ENKORE: Advancing circular healthcare through eco-design

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FACTS & FIGURES

Start date:	1 January 2025
End date:	31 December 2028
IHI funding:	7.74 million €
Industry contribution:	9.10 million €
Total Cost:	16.84 million €
Project website:	enkoreecohealthcare.eu
Social media:	LinkedIn Bluesky YouTube

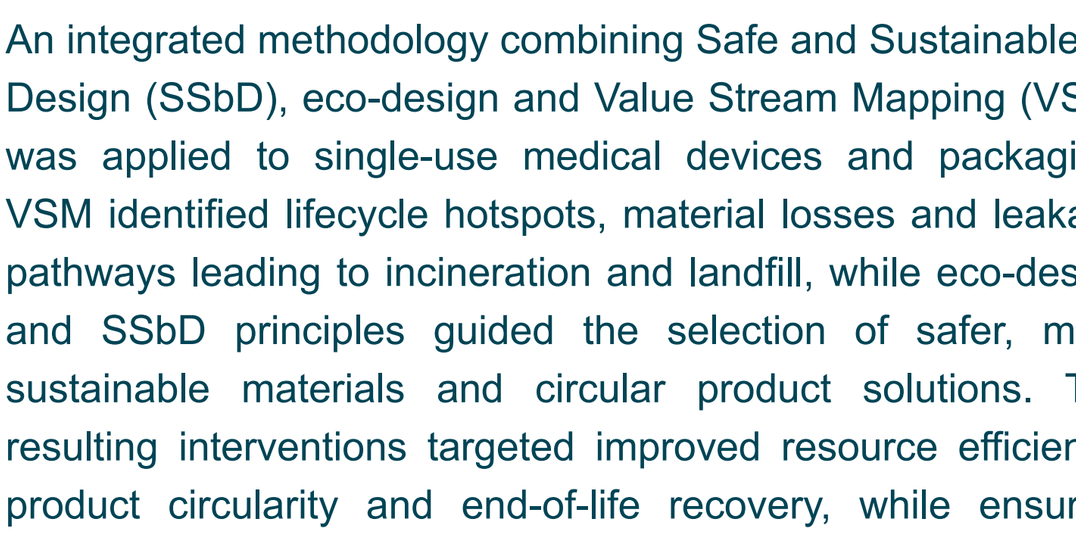
CHALLENGE

Single-use medical devices and packaging are essential to safe healthcare delivery but remain largely embedded in a linear take-make-dispose model that drives significant waste and resource consumption. Transitioning to circular alternatives requires overcoming technical, regulatory and operational barriers while ensuring sterility, clinical performance and patient safety.

ENKORE addresses this challenge through an eco-design framework guided by the Safe and Sustainable by Design (SSbD) approach. By embedding circularity across the five SSbD dimensions, ENKORE supports the development of safer, more resource-efficient and scalable alternatives that help healthcare systems move beyond linear waste practices

APPROACH & METHODOLOGY

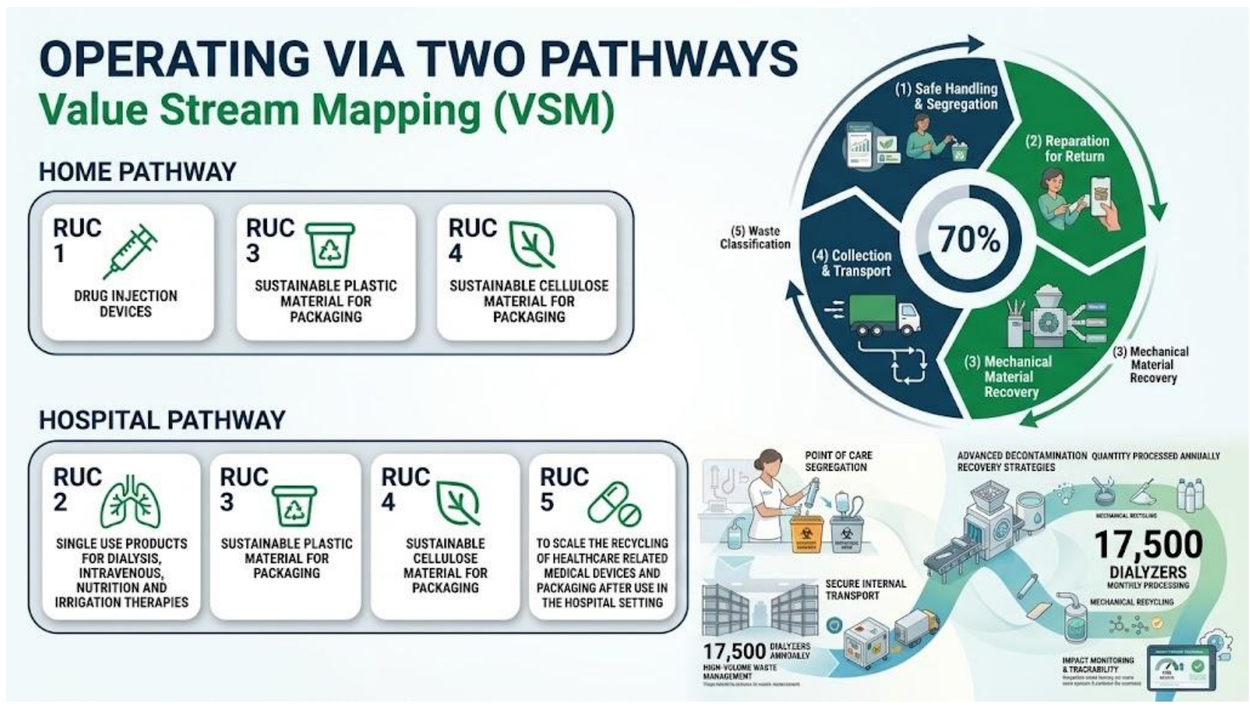
An integrated methodology combining Safe and Sustainable by Design (SSbD), eco-design and Value Stream Mapping (VSM) was applied to single-use medical devices and packaging. VSM identified lifecycle hotspots, material losses and leakage pathways leading to incineration and landfill, while eco-design and SSbD principles guided the selection of safer, more sustainable materials and circular product solutions. The resulting interventions targeted improved resource efficiency, product circularity and end-of-life recovery, while ensuring clinical performance, sterility, regulatory compliance and operational feasibility.



RESULTS

A baseline assessment of the current linear management of single-use medical devices and packaging has been completed. Five Reference Use Cases, co-designed with six hospitals across six European countries, are now in place to validate circular alternatives and measure their environmental, economic and social benefits.

Expected outputs include material and recycling solution catalogues, digital tools, and evidence to support the large-scale adoption of safer, more circular and sustainable healthcare solutions.



VALUE OF IHI COLLABORATION

Five Reference Use Cases integrate eco-design, innovative materials and circular end-of-life solutions. Through value chain mapping and life cycle assessment, ENKORE identifies value-retention opportunities and quantifies environmental, economic and social impacts. By bringing together 39 partners across the healthcare value chain, the project enables real-world validation in six hospitals across six European countries, generating evidence to inform policy, accelerate market uptake and advance shared circular solutions for single-use medical devices and packaging



CAREER IMPACT

Being part of this public-private partnership as a doctoral candidate at Universidad Politécnica de Madrid has profoundly shaped my career. Through close collaboration with industry, healthcare providers and research organizations, I developed expertise in large-scale project management, financial compliance and translational research. By coordinating clinical site visits and managing work packages, I gained practical experience in applying research in real-world settings and evolved into a researcher able to bridge clinical engineering, digital health innovation and regulatory requirements..

This project is supported by the Innovative Health Initiative Joint Undertaking and its members.