Special consultation with the Pan-European Commission on Climate and Health:

Building resilient health systems for a changing climate

Output report

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Introduction: health systems and climate-health action

This special consultation brought senior health system leaders, clinicians, policy-makers and supply-chain actors directly into the work of the Pan-European Commission on Climate and Health (PECCH). The objective was to move beyond high-level framing and examine the practical "how" of transforming health systems in response to climate change.

Discussions focused on embedding both mitigation (of greenhouse gas emissions from care, procurement and infrastructure) and adaptation and resilience (preparedness for climate-related shocks, protection of service continuity and workforce sustainability) within broader health system reform. Climate action was framed by experts not as a parallel agenda, but as integral to delivering high-quality, equitable and future-proof care.

Building on earlier hearings, which examined climate and health through broader governance and societal lenses, this consultation provided a sector-specific deep dive into health systems to inform the refinement of priorities for the Commission's Call to Action.

Health system transformation: expert and policy perspectives

Translating climate policy into action in health systems: governance, quality and workforce realities

The consultation opened with the perspective of Dr Miglė Trumpickaitė, Vice-President of the European Junior Doctors Association, who grounded the discussion in the lived experience of frontline clinicians. She highlighted workforce shortages, heavy workloads and burnout, noting that climate-related disruptions, including heatwaves, floods and infectious disease outbreaks, exacerbate existing system fragilities and place additional strain on surge capacity. She also drew attention to rising climate anxiety among young health professionals and called for cultural and structural change within health systems with priorities for climate resilience, for reducing low-value care and empowering a prepared workforce.

She was followed by Mr Ype van Strien, Programme Coordinator at the Ministry of Health, Netherlands (Kingdom of the), who described the country's Green Deal on Sustainable Healthcare as a collaborative, decentralized governance model in which stakeholders jointly commit to emissions reduction, illustrating how national frameworks can enable system-wide transformation without relying solely on legislative mandates. This "bottom-up" approach adopted in the Netherlands (Kingdom of the) can be compared with the "top-down", legally-mandated approach described for the United Kingdom (England), presented by Mr Chris Gormley, Chief Sustainability Officer, National Health Service (NHS), United Kingdom, where the NHS was the first national health system worldwide to commit to net zero (Box 1).

Box 1. National case studies for decarbonizing the health sector: "no one size fits all but every system can find a pathway"

In the Netherlands (Kingdom of the), the decentralized, voluntary Green Deal for Sustainable Healthcare initiative was started in 2015. Version 3.0 of the Deal is led by the Ministry of Health, with support from other ministries (e.g. with sectoral responsibilities for housing and management). There is continuing collaboration with the Green Deal's stakeholders' group and ongoing evaluation to draw on lessons learnt (e.g. need for clear goals and clinical leadership) *(1)*.

In England, United Kingdom, a centralized and legally mandated approach was taken in 2020, committed to net zero: for direct emissions by 2040 and for other emissions that can be influenced, by 2045. Direct emissions have decreased by 14% over the past 5 years and NHS England is on track to meet its 2040 target *(2)*. Significant cost savings from the various interventions are being captured (e.g. from the installation of solar power, electrification of a transport fleet, reduction of waste).

Both models of sector decarbonization are considered workable, according to setting, and both depend on clear recognition of importance of metrics and accountability. Continuing challenges, for both "bottom-up" and "top-down" designs, are associated with the (longer-term) objective to reduce the carbon footprint of supply chains and the continuation of efforts to build resilience to climate change impacts such as heatwaves and flooding. The speakers emphasized that experience to date indicates that sustainability and high-quality patient care are mutually reinforcing goals.

Dr Mark Harber, Special adviser on healthcare sustainability and climate change, Royal College of Physicians, United Kingdom, emphasized that "top-down" approaches cannot succeed without clinical leadership nor can change occur purely from health-care professionals trying to influence local strategy. Bundles of proven interventions provided to institutions are much more likely to deliver rapid change. The Royal College of Physicians as an organization is itself taking action to improve its environmental sustainability, as well as advising government, health-care organizations and individual clinicians through outputs such as their Green Physician Toolkit *(3)*.

Decarbonizing care delivery: reducing low-value care, prevention and digital-enabled redesign

Representing the European University Hospital Alliance, Professor Johan Van Eldere described how university hospitals are leveraging research capacity and digital tools to redesign care pathways. He highlighted efforts to use health data to identify low-value or inefficient interventions and to shift appropriate care from hospital settings to community-based services. Digitalization, including data interoperability and benchmarking, was presented as an enabler of more efficient

and sustainable models of care. Artificial intelligence (AI) is increasingly used but has a large carbon footprint that needs to be better understood. Dr Miklos Szocska, Director of the Health Services Management Training Centre, Semmelweis University, Hungary, described a broad range of potential AI applications in diagnosis, prescribing and prevention, observing that AI resources can be economized if centres coordinate rather than compete (e.g. in providing joint data sets for patient pathways).

Dr Nicole Hunfeld, Erasmus University Medical Center, Netherlands (Kingdom of the), illustrated how hospital-level sustainability leadership, embedded within clinical departments such as intensive care, can align frontline decision-making with system-wide decarbonization goals, accompanied by cost reductions but with no reduction in quality of care.

From a national health system perspective, Dr Alexandre Lourenço, Chief Executive Officer and Chairman, Unidade Local de Saúde de Coimbra [Coimbra Local Health Unit], Portugal, provided concrete examples of digitally enabled service redesign. He described community ophthalmology services using imaging technologies and remote validation supported by AI, significantly reducing unnecessary appointments. He also outlined digital triage approaches that reduced avoidable emergency visits. These interventions were framed not only as emissions-reduction measures, but as strategies to strengthen access, resilience and proximity-based care, particularly in rural areas.

Across contributions, speakers converged on objectives for delivering clinically appropriate, high-quality care in the right setting, with a strong emphasis on prevention and community services. Decarbonization was therefore presented as inseparable from broader health system reform.

Greening health-care supply chains: strategic procurement, metrics and collaboration with industry

Supply chains and procurement were discussed as strategic levers for reducing the environmental footprint of health systems. Contributions from policy-makers and industry representatives emphasized that transformation requires alignment between purchasers, suppliers and regulators. Dr Fiona Adshead, Chair, Sustainable Health Coalition, United Kingdom, explained some of the ways that metrics are central for measuring impact and that the use of metrics requires harmonized approaches across the pan-European region for comparability. WHO has a core role to harmonize and standardize metrics. The traditional approaches of Health Technology Assessment to define outcomes and cost-effectiveness, must now include assessing sustainability over the innovation lifecycle, starting from the realization that future potential environmental problems can be prevented/reduced if development processes are constructed in sustainable ways by design. Relevant case studies can be found in the resources of the Sustainable Healthcare Coalition *(4)*. Dr Kirsty Reid, Director of Science Policy, European Federation of Pharmaceutical Industries and Associations, Belgium, highlighted that sustainability measures in the pharmaceutical sector must safeguard availability, affordability and supply security, and argued that climate and health objectives are complementary when supported by shared evidence and coordinated policy *(5)*.

In summary, speakers highlighted the importance of consistent metrics, shared reporting frameworks and clear demand signals from health systems. Strategic procurement was described as requiring defined roles, collaborative approaches and incentives that value sustainability alongside quality and safety. Practical pathways discussed included circular approaches, such as reuse or take-back schemes where feasible. It was recognized that global pharmaceutical companies and other global suppliers are relatively unlikely to respond to pressures from single countries/smaller markets and, therefore, countries across the pan-European region must work together to develop common procurement requirements for decarbonizing supply chains.

Climate and health policy were framed as complementary, and the need for shared infrastructure to support evidence-based decision-making was underscored.

Investing in climate-resilient, low-carbon health infrastructure: financing and alignment to the United Nations Framework Convention on Climate Change Paris Agreement

Mr Thomas Kergall of the Council of Europe Development Bank, France, described how Paris Agreement-aligned financing approaches require health infrastructure projects to address both emissions reduction and physical climate risk. He outlined how energy-efficiency measures, including improvements in heating, ventilation and cooling systems, and insulation and equipment upgrades, can reduce emissions while strengthening operational performance. Recent projects for financing health infrastructure include those in Barcelona, Spain; Belgrade, Serbia; Helsinki, Finland; and Leipzig, Germany *(6)*.

He also explained the use of location-based climate-risk intelligence tools to assess exposure to hazards and inform investment decisions. Projects that fail to address tangible climate risks may face challenges in securing finance, while technical assistance can support improvements in design and resilience. Mr Kergell's contribution underscored that mitigation and adaptation must be integrated within health infrastructure planning to ensure long-term service continuity.

Examples from Greece, presented by Ms Lilian Vidiridi, Secretary-General Health Services, Ministry of Health, Greece, showed how a national strategy for climate-resilient health facilities could be practically translated in both hospital infrastructure (80 hospitals upgraded in energy performance and three new hospitals as flagship projects to be delivered in 2027 with net zero emissions) and primary health care (156 centres upgraded with better insulation, heating and cooling).

Dr Dimitra Panteli from the European Observatory on Health Systems and Policies, Belgium, in summarizing the session noted that many of the strategies described for climate–health action lead to improvements that are wanted for other reasons (e.g. better patient outcomes, prevention of ill health, reduction of low-value care) reiterating the need for measurement of impact both for evidence-informed policy change and for communication to professionals and patients. The workforce is the catalyst, and this has implications for their education and motivation. A recent Policy Brief from the Observatory *(7)* – operating primarily in the European Union – describes case

studies from, for example, Austria, Ireland and Catalonia, Spain. Because interventions need to be tailored to different settings, collaboration and exchange programmes are vitally important.

In addition to the case studies and initiatives discussed, the number of examples of good practice and evidence is growing. Several resources and initiatives on actions in the health sector are listed in Box 2.

Box 2. Additional resources for evidence on solutions

Additional resources for evidence on building sustainable solutions in health systems include the:

- Alliance for Transformative Action on Climate and Health (ATACH): a global WHO initiative to help countries build climate-resilient, sustainable health systems *(8)*, including its:
  - Belém Health Action Library *(9)*: a repository of country-level case studies;
  - resource repository *(10)* containing practical guides and tools;
- WHO European Environment and Health Process Partnership for Health Sector Climate Action *(11)*;
- Health Care Climate Learning Global Initiative, supported by Health Care Without Harm, with case studies for health system decarbonization and climate resilience *(12)*;
- ClimaHealth collaboration by WHO and the World Meteorological Organization with a few studies in the pan-European region *(13)*; and
- Sixth Assessment Report of the Intergovernmental Panel on Climate Change, especially on impacts, adaptation and vulnerability *(14)*.

Synthesis of consultation messages

Taken together, the consultation underscored that climate action within health systems must be grounded in governance realities and workforce pressures. As emphasized by junior doctors and reflected in the commissioners' deliberations, transformation will only be credible and durable if it strengthens quality of care, supports health professionals and aligns with existing system priorities rather than adding parallel obligations. A consistent theme of this PECCH consultation was that to achieve objectives both for sustainability and health, there must be a much greater emphasis on prevention; but prevention is not solely a responsibility for the health sector, it applies across government and civil society.

Decarbonization was consistently framed not as a narrow technical exercise, but as a matter of redesigning care delivery. Speakers highlighted the need to reduce low-value care, strengthen prevention and primary care, and use digitally enabled, community-oriented models to improve

appropriateness and efficiency. Examples from university hospitals and national system reform illustrated how service redesign can simultaneously improve patient outcomes, reduce unnecessary demand and lower environmental impact.

Participants also identified procurement and supply chains as high-leverage entry points. Strategic purchasing, harmonized metrics and collaboration across suppliers, clinicians and policy-makers were presented as essential to shifting markets while safeguarding access, affordability and equity.

Finally, infrastructure investment emerged as a critical domain for integrated mitigation and adaptation. Aligning health infrastructure with compatible standards and systematic climate-risk appraisal is both feasible and increasingly necessary to secure investment and protect long-term service continuity.

The interventions described during the consultation presented the concrete levers available within health systems to translate climate ambition into operational change. The consultation demonstrated how governance structures, care redesign, procurement practices and financing mechanisms can serve as actionable entry points for transformation under real-world constraints and operational contexts.

References[1]

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