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Promoting a healthy environment – and ensuring health in the future

People need a healthy environment. As a healthcare company, we operate in a unique space where there is a tension between wanting to do our best to minimize any potentially adverse impact on the environment and remembering never to lose sight of the strict requirements governing patient safety and hygiene. Our aim is to promote human health while continuing to reduce our environmental footprint.

To this end, we have introduced environmental management systems across our production sites and hospitals. These form the basis for us to improve step by step and make our activities more environmentally friendly. We can use the management systems to effect changes in various areas. By way of example, we are actively embracing the use of renewable energies to achieve our climate targets and looking closely at how we consume resources. This also includes careful use of water, an indispensable resource.¹

¹ We report in detail on our climate and environmental targets – along with our approaches, measures, and progress – in the audited [Sustainability Statement 2025](#).

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A secure energy supply and lower climate impact – climate action at Fresenius

As a global healthcare group, Fresenius depends on a reliable energy supply around the clock so that it can provide patients with safe care. At the same time, we want to play our part in mitigating the consequences of climate change.

Our commitment to decarbonization

We have a clear target: net zero emissions from our own operations and along our value chain by 2050.¹

Reconciling energy demand with climate action ambitions

Fresenius manufactures medical devices and operates healthcare facilities, activities that use energy and generate greenhouse gas emissions. In production areas, for example, the necessary machines and containers need to be constantly sterilized, while in our hospitals, a wide range of technical systems are in continuous operation. This presents us with particular challenges: On the one hand, we want to reduce our energy consumption.

On the other hand, we must guarantee the safety of the patients in our facilities at all times while also making sure that we have a secure energy supply at our production sites.

¹ Net zero emissions means that Fresenius will reduce its greenhouse gas (GHG) emissions across Scopes 1 to 3 as much as possible by 2050 and offset the remaining unavoidable GHG emissions (no more than 10%). Fresenius has defined interim targets for the path to net zero and produced a climate transition action plan. Detailed information on our climate targets and our transition action plan can be found in our audited [Sustainability Statement 2025](#).

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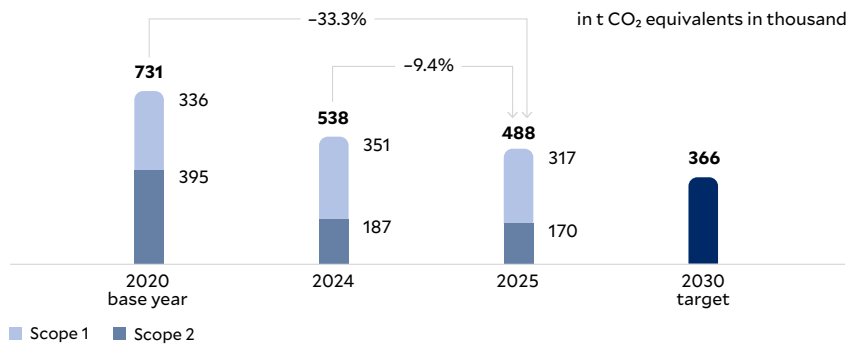
At the same time, we are already noticing that the consequences of climate change, such as extreme weather events, are having an impact on the working and living conditions of our employees and patients. Climate change is also a health matter. That’s because heat stress and changing climatic conditions affect particularly vulnerable groups such as the elderly, the chronically ill, and children.

Our climate targets²

- Target by 2030: to cut our entire Scope 1 and Scope 2 emissions by 50% in absolute terms (base year: 2020)
- Target by 2040: greenhouse gas neutrality for Scopes 1 and 2 (base year: 2020)
- Target by 2050: net zero emissions across Scopes 1, 2, and 3

Scope 1 comprises direct emissions that we cause through our own business activities. Scope 2 relates to indirect, energy-related emissions that are caused by the consumption of purchased energy. Scope 3 covers other indirect emissions from our value chain.

Scope 1 and Scope 2 target pathway to 2030



Since 2020, we have been able to cut our absolute Scope 1 and Scope 2 emissions by a total of 33.3%.

² Fresenius plans to eliminate all avoidable GHG emissions (at least a 90% gross reduction) to meet the 2040 target and the net zero target by 2050. Unavoidable emissions (a maximum of 10%) are to be offset in the future by measures aimed at the permanent removal of CO₂. Detailed information on our climate targets and our climate transition action plan can be found in our audited [Sustainability Statement 2025](#).

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Fresenius Kabi



Marc-Alexander Mahl

President of Pharma, Nutrition & Sustainability at Fresenius Kabi







“We are making good progress towards achieving our target by 2030. We follow an action plan that includes short- and long-term measures. They include continuously improving our energy efficiency in buildings and in processes, and expanding the use of renewable energy. This enables us to track our progress transparently and further develop our efforts each year.”

Pulling the right levers – decarbonization at Fresenius

There are various levers that can help us to achieve our climate targets. The focus here is on making greater use of renewable energies, improving energy efficiency, and optimizing production technologies.³

Decarbonization levers

<p>LEVER 1 Make greater use of renewable energies</p>  <ul style="list-style-type: none"> • Purchase electricity from renewable energy sources • Electrify processes • Replace fossil fuels with alternatives that cause less climate damage 	<p>LEVER 2 Improve efficiency</p>  <ul style="list-style-type: none"> • Improve the energy efficiency of buildings and processes • Measure the output of relevant energy consumers • Optimize, renovate, or convert plants and systems
<p>LEVER 3 Switch fuels, technologies, and processes</p>  <ul style="list-style-type: none"> • Substitute fossil fuel sources for renewable alternatives • Switch to low-emission technologies • Change processes 	<p>LEVER 4 Electrify the vehicle fleet</p>  <ul style="list-style-type: none"> • Replace inefficient and high-carbon vehicles with electric alternatives • Expand the charging infrastructure

³ Detailed information on our climate transition action plan can be found in our audited [Sustainability Statement 2025](#).

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Only cooling or heating a room in the hospital when it is actually occupied? A connection between the building management system and Quirónsalud’s Casiopea app can make this possible. Find out how the app also simplifies processes for patients and hospital staff in our **Highlight Story: Enhancing patient experience: Bridging digital care and energy consumption.**

Highlight Story



Enhancing patient experience: Bridging digital care and energy consumption

[Read Highlight Story →](#)

Fresenius Kabi



Kirsten Nyland

Senior Vice President, Environmental & Occupational Management at Fresenius Kabi



“At Fresenius Kabi, we are working to continuously reduce the environmental footprint of our manufacturing processes. This includes efficiency efforts at our sites as well as rethinking the way we produce key components of our pharmaceutical portfolio. One example is the production of Water for Injection (WFI): It is indispensable, but requires a high amount of energy. In 2025, we therefore launched pilot projects at two sites to test technologies that have the potential to significantly lower both energy and water consumption in the future.”



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Anesthetic gases are one of the largest direct sources of emissions in hospital operations. Helios has introduced a system for capturing the gases so that they no longer reach the outside air in an unfiltered state in the future. Read all about it in our **Highlight Story: [What do anesthetic gases have to do with the climate?](#)**



Highlight Story

What do anesthetic gases have to do with the climate?

[Read Highlight Story →](#)

Every step counts

Cada Paso Cuenta (“Every Step Counts”) is an initiative of the Quirónsalud Foundation that brings together various cooperation projects. In spring 2025, “Cada Paso Cuenta: Muévete por el Mediterráneo” (“Every Step Counts: Move for the Mediterranean”) was launched to raise awareness for environmental responsibility.



1,243
participants

logging their steps;
80 volunteers participating in the beach clean-up.

121,673
km total distance

logged in the two-week walking challenge (≈ 2,5 laps around the Mediterranean);
160,095,693 step.

Employees across Spain joined the walking challenge and tracked their steps to support the restoration of Mediterranean ecosystems: Based on the total distance logged, the Quirónsalud Foundation committed funds to local projects.

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This support enabled the restoration of 450 m² underwater meadows and the planting of 500 native trees in the Valencia region. As an additional measure, volunteers from Quirónsalud as well as local residents took part in a beach clean-up in June, helping an area still affected by severe flooding in 2024.

183.3

kg of waste

collected during the June 2025 beach clean-up.

450 m²

of underwater Posidonia meadows in the Mediterranean restored.

500

native trees planted.

Water – fundamental to health and hygiene

As a healthcare group, we depend on water. To care for our patients, we need drinking water of the highest quality. We also use water to manufacture our pharmaceutical products.



Our commitment to water

We place particular emphasis on preserving water quality. In water-stressed areas, we are especially committed to reducing our water withdrawal.¹

¹ According to the [World Resources Institute](#), baseline water stress measures the ratio of total water demand to available renewable surface and groundwater supplies. Water demand includes domestic, industrial, irrigation, and livestock uses. Available renewable water supplies include the impact of upstream consumptive water users and large dams on downstream water availability. Higher values indicate more competition among users. We report in detail on our reduction target, the measures planned to achieve it, and the level of progress in the audited [Sustainability Statement 2025](#).

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Water requirements in hospitals and in the production of pharmaceutical products

An adequate supply of fresh water is important in hospital operations for meeting high hygiene standards and thus ensuring patient safety. For this reason, the opportunities to reduce consumption here are limited. Water is also an important component of some pharmaceutical products, such as infusion solutions. The water used for these products must meet even higher quality standards than those governing drinking water. We are unable to reduce the amount we use for this purpose. One of the main ways in which Fresenius can save water therefore lies in the processes used to manufacture its products, such as cooling or sterilization.



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Our aim of reducing water consumption in production processes



-20%

Fresenius Kabi

Water Reduction

By 2030, Fresenius Kabi aims to reduce process water withdrawal at production sites in areas with water stress by **20%** in absolute value (base year: 2023).

In 2025, Fresenius Kabi reduced water withdrawal in water-stressed areas by around 2.6% compared to the base year, which means that we are well on course to achieve our target by 2030.

Fresenius Kabi



Tobias Listmann
 Director of Global Water & Project Management at Fresenius Kabi



“Fresenius Kabi is in the process of trying to meet its reduction target. In 2025, for example, conventional vacuum pumps were replaced by models that either do not require water at all or recirculate the water used. In addition, by the end of 2026, we want to precisely record relevant water flow at selected production sites with the aid of so-called water maps. This will enable us to identify areas where water can be saved or reused.”

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Site in France – heat pumps instead of water

Until now, the production site in Louviers, France, has used river water, among other things, to cool its plants. From 2026, Fresenius Kabi will be fundamentally changing the system here. The use of heat pumps should reduce the amount of river and groundwater needed for cooling. The heat pumps absorb the waste heat from the production processes and feed it into the municipal heat grid. This waste heat can then be put to good use. At the same time, the plant needs less water for cooling. According to the site’s own calculations, it will be able to save around 160,000 m³ of water per year in the future.

Manufacturing medicine – controlling antibiotics in wastewater

Antibiotics can enter natural ecosystems via wastewater, where they promote the development of antibiotic-resistant bacteria. Find out about the measures we are taking in production plants and hospitals to reduce the risk of antimicrobial resistance in the

Highlight Story: Resistant pathogens: Prevention in hospitals and when manufacturing antibiotics.

Highlight Story



Resistant pathogens: and when manufacturing antibiotics

[Read Highlight Story →](#)

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Water in everyday hospital operations – between hygiene and security of supply

Quirónsalud



Leticia Moral
Infrastructure, High Technology Equipment, Maintenance, Electromedicine & Sustainability Director at Quirónsalud



“Even if the savings potential in hospitals is limited, we at Quirónsalud are looking at various ways to use water more efficiently. We have for instance set up a Water Optimization Working Group. The first step is to understand how we use water. That is why we are strengthening our monitoring systems and installing sub-metering to record detailed consumption patterns. We are also exploring solutions to reduce water consumption in sterilization processes and public toilets.”

Hospitals as guardians of water quality

Fresenius continuously monitors water quality in its healthcare facilities, making it possible to detect any contaminants and anomalies in drinking water quality. In some German municipalities, Helios hospitals serve as local testing centers for drinking water quality. The hospitals communicate with the authorities and inform them if any critical deviations from the drinking water standard are identified, enabling Fresenius Helios to help protect patients as well as the surrounding population.

Water reserves in case of emergency

All hospitals have emergency plans in place to maintain patient healthcare even in the event of water shortages. In Germany, solutions such as additional modules to treat the water are used in instances of contamination. In most Spanish hospitals, special pipe systems linked to water reserves are designed to bridge the supply gap for a short period of time in the event of loss of drinking water.





Guaranteeing hygiene, avoiding waste – the balancing act of conserving resources

Natural resources are finite, but some raw materials are indispensable to healthcare. Fresenius, for example, relies on metals to manufacture its equipment, crude oil to produce plastic items such as cannulas, and active pharmaceutical ingredients to make medicinal products.

Our commitment to circularity & waste

At Fresenius, we focus on reducing our waste and embedding circular principles into product design and packaging solutions.¹

¹ Fresenius reports on concepts, measures, and the level of progress relating to the use of resources in the audited [Sustainability Statement 2025](#).

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When it comes to conserving resources, we must always try to strike the right balance between resource efficiency and hygiene requirements. Disposable items are often used in hospitals for hygiene reasons. Our options to save resources are limited here. Strict regulations governing medicine packaging also make it difficult for us to do this. A key way of conserving resources therefore involves developing products that last as long as possible, reusing resources wherever possible, and taking a systematic approach to the disposal of waste.

Infusion bag production – recycling production waste

Fresenius Kabi

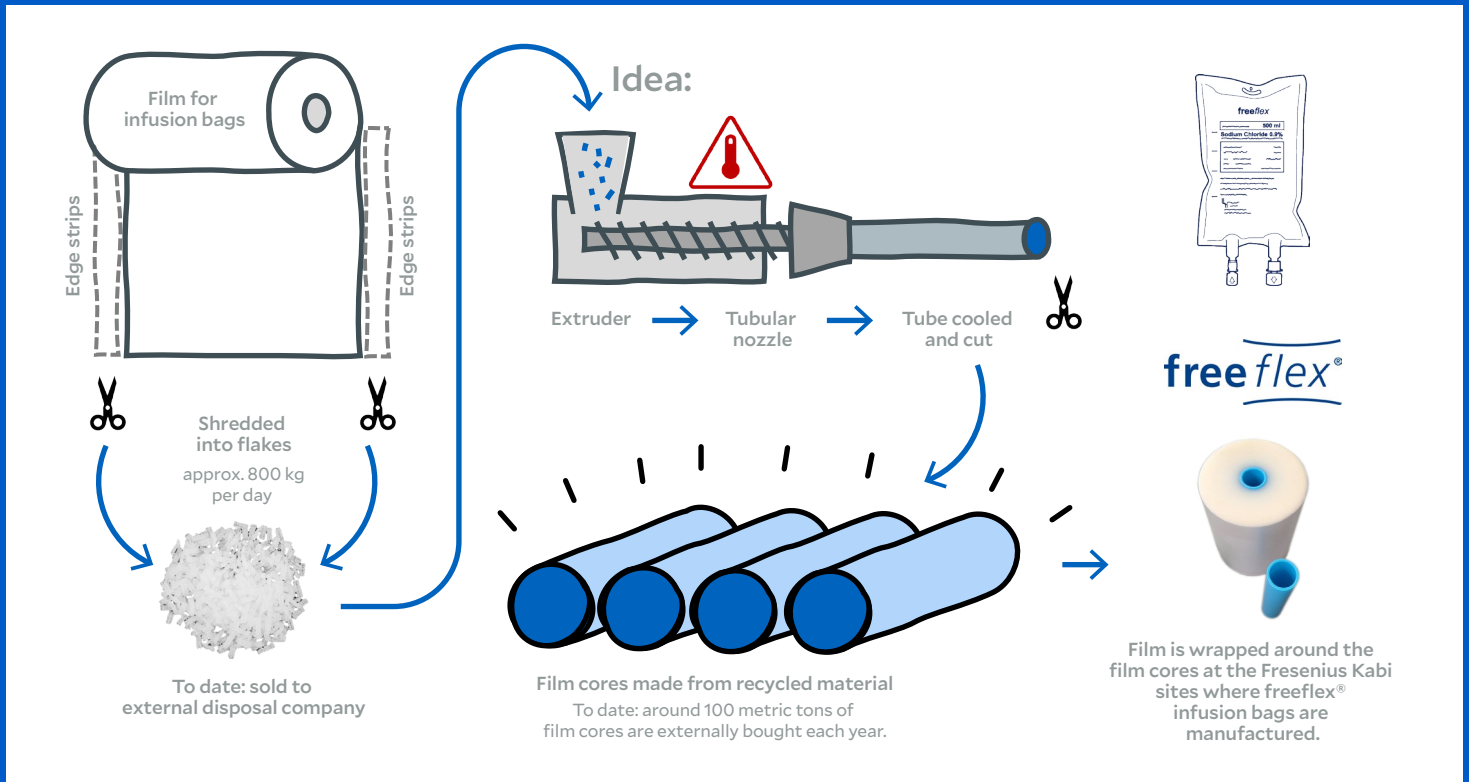
Fresenius Kabi manufactures infusion bags in line with strict quality standards. The process of cutting the primary film along the edges to make the bags generates waste in the form of offcuts that were previously thrown away. Based on Fresenius Kabi's own calculations, these offcuts alone account for around 800 kg of the production waste generated daily at the Friedberg site.



The team behind the idea at the Friedberg site.

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Fresenius Kabi employees have come up with an idea for how they can be recycled in the future. It involves the shredded film being melted down and used to make new film cores. These cores are needed in production anyway, with film wound around them before everything is then used in the plants to make the infusion bags. Until now, we have had to buy the film cores externally.



Plans are currently underway to put the idea into practice.

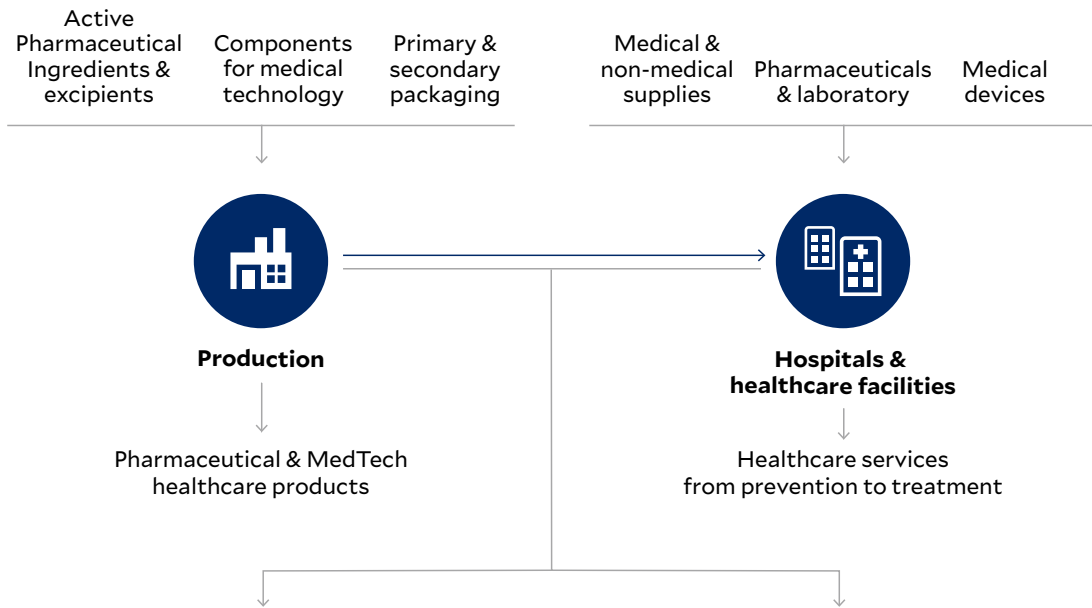
Understanding and managing resource streams

To make sure that we use raw materials as efficiently as possible, we have to keep a close eye on our resource inflows – in other words, all raw materials and other materials that we procure and use. At the same time, resource outflows in the form of waste hold great potential as valuable resources.

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Active pharmaceutical ingredients (APIs) play a key role in our production processes, followed by plastic parts and packaging. Consumables for care and medical treatment are indispensable in our healthcare facilities.

Insight into our resource flows



- Examples of potentially hazardous waste**
- Contaminated syringes & needles
 - Infectious samples & tissues
 - Biological waste such as blood or cell cultures
 - Chemicals for disinfection
 - Residues from chemical reactions
 - Residues of filtration & cleaning processes
 - Waste from chemotherapy
 - Sharp & pointed objects such as scalpels

- Examples of non-hazardous waste**
- Uncontaminated packaging & containers made of paper, plastic, & glass
 - Uncontaminated disposable gloves
 - Plastic & metal waste from administrative areas & medical devices
 - Production waste from non-toxic & non-reactive materials
 - Food waste
 - Uncontaminated medical devices
 - Disposable clothing, bandages & diapers

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Knee and hip operations – reducing single-use packaging in the operating room

Helios

Around 30,000 metric tons of waste are generated annually at Helios in Germany. The packaging of surgical materials accounts for a significant proportion of this figure. A project set up by the Ortho-Campus in Krefeld is helping to reduce packaging waste associated with knee and hip operations. The surgical materials needed for these procedures are bundled together and delivered in ready-made, standardized, and hygienically packaged medical sets. Besides reducing packaging waste when compared to individually packaged materials, it also saves the time it would otherwise take for the surgical team to open and dispose of the packaging and prepare for each individual operation. An internal evaluation of around 2,000 hip and knee operations performed annually at the Ortho-Campus reveals that the medical sets can reduce the waste generated by the packaging of the surgical materials used for these procedures by around 80%.²



Hygienically packaged:
Material sets put together
for hip and knee operations
can reduce packaging
waste by around 80%.

The individual consumables packaging needed for the roughly 30,000 hip and knee operations performed annually at Helios currently still generates about seven metric tons of waste across all of the approximately 70 orthopedic departments. This is equivalent to around 3,000 yellow bags. Once the new customized sets are introduced everywhere, we calculate that only around 1.4 metric tons of waste will be generated by consumables packaging. The plan is for the medical sets to be used for all hip and knee operations in the future.

² In a standard operation, the medical kits generate 80% less waste by reducing the amount of outer packaging. Additional materials may also be needed, however, depending on the circumstances of the operation.

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Waste – a focus on safety and hygiene

Systematic waste management is designed to make efficient use of resources and reduce environmental pollution. In some cases, however, corresponding regulations vary by municipality, country, and operating company. We therefore adapt our waste management system depending on the business activity and location.

Clinical waste – clear labeling designed to simplify disposal



At the Helios hospitals in Germany, the color-coded waste container concept, which was redesigned in 2024, helps to simplify the sorting of waste such as medicines or infectious waste. Accompanied by an awareness campaign and an international guide in six languages, the concept is designed to reduce the improper disposal of waste and make it easier for employees to dispose of it correctly.



The different types of waste are presented in several languages together with pictures to help improve the sorting of waste. There is a need to comply with special regulations governing the disposal of infectious and other hazardous waste in hospitals. Recyclable waste can be recycled if collected correctly.

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Closed-loop filtration for hazardous waste from surgeries

Surgical procedures demand high levels of precision and safety, but they also produce significant amounts of waste that require careful handling and disposal. For surgeries generating large volumes of fluids, these are typically collected in heavy disposable containers for incineration.

Quirónsalud has tested a closed-loop filtration system for these types of surgeries. The system replaces the traditional containers by filtering the fluids so the now-clean liquid can be discharged into the standard wastewater system, leaving only the filter as waste.

As an additional benefit, the system reduces the risk of hazardous splashes and spills in the operating room by eliminating the need to replace the disposable containers when they become full.

The assessment of the pilot project is planned for completion in the course of 2026.

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The waste in our healthcare facilities and production plants undergoes various disposal and recovery processes, depending on the type.

Disposal and recovery processes

