Key considerations for the incorporation of a health perspective in NDCs

Overview

This policy brief identifies some of the main elements for incorporating a comprehensive health perspective in the Nationally Determined Contributions (NDCs) presented by countries as climate action commitments under the Paris Agreement. Its goal is to guide national governments who are developing or updating their NDCs to incorporate key considerations – in their narrative, objectives, and measures – which would enable them to mobilize the health sector to tackle the climate crisis.

From a **mitigation perspective**, we suggest following Argentina's example, as it is the first country in the world to expressly incorporate the commitment to estimate its health sector's climate footprint and take measures toward reducing it in their NDC. To do so, we stress the importance of using robust methodologies to establish a baseline and translating results into sectoral plans and roadmaps aimed at the complete decarbonization of health services by 2050.

From an **adaptation perspective**, we encourage addressing a wide spectrum of possible impacts of climate change on people's health, and identify necessary actions to assess the vulnerability and strengthen the resilience of the health sector's operations and infrastructure, as well as that of the communities they serve.

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I. Introduction: three key messages.

Climate change is a public health issue. Its negative effects already have a direct impact on our health: extreme events, which have become more frequent and severe, cause injuries and deaths, undermining health systems' capacities and infrastructure; the rise in average temperature expands the distribution area for vector-borne diseases, such as malaria, dengue, and chikungunya; and poor air quality due to fossil fuel combustion aggravates the incidence of respiratory and cardiovascular diseases, causing over seven million premature deaths per year. Furthermore, slow-onset events generated and accelerated by climate change will have a more indirect but equally significant impact on our health. For example, the sea level rise and saline intrusion will affect the availability and quality of water, aggravating diarrheal and water-borne diseases. Additionally, desertification and soil deterioration will accelerate the loss of agricultural productivity, increasing malnutrition and associated ailments. In the long term, climate change will amplify complex social dynamics, such as migration and conflicts, which will increase both physical and mental health risks. These effects disproportionately impact vulnerable groups, further deepening pre-existing inequalities.

The health sector has the ethical imperative of bolstering ambitious climate action. Health Care's Climate Footprint Report, published by Health Care Without Harm in 2019, estimated that the health sector's climate footprint equals 4.4% of net global emissions. This means that if the health sector were a country, it would be the world's fifth largest emitter. Since its ultimate objective is to protect and promote human health, the fact that this sector makes a significant contribution to the multifaceted environmental crisis that puts our wellbeing at risk is an unacceptable contradiction. Healthcare institutions and workers, whose primary commitment is to "do no harm", must take an active stance on decarbonizing, both within and beyond their sector. Recognizing that their mission will be impossible to achieve in a world in which global temperature rise exceeds 1.5ºC, actors in the health sector must not only promote, but lead the path toward zero emissions by 2050.

Ambitious climate action has multiple co-benefits for our health. Taking an active role in mitigating climate change and adapting to its already inevitable impacts is imperative. It is also an opportunity to promote more equal, inclusive, and prosperous development models. The many co-benefits of climate action are particularly evident in the realm of health. The most often-cited examples are linked to measures aimed at reducing air pollution, as they have a direct impact on the prevention of diseases and premature deaths. In fact, the World Health Organization estimates that over a million lives could be saved every year by 2050 if air quality measures are implemented in accordance with the Paris Agreement. Furthermore, adopting and implementing ambitious NDCs could result in significant savings for the health sector: for example, a study led by the Government of Mexico shows that if their clean power generation objectives are met (43% by 2030), the reduction in mortality exclusively associated with PM2.5 pollution would result in a 2.7 billion dollar saving, equivalent to 41% of the national health budget for 2019.

II. Health perspective in NDCs: the link between climate change and health care

Climate change threatens to obstruct the achievement of global health aspirations, including the third Sustainable Development Goal of the 2030 Agenda, and even reverse progress made in public health care worldwide in the past decades. The United Nations System, particularly the World Health Organization (WHO), and other key institutions such as The Lancet Countdown and Health Care Without Harm, have stressed for years the many ways in which the negative effects of climate change put people's health at risk, and have promoted the active participation of the health sector in climate action.

The updating of Nationally Determined Contributions (NDCs) in 2020 and 2021 represents a key opportunity to strengthen public health care in the face of the growing threat posed by climate change, and promote high impact actions in a sector that has traditionally not been recognized as a significant source of GHG emissions. Additionally, incorporating the health perspective in the NDCs will highlight the multiple benefits of climate action for health. While more research is required in this respect, it is clear that the benefits of ambitious mitigation and adaptation policies far outweigh their cost. In fact, the WHO estimates that the health gains resulting from the Paris Agreement will be worth at least twice the cost of its implementation.

Making the link between health and climate change explicit, both through the narrative of NDC updates and through the estimation of the health co-benefits of specific climate measures, could be a powerful means of bringing climate action to the public's attention and strengthening the social and political support necessary to set ambitious climate goals. Moreover, monitoring the impacts of NDC implementation on public health is crucial to demonstrate the difference in benefits between current commitments, and updated NDCs that are in line with the Paris Agreement's goals. Most NDCs (70% of those presented by December of 2019) include health considerations; however, according to a WHO review, while many mention the health co-benefits that their NDC measures will deliver, only two cases state that they will monitor and quantify them.

Including the health perspective in the NDCs does not necessarily mean that a detailed set of health targets must be integrated in the document itself, but rather that health should be anchored as a priority consideration for both mitigation and adaptation measures. This will provide the high-level mandate that will later allow for the development of more specific programs, regulations, and sectoral plans to advance the recommendations included in this brief.

Health Care Without Harm offers several resources, tools, and guidelines that are at the disposal of national authorities who wish to include the health perspective in their climate policies and to incorporate climate considerations in their health policies. Some of these have been developed in collaboration with the United Nations System, such as the WHO Guidance for Climate Resilient and Environmentally Sustainable Health Care Facilities, where more detailed information is provided.

Argentina: mitigation and adaptation of the health sector in the NDC update

In December 2020, Argentina presented its second Nationally Determined Contribution before the United Nations Framework Convention on Climate Change (UNFCCC). This new NDC recognizes health as one of its guiding principles. Additionally, it included health care as one of the priority sectors in the Second Adaptation Communication, establishing concrete measures such as modelling impact scenarios, and strengthening health sector responsiveness to extreme weather events and to the increase in climate-sensitive diseases. Notably, Argentina became the **first country in the world to include the decarbonization of its health sector in its NDC**, by including the estimation of health sector emissions and the definition of actions to reduce them as one of the key steps for its implementation.

Although the health care carbon footprint is yet to be estimated in Argentina, it is a significant sector of its economy: in 2017, the public health budget equaled 9.4% of the country's GDP. Furthermore, the Federal Registry of Healthcare Establishments, which is available in the Argentine Integrated Health Information System, shows that the country has almost thirty-thousand health facilities on record, 139 of which are under State management.

The health sector's contribution to the country's total emissions is significant. For example, up until July of 2020, there were 33 health facilities featured in the list of the largest electric energy consumers published by CAMMESA. In 2019, these facilities amounted to an electricity demand of over two-hundred thousand megawatts hours (205 .799 MWh), equivalent to over seventy-thousand tons of CO_2e emitted into the atmosphere (calculated by Health Care Without Harm).

III. Mitigation component

Certain mitigation measures have a more direct effect on human health, especially those that impact air quality locally. A good practice to follow in this regard is to include particulate matter and short-lived climate pollutants (SLCPs) reduction targets in the NDC, in addition to greenhouse gases. However, almost all mitigation measures have a positive effect on our health, from campaigns to reduce meat consumption (which promote healthier diets) to the development of zero-emissions transportation options such as bike lanes (which promote physical activity). A recent study published by The Lancet Planetary Health, which modelled different scenarios in nine countries, estimates that increasing the ambition of NDC mitigation goals could prevent millions of premature deaths by 2040.

However, one of the main challenges of incorporating the health perspective into the mitigation component of NDCs is considering the health sector itself as an important source of emissions, and establishing concrete goals to advance its decarbonization. Health Care's Climate Footprint Report provides data and important guidance to focus these efforts strategically:

- Health sector emissions by scope: Emissions produced directly by the health sector (Scope 1) account for 17% of its global footprint. Indirect emissions from purchased energy sources, such as electricity, steam, refrigeration, and heating (Scope 2), make up another 12%. The largest percentage of health care emissions – 71% – are Scope 3, that is, they come from the health sector supply chain (production, transportation, use, and provision of goods and services the sector consumes).
- Health sector emissions by source: If we consider the three scope categories, more than half of the health sector's footprint can be attributed to energy consumption, especially electricity, gas, steam, and air conditioning, combined with the sector's operational emissions. Other significant activities that contribute to the sector's footprint are agriculture (9%, which includes culinary services in health centers, cotton farming for surgical gowns, etc.); pharmaceutical and chemical products (not including the energy used to produce them, 5%); transportation (7%); and waste treatment (3%).
- Health sector emissions hotspots: Certain products, equipment, and services that are part of the health sector's supply chain are particularly intensive in their emissions and must be identified to substitute them wherever possible. For example, almost an additional 1% of the health sector's global climate footprint comes from anesthetic gases (0.6%) and metered-dose inhalers (0.3%). In addition, a study led by the United Kingdom's National Health Service (NHS) estimates that in 2010, almost 22% of the system's GHG emissions could be attributed to pharmaceutical products and 8% to medical equipment.

In order to translate these considerations into concrete measures, whether it be in the NDC or in the sectoral instruments adopted to implement it, the following actions are required:

- Establish a baseline: Each health facility has its own climate footprint, and these can vary significantly depending on the degree of complexity, among other factors. For example, the 2019 Carbon Footprint Progress Report for members of the Global Green and Healthy Hospitals network in Latin America detected that in high complexity hospitals, Scope 3 emissions account for over 60% of total emissions, whereas in primary care facilities they represent slightly over 10%, with Scope 1 emissions accounting for over 50% of the total. This information is crucial for decision making and for the design of effective mitigation strategies for the sector.

Carbon footprint calculation tool for health care facilities and systems

Health Care Without Harm Latin America developed a tool which has already been used by over 200 members of the Global Green and Healthy Hospitals (GGHH) network in the region to calculate their carbon footprint.

In May 2021, the global HCWH team will present a more robust version of this tool to be used by GGHH members all over the world. In addition to adapting the tool for it to be

applicable to all regions, new emission sources and auxiliary formats for data gathering will be included. The tool will be launched together with a detailed user guide, including recommendations on how to analyze and interpret the data and use it as an input for the development of mitigation plans.

As part of this guide, HCWH is developing and piloting a methodology that will allow national and sub-national governments to estimate the carbon footprint of their health care systems through a protocol for representative sampling. This approach will be complemented by the release of the Global Road Map for Health Care Decarbonization and supporting national level data in April 2021 (see below).

- Identify and address emission hotspots: Each health care system or medical unit purchases and consumes a series of emissions-intensive products, equipment, and services in different ways. It is essential to identify them and establish goals for their gradual replacement, promoting sustainable procurement strategies with suppliers.
    - Health Care Without Harm is developing a tool to identify carbon hotspots in the health sector's supply chain, along with guides to replace and discontinue them.
- Include emissions reduction targets for the health sector: The health sector must be seen as an emission source, requiring sectoral strategies designed specifically to decarbonize it. These must be aligned with a level of ambition consistent with a 1.5ºC global temperature increase by 2100 (in other words, aiming for net-zero emissions by 2050).

Global Road Map for Health Care Decarbonization and Operation Zero

In April 2021, Health Care Without Harm will present a Road Map for decarbonizing the health sector worldwide. This Road Map charts the course to net-zero health emissions by 2050 through three interdependent pathways and seven high-impact actions. Countries can follow different trajectories, depending on their development levels and the magnitude of their health sectors' per capita emissions. The report will include factsheets with national data for 68 countries of all regions.

The Road Map sets the course for health care systems at the global level, consistent with the leadership required of the sector to limit the increase of the planet's average temperature to 1.5ºC toward the end of this century. Through this initiative, HCWH will support pilot countries in calculating their national health systems' carbon footprint, as well as establishing emissions reduction targets in accordance with each country's corresponding mitigation trajectory and developing tailored road maps to achieve such targets. The systematization of these pilots, in 2022, will allow for the development of further guidance and a framework applicable to a diversity of countries for the elaboration of national and subnational health care decarbonization plans.

IV. Adaptation component

The health sector is highly vulnerable to climate impacts, from various perspectives. For one, climate change increases the risk of diseases, injuries, and premature deaths, resulting directly or indirectly from extreme events and slow-onset events. The impact of climate change on people's health increases the demand for medical care and the pressure on health care services, which are already overwhelmed in many countries. Additionally, it increases direct risks to the sector's infrastructure and operations, further limiting its responsiveness. For example, the WHO estimates that during the 2010 Pakistan floods which affected 20 million people, at least 6 million required urgent medical attention, but few were able to receive it because the floods damaged and destroyed 514 health facilities.

Furthermore, climate change increases systemic risks for global public health. The current pandemic of COVID-19, a zoonotic disease caused at least in part by the increasingly close interaction between humans and wild species, is a reminder of the great social and economic costs of the anthropogenic environmental crisis. At the same time, environmental and health risks interact and reinforce each other. For example, the health emergency caused by COVID-19 made response to the Ambo typhoon, which devastated the Philippines in 2020, significantly more difficult. This was due to the added complexity of activating evacuation protocols while following social distancing measures, and managing shelters with the capacity to detect, isolate, and treat people who presented symptoms.

Expediting the health sector's adaptation to the already inevitable effects of climate change is more important than ever in this context. Resilient health care systems and facilities are those able to anticipate climate impact and stress, as well as to respond and recover from them. This reinforces their adaptive capacity and allows them to secure continuity in their operations and services in a changing climate. In other words, health systems and facilities must be able to anticipate, prepare, respond, and recover from increasingly frequent and sometimes compounded climate impacts.

To achieve this, each facility or system needs to assess its specific vulnerabilities (in their operations and infrastructure), as well as those of the communities they serve, considering their different components:

- Exposure: The degree of exposure is related to a facility's geographic location, and thus, the kind of bio-physical and hydro-meteorological hazards it might face. For example, hospitals or health facilities that are in coastal areas are exposed to infrastructure erosion due to sea level rise, or to extreme events such as hurricanes and storm surges; facilities located in large cities are exposed to more severe heat waves because of the urban heat island effect, etc.
- Sensitivity: Sensitivity is a measure of a system's susceptibility to damage caused by a hazard. In other words, it refers to the degree to which a system can absorb impacts. In the case of health facilities and systems, the physical sensitivity of sites can be determined by factors such as building materials, whether the infrastructure follows building codes, land use regulations and appropriate zoning (according to each area's risk level), and if they possess

back-up supplies and equipment (e.g., back-up generators in case of a blackout). In addition, the sensitivity of their operations can be determined by factors such as the stability of their supply chains in the face of external shocks, and their flexibility to increase capacity in case of an emergency (e.g. bed occupation, medical personnel available per bed).

- Adaptive capacity: The IPCC defines adaptive capacity as "The ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences". In health care facilities and systems, adaptive capacity is determined by factors such as the level of access to information and resources, and the existence of procedures that strengthen their ability to deal with hazards and mitigate potential short-term damage. These include, for example, whether a facility or system is connected to local and national early warning systems, if they have operating procedures for different emergency scenarios (including evacuation protocols), if their medical and administrative personnel is trained to respond to different types of climate hazards, and if their assets are insured against weather-related damages.

To translate these considerations into concrete measures, whether they are included in the NDC or in the sectoral tools adopted to implement it, the following actions are required:

- Conduct comprehensive evaluations to assess the national health sector's vulnerabilities: Health sector adaptation measures in the NDC or other instruments must respond to a vulnerability assessment that covers both the rising health risks faced by the population, and potential impacts on health facilities and systems (including their operations and supply chains). For example, the Argentine Government annually publishes the "Climate and Health in Argentina: Situation Assessment" report, where they list the status of a series of direct and indirect impacts of climate change on public health. The report addresses environmental health from a comprehensive perspective, considering the multiple determinants of health, including social factors and inequalities (e.g. access to basic hygiene and sanitation services) that increase the vulnerability of certain groups. Considering that vulnerability to climate change stems from context-specific conditions, its assessment must be localized, and preferably mapped through geographic information systems. For example, Mexico's National Atlas of Vulnerability to Climate Change maps population vulnerability to the increase in dengue distribution, with disaggregated data at the state and municipal levels.
  - Health Care Without Harm contributed to the development of the WHO Guidance on Climate Resilient and Environmentally Sustainable Health Care Facilities, which includes checklists and other resources to assess the resilience of health institutions to different types of climate impacts.
  - Health Care Without Harm is also working to develop indicators that make it possible to assess the resilience of GGHH members through the Health

Care Climate Challenge, as well as identifying priority workstreams for the adaptation of the health sector.

- Stress testing: Building and strengthening the resilience of health facilities and systems requires a comprehensive understanding of existing and projected climatic conditions, of the facility or system's internal dynamics (e.g., anticipated demand shifts in certain medical services due to demographic adjustments), and of their ability to respond to different hazards. Stress testing is a useful tool for national health authorities to simulate different contingencies, based on the probability of occurrence of certain climate events, and to identify the main vulnerabilities to address.
- Develop specific adaptation measures for the health sector, including regulations and protocols to implement them: Information gathered through a comprehensive vulnerability assessment and stress testing will make it possible to develop effective adaptation measures for the health sector on different levels. Additionally, it will allow national authorities and other health sector stakeholders to make informed decisions when facing a climate hazard. For example, the Peruvian Health Ministry has developed a portfolio of fourteen climate change adaptation measures for the sector. Protecting human health from the effects of climate change also requires strengthening the responsiveness of health care systems and communities, including through coordination and information measures, such as early warning systems. For example, Argentina has put in place a Heatwave and Health Warning protocol, issued by the National Meteorological Service. Similarly, the Colombian Government publishes the Health and Climate Newsletter every month, containing projections of climate variability per region, their possible effects on health and preventive recommendations.

V. In conclusion

Health Care Without Harm offers governments the tools and technical assistance to incorporate the health perspective in their NDCs and other strategic climate and health policy instruments.

If you require additional information or support in setting health targets and designing sectoral plans, please contact Sonia Roschnik (sroschnik@hcwh.org).

To find out more about Health Care Without Harm, visit our website:
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