

Green Cardiac ITU



Carly McNeil
Senior Sister
Sustainability Lead

Kaylee Marson
Senior Staff Nurse
ERACS Lead



Society of Cardio-thoracic Surgery
Winners 2025 Sustainability Award

INTRODUCTION

- Elective surgery ITU/HDU 20 beds total
- PACU(590) & Cardio Thoracic (746) Patients
- Patients in last year =1336

AIMS

- Reduce our Carbon Footprint
- Reduce Costs and single use plastics
- Enhance Patient Recovery reduce hospital stay

Making Cardiac ITU Green



- ▶ The NHS is responsible for **5%** of the UK's carbon admissions.
- ▶ Intensive care units generate massive amount of single use plastic waste and energy usage which has a negative impact on the environment and contribute to global climate changes.
- ▶ Our aim is to reduce plastic usage and carbon footprint.
- ▶ Reducing routine "daily blood testing"



Reducing single use plastics

- ▶ Cost of large surgical waste bins. 1 bin= £9.26
- ▶ 1.5 bins per day on average= £13.89
- ▶ Per week= £97.23
- ▶ Per year= £5055.96
- ▶ Cost savings of £4946.76 a year (98%) and 240 kg CO2 a year



- AMBU bags. Cost £5.34 each. 1336 patients admitted this year only 56 used. Saving of £6835.

Statistics Of Savings

	2021 / 2022		2022 / 2023		2023 / 2024	
ITEM	USAGE	COST	USAGE	COST	USAGE	COST
MASKS	565	£129.95	487	£112.01	244	£56.12
WATER & ADAPTOR	570	£2,183.10	478	£1,830.74	185	£708.55
TUBING	39	£854.88	30	£657.60	14	£306.88
		£3,167.93		£2,600.35		£1,071.55





Trolley Pick and yellow form (1 of each)	
DRAW 1	Drugs/Tests.
DRAW 2	Syringes - 5ml, 10ml, 20ml, 50ml 3 of each. Syringes - ABG x 5, insulin x 3. Needles - Filtered x 5. Needles - wide bore x 5. Saline pre-filled syringes x 5. Saline for injection x 5. Water for injection x 5.
	Red bags x 5. Vamps x 5. Gauge x 1. Drugs labels x 5. ECG stickers x 5. Alco wipes x 5. Cloth wipes x 5.
DRAW 3	Sodium chloride - 50ml x 2 & 100ml x 2. Dextrose - 50ml x 2 & 100ml x 2. Gels x 1.
	Syringe infusion line x 3. Pump set x 1. Gravity set x 1. Blood giving set x 1.
DRAW 4	Dry wipes and soap bottle x 1 of each. Linen - towel x 1, gown x 1, sheets x 2, pillow case x1. Side sheets x 1 set (come with patient from theatre). Patient property.

PUMP SIDE		VENTILATOR SIDE	
TOP Hartmanns 1000ml and giving set. Gels 500ml and giving set. Sterile water bottle.		DRAW 1 - Ventilator items only, rest floor. Co2 line and water trap.	
SIDE BASKETS Basket 1 Airway adjuncts - 2, 3 & 4 1 of each. Basket 2 Suction catheters x5. Tracheal sucker x 2. Sterile gloves x 5.	DRAW 1 - Intubation items only. Aque pack. Exophant tubing. Face mask. DRAW 2 Nasal cannula. Neb set.	O2 SIDE Suction liner instr. Clear tubing for suction. Valve bag mask. Feet up - water circuit. Clear tubing for drains to low suction - cones	DRAW 2 - Blue items. Essentials - Cuff manometer. Sats probe. Only if needed - Oral care items. Tracheal care items. ABG syringes and set.

Overstocking Bed areas

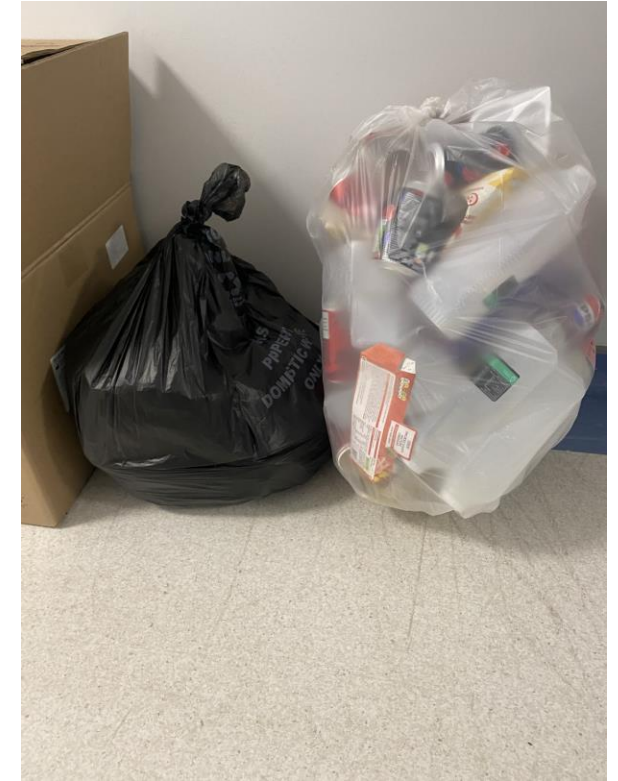
25-30% of NHS co2 costing is from energy, gas and water



Switch off campaign.



SAVE ENERGY!
Please switch off after
use. Thank you!



Introducing black and recycling waste

Over 2 weeks orange waste reduced by **50%** separated into recycling and black bin waste

Enhanced Recovery After Cardiac Surgery (ERACS)

- ▶ This is a policy that is currently being implemented by staff nurse Kaylee Marson and the ERACS team which Aims to reduce hospital stay for routine Cardiac Patients from 7 days to 5 days.
- ▶ Advantages are:
- ▶ Earlier discharges
- ▶ Less chance of HAI
- ▶ Better patient experience and recovery
- ▶ From our 2024, 746 Cardio- thoracic patients admitted It is projected that this will save an average of 2 days per patient, 1 ITU/HDU day and 1 ward day, therefore potential savings of 1492 days and **average of 204,750kg of co2.**
- ▶ Cost saving of for 1 day in ITU/HDU (AV £1881/ day) based on 746 patient=**£1,403,226. 1 day Ward bed (£350) saving= £261,100.**

Challenging the existing practices of “we have always done it this way”



- ▶ Life Cycle Analysis for our 5 "daily" routine pathology tests FBC, U&E, Coag, CRP, LFT's and magnesium.
- ▶ The tests range from 49 g - 116 g CO₂. Our test savings for all 5 routine blood tests cost **£19.28 and 885 grams of CO₂ Per patient**
- ▶ Also impacts unnecessary patient blood loss + risks of errors.

- ▶ Introduce set days for blood tests for routine post op patient instead of everyday. Full set of routine blood tests cost £19.28 and 885 grams of CO₂.
- ▶ Cardiac pt's to reduce blood tests by 1 day. This year we admitted 396 cardiac patient so projected savings for next year= £7634 and 350kg CO₂
- ▶ Thoracic patients reduce blood tests by 3 days. Average 350 patients a year saving = £23 244 and 929kg c02
- ▶ PACU patients reduce by 2 days. 590 PACU patients = £22 750 and 1044kg of c02

Pharmaceuticals



- ▶ 12% of health related co2
- ▶ Reduction in IV paracetamol **£0.72**, oral **£0.02**. (97% saving)
- ▶ CO2 310g IV, 38g oral (88% saving)
- ▶ Nebs prn - cost of the drug plus face mask and giving set
- ▶ Omeprazole now oral replace IV Post op- IV drug **£1.24** opposed to **£0.03** oral
- ▶ Saving on the IV drugs, giving sets **£0.97**, needle syringe and mixing fluid. Need cost and co2

Barriers

It can't be done

Registrar's stuck in old habits

What's the point

Resistance to change

We tried before and failed

Enablers

Enthusiasm

Nursing staff willing to change

Audits, facts and figures

MDT support

Consultant and matron support

Education

The right team to drive forward

Cardiff ITU support

SBU sustainability team

SBU green Group

Future goals

- ▶ Gloves off campaign
- ▶ Reducing our pharmacy stock of drugs we rarely use.
Decrease waste of expiring drugs.
- ▶ Electronic obs charting.
- ▶ Electronic anaesthetic charts.

What we have learnt

- ▶ We have learnt that we are all part of the same goal. It is not all "us and them" **we all have an equal goal of reducing the NHS carbon footprint** and help in the fight against global warming and reduce unnecessary spending

What we need to drive forward.

You to Listen

Support

Act

Thank you

- ▶ Carly.mcneil@wales.nhs.uk
- ▶ Kaylee.marson@wales.nhs.uk
- ▶ Sameena.ahmed.wales.nhs.uk
- ▶ Ross.phillips@wales.nhs.uk