

# IMPLEMENT A NEW WASTE MANAGEMENT SYSTEM

CASE STUDY

## *Case study*

This document illustrates Sterigerms business approach, expertise and integrated medical waste services implementation.

The study describes a medium-sized hospital for **120 beds located in France**.

The hospital provides services across various departments such as general surgery, ENT, nephrology, dermatology, gastroenterology etc.

Before the coronavirus outbreak hospital generated ~ 45 tons of infectious medical waste per year. During pandemic volume of MIW increased at 40 % reaching **65 tons of MIW per year** in 2020.

The biggest amount of waste was generated in **general and surgery wards**. Most common infectious waste included PPE, containers with needles and sharps, soiled clothing, bandages, dressings and swabs, diapers, catheters and other disposable medical sets.

Until the 2020 hospital used outsourced company for medical waste management. The vehicles for waste collection arrived 2 times per day, 6 days per week.

# *Needs & constraints of the Hospital*

Major challenges hospital faced:

- **Sanitary risks;**
- **Environmental concerns** - carbon footprint from vehicles transporting medical infectious waste;
- **Elevated prices for infectious waste handling.** Cost of medical waste collection is ~8 times more expensive than collection of domestic waste.

In 2021 Sterigerms implemented in the hospital a pilot project aimed to help the facility to overcome current challenges and constraints.

Sterigerms aims to drive MIW reduction through prevention and waste segregation. Both measures allow to reduce environmental harms from waste, to save money and to improve sanitary safety.

# *STERIGERMS Integrated Waste Management Service.*

## *Phase 1*

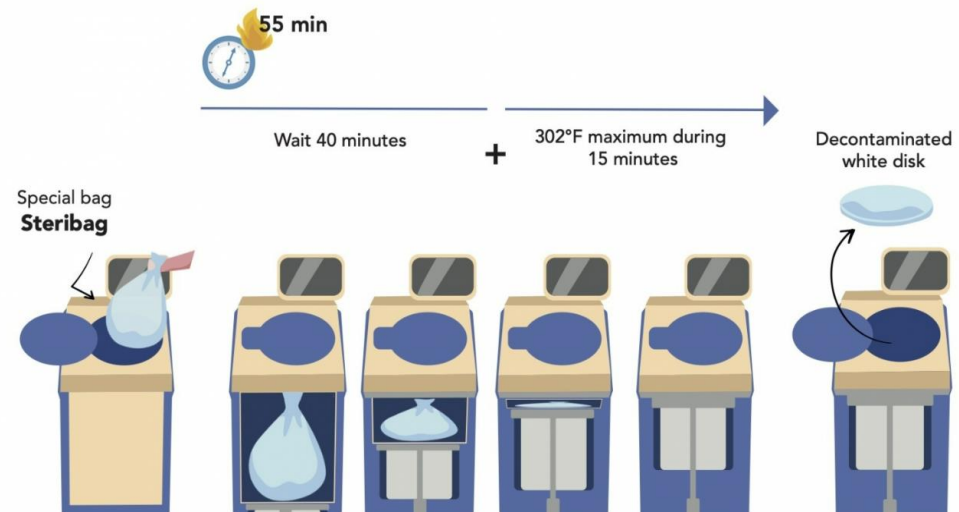
- **Waste management audit:** analysis of amount and type of waste flow, storage facilities, transportation, assessment of personal, financial analysis;
- **Recommendations on waste segregation:** audit showed that MIW often mixed with infectious waste what increase dramatically the amount of infectious waste, and as result costs and environmental impact of its disposal. For example, such waste as plastic bottles, paper or cans which should be treated as domestic waste. Some of medical waste which is not infectious. It was determined two main reasons of this problem: lack of understanding of the economic and ecological impact from the waste segregation and lack of understanding the difference between infectious waste and domestic waste;
- **Creating the working group** consisted of employees of hospital and Sterigerms to control implementation of recommendations and follow up;
- **Trainings** for all the hospital employees from nurses to managers. Trainings aimed to provide clear, consistent information, full understanding of the hazards, risks, regulations, health and safety impacts, cost implications, and environmental concerns.

# *STERIGERMS Integrated Waste Management Service.*

## *Phase 2*

- Co-developing new Waste Management Regulation Policy;
- New infrastructure design
- Implementation of on-site medical waste treatment solution: 2 x STERIGERMS 60 litres;
- Pilot project implementation. The pilot project was carried out for 3 months.

### Patented STERIGERMS medical waste treatment technology:

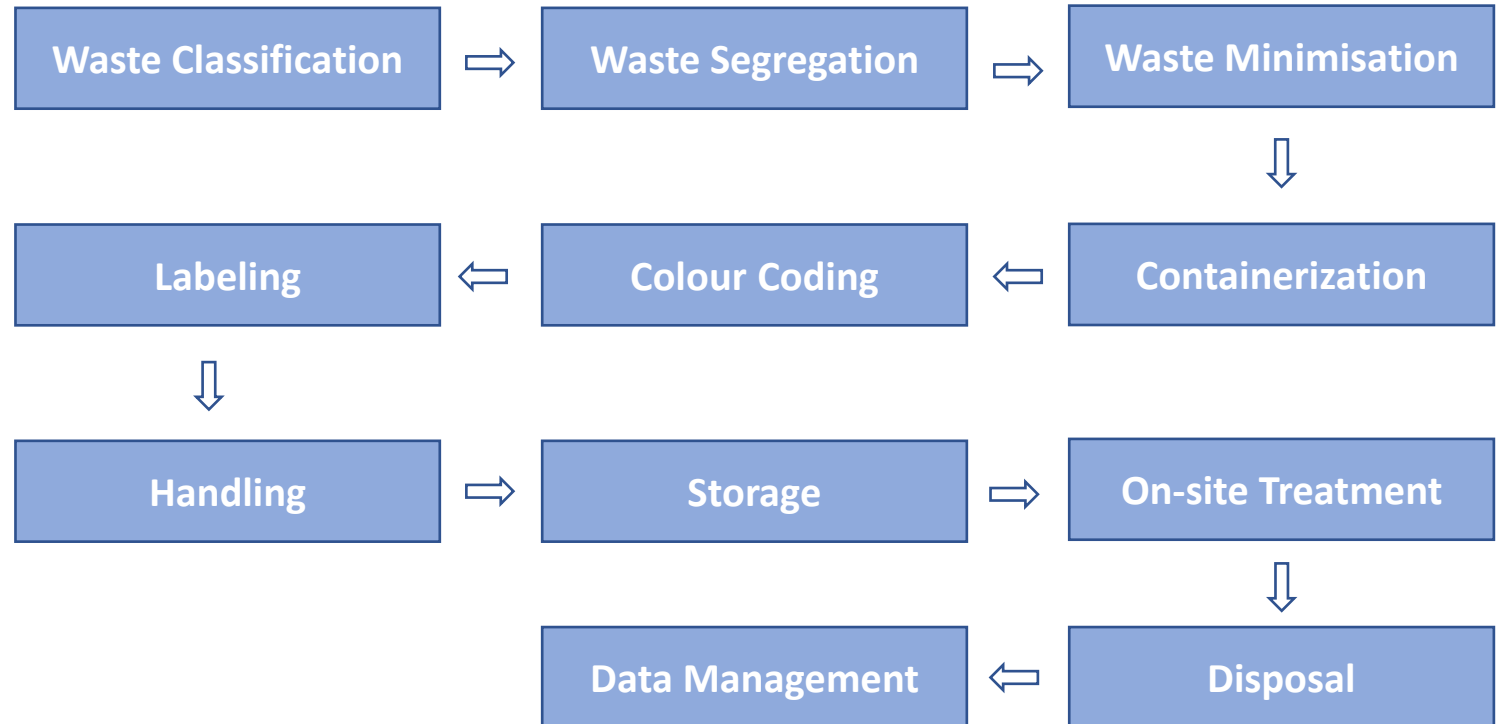


# STERIGERMS Integrated Waste Management Service.

## Phase 3

- During the pilot project data was collected from personal about type and amount of waste and number of treatment cycles via Sterigerms software.
- Data management, follow-up and corrective actions by the project working group.

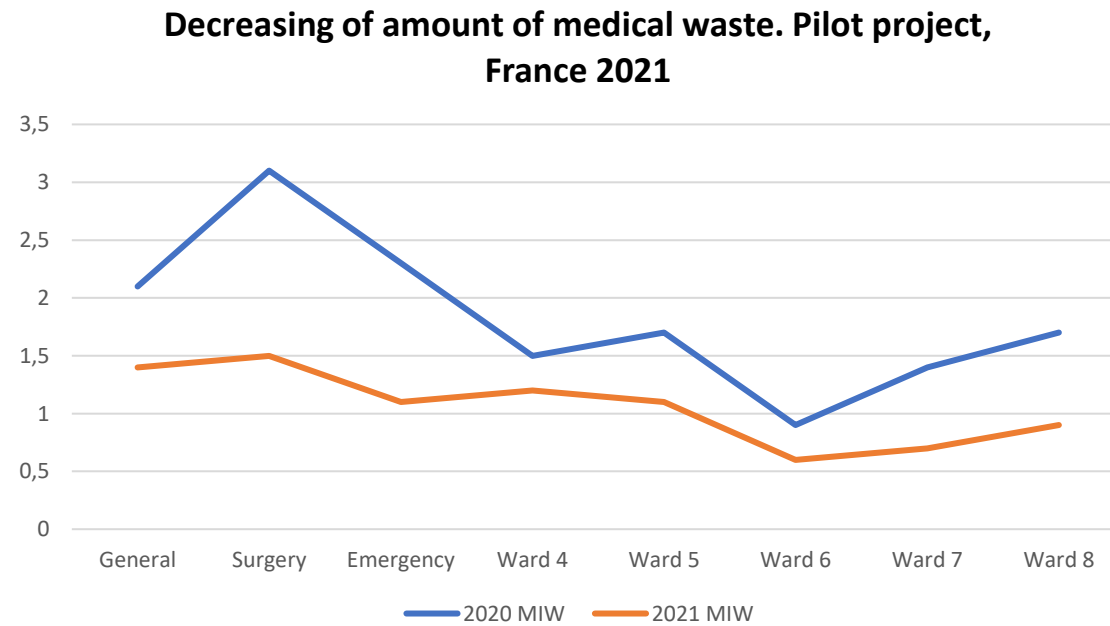
### STERIGERMS Pilot Project Waste Management structure:



# Results

The parameters used to evaluate the project were **the amount of infectious medical waste** and **total expenses on MIW disposal**.

**Phase 1:** MIW generation reduction due to implementing waste management policy, waste management group and educational activities.



## *Conclusion*

Due to of waste segregation measures implemented MIW generation decreased from 14 to 52 % depending on the hospital ward.

**Phase 2:** Design of new waste management infrastructure.

Installation of 2 Sterigerms machines 60 liters capacity together with the implementation of new waste management policy allowed to reduce monthly costs of MIW up to 30% from 7.2 k€/month in 2020 to 5.2k €/month in 2021 after pilot project implementation.

**Phase 3:** Tracking progress and make adjustments wherever necessary.

**Constant communication between the hospital and Sterigerms is fundamental for development of optimal waste management program which answer the needs of the facility. The working group continues to collaborate, analyse the data and implement corrective actions to ensure constant improvement of waste management processes in the facility, staff safety, environmental impact and financial results.**