University Hospital Southampton NHS
NHS Foundation Trust

UNIVERSITY HOSPITALS SOUTHAMPTON GREEN WARD COMPETITION CASE STUDY AND SAVINGS 2017

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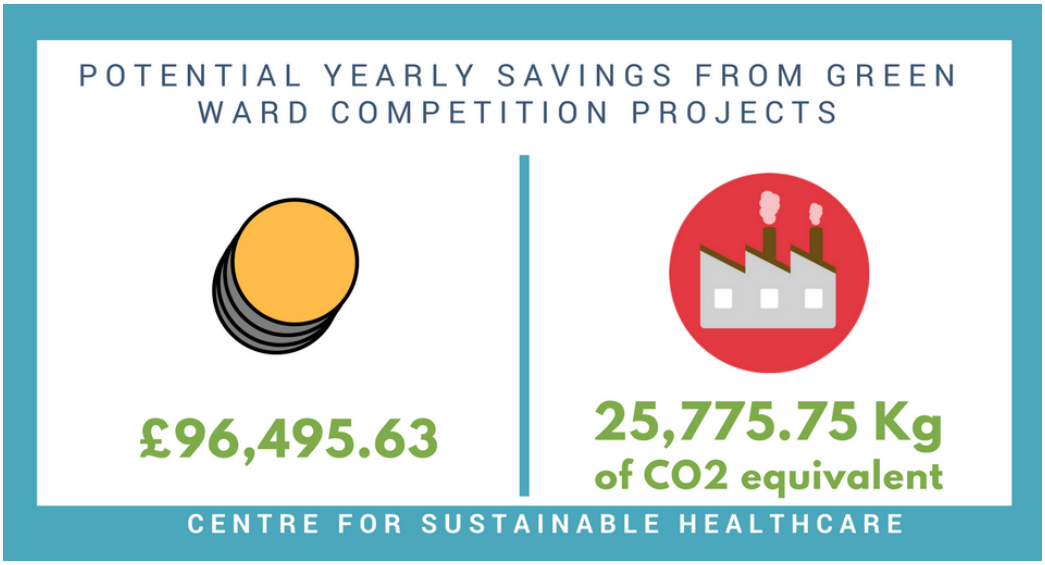
GREEN WARD COMPETITION UHS



Figures based on Southampton's 2017 Green Ward Competition

COMPETITION BACKGROUND

The Green Ward Competition is a clinical engagement programme run by the Centre for Sustainable Healthcare (CSH) for NHS Trusts wishing to improve their environmental sustainability and reduce their carbon footprint. Healthcare workers who participate are supported to design an innovative project in their unit or ward that will bring social and financial benefits alongside carbon reductions from resource efficiency.

University Hospitals Southampton NHS Foundation Trust (UHS) was keen to engage staff in this endeavour and also to realise the substantial carbon savings available from sustainable approaches to treatment and care. This report outlines the activities and outcomes of the Green Ward Competition which ran between April and September 2017.

University Hospitals Southampton's Green Ward Competition in 2017

Commissioned by UHS and overseen by Louis Pilard (Clinical Programme Manager, CSH) and Christelle Zemkoho, (Energy Manager, UHS), the Competition was launched in April 2017, running alongside the Low Carbon Europe programme. A mix of four teams consisting of multiple staff members signed up. Each team attended an hour-long workshop led by Ben Whittaker (CSH) and Louis Pilard to develop project ideas, discuss approaches to measuring project outcomes and savings and hear about the competition's judging criteria.

Green Ward Competition Award Ceremony

The workshops included some background information about the breakdown of the NHS's carbon footprint and a resource analysis for each setting was conducted. Staff were encouraged to consider clinical care changes, as well as traditional green project ideas (e.g. waste and energy) to maximise the potential carbon savings. Teams were given six to eight weeks to set up and run the developed projects and record the results. During the project implementation, Louis Pilard provided support in person and by phone and email. Following the competition, a feedback process sought views on the experience of participating in the competition and suggestions to improve future years.

COMPETITION ENTRIES

Four teams submitted competition entries.

Urology Day Unit Team with Christelle (UHS) Michelle (LCE) and Louis (CSH) after Green Ward Competition workshop

1. UROMETRE CHOICE – UROLOGY DAY UNIT (UDU)

Goal: To reduce the unnecessary use of urometres across UHS.

Background: The unit decided to review the use of urometres for hourly urine measurements. The team noted that urometres did not always have hourly recordings completed and the patients found the urometre bulky and difficult to mobilize with. The team aimed to facilitate the decision-making process made by nursing and medical staff when choosing a urinary catheter bag for their patient. Currently within the Trust the urometre appears to be the first choice following catheterization, assuming the patient requires hourly urine measurements. The University Hospital Southampton has the 4th highest use of urometres compared to 29 other NHS trusts (2016).

Approach:

1. The UDU worked with wards across the Trust to measure urometre use and decision making.
2. Data was collected across 2 wards over 6 days due to time constraints.
3. 3 main reasons were identified for the use of urometres across wards: Post-op, MEWs Act and Monitoring.
4. The unit worked with the Catheter Working Group and other stakeholders to liaise project with ongoing work in the Trust.
5. Next steps for catheter reduction were developed.

'The competition allowed the UDU team to consider the savings in energy, time and patient care.'

- Clare Tull, Senior Nurse

The project is ongoing and staff plan to:

1. Produce education materials to encourage correct usage of urometres and catheters.
2. Collaborate across wards to explain urometre effects on patients and clinical waste stream.
3. Continue measuring effect on overall urometre use across wards.

Savings:

Over the measurement period, 57 urometres were used across 2 wards. This is an estimated use of 3,458 urometres per year. Of the 57 urometres used only 42 were used with reasonable justification, projected across a year this means potentially 2,548 justified urometre uses and 910 unnecessary uses. Taking into account the unit

cost per urometre and theatre pack of £10.63 this adds up to an estimated £9,673.00 spent on unnecessary urometre procurement with 2563.58KgCO2e emitted using the SDU carbon factor of 0.3kgCO2e/£ for medical and surgical equipment.

The weight of a urometre and theatre pack adds up to 0.9kg, meaning 819kg of waste is generated by unnecessary urometre use. Further downstream, based on a clinical waste disposal cost of £481.45 £/tonnes for UHS, there is also £394.31 spent and 180.18KgCO2e associated with clinical waste disposal of urometres yearly (using a carbon conversion factor of 220kgCO2e/tonne for High Temperature Waste Disposal). **If the unnecessary urometre use was diverted through the development of educational materials and facilitation across the two wards a total of £10,061.31 and 3082.17KgCO2E will be saved.** It should be noted that this is likely a conservative estimate as it does not count the time saved on unnecessary fitting of urometres and hourly readings as well as the possible reduction in patient infection and reduction in mobility associated with urometre use. This intervention could also be scaled up across other wards were urometres are used to expand cost and carbon savings.

2. REDUCING DUPLICATE ORDERING OF MEDICATION – ACUTE MEDICAL UNIT (COMPETITION WINNER)

Goal: To reduce the amount of duplicate medication orders on the Acute Medical Unit through cooperation with patients and families.

Background: The Acute Medical Unit (AMU) is a 57-bedded ward tending to the acute health needs of the Southampton population and surrounding areas. As a busy ward, medications that are ordered specifically for individuals are often ordered multiple times. This is an extra cost to the unit, Trust and environment with the amount of medication purchased and then later disposed and wasted.

Approach:

1. The goal and background of the project was communicated to the team.
2. Baseline data was collected.
3. A Team Leader of each area checked each shift that medication in the iBin (location of all ordered medication) was in the correct POD (patient own drugs) cupboard so that medication was transferred with patients to wards.
4. To prompt the Team Leader to do this a 'tick box' was introduced on the white boards of each area to prompt and remind staff to perform the checks each shift at 0730, 1200 and 2000.
5. Follow up data was collected during the project.

Savings:

At baseline, there was no formal process for avoiding duplicate medication orders. After thirteen weeks of running the project, there was an average reduction of 50 duplicate medication orders per week. It is important to note that there will be variation throughout the year depending on the number of patients and the staff demand, further support would be required to identify this variation. Medication cost data was unavailable from the pharmacy; however, we have assumed a conservative estimate of £10 per average medication order as medication costs have a range of thousands of pounds. Using this estimate and the average medication reduction from the duration of the competition, **the yearly savings would amount to £26,000 and 11,180kgCO2e using a carbon conversion factor of 0.43KgCO2e/£ for medication orders.** These projections are underestimates as time savings in medication orders are reduced every time a duplicate order is averted and medication disposal costs are not included. Furthermore, this does not measure the benefits of patients not waiting for new orders of medication to continue with their treatment.

3. EAT, DRINK, DRESS, MOVE – THERAPY SERVICES

Goal: To optimise patients in readiness for leaving hospital and to enable and increase patient engagement with activity. To reduce social, financial and environmental impacts of immobilisation on the frail and elderly.

Background: Inpatients with long stays can develop "pyjama paralysis" and have slower recovery on wards when not drinking, eating, dressing and moving regularly. By encouraging these four simple actions it is possible to speed up recovery, make the hospital stay more pleasant and reduce the resource efficiency of care.

Approach:

1. A band 2 therapy assistant was based on the MOP (medicine for older people) ward each morning to encourage patients to get washed and dressed in their own clothes.
2. Therapy assistant contacted patients and relatives on the unit to request day clothes & shoes be brought into UHS.
3. Data was collected to highlight how many patients were getting dressed and active before and after pilot.

Savings:

The cost of the band 2 therapy assistant used in the intervention is £1064 per month. As there was no control group in this pilot, there was no way of verifying how length of stay of patients was affected. However, it is likely that length of stay was lower than it would have otherwise been as a 6 month randomized control trial of the same intervention with 1179 patients at Heart of England NHS Foundation Trust found that patients in the intervention group had a higher likelihood of being in the lowest quartile of length of stay. Making the conservative assumption, based on the best quality evidence of this intervention, that the programme reduced hospital stays by the equivalent of one bed day every week, this makes a saving of £11,452.32 and 1,819.2KgCO2e per year. The best way to verify this would be to run the programme again as a randomized control trial within the context of Southampton Hospital.

It is important to note that both the UHS Therapy team and the Heart of England Therapy team have posited that the programme could be run at no cost, integrating it with every day carethrough a training programme and educational materials.

Further cost and carbon savings include reduction in gown use from 345 to 125 over a six-week period equating to roughly 1 load of laundry less every two weeks and 314.6KgCO2e saved per year. There will also be cost savings, but laundry costs were not available. Furthermore, patients were no longer being discharged in pyjamas (£8.90) and socks (£2.50). With an average amount of 10 people discharged every month, the savings on new pyjamas and socks for discharge are £1,482 per year and 429.78KgCO2e in procurement, with extra savings if pyjamas are reused. **The total estimated savings from the programme as it is currently run are £166.32 and 2563.58KgCO2e per year. However, if the project were to be integrated through training and educational materials, savings could be £12,934.32 and 2563.58KgCO2e.** This would of course increase if the intervention was spread across all elderly and respiratory wards.

4. EARLY MOBILISATION PROJECT – CARDIAC INTENSIVE CARE UNIT

Goal: The aims of the project were to show that increasing therapy input alongside a strict sedation protocol would both reduce intensive care length of stay and improve functional outcomes for patients following discharge from CICU.

Background: Survival following critical illness is improving but is often associated with a poor functional outcome which may persist for years. Immobilisation due to sedation may exacerbate muscle wasting and deconditioning of the body. The team sought to improve patient outcomes while reducing the resource intensity of recovery for patients on the CICU.

Approach:

1. An initial training period was required to familiarise staff with equipment.
2. The technician delivers two 30 minute sessions of rehabilitation/ mobilisation therapy daily in addition to standard physiotherapy sessions.
3. Therapy is started for cardiac patients with a strict criteria, within 24 hours of being intubated and ventilated and continued until discharge from CICU.

Savings:

The cost of the intervention per year is £12,000 for a Therapy Technician and £18,000 for a MOTOmed Letto2. Conservative estimates of yearly savings in bed days (one bed day per patient) equal to £77,500 and 8,950KgCO2e including a reduction of 1 day of ventilation per patient. **This culminates in total yearly savings of £47,500 and 8950KgCO2e.**

Green Ward Competition winner Katherine MacFarlane (Junior Sister at Acute Medical Unit) with Fiona Dalton (Chief Executive), Christelle Zemkoho (Energy Manager) and Rachel Stancliffe (Director, Centre for Sustainable Healthcare).

Judging

Fiona Dalton (Chief Executive), Mark Bagnall (Director of Estates and Capital Development) and Tania Topp (Education Lead) and Rachel Stancliffe (Director of the Centre for Sustainable Healthcare) judged entries by examining the impact of the project and the approach taken.

Impact	**Approach**
• Environmental sustainability – how much carbon or other resources have been saved? • Social sustainability – can you demonstrate a benefit to staff, patients, or the wider community? • Economic sustainability – have you quantified any financial savings?	• Strategic thinking – why have you chosen your given action(s)? • How are you measuring progress? • Have other staff and patients been involved?

On September 8th 2017 at University Hospitals Southampton, the Acute Medical Unit was pronounced the winner and presented with a certificate and £500 pounds of prize money to invest in their project or another sustainable initiative.

Current and potential annual savings

The following table provides detail on the annual savings available to the Trust from the 2017 Green Ward Competition projects when projects are fully implemented and ongoing. This list is not exhaustive as there are other carbon and cost savings which could not be captured in the time available. Furthermore, these carbon and cost savings will increase if the projects are scaled up across wards.

Project	**Carbon**	**Money**
Urometre Choice	3,082.17 kg CO_2e	£10,061.31
Reducing Duplicate Ordering of Medication	11,180 kg CO_2e	£26,000
Eat, Drink, Dress, Move	25,63.58 kg CO_2e	£166.32 (current) £12,934.32 (potential)
Early Mobilisation Project	8,950 kg CO_2e	£47,500
Totals	**25,775.75** kg CO_2e	**£83,727.63 - £96,495.63**

Next steps

The following sets out possible next steps for University Hospital Southampton NHS Foundation Trust to build on the enthusiasm staff are developing for sustainability:

1. Ensure that all ward teams have copies of this report and that results are communicated across internal communications.

2. Work with the communications team at the Trust to track progress of these projects and tell their stories.

3. Follow-up work could be commissioned to roll out Green Ward Projects across the Trust. The first step here would be to calculate potential savings from these projects if they were rolled out on every unit where applicable and for CSH to support and facilitate the implementation of projects across the Trust.

4. The Trust has already expressed interest in running the Green Ward Competition next year. Now that one competition has already been run, it would be feasible to run a competition with twice as many teams. 2017 participants have expressed that they would re-enter if the competition were to run a second year. It may be useful to use entries from this year in promotion material and to invite the winners to return to the 2018 award ceremony to report back on progress and to detail how the prize money was used.

5. Competition entries can be developed as case studies for inclusion in Mapping Greener Healthcare to ensure the good practice is shared and to raise the profile of UHS NHS Trust's sustainability work as well as submitted to various awards.

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