

Economic Impact of Medication Non-Adherence and Medication Waste

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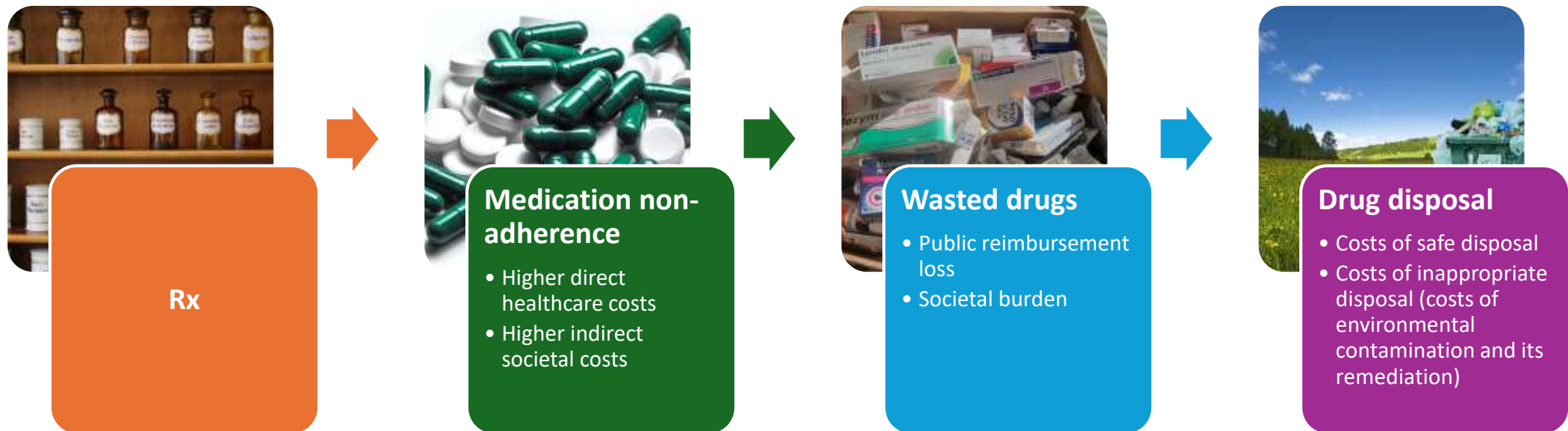


Prevalence of medication non-adherence



of patients
worldwide do not
adhere to their
prescribed chronic
medications

Economic consequences of medication non-adherence and medication waste



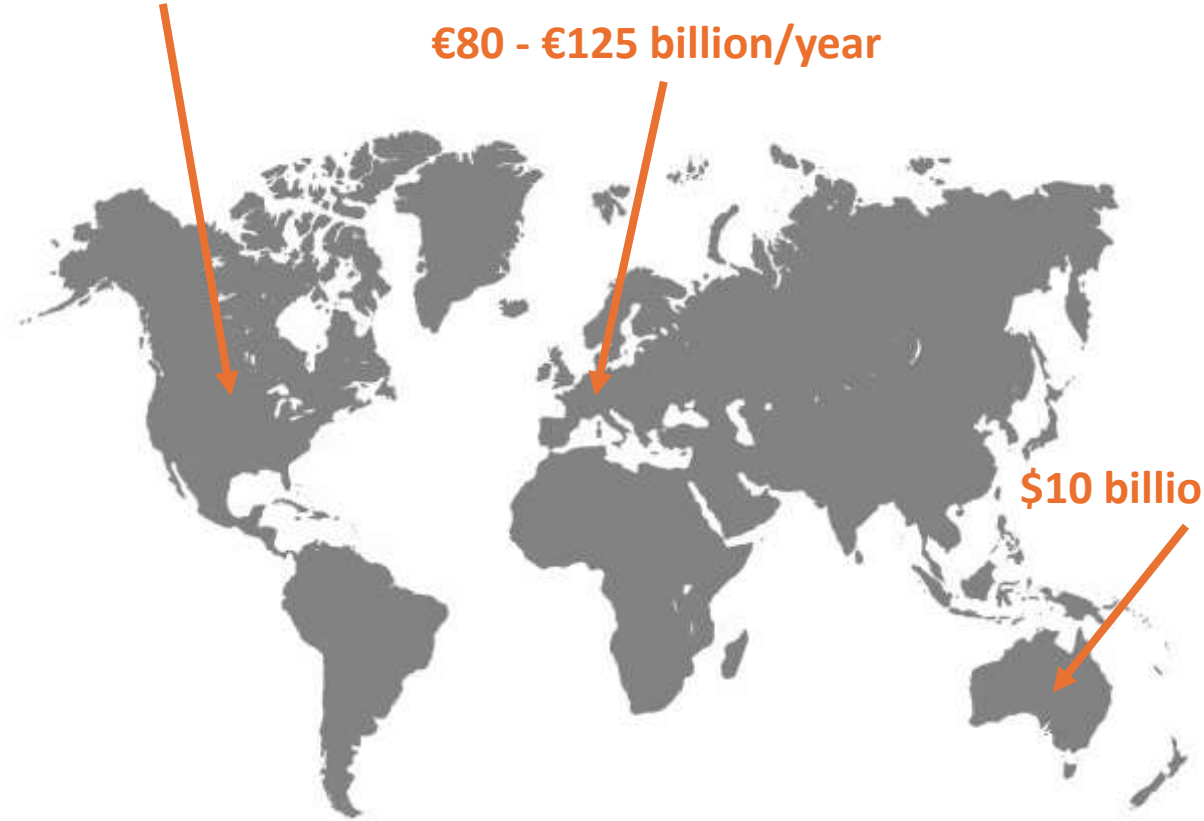
What does non-adherence cost to healthcare systems?

- Medication non-adherence is associated with higher total healthcare costs
- The actual impact depends on several factors, including disease area and drug characteristics

\$100-\$300 billion/year

€80 - €125 billion/year

\$10 billion/year



Indirect societal costs of non-adherence

- The economic burden of reduced productivity resulting from medication non-adherence is approximately 2.3 times greater than the associated additional healthcare costs
- Adherent employees spend 1.7 to 7.1 fewer days per year on sick leave



Lower adherence ≠ Lower drug costs

- A major cause of medication wastage (50%) was found to be medication non-adherence
- The gross annual cost of prescription medicines waste is £300 million each year in England -> £110 million worth of medicines are returned to pharmacies for disposal
- Annual economic value of pharmaceutical waste returned to Finnish community pharmacies is estimated to be €81 million a year
- Reimbursement rates for medicines vary across countries, which affects the public financial loss associated with medications non-adherence

Societal cost of pharmaceutical waste

- Estimated economic value paid by society for wasted medicines
 - Finland: €7.7 per capita/year
 - Vienna, Austria: €21 per capita/year
- In Finland, it is estimated that society covers 53% of the cost of unused prescription medicines (returned to community pharmacies)

Direct drug disposal costs

- In France's Cyclamed program, which manages pharmacy-based take-back of unused medications
 - Collects 62 % of the unused medication -> 10,500 tonnes/year
 - Total costs: ~€10 million/year
 - Waste disposal (250 EUR/tonne) including the incineration cost (120 EUR/tonne), storage and transport
- The cost of pharmaceutical waste disposal is ~£450 per tonne in the UK and \$790 per tonne in the USA

Costs of inappropriate disposal

- Unused or expired medications are frequently flushed (3-30%) or thrown away (16-80%), contaminating household waste and wastewater systems
- EU has recently updated its Urban Wastewater Treatment Directive, requiring upgrades to treatment plants to remove micro-pollutants like pharmaceutical residues
 - The European Commission estimates that this will cost approximately €1.2 billion annually, with the pharmaceutical and cosmetics industries expected to be responsible for at least 80% of the total cost
- Trace pharmaceuticals detected in water sources and soil can disrupt ecosystems and contribute to the development of antimicrobial resistance, which poses a significant public health risk and carries substantial economic consequences

Key takeaways

- Medication non-adherence affects 50% of patients globally
- Non-adherence results in large-scale medication waste
- Disposal of unused drugs results in significant costs
- Inappropriate disposal harms the environment and public health
- Improving adherence and consequently reducing waste is a strategic priority
 - Triple value for patients, health systems, and the environment