

Statewide Anaesthesia and Perioperative Care Clinical Network Environmental Accountability Working Group

Communique – Sequential Compression Device Stockings

Purpose

The purpose of this communique is to raise awareness in relation to healthcare waste and to support healthcare facilities in their endeavours to consider alternatives when disposing of waste and in particular, Sequential Compression Device Stockings (SCDS) garments and when purchasing, embrace a circular economy approach whenever possible.

Issue

Part of best practice recommendations for the prevention of Deep Vein Thrombosis (DVT) and Pulmonary Embolism (PE) is the use of sequential compression device garments to assist circulatory flow to at risk patients following surgery¹⁻⁴.

The inflatable compression garments most commonly used are below the knee sleeves and foot boots however full length leg sleeves are also available. These garments come in pairs, one for each limb. Considering the number of patients that wear these garments as part of their DVT prophylaxis, and the significant numbers that are subsequently disposed of into landfill upon discharge from hospital and given the reissue of the garments should they become soiled with blood or urine, there are hundreds of thousands of pairs of SCD garments being disposed of in landfill every year in Australia.

SCD garments are commonly made of a composite of materials namely Polyester and Polyvinyl Chloride (PVC) that are not compostable or biodegradable.

Due to their composition these garments are difficult to recycle because they cannot be assigned to one recycling material class or be separated easily. They are therefore thrown into general waste, ending up in landfill and polluting the environment because, until recently, there was no other option within Australia.

A few medical companies offer a collection of their SCD garments which are then taken to a facility for incineration to generate energy.

There is now the option in Australia to collect and re-process SCD garments after going through a quality checking process including a Therapeutic Goods Administration (TPG) approved sterilisation process. This process has been successful for over 20 years in the United States and other countries.



Supporting Evidence

Embracing A Circular Economy Approach To SCD garments

In Australia, we now have an opportunity to collect and reprocess SCD garments through a sterilisation process, making them available for re-use. This helps to prevent the SCD garments from entering landfill, conserves raw materials (as it reduces the need to make 'new' garments, and the sourcing of new materials), and reduces the emissions made from manufacturing and distribution, depending on where the sterilisation processing plant is located. Some companies in Australia offer or are in the process of offering, a collection and sterilisation process that sees their SCD garments reprocessed ready for resale and reuse. These include:

ARJO – ReNU⁵

- Free collection.
- Skips plus bio-degradable collection bags supplied for free.
- Quality control checking system to discern if SCD garments are able to be re-processed.
- Utilise a high level disinfection (HLD) water based process to render SCD garments free of bacteria, viruses and numerous other microbes.
- TGA approved and certified.
- Utilise high temperature and time only with minimal water use.
- Non-toxic process - no chemicals used.
- Garments are able to be sterilised and re-used multiple times, keeping garments in circulation longer.
- Each pair of re-processed SCD garments has its own unique barcode to track its life journey.
- Collected and re-processed garments are sold back to the Healthcare facility from which they are collected.
- Reprocessed in a facility in New South Wales (NSW), Australia.
- Transported on established routes - no new trucks added to transport the collected garments. (These trucks would normally return to NSW empty and will now be full).
- SCD garments are made in Australia.
- Discarded SCD garments not suitable for re-processing will be sent to a facility for incineration to make clean energy.
- Successfully re-processed in the United States for the past twenty years.

Cardinal Health⁶

- SCD garments collected for free.
- Collection skips supplied for free.
- TGA approved and certified for re-sale and re-use in Australia and New Zealand.
- SCD garments not suitable for sterilisation and reuse are incinerated in Australia to make energy.

Recommendations

Consider:

- Life Cycle Assessment (i.e. 'cradle to grave' analysis), a definitive method used to compare and contrast ecological footprints of products, processes, and systems.
- Whether the manufacturer has an end life plan for their product and purchase from companies that do.
- Whether the manufacturer embraces a circular economy approach and purchase from manufacturers that do.
- Whether the products are made locally, and support locally made whenever possible.
- Travel implications (transport to/from) and choose options to minimise travel and consequently, emissions.
- Whether the SCD garments are incinerated, and if so, is it 'clean' incineration with minimal pollution.

References

1. [Guideline for the Prevention of Venous Thromboembolism \(VTE\) in Adult Hospitalised Patients \(December 2018\).](#)
2. [Venous Thromboembolism Prevention Clinical Care Standard | Australian Commission on Safety and Quality in Health Care.](#)
3. [Surgical VTE Prophylaxis Guide.](#)
4. [John Hopkins Medicine: DVT Prevention Intermittent Pneumatic Compression Devices \(hopkinsmedicine.org\).](#)
5. [FAQ - Arjo ReNu™reprocessing medical devices | Arjo.](#)
6. [Cardinal Health, Australia.](#)

Disclaimer: The content of this communicate is provided as information only. Staff in Queensland Health facilities are advised to follow local practice and processes as required.