

A person in a white lab coat is shown from the back, interacting with a digital interface. The interface consists of a grid of hexagonal icons, each containing a different symbol: a person, a heart with a pulse line, a DNA helix, a globe, and an atom. The person's hands are raised, touching the icons. The background is a dark blue gradient with a grid of hexagons.

**THE
TECHMED
EVENT** | SHAPING A
HEALTHY
FUTURE

**CLOSING THE LOOP: EMBRACING
A CIRCULAR ECONOMY FOR
SUSTAINABLE HEALTHCARE**

REDUCE

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**UNIVERSITY
OF TWENTE.**



THE HARM OF HEALTHCARE (NL)

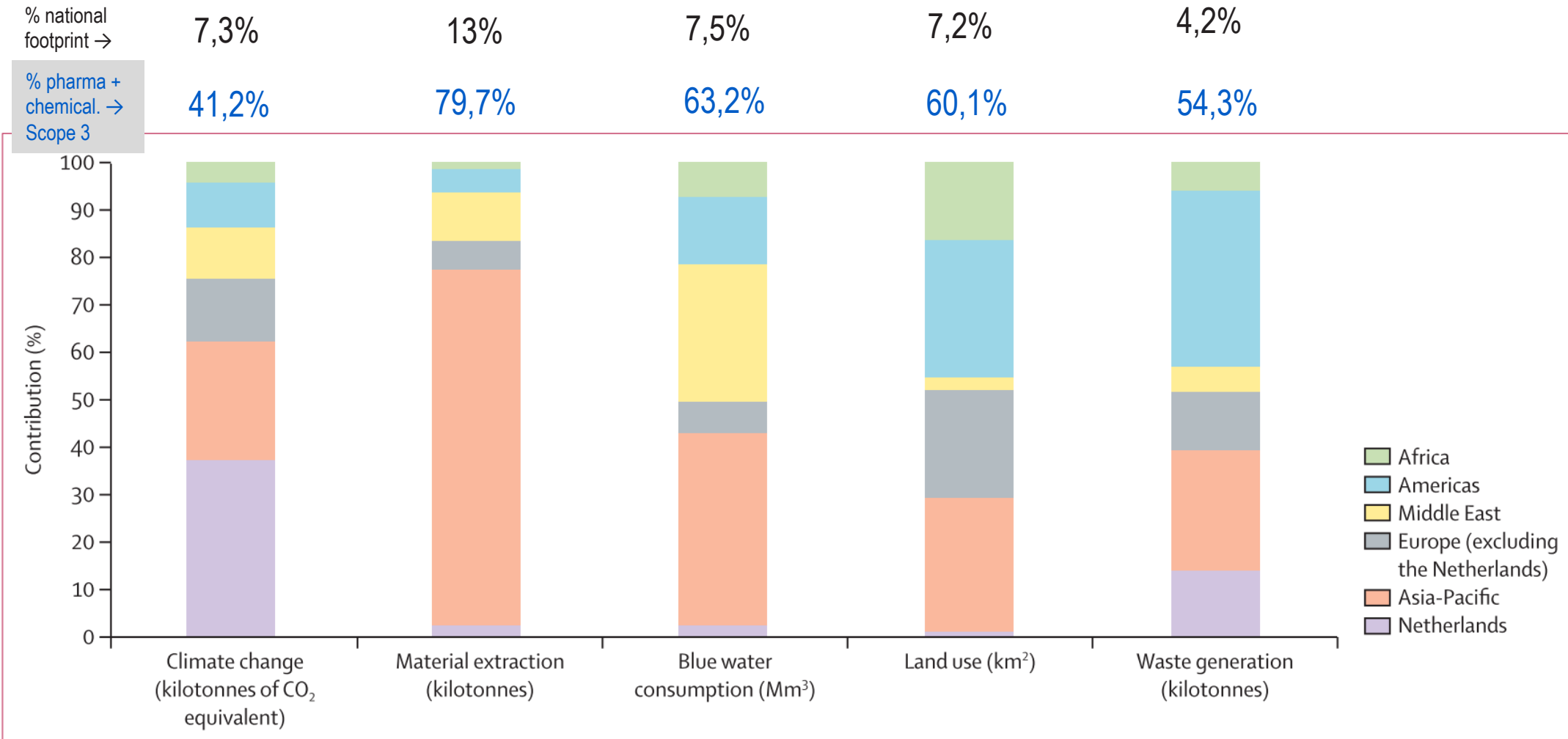


Figure 3: Geography hotspot analysis of the health-care impact footprints

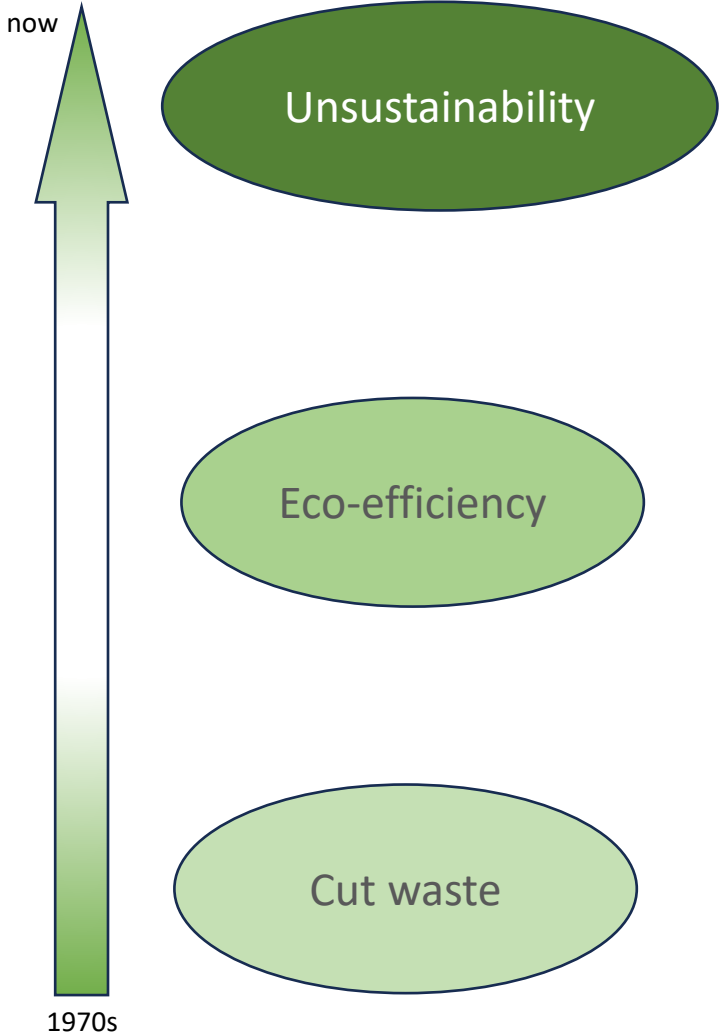
Steenmeijer, Michelle A., João FD Rodrigues, Michiel C. Zijp, and Susanne L. Waaijers-van der Loop. "The environmental impact of the Dutch health-care sector beyond climate change: an input-output analysis." *The Lancet Planetary Health* 6, no. 12 (2022): e949-e957.



Transformational change

- *Healthcare is harmful and unsustainable... globally*
- *'Do less harm' within 'business-as-usual' is also unsustainable*
- *How to develop and embed an intergenerational, planetary perspective?*

Reduce – context



Cardinal aims in healthcare

- (1) quality and experience of patient care
- (2) population health
- (3) quality of work and satisfaction of healthcare providers
- (4) equity and inclusion
- (5) cost reduction
- (6) environmental sustainability

2022

Psychological Explanations and Interventions for Indifference to Greening Hospitals

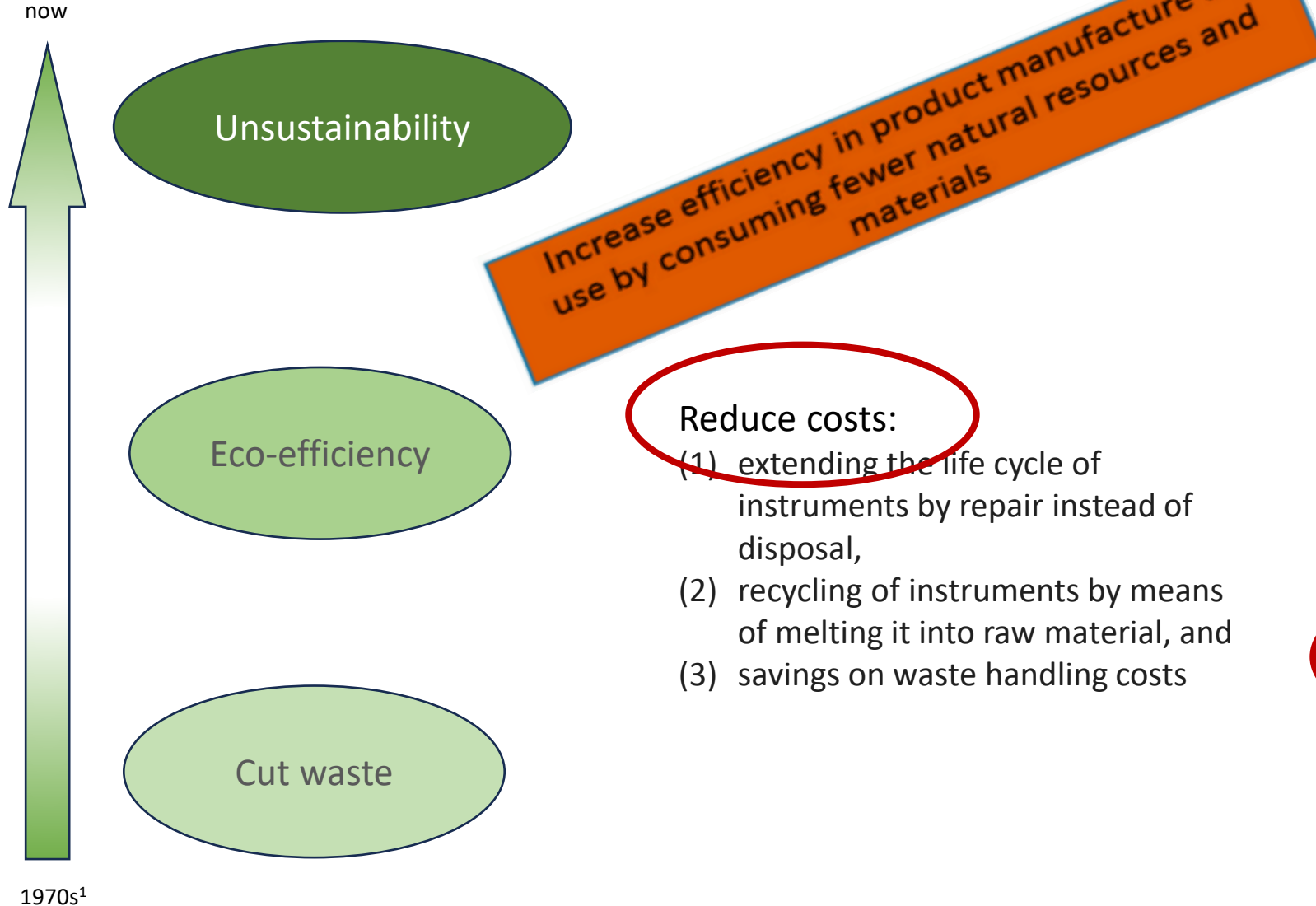
2005

Trends Shaping the Health Professions

1989

Expert Systems	Automated Equipment & Robotics	New Diagnostics	Alternative Therapies	Health Promotion	Health Outcome Measures	Self-Care	Deregulating Doctoring
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Views on 'Reduce'



10 Value Retention Options in CE

	R #	CE concept
Downcycling	R9	Re-mine
	R8	Recover (Energy)
	R7	Re-cycle
Product upgrade	R6	Re-purpose (ReThink)
	R5	Re-manufacture
	R4	Re-furbish
Client/user choices	R3	Repair
	R2	Re-sell/Re-use
	R1	Reduce
	R0	Refuse

What reductions?

Reduce consumption



Avoid use

Change practices – use fewer

Use for longer: re-use yourself, repair (R3, R4)

Reduce harm



Reduce toxicity

Reduce emissions

Reduce waste



Reduce packaging

Change practices – waste fewer products

Improve waste management

Reduce inputs (dematerialise)



Use fewer materials

Reduce % of virgin materials

Use higher % of repurposed or recycled materials (R7, R8)

CARE

MANAGEMENT

PRODUCT

Additional angles on Reduce

The care provision system

IMPROVING CARE PROVIDER OPERATIONAL PERFORMANCE

- Stop poor waste segregation
- Reduce incineration
- Build reverse logistics capability: in house

REDUCING DEMAND BY CHANGING CLINICAL PRACTICES

- Challenge clinical practices
- Challenge commissioning practices
- Challenge regulation

The business system

BETTER PRODUCTS

- Resist planned obsolescence
- Resist the rise of single-use
- Design for repair

NEW AND BETTER SUPPLIERS

- Support innovators
- Build reverse logistics capability: reprocessors
- Consider business models
- Reduce marketing waste
- Supplier development
- Managing upstream supply chain

Essential ingredients for successful reduction

- Multi-faceted efforts:
reducing consumption, materials etc.
- Chain perspective:
regulation – care – business
- Systems view of incentives
- Mobilising suppliers
including the reluctant ones
- Collective action





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