability.

Through this, we ran a Green Teams Competition. Six clinical teams were chosen to engage in a 12-week mentoring programme to develop, run and measure the outcomes of a Sustainability in QI project. They delivered six projects with benefits on the environment, patient care and organisational costs. The CSH team calculated the benefits of the projects via carbon accountancy and then translated this into more meaningful concepts such as the number of trees or car journeys saved. This in turn ensured the benefits of the improvement work could be shared in ways which are impactful to others.

To increase the number of projects, we worked with CSH to thread sustainability throughout two levels of our QSIR training. Emphasising it in discussions on quality domains, using it in developing change ideas and creativity exercises, and sharing our Green Team examples where relevant. Feedback from delivering our sustainable versions of the programme has been positive. Participants report having found it encouraging to see other people's projects and to then consider sustainability in their own.

What have been the enablers

The addition of sustainability and quality within our strategic pillars and additionally net carbon zero and prevention within our Big Moves has enabled us to progress this work with the full backing of the organisation, and at a greater pace.

Glen Burley advocates that 'Improvement is everyone's business', which empowered us to improve the QSIR Programme, ensuring that it includes these vital concepts.

The Centre for Sustainable Healthcare's training and coaching was vital in enabling the Sustainability and Service Improvement teams to understand the links, gain practical insights and work towards a more collaborative approach to improvement.

Our Green Team competition allowed staff to learn and develop valuable improvement projects with sustainability and prevention in mind. Using SWFT Green Team examples highlights what is possible for those attending improvement training.

The integration of sustainability and prevention into our improvement methodology has enabled us to begin conversations with our staff about what is possible, and how they can get involved, and has empowered them to act or to consider how their work impacts the environment.

The positive feedback and engagement from all staff involved with the CSH and Green Team competition has been key.

What have been the challenges

As the QSIR programme content is managed by AQUA, we had to find a way of embedding sustainability without affecting the core programme. We went through several iterations, gaining feedback from participants as we tweaked the new content and where it was embedded to ensure that the flow of information remained appropriate.

One of the module titles within the QSIR programme – ‘Sustainability of Improvement’. Sustainability in the context of QSIR refers to ensuring that the improvements made are maintained over time. We had to find a way of referring to Sustainability without confusing participants. We accomplished this by ensuring to add the term ‘environmental’ when we discussed sustainability in the context of ecological and environmental impacts, thereby distinguishing it from the sustainability of improvement efforts.

Next steps

- We aim to connect with other QSIR faculties across the country to share our programme.
- We plan to target individuals who have already completed the QSIR programme with a standalone sustainability module.
- Additionally, we will demonstrate the impact of our efforts by repeating our follow-up survey and measuring the sustainability benefits of our improvement projects.
- We plan to create a more robust measure to set a clear baseline and compare our progress as we continue to embed sustainability into improvement at SWFT.

We are running another Green Teams competition in 2024, this time across the ICB.

Case study

Reducing routine blood testing, frailty and care of the elderly wards

Problem: Many elderly inpatients are subject to regular (sometimes daily) blood tests during their inpatient stay to help monitor their condition and guide their treatment. However, it has been recognised that an overuse of testing is commonplace in this population of patients which can negatively impact multiple aspects of the process. Routine blood testing has adverse environmental impacts due to consumable use (many of which are single-use plastics), test processing and waste disposal involved in the blood testing process. In addition to improving environmental sustainability, reducing the number of tests taken would bring benefits to patients and staff. This patient group can find excessive blood tests distressing, and patient discharges and hospital flow can be delayed if waiting for blood test results is part of the decision-making process. There is also a financial impact from excessive testing and more staff time is needed to carry out the testing.

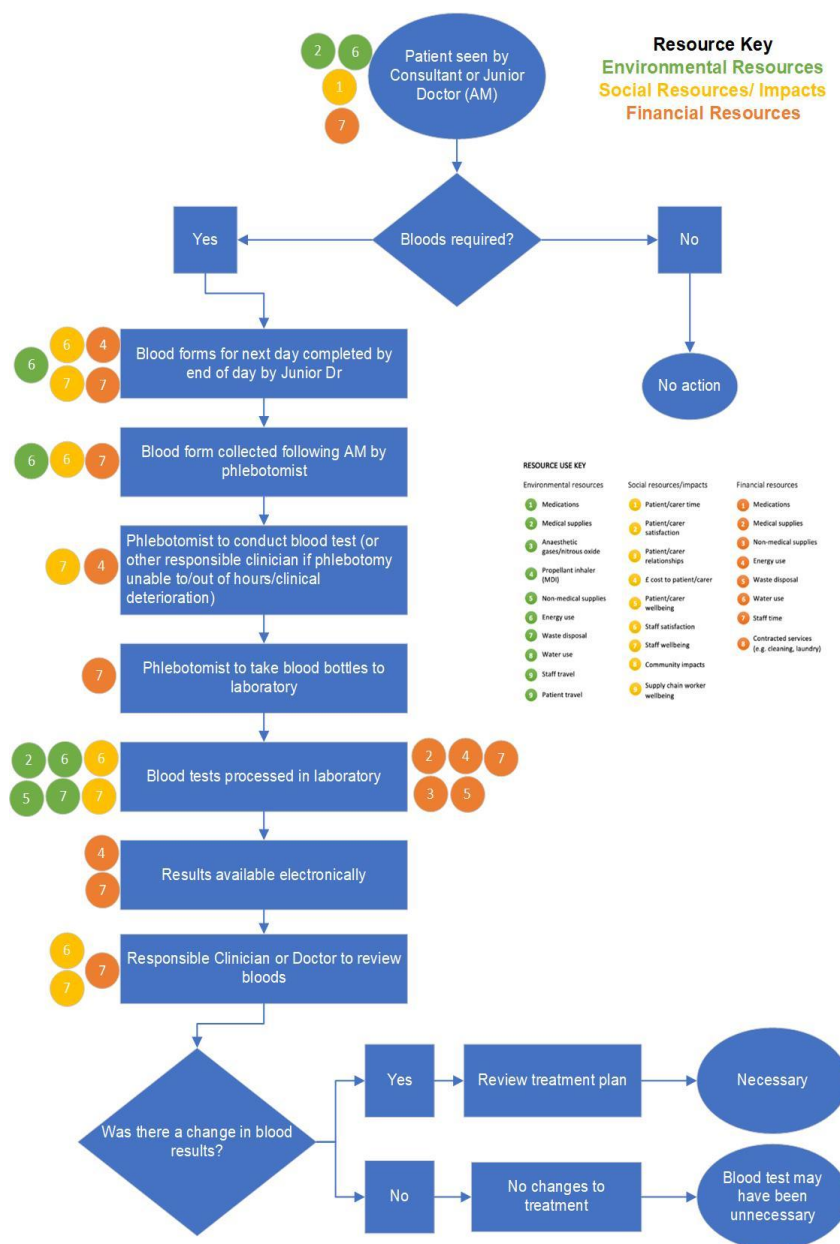


Aim: Reduce low-value and unnecessary blood testing by 10% in Care of the Elderly inpatients by December 2023.

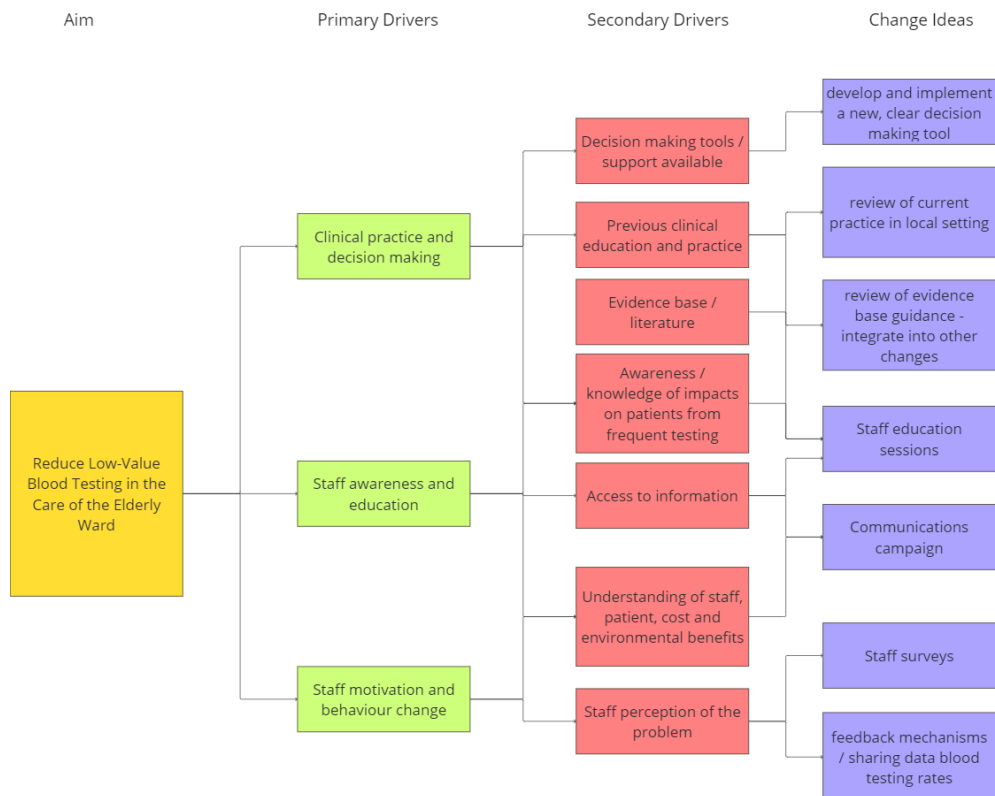
Studying the System:

A process map was completed to identify resources used within the blood testing pathway. We identified two potential areas of waste;

- 1) How many inpatient routine phlebotomist requests were conducted on care of the elderly inpatients and were some requests unnecessary?
- 2) For each routine request, several blood tests may be requested. How many blood tests did each patient have carried out per request, and were these all necessary?

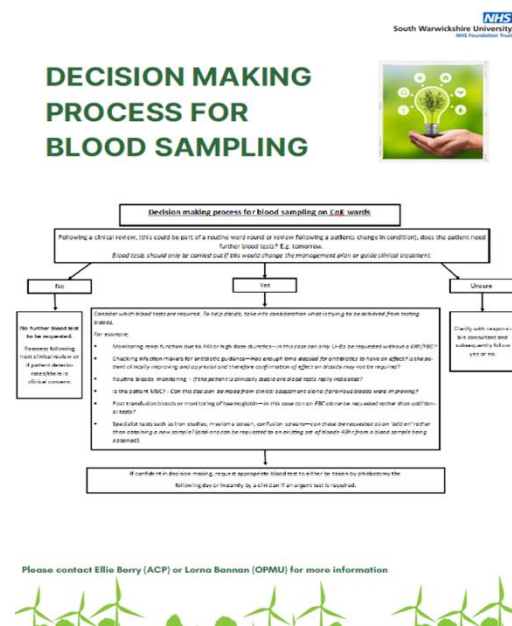


A driver diagram was developed to explore potential change ideas that would address these areas of waste:



Changes:

- A decision-making tool developed to aid clinicians in deciding if blood testing was necessary and if so, which tests were necessary for each patient.
- Education for clinicians was developed and provided to create a change in culture and challenge thought processes.
- A communications campaign was developed and disseminated across our six care of the elderly wards as well as presenting to wider staff and primary care colleagues at a Trust event.



Outcomes:

Patient: 9.8% reduction in phlebotomy requests and testing on the care of the elderly wards.

Environmental: 937.1 kgCO₂e per year, equivalent to driving 2,768 miles in an average car.

Social: “Thank you for your work in reducing unnecessary blood tests across the frailty wards. The benefits of this project for our patient group are considerable – unnecessary blood tests cause pain and distress and they can result in delays to discharge which can be very detrimental to this patient group. In addition, reductions in blood testing will provide both environmental benefits reducing waste and a number of cost savings”. - (Consultant feedback)

Financial: £18,444 per year, does not include staff time saved for ward staff, phlebotomy staff and lab processing time.

Conclusion

Embedding sustainability into organisational CQI improvement approaches supports the following priorities:

- **Improving patient care** - Integrating the [principles of sustainable clinical practice](#) ⁽⁸⁾ prioritises improvements in prevention, patient empowerment & self-care and lean pathways, directing us towards the highest value, lowest carbon improvements in healthcare.
- **Investing in staff** – Ensuring staff gain knowledge in sustainable healthcare and skills including how to identify and measure the environmental, social, and financial impact of improvement work. Through focusing improvement work on lean service delivery and waste reduction staff see time gained back, which can be used for higher value work with patients, increasing job satisfaction. Furthermore, this [SusQI evaluation](#) ⁽⁹⁾ has shown those taught about sustainability alongside QI feel more hopeful about the challenges of climate change.
- **Delivering green plan priorities and supporting net zero goals** – Supporting organisations to embed the knowledge of why sustainability matters and how staff can contribute to change into existing methodology and education, ensuring the knowledge of the need for sustainable healthcare is provided alongside the practical tools to make change. Once embedded into the organisations approach, the carbon impact of all projects can be measured.
- **Cost savings** - Delivering QI focused on reducing waste and its associated costs.
- **Motivation for QI** - Providing fresh motivation for engagement with QI by focusing on sustainability as a domain of quality, aligning personal values with work practices. This [SusQI evaluation](#) ⁽⁹⁾ has shown learners taught the SusQI approach develop increased motivation for Quality Improvement.

Key learning

Organisational culture and readiness

- Organisations must recognise the climate and ecological crisis
- Boards are required to support and set the vision
- Links must be made between delivering clinical care and sustainability
- Improvement methodology should be used to deliver strategic sustainability objectives

Increase capability and capacity for improvement

- Increase core staff expertise in sustainability and improvement e.g. carbon accounting.
- Increase staff training and awareness, integrate sustainability into improvement training throughout all levels

Systems and processes

- Embed into management, communication and award and recognition processes
- Embed data management tools e.g. dashboards, carbon calculators.

References

1. **Romanello, M., McGushin, A., Di Napoli, C., et al.** (2021) 'The 2021 report of the Lancet Countdown on health and climate change: code red for a healthy future', *The Lancet Planetary Health*, 5(9), pp. e681–e710. Available at: [https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196\(21\)00053-X/fulltext](https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(21)00053-X/fulltext)
2. **Van Daalen KR, Romanello M, Rocklöv J et al.** (2022) 'The 2022 Europe report of the Lancet Countdown on health and climate change: towards a climate resilient future', 2022;7(11):e942–e965. Available at: [The 2022 Europe report of the Lancet Countdown on health and climate change: towards a climate resilient future - The Lancet Public Health](#)
3. **Watts, N., Amann, M., Arnell, N., et al.** (2020) 'The 2020 report of The Lancet Countdown on health and climate change: responding to converging crises', *The Lancet Planetary Health*, 4(11), pp. e424–e444. Available at: [https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196\(20\)30121-2/fulltext](https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(20)30121-2/fulltext)
4. **NHS England and NHS Improvement** (2020) Delivering a Net Zero National Health Service. Available at: <https://www.england.nhs.uk/greenernhs/publication/delivering-a-net-zero-national-health-service/>
5. **NHS England** (2017) *Sustainability and the NHS: Staff Survey 2017*. Available at: <https://www.england.nhs.uk>
6. **NHS England** (n.d.) *The five components of NHS IMPACT*. Available at: <https://www.england.nhs.uk/nhs-impact/impact-components/>
7. **Mortimer, F., Isherwood, J., Wilkinson, A. and Vaux, E.** (2018) 'Sustainability in quality improvement: redefining value', *Future Healthcare Journal*, 5(2), pp. 88–93. Available at: [Sustainability in quality improvement: redefining value - ScienceDirect](#)
8. **Stancliffe R, Bansal A, Sowman G, Mortimer F.** (2022) 'Towards net zero healthcare'. *BMJ*; 379 :e066699 doi:10.1136/bmj-2021-066699. Available at [Towards net zero healthcare | The BMJ](#)
9. **Spooner, R., Stanford, V., Parslow-Williams, S., Mortimer, F., & Leedham-Green, K.** (2022). "Concrete ways we can make a difference": A multi-centre, multi-professional evaluation of sustainability in quality improvement education. *Medical Teacher*, 44(10), 1116–1124. Available at: <https://doi.org/10.1080/0142159X.2022.2064737>