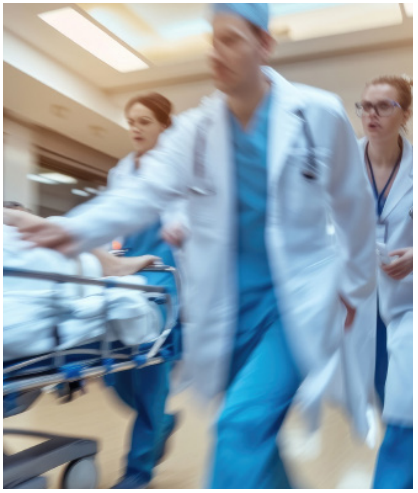
Game-changing Waste Collection for Healthcare













Healthcare Waste & Soiled Linen Management

Future-Proofing Hospital Infrastructure

Given the high patient volumes experienced by hospitals and the heightened demands for hygiene and optimal working environments, traditional waste and soiled linen collection methods have become increasingly obsolete. Implementing smart solutions for collecting waste, soiled linen, recyclables, kitchen waste, and infectious waste can significantly save time and cost while substantially improving the hospital's productivity and hygiene standards.

Infectious air valve

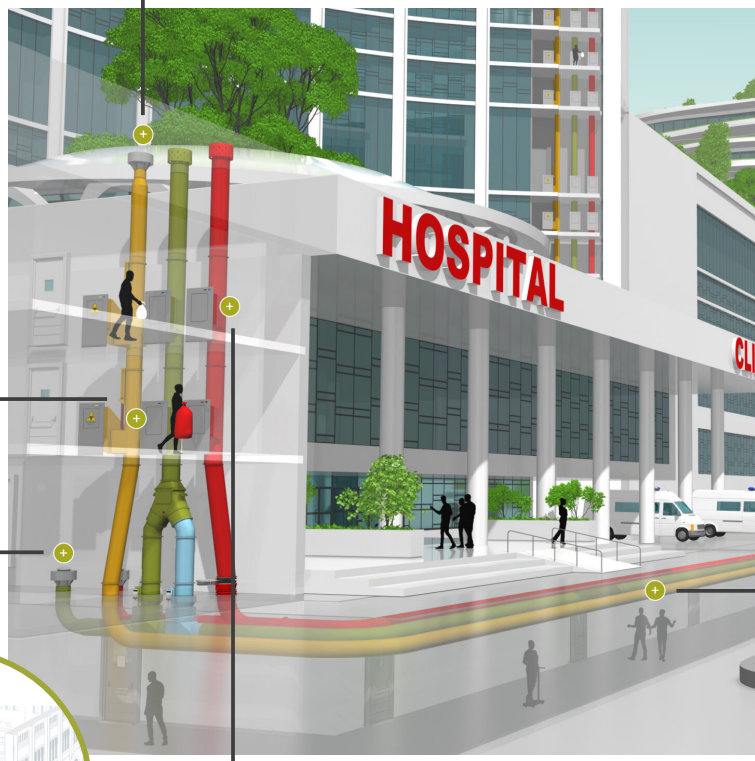
Air inlet valve for the infectious waste collection (IWC) system.

Infectious waste

Infectious waste collection (IWC) system is a stand alone and hermetically sealed system.

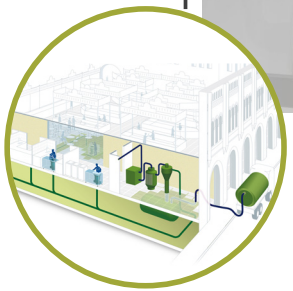
Air valve

Air inlet valves for waste/ recyclables and soiled linen transportation systems.



Kitchen Waste System

Kitchen Waste System is a stand-alone, tailor-made, integrated system for kitchens and staff canteens, ensuring fast and hygienic removal of the large volumes of food waste directly at the source.



Inlet point

Inlet point with disposal inlets for different fractions. Can feature fully touchless user access control.

RETURN ON INVESTMENT

3-6 Years

Hospitals typically recoup their investment in few years through operational savings, improved infection control, and reduced waste management expenses.

TYPES OF WASTE

5+ fractions

The Envac system in healthcare facilities is capable of handling general waste, recyclables, soiled linen, infectious waste, and kitchen waste efficiently.

Containers

Containers for waste and recyclables. Material is compacted to minimise truck collections.

Air filtration system

Air filtration system ensure that transport air is purified before being released into the open air.



Infectious waste treatment

Infectious waste treatment; converts the hazardous waste into non-hazardous waste.

Soiled linen collection

Soiled linen collection drop bags into trolleys for transport to either local or external laundry facility.

Collection station

Collection station usually located at the hospital's logistic center for easy truck access.

Smart automation

Processes are controlled by Envac's self-learning Automation Platform (EAP) and can be monitored by the Hospital's BMS (Building Management System).

Pipe network

Pipe networks for the different soiled flows connect the disposal inlets to the collection station.

Improving hospital efficiency and hygiene by eliminating cross-infection risks and streamlining waste and soiled linen handling. Replacing wheel-based corridor transportation with our sealed and efficient vacuum transportation system will free up valuable space, improve workflow, and ensure a cleaner environment for patients and healthcare professionals.



Challenges with soiled flow management using robots and/or manual labour

- Need wide corridors to prevent congestion and cross-contamination risks
- Risk of exposure to airborne pathogens from soiled linen and waste transports
- Extensive access throughout the hospital imposes security issues
- Space in critical areas for intermediate storage, access, loading, unloading and charging
- Heavy and hazardous handling risk causing strain injuries
- Relying on the presence of manual labour
- Risks of human errors and medical leave
- Elevator capacity for vertical movements
- Shorter lifespan and high investment cost
- Frequent maintenance required
- High stress at peak loads and sudden high volume causing events



Envac enables cleaner, safer, and more efficient hospitals

Hospitals face unique waste management challenges—limited space, constant activity, and high hygiene demands. Traditionally, waste and soiled linen are stored locally in the wards and transported in corridors and elevators. Patients and healthcare professionals risk exposure to both pathogens and odours.

By using fully automated collection through sealed pipes hidden in walls and ceilings, colony-forming unit (CFU) levels in the healthcare environment are minimised, and risks for cross-contamination are eliminated, helping to prevent and reduce risks of healthcare-associated infections (HAIs).

Healthcare waste & associated risks

Ugent need for smart waste collection system

9 Million HAIs per year in Europe)
Leads to 25 million extra hospital days

60% of healthcare facilities
Lack safe, proper waste management systems

15% of medical waste is hazardous
May be infectious, toxic, or radioactive

€13–24 billion in HAI-related costs
Europe spends billions annually due to poor infection control

Manual Waste Handling = Hygiene Risk
Exposure increases infection risk for staff and patients

- Prevents cross-contamination
- Minimises manual handling
- Modern, clean & efficient

Benefits of Envac's automated system - supporting hygiene, compliance, and care

- Reduced cost & time
- Less wear & tear
- 24/7 availability

Solutions for Healthcare Facilities



Collection System for Waste and Recyclables

Traditional waste handling takes up valuable space and risks cross-contamination in the hospital environment. Envac optimises hospital waste management by hygienically transporting it with a sealed vacuum system to a central collection point. Smart multi-fraction inlets simplify sorting, reduce manual handling, improve hygiene, and save space, labour, and operational costs.



Infectious Waste Collection System

Managing hazardous hospital waste - especially infectious and sharps waste - demands strict routines, special containers, and detailed labelling. Transport must follow strict safety protocols. Envac simplifies this by enabling near-source disposal and enclosed pipe transport to an on-site treatment facility, converting it into non-hazardous waste. The result: safer handling, higher efficiency, full compliance, and lower costs.



Soiled Linen Collection System

Handling soiled linen risks exposing staff and patients to airborne pathogens, and heavy bags can cause strain-related injuries over time. Frequent transport through corridors and elevators negatively disrupts hospital logistics, decreasing accessibility. Envac's 24/7 smart linen collection system minimises physical contact, supports infection control protocols, and maintains a clean, efficient, and compliant environment.



Kitchen Waste Collection System

Envac's kitchen waste solution eliminates the need for bins and bags by allowing direct disposal of waste into inlets integrated within the food preparation area. The waste is then swiftly transported through vacuum-sealed pipes to a central collection unit, removing transport paths and ensuring a clean, odour-free kitchen that complies with the most stringent hygiene requirements.

Envacs Infectious Waste Collection

Reduce infection risks, eliminate trolley transport and cut costs with a fully enclosed, automated system for infectious and hazardous healthcare waste.

The challenge: infectious waste and healthcare-associated infections (HAIs)

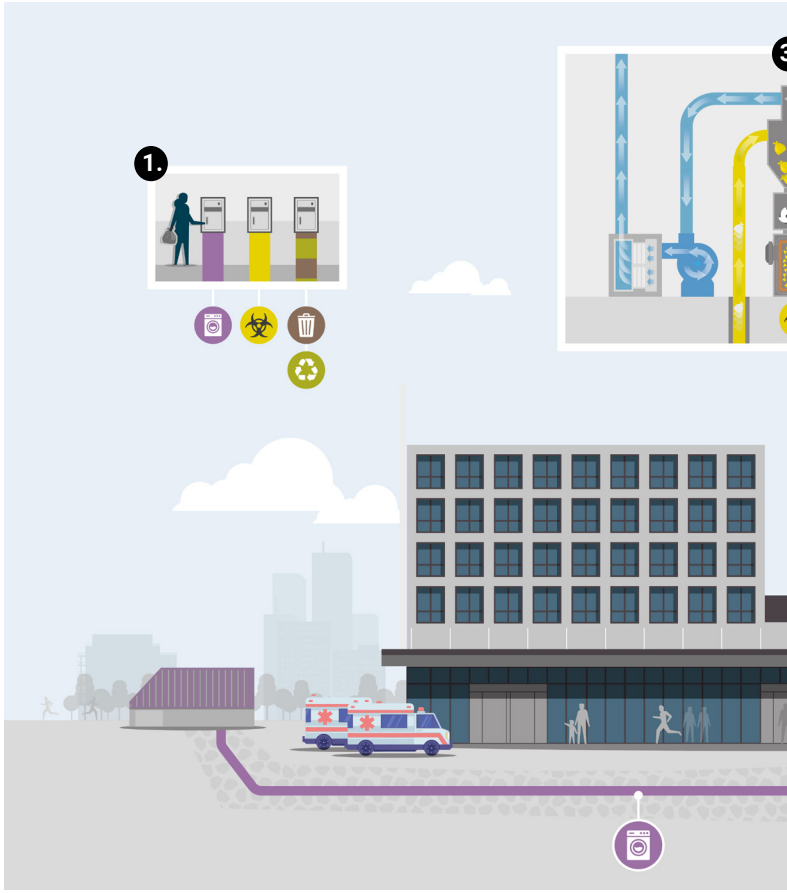
Healthcare-associated infections are a major threat to patient safety and drive costs through additional treatment and extended length of stay. Traditional waste handling, even with AGVs/AMRs, relies on manual handling, waste rooms and transport through corridors and lifts, increasing the risk of spills, contamination and staff exposure.

Envac's IWC solution

Envac IWC is a dedicated pneumatic collection system for infectious and hazardous healthcare waste, operating in a completely separate, closed pipe network. By combining vacuum technology with strict source segregation, disinfection and advanced air filtration, the system simplifies work for clinical staff, enables disposal close to the point of care and automates both transport and treatment.

Key benefits

- Lower infection risk and reduced cross-contamination
- Minimal manual handling and reduced staff exposure
- Separate system for high-risk fractions
- On-site treatment and up to 80% volume reduction
- WHO-aligned sorting and strengthened preparedness for outbreaks
- Lower transport and logistics costs through fewer external collections



1. Waste collection points
Nurses, service or logistics staff place bags of infectious waste into dedicated intake hatches.

The system is self-sealed and closed to minimise contamination and can be equipped with touch-free operation and access-controlled access.

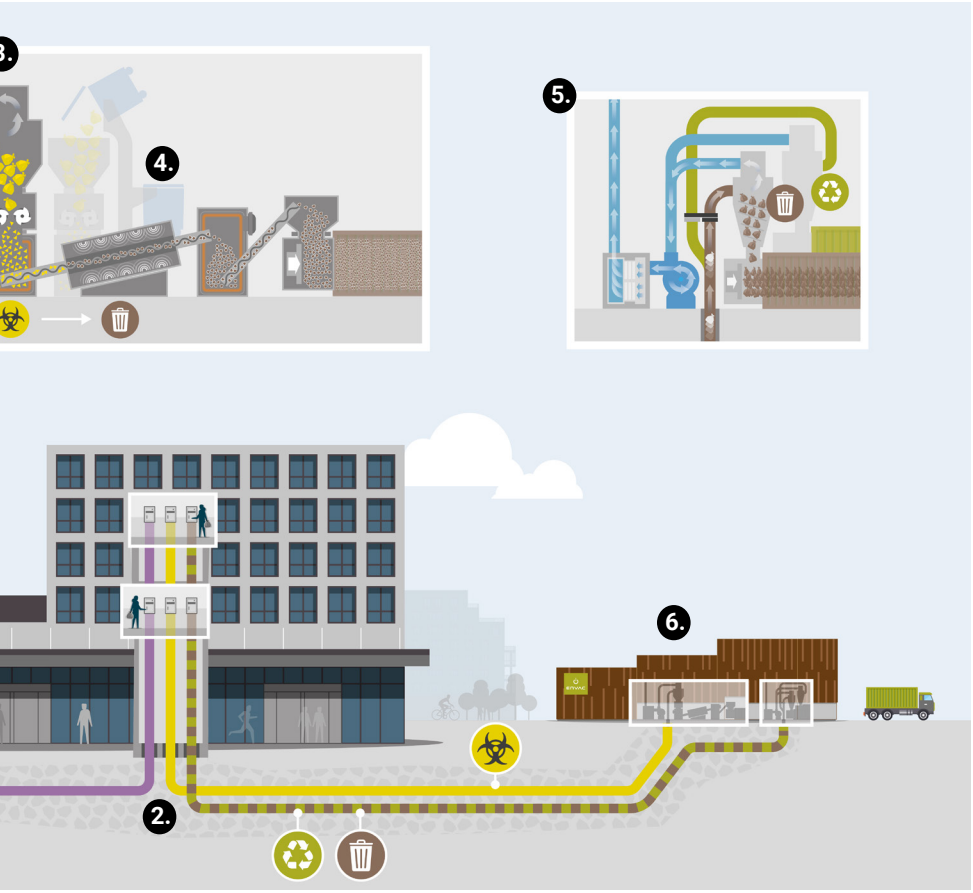
2. Pneumatic transport
Powerful airflow transports the sealed ba
the intake hatches through a hermeticall
pipe network to a central collection stati
instead of via lifts and corridors.

3. Shredding and volume reduction
At the station, an industrial shredder redu
volume of medical waste by up to 80%.

The IWC concept focuses not only on safe transport, but also on actively reducing the infectious load in the waste and the air associated with

- Integrated disinfection (e.g. ozone-based processes) designed to reduce or eliminate viruses and bacteria inside the system.
- Advanced multi-stage filtration and HEPA filters for exhaust air before it is released.
- Safe negative-pressure transport from the intake hatches to the local waste conversion unit.

The combined effect is to minimise
hospital environment and to ensure
transformed into an inactive residue
storage rooms or awaiting external



ags from
y sealed
on,

uces the

4. Pre-heating and disinfection
Shredded infectious waste is transported to a pre-heating zone and then into a sterilisation unit where it is exposed to high temperatures for complete disinfection. The treated material is fully disinfected and converted into general waste.

5. Terminal and clean air management
Combustible residual waste and recyclable fractions can share pipes during collection but are separated by switching valves at the station so that each fraction ends up in its own container. The transport air passes through several filtration stages, usually including HEPA filtration, before being released into the atmosphere.

6. Storage and external collection
After conversion into general waste, the material is compacted and stored in containers until it is collected for final disposal or further treatment.

it:

the release of pathogens into the
that infectious waste is quickly
e instead of remaining untreated in
transport.



CHU Rennes saves €400 000 annually

At the university hospital CHU Rennes in France, Envac's system transports infectious sharps waste (type III) to a local treatment unit.

The hospital is expected to save approximately €400,000 per year compared with traditional medical waste handling, which on average is five times more expensive than conventional waste management.



Invented for a Hospital. The world's first vacuum system for waste collection was launched, by Envac, at Sollefteå Hospital, Sweden in 1961. This system is still operational and contains many original components.



25 countries
Trusted by leading healthcare facilities worldwide for safe and efficient waste handling.

115+ cities
Improving hygiene, operational efficiency with smart waste collection systems.

180+ systems
Proven technology reducing cross-infection risks and improving sustainability in healthcare facilities.

Major global customer references:

- Landspítali Hospital, Iceland

6 tonnes soiled linen/day | 6 tonnes general waste/day | 0,5 tonnes recyclables/day

- Ng Teng Fong General Hospital, Singapore

12 tonnes waste output/day | 81 inlets | 6 chutes

- Sengkang General Hospital, Singapore

18 tonnes waste output/day | 212 inlets | 28 chutes

- Hainan Cancer Hospital, China

12 tonnes waste output/day | 3 fractions: soiled linen, general & kitchen waste

- Childrens Healthcare of Atlanta, USA

54 inlets | 2 fractions: general waste & recyclables

- St Olav Hospital, Norway

5 tonnes waste/day | 120 inlets | 20 Sort-More systems | 4 fractions

- Ersta Hospital, Sweden

0,3 tonnes waste/day | 32 inlets | 2 fractions: general waste & soiled linen

- Sant Pau Hospital, Barcelona

3 tonnes general waste/day | 3,5 tonnes soiled linen/day | 44 inlets

- Sírio-Libanês Hospital, Brazil

8,5 tonnes soiled linen/day | 8 tonnes general waste/day | 116 inlets

- Centre Hospitalier Universitaire de Rennes, France

162 inlets | 4 fractions: soiled linen, recyclables, infectious & general waste