

FIP STATEMENT OF POLICY

Environmental sustainability within pharmacy

Background

Both the practice of pharmacy and medicines themselves have negative impacts on the environment through greenhouse gas (GHG) emissions and pollution which contribute to climate change and ecological damage, both of which threaten human health. Given the role of pharmacy professionals in supporting health, these issues present the profession with ongoing challenges and an imperative to address environmental sustainability.

Environmental sustainability in pharmacy involves –

- i) mitigation measures which include the reduction of pharmaceutical pollution and contributions to climate change and,
- ii) adaptation measures that support the health of people and communities impacted by climate change and ecological crises, now and in the future. The optimal use of medicines in disease prevention and treatment can mitigate the environmental footprint of healthcare, by avoiding unnecessary, ineffective, or more carbon-intensive treatments and procedures. Moreover, secure, and equitable access to medicines and to pharmacy services must be prioritised as part of any effort to improve environmental sustainability.

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Through equitable and environmentally sustainable practice, pharmacy professionals can support planetary health (the health of human civilisation and the natural systems on which it depends).

Climate change poses diverse, immediate, and long-term threats to human health. Global health systems have a significant climate impact and medicines account for a significant portion of health system-related GHG emissions in every country. Pharmaceutical pollution causes damage to the environment and ecosystem degradation with downstream impacts on patient care e.g., antimicrobial pollution causing antimicrobial resistance (AMR). Pharmacists, as medicines experts, are well-positioned and ethically responsible to mitigate climate and pollution risks to health throughout the pharmaceutical supply chain and across the spectrum of medication management.

In addition, the pharmacy profession must address climate adaptation to allow for the sustainability of pharmacy services in changing environments; these roles include disaster preparedness and support of patients already experiencing or at highest risk of the impacts of climate change on health, due to co-morbidities or social or geographical factors.



An FIP policy statement published in 2016 examined the importance of reducing the environmental impact of pharmaceuticals and activities associated with the research, development, production, distribution and dispensing of medicines. The 2016 statement is an excellent resource for pharmaceutical pollution related recommendations. However, this new 2023 statement expands the scope of environmental sustainability to additionally discuss climate change recommendations within pharmacy sectors. The timeliness of this update is particularly critical as the Intergovernmental Panel on Climate Change (IPCC) AR6 report 2023 has outlined the urgency and necessity of immediate action to reduce GHG emissions and achieve net zero carbon dioxide emissions this decade to limit global warming to 1.5°C or 2°C above pre-industrial levels.

This document outlines the roles of pharmacy professionals, their associations, and individual sectors of the profession, listing key actions. Each section is separated into two areas of action: mitigation and adaptation.

The first area of each section focuses on the roles of pharmacy in the mitigation of pharmaceutical pollution and climate change. Areas of involvement within climate mitigation are most relevant in countries with larger carbon footprints per capita and involve the reduction the GHG emissions associated with: medicines manufacture, distribution and use; the optimisation of the use of medicines; and the enhancement of the roles of pharmacists in preventive health care.

Areas of involvement in mitigation of pharmaceutical pollution include the reduction of medicine waste, the appropriate disposal of unused medicines, the understanding of the mechanisms by which active pharmaceutical ingredients (APIs) reach ecosystems, and the understanding of the health effects of pharmaceutical pollution.

The second area of each section discusses the roles of the pharmacy profession in climate adaptation in all countries, but especially in low-income and climate-vulnerable communities. Areas of involvement within climate adaptation include the strengthening of medication management and healthcare system resilience to climate hazards (e.g., extreme heat waves and natural disasters).

Pharmacy associations

Mitigation

As leaders of the profession, pharmacy associations should:

1. Publicly recognise the scale and importance of the climate and ecological emergency by issuing a declaration statement and discourage engagement with industries that do not promote environmental sustainability;
2. Consider publishing environmental sustainability recommendations for all pharmacies in collaboration with sustainable healthcare or pharmacy organisations;
3. Promote consideration of environmental sustainability as part of all efforts to improve healthcare quality and promote the roles of pharmacists in improving healthcare sustainability;
4. Provide education and advocacy concerning the reduction of pharmaceutical and all pollution associated with health care (e.g., single-use plastics);
5. Promote consumer- and practice-friendly pharmaceutical-waste disposal, including supporting take-back programmes and legislation that do not



- place the financial burden on pharmacy practices;
6. Support advocacy initiatives to raise awareness of the potential health impacts of climate emergency and socioeconomic inequalities.

Adaptation

As leaders of the profession, pharmacy associations should:

1. Provide guidance on extreme weather events and natural disaster preparedness while encouraging pharmacies to create disaster plan toolkits, including plans for communication, medicine shortages, and safeguarding of vulnerable patients;
2. Advocate the expansion of the role of pharmacists within public health, including the distribution of clean water during water shortages, and the provision of public health information regarding heat waves and natural disasters;
3. Provide education on how pharmacists can advise on medication management during heat waves, (e.g., the management of medicines that can accumulate due to acute kidney injury as a result of dehydration);
4. Provide education on how pharmacists can reduce the impact of air and water pollution on health.

Hospital pharmacy

Mitigation

Hospital pharmacy professionals should:

1. Where possible, collaborate with the healthcare team, in multidisciplinary committees where applicable, to raise awareness of the environmental classifications of medicines and other products (e.g., high power disinfectants, medical devices and dressings) in their practices;
2. Work with healthcare teams and patients to optimise respiratory care for patients and review inhaler prescribing guidelines to promote lower carbon alternatives (e.g., dry powder inhalers);
3. Work with anaesthesiology teams to optimise care within anaesthesia (e.g., reducing desflurane use to <5% of total hospital use or eliminating it altogether and reducing piped nitrous oxide and mixed nitrous oxide wastage);
4. Within distribution and dispensing processes, consider reviewing the transfer process of medicines from admission onwards to reduce unnecessary waste;
5. Consider reusable cytotoxic waste bins in aseptic units and sharps bins in pharmacies to reduce carbon impacts in pharmaceutical waste management processes;
6. Closely manage drug inventories with ward-based clinicians and revise standard operating procedures in pharmacy to prevent overstocking and wastage from drugs expiring;
7. Limit the use of single-use medical devices wherever possible.

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Adaptation

Hospitals pharmacy professionals should:

1. Regularly update hospital pharmacy disaster plans for emergencies and provide regular training or drills to hospital pharmacists on new disaster plan procedures relevant to worsening natural disasters and extreme weather events;



2. Provide extended medication monitoring of at-risk patients on wards during heat waves;
3. Ensure minima and maxima of inventory management can manage unexpected medicine shortage challenges related to worsening natural disasters and extreme weather events;
4. Consider appropriate stock management within pharmacies and wards during heat waves as raised temperatures may accelerate medicines degradation.

Community pharmacy

Mitigation

Community pharmacy professionals should:

1. Advise patients on best practices for the use and disposal of medicines (e.g., returning all unused medicines or partially completed medication courses to community pharmacies for disposal);
2. Recognise how non-adherence to prescribed regimens contributes to the production of medicines waste and implement strategies to support adherence;
3. Consider enrolling community pharmacies in recycling programmes, where present;
4. Consider operational changes within pharmacies that reduce carbon footprint, such as using renewable energy sources or replacing paper prescriptions with digital dispensing;
5. Where possible, collaborate with healthcare colleagues and patients to optimise medicines use, and support deprescribing where clinically appropriate.

Adaptation

Community pharmacy professionals should:

1. Regularly update community pharmacy disaster plans for emergencies and provide regular training or drills to staff on new disaster plan procedures relevant to worsening natural disasters and extreme weather events;
2. Ensure minima and maxima of inventory management can manage unexpected medicines shortage challenges related to worsening natural disasters and extreme weather events;
3. Provide extended medication monitoring of at-risk patients in community during high-risk events, such as during heat waves or periods of hazardous air quality.

Pharmacy regulators

*This section includes statements targeted towards medication regulatory bodies and pharmacy licensing authorities.

Mitigation

Pharmacy regulators should:

1. Consider implementing a mandatory assessment of environmental risks of all medical products used within a country;
2. Ensure mandatory assessment documents are updated on a regular basis based on existing evidence;
3. Collaborate with other stakeholders to build a standardised data collection at national level about GHG emissions and waste from all sectors of pharmacy while creating objectives to reduce the environmental impact of medicines across their lifecycle;



4. Embed environmental sustainability objectives within the curricula of pharmacy schools via accreditation processes, while also promoting continuous professional development within environmental sustainability;
5. Create programmes to accredit pharmacies on their environmental sustainability status while also mandating recycling facilities in all pharmacies.

Adaptation

Pharmacy regulators should:

1. Implement mandatory training on disaster preparation, and on disaster preparation toolkit creation within community and hospital pharmacies;
2. Implement a national assessment of climate risks in collaboration with other stakeholders and implement key regulation in strengthening existing pharmacy physical and electronic infrastructure to climate hazards.

Industrial pharmacy

*This section includes statements targeted towards pharmaceutical companies and pharmacy professionals working within these companies.

Mitigation

The pharmaceutical industry should:

1. Publish transparent and detailed plans towards net zero, including calculations of current and projected carbon emissions, with annual audits to ensure compliance;
2. Develop waste management plans (e.g., recycling schemes for manufactured products) as a strategic move towards a circular economy;
3. Collaborate with pharmaceutical suppliers to measure the levels of certain active pharmaceutical ingredients (APIs) in wastewater in order to set meaningful thresholds for reduction;
4. Consider attaining recognised certification to demonstrate high standards of social and environmental performance, transparency and accountability;
5. Implement green chemistry and laboratory practices in all research and manufacturing processes.

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Adaptation

The pharmaceutical industry should:

1. Take steps to improve resilience of the supply chain and improve timely access to quality and affordable medicines particularly in preparation for disaster scenarios.

Procurement

*This section includes statements targeted towards pharmacy professionals working within procurement in all sectors.

Mitigation

Procurers should:

1. Benchmark and establish sustainable procurement criteria regionally or nationally and harmonise these criteria across regions;
2. Centralise processes in procurement, supply chain, and logistics to favour the purchase of medicines, medical devices and dressings with lower environmental impacts, while prioritising access for patients;



3. Recognise the need to avoid active pharmaceutical ingredients (APIs) known to accumulate in the environment in the sustainable procurement criteria. (Procurement officers can ask companies to incorporate transparency mechanisms to make pharmaceutical supply chains more transparent in providing data required.)

Adaptation

Procurers should:

1. Prioritise procurement from local manufacturers where possible to increase access to treatment, especially in foresight of health emergencies.

Academic pharmacy

Mitigation

Academic pharmacists and educators should:

1. Ensure that future pharmacists are aware of and able to communicate the links between planetary and human health, and of the contributions of the healthcare system and pharmaceutical industry to environmental degradation;
2. Provide education on environmentally sustainable pharmacy practice and key aspects of health care decarbonisation;
3. Engage students and faculty members in interprofessional education service and research collaborations to advance environmental sustainability in health care.

Adaptation

Academic pharmacists and educators should:

1. Provide education on environmental determinants of health, including the impacts of climate change and environmental degradation on health outcomes and delivery of care and their exacerbation of underlying health disparities;
2. Promote just and equitable adaptation strategies through personal and student involvement in interprofessional research, policy development, advocacy and through patient education.

Public health and population health

Mitigation

Those working in public and population health should:

1. Run campaigns to encourage patients to return leftover or unused medicines to their local pharmacies for appropriate disposal;
2. Run climate change and health awareness campaigns and increase pharmacy-specific involvement in climate change and health impact research;
3. Increase opportunities for structured and safe disposal of needles or other equipment within substance use reduction programmes to reduce pollution;
4. Promote health screenings, immunisation campaigns and other preventive care measures to reduce overall healthcare utilisation and associated carbon emissions;
5. Promote plant-based diets as they reduce risks of non-communicable diseases and promote planetary health.



Adaptation

Those working in public and population health should:

1. Develop strategies to promote population health and minimise the impacts of climate and environmental health hazards on disease trends, particularly for those at highest risk of adverse outcomes.

Military and emergency pharmacy

Mitigation

Those working in military and emergency pharmacy should:

1. Advocate climate change mitigation in all sectors in order to reduce impact on natural disasters and humanitarian needs.

Adaptation

Those working in military and emergency pharmacy should:

1. During global health emergency work, consider methods to increase pharmacy resilience to future natural disasters;
2. Engage community partners and stakeholders and apply culture and context specific approaches when building adaptation-strategies to climate change;
3. Promote pharmacists' roles in all emergency planning, response, and recovery efforts to manage the impacts of extreme weather events and other disasters;
4. Promote global pharmaceutical supply-chain resilience to the increasing frequency and severity of extreme weather events and other disasters;
5. Understand current trends in climate change health impacts to provide foresight on number of supplies needed (i.e. changes in malaria patterns).

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Conclusion

This FIP statement considers environmental sustainability within the impact of medicines on both climate change and pollution, while also identifying opportunities for sustainable pharmacy services. It is grounded in the 2016 FIP Green Pharmacy Practice statement on pharmaceutical pollution and includes urgent calls for climate change action within each pharmacy sector.

The statement highlights the responsibility of every pharmacy sector to safeguard health through mitigation of greenhouse gas emissions and pharmaceutical pollution. In addition, every pharmacy sector should consider adaptive measures to build climate resilience, especially those in countries and communities most vulnerable to the impacts of climate change.

This statement supports the urgent and necessary uptake of new and strengthened environmental mitigation and adaptation policies in regional, national and local pharmacy settings, in line with established United Nations Sustainable Development Goals.



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This Statement references the following FIP Statements and documents:	: See list of references to FIP documents below.

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