

Local Circular Solutions for Food Waste

Hunter Brain Injury Service (HBIS), Hunter New England Local Health District (HNELHD), NSW Health

Demographic information

- Region: Pacific
- Country: Australia
- Type of institution: Transitional Living Unit and Community based rehabilitation services for adults with Acquired Brain Injury
- Number of staff: 20
- Number of beds: 5

GGHH agenda goals

- Waste
- Food

Case study summary

HBIS is supporting HNELHD's plan to be Carbon and Waste Neutral by 2030 by using the principles of a circular economy to tackle the issue of food waste. HBIS has successfully implemented a closed loop patient-led solution to stop food waste from reaching landfill.

The issue

HBIS provides a combination of transitional and community-based rehabilitation to adults who have an acquired brain injury. This standalone service has a unique model of care that is focused on community reintegration and social participation. Compared to large acute health facilities in the district, HBIS has a relatively low level of waste production. This is due to the low acuity of the cohort and the fact that the multi-disciplinary rehabilitation team is comprised mainly of allied health professionals who use minimal medical consumable products.

At the beginning of the project, the team identified that food waste was the main constituent of general waste at the service and with no commercial food organics collection available, sought to implement a patient-led circular solution to manage food waste onsite.

Hospital goals

- HNELHD is aiming to be Carbon and Waste Neutral by 2030.
- In an effort to work towards the district's goal of zero waste to landfill by 2030, HBIS committed to diverting food waste from general waste. As well as minimising food waste, the team aimed to improve patient outcomes as follows:
 - Embed patient-led sustainable practice into brain injury rehabilitation;

- Create a culturally safe space for patients and their families and recognise the value of Caring for Country on health and wellbeing;
- Improve opportunities for incidental physical activity, cognitive stimulation and social interaction;
- Optimise nutrition literacy and improve dietary habits;
- Offer opportunities for pre-vocational skill development;
- Combat poor engagement in centre based indoor therapy programs.

Sustainability strategy implemented

A therapy garden and bush tucker yarning circle were built on site and a small-scale compost system and worm farm were integrated into the design. Additionally, a rainwater tank was installed to service the therapy garden and bush tucker yarning circle.

The therapy garden consists of ground, raised and wheelchair accessible garden beds with a variety of edible and sensory plants. The bush tucker yarning circle is an extension of the therapy garden and offers patients and staff a culturally safe space to sit and converse. The circular seating plan in the yarning circle is constructed of local sandstone and is surrounded by an abundance of native plants, many of which are edible.

Processes for diverting staff and patient food waste from the kitchen from general waste to the onsite compost system and worm farm were developed and embedded into the service model. For ease of operation and for patients to learn transferable skills for reintegration into home life, off the shelf plastic compost tumblers and worm farms were installed.

Implementation process

There were two key milestones that initiated the project in 2019:

- A HBIS consumer engagement group identified that access to meaningful and culturally safe outdoor leisure activities could help to reduce physical inactivity and boredom between therapy appointments.
- HNELHD released an expression of interest for staff to become 'Sustainability Champions' to bolster efforts towards achieving the ambitious sustainability goals set out in the district's Sustainability Strategy.

The idea of implementing a therapy garden and bush tucker yarning circle was born. The space was co-designed and built in conjunction with the HBIS multidisciplinary rehab team and HBIS patients. Donor funding supported the involvement of the following organisations during the implementation phase of the project:

- [Royal Botanical Gardens Community Greening Program](#)
- [Newcastle Men's Shed](#)
- [Therapeutic Horticulture Australia](#)

Since implementation, patients residing in the transitional living unit participate in a weekly garden group that is facilitated by the multidisciplinary rehabilitation team. Patients prioritise a task list that can include seasonal seed selection, planting, propagating, pruning, soil and pest management and weeding. Patients harvest fresh seasonal produce from the garden and meal planning is centred around these ingredients. The volume of fresh seasonal produce from the garden varies throughout the year. Patients deposit food waste from the kitchen into the compost bin and worm farm each day. The compost and worm castings generated from these systems are then fed into the garden beds to optimise conditions for prolific growth and harvesting.

Formal therapeutic horticulture training was investigated to build capacity for the staff involved in the project however was cost prohibitive at the time of implementation. As such, the garden program at HBIS has evolved organically with frequent garden knowledge sharing sessions between interested staff, patients, and their families. Patients involved in pre-vocational community-based activities such as local [Landcare](#) groups also informally share their learnings with their peers.

In addition to the weekly garden group, the multidisciplinary rehab team utilise the therapy garden and yarning circle for 1:1 therapy sessions to target specific functional physical, cognitive or communication activities. This natural green space has also become a safe and relaxing environment for social work and psychology sessions.

To further mitigate food waste, the meal planning process at HBIS was reviewed. Prior to the implementation of the program, all patient food was procured at a major supermarket. Post implementation, the seasonal harvest from the garden inspires meal planning sessions. A stringent weekly pantry/fridge/freezer audit has also been introduced. Any supplementary grocery items are then procured from the supermarket. This system has reduced food costs and minimised food spoilage due to over-purchasing.

Tracking progress

In 2022, HBIS partnered with a local circular economy advisory group, [Go Circular](#), to quantify the success of the first two years of the program. This collaboration was facilitated by [the NSW EPA Love Food Hate Waste](#) initiative and did not incur any costs for HNELHD.

A range of quantitative and qualitative methods were used to track progress:

- **Waste stream audits:** including general waste, co-mingled recycling and food waste;
- **Food audits:** including pantry/fridge/freezer stock takes and a retrospective review of ordering data;
- **Patient and staff surveys:** aiming to better understand current attitudes towards food waste, current waste practices, understanding of optimal waste streaming and barriers to further optimisation of waste streaming.

Please note that the information in this case study was provided by the GGHH member named above. Health Care Without Harm (HCWH) is not responsible for the accuracy of the information/data provided.

Progress achieved

Since the program was implemented in 2020, there have been significant environmental and financial benefits observed:

- Onsite composting and worm farming have diverted 120kg of food waste from landfill per year and reduced emissions by 130kg CO₂e.
- Harvesting fresh produce from the garden and completing weekly kitchen audits has decreased the average spend on patient food by 49%

Data collected from the patient surveys and feedback from the multidisciplinary team highlighted that a range of patient benefits have been realised:

- Improved nutrition literacy and enhanced connection to food systems;
- Diversified meal preparation skills and higher intake of nutritious unprocessed foods;
- Increased incidental physical activity with opportunities to practise functional upper limb, mobility and balance tasks in a real-world environment;
- Enhanced social connection with peers and improved mood;
- Greater opportunities to practise real world cognitive and social communication skills.

Encouragingly, 87.5% of patients who participated in the program indicated they are eager to use their new knowledge of sustainable gardening and food preparation upon discharge from the service.

In 2022, the project was awarded the Sustainability and Environmental Health Award at the annual [HNELHD Excellence Awards](#).

Challenges and lessons learned

- Embedding processes into the service model: The project required considerable efforts from the project team and it was important to ensure that the program was sustainable over the long term to mitigate risks such as staff turnover and lack of ownership. Identifying distinct roles and responsibilities for the ongoing management of the space has been integral. Other factors that have helped to sustain the program include:
 - Ongoing support from management
 - Recognition of the work via the HNELHD Excellence Awards
 - Enthusiasm and passion of champions and the wider Sustainability Network.
- Infection Control: Ensuring the compost and worm farm systems met the requirements of the district infection control team was essential.
- Holistic outcomes: While sustainability was one of the key drivers of the project, it was important to capture the financial savings and improved patient outcomes to demonstrate the widespread benefits of the program in the long term.

Please note that the information in this case study was provided by the GGHH member named above. Health Care Without Harm (HCWH) is not responsible for the accuracy of the information/data provided.

Next steps

This model for managing small scale food waste has potential to be replicated at a number of services within our health district. Other services that have expressed interest include:

- Inpatient Short Stay Mental Health Unit;
- Residential Eating Disorder Treatment Centre;
- Regional and Rural Multi-Purpose Services with residential aged care beds.

This model has been proven to be a cost-effective solution to managing small scale food waste particularly when commercial food organics collections are geographically limiting or not financially viable due to low volumes.

Links

- [About the Brain Injury Rehabilitation Network | Agency for Clinical Innovation \(nsw.gov.au\)](https://www.nsw.gov.au/health-care/brain-injury-rehabilitation-network)
- [Community Greening | Botanic Gardens of Sydney](https://www.botanicgardens.com.au/community-greening)
- [Welcome - Therapeutic Horticulture Australia \(tha.org.au\)](https://www.therapeutichorticulture.org.au)
- [Newcastle Men's Shed | The Key is Working Together \(newcastlemensshed.com\)](https://www.newcastlemensshed.com)
- [Circular Economy in Newcastle, NSW, Australia - Go Circular](https://www.go-circular.com/circular-economy-in-newcastle-nsw-australia)