

Theatre recycling: Middlemore Hospital Counties Manukau Health

GGHH Agenda Goals

- **Leadership**
- **Waste**

Hospital Goal

- **Reduce waste**
- **Reduce carbon dioxide emissions**

Progress Achieved

- Financial benefits (savings, spending reductions or costs reductions)
- Environmental benefit (reduced emissions)
- Human health benefit
- Other quantitative results (increased job satisfaction, improved morale, direct and indirect benefits)

The Issue

The green theatre team was established during 2013 and consisted of a small team of clinicians and non-clinicians intent on making improvements to their practice that went beyond the usual quality, health and safety criteria. The aim of the team was to activate the organisations sustainability mission, raise awareness of sustainable practices and facilitate education to help stimulate ideas and actions for system improvements. Waste was identified as being a key problem in terms of waste volumes going to landfill. In general, theatre departments have been at the leading edge when it comes to recycling and theatre pack rationalisation projects. Theatre departments lend themselves to such projects since they generate up to 30% of the total hospital waste. They use a large volume and range of single use products and consequently generate a large volume of waste; arguably, much of this waste is recyclable. Disposing of waste to landfill is often the most convenient and costly option. Making changes to the way people segregate and dispose of their waste is a process of change. The change process has to be managed in such a way that the desired behaviour is sustained. By reducing waste to landfill, volumes operational costs will be reduced and carbon emissions avoided. Reducing carbon emissions impacts the well-being of patients, staff and hospital workers, as well as the society outside the hospital walls.

‘Operating departments can produce up to 30% of the total hospital waste’.

Sustainability Strategy Implemented

The theatre green team believed by recycling they could save money, reduce emissions and improve morale all at the same time. As a means of addressing this issue of waste, a strategy was developed following a project management framework. In doing so, the process had rigor and resulted in a streamlined approach. The theatre recycling project came under the organisations’ Environmental Sustainability programme and is one of the key successful intervention projects that took place over 2014/15.

Implementation process

The planning phase began with several meetings with key stakeholders. Consideration had to be given as to what waste was being generated and importantly, of that waste, what could be readily recycled in Auckland. This is important because there are local and regional variances as to what materials can and cannot be recycled. As part of the initial phase, materials were collected and once enough material was gathered, samples were given to the recycling waste provider. See the following table which shows details of recycling and waste streams:

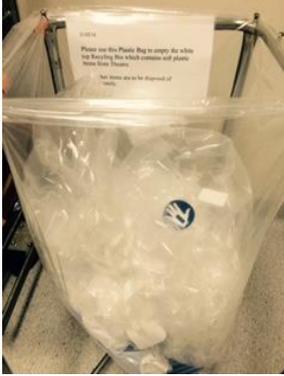
Paper and fine card into the green bin	Mixed recycling into the blue bin	Soft plastic into the orange bin	General waste into a white bag
<p>Green bin needs to be emptied into the large green paper bin. This includes medication boxes, glove boxes, backing paper from syringe wrappers.</p>	<p>Blue bin needs to be emptied into the large blue recycling bin. This includes glass, aluminium and rigid plastic (no broken ampoules or aerosols please).</p>	<p>Orange bin needs to be emptied into a large clear plastic bag. This includes soft plastic packaging material, clear and opaque and does not include fluid bags, giving sets, gloves or kimguard.</p>	<p>Waste for landfill needs to be emptied into the dark green 660L wheelie bin (labelled as waste to landfill).</p>
			

Table 1. Waste streams identification table

Once we understood what could be recycled, then resources could be put in place based around these items. In addition, prior to making any changes, waste counts were taken as means of benchmarking current practice. Pre-intervention waste counts quantified the number of white bag (general waste) and yellow bag waste (medical waste). From then on in the team considered what education was required and what tools and resources were needed. In the interim the Sustainability Officer connected with the non clinical support services to map out the waste disposal process and make sure the waste was removed from theatre and taken to the waste dock where it could be collected by the recycling provider. Any successful sustainable waste management programme involves meeting the requirements of three distinct elements: correct segregation at source, internal movement of waste to an internal collection point and external movement of waste from the collection point to the waste dock and beyond. Each element requires attention and consideration to ensure the right waste ends up in the right waste stream.

Collateral was developed including fact sheets and posters and the 'plastics' theatre became the first theatre to trial the system. Communication to theatre staff formed the next phase, whilst searching for appropriate recycling bins. The recycling project started as a trial and during that trial various bins were tried out, and feedback was taken on the quality of the

fact sheets and posters. All clinicians were involved who used the plastic theatres and this phase lasted several weeks to ensure each new tool was tried and tested effectively. By choosing to trial the project in one theatre, interest was raised and other teams mentioned they were also keen to recycle and were eagerly waiting for the trial to go live and across all theatres. During the trial the theatre department relocated into a brand new facility and time was allocated to the new area to ensure any new waste management procedures were fit for purpose at the new site.

Eventually the team decided they needed larger bins, and bins on wheels. Contact was made with a local supplier who agreed to make a trolley with wheels and designed this trolley to fit our purpose. A small time in motion study also helped to show the advantage of capturing the waste in a trolley on wheels. The study revealed how orderly time was saved because they needed to take less frequent trips to the waste room since the waste was segregated and split into additional waste streams.

The bins and trolley were made in NZ, adding more value to the programme since the Environmental Sustainability Programme is very interested in economic, environmental and social outcomes. Over the course of nine months and following on from a long period of engagement and evaluation, the project went live across all theatres. Since the trial period was over a few months, engagement was high. The project has been fully employed now since February 2015. Aside from a handful of people, all members of the theatre team have been actively engaged and segregating their waste very successfully.

Tracking Progress

Over the course of the implementation process and well into business as usual, feedback is provided as to how well the team are doing in terms of contamination rates. Waste bin analysis allows for snapshot auditing and feedback. Overall the contamination rates are very low. Waste being recycled totals approximately 800 kgs per week, which equates to 26 wheelie bins. Medical and general waste volumes have decreased and costs of diverting waste to landfill lessened. This behavior is considered the new norm and theatre departments are very keen to follow suit. In fact another trial has started on a different site.

Challenges and lessons learned

One of the most challenging aspects of the project was being able to effectively quantify the impact of adding in additional waste streams to all those involved in waste transportation, post the theatre department. Adding any workload onto the non-clinical support services requires careful consideration of existing work capacity. Each of the three elements poses different challenges and requires each member of the team to work closely together in the planning and implementation phase.

Next Steps

Next steps include adding in PVC recycling and fully rolling out at the other main site.

Demographic information



Trolley and bins made in NZ by Pioneer 'fit for purpose'

CM Health is a major provider of both community- based and secondary health care services to the estimated 520,130 people residing in the Counties Manukau district. Counties Manukau Health is New Zealand's fast growing multicultural area, and is also home to more new immigrants than any other region.

CM Health operated services are delivered at seven in-patient facilities and a number of community outpatient sites and community health sites across the District. The Middlemore Hospital and Manukau Health Park (comprising the SuperClinic and Surgery Centre) contain the largest elective, ambulatory and inpatient facilities.

There are 1,000 beds across these facilities, and the services discharge in excess of 115,000 people per annum (across acute, surgical, mental health, maternity and health of older people/ rehab), with Emergency Care seeing over 100,000 people per annum. There are also over 80,000 outpatient first appointments, and 215,000 follow-up events each year.

The organisation is one of the largest of New Zealand's District Health Boards and a significantly large employer in the Counties Manukau district, providing jobs for over 7,000 people across the region, 5,700 FTE. Counties Manukau Health employs over 400 Senior Medical Officers and over 480 medical trainees covering most specialty areas working within our various sites. Counties Manukau employs over 2,500 Nursing staff (Registered and HCA), and over 1,000 Allied Health and Technical Staff.

More information can be found on the website: www.cmdhb.org.nz

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