The Standing Committee of European Doctors (CPME) represents national medical associations across Europe. We are committed to contributing the medical profession's point of view to EU and European policy-making through pro-active cooperation on a wide range of health and healthcare related issues.

Policy on climate change and health

Healthcare sector's action has become a necessary and immediate priority

European doctors recommend the EU, its member states, and local level policymakers to:

1. Ensure that the targets of the EU climate law will be met by reducing emissions of greenhouse gases through more sustainable energy management, transport, and food choices which also result in improved health. This can be done by increasing the use of renewable energy and phasing out the use of fossil fuels, promoting energy saving strategies, and supporting countries affected by the shift. Moreover, it is crucial to invest in more sustainable transport systems, improve urban and residential planning, increase and preserve green spaces, and preserve forests. Finally, it is necessary to make food systems more sustainable and offer people healthy and affordable ways to change their dietary habits, e.g. by shifting towards more sustainably and organically produced high-quality food.

2. Update the EU ambient air quality standards to fully align the new WHO guidelines and the latest scientific evidence on the health effects of air pollution by 2030 at the latest.

3. Strengthen the climate resilience of health systems. This includes putting in place public health plans to help all citizens cope with the consequences of climate change such as extreme weather events. Health systems should also be prepared to care for increased number of migrants due to climate change.

4. Mental health support should be included, and health inequalities taken into consideration in the response strategies to the climate crisis. For example, hospitalisations for psychiatric disorders and emergency psychiatric visits tend to increase during heatwaves.

5. Develop effective climate epidemiology methods to collect and analyse data on climate related illness and death.

6. Introduce regulatory requirements to promote sustainable procurement of pharmaceutical products, food, medical devices and other hospital equipment, ensuring low-carbon, sustainable supply chains.

7. Increase awareness on the link between climate change and health risks in all policy areas through a Health in All Policies (HiAP) approach.

8. Ensure that doctors and other healthcare professionals are trained to inform about the health impacts of environmental and climate change and treat patients affected by the consequences of climate change, including changing disease panoramas. This should also be part of the core curriculum for medical students and other healthcare professionals in training.

European doctors recommend the EU, its member states, and local level policymakers to:

1. Advocate for health promotion and protection in adaptation and mitigation of climate change.

2. Increase efforts to make healthcare delivery more sustainable and climate neutral.

3. Increase efforts to de-carbonise healthcare services by
   - primary, secondary, and tertiary prevention of disease at all points of healthcare,
   - improving energy efficiency,
   - shifting towards more sustainable and climate neutral procurement of pharmaceutical products, food, medical devices, and other hospital equipment,
   - developing low or zero emission waste management systems; and
   - investing in research in sustainability and patient-safe healthcare.

4. Take a more active health advocacy role in promoting knowledge about the link between climate change and health in all relevant local, national, and international bodies.

Finally, we call on all European doctors to lead by example on climate issues.

1. Introduction

Climate change is the biggest global health threat in the 21st century.[1] The United Nations' Intergovernmental Panel on Climate Change (IPCC) warns that global warming, reaching 1.5°C in the near-term, would cause unavoidable increases in multiple climate hazards and present multiple risks to ecosystems and humans.[2] This also means adverse effects on the physical and mental health of people and a reduction in quality of life with indirect health consequences.

The 2009 CPME policy on global warming and health[3] already highlighted that climate change demands a response from every individual and the society. It also emphasised the role of doctors who must be prepared and respond to the health threats caused by climate change. Doctors can support patients directly, but they can also advocate about the health risks of climate change and the benefits of action.

There are several causes of climate change. Burning fossil fuels, cutting down forests, sealing and removal of green spaces, and farming livestock add greenhouse gases, in particular carbon dioxide (CO_2), methane, nitrous oxide, and fluorinated gases, in the atmosphere, increasing the greenhouse effect and global warming.[4]

The consequences of climate change already include extreme weather events such as heat, drought, fires, rising sea levels, flooding, melting polar and mountain ice, lack of rain, water scarcity, debris flows, and storms, as well as changing geographical distribution of communicable diseases, besides declining biodiversity.

In 2019, the European Commission presented the Green Deal[5] aiming to make Europe climate neutral by 2050. In 2021, this aim became part of the EU's first climate law[6] which also aims to achieve negative emissions after 2050 and sets an intermediary climate target of a reduction of net greenhouse gas emissions of at least 55% compared to 1990 levels by 2030.

[1] The 2022 report of the Lancet Countdown on health and climate change. Lancet Countdown, 2022.
[2] Climate Change 2022: Impacts, Adaptation and Vulnerability. IPCC, 2022.
[3] Policy on Global Warming and Health. CPME, 2009.
[4] Causes of Climate Change. European Commission, 2022.
[5] A European Green Deal. European Commission, 2019.
[6] European Climate Law. European Commission, 2021.

2. Health and Climate Change

Climate change has an impact on health, affecting the social and environmental determinants of health such as clean air, safe drinking water, sufficient food, and secure shelter. Globally, between 2030 and 2050, climate change is expected to cause roughly 250 000 additional deaths per year, from malnutrition, malaria, diarrhea, and heat stress.[7] The real number of deaths is even higher due to all other effects of climate on health such as other vector- and waterborne diseases, flooding, wildfires, displacement, and indirectly civil unrest.

Extreme weather events

Across Europe, extreme weather events and other climate hazards have become more frequent and severe. Heatwaves are one of the main health risks caused by climate change. In the last two decades, an exceptional number of record-breaking and prolonged heatwaves have been reported. Particularly in Europe, where many people are not used to high temperatures, exposure to extremes of heat can lead to significant adverse health outcomes including increased morbidity and mortality from heat stress, heat exhaustion and heatstroke, and an increase of cardiovascular, respiratory and kidney disease.

Those particularly at risk include urban populations, those with underlying health conditions, and the population aged over 65 years old, whose thermoregulation, circulation, and fluid balance can also be altered by medications. [8] The effects of heat on human health are underestimated, and in many countries official heat-related death toll statistics are lacking with death certificates routinely ascribing cause of death to, for example, heart failure rather than exposure to high temperatures. This highlights the importance of developing effective climate epidemiological methods.

It is therefore crucial that public health plans are in place to help citizens cope with high temperatures and heatwaves to reduce mortality and morbidity. It is also important that the staff of acute healthcare facilities is trained and that there are adequate resources available to treat the added load of patients during the emergency periods as extreme weather events may affect the resilience of the healthcare services. Hospital admissions due to high temperature have already been increasing, particularly in southern Europe.[9]

[7] Climate Change and Health. World Health Organization (WHO), 2021.
[8] Lancet Countdown Policy Brief for Europe. Lancet Countdown & CPME, 2021.
[9] Extreme temperatures and health. European Environment Agency (EEA), 2016.

In regard to resilience to other extremes of weather, such as floods and high winds, public health emergency plans must be in place to deal with injuries and transport of patients to acute healthcare facilities in challenging meteorological conditions. Furthermore, infrastructure projects, such as dams on rivers and electricity distribution grids, must be engineered to be safe during extreme weather events.

Air quality

Air quality is gradually improving in Europe, but air pollution still has major health impacts. It is responsible for a significant burden of premature deaths, hospital admissions and health symptoms. The main noncommunicable diseases (NCDs) associated with air pollution are lung cancer, ischaemic heart disease, stroke, and chronic obstructive pulmonary disease (COPD). Air pollution is also associated with the risk of asthma and chronic laryngitis. Children are especially harmed by air pollution as they breathe more air per unit body weight and therefore inhale proportionately more airborne toxicants than adults. Moreover, it is important to preserve and expand green spaces for climate regulation. This is relevant in metropolitan areas as space for physical activity and potential areas for growing food. Green spaces also help address air pollution by reducing the formation of photochemical production of ozone. Shade provided by urban trees also reduces energy demand, indirectly contributing to improved air quality.

Improving air quality can be achieved by reducing consumption of fossil fuels which are also the main source of greenhouse gases and future climate change and global warming. There are various policy options which may help to improve air quality, reduce global warming and protect health. Spatial planning at local level, taking into account public health interests for example by placing residential areas at a distance from polluting traffic and business areas, may be in opposition to certain pure environmental aspects. Urban planning should motivate citizens to take alternative forms of transport such as walking, cycling or public transport.

Communicable diseases

Climate change also impacts the spread of communicable diseases in Europe, posing new threats to public health. Particularly food-, water- and arthropod-borne disease incidence has been correlated to warmer temperatures. Disease vectors such as mosquitoes and ticks are sensitive to climatic conditions, including temperature and humidity. Therefore, certain vector-borne diseases may be introduced to regions that have not previously encountered them as the temperatures are increasing.[10]

[10] Vector-borne diseases and climate change: a European perspective. European Climate and Health Observatory, 2018.

In view of the change in prevalence and change in geographical distribution of tropical and/or arthropod-borne diseases, awareness campaigns, vaccine preparedness, and training of medical staff is necessary to recognise and treat such "tropical" diseases.

Mental health

In addition to the impact on physical health, climate change also has an impact on the mental health and well-being of people as it can cause emotional distress, anxiety, depression, grief, and even suicidal behavior. Heatwaves, for example, also pose a threat to the ability to work as production and efficiency decrease. This can affect people's ability to earn and their living standards in the worst affected areas. The number of lost working hours increased by 45 billion hours when comparing the year 2000 to the year 2018.[11] The mental health impacts are distributed unequally with certain groups depending on factors such as socioeconomic status, gender, and age.[12]

Health inequalities

Also, the physical health impacts are unequally distributed. People who are least responsible for human-induced climate change are suffering the greatest consequences. Higher levels of environmental risk are often found in disadvantaged population subgroups. Inequalities in environmental exposure occur between countries and within countries and local communities, where they contribute to health inequalities. Transition to a low-carbon economy should happen in a way that fairly shares the benefits of the transition while supporting those who will be negatively impacted. Given the many environmental inequalities, there is a need for a just approach in climate change adaptation, so those that most need assistance receive the support they need.

European regions with lower incomes and education and with higher unemployment rates compared to European averages, are more exposed, for example, to air pollutants. Moreover, southern and south-eastern European regions are more affected by higher temperatures, and many people cannot keep their homes cool in summer and warm in winter because of poor-quality housing and the high price of energy.[13] Inequalities can also arise from climate migration as many displaced people are faced with a lack of social support or a compassionate health system. Finally, the burden of climate change is disproportionally carried by populations in low-

[11] Watts, N. et al. The Lancet Countdown report on health and climate change. Lancet Countdown, 2019.
[12] Why mental health is a priority for action on climate change. World Health Organization (WHO), 2022.
[13] Unequal exposure and unequal impacts: social vulnerability to air pollution, noise and extreme temperatures in Europe. European Environment Agency (EEA), 2018.

and middle-income countries outside Europe, and it would be just to also support these countries in their efforts to adapt their health systems to the effects of climate change.[14]

Food systems

Climate change is also linked to people's dietary consumption, especially of unhealthy foods, as agriculture and food systems contribute to greenhouse gas emissions. For example, a planetary health diet could serve as a global reference.[15] It is important to pay attention to the quality of food and shift from mass production to sustainable, organic and extensive production. At the same time, these measures increase food prices which lead to socio-economic inequality. Also, the issue of food waste should be tackled. The effects of climate change on food systems, and vice versa, are a critical part of the impacts on human but also planetary health.[16]

3. Doctors' role and sustainable healthcare

Doctors are seen as trustworthy sources when it comes to giving health information to people. Therefore, they have a key role in raising awareness of the health impacts of climate change among their patients but also policy-makers. Doctors and other healthcare professionals can be champions of change in the community by advising how to equitably support adoption of sustainable and healthy lifestyles.[17] Healthcare professionals can also address policy areas beyond health such as energy and transportation, advocating for more sustainable and renewable approaches.

Across Europe, networks and bottom-up initiatives of (young/future in particular) healthcare professionals are rising to take responsibility for environmental change through advocating for health promotion in adaptation and mitigation of environmental change and combining forces to achieve sustainable healthcare. However, more environmental awareness should be integrated into the training courses and curricula of healthcare professionals.

Moreover, healthcare services have a key role to play in reducing their own carbon footprint and achieving net-zero emissions. The healthcare sector has to adapt and become resilient to climate change. De-carbonising healthcare services is of great importance as globally the health

[14] Hickel J. et al. National responsibility for ecological breakdown: a fair-shares assessment of resource use, 1970–2017. Lancet Planetary Health, 2022.
[15] Willett W, Rockström J et al. Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. The Lancet, 2019.
[16] Climate change and its impact on food and nutrition security. European Parliament's Committee on Environment, Public Health and Food Safety (ENVI), 2020.
[17] Health in the climate emergency: a global perspective. InterAcademy Partnership, 2022.

sector accounts for 4.4% of greenhouse gas emissions (and even more in certain European countries[18]). It is therefore necessary to reduce the consumption and disposal of health-related products, energy use of buildings, and transport of staff and patients among other measures.[19]

Without action, the healthcare sector's absolute global emissions would grow enormously from a 2014 baseline and more than triple by 2050, reaching six gigatons of carbon dioxide a year.[20] The recognition of healthcare-related contributions to climate change is essential in making more sustainable health systems. There are various ways to enhance the capacity of healthcare facilities in a changing climate, and to empower them to be environmentally sustainable, by optimising the use of resources and minimising the release of waste into the environment.[21] However, these measures should not compromise health promotion and disease prevention. The most sustainable healthcare is the reduced need for healthcare.

Energy use

Healthcare services can be more energy efficient by using renewable energy sources such as solar and wind power, and (geothermal) heat pumps. At the same time, the health sector should advocate for a rapid phase-out of fossil fuels. The transition requires investments in low carbon technologies and better building design including insulation and correct ventilation management as it is likely that increasing temperatures also lead to an increased demand for air conditioning.[22] The operators of healthcare facilities should optimise the use of energy and other resources such as water and paper.

Procurement of pharmaceutical products, medical devices, and food

Public procurement can be one of the keys to more sustainable production and consumption patterns. The pollution linked to the production and transport of pharmaceuticals and medical devices is an emerging environmental problem. [23] It is possible to find a better balance between environmental protection and access to medicines but it requires greener manufacturing and packaging processes, and better awareness of prudent use of pharmaceuticals, including more rational pack sizes.[24] [25]

[18] Steenmeijer et al. The Environmental Footprint of the Dutch Healthcare Sector: Beyond Climate Impact. Lancet, 2022.
[19] Health care climate footprint report. HealthCare Without Harm (HCWH), 2021.
[20] Global Road Map for Health Care Decarbonization. HealthCare Without Harm (HCWH), 2021.
[21] WHO guidance for climate resilient and environmentally sustainable health care facilities. WHO, 2020.
[22] Karliner, J. et al. Health Care's climate footprint: how the health sector contributes to the global climate crisis and opportunities for action. HealthCare Without Harm (HCWH), 2019.
[23] Cabral, E. (n.d.). Driving Change: High-level policy recommendations. Health Care Without Harm (HCWH), 2021.
[24] Nawrat, A. Are healthcare's sustainability goals bold enough? Pharmaceutical Technology, 2020.
[25] Safer Pharma. Health Care Without Harm (HCWH), 2022.

More transparency should be required from pharmaceutical companies about supply chain information such as names and locations of suppliers, production units and processing facilities in an online public database to ensure traceability of pharmaceutical products.[26] Medical device manufacturers need to consider sustainability in the design phase and take into account the entire lifecycle of the device. Reprocessing and remanufacturing single-use medical devices should be seen as an opportunity for health systems to minimise waste and achieve sustainability goals.

Moreover, the production plants should be more environmentally friendly and closer to the end-users in order to reduce the need for global transportation. Currently, many pharmaceuticals consumed in Europe are manufactured outside Europe. Closer production would reduce the carbon footprint and support the possibilities to monitor the climate impact of production processes. In general, unnecessary pharmaceutical use should be reduced and the aspects of higher compliance must be considered as many drugs are prescribed but not taken and thrown away.

Hospitals and healthcare institutions can also play an important role in promoting sustainability through the food chain. They often purchase their food through procurement centres which should consider more green and social criteria, such as transition to plant-based food. Healthcare institutions should aim to seek more local procurement options and shorten the supply chain, for example by shifting to locally produced fresh and seasonal food and by choosing higher-quality ingredients in smaller amounts.[27]

Waste management

Also, solid waste contributes to climate change as it generates greenhouse gas emissions resulting from inadequate waste collection, uncontrolled dumping, and burning of waste.[28] Considerable room remains for the healthcare sector to improve waste management and recycle practices, and to reduce waste in general. This means particularly the use of plastics and single-use medical devices as well as disposal of pharmaceutical products.

Efforts need to be directed towards identifying opportunities to reduce the use of plastic products and adapt practices accordingly. For instance, it is possible to reduce the consumption of disposable plastic products through initiatives promoting reusable products

[26] Stenuick, J.Y. Recommendations for Greener Human Medicines: in the revision of the EU general pharmaceuticals legislation. Health Care Without Harm (HCWH), 2022.
[27] The importance of sustainable food procurement in healthcare. Health Care Without Harm (HCWH), 2017.
[28] What a Waste 2.0: A Global Snapshot of Solid Waste Management to 2050. World Bank, 2018.

such as reusable gowns and glass IV administration systems. Careful and considered selection of surgical equipment and materials can also play a role in reducing the utilisation of disposable plastic products. It is also important that hospitals closely look at their options to improve separating their waste so that more plastic and other materials can be recycled. Beyond the consultation room and the operating theatre, hospitals can consider reducing plastic waste output by revising food services to opt for reusable tableware as well as introducing plastic consumption monitoring across all departments and services. Moreover, hospitals generate large amounts of food waste. This could be avoided by optimising food purchases and redirecting waste for example through donation, recycling or composting strategies.

In general, the implementation of such measures to reduce the carbon footprint of the healthcare sector requires research and innovation. Transforming the healthcare sector to be more ecologically sustainable must be done without compromising patient safety or care. Moreover, it is important that all the people working in healthcare services are trained to act in a more sustainable way in their everyday work.