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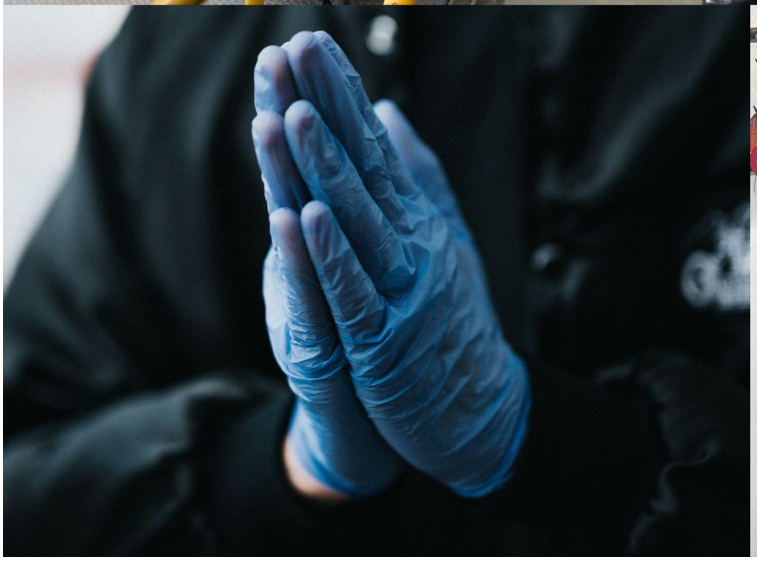
Climate and Health Alliance

PLASTIC OCEANS AUSTRALASIA

July 2023 | Report

EPIC for Health.

Pilot Program



EPIC for Health Pilot Program

Introduction

Single-use plastic is harmful to our health and the environment - yet it's everywhere in healthcare. 98% of single-use plastics are made from fossil fuels, which emits green-house gases and drive climate change[1].

Plastic Oceans Australasia (POA) and the Climate and Health Alliance (CAHA) partnered to deliver this pilot project at King Edward Memorial Hospital and Austin Health, both members of the Global Green and Healthy Hospitals network. Funding was provided by the Minderoo Foundation.

While the plastic problem is vast, particularly in healthcare, solutions and frameworks for action exist. POA has successfully helped a myriad of businesses, community groups and councils to reduce their single-use plastic consumption through their EPIC Program (EPIC). This pilot project applied the EPIC Program in a health setting for the first time.

The EPIC for Health pilot project was funded by the Minderoo Foundation.

Aims

The aims of the project were

a) to demonstrate that the EPIC Program can reduce single-use plastic in health settings, and

b) to document and disseminate key achievements and learnings from this pilot project.

[1] https://sourceofplasticwaste.org/

Front cover images: Austin Health and POA staff during an EPIC Program site visit to Austin Health

Objectives

Project objectives were:

1. To introduce healthcare service providers to the EPIC Program
2. To support participating health institutions to measure their single-use plastic use
3. To demonstrate a quantified reduction in single-use plastics in health institutions involved in the pilot
4. To showcase measures health institutions can take to reduce single-use plastics through case studies
5. To showcase that behaviour change is possible in challenged workplaces
6. To support the health service to continue their sustainability journey
7. To demonstrate that the EPIC Program can be delivered in a healthcare setting

EPIC overview

EPIC stands for *Engagement in Plastic-free Innovation for Change*. The EPIC program is a twelve-month tailored program available for organisations that supports participants in reducing single-use plastics. It is a team building program which fosters innovation and change. Participants are guided through the program by POA staff and are provided with the EPIC Program toolkit which provides extensive resources including workshops and an operational framework to support and align with each organisation's requirements and objectives.

There are 4 stages in the program:

- Stage 1: Established a baseline for plastic waste and behaviour trends
- Stage 2: Explored solutions that meet sustainability goals
- Stage 3: Implemented solutions, and staff engagement initiatives
- Stage 4: Compared the initial and final behaviour trends and plastic waste results. Planned the future steps to take.

Implementation and outcomes

Stage 1

The EPIC Program began with an online workshop for each health service. This workshop was an opportunity to introduce the EPIC Program and identify staff champions who could help deliver the program.

Following this workshop, a staff survey was conducted to investigate staff plastic behaviours and motivations, both in their personal lives and at work.

Waste audits were conducted to establish a baseline measure of the types and quantity of plastics generated. Support provided through the EPIC program included waste audit communication materials, instruction manuals and templates (see Figure 1).

Considerable delays were experienced while completing stage one of the program due to the prioritisation of COVID-19 responses in both Victoria and Western Australia, and EPIC lead staffing changes.

Figure 1

Austin Health

- 14 staff attended the introductory workshop held in early 2022 (a recording was shared with all 46 staff who registered).
- The staff survey was completed by 430 of approximately 11,018 staff.
    - The survey was shared via Austin intranet and corporate communications, as well as via in-person events on campus cafés.
    - Initial staff engagement was limited, a free coffee voucher for everyone who completed the survey was offered which increased the response rate considerably.
    - The findings reflect over 95 percent confidence levels.
- Waste audits of 57 general waste and recycling bins were completed at 8 locations on 3 campuses.
    - Locations included Dietetics, Executive Office, ICU, Service Improvement, Spinal Ward, Heidelberg Repatriation Hospital and Royal Talbot Rehabilitation Centre.
    - Waste had accumulated in these bins for between 0.5 - 5 days.

King Edward Memorial Hospital

- 35 staff attended the introductory workshop in March 2022 (a recording was shared with all 86 staff who registered).
- The staff survey was completed by 164 of approximately 1906 staff.
    - The survey was shared via KEMH intranet, the KEMH Health Point hub page, direct emails, posters, part of the climate and sustainability workshop display and a display in the hospital library.
    - The findings reflect over 85 percent confidence levels.
- Waste audits of 17 general waste and recycling bins at 3 locations were completed.
    - Locations included Supply, Health Information and Admin Services, and Carson House.
    - Waste had accumulated in these bins for between 0.5 - 5 days.

Stage 2 and 3

Following completion of the waste audits and staff survey, a second online workshop was held in January 2023. Stage 2 and 3 of the EPIC Program were combined and introduced at this workshop together to make up for the delays experienced in stage 1. This workshop brought together staff from both Austin Health and King Edward Memorial Hospital. The workshop was attended by 34 staff across both health services.

During the workshop:

- Survey and audit results were shared
- The next steps in the program were introduced including an overview of the tools and support available, such as POA's Plastic Swap Site and a cost benefit analysis tool
- Case studies of successful plastic reduction projects were shared
- Group brainstorming sessions were held to begin exploring possible solutions

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Survey results

The survey included 13 questions about plastic habits in the workplace and home. The purpose of the survey was to determine the behavioural trends of staff when it comes to preserving the environment and reducing single-use plastic waste.

The survey prompts respondents to rate behaviours and actions on different plastic related scenarios using a continuous scale of 1-5 ranging from "Strongly Disagree" to "Strongly Agree".

KEMH and Austin Health achieving an overall score of 3.62 and 3.63 out of 5 respectively, demonstrated that each health service had made some progress in reducing their single-use plastic footprint, and were in a strong position to implement additional steps to further reduce plastic use.

The survey results demonstrated that overall staff at both health services were 'somewhat concerned to very concerned' about all the environmental and health impacts of plastic questions included in the survey, such as their impacts on waterways and human health.

The results also demonstrate that while staff reported regularly refusing single-use plastic bags and buying bottled water, they avoided takeaway coffee cups less consistently.

Convenience, lack of knowledge about alternatives available and accessibility, restricted time and budget are the main factors that respondents used to justify the consumption of disposable plastics at both health services.

67.5% of respondents at Austin Health and 65% of respondents at KEMH believed finding alternatives to plastic in the workplace was the most important action for their workplace to undertake.

Audit results

The purpose of the audits were to establish a baseline measure of plastic use, and to understand the plastic waste habits of staff and how this compared to their behavioural habits documented in the survey. Support provided through the EPIC program included communication materials, instruction manuals and templates.

The bins audited consisted of waste from general waste and recycling streams. The scope of the audits were limited to single-use plastic waste originating from back-of-house operations and staff personal waste habits, and does not include the clinical waste stream.

The plastic waste collected were categorised into medical and non-medical items to allow greater insights into the data and allow more focused solutions. Medical items are waste associated with products used in a healthcare setting such as PPE and other healthcare products. The plastic waste collected were also categorised according to POA's grading system which is based on the lifespan of a product.

Information about the number of staff at each location and the period for which the waste had accumulated was also collected to provide further insights and allow for comparison across locations.

Austin Health:

The waste audits found:

- A total of 1479 pieces of waste weighing 7.89 kg, with the most waste generated from ICU as shown in figure 2 below
- 99.6% of items found were single-use
- The most common item by number (274) and weight (1081g) was gloves as demonstrated in Figure 3

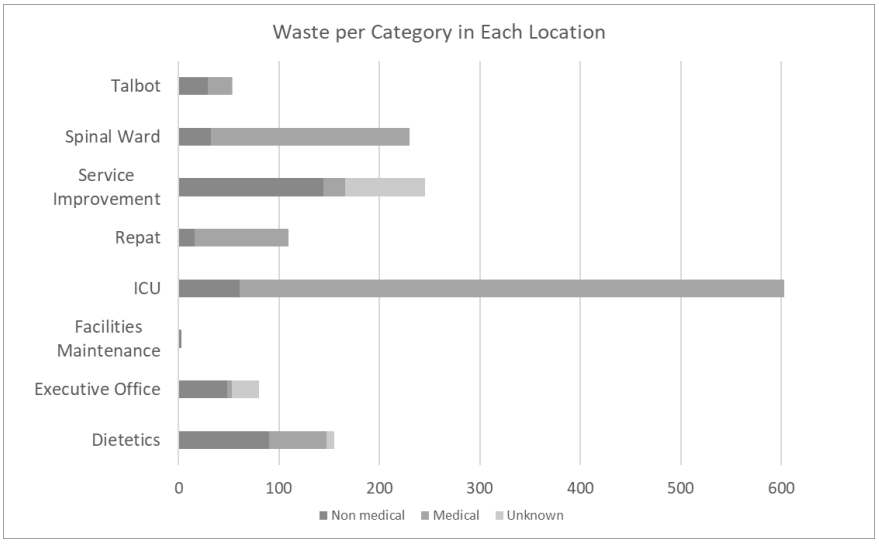

Figure 2

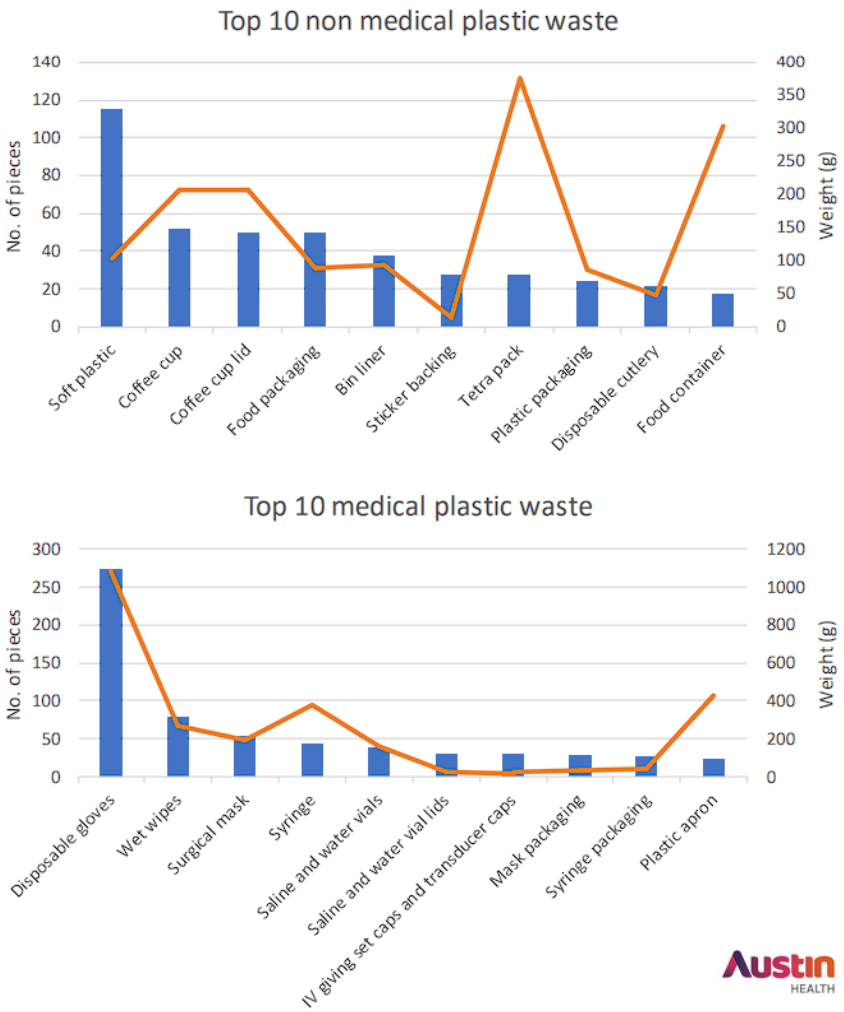

Figure 3

KEMH:

The waste audits found:

- A total of 117 pieces of waste weighing 0.79 kg from 3 locations as shown in figure 4 below
- 94.9% of items found were single-use
- The most common item by number was plastic wrap strips (20) and by weight was plastic drink bottles (200g) as demonstrated in figure 5 below

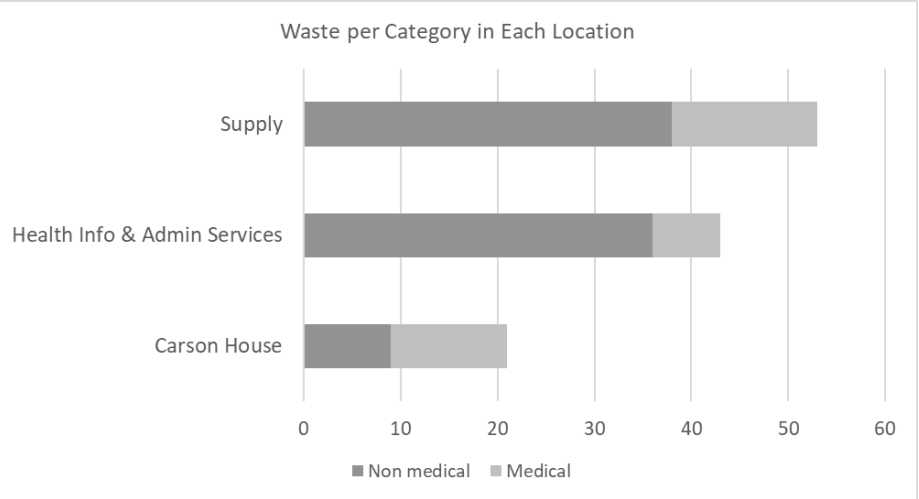

Figure 4

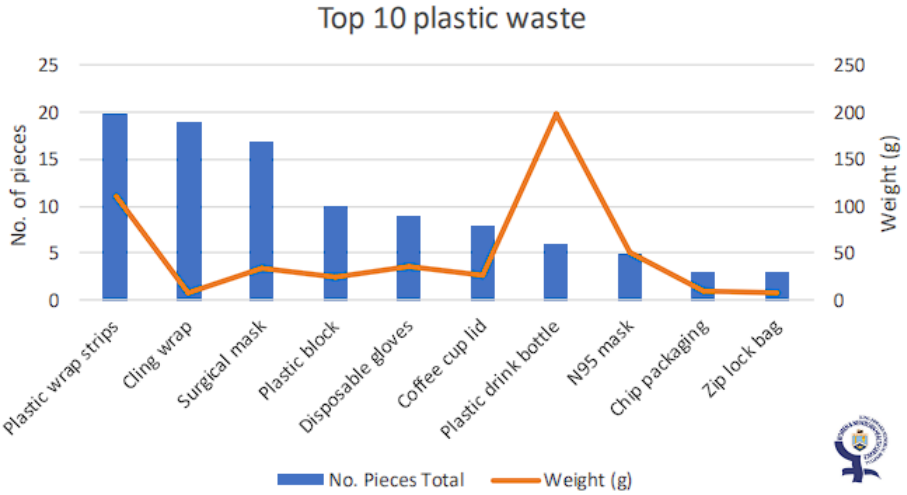

Figure 5

Audits at both health services found contamination within waste streams, for example soft plastics were found in recycling bins.

After these results were shared with workshop participants, POA introduced a template for finding solutions, and participants broke into small groups to brainstorm solutions. Participants identified a number of items to potentially focus on, including disposable coffee cups, wipes, blister packs, masks, and gloves.

POA's Plastic Swap Site was then introduced to participants. The website provides recommendations of more sustainable alternatives for a range of commonly used products at home and in the workplace. The integrated cost-benefit analysis tool and information about each product's cost, supplier and disposal method enables users to make sustainable procurement decisions easily.

The importance of making the environmentally preferred choice the easy choice, and case studies of successful healthcare plastic reduction initiatives, were shared with participants.

Following the workshop, EPIC teams at each health service were provided with a process to focus their efforts going forward using the EPIC Program toolkit, along with support from POA's EPIC Program Facilitator from January to May 2023.

Austin Health

EPIC champions at Austin Health chose to focus on reducing disposable coffee cups and disposable gloves, organised into small action teams and developed SMART (Specific, Measurable, Achievable, Realistic, Time referenced) goals.

Gloves:

Staff chose to focus on reducing non-sterile glove use through staff education around when gloves are not required. Working closely with Infection Control and drawing on case studies and external sources, they developed communication material for a staff education campaign focusing on appropriate glove use. Further details of this initiative are outlined in this case study.

They also investigated options for buying biodegradable gloves. With Techtile biodegradable gloves currently in circulation around the hospital as a nitrile biodegradable alternative to traditional gloves.

Coffee Cups:

EPIC champions explored options for reducing disposable coffee cups including:

- Sale of Austin Health branded reusable coffee cups at in-house café.
- Exploration of a trial at their in-house café using the Green Caffeen reusable cup system.
- Adding contract wording to café contractors to align with Austin Health's ESG targets and co-operate with sustainability initiatives.

KEMH:

Disposable coffee cups:

While a number of KEMH staff were interested in the EPIC program initially, it was a challenge to establish a team of staff to deliver the program. Instead, the KEMH EPIC lead took responsibility for rolling out the program and chose to focus on disposable coffee cups and blister packs.

While coffee cups weren't identified in the initial audit, the EPIC lead chose to focus on single-use coffee cups as:

A. It was something all hospital staff could be involved in
B. It was an opportunity to get a 'quick win' and encourage staff to think about what else they could do to reduce plastic waste
C. It was visible and tangible

A 'nominate a mate' initiative that involved nominating colleagues to receive a Keep Cup was relaunched at KEMH. Staff who use their Keep Cup at the onsite café receive 50c off their hot drinks. Further details of this initiative are outlined in this case study.

Blister packs:

KEMH will begin a blister pack recycling pilot in mid-2023. At the time of writing this report KEMH have developed communications for staff to promote the pilot and recently commenced the recycling program with high initial staff uptake.

KEMH are also reducing plastic by:

- Increasing the visibility of recycling programs in Labour and Birth Suite (Syringes, Operating plastics, PVC recycling)
- Investigating options for sustainable product alternatives through the POA Plastic Swap website. Some products identified through the Plastic Swab website have been suggested to KEMH's supply department, for example biodegradable hand stretch wrapping.
- Undertaking ongoing improvements to KEMH site wide recycling efforts in partnership with Veolia/Suez, including holding workshops and recycling events.
- Trialling more sustainable items in anaesthetics, wards, patient support services
- Asking more from their manufacturers when it comes to sustainable materials and products

Stage 4

A second round of staff surveys and waste audits were completed from May - July 2023. Survey and audit results were shared at a final joint online workshop with both health services in June 2023. During the workshop achievements and challenges were highlighted, and sustainable healthcare champions at each health institution were recognised for their contributions. Possible next steps for each health service were suggested, such as the adoption of a single-use plastics policy and continued collaboration with suppliers and contractors.

Austin Health

- The second staff survey was completed by 114 of approximately 11,018 staff. This response reflects 70% confidence levels and is below the minimum sample size required by POA to achieve a representative result of staff behaviour.
- Waste audits of 38 general waste and recycling bins were completed at 5 locations at Austin Health's main campus.

King Edward Memorial Hospital

- The staff survey was completed by 66 of approximately 1906 staff. This response reflects less than 70% confidence levels and is below the minimum sample size required by POA to achieve a representative result of staff behaviour.
- Waste audits of 17 general waste and recycling bins at 3 locations were completed.

The purpose of the **second survey** was to understand the behavioural trends of staff around reducing single-use plastic waste, by comparing staff's plastic habits at the beginning and the end of the program. The final survey included 11 questions. The questions asked fell into two main categories: personal use and workplace use.

Based on the responses received the plastic free continuum score for each health service increased during the project period, however it should be noted that due to a low response rate this may not be a representative measure (see Figure 6 below).

	Austin Health	KEMH
Initial	3.63	3.62*
Final	3.78	4.00*

*Figure 6 - Austin Health and KEMH's initial and final scores on the EPIC Plastic Free Continuum. *Due to a low response rate this may not be a representative measure*

The purpose of the **second waste audit** was to qualitatively measure progress made through the program. The bins audited consists of waste from general waste and recycling streams.

The scope of the audits were limited to single-use plastic waste originating from back-of-house operations and staff personal waste habits, and does not include the clinical waste stream.

Austin:
Overall, 660 pieces of waste weighing 6.51 kg were found in audit 2. Fewer bins were counted in the second audit as fewer staff volunteered to undertake the audits. The ICU included in the initial audit was undergoing renovations during the second audit, therefore a different ICU was selected for the second audit.

Audit 1	Audit 2
8 Locations	5 Locations
57 Bins	38 Bins
1479 pieces / 7.89 kg of plastic waste found	**660 pieces / 6.51 kg** of plastic waste found

Figure 7: Comparison of initial and final waste audit results at Austin Health

To enable accurate comparisons when fewer bins were counted in the second audit, the number of bins audited, waste accumulation period, and staff present at each audit location were used to calculate the average usage of each item per day as shown in figures 8 and 9 below.

Looking at all plastic found at each audit:

- **30.6 pieces of plastic waste per person per day were found in audit 1**
- **16.5 pieces of plastic waste per person per day were found in audit 2**

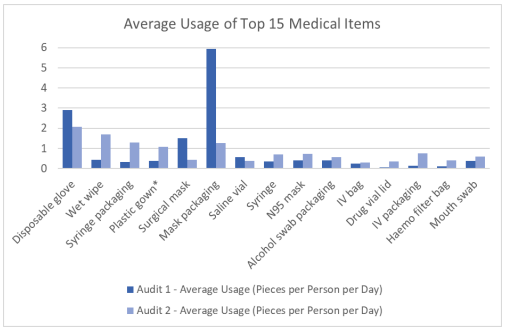

Figure 8

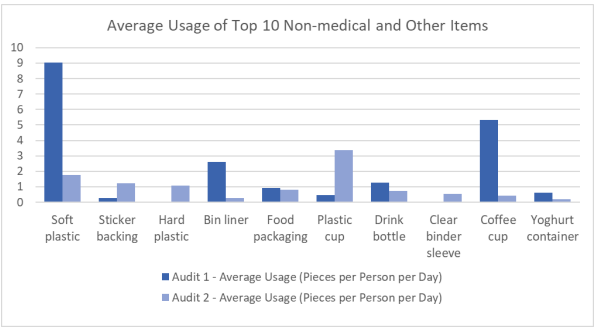

Figure 9

This shows that there was a decrease in the average use of items such as gloves and masks during the project period. However, it's anticipated that it will take some time before the impact of the glove education program can be properly measured. These results provide further insights into staff plastic behaviour for Austin Health to: focus efforts on reducing; or

investigate further to determine what has enabled positive change so it may be replicated elsewhere in the health service.

KEMH:
Overall, 163 pieces of plastic weighing 0.97 kgs were found in audit 2. The overall quantity of plastic waste increased compared to the initial audit. This increase is likely due to two factors, that are not reflective of business-as-usual operations, that occurred during the second audit period. Firstly, a large delivery that included plastic packaging, laminated tags and plastic ties was received. Secondly, a product recall of catheter mounts occurred.

Audit 1	Audit 2
3 Locations	3 Locations
17 Bins	17 Bins
117 pieces / 0.79 kg of plastic waste found	**163 pieces / 0.97 kg** of plastic waste found
95% of plastic waste found was single-use	**100% of plastic waste found was single-use**

Figure 10: Comparison of initial and final waste audit results at KEMH

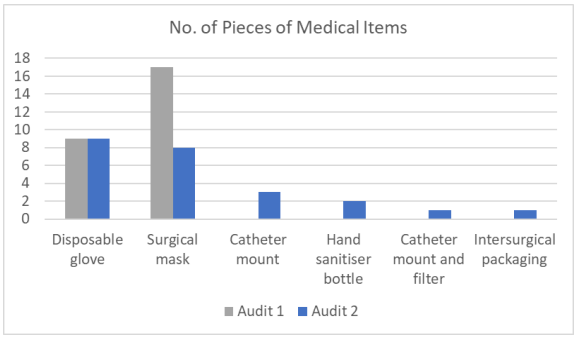

Figure 11

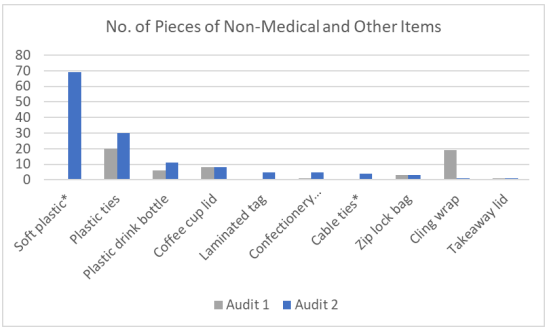

Figure 12

Notably coffee cups, which were the focus of KEMH efforts weren't found in either the 1st or 2nd survey. This was because they weren't counted in the audit as the cafe provides Sustain disposable cups which are paper based. The audit results provide an indication of where KEMH can focus future plastic reduction efforts.

It should be noted that both sets of results are likely to be affected by several factors including staffing changes, introduction of state-wide single-use plastic bans as well as operational procedures and personal behaviours impacted by COVID-19.

Health service staff observations and reflections

Austin Health:

Sustainability staff at Austin Health reported that the EPIC program provided an opportunity to engage with staff and involve them in sustainability efforts. While rolling out the program during the COVID-19 response created challenges, the EPIC Program helped to re-activate staff sustainability groups which were put on hold during the pandemic. The opportunity to work across departments in such a large organisation was invaluable for creating paths to meaningful change. This journey will continue past the EPIC program completion date as Austin Health continues to push important sustainability messaging across the health service.

KEMH:

The EPIC Program lead reported that being involved in the program demonstrated that significant movement for change takes time. Engaging staff can be difficult when they're responding to a pandemic and are focused on patients, and their own immediate wellbeing. The 'nominate a mate' initiative was effective in creating a '**buzz'** and got people asking questions about how to reduce waste at KEMH in other ways. A blister pack recycling program also gained momentum because of the EPIC Program. This blister pack recycling program has commenced and aligns with the EPIC philosophies.

Challenges & Lessons Learnt

Staff engagement in environmental initiatives in a healthcare setting can be challenging during business as usual. The healthcare workforce experiences considerable time pressures, their availability is often determined by patient demands, staff are rostered on different shifts, and receive frequent and varied communications from their health service. As this pilot was carried out during the COVID-19 pandemic, there were significant unforeseen additional engagement challenges. Staff at the front line experienced considerable stress, burnout and sickness. Staff were often redirected from their regular duties to respond to COVID-19 and non-essential services were postponed.

For the EPIC Program to be successful, it requires a team of staff to work collaboratively. Due to the pandemic, the first stage of the program which includes establishing baselines and setting up teams was delayed considerably. The initial staff survey was extended to obtain a representative number of responses. One health service offered an incentive, in the form of a coffee voucher, for taking part. This approach along with targeted engagement such as attending staff meetings, was successful in gaining responses from more staff. Additionally, waste audits are best managed with a team of people on hand. Considerable encouragement and support was required to involve staff in the waste audits due to their limited capacity and willingness to sort through bins.

It was evident from the ideas and challenges shared during workshop brainstorming sessions that some dedicated staff had already put in considerable effort into reducing the plastic waste in their realm of influence.

During the project period there were a number of staffing changes of key project roles. This resulted in project delays while roles were filled and new team members became familiar with the project. These extensions and delays at the beginning of the program resulted in less time to implement changes and allow time for change to occur before conducting final audits. Ideally, the implementation stage of the program would have run for a longer period before final audits occurred.

Undertaking the EPIC Program in complex healthcare environments highlighted the importance of having an EPIC Program Lead Team Leader at participating institutions to manage the program internally. Ideally the EPIC Program Team Leader would be an employee who is knowledgeable about sustainability and waste management, and is provided with the appropriate strategic support and resources to implement solutions. Most importantly, to get maximum results, the EPIC Program team needs to collaborate effectively to enable systematic change.

The EPIC Program focused on non-clinical waste to ensure staff safety when conducting audits and to minimise complexity during the program. However, it's noted that addressing clinical waste is a significant opportunity for health services to reduce their plastic footprint, and the environmental and human health impacts associated with plastic.

Conclusion

The EPIC Program has been the catalyst for a number of projects to reduce single-use plastic waste that are underway or are planned for the near future, at both health services. It helped to heighten staff awareness of changes their health institutions were undertaking to reduce single-use plastic waste. While the EPIC Program focuses on single-use plastics, it can also be a catalyst for change across all waste streams.

This pilot demonstrates that the EPIC Program is successful in bringing people together to collaboratively enact change in institutions that have an eager group of staff sustainability champions. The structure, resources and support provided through the EPIC Program enabled staff to connect across a large and diverse organisation, and guided them to develop solutions and implement change. The pilot also demonstrated that when the delivery of the EPIC Program falls to an individual, the opportunities to reduce plastic waste are less extensive.

It is critical to plan for next steps by reviewing and building on the lessons learnt through the program. Repeating the waste audits and staff surveys into the future will provide ongoing insights into the success of current and future plastic reduction initiatives, and highlight further opportunities for addressing plastic waste. By doing so, both organisations can maintain the momentum created and ensure the changes implemented are self-sustaining.

Challenges and lessons learned

The project experienced delays due to staffing changes, limited staff availability and COVID-19 pressures.

In a hospital setting people are hyper aware of germs and there has been some push back from staff who perceive that gloves are cleaner. Raising staff awareness that incorrect glove use actually increases their exposure germs will be an ongoing process.

Next steps

The EPIC project team are aiming to:

- share the education material they have developed via Austin's internal communications channel for all staff to see
- Ensure glove education is included in yearly learning modules
- Include glove education in regular in-service education

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