

# CleanMed Europe: Healthcare Plastics Recycling Council Pre- Conference Session

Challenges and solutions for recycling plastic,  
non-infected medical packaging



## Executive Summary

This whitepaper shares information related to the CleanMed pre-conference session of HPRC Europe which took place on 10 October 2018 in Nijmegen, The Netherlands. Participants were introduced to HPRC Europe and the Hospital Facility Advisory Board (HFAB), as well as HPRC Europe executive projects. The interactive pre-conference session included a knowledge sharing session and three interactive breakout sessions, of which the key conclusions are presented below:

### **Engagement with stakeholders**

- Multiple stakeholders involved all along the value chain
- Identify and understand their role, influence and position
- Education and awareness is key
- Build coalitions and communication forums

### **Design Guidance**

- What is being recycled more about what recyclers will take
- Be aware of trade-offs (sustainability vs functionality)
- Getting consistency with other guidance
- Using some way of communicating progress against goals that can drive easy understanding and procurement decisions.

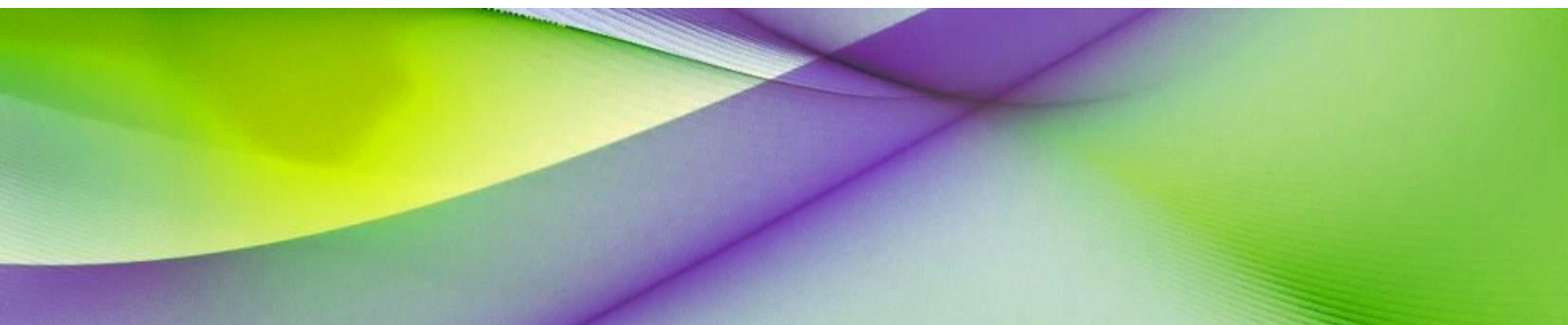
### **Engagement with recyclers & waste management companies**

- Leave sorting to waste management companies (automated sorting)
- Hospital staff to focus on sorting hazard and non-hazard waste + high level sorting (e.g. soft vs hard plastic)
- Role of procurement to select suppliers based on recyclability of their materials
- EU plastics policy to help with driving the circularity within healthcare sector



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## Introduction

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1. Engagement with stakeholders
2. Design Guidance
3. Engagement with recyclers & waste management companies

## HPRC Europe

The Healthcare Plastics Recycling Council (HPRC) is a private, technical consortium of industry peers from across the healthcare, recycling, and waste management industries seeking to improve the recyclability of plastic products and packaging within healthcare. Founded in 2010 and made up of [globally recognized members](#), HPRC engages in pioneering projects designed to help increase plastics recycling efforts in clinical settings of hospitals.

HPRC Europe has focused on two executive projects in 2018: Barrier Mapping and Design Guidance. The Barrier Mapping project focusses on barriers, real or perceived. The project aims at a description of barriers in order to identify Europe-specific barriers, applicability of current US-developed HPRC solutions, and gaps. There is an initial focus on barriers for product and packaging design, manufacturing and product use. The Design Guidance project is about informing manufacturers and design engineers on desirable and less desirable design aspects, specifically from a European recycling perspective.

In addition, HPRC developed the flagship project HospiCycle. It provides a guide and collection of tools for establishing and improving plastics recycling in patient care settings and considers economic, regulatory, resourcing and infrastructure factors. HospiCycle is available at <https://www.hprc.org/hospicycle>.

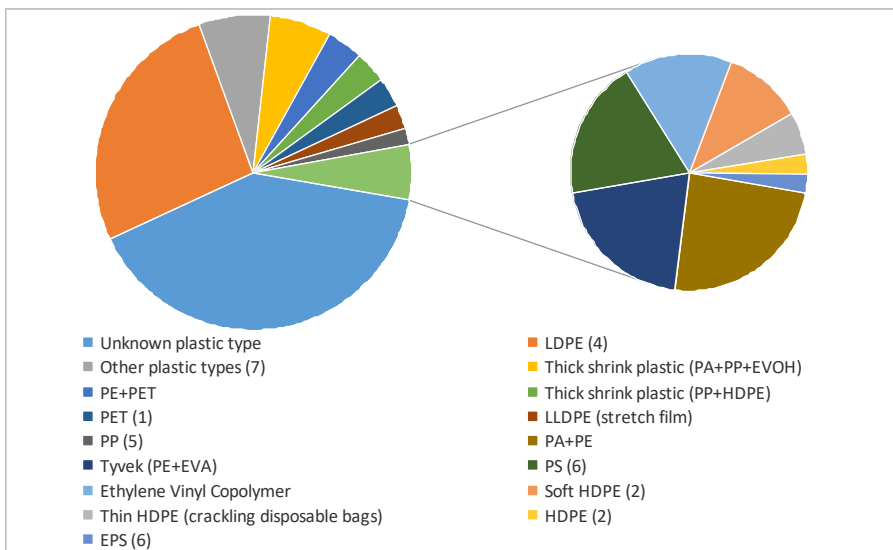
## About the Hospital Facility Advisory Board (HFAB)

The Hospital Facility Advisory Board (HFAB) consist of a [leading hospital](#) who enable the HPRC member companies to understand the barriers that exist within healthcare facilities, identify high-value needs and opportunities for action, and to develop and test solution through access to data, information and resources. The current advisory board in Europe consists of Aarhus Universityhospital Denmark, which is represented by Susanne Backer, project leader Circular Economy.

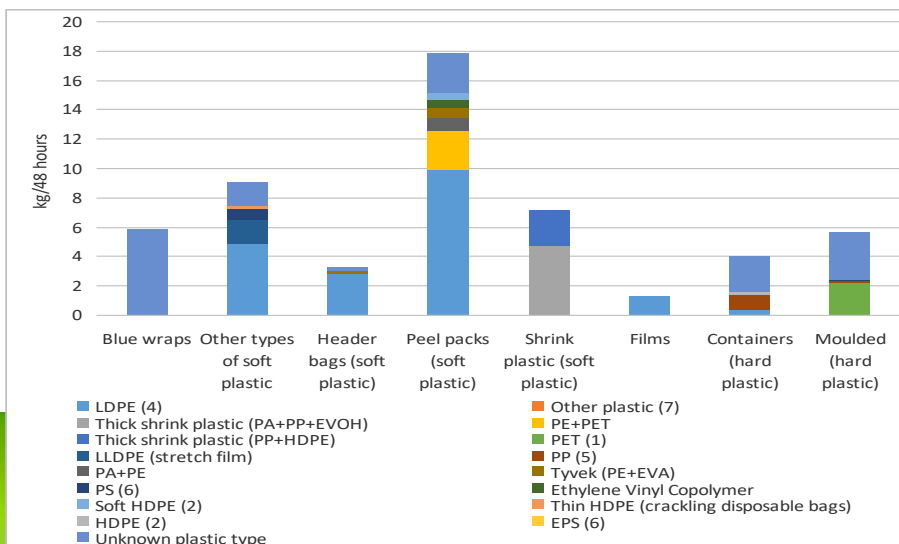
## CleanMed Europe Pre-Conference Session

### Knowledge Sharing

Plastic recycling initiatives efforts at Aarhus University hospital have been shared by Susanne Backer. The hospital's endeavors are aimed at an increased recycling through application of circular economy principles. The initial focus has been on hospital plastic packaging waste. As part of this circular economy strategy, Aarhus University hospital has been developing and testing a value chain model for creation of commercial and environmental value out of hospital plastic packaging waste in cooperation with multiple stakeholders.



Specifically, Ms. Backer has led initiatives to characterize the quantity and quality of healthcare plastics waste generated at the hospital. Based on the same methodology as used by Stanford Hospital & Clinics in 2013, a sample of 500 kgs of solid waste was analyzed. In the sample 18% was clean, uncontaminated plastic packaging, corresponding to a total of 400 tons of clean, un-contaminated sortable plastic packaging a year from Aarhus University hospital.



However, as illustrated by fig. 1 the plastic packaging consists of many different types of polymers and combinations of polymers. Moreover it was not possible for experts to identify the recyclability of approx. 40% of the plastic by visual inspection only.

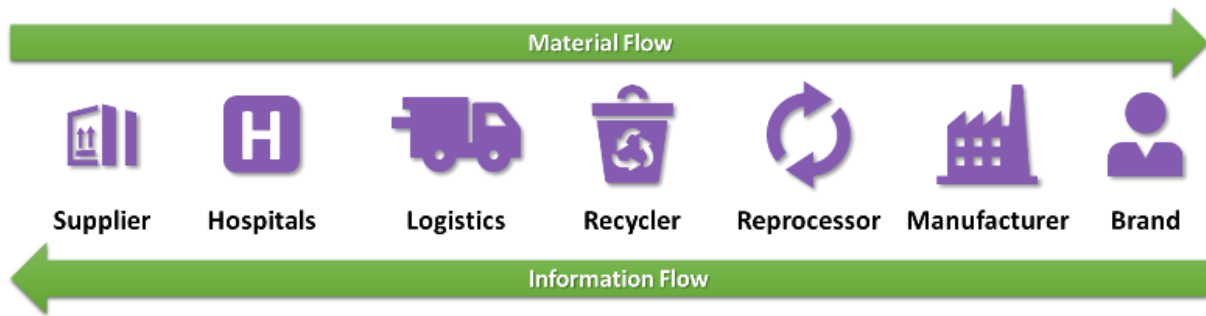
As illustrated in Fig.2, the most common type of packaging found at the sample test at Aarhus Universityhospital is peel-packs, making peel-packs an obvious choice for recycling. Peel-packs is often the primary packaging close to the utensil or device and is meant to keep the product sterile. Peel-packs are particularly found in specialized sterile un-packing rooms, next to Operation Theaters, and can thus rather easily and safely be sorted and kept free of any form of contamination. However, the fact that peel-packs does not come in just one type of polymer, but in 7 different polymers, which cannot be recycled together, makes recycling of peel-pack not viable.

### Engagement with Stakeholders (breakout session)

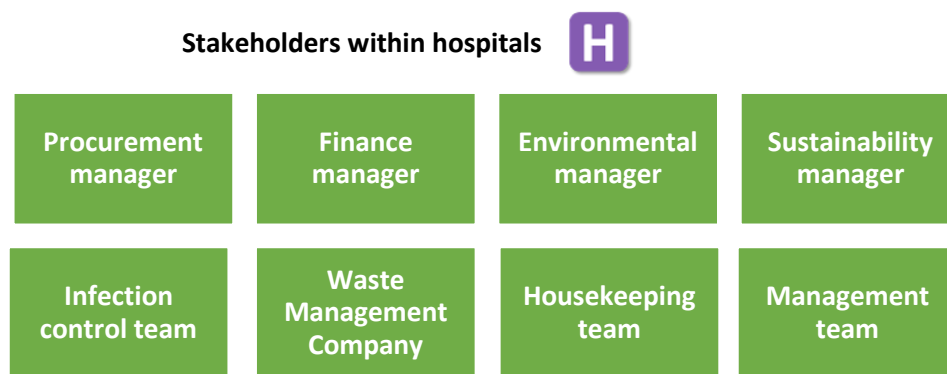
Cooperation with all stakeholders in the value chain is necessary in order to find better design solutions and more recyclable plastic packaging also within the medico and pharma industries. In this break-out session participants identified the various key stakeholders along the value chain and discussed the value proposition and challenges related with their buy in for the circular solutions for medical plastics. Key insights include:

- It is important to identify and understand the role, their influence and position of each stakeholder. Internal stakeholders such as Procurement, the Infection Control Team and Finance are critical to the program's success, as well as the housekeeping teams. It is also important to engage waste management companies early in the process to ensure the hospital is focused on the right areas. Procurement play a pivotal role in the process as they engage with the waste management companies as well as determining and setting product selection criteria. The Infection Control team are also vital to have on board as they write the hospital procedures and protocols.
- Understand the concerns expressed by staff and functional areas and ensure these are addressed in the implementation and communication plan. Several participants had experienced project failures due to the lack of a robust communication and engagement plan. Even if the business case is pretty compelling, initiatives will fail if there is poor communication and limited buy-in.
- Education and awareness within stakeholder organisations (especially hospitals) is key, as well as building coalitions and communication forums.

As with any change program, taking time to map stakeholders for influence and interest in the topic was seen as a vital first step in the engagement process.



The different stakeholders are as follows:



HPRC can play a role as facilitator to join the dots between value chain participants that is needed for successful circular economy programmes

### Design Guidance (breakout session)

Most participants experienced recycling difficulties because of specific product design characteristics. Even when being aware of sustainable design, it is often the functionality of products that takes preference over sustainability (e.g. in case of sterile barrier packaging).

The Design Guidance breakout session highlighted the pivotal role that procurement can play. Selection criteria that focus on recyclability can be a strong signal for the market to implement changes in design. Specific criteria should be developed in collaboration with suppliers that have good understanding of the product, its functional requirements and need to be part of the exercise of identifying opportunities in design improvements. Hospitals often lack appropriate experience and would benefit from harmonized European approach to tackle this challenge. There is need for procurement guidance from various groups.

It was also concluded that collaboration between group of hospitals can be helpful in best-practice sharing and paving the way for success. Not only does this strengthen the voice of hospitals, but also gives the medical suppliers opportunity to broader hospital base and help with bringing alignment on expectations and realistic deliverables. This will undoubtedly accelerate the transformation to a more circular supply chain.



### Engagement with Recyclers & Waste Management Companies (breakout session)

Plastic recycling starts with waste sorting, which is mainly performed at the hospitals. During the workshops, it became clear that this might not be the most efficient method. Detailed sorting of waste can be left to the waste management companies who own automated sorting systems. It is important to bear in mind that hospital staff should still focus on ensuring that recyclers are dealing only with non-infected waste. To address:

- Challenge of volumes – need to explore collaboration with hospitals or other establishment that can sort out clean plastics
- Need to overcome the fear of infected content in the waste stream – organize study trip to demonstrate how much waste is generated before patient even enters the OR
- External trend – EU policy: recycling targets, push for recycled content to drive demand on the market and help with building in market mechanisms to make recycling economically viable

Other sorting activities should be evaluated together with the hospital's waste management company. Only value-adding sorting activities should be considered and all other sorting is best left to the specialists: the waste management people.

Again, the role of procurement can be influential in order to select suppliers based on recyclability of their materials. The existing European Union plastic policy: 'European Strategy for Plastics in a Circular Economy' might help with driving the circularity within healthcare sector (source: [http://ec.europa.eu/environment/waste/plastic\\_waste.htm](http://ec.europa.eu/environment/waste/plastic_waste.htm)).

### Conclusion

Active discussion during the HPRC CleanMed Europe pre-conference session "Challenges and solutions for recycling of non-infected medical packaging" indicates that this topic is of great interest to the healthcare industry. Discussions and our work have shown that cooperation with all value chain stakeholders is critical and needed to understand the supply and demand related to recycling plastics. This understanding could be the foundation for creating realistic procurement standards to advance healthcare plastics recycling in Europe, an interest expressed by European hospitals.

### Contact Us

Would you like to hear more about our work? Are you a hospital representative and interested in becoming a Hospital Facility Advisory Board (HFAB) member? Your feedback is valuable for us! Contact us:

**Website:** [www.hprc.org](http://www.hprc.org)

**Email:** [info@hprc.org](mailto:info@hprc.org)