



Transfer sheets in Endoscopy, Endoscopy Team

TEAM MEMBERS:

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Background:

Hywel Dda University Health Board (HB) provides all healthcare services for the 375,000 people living in West Wales. The Health Board operate four acute hospitals, several community hospitals and resource centres, eleven health centres as well as GPs, Dentists and Pharmacists providing Acute, Primary, Community, Mental health and Learning disabilities for the people of Carmarthenshire, Ceredigion and Pembrokeshire.

Each of the four acute hospital sites has its own endoscopy unit. Work is ongoing to align clinical and technical standards and processes across the four units. This includes matters concerning sustainability. A Green Endoscopy group was developed to look closely at pathways, usage of equipment, waste, perform waste walks and many others. As an example, we have established effective segregation of clinical, recycling and domestic waste across 4 units. We are also cooperating with environmental team in performing Pre-acceptance audits.

By reviewing work and pathways on all 4 units we have identified an area of improvement within one unit is the usage of slide sheets for each patient. 3 of 4 remaining units were using laundry department in order to wash sheets, so they can be re-used. One unit continued to use single use patient transfer sheets for all patients attending the unit regardless of how mobile the individual was. This was an opportunity for improvement.

Specific Aims:

To reduce environmental waste (CO₂e) by

- a) reducing unnecessary use of single use slide sheets
 - b) replace remaining necessary slide sheets with a reusable alternative
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Methods

It has not been possible to implement our change in the 10 week project timeframe. We plan to reduce the use of single-use patient transfer sheets by encouraging staff to use the results of the individual manual handling assessment completed with each patient, to determine if any aids are required.

We are continuing to gather data on reusable alternatives to slide sheets for continued required use.

Measurement:

Patient outcomes: These were not affected by the project objectives

Environmental sustainability:

We have been liaising with Procurement, Laundry Department, and Manual Handling. The carbon footprint of the single use patient transfer sheet was calculated using a bottom-up carbon footprinting methodology, however due to data unavailability the carbon footprint of a single use patient transfer sheet is likely to be an underestimation. To estimate the greenhouse gas (GHG) emissions associated with the raw materials of the sheet and the first layer of packaging, the raw material weight was obtained from the manufacturer and converted into emissions using the BEIS 2022 database. Data was unavailable to estimate emissions for the second layer of packaging. It was assumed the sheet gets disposed of into clinical waste and the first layer of packaging into domestic waste. Disposal conversion factors were taken from Rizan et al. (2021) the carbon footprint of waste streams in a UK hospital. Transport GHG emissions from manufacturer (China) to UK harbour were estimated using the Pier2Pier tool, data for transport from UK harbour to supplier was unavailable and so was excluded and assumed the sheets get transported directly to the health board.

Economic sustainability:

Reducing costs associated with the purchase and transport of the single use patient transfer sheet

Social sustainability: This has not been measured within the competition timeframe.

Results:

Patient outcomes: Health & safety of patient unaffected.





Environmental sustainability:

The CO₂e of a disposable single use patient transfer sheet is 1.38 kgCO₂e per sheet

We perform on average 250 endoscopic procedures a month, equating to 3000 a year.

At baseline, assuming one slide sheet is used per patient, this equates to CO₂e of 4,140 kgCO₂e

We estimate that 90% of slide sheet use (2,700 sheets) is not needed clinically for the patient. This will lead to potential savings of **3,726 kgCO₂e per year**. This is equivalent to 10,731 miles driven in an average car.

We are continuing to collect data on the carbon footprint of reusable slide sheets and laundering and aim to share additional impacts of switching disposable to reusable for remaining slide sheets this in the future.

Economic sustainability:

A single transfer slide sheet costs £0.80p. A reduction of 90% (2,700 sheets) will save **£2,160 per year**.

We are continuing to collect data on the cost of reusable slide sheets and associated costs from laundering and aim to share additional impacts of this in the future.

Social sustainability:

Patients maintaining independence throughout the Endoscopy journey, including Procedure and recovery.

Ensuring individuals maintain maximum independence when having procedures in our endoscopy units.

Discussion:

Although the project felt very straight forward to undertake, it was difficult to gather essential information. However, in undertaking the project we learned a lot and made valuable connections across our organisation that will support our ongoing Green Health agenda. We now appreciate the detailed information we need to gather for a full carbon footprint to be undertaken and allow the time needed for this to be collected in future work.

Currently, the endoscopy unit mentioned above is still in the process of implementing standard sheets.

One of the highlights of this work, is that it has begun changing the mindsets of staff working within the endoscopy units. To question why we are doing or using things the way we do. To take into





consideration not just the financial cost of what we use within the department. But to consider the environmental impact of our decision making per se and of the disposal of our consumables.

We are also still focusing on our Green initiative and will be looking at the endoscopy areas like:

- use of endoscopy accessories
- reduce of histology pots numbers
- reduce Entonox use (currently we are monitoring exposure)
- reducing pre-assessment paper leaflets and patient information (both prior and post procedure) in favour of digital information.
- Telephone Pre-assessment, electronic reporting and digitally collected patient feedback

Conclusion:

This project highlights the need for staff as well as the public to think in a more sustainable way and the Endoscopy Green Team will be undertaking other pathway reviews to ensure we are providing sustainable healthcare in our endoscopy units.

