

Health Care Without Harm (HCWH) Europe



ABOUT HCWH EUROPE

- A **non-profit coalition** of hospitals, healthcare systems, healthcare professionals, local authorities, research/academic institutions, and environmental and health organisations
- **Bringing the voice of healthcare professionals** to the European policy debate about key issues, such as: chemicals, climate change and health, green building, sustainable procurement, pharmaceuticals, sustainable food, and waste management
- **Educating the healthcare sector** to understand the importance of the environment and press healthcare leaders and professionals to advocate for broader societal policies and changes



MAIN POLICY AREAS



Pharmaceuticals



Sustainable & Healthy Food



Climate & Energy



Sustainable Procurement



Safer Chemicals



Waste/Resources

ENVIRONMENTAL FACTORS = 1/4 OF GLOBAL BURDEN OF DISEASE

12.6 million deaths per year (WHO, 2016)



AIR POLLUTION: GLOBAL BURDEN OF DISEASE

GBD Air Pollution

WHO reported that in 2012 around 7 million people died - one in eight of total global deaths – as a result of air pollution exposure

- 3.3 million deaths linked to indoor air pollution
- 2.6 million deaths related to outdoor air pollution

Source:
who.int/mediacentre/news/releases/2014/air-pollution/en/

Outdoor air pollution-caused deaths – breakdown by disease

- 40% – ischaemic heart disease
- 40% – stroke
- 11% – chronic obstructive pulmonary disease (COPD)
- 6% - lung cancer
- 3% – acute lower respiratory infections in children

THE HEALTH SECTOR'S ENVIRONMENTAL FOOTPRINT

Greenhouse gas emissions

- NHS-England represents 25% of the public sector carbon footprint
- U.S. health care industry represents 8% of their carbon footprint nationally

The incineration of medical waste

- Source of dangerous air pollutants: dioxin (carcinogen and endocrine disruptor) and mercury (neurotoxicant, retards development, intelligence)

The use of hazardous chemicals indoors

- Contributes to the high rates of asthma among health care workers
- Reproductive hazards, carcinogens, mutagens

The huge scale of the health care sector results in unhealthy practices

- Poor waste management
- use of toxic chemicals
- unhealthy food choices
- reliance on polluting technologies

CLIMATE CHANGE IS HERE IN OUR HEALTH SYSTEMS



Hospitals doing double work - Hurricane Sandy

ENERGY CHOICES AFFECT HEALTH – AIR POLLUTION



ENERGY CHOICES AFFECT HEALTH – AIR POLLUTION

From an American study, it appears life expectancy increases again when concentrations of particulate matter decrease.

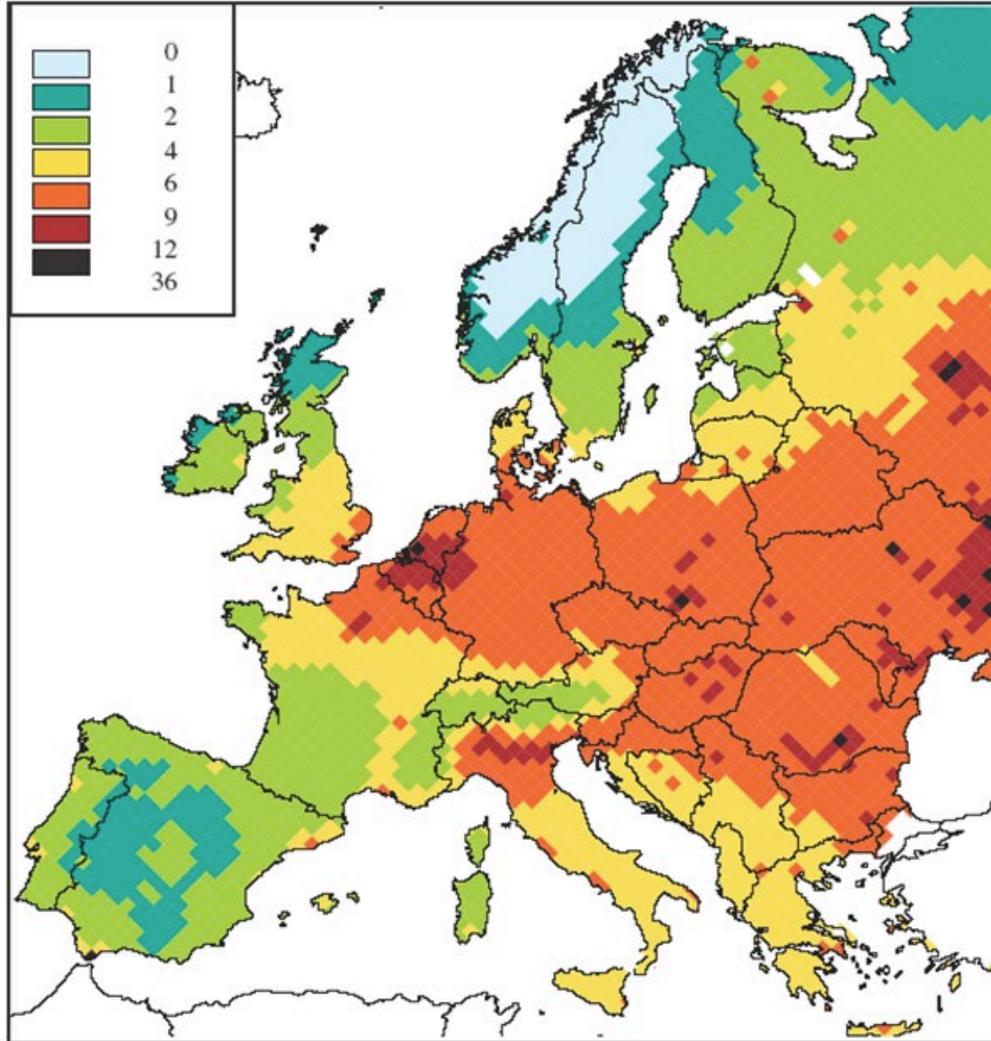


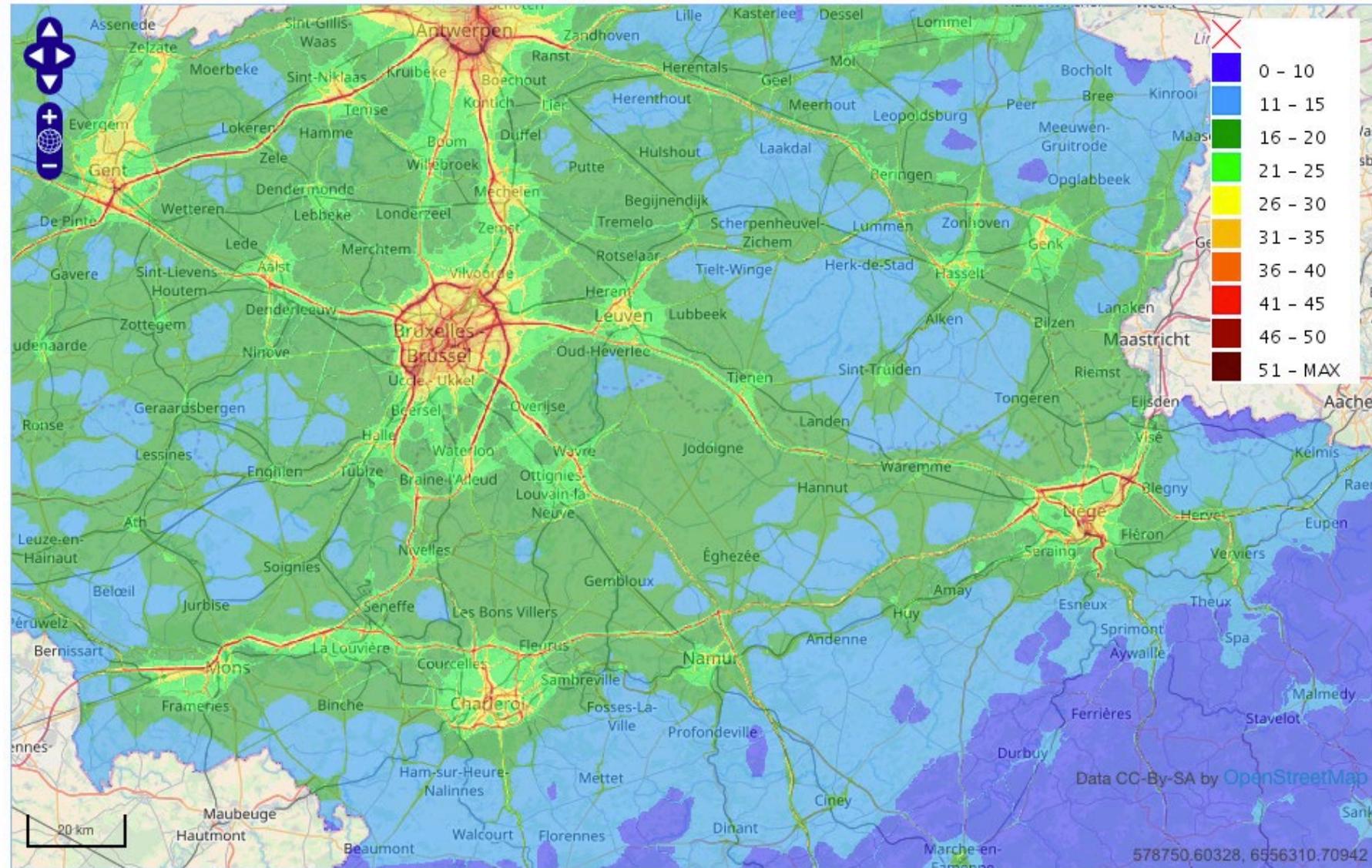
Figure: The number of months of life expectancy decrease caused by PM2.5 in 2010. This estimation was based on model results

“Air pollution is the single largest environmental health risk in Europe”

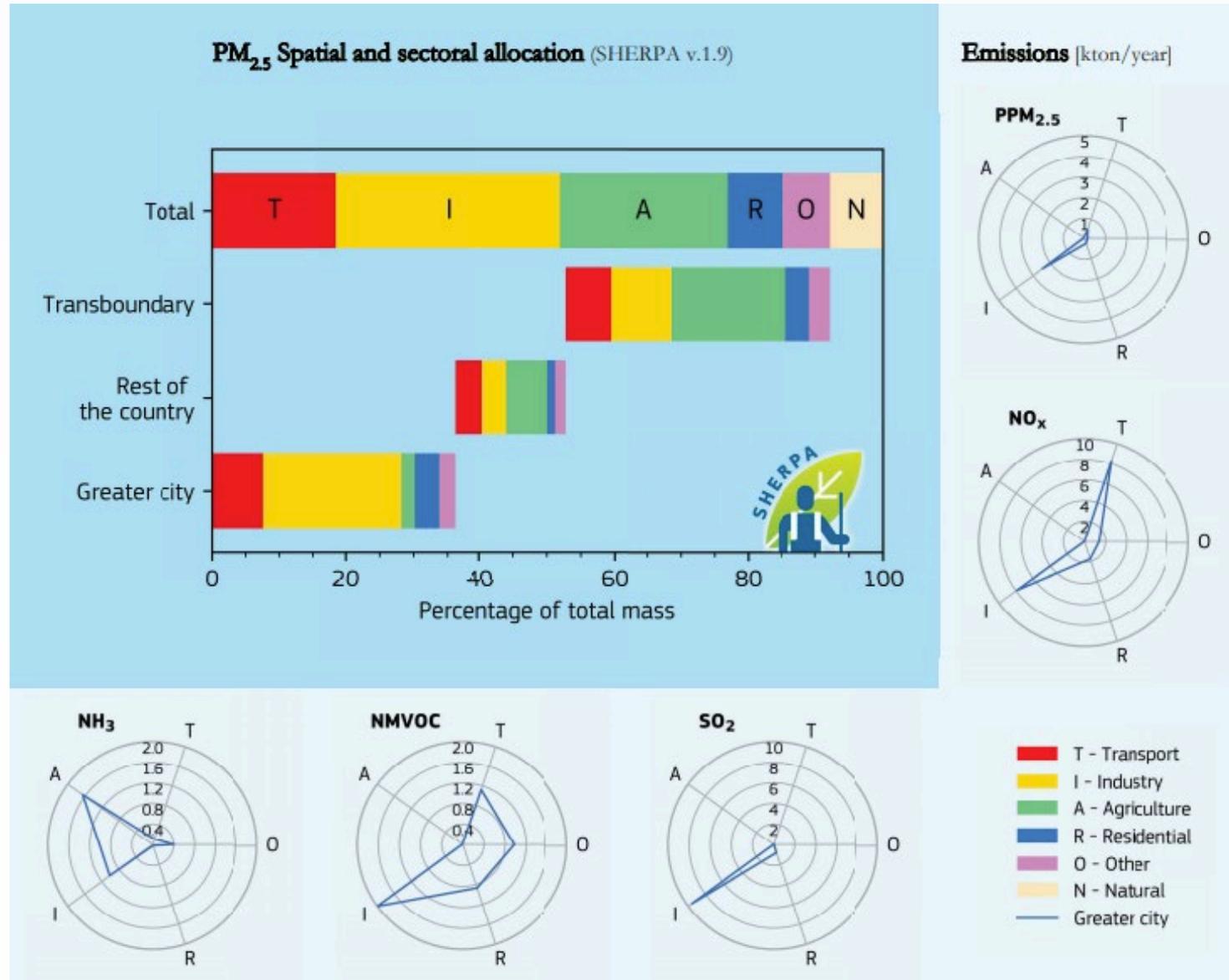
- European Environment Agency
(Air Quality in Europe 2017)

BELGIAN AIR QUALITY THREATS

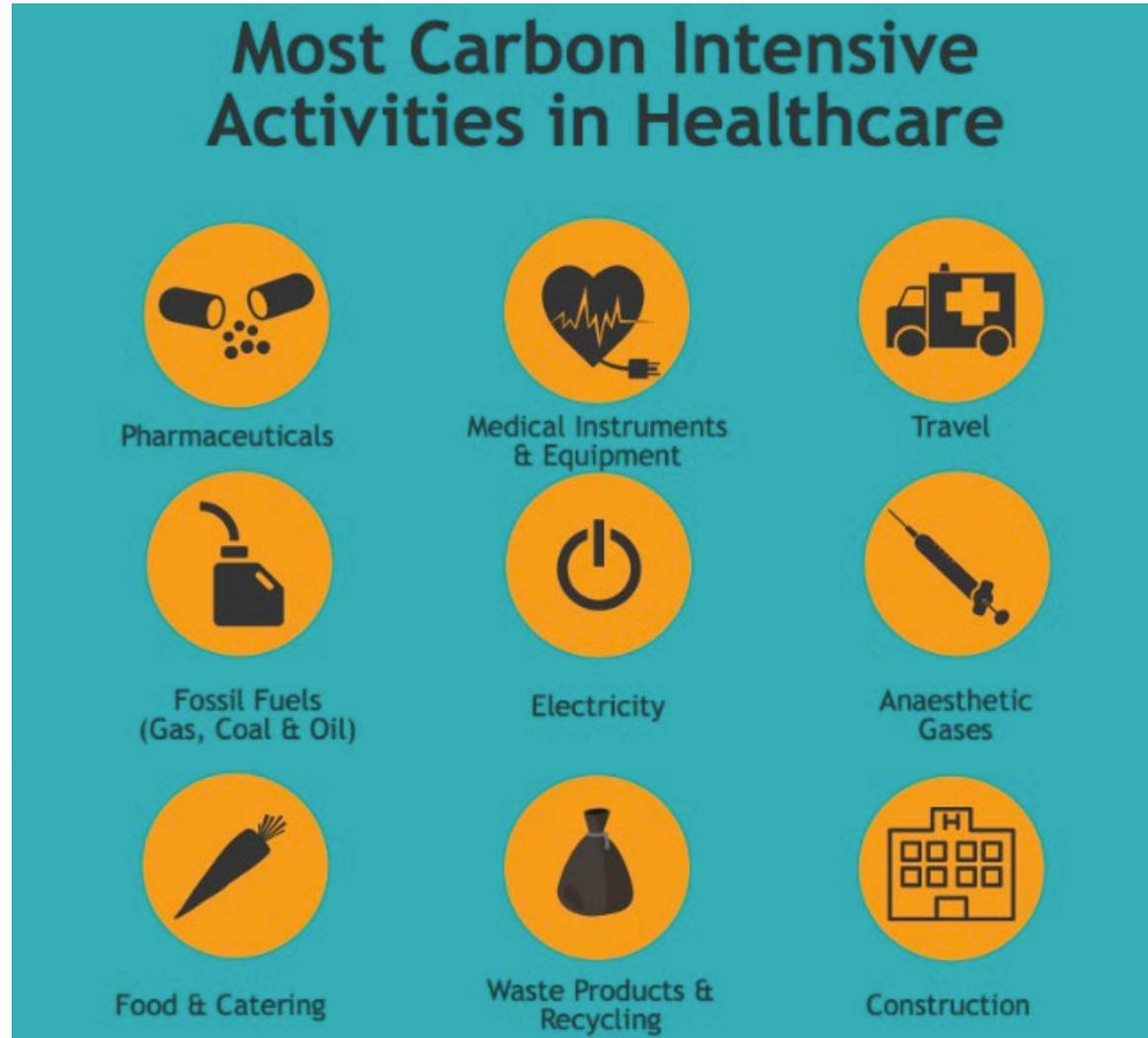
2013 air quality map: NO₂ - Average (µg/m³)



AIR POLLUTION SOURCES – LIEGE



ENERGY CHOICES AFFECT HEALTH – CLIMATE CHANGE

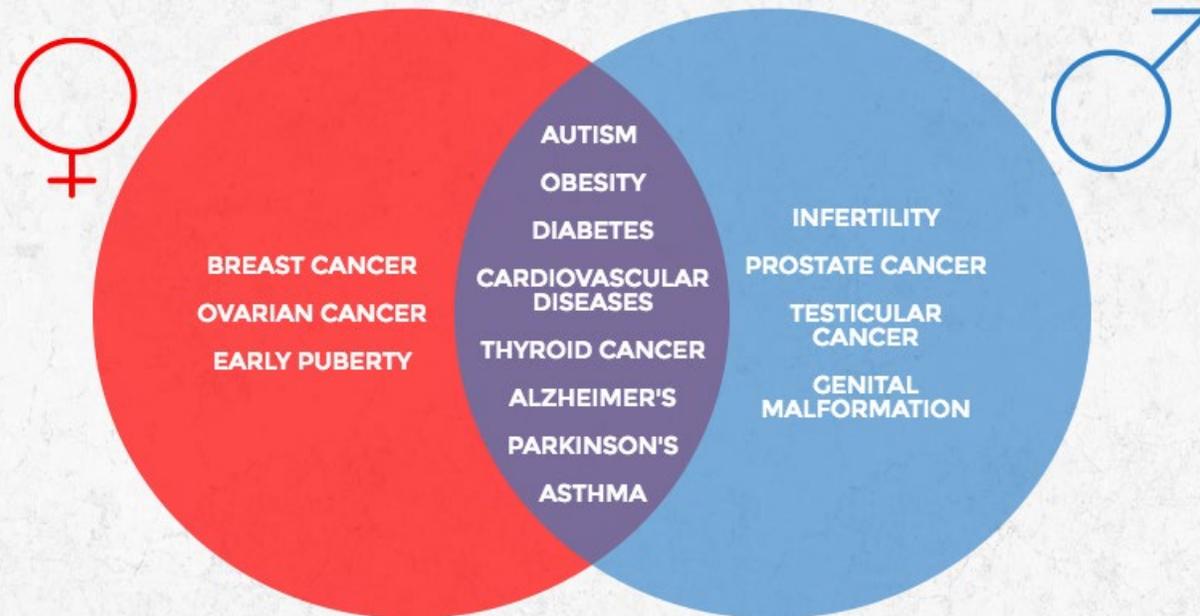


[*How does climate change impact health?*](#) HCWH Europe, 2015

The health risks linked to EDCs



Exposure to EDCs has been associated with an increase in the incidence of hormone-related diseases and illnesses, and also has links to some cancers ^{7, 8, 9}



Where are EDCs found? In healthcare

MEDICAL TEXTILES

Phthalates (plasticizers)

Polybrominated Biphenyl Ethers (flame retardants)

CLEANING PRODUCTS

Glycol Ethers (surfactant)

Cyclosiloxanes (spreading agent)

Ethanolamines (emulsifier)

FLOORING

PVC



INTRAVENOUS TUBING & BAGS

Phthalates (plasticizers)

MEDICAL DEVICES

Phthalates, BPA (plasticisers)

MEDICAL GLOVES

Phthalates (plasticisers)



Success stories and alternatives

HOSPITAL OF SOUTHERN
JUTLAND PAEDIATRICS &
NEONATOLOGY DEPARTMENT



Began phasing out
PVC products in 2005¹²

KAROLINSKA
UNIVERSITY HOSPITAL,
NEONATAL UNIT



Completely phased out
PVC in 2014¹²

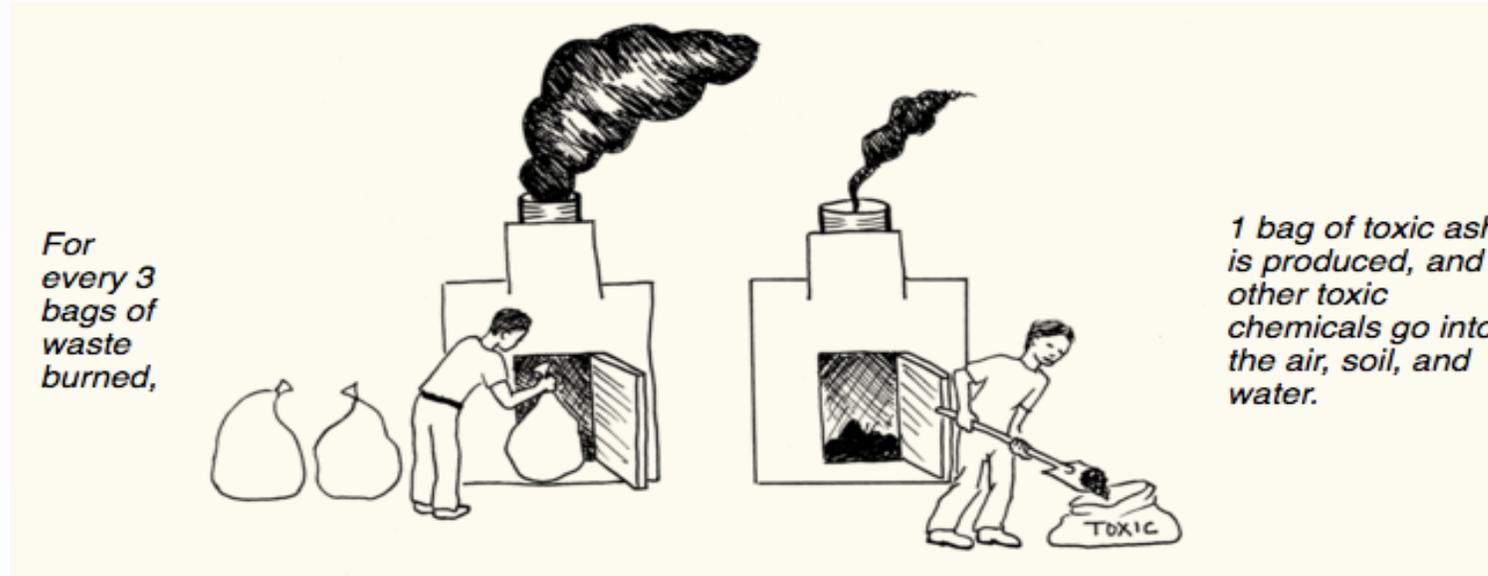
WESTFRIESGASTHUIS HOSPITAL
PAEDIATRICS DEPARTMENT



Substituted 80-100% of
PVC devices¹²

Alternatives were initially 2.5 - 3 times more expensive, but now there is no difference in price, quality, or applicability^{9, 12}

MEDICAL WASTE INCINERATION



Dioxins, heavy metals and particulate matter cause well-known respiratory diseases, cancer, immune system damage and reproductive and developmental problems

[Source](#)

MEDICAL WASTE INCINERATION

Medical Waste Incineration (MWI) is a Major Global Source of Dioxins –Europe:

- 62% of dioxin emissions due to 4 processes, including MWI
- Belgium: MWI accounts for 14% of dioxin emissions
- Denmark: MWI is 3rd or 4th largest dioxin source of 16 process groups

Thailand: MWI - highest dioxin source by far of 7 sources tested Extremely high dioxin levels in MWI ash and wastewater Thailand's 1,500 incinerators exceed combined total dioxin releases of several European countries

United States: MWIs

- Third largest source of dioxins: 17% of total dioxins in 1995 Drop in dioxin emissions from MWI in part due to shift to non-incineration methods: 2470 g TEQ/yr in 1987 to 477 g TEQ/yr in 1995 –

Canada: MWI - largest dioxin source in Ontario province Drop in dioxin emissions from MWI due to closure of MWIs: 130 g TEQ/yr in 1990 to 25 g TEQ/yr in 1999

Food waste in European healthcare

The scale of food waste in healthcare isn't clearly known due to a lack of sufficient and harmonised data; food waste in healthcare can range from 4% - 65% (Williams, 2011)

United Kingdom

18% of food purchased
= 1/6 of meals served by
hospitals is wasted

WRAP (2016)

The Netherlands

25% of food purchased
by hospitals is wasted

Snels, J et al. (2016)

Ireland

2,900 tonnes of food
purchased by
hospitals is wasted

Programme, T.G.H. (2010)

France

20% of hospital food is
wasted ≈ 14% waste of
purchase costs

Thomasson, E (2016)

Germany

Hospitals account for
65,000 tonnes of food
waste each year

Kranert, M et al. (2012)





Why reduce food waste in healthcare?

The healthcare sector can be a leader in reducing food waste, to further improve patients' health and well-being



- Reduced costs



- Reduced negative environmental impact



- Educate patients about healthier diets and help reduce malnutrition

How to prevent and reduce food waste in healthcare



- Design and plan attractive, tasty menus with a variety of appropriate portion sizes



- Establish a simple and flexible ordering procedure



- Provide protected mealtimes



- Carry out satisfaction surveys with patients, visitors, and staff



- Measure food waste in kitchens, wards, and canteens

RELATIVE POTENCY OF ANAESTHETIC GASES

	IR absorption range (μm)	Tropospheric lifetime (yr)	GWP 100	Standard container	kg CO ₂ e for container	Amount needed (MAC ₄₀)	Relative CO ₂ e (per MAC ₄₀)
Sevoflurane	7-10	1.1	130	250ml	49	1.8	1
Isoflurane	7.5-9.5	3.2	510	250ml	191	1.2	2.6
Desflurane	7.5-9.5	14	2540	240ml	893	6.6	72
Nitrous oxide	4.5, 7.6, 12.5	110	298	Cylinder size G	5066	104	132

References:

Lifetimes calculated from JPL <http://jpldataeval.jpl.nasa.gov>

GWP 100 from Sulbaek Andersen 2012 <http://dx.doi.org/10.1021/jp2077598>

MAC₄₀ from Tom Pierce, Environmental Advisor to the Royal College of Anaesthetists, UK



Saving a conservative 40% of potential CO₂e savings from anaesthetic gases for four hospitals would be equivalent to 166 fewer cars on the road

Scaling this up to half of Europe's hospitals could equate to **300 000** cars





Reduce flow rates through training in closed circuit anaesthesia (CCA)



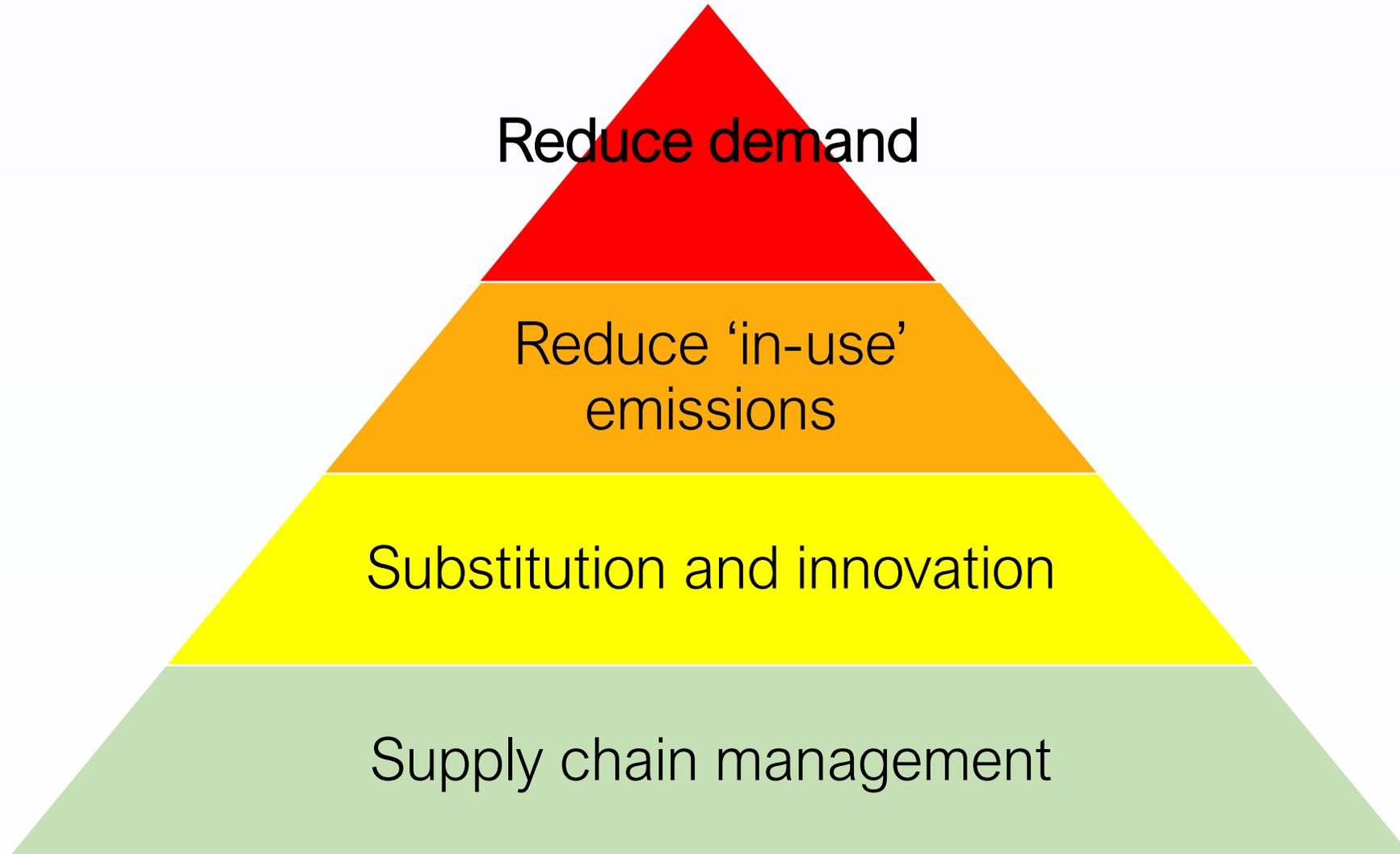
Closed circuit anaesthesia reduces CO₂e emissions, and can also benefit patients

SUSTAINABLE ANAESTHETIC PRACTICE

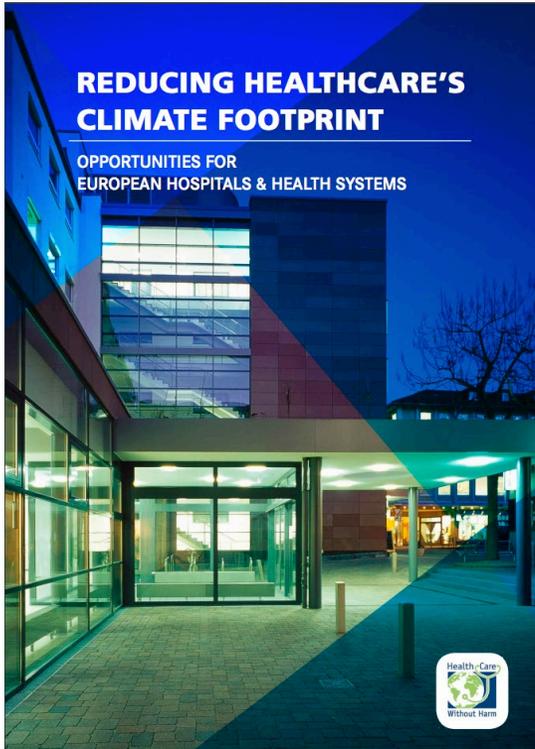
The key messages for anaesthetic practice are:

- 1) Whenever possible use Sevoflurane and only use Desflurane when clinically necessary.
- 2) Reduce or eliminate the use of nitrous oxide during surgery.
- 3) Reduce flow rates and train in the use of Closed Circuit Anaesthesia which confers clinical benefits as well as saving costs and reducing carbon emissions.
- 4) Consider the use of intravenous and regional anaesthesia whenever possible.

CARBON REDUCTION HIERARCHY



CASE STUDIES: EUROPEAN HOSPITALS TACKLING CLIMATE CHANGE



The hospitals showcased in this report were hand picked by HCWH) Europe for their impressive efforts in reducing their institution's climate footprint.

These case studies provide examples of current best practices, yet the scope of European hospitals' efforts to address climate change is not limited to these examples.

[Reducing healthcare's climate footprint: Opportunities for European hospitals and health systems](#), HCWH Europe 2016

OPERATION TLC

“It is about taking simple actions that help to give patients and staff a little extra Tender Loving Care.”

- Operation TLC⁴⁴



Turn off equipment



Lights out



Control temperatures



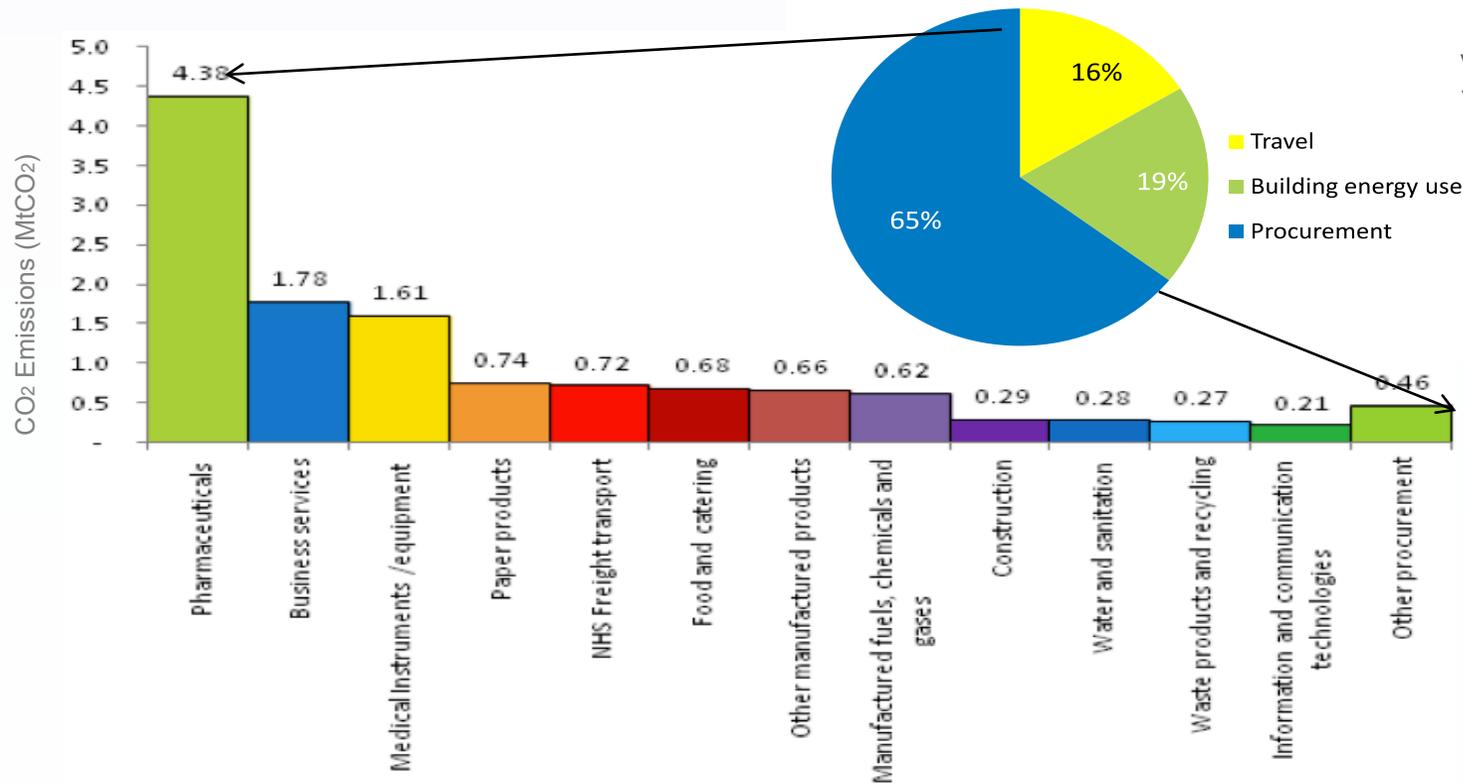
Barts Health saved £49,000 (€57,445) in the first year by simply turning off equipment that could be safely switched off during non-working hours, and by placing reminder stickers close to the light switches.

Thanks to the Operation TLC programme, in two years the Trust reported **one-third less sleeping disruptions** and **38% fewer patient requests** to change room temperatures, which **saved 1,900 tonnes of CO2** and **£428,000 (€501,764)**.

[Reducing healthcare's climate footprint: Opportunities for European hospitals and health systems](#), HCWH Europe 2016

PROCUREMENT

National Health Service (NHS) England: 65% of GHG Emissions are from procurement of products and services



Footprint: 18 million tons of CO₂ per year, 26% of public sector emissions

CO₂ Reduction Targets

- 10% by 2015
- 26% by 2020
- 80% by 2050

[Reducing healthcare's climate footprint: Opportunities for European hospitals and health systems](#), HCWH Europe 2016

Region Skåne

In 2009, Region Skåne adopted a fossil fuel-free strategy with the ambition of eliminating the use of fossil fuels by 2020 in all buildings and transportation managed by the Region



Year	Goal
2012	<ul style="list-style-type: none">• 60% of heating to be provided by renewable sources• 50% of all transportation to use renewable fuels
2016	<ul style="list-style-type: none">• 80% of heating to be provided by renewable sources• 75% of all transportation to use renewable fuels
2020	<ul style="list-style-type: none">• 100% of heating to be provided by renewable sources• 100% of all transportation to use renewable fuels

Region Skåne

The region is increasingly using products made from biomaterials - which consist of raw materials from renewable sources - to replace some plastic materials.

For example, in 2017 as the result of innovative procurement, one supplier developed more climate-friendly aprons using 91% renewable materials.

EACH YEAR, REGION SKÅNE PURCHASES:

48

million pairs of gloves

32

million paper towels

15

million napkins

6

million aprons

7

million syringes

1.7

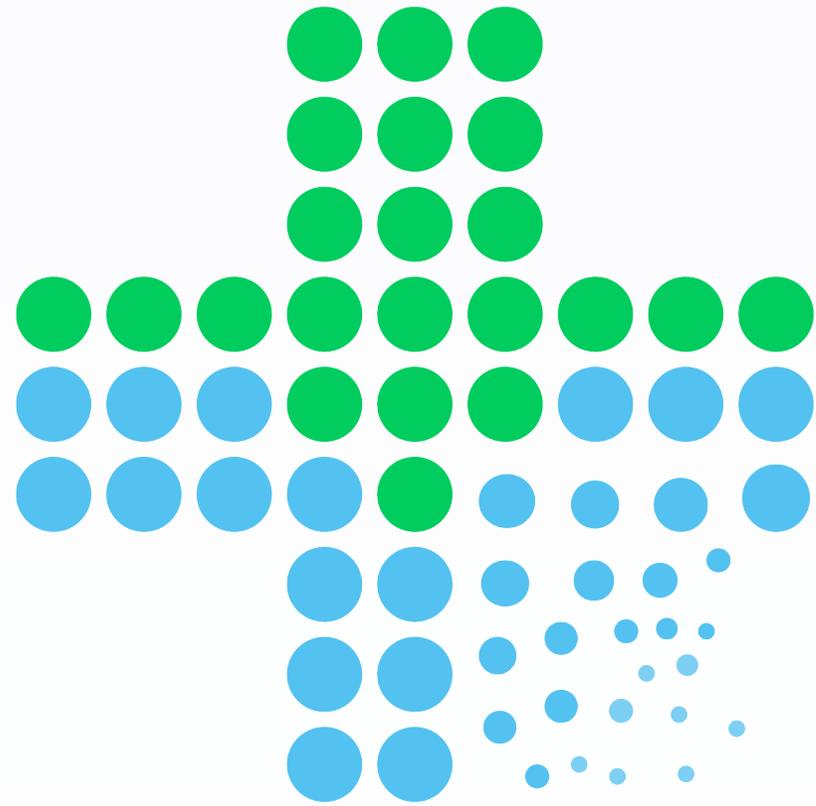
million mouth protection masks

300

tonnes of disinfectant, cleaning materials,
and dishwashing detergent

350

tonnes of copying paper



Safer Pharma

Safer medicine for a safer world

SAFER PHARMA CAMPAIGN

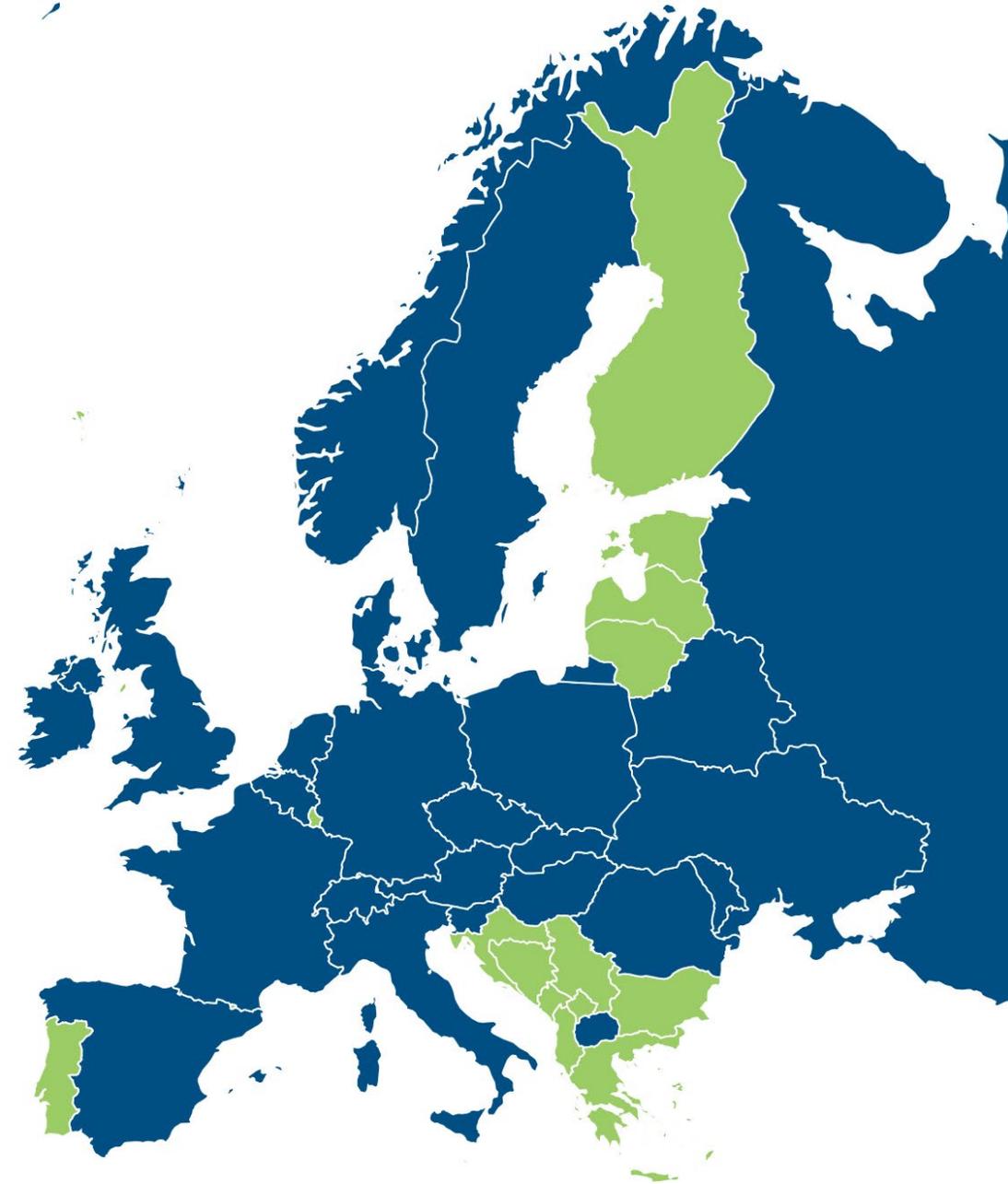
- Aims of the campaign:
 - Challenge the **pharmaceutical industry** to clean up their production
 - Raise awareness amongst **healthcare professionals** about the impact of pharmaceuticals in the environment, encouraging rational prescription practices
 - Help **citizens** to understand the impact of pharmaceuticals in the environment and how to safely dispose of unused medicine
 - Work towards **transnational agreement** to ensure the minimisation of pharmaceuticals in the environment



Find out more at www.saferpharma.org

HCWH EUROPE MEMBERS

- Currently **84 members** in **25 countries** of the WHO European region, including **16 Member States** of the European Union
- Membership of HCWH Europe is based on an organisational **commitment to the mission and goals of HCWH**, and desire to participate fully in helping to achieve them
- Our members include hospitals, healthcare facilities, regional authorities, professional associations, and other NGOs



GGHH MEMBERS AROUND THE WORLD

GGHH has **805** members from **47** countries representing the interests of **25,600** hospitals and health centres

US & Canada

HCWH's implementation arm, Practice Greenhealth has 1,400 Hospital members in the U.S. In Canada, GGHH members include 5 Health Systems and 2 Organisations representing the interest of 878 Hospitals and Health Centres.

Europe

22 hospitals and health centres, 19 health systems and 9 organisations, representing the interest of 6,602 hospitals and health centres.

Asia

92 hospitals and healthcare facilities, 6 health systems and 11 organisations representing the interest of 8,224 hospitals and health centres.

Latin America

447 hospitals and health centres, 34 health systems and 14 organisations, representing the interest of 1,592 hospitals and health centres.

Pacific

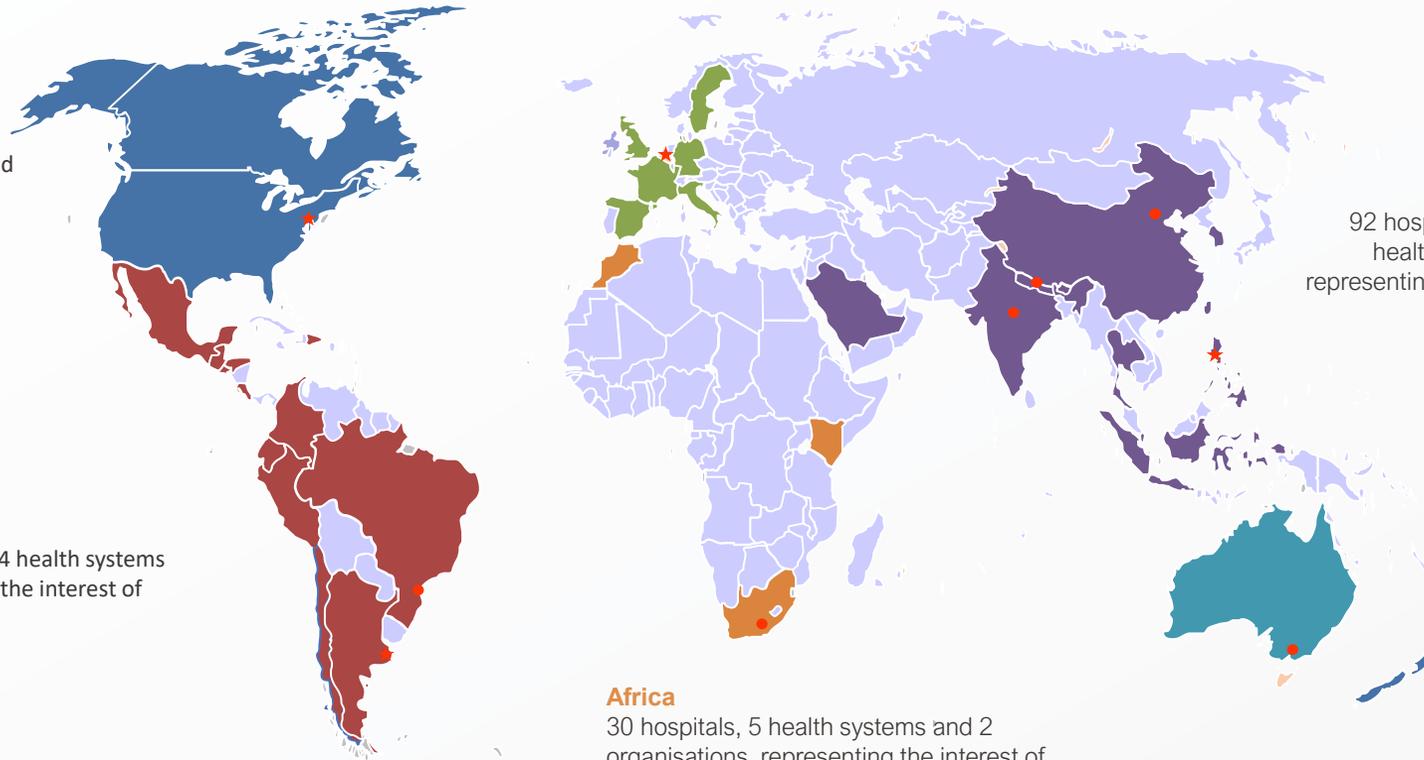
6 hospitals, 19 health systems and 5 organizations, representing the interest of 581 hospitals and health centers.

Africa

30 hospitals, 5 health systems and 2 organisations, representing the interest of 1,453 hospitals and health centres

Global

1 health system and 3 organizations representing the interest of 1,040 hospitals



- ★ HCWH Regional Offices
- Strategic Partners

CLEANMED EUROPE

- Europe's leading conference in sustainable healthcare
- Optimal platform to hear about the latest **industry trends**, discuss **diverse topics**, and **network** with international thought-leaders
- Showcases **cutting-edge sustainable practices** in healthcare
- Ideal platform for healthcare **innovators** to inspire their organisations





- UN City, Copenhagen, 19th – 21st October
- Over **250 participants** from **26 countries** and **5 continents**
- **91 speakers/presenters** from **17 countries** worldwide
- **5 plenary** sessions, **24 parallel** sessions, **21 'market lounge'** presentations
- **9 exhibitors** from a wide range of companies exhibiting products and services aimed at the healthcare sector
- **96%** of participants were **satisfied** with the conference, and **98% would recommend** to a friend



CleanMed

Creating Healing Environments

Europe
2018

Radboudumc
university medical center

Nijmegen | Netherlands
10th – 12th October