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## SPECIAL ARTICLE

# Recommendations of the Spanish-Portuguese Internal Medicine services in the fight against climate change and environmental degradation<sup>☆</sup>



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colegios, y asociaciones de Medicina Interna de los países de habla hispana y lusa

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**Abstract** Facing the severity of the impact of climate change and environmental degradation on human health, 32 Internal Medicine societies, colleges, and associations of 29 Spanish and Portuguese-speaking countries issue a consensus document in which they call for the implication of doctors and all health professionals in the global fight against the causes of these changes. This commitment requires the cooperation of health-related organizations, elaboration and implementation of good environmental sustainability practices, greater awareness of professionals and population, promotion of education and research in this area, increasing climate resilience and environmental sustainability of health systems, combating inequalities and protecting the most vulnerable populations, adopting behaviors that protect the environment, and claiming Internal Medicine as a core specialty for empowerment of the health system to respond to these challenges.

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**PALABRAS CLAVE**

Ambiente;  
Cambio climático;  
*One Health*;  
Medicina Interna;  
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**Recomendaciones de los servicios de Medicina Interna hispano-lusos en la lucha contra el cambio climático y la degradación ambiental**

**Resumen** Ante la gravedad del impacto sobre la salud del cambio climático y la degradación ambiental 32 sociedades, colegios, y asociaciones de Medicina Interna de 29 países de habla hispana y lusa divulgan un documento de consenso en que llaman a la implicación de los médicos y todos los profesionales de salud en la lucha global contra las causas de estos cambios. Este compromiso requiere la cooperación de las organizaciones relacionadas con la salud, elaboración e implementación de buenas prácticas de sostenibilidad ambiental, sensibilización de los profesionales de la salud y de la población, promoción de la educación e investigación en esta área, refuerzo de la resiliencia climática y la sostenibilidad ambiental de los sistemas de salud, combatir las desigualdades y proteger a las poblaciones más vulnerables, adopción de comportamientos que protegen el medio ambiente, y defensa de la Medicina Interna como una especialidad central para habilitar al sistema de salud para responder a estos desafíos.

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**Introduction**

In 2021, the Food and Agriculture Organization of the United Nations, the World Organization for Animal Health, the United Nations Environment Program, and the World Health Organization defined the concept of *One Health* as an integrated and unifying approach that recognizes the close interconnection and interdependence of human, animal, plant and environmental health in general.<sup>1</sup> On 28 July 2022, the United Nations General Assembly recognized a new human right: the right to a clean, healthy, and sustainable environment.

The main environmental determinants of human health include superpopulation, climate change, ecosystem degradation, loss of biodiversity, and the depletion of natural resources. On 15 November 2022, the world population reached 8 billion people. Since 1970, our ecological footprint has exceeded the rate of regeneration of the planet Earth.<sup>2</sup> The effects of climate change include global warming, extreme temperatures, food shortages, increased allergens, loss of biodiversity, more severe storms, floods, fires, and droughts, more poverty, displacement, and health risks. It is estimated that climate change could take over 100 million people into extreme poverty by 2030. The *World Meteorological Organization* and the Copernicus program have confirmed that July 2023 was the hottest month ever recorded.<sup>3</sup> In 2023, in Canada, a forest area equivalent to 17 million football fields was consumed by fire. With the current policies, the planet will exceed the 1.5 °C limit set by the Paris Agreement, and it is estimated that this increase could reach 2.7 °C by 2100 - though the complexity of the ongoing phenomena and the existence of tipping points may make this prediction uncertain. These changes are attributable to the past and future greenhouse gas emissions.

Human activities have contributed to the growing destruction of forests, grasslands and wetlands, threatening people's lives and well-being.<sup>2</sup> Food production is not only affected by climate change, but is also responsible for 20% to 30% of greenhouse gases.<sup>4</sup> At present, 55 million people

are suffering from drought, and it is estimated that 75% of the world population could be affected by 2050.<sup>5</sup> On average, 150 species become extinct each day, and one million species are at risk of extinction. (2)

These changes, to which the health sector also contributes, are having a devastating impact on population health. This document expresses the consensus of 32 societies, colleges and associations of Internal Medicine in 29 Spanish- and Portuguese-speaking countries on the priorities in the participation of internists and health professionals, in general, in actions to adapt and mitigate this impact.

**Methods**

Given the importance of the effects of climate change on the environment and, above all, on human health, and the essential and fundamental role played by Internal Medicine in this emerging problem, a working group was set up in July 2023 with representatives of the 32 scientific societies, colleges and associations of Internal Medicine from 29 Spanish- and Portuguese-speaking countries. The main objective was to develop a consensus document to make this situation visible and to outline strategies to combat this urgent problem.

The secondary objectives were to promote the prevention of the possible consequences of climate change; to encourage specific training and research in this area, and to take measures to combat threats to our health systems and their sustainability resulting from climate change.

For the development of this document, a non-systematic literature review was performed by the members of the working group, selecting recent articles (published in the last two years) and some of special relevance from previous years. The search period ended in August 2023. The document was prepared through virtual meetings held in the last week of August. A two-round DELPHI method was used to build consensus, involving all collaborators from the different countries.

Experts, collaborators, and representatives of the scientific societies, colleges, and associations involved in the

preparation of this international consensus document are listed in Appendix 1.

## Results

The recommendations for healthcare professionals resulting from this consensus are presented below:

- 1 **Ethical obligations:** It is our ethical duty to participate in the global fight against climate change and environmental degradation.
- 2 **Cooperation of health organizations:** Health organizations must work together to reduce the health impact of environmental change on the human population.
- 3 **Environmental sustainability practices:** We must develop and implement good environmental sustainability practices at all levels to reduce the ecological footprint of the health system.
- 4 **Clinical guidelines:** Clinical guidelines for the prevention and management of the health consequences of environmental change should be published.
- 5 **Public awareness:** We have to commit ourselves to raising public awareness of these issues.
- 6 **Education on *One Health*:** Education on *One Health* must be mandatory in the pre- and post-graduate training of healthcare professionals, and should be incorporated into scientific meetings. Research in this field should be encouraged and supported.
- 7 **Climatic resilience:** Health systems should be resilient to climate change and develop capabilities to respond to the current epidemiological transition and the increased risk of unexpected events.
- 8 **Prevention of inequalities:** We must actively prevent inequalities referred to the health consequences of environmental change and protect the most vulnerable populations.
- 9 **Exemplary behavior:** We must be an example of environmentally friendly behaviors.
- 10 **Role of Internal Medicine:** Internal Medicine must be defended as a core specialty for responding to the health consequences of environmental change.

## Discussion

Each year, environmental factors cause about 13 million deaths or 20% of overall mortality.<sup>6</sup> Globally, 9 out of 10 people breathe the air with high levels of pollutants exceeding the limits set by the WHO.<sup>7</sup> Air pollution and increased allergen levels are driving the growth in the incidence of cardio- and cerebrovascular diseases, lung cancer, chronic obstructive pulmonary disease, asthma, and allergies. With the changes in vector ecology, vector-borne diseases are on the rise, causing more than 700,000 deaths a year.<sup>8</sup> Zoonoses are growing, and account for almost 100% of all pandemics. Water-related diseases cause more than 3.4 million deaths annually, and food-borne diseases cause 420,000 deaths a year, overall.<sup>9</sup>

Climate, weather, and water hazards have accounted for 50% of all disasters and 45% of all reported deaths since 1970.<sup>10</sup> More than 10 million people died because of the severe droughts of the last century and, each year,

>5 million additional deaths can be attributed to extreme temperatures.<sup>11,12</sup> Climate change is having stronger and more lasting impacts on people, with direct and indirect damage to their mental health and psychosocial well-being. These consequences particularly affect the most vulnerable populations.

On the other hand, health systems must increase climate resilience and their environmental sustainability.

In 2020, the WHO published a framework for implementing climate resilience and environmental sustainability in health facilities.<sup>13</sup> This document highlights four key requirements: the existence of an adequate number of qualified human resources with decent working conditions, and those who are ready to respond to these environmental challenges; sustainable and safe management of water, sanitation and waste services; sustainable energy services; and efficient infrastructure, technologies, products and processes.

Beyond human resources, to address this epidemiological transition and the increased risk of climate catastrophes, health systems must have emergency plans at all levels of care; hospitals must be flexible, scalable, and with matrix-based organization; different levels of care must be integrated; there must be a sufficient number of hospital beds and intensive care beds; information and communication systems must be robust; telemedicine must be facilitated to reduce patient travel; health care disparities must be prevented; and political decisions must be accompanied by science.

Internists were at the forefront of the response to the COVID-19 pandemic, due to their broad training, polyvalence, efficiency, and coordination capacity. General internal medicine is undoubtedly a crucial medical specialty for addressing the uncertainty that threatens our health systems, particularly in hospitals.

Although the health system is essential to respond to epidemiological change and the increased risk of unexpected events, it is also responsible for 4.4% of greenhouse gas emissions.<sup>14</sup> Reducing the ecological footprint of the health sector requires a strategy at the national level and has to be seen as a political priority. Everyone, at every level of decision, is urged to contribute. Many of these measures may imply short-term investments, but they generate important medium- and long-term savings.

Health systems, through demands placed on their providers, can also have an indirect influence in many other sectors. In the United Kingdom, the NHS (National Health Service) has set itself a target of zero emissions by 2040, in everything directly dependent upon it, and by 2045, in everything indirectly dependent on it.<sup>14</sup>

Several scientific societies have already taken positions calling for greater involvement of healthcare professionals in this effort. The European Federation of Internal Medicine also published a position paper, calling for the same.<sup>15</sup> Health professionals have an unavoidable responsibility for this emerging problem.

The sense of the duty of intergenerational solidarity and the notion that doctors, in addition to carer providers, should also be advocates for our patients, must be our motivation to be involved in the fight against climate change, environmental degradation, and its consequences for the health of the population. We as physicians, and health pro-

professionals, have an ethical obligation to participate in this global movement. We do not have the right to ensure our well-being at the expense of the next generations, which are the generations of our children and our grandchildren.

It is not the survival of the planet or even life that is threatened, but that of many species, including us humans. Robert Swan, the first man to reach both poles, said: "The biggest threat to our planet is the belief that someone else will save it." Changing the announced fate for humanity requires everyone's commitment, and health professionals have an additional responsibility in this fight.

## Conflicts of interest

The authors declare that they have no conflicts of interest.

## Appendix 1. Collaborators representing the societies, colleges and national associations of Internal Medicine signing this consensus document

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Bismarck Perez (Asociación Nicaragüense de Medicina Interna)

Carlos Araya-Fonseca (Sociedad de Medicina Interna de Costa Rica)

Carlos W. Contreras-Camarena (Sociedad Peruana de Medicina Interna)

Claudia Arias (Asociación de Medicina Interna de Centroamérica y El Caribe)

Diego Alberto Brosio (Sociedad Argentina de Medicina)

Diego Graña-Cruz (Sociedad de Medicina Interna de Uruguay)

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Fortuna Peralta (Sociedad de Medicina Interna de República Dominicana)

Helga Codina (Sociedad Hondureña de Medicina Interna)

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Natalie Maynard Gamboa (Asociación Costarricense de Medicina Interna)

Omar Castillo-Fernandez (Sociedad Panameña de Medicina Interna)

Ricardo Hidalgo Ottolenghi (Asociación Ecuatoriana de Medicina Interna)

## Appendix 2. Societies, colleges and national associations of Internal Medicine signing this consensus document

Asociación Colombiana de Medicina Interna - Colombia

Asociación Costarricense de Medicina Interna - Costa Rica

Asociación de Medicina Interna de Centroamérica y El Caribe - Centroamérica y el Caribe

Asociación de Medicina Interna de El Salvador - El Salvador

Asociación de Medicina Interna de Guatemala - Guatemala

Asociación Dominicana de Médicos Internistas - República Dominicana

Asociación Ecuatoriana de Medicina Interna - Ecuador

Asociación Nicaragüense de Medicina Interna - Nicaragua

Associação de Médicos de Língua Portuguesa de Macau - Macau

Colégio de Especialidade de Medicina Interna da Ordem dos Médicos Caboverdianos - Cabo Verde

Colégio de Especialidade de Medicina Interna da Ordem dos Médicos de Angola - Angola

Colégio de Medicina Interna da Ordem dos Médicos de Moçambique - Moçambique

Colegio de Medicina Interna de México - México

Foro Internacional de Medicina Interna - América Latina y El Caribe

Ordem dos Médicos da Guiné-Bissau - Guiné-Bissau

Sociedad Argentina de Medicina - Argentina

Sociedade Brasileira de Clínica Médica - Brasil

Sociedad Chilena de Medicina Interna - Chile

Sociedad Cubana de Medicina Interna - Cuba

Sociedad Cruceña de Medicina Interna - Bolivia

Sociedad de Medicina Interna de Costa Rica - Costa Rica

Sociedad de Medicina Interna de Guatemala - Guatemala

Sociedad de Medicina Interna de la República Dominicana - República Dominicana

Sociedad de Medicina Interna de Nicaragua - Nicaragua

Sociedad de Medicina Interna de Uruguay - Uruguay

Sociedad Española de Medicina Interna - España

Sociedad Hondureña de Medicina Interna - Honduras

Sociedad Panameña de Medicina Interna - Panamá

Sociedad Paraguaya de Medicina Interna - Paraguay

Sociedad Peruana de Medicina Interna - Peru

Sociedade Portuguesa de Medicina Interna - Portugal

Sociedad Venezolana de Medicina Interna - Venezuela

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