



# How to measure and reduce plastic in healthcare

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# Speakers



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# About HCWH Europe



We are a non-profit European network of hospitals, healthcare systems, healthcare professional bodies, local authorities, research/academic institutions, and environmental and health organisations.

Health Care Without Harm is a global movement:

- Three regional HCWH offices (Europe, USA, South East Asia) and virtual team in Latin America
- Partners around the world (Australia, China, India, South Africa)

# First, do no harm



**Vision:** Healthcare mobilises its ethical, economic and political influence to create an ecologically sustainable, equitable and healthy world.

**Mission:** Transform healthcare so that it reduces its environmental footprint, becomes a community anchor for sustainability and a leader in the global movement for environmental health and justice.

# Our members in Europe



4,917



1,045,352



112,573



60.7m

**92 members in 19 countries**

# Global Green and Healthy Hospitals



GGHH is an international network of:

- Hospitals
- Healthcare facilities
- Health systems
- Health organisations

This worldwide community comprises **1,450 members** in **72 countries**, representing the interests of over **43,000 hospitals/health centres**.



# HCWH Europe Programmes



Climate-smart Healthcare



Sustainable Food



Safer Pharma



Circular Healthcare



## Pilot project: Towards plastic-free healthcare in Europe

20 July 2021

<https://noharm-europe.org/towards-plastic-free-healthcare>

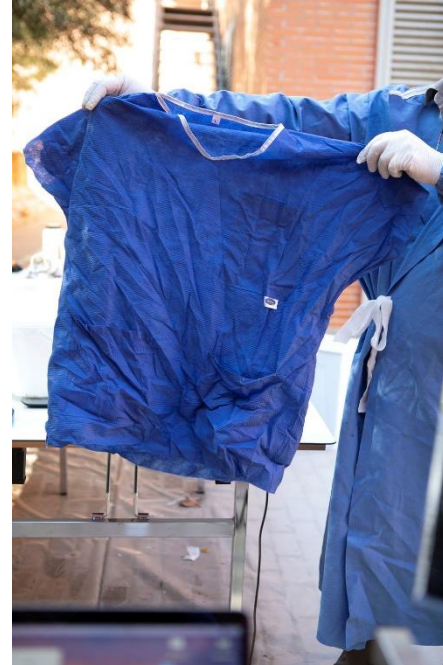


# Project description

Long-term vision: **Transforming plastic use in healthcare**

Three pillars:

- **Research – waste audits**
- **Education – awareness raising campaign**
- **Innovation – plan to reduce plastic waste**



# Audit steps\*

## Before the audit:

- Decide on the scope and purpose of the audit
- Identify audit site and staff resources required
- Gather necessary equipment (PPE, waste handling, weighing scales, containers, etc.)
- Collect waste for auditing
- Prepare audit site
- Brief audit team

## The audit (next slide)

## After the audit:

- Clean up
- Complete gathered data



# Audit steps

## During the audit, for each waste bag:

- Record the ward and waste stream
- Record the weight of the unopened bag
- Open the bag and remove any non-plastic items
- Separate plastic items into categories
- Weigh each item and record individual items in the data form
  - Group identical items together when weighing and recording e.g. group several drink bottles.
  - Photograph unknown items, including any visible labels for future reference
- Dispose of both plastic and non-plastic items into correct waste stream bins. Reuse the original waste bags if possible

The main categories in the database are the following, each divided into subcategories:

- Unknown
- Drink bottles
- Foodware
- Medical items
- Packaging
- Toiletry
- Other



# Waste audit database



Department Source	Waste Stream	Type of Product	Product	Plastic	No items	Weight of all items (g)	Unit weight (g)
Neonatal ICU	Sanitary (18 01 04)	SN Sanitary item	SN2 other sanitary item	MX Mixed materials	48	1159,00	24
Neonatal ICU	Sanitary (18 01 04)	MD Medical item	MD11 Surgical gown / apron	G5 PP	51	3670,00	72,5
Neonatal ICU	Sanitary (18 01 04)	SN Sanitary item	SN1 diaper	MX Mixed materials	177	2938,00	16,6
Neonatal ICU	Sanitary (18 01 04)	MD Medical item	MD18 other	MX Mixed materials	97	890,00	9,2
Neonatal ICU	Sanitary (18 01 04)	MD Medical item	MD5 medical bottles and access	L5 PP	6	110,00	18,7
Neonatal ICU	Sanitary (18 01 04)	MD Medical item	MD6 Saline bottle	L2 HDPE	283	705,00	2,49
Neonatal ICU	Sanitary (18 01 04)	MD Medical item	MD14 Wipes	NK unknown		1415,00	
Neonatal ICU	Sanitary (18 01 04)	MD Medical item	MD2 Surgical glove	G9 nitrile	81	365,00	4,52
Neonatal ICU	Sanitary (18 01 04)	MD Medical item	MD8 Syringe and accessories	NK unknown	69	2050,00	29,65
Neonatal ICU	Sanitary (18 01 04)	MD Medical item	MD18 other	NK unknown	127	115,00	0,9
Neonatal ICU	Sanitary (18 01 04)	MD Medical item	MD4 other medical bag	NK unknown	6	585,00	99,4
Neonatal ICU	Sanitary (18 01 04)	MD Medical item	MD9 Tubing and accessories	NK unknown	13	845,00	63
Neonatal ICU	Sanitary (18 01 04)	MD Medical item	MD16 Oxygen mask	NK unknown	4,8	120,00	25
Neonatal ICU	Sanitary (18 01 04)	MD Medical item	MD18 other	NK unknown	9	234,00	24
Neonatal ICU	Sanitary (18 01 04)	MD Medical item	MD6 Saline bottle	MX Mixed materials	19	174,00	9,25
Neonatal ICU	Sanitary (18 01 04)	MD Medical item	MD7 Other sterile liquid contain	NK unknown	4	47,00	12
Neonatal ICU	Sanitary (18 01 04)	MD Medical item	MD7 Other sterile liquid contain	NK unknown	1	75,00	75
Neonatal ICU	Sanitary (18 01 04)	MD Medical item	MD18 other	NK unknown	1	5,20	5,2
Neonatal ICU	Sanitary (18 01 04)	PK Packaging	PK1 Plastic bag (non-medical)	G4 LDPE	85	510,00	6
Neonatal ICU	Sanitary (18 01 04)	PK Packaging	PK12 plastic film (non bag SOFT)	NK unknown		555,00	
Neonatal ICU	Sanitary (18 01 04)	PK Packaging	PK13 medical packaging	MX Mixed materials	2	68,00	20
Neonatal ICU	Sanitary (18 01 04)	PK Packaging	PK13 medical packaging	L4 LDPE	5	60,00	12
Neonatal ICU	Sanitary (18 01 04)	PK Packaging	PK13 medical packaging	NK unknown	1	16,00	16
Neonatal ICU	Sanitary (18 01 04)	PK Packaging	PK8 food sachet	NK unknown	1	4,00	4
Neonatal ICU	Sanitary (18 01 04)	DC Drinks bottles	DC1 Water bottle	L1 PET	1	44,00	44
Neonatal ICU	General (20 01 04)	FD Foodware	FD3 Drinks cup	L5 PP	51	125,00	2,432
Neonatal ICU	General (20 01 04)	FD Foodware	FD1 knife fork spoon	L5 PP	64	115,00	1,8
Neonatal ICU	General (20 01 04)	FD Foodware	FD2 plate or bowl	L5 PP	47	355,00	7,5
Neonatal ICU	General (20 01 04)	MD Medical item	MD12 Surgical mask	NK unknown	2	6,70	3,33

# Waste audits – preliminary results



Hospital	Audited wards	Waste stream	Kg of waste	Plastic waste %
H1	Orthopaedic; Neurosurgery, neurology, spine and video telemetry	General waste	148.4	34.3%
		Sanitary/offensive waste	96.9	68.9%
		Recycling waste	21.8	47.0%
H2	Adult hospitalisation (general and maternity); Neonatal; Neonatal ICU	General waste	66.3	9.8%
		Sanitary/offensive waste	341.2	49.4%
		Recycling waste	10	65.6%
H3	Neonatal; Gastroenterology	General waste	68.9	60%
		Recycling waste	7.4	83%
H4	Intermediate care wards	General waste	155.6	14%
		Sanitary/offensive waste	237	83%
		Recycling waste	14.6	19%

Of 1168kg of waste audited, 577.24kg, or 49.42%, was plastic\*. 37% of all the plastic items analysed were mixed materials, mostly unknown or unlabelled. 18.27% were non-mixed materials of unknown plastic types.

# Audit results – items found



# Audit results – items found (percentage of total plastic waste audited\*)

	<b>Wipes</b>	<b>Gloves</b>	<b>Nappies</b>	<b>Gowns/ aprons</b>	<b>Medical packaging</b>	<b>Syringes &amp; accessories</b>	<b>Plastic bags (non-medical)</b>
H1 (Orthopaedic, Neurosurgery, neurology, spine & video telemetry)	13.64%	11.7%	3%	8.91%	4.23%	2.84%	-
H2 (General, maternity, Neonatal, Neonatal ICU)	3.28%	10.24%	11.36%	4.65%	3.3%	5.02%	-
H3 (Neonatal, Gastroenterology)	3.41%	12.91%	13.42%	1.27%	5.01%	9.2%	7.07%
H4 (Intermediate care wards)	16.21%	11.53%	17.33%	7.16%	-	-	1.9%
H5 (Neonatal ICU, Ophthalmology theatres)	9.76%	13.26%	10.74%	10.11%	12.81%	5.33%	2.73%

*\*More detailed findings on next slide*

# Audit results – items found

## **Hospital 1** (*Orthopaedic, Neurosurgery, neurology, spine and video telemetry*)

- Wipes: 13.64%
- Gloves: 11.7%
- Gowns/aprons: 8.91%
- Medical packaging: 4.23%
- Black trays: 4.03%
- Nappies: 3%
- Syringes and accessories: 2.84%

## **Hospital 2** (*General, maternity, Neonatal, Neonatal ICU*)

- Sanitary items (mainly bed pads and sponges): 12.18%
- Nappies: 11.36%
- Gloves: 10.24%
- Tubing and accessories: 7.58%
- Syringes and accessories: 5.02%
- Gowns/aprons: 4.65%
- Water bottles: 3.72%
- Medical packaging: 3.3%
- Wipes: 3.28%

## **Hospital 3** (*Neonatal, Gastroenterology*)

- Nappies: 13.42%
- Gloves: 12.91%
- Syringes and accessories: 9.2%
- Medical bottles and accessories: 8.71%
- Plastic bags (non-medical): 7.07%
- Medical packaging: 5.01%
- Tubing and accessories: 4.59%
- Wipes: 3.41%
- Gowns/aprons: 1.27%

## **Hospital 4** (*Intermediate care wards*)

- Nappies: 17.33%
- Wipes: 16.21%
- Gloves: 11.53%
- Gowns/aprons: 7.16%
- Sanitary items (mainly bed pads and sanitary pads): 4.69%
- Tubs (packaging): 3%
- Plastic film: 2.84%
- Drink cups: 2.64%
- Plastic bags (non-medical): 1.9%

## **Hospital 5** (*Neonatal ICU, Ophthalmology theatres*)

- Gloves: 13.26%
- Medical packaging: 12.81%
- Nappies: 10.74%
- Gowns/aprons: 10.11%
- Wipes: 9.76%
- Syringes and accessories: 5.33%
- Sterile liquid containers (others): 4.59%
- Plastic bags (non-medical): 2.73%
- Soft drink bottles: 2.48%





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Health Care



Without Harm