The journey to sustainable healthcare

Human impact

Sustainability in the operating room requires a broader view of the entire product journey. Multi-patient products are often seen as a sustainable choice, but we need to look beyond just life cycle assessments to truly understand the products' value. The LCAs are valuable tools for evaluating, but they do not factor in the supply chain human rights, patient and staff safety, wellbeing, clinical outcomes and the potential further environmental, human and economic impacts.

Sustainability goes beyond just greenhouse gases and waste management, all aspects of the product journey need to be considered to achieve the goal of sustainable healthcare.

Antimicrobial resistance

Antimicrobial resistance (AMR) is a major global health threat, causing over **700,000 deaths annually**, with projections of up to **10 million by 2050**[1]. Hospitals contribute significantly to AMR due to wastewater containing resistant microorganisms and antimicrobial residues. AMR can also spread through hospital laundry, transport vehicles, and staff. Reprocessing multi-patient products creates wastewater with high levels of pathogens and resistance genes, increasing transmission risks[2]. AMR must be considered in sustainability assessments.

Workforce wellbeing

Healthcare workers face severe strain, with over **50% experiencing burnout**[3] in the EU. Multi-patient products reprocessing adds to this strain due to physical tasks, which can lead to musculoskeletal injuries. Delays in operating room turnover also increase stress levels and burnout, which negatively affect both workers and patient outcomes. Sustainability assessments should include the impact on workforce wellbeing and explore ways to balance sustainability with worker health.

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Healthcare-Associated Infections (HAIs)

HAIs are a major challenge, with over **4 million patients in the EU/EEA acquiring infections annually[4].** Contaminated medical equipment is a key transmission route. Studies show improved cleaning protocols can reduce HAIs, but residual contamination still poses risks[5]. HAIs increase patient load, prolong stays, and strain healthcare workers, leading to burnout and worse patient outcomes. Sustainability assessments should evaluate HAI risks related to medical products and include strategies to address them.

Medical product degradation

Medical product degradation, particularly during reprocessing, can compromise safety. Microdamage can go undetected, increasing contamination risks and impairing product functionality. Even minor defects can lead to infections and affect treatment efficacy. Sustainability assessments must account for the risks of product degradation and include measures to minimise them.

To evaluate the sustainability of a medical product, we need sustainability assessments that take a holistic approach by assessing the product journey and the human impact.

Your choices today can drive a more sustainable future in healthcare.

To learn more, scan here:

1. Kumari, A., Maurya, N.S. & Tiwari, B. (2020) 'Hospital wastewater treatment scenario around the globe', *Current Developments in Biotechnology and Bioengineering*, pp. 549–570. doi: 10.1016/B978-0-12-819722-6.00015-8.
2. Parida, V.K., et al. (2022) 'An assessment of hospital wastewater and biomedical waste generation, existing legislations, risk assessment, treatment processes, and scenario during COVID-19', *Journal of Environmental Management*, 308, p. 114609. Available at: https://doi.org/10.1016/j.jenvman.2022.114609 [Accessed 21 Jan 2025].
3. O'Brien, J., et al. (2024) 'The prevalence of burnout in healthcare workers presenting to occupational health', *Irish Medical Journal*, 117(10), p. 1049.
4. Maida, A., Pattavina, F., Ricciardi, R., D., F., Nistico, A. & Calabro, G.E. (2023) 'Burden of healthcare-associated infections in Europe: a systematic literature review', *Population Medicine*, 5(Suppl), p. A966. doi: 10.18332/popmed/163729.
5. NSW Government, Agency for Clinical Innovation (2025) 'The Cleaning and Enhanced disiNfection (CLEEN) study'. Available at: https://aci.health.nsw.gov.au/ie/projects/the-cleen-study [Accessed 25 Feb 2025].

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