Department of Health & Social Care

Design for Life: One Year On

HIL: Decarbonising Life Sciences 2025

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Design for Life

A circular economy for medtech by 2045

Resilience

Sustainability

Cost Savings

Growth

Design for Life has been developed with a collaborative that now includes over 170 stakeholders from across the **medtech industry, health family**, and **academia.**

Leadership & Alignment

Unclear direction and misaligned strategies across the value chain leads to inconsistencies, inefficiencies, and inertia, hindering meaningful, coordinated progress.

Behavioural Change

The medtech landscape is one in which linear products are the default choice, maintained by a lack of value placed on circular systems and limited support for change.

Commercial Incentivisation

Stakeholders are insufficiently incentivised, or in some instances are disincentivised to choose and deliver circular solutions.

Regulations & Standards

UK regulatory regimes and technical standards predate circularity and have potential to further enable the medtech sector to recognise opportunities and align internationally.

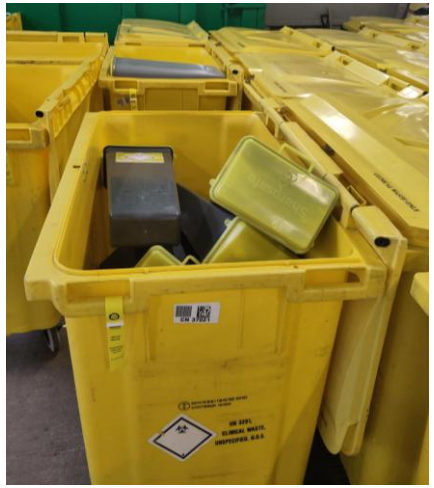
Physical & Digital Infrastructure

Existing physical and digital infrastructure and supporting services hold back the scaling of circular solutions, both locally and nationally.

Transformative Innovation

The innovation ecosystem is not tailored to circular objectives, leading to impeding solution developments.

The case for change in pictures…



Sharps bins at an NHS hospital (~49 wheeled containers per day)

‘A skip a week’ of mattresses at an NHS trust

2 weeks of single-use tourniquets at a single phlebotomy clinic

A shipment of disposable curtains from China at an NHS trust

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From publication to implementation…

FY 25/26 → FY 26/27 → FY 29/30

This year's impact through research
This phase will look to complete the evidence base and systems needed to deliver tangible outputs moving forward

Examples of research include…

Product pilots and behaviour change landscape review

Map of English decontamination capacity and expected future demand

Proposal for KPIs to govern health services and procurement frameworks

'Leakage rates' of easily-recoverable, precious materials

Following years' impact through tools
This phase will take all our hard-won evidence to develop and scale tools to allow for wholesale shifts to circularity

Examples of outputs could include…

Training framework for NHS staff (general and specialised)

Infrastructure framework to drive and govern creation of new facilities

New systems for materials recovery and sale

New, dedicated standards at UK and / or international level

Circular KPIs *(Leadership and Alignment)*

Priority action – Develop circular KPIs and metrics

- Commissioned NIHR Innovation Observatory (Newcastle University) to conduct a feasibility assessment into a range of potential new circular KPIs (over 30 being tested overall), including:
  - Good devices custodianship
  - High utilisation of reuse limits
  - Quick turn-around times for reusable products
- **A big question:** How do we measure circular economy performance?

VBP, Part IX and Supplier Engagement *(Commercial Incentivisation)*

Priority action – Deliver Value Based Procurement (VBP)

- Building circularity into the new VBP and Part IX drug tariff guidance, to shift procurement from price to value in primary and secondary care.
- Growing demand for circular solutions
- **A big question:** How do we make circular innovation pay?

Decontamination *(Physical and Digital Infrastructure)*

Priority action – Survey existing systems and model future demand

- Three-part research plan to prepare for a Decontamination Framework for England
    - Survey of decontamination capacity in England (the baseline)
    - Modelling future demand (the target)
    - NIHR service models and emerging tech (the methods)

DECHI DIGITALLY ENABLED CIRCULAR HEALTHCARE INNOVATION

NIHR | Innovation Observatory

Class 1 Remanufacture Guidance *(Regulations and Standards)*

Priority action – Align regulatory environment with global counterparts

- Remanufacture offers an intermediate option – especially for products that cannot be easily be decontaminated through existing systems
- MHRA remanufacturing guidance excludes Class I devices while many Class Is are already safely remanufactured internationally, including in USA and Australia
- Working with MHRA to build the evidence base to inform a potential consultation on Class 1 remanufacture guidance


ECG LEADS


DVT GARMENTS


FALL ALARMS

SUSTAIN and innovation pipeline (Transformative innovation)

Priority action – facilitate circular innovation

- Funded SUSTAIN – a high-fidelity simulated operating theatre in Leeds Teaching Hospitals Trust. Exploring a wider innovation pipeline.
- The DfL Research and Funding working group will aim to increase circular healthcare research through supporting co-ordinated funding bids for calls such as Horizon Europe.
- So far 7 new research projects have commenced that address DfL's Areas of Research Interest, with a combined value of over £17mn.

Priority Adoption working group (Behaviour Change)

- **Priority action – identify and tackle adoption barriers**
- 7 product pilots across 12 NHS trusts
- Priority adoption working group set up with objective to co-ordinate and accelerate adoption of circular products in the NHS with clinical, procurement, health system, SSD and IPC expertise and now preparing for wider industry engagement
- Prioritised reusable products using RICE scoring methodology (Reach, Impact, Confidence, Effort) and developing a national campaign to accelerate adoption

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Pilot – Tray Containers

Tray wraps are a sterile packaging material that plays a critical role in maintaining the sterility of surgical instruments during storage, transport and use in operating theatres.

Cardiff and Vale Health Board pilot:

Waste: **60,000** single-use wraps per year, at a total cost of **£146,572** (inc £25k disposal costs)

Cost savings: **£61,500** per year

Emissions savings: up to **4,291** kgCO2e

Quality: Containers found to be more robust and reduce the risk of tearing/holes when compared to wraps, offering better protection during transport. This would also reduce risk of delay in theatres.

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Pilot – Bronchoscopes

Bronchoscopes are used to examine and treat conditions affecting the airways and lungs by inserting a flexible tube with a camera into the airways.

Cambridge University Hospitals pilot:

Waste: **207** single-use scopes binned per year at **£225** each

Cost savings: **£22,400** in yr 1, rising in subsequent years

Emissions savings: **200 kgCO2e**

Quality: Reusable scopes had better image quality, better flexibility for accuracy and comfort for the patient, and wider range of capabilities beyond simple diagnostics.

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Other products under consideration include…

Tourniquets

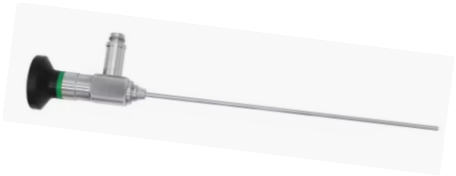
Blood Pressure Cuffs

Anaesthetic face masks

Medical Holloware

Surgical Gowns

Nasendoscopes



Speculae

Scissors

Tell us how you could support adoption of circular products

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Thank you

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