

# Planetary Health & Medication PlanED Prescribing

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## Disclosure of speaker's interests

(Potential) conflicts of interest	None
Possibly relevant relationships with companies for the meeting	None
<ul style="list-style-type: none"><li>• Sponsorship or research money</li><li>• Honorarium or other (financial) compensation</li><li>• Shareholder</li><li>• Another relationship, namely...</li></ul>	Coördinator Erasmus+ project PlanED Prescribing (2023-1- NL01-KA220-HED-000166537)



# Planetary Health

About the connection between major changes in the global environment and how they influence our health  
+ finding ways to protect our health from these global threats

Not only climate change, also biodiversity loss, pollution, and other global changes that can undermine the foundations of our health



# Content

- Why is this important in healthcare/pharmacotherapy?
- How do medicines impact our planet?
- What can you do?
- What do we need for the future?
  
- Specific questions from you?



# Is the topic already of interest?

- Who is already keeping sustainability in mind during daily life/activities?
- Who is already keeping sustainability in mind during working practices?
- Who believes this topic is important for pharmacotherapy?



# Environmental crisis

World Health Organization:

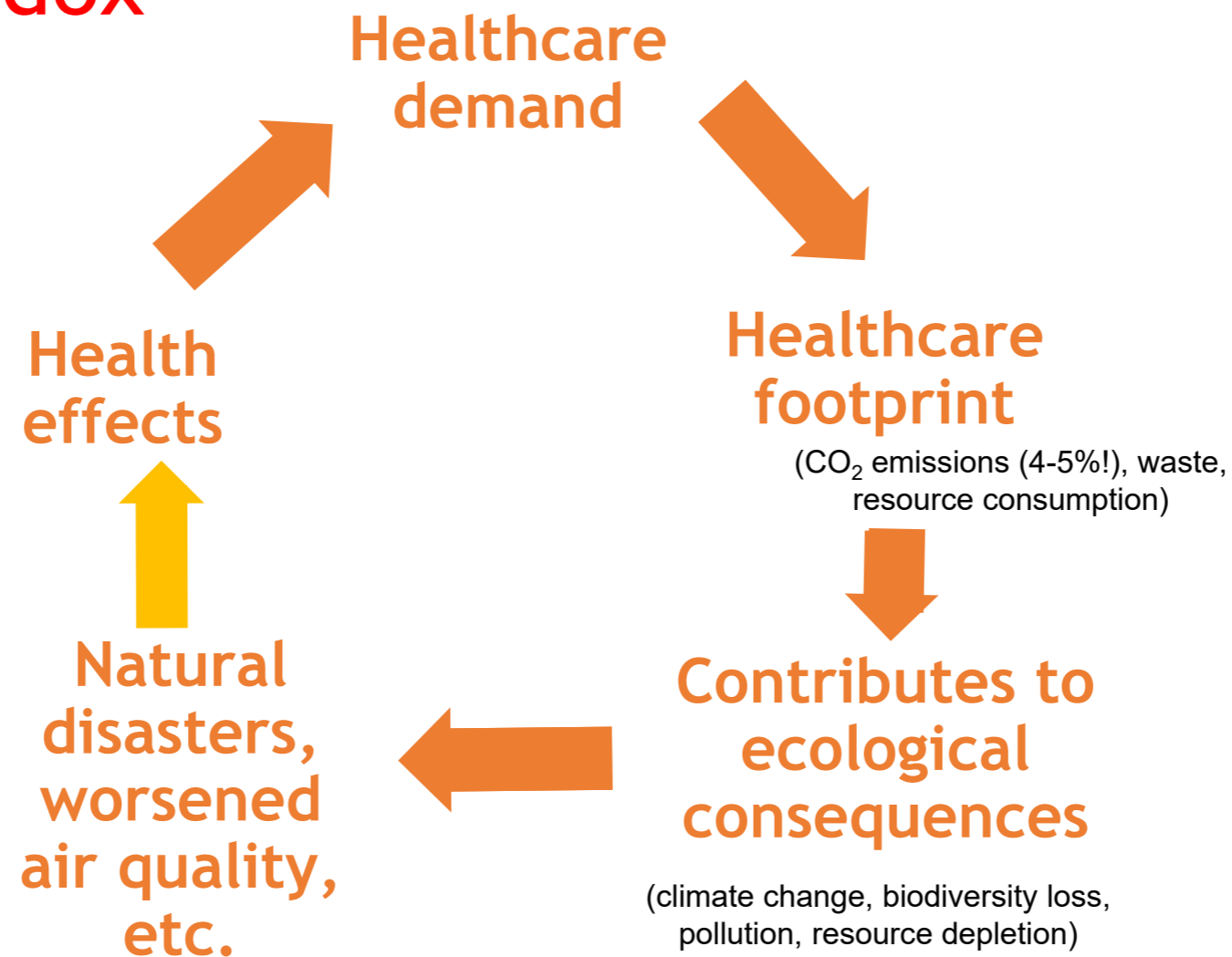
Climate change is the greatest threat to (human) health

Threat to the essential ingredients of health

- Clean air
- Safe drinking water
- Food supply
- Safe shelter



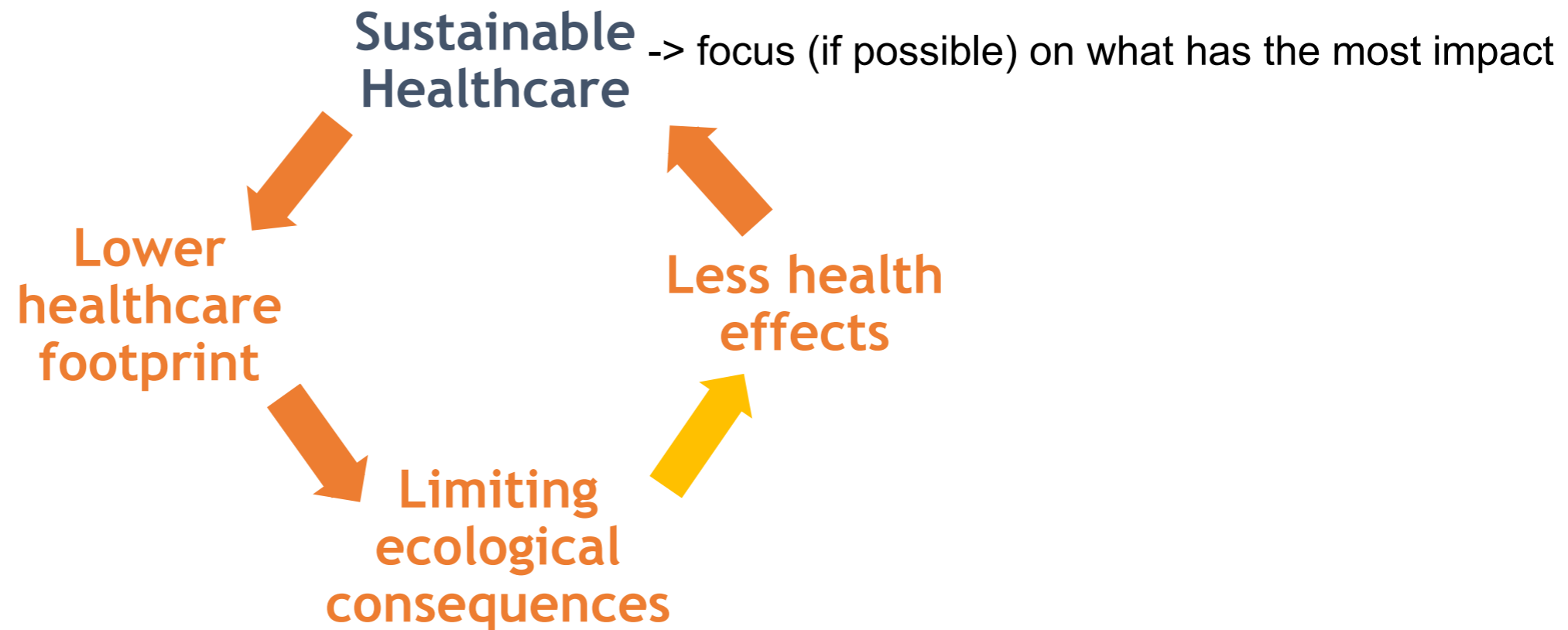
# Health paradox



 The Lancet Countdown report on Health and Climate Change

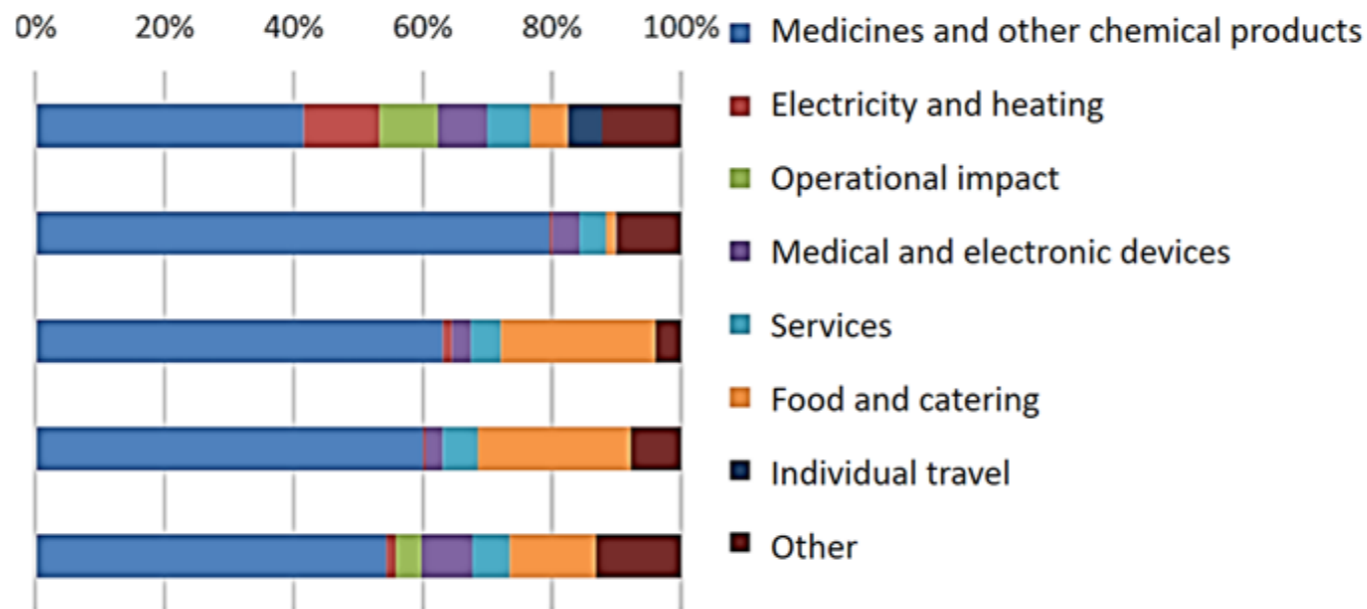


## To reverse the paradox positively



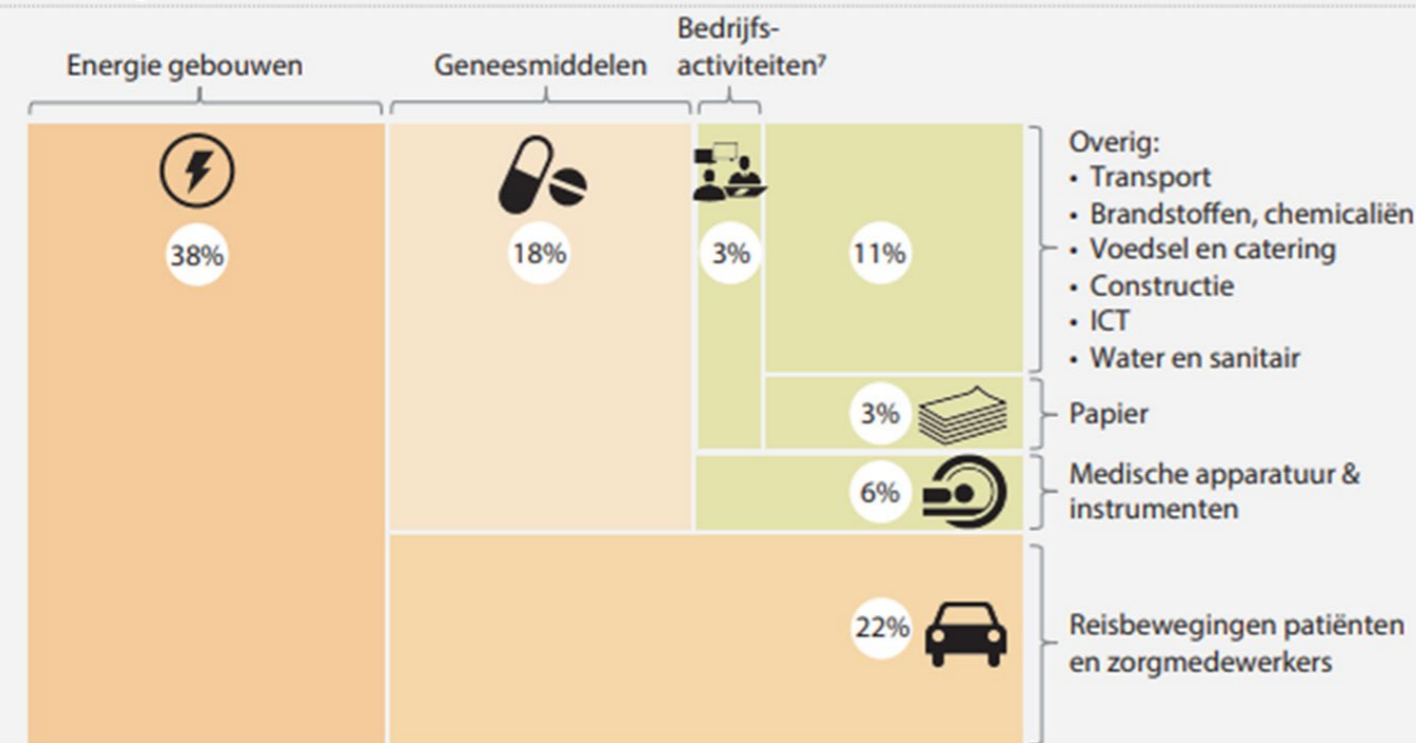
 The Lancet Countdown report on Health and Climate Change





M.A. Steenmeijer et al. (2023); Verduurzaming van de zorgsector - Het effect van de zorgsector op het milieu, Rijksinstituut voor Volksgezondheid en Milieu; Ministerie van Volksgezondheid, Welzijn en Sport; beschikbaar via: [De impact van de zorgsector op het milieu.pdf](#)

**Aandeel in totale CO<sub>2</sub>-voetafdruk gezondheidszorg**  
[Percentage; 100%=11 Mton CO<sub>2</sub>]



	Klimaatimpact kton CO <sub>2</sub> -eq.	Uitgaven mln euro
Energie	41	120
Implantaten	12	26
Mobiliteit	11	3
Disposables	11	31
Diagnostiek	10	41
ICT	7	17
Huisvesting	6	34
Medische apparatuur	5	34
Voeding	4	6
Afvalverwerking	0,7	1
Reusables	0,6	4
Kantoor	0,5	9
Textiel	0,4	3


CE Delft (september 2018): Impactanalyse MVI UMC Utrecht

Gupta Strategists (mei 2019): Een stuur voor de transitie naar duurzame gezondheidszorg





# Medication in water

- How many kilograms minimally end up in Dutch surface water annually?
  - At least 190.000 kg (38  !)
  - Globally (258 rivers; 104 countries) > 25% of samples with risks
- ➔ Impact on plants and animals in the water



- NSAIDs:
  - Tissue damage, affected behavior and reproduction
- Psychotropics
  - Affected behavior, endocrine processes and reproduction
- Hormonal contraceptives (especially estrogens)
  - Hormone disruptions, reduced reproduction

➔ Negative changes in ecosystems



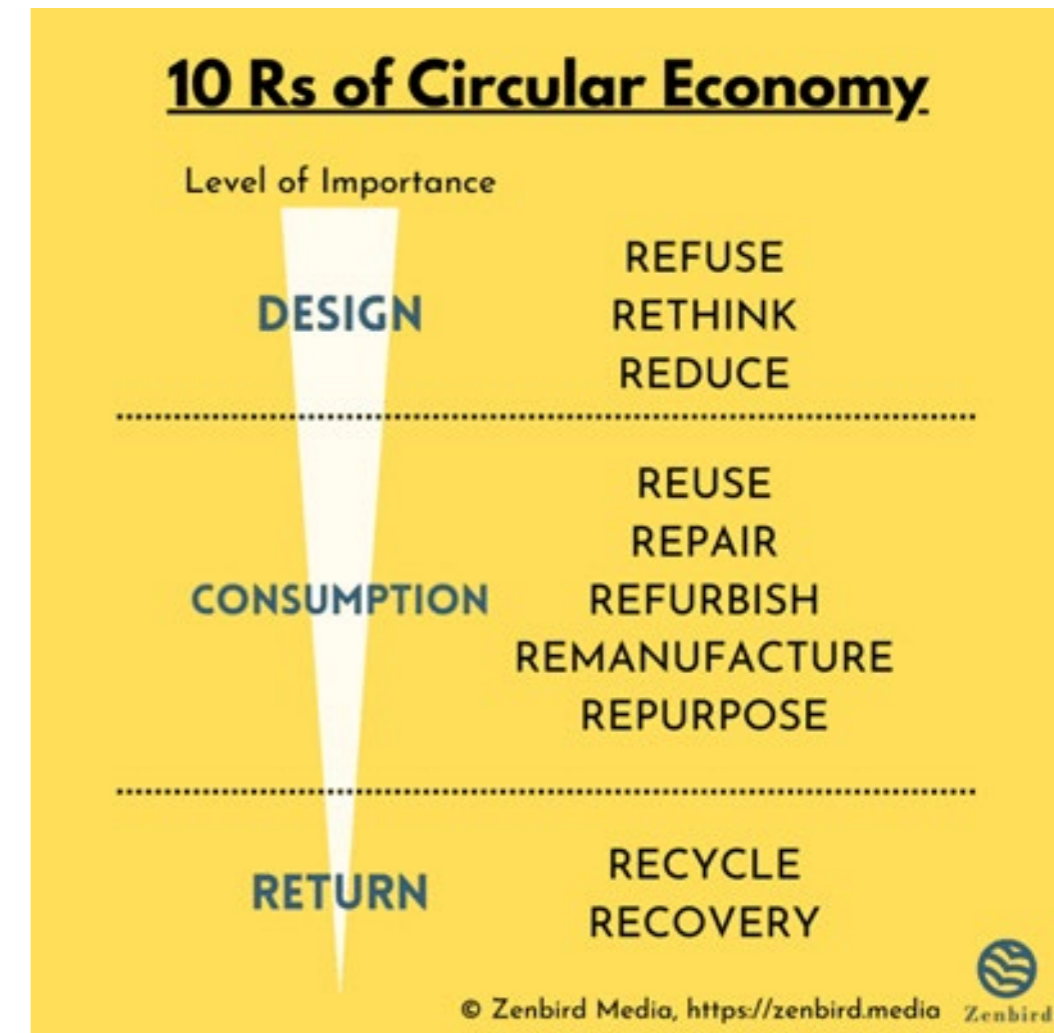
# Planetary Health and prescribing

- How can the environmental impact of medication be reduced?
- General advice
- Including sustainability in argumentation for therapy choices  
*In addition to effectiveness, safety, costs, etc.*



# General advice

- No unnecessary medication
- Reduce waste
- Reduce environmental effects





# General advice

- No unnecessary medication



- Reduce waste



- Reduce environmental effects



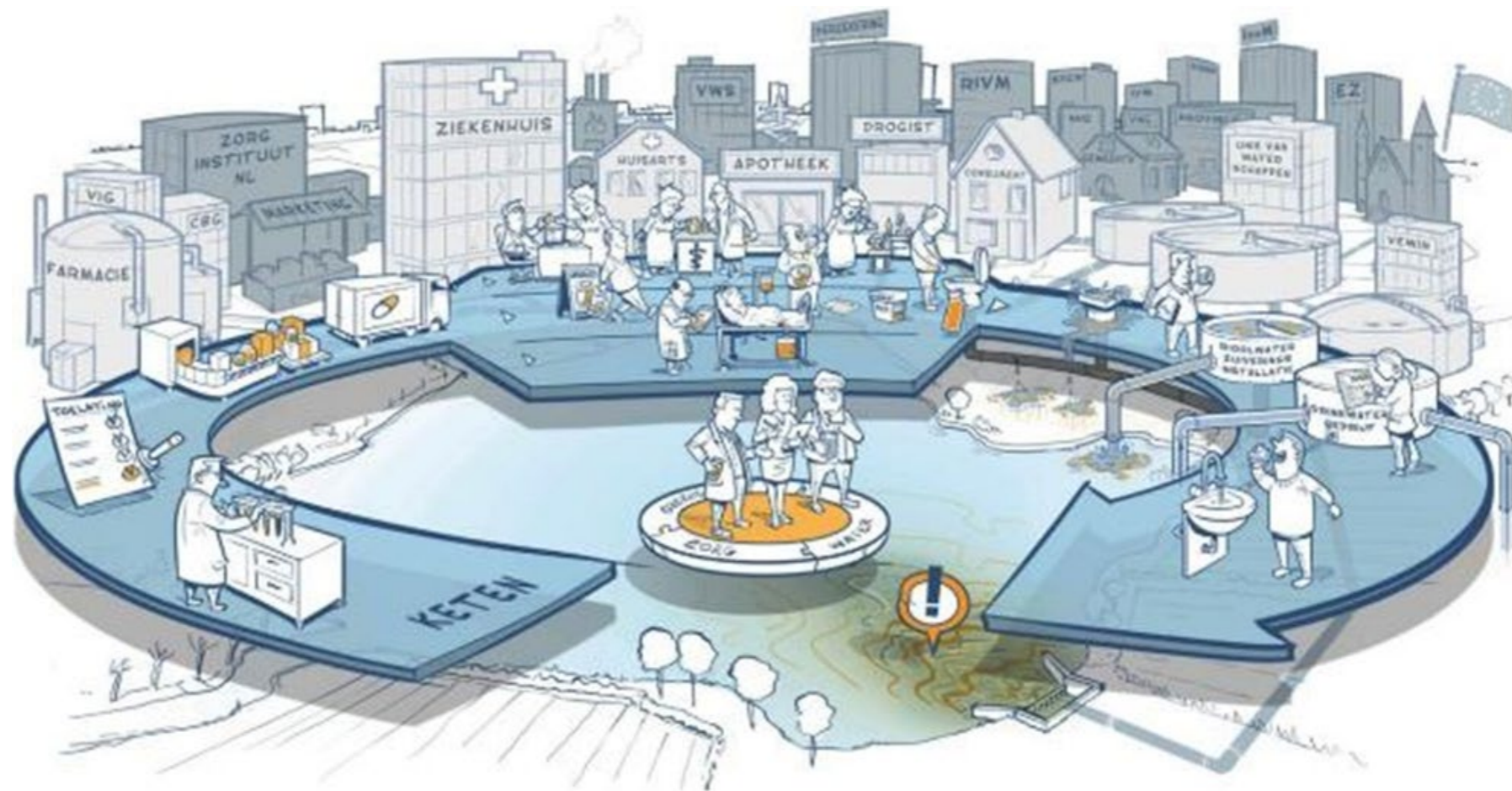


# Planetary Health and prescribing

- How can the environmental impact of medication be reduced?
- General advice
- Including sustainability in argumentation for therapy choices  
*In addition to effectiveness, safety, costs, etc.*



# Total environmental impact of medicines



Medicijnresten uit water. (2020, 26 oktober). Jam Visual Thinking.

[www.jamvisualthinking.com](http://www.jamvisualthinking.com)







# Total environmental impact of medicines

- Indirect effects  
*Development, production, transport, use and waste process*
- Direct effects  
*Direct effect of medicines into the environment*
- Major lack of information



# Necessary steps for implementation in practice

- **Consensus Building:** Essential criteria of total impact
- **Information Assessment:** Evaluate existing data and ensure missing information becomes accessible
- **Resource Compilation:** Compile available information to create educational resources



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PlanED  
Prescribing

# PlanED Prescribing

- Taking essential steps for adequate integration of Planetary Health into pharmacotherapy education
- Creating new methods, materials and approaches to integrate this into education





# Partners and associate partners

- Amsterdam University Medical Center
- Dutch National Institute for Public Health and the Environment (RIVM)
- Inholland University of Applied Sciences
- Maastricht University
- Radboud University Medical Center
- Transilvania University of Braşov
- University Medical Center Groningen
- University of Bologna
- University of Lisbon
- University of Zagreb
- WHO Europe
- University of Oxford
- University Hospital of Limoges
- Dutch Society for Clinical Pharmacology
- EACPT
- ESMO - Climate Change Task Force
- NFU - working group Green Deal Sustainable Healthcare 3.0 'Medication'
- CO2-assistant
- RECIPE
- Northwest Academy Alkmaar





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PlanED  
Prescribing

From the PlanED Prescribing Consortium  
May 30, 2024

To the European Commission

CC: European Medicines Agency

### **Recommendations to improve environmental sustainability in EU pharmaceutical legislation**

Dear European Commission,

I am writing on behalf of the Consortium of the Erasmus+ project 'Planetary Health Education in Prescribing' (PlanED Prescribing; a collaboration between eight European medical schools and the Dutch National Institute for Public Health and the Environment (RIVM), with advisory support from, among others, the European Association for Clinical Pharmacology and Therapeutics) to express our concern about the way in which environmental sustainability is included in the ongoing reform of the EU pharmaceutical legislation.





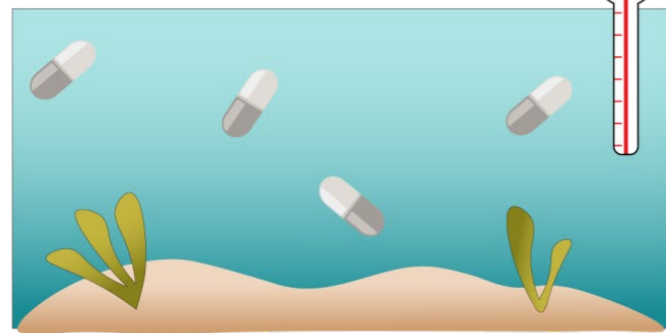
# Planetary Health in education

- Start to teach basic principles
- Integrate in current curriculum



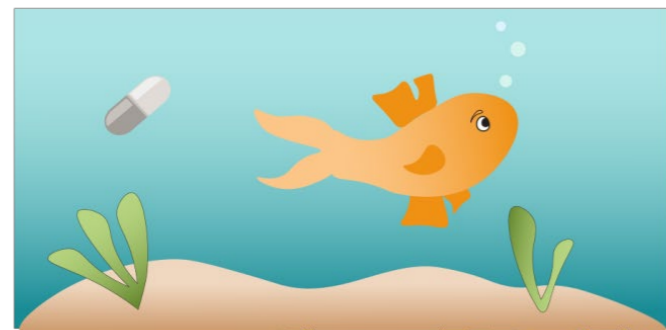
# Risk quotient (RQ)

Measured/estimated concentration  
In the environment



RQ > 1  
potentially ecotoxic

= RQ



RQ < 1  
probably not ecotoxic

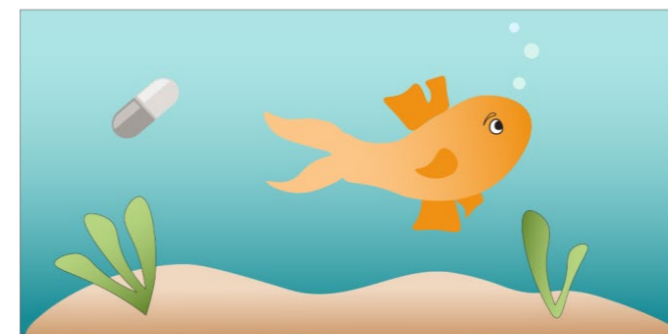
'No effect' concentration  
Research setting



Concentration in the  
environment



RQ > 1



'No effect' concentration



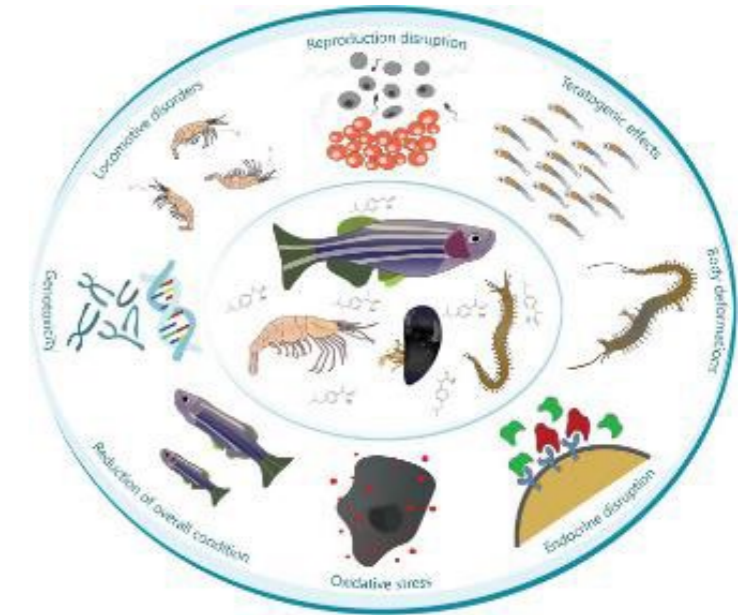
-> May differ per country/region







# Pain medication



- NSAIDs have negative impact on aquatic life
  - Paracetamol poses a smaller risk to aquatic life (breaks down fast and less effect)
- > Extra reason to be cautious with NSAIDs and always recommend PCM first



# Take home

- Planetary Health is important within pharmacotherapy
- Medicines can impact the environment in various ways
- You can reduce this impact
  - General advices (10 R's)
  - Take this into account for prescribing practices/education
  - Spread the word!
  
- Questions?





# Other questions or ideas?

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[https://www.prescribingeducation.eu/planed\\_prescribing/](https://www.prescribingeducation.eu/planed_prescribing/)

