



Singapore Healthcare Management 2025

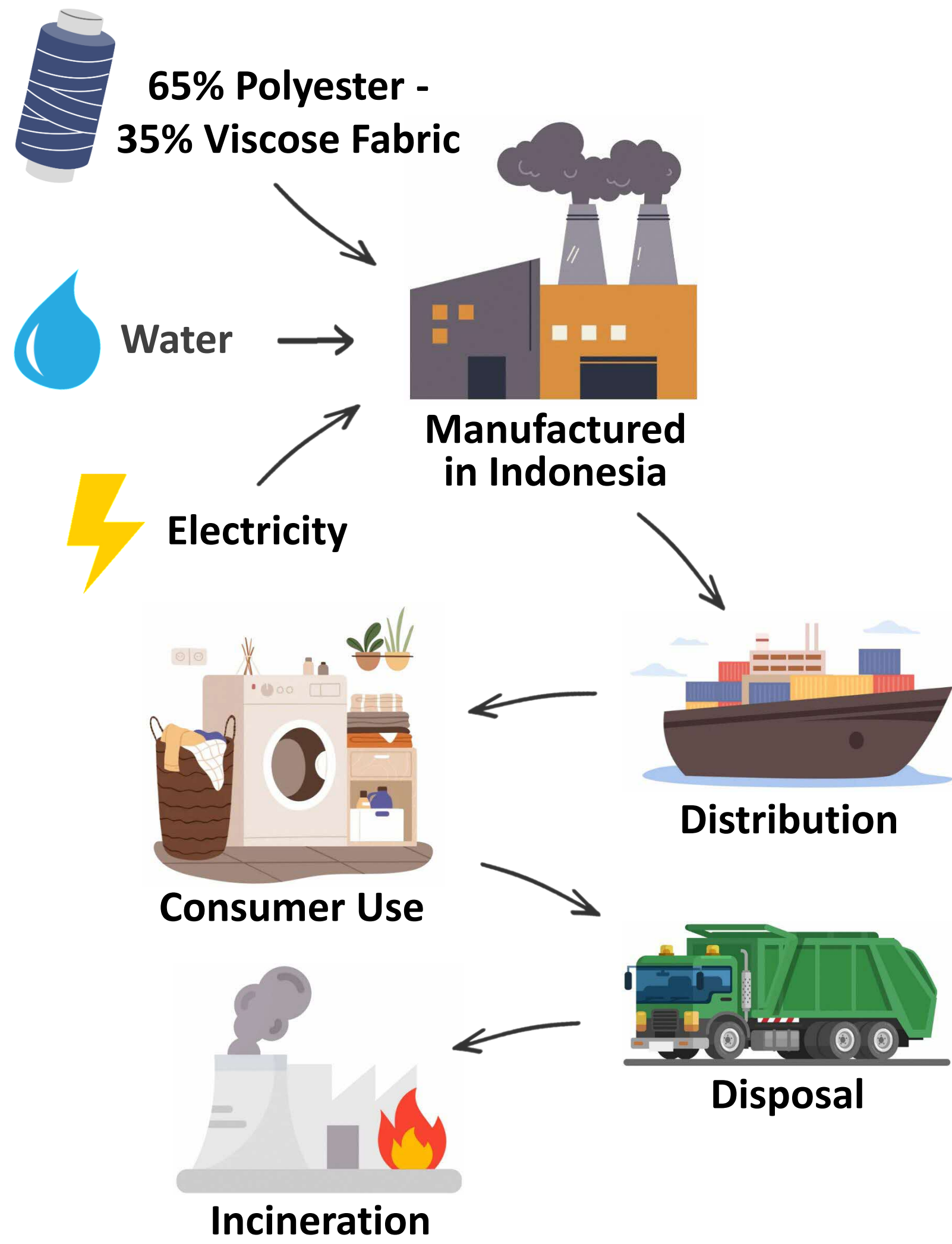
WEAVING CHALLENGES INTO SUSTAINABLE UNIFORMS

PROBLEM STATEMENT

Healthcare uniforms made from polyester-viscose blends pose significant environmental and health risks throughout their lifecycle. Their production contaminates global waters, and the use of per- and polyfluoroalkyl substances (PFAS) in treatments is associated with various adverse health effects, even at extremely low exposure levels. Washing and drying of uniforms release microplastics into the air, which can serve as transport vector for chemicals that cause toxicity, carcinogenicity, and mutagenicity. Additionally, polyester-viscose blends are not recyclable and ultimately contribute to landfill waste.

LIFECYCLE ANALYSIS

A lifecycle analysis was conducted to assess the environmental impact of healthcare uniforms within SingHealth.



There are about 98,000 clinical and patient-facing staff, each receiving 3 sets of uniforms, resulting in a total of approximately 294,000 uniforms. The uniforms are composed of a 65% polyester and 35% viscose blend, manufactured in Indonesia. For calculations, it is assumed that the uniforms are shipped directly by sea freight and have an average lifespan of 2 years.



INTERVENTIONS

Dedicated Uniform Upcycling Bin

Dedicated uniform upcycling bin was installed in the common staff lounge to promote uniform upcycling. From Feb 2024 to Feb 2025, a total of 188kg of uniforms were collected from these upcycling bins.

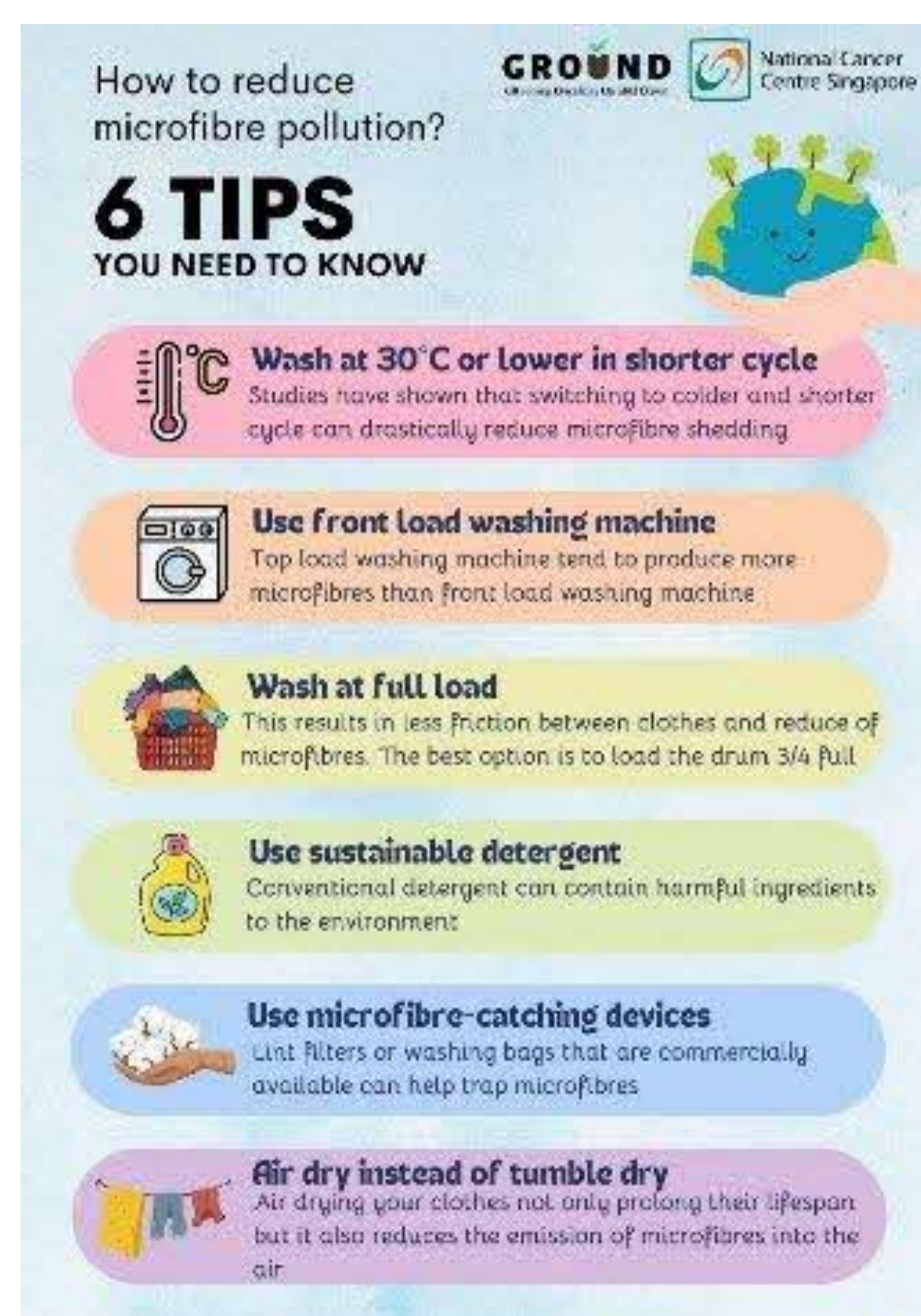
Promote Mindful Uniform Consumption

At NCCS, email blasts were disseminated prior to the uniform measurement exercise 2024. Staff were reminded to practice mindful consumption by ordering only what they truly need and reduce unnecessary consumption.



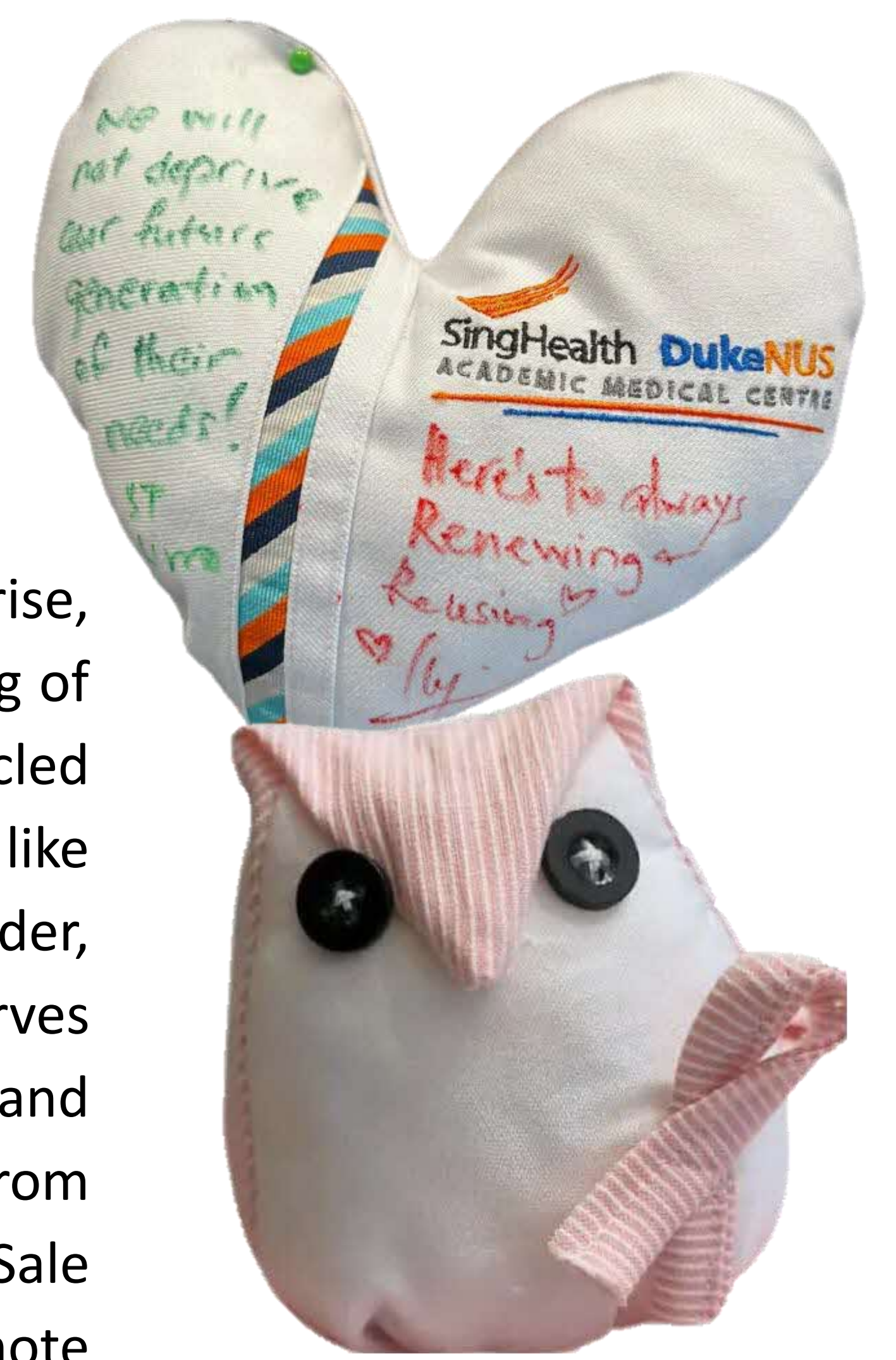
Encourage Sustainable Laundry Practices

Education efforts focused on proper washing techniques were communicated to minimise wear and tear, preserve fabric integrity and increase clothing longevity. The collective economic savings as a cluster was estimated to be \$505,000 annually if each uniform's lifespan was extended by 5 months.



Uniform Repurposing Program

In collaboration with social enterprise, The Circular Classroom (TCC), 55 kg of discarded uniforms were upcycled into everyday products like laptop sleeves, pouches, tissue holder, bags and handicrafts. This conserves resources (material, energy and water) and diverts textile waste from landfills and incinerators. Sale proceeds were also used to promote social good by supporting disadvantaged homemakers and raise \$233 for President's Challenge 2024.



RESULTS

The results of the analysis indicated that the environmental impact includes an estimated 5,250 litres of water usage, 161 kWh of energy consumed, and 67 kg CO2e emitted throughout the lifecycle of the uniforms, with 94% of the carbon emitted during its lifecycle attributed to laundry practices.

CONCLUSION

The four-pronged solution exemplifies sustainability across all three pillars of the triple bottom-line: Planet (reducing landfill waste and uniform consumption), People (contributing to social causes), and Profit (optimising cost savings through extended uniform lifespan). This holistic approach demonstrates that simple thoughtful solutions can create lasting value for our organisation and the environment we share.

ENVIRONMENTAL IMPACT (PER UNIFORM)

