

## Eco WarriERs: Reducing waste in the Fiona Stanley Hospital Emergency Department South Metropolitan Health Service Western Australia, Australia

### GGHH Agenda Goals

- Waste
- Procurement
- Climate

### Hospital Goal

- Improve waste management and reduce waste to landfill
- Engage staff in waste management and environmental sustainability initiatives

### Progress Achieved

- Increased number of co-mingled recycling bins utilized indicating higher volumes of waste diverted from landfill.
- PVC, single-use metal instruments and syringes diverted from landfill, indicating Emergency Department staff engagement and compliance with new recycling streams.

### The Issue

The Fiona Stanley Hospital (FSH) Emergency Department (ED) is a fast-paced area with a high patient turnover, with more than 110,000 presentations a year. Most of the equipment used is disposable leading to enormous amounts of waste. The ED is made up of a large workforce operating under considerable time constraints, making engagement on waste reduction initiatives a challenge.

### Sustainability Strategy Implemented

In January 2021, motivated staff revamped an environmental sustainability group which was initially developed in 2019, called Eco WarriERs. The group focuses on implementing recycling initiatives in the ED whilst also delivering education to their colleagues to reduce wasteful practices.

### Implementation process

The Eco WarriER team initially started small by replacing single use plastic items with alternative products available on SMHS purchasing lists including paper medication and drinking cups, wooden stirrers, paper denture pots and ANTT trays, which are a hard plastic and can be wiped down and re-used. Plastic patient property bags were removed from some areas and replaced with brown paper bags.



Image 1: Climate Emergency Week display.

Eco WarriERs then worked with the hospital’s waste management team to introduce co-mingled, syringe and PVC recycling bins, in a staggered approach across areas of the ED. Prior to the introduction of the new bins, regular toolbox sessions were held. These were brief 15 minute education sessions conducted by Eco WarriER members on the floor. To facilitate maximum staff reach these sessions were run early in the morning during times of reduced demand and again in the afternoon when there was an overlap of staff at shift changeover. To consolidate content, emails were sent to all staff (medical and non-medical) working in ED and QR codes linking staff to videos explaining their use were displayed in all areas. All new starters are given a demonstration during their orientation and an introductory text is provided to both nursing and medical staff. The Multidisciplinary Ambulatory Care area is consistently staffed by Nurse Practitioners who ensure all staff rotating through the area are briefed on the use of the bins at the beginning of each shift. Additionally, signs with step-by-step instructions are provided above each bin.

To further motivate staff and raise awareness, the Eco WarriERs held a Climate Emergency Week in June 2021, highlighting the need to implement change with a focus on the simple things everyone can do. This included creating a display to illustrate which items go into each of the bins. This display has become a point of reference for staff when members of the Eco WarriERs are not available to provide advice.

Metal recycling for single use instruments was already available in ED however, awareness was poor. We used the Climate Emergency Week to highlight that these instruments can be recycled. Auditing indicated that a majority of IVCs inserted in the ED were not being used. There is currently a big push for venepuncture over IVC insertion and encouraging critical thinking prior to insertion. Signs with the question, “Does your patient really need a cannula?” have been added to the IV trolleys. Huddles delivered at every change of shift highlighted the waste and increased patient infection risk associated with PIVC insertion.



Image 2: Instructional signage above bins in the FSH ED.

PVC is collected and sterilized by the hospital’s waste contractor, and it is then delivered to a third party company where the plastic is shredded, washed, granulated and pelletised. This material is used in the manufacturing of irrigation, gardening and landscaping products. Recycled plastic processed to make new plastic products, saves approximately 88% of the energy needed if raw oil and gas were used. Aluminum, which is infinitely recyclable, steel and titanium are recovered from surgical instruments to make new products which significantly reduces the use of natural resources and energy as well as reducing the impact on air pollution.

### **Tracking Progress**

We measured success by tracking how many collected buckets we were diverting from landfill. Waste management audited the number of buckets received which have steadily risen each month.

In April 2021, 20 co-mingled recycling bins were collected from ED, increasing to 35 in August 2021. In addition, a total of 6 metal instrument buckets, 6 PVC buckets and 3 syringe buckets were collected during the same time period. These numbers will be monitored to ensure ongoing compliance.

[Note that recycling bins and buckets are not weighed at the collection point so weight calculations are not available]

### **Challenges and lessons learned**

The response to COVID-19 delayed the initial introduction of recycling and resulted in increased use of PPE and single use equipment. Preventing students from seeing droplet precautions patients and minimising the staff that see these patients is one method used to reduce waste.

While there were initial delays ordering each of the recycling bins, this turned out to be a positive as it led to a gradual introduction of bins area by area, which in turn helped to prevent staff becoming overwhelmed with the changes.

The ED is a large department with a huge workforce who are bombarded by frequent signs and emails, resulting in challenges in getting the message out to everyone. Face-to-face toolbox sessions and impromptu sessions, as well as having champions on the floor, were the most effective staff engagement methods. Due to the time constraints of emergency medicine, it can be difficult to engage staff who perceive recycling as extra work. As a result, recycling has not yet been introduced in the resuscitation department, it will be implemented when staff are comfortable with the process.

### **Next Steps**

Creating engagement in recycling initiatives and increasing sustainability awareness will continue to be a primary goal. Given the nature of the ED, this is challenging and requires a continuous push for attention.

In the future, the Eco WarriER team is planning to:

- Introduce recycling bins to the remainder of the department
- Introduce soft plastic recycling
- Assess pre-made packs and remove items not commonly used
- Investigate how food is being ordered for ED to prevent waste, including assessing the potential of providing vegetarian meals/sandwiches only
- Undertake an awareness drive to encourage use of patient's own medication to reduce medication waste
- Additionally, [Virtual Emergency Medicine \(VEM\)](#) has been introduced to ED which, among other things aims, to reduce presentations to the ED, particularly from nursing homes.

## Demographic information

Fiona Stanley Hospital (FSH) is the major tertiary hospital in the south metropolitan area and offers comprehensive health care services to adults, youth and children.

- It has 783 beds and offers:
- acute, general and specialist medical and surgical services
- subacute services including rehabilitation and aged care
- comprehensive cancer services
- State adult burns unit
- State rehabilitation service including ventilator dependent quadriplegic service and spinal outreach service
- State heart, lung and bone marrow transplant service
- emergency and intensive care
- mental health
- maternity, paediatric and neonatal services.

The South Metropolitan Health Service (SMHS) delivers hospital and community-based public health care services to nearly a quarter of WA's population across 9 local government areas in southern metropolitan Perth (PDF 2MB). In addition, SMHS provides services to WA Country Health Service (WACHS) patients from the Great Southern, South West, Southern Wheatbelt and Goldfields.

SMHS provides a wide range of services through a hospital network and community-based services.

### Links

SMHS Environmental Sustainability website: <https://smhs.health.wa.gov.au/About-Us/Strategic-focus/Environmental-sustainability>

### Quotes:

I find it actually has become second nature to separate plastics from paper backings on sterile syringes and needles. We produce so much waste in hospitals and obviously a lot is contaminated/unsafe to recycle but we could still be recycling at least half what we are using at the moment! I think [the] recycling project is a great step in the right direction and one day will become the norm for all of us (or our kids at least) – Livia Ciancotti ED RN

Just having a choice of bins encourages me to think more about our waste and where it goes. – Belinda Kenworthy ED RN

Keywords / topics: waste, recycling, engagement, awareness