Final Project Submission Form

Health Service:
Royal Melbourne Hospital

Title of project:	**Department**: Intensive Care Unit
Glove and gown disposal trial	

Introduction

This project was led by ANUMS from the RMH ICU who are passionate about sustainability in healthcare. Our 2024 aim was to reduce our landfill wastage from ICU.

A project that we have investigated for quite some time was changing our current practice around disposal of aprons and gloves upon discharge from ICU.

What was the problem you tackled?

Recognising a significant amount of landfill waste was created from standard practice within our ICU, wearing disposable plastic aprons for all patient contact, regardless of exposure risk. Additionally, all gloves and aprons whether full or unopened were discarded from the bed space upon discharge. Previously some of the stock had been redistributed to local vet centres/education departments, however during the pandemic most shelters accumulated stock to last quite some time and ICU built up further.

What was your SMART Goal?

To reduce wastage and ordering of single use aprons and gloves to reduce carbon emissions and financial costs over a 3-12 month period without increasing infection risk to our patients.

What system factors contributed to the problem?

Knowledge of infection prevention guidelines.
Cultural factors - standard ICU practice to always wear aprons at the bedspace regardless of procedure or task. Change for all staff within the unit during a time of uncertainty.

Who were the key stakeholders?

Clinical Assistants, Clinical Nurse Manager's, Nurse Unit Manager, Nursing staff, medical staff, Allied Health, Infection Prevention & Surveillance Service.

What was the intervention?

No longer discarding aprons or gloves upon discharge.
Education around gown usage at the bedside supporting individual risk assessments for individual patient interactions
Education and reinforcement of hand hygiene moments to support cross contamination of gown and glove boxes.

What impacts/outcomes were measured? How did you measure them?

Financial – cost per unit, accounting for purchase only, waste management costs are beyond the scope of this project.

Environmental - CO2 emissions

What challenges did you face? What enablers facilitated the change? What were the learning points?

There was initial hesitation from staff to change practise in apron usage due to infection prevention concerns.
Approval from IPPS regarding change of discarding upon discharge supported our ability to reduce our glove and gown consumption.
We currently only have 3 months of data and are extrapolating that data for annualised numbers.

What are the next steps with this project?

Continuing regular infection prevention audits to ensure nil adverse outcomes from change implemented.
Data collection over next 12 months: number of aprons/gloves ordered, comparing this to previous and calculating amount saved to estimate wastage carbon emissions.
Reviewing apron usage at bedside to identify further education requirements.
As the demands for the unit continues to grow the effects of this intervention will also continue to grow.

Points will be awarded in the following categories:

Environmental sustainability: What were the carbon savings from your project? (Please include your raw data and calculations)

Data compares the three months prior to the intervention (June to August) to the three months post intervention (September to November).

Number of units ordered:

	June	July	August	September	October	November
Aprons	43,600	50,200	47,000	26,000	28,000	26,200
Gloves (S)	58,000	78,000	96,000	40,000	80,000	50,000
Gloves (M)	72,000	96,000	116,000	50,000	36,000	0
Gloves (L)	79,000	54,000	108,000	60,000	60,000	36,000

CO2 emissions per unit:

- Gloves – 0.026kg CO2
- Aprons – 0.065kg CO2

Kg CO2 produced

	June	July	August	September	October	November
Aprons	2,834	3,263	3,055	1,690	1,820	1,703
Gloves (S)	1,508	2,028	2,496	1,040	2,080	1,300
Gloves (M)	1,872	2,496	3,016	1,560	936	0
Gloves (L)	2,054	1,404	2,808	1,560	1,560	936
Total	**8,268**	**9,191**	**11,427**	**5,850**	**6,396**	**3,939**

Emissions Jun – Aug = 28,886kg CO2
Emissions Sep – Dec = 16,185kg CO2

Total reduction = 12,701kg CO2

Annualised reduction 50,804kg CO2

Environmental sustainability: What were the waste reductions? (If possible, please specify what waste stream – reduced clinical waste by diverting to recycling, reduced clinical waste by using reusable equipment etc.)

Approximately 60,600 plastic aprons were diverted from either landfill of clinical waste
Approximately 345,000 gloves were diverted from either landfill of clinical waste.

Financial sustainability: Have there been any financial savings? (please include your calculations)

Cost per gown: $0.0161
Cost per small glove: $0.0494
Cost per medium glove $0.0494
Cost per large glove $0.0574

Cost Jun – Aug: $59,858.91
Cost Sep – Nov: $33,779.05

Total savings: $25,806.86

Annualised savings: $103,227.44

Social sustainability: How did your project socially benefit patients, staff, or wider community?

Staff are pleased with the reduction in waste and are excited by the numbers we have been able to present improving morale.

Generalisability: Could this project be replicated in other areas of the hospital?

Other departments with high-volume glove and gown disposal would be able to consider implementing a similar change in practice