

Minimising Pharmaceuticals in the Environment



What's the Problem?

Pharmaceuticals enter the environment (water, soil, sludge, & organisms) at all stages of their life cycle

Pharmaceuticals can end up in drinking water and accumulate in vegetables and fish

More than 600 pharmaceuticals have been found in the environment worldwide

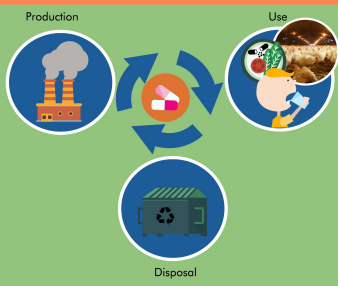
...raising concern about the impact they can have on humans

A Problem by Design: Active Pharmaceutical Ingredients (APIs)

APIs are designed to be biologically active and resistant to metabolic degradation, in order to be effective as a drug

APIs in the environment can cause reproductive failure, growth inhibition, behavioural changes and population collapse

Minimisation must occur across the entire life cycle!



Solutions Along the Life Cycle: Minimising Release

Production	Use	Disposal
Manufacturers/Producers	Health Institutions/Professionals	Health Institutions/Professionals
<p>Must be held accountable and responsible for the products they place on the market</p> <p>And they must implement prevention and mitigation systems for spills & release</p>	<p>We need improved prescription practices</p> <p>Rational doses & appropriate pack sizes</p> <p>Promote healthy lifestyle choices!</p> <p>Raise public awareness about the appropriate use of medication</p>	<p>Collect the urine of specific patient groups for separate treatment</p> <p>These patients should also do this at home</p> <p>Implement advanced wastewater treatment systems</p> <p>Raise Awareness!</p>
Companies/Suppliers	Patients	Patients
<p>Should comply with all environmental requirements</p> <p>There needs to be more stringent:</p> <p>Permits</p> <p>Registrations</p> <p>Licenses</p> <p>Restrictions!</p> <p>Sustainable Procurement Initiatives</p>	<p>Educate patients about the harms of pharmaceuticals in the environment</p> <p>Provide collection services</p> <p>Healthy Lifestyle</p> <p>Should use medication rationally</p> <p>Finish doctor's prescriptions!</p> <p>Food Producers</p>	<p>...about safe disposal practices, and nearby disposal locations.</p> <p>Responsible Disposal</p> <p>DO NOT accumulate unfinished prescriptions at home</p> <p>DO return excess or expired medication to disposal location</p> <p>DO NOT dispose in toilet or sink</p>
Transparency	Food Producers	Food Producers
<p>Companies need to know their supply chains</p> <p>ORGANIC FARMING</p> <p>Regulate pharmaceutical contaminants in fertilisers</p> <p>& Regulate the use of growth promoters</p>	<p>Need to minimise use of pharmaceuticals in agriculture</p> <p>Should ensure responsible disposal</p> <p>We need improved water treatment technologies for large-scale agro production</p> <p>DO NOT release pharmaceuticals into rivers!</p>	

Transnational laws are needed to ensure minimisation of pharmaceuticals in the environment!