Working towards sustainable
healthcare and a healthier environment

Sustainable healthcare waste management in the EU Circular Economy model

November 2020

Waste in the healthcare sector

The healthcare sector has a unique healing mission to protect and restore health and save lives, however, the sector's activities can paradoxically undermine this mission. The healthcare sector generates millions of tonnes of waste worldwide each year, and waste directly or indirectly negatively impacts our environment, health, and well-being in many ways. How we dispose of waste can contribute to climate change, release air pollutants into the atmosphere, or contaminate water and soil.[1] Despite the proven negative health and environmental impacts of incineration many European public health agencies and national governments still require incineration as the only safe waste management solution for hospitals' waste.[2]

The large majority of waste produced by the healthcare sector (approximately 85%), however, is actually non-hazardous and similar to domestic waste i.e. much of it can be easily recycled. Over 50% of non-hazardous waste from hospitals is paper, cardboard, and plastics, while the rest comprises discarded food, metal, glass, textiles, and wood.[2]

If non-hazardous waste is mixed with hazardous waste and not segregated at the point of generation, it must be classified and treated as hazardous medical waste. This lack of segregation and separate waste streams means that the quantity of waste categorised as hazardous is unnecessarily much higher than it needs to be – increasing not only the environmental impacts of disposal methods, but also the financial costs of disposal and treatment.

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[1] European Environment Agency (2014) *Waste: a problem or a resource?* www.eea.europa.eu/signals/signals-2014/articles/waste-a-problem-or-a-resource

[2] WHO (2014). Safe management of wastes from health-care activities, 2nd ed. www.who.int/water_sanitation_health/publications/safe-management-of-wastes-from-healthcare-activities/en/

Typically, only 15% of waste from the healthcare sector should be classified as hazardous – waste that is potentially infectious, toxic, radioactive, and/or capable of other environmental and health risks.[3]

The volume of waste generated by the healthcare sector is huge and has been for some time, but more recently we have seen a sudden increase in healthcare generated waste as a result of the COVID-19 outbreak and increased use of single use personal protection equipment (PPE), and unsound waste management.

It's time to act - we urgently need to work towards more sustainable healthcare waste management.

Healthcare waste management in Europe – a snapshot

In the summer of 2020, Health Care Without Harm Europe conducted a survey of its members to better understand waste management practices and challenges within European hospitals. We received 25 responses from 9 countries giving a snapshot of healthcare waste management in Europe:

- Over 50% reported that national legislation requires incineration of hospital waste.
- Respondents provided an extensive list of over 55 different categories that are treated this way.
- More than half respondents (14) do not have access to other technologies to treat infectious waste.
    - o Those who have such facilities reported the use of autoclaving, microwaving, high temperature, and/or physico-chemical treatment.
- The most frequently reported challenges in switching to non-incineration technologies were cost and the lack of supportive regulation.

Over half of respondents (60%) reported that recycling companies refuse to collect and recycle certain waste from hospitals – primarily from fear of contaminated materials. The majority of respondents (68%) did report however, that they are able to recycle packaging from medical supplies including paper & cardboard, plastic, glass, and metal, as well as from other sources.

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[3] WHO (2018) *Health-care waste: Key facts* www.who.int/news-room/fact-sheets/detail/health-care-waste

Almost all respondents (92%) have a dedicated training programme on waste segregation and collection - 68% of respondents have a dedicated programme that includes a strategic plan, promotes a recycling culture, a reuse scheme, and packaging reduction in procurement criteria. One respondent even has a target to become a waste-free hospital by 2030.

In terms of potential improvements, respondents were most interested in being better informed about alternative waste treatment technologies, published data on waste recovery and recycling rates in European hospitals, and guidance on how to better prevent, reduce, and recycle plastic waste. You can find a summary of responses on our website.

Five guiding principles for safe and sustainable healthcare waste management in Europe

Sustainable healthcare waste management should be addressed through EU-level policy initiatives linked to environmental protection, climate change, renewable energy, and greening the health sector, that also align in line with the Sustainable Development Goals and the European Green Deal.

The Global Green and Healthy Hospitals (GGHH) Waste Guidance Document sets out strategies for healthcare facilities to meet sustainable waste management targets covering methods of transportation, storage, treatment, recycling, and disposal.

Health Care Without Harm has recently developed a set of global principles for sustainable healthcare waste management.[4] This position paper builds on those principles and focuses on the situation in Europe – particularly with reference to the EU Circular Economy framework.
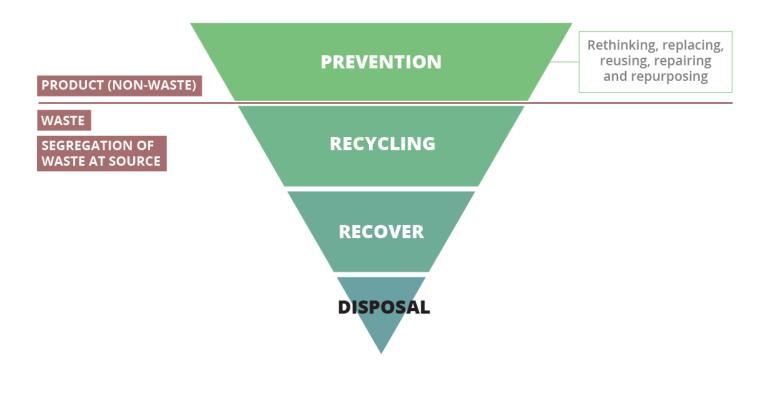
1. Towards zero waste

HCWH Europe supports a circular economy in Europe including the reduction of all waste; strategies should follow the waste hierarchy to both conserve resources and minimise waste. We must first rethink the need for products, then reduce waste through reusing, repairing and repurposing products, and finally segregate waste at source so that it can be considered for composting or recycling before final disposal removes the resources from the circular economy.

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[4] Health Care Without Harm (2020) *Five principles for sustainable health care waste management*

Because of its environmental impact through energy intense cultivation and global warming potential when disposed of, food waste is a particularly emerging concern for hospitals across Europe.[5]

To set up meaningful goals for the measurement and reduction of all waste, there is an urgent need to plan, implement, and monitor all relevant healthcare waste-related activities at local, regional and national levels.

The waste hierarchy
[adapted from European Commission]

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[5] HCWH Europe (2016) *Food waste in European healthcare settings* noharm-europe.org/sites/default/files/documents-files/4336/HCWHEurope_FoodWaste_Flyer_Oct2016.pdf

Key waste-prevention and reduction actions for healthcare organisations

- Set baselines, identify goals, and implement strategies for more efficient sorting, single-use device reprocessing, composting, and other approaches to prevent waste.
- Develop new tools and programmes that support and measure the reduction of waste.
- Address circularity concepts early in the procurement stage when assessing products and services. Establish dialogue with manufacturers and collaborate to prevent the creation of waste and increase reusability.
- Promote practices that reduce the volume of waste generated and ensure proper waste segregation at source.
- Raise awareness of the environmental impacts of waste and that most non-hazardous waste from healthcare facilities is potentially recyclable or compostable.
- Work with authorities and third parties (e.g. reprocessors, waste treatment services), to improve the reuse and recycling of healthcare products and materials (including clinical/medical items) as well as reducing the need for incineration to a minimum.
- Monitor and measure food waste (weight and cost); identify which food items are wasted most often and where the waste occurs (e.g. kitchen, canteen, wards).[6]

2. Phase down incineration

Incineration, including waste to energy, pyrolysis, plastics chemical recycling and related technologies, can be harmful to health and the environment.[7] All incineration methods should be phased down, starting with facilities that do not meet the standards recommended by the Stockholm Convention on Persistent Organic Pollutants, the World Health Organization's healthcare waste management policy, and the European Union.[8] [9]

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[6] HCWH Europe (2020) *How to green food services in European healthcare* noharm-europe.org/sites/default/files/documents-files/6443/2020-06-10_Green-food-European-Healthcare_WEB.pdf

[7] WHO *Factsheet Health-care waste* www.who.int/news-room/fact-sheets/detail/health-care-waste

[8] WHO (2004) Policy Paper: Safe healthcare waste management. Publ: World Health Organisation, Geneva, 2pp www.who.int/water_sanitation_health/medicalwaste/en/hcwmpolicye.pdf;

[9] The EU Industrial Emissions Directive (Directive 2010/75/EU)

In addition to negative environmental and health impacts, by destroying products through incineration we destroy the vast quantities of resources used to manufacture those products, including the energy-intensive extraction of primary raw materials with resulting emissions of greenhouse gases. Incinerating products that could otherwise be reused, repurposed, or recycled perpetuates an unsustainable linear economic model.

In Europe, the incineration of healthcare waste is still common practice. Alternatives to incineration that can safely disinfect and neutralise infectious waste already exist, therefore a phase-down of medical waste incineration is entirely feasible and appropriate for the benefit of our health and our environment. HCWH Europe encourages Member States to support their health systems to move towards alternative methods of waste treatment.

All waste should be disposed of off-site and not on healthcare premises. Non-hazardous waste should be regularly collected by the municipality or a licensed waste contractor and transported to a licensed and safely managed disposal site. All hazardous waste should be treated to eliminate the hazardous properties before disposal, or should be disposed of in an engineered landfill designed for hazardous waste.[6]

We support further research into the recyclability or reusability of medical materials that have been rendered safe via pre-treatment. At the time of writing, sharps containers are one current example of a medical product that are almost exclusively sent to incineration. The process of reprocessing sharps containers is now common in the US, however, and reusable sharps containers have recently been introduced in the UK.[10] This example shows that reuse can be made possible.

Key incineration phase-down actions for healthcare organisations

- Prioritise the safe and environmentally sound treatment of hazardous healthcare waste where feasible e.g. autoclaving, microwaving, steam treatment integrated with internal mixing, or chemical treatment.
- Build a comprehensive waste management system, that clearly addresses responsibilities and resource allocation for the handling, and disposal of healthcare waste. This is a long-term process, sustained by gradual improvements.

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[10] Sustainability West Midlands (2017) *Sustainable Development Unit: Sustainability review of reusable sharps containers* *www.sustainabilitywestmidlands.org.uk/resources/sustainable-development-unit-sustainability-review-of-reusable-sharps-containers/*

3. Toxic-free future

Carcinogenic, mutagenic, toxic, or hazardous substances should be excluded from products and services used in healthcare.[11] Materials containing toxic chemicals should not be recycled to prevent legacy toxics from contaminating new products.

Key toxic-free action for healthcare organisations
- Exclude hazardous chemicals from products and services through sustainable procurement where feasible.
- Accelerate the shift towards substitution within the European healthcare sector, supported by research, evidence, collaboration, and greater awareness, as well as engagement with the authorities and advocacy toward the policy makers.
- Prioritise PVC-free medical devices.

4. Worker protection
Workers managing waste must be recognised as essential workers and provided the education, occupational health protection, pay, and status that they deserve as a vital part of environmental health and infection prevention and control.

Key worker protection actions for healthcare organisations

- Choose safe and environmentally friendly waste management; protect workers from the hazards of handling, storing, transporting, treating or disposing waste.
- Educate workers on hazards linked to healthcare waste and provide them with training in implementing the waste policies such proper waste segregation, waste handling, storage, and disposal.

5. The way forward
HCWH Europe strongly believes that employing a circular economy model supported by the strategies and action plans developed within the Green Deal provides the opportunity to achieve significant EU wide healthcare waste reduction.

HCWH Europe encourages Member States, and stakeholders (manufacturers, waste processors, etc.) to set goals to achieve a reduction in healthcare waste through national activities. Public health authorities should see effective, scaled-up promotion of non-incineration technologies for the final disposal of healthcare waste as a tool to prevent environmental pollution and disease burden from incineration pollution.

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[11] HCWH, UNDP (2018) *Chemicals of Concern to Health and the Environment* noharm-europe.org/documents/chemicals-concern-health-and-environment-0