World Health Organization

Expert meeting on measuring greenhouse gas emissions and other environmental sustainability concerns in health care facilities

24 February 2021
Meeting report

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Executive Summary

On 24 February 2021, the World Health Organization (WHO) convened an *Expert meeting on measuring greenhouse gas emissions and other environmental sustainability concerns in health care facilities* consisting of 59 participants, including experts from several agencies and institutions, and staff from all WHO Regions. During the meeting, experts were invited to present and discuss on the following objectives:

- Validate and/or refine WHO's approach on Climate Resilient and Environmentally Sustainable Healthcare Facilities
- Get a high-level overview of the utility of the main approaches and tools on assessing carbon emissions and sustainability of health care facilities (HCFs)
- Receive updates from leading partners on their initiatives
- Seek guidance on how WHO can contribute most effectively across awareness raising, norms and guidance, technical tools, capacity building and support to implementation
- Identify opportunities to raise awareness and political momentum, particularly in the context of the United Nations Framework Convention on Climate Change (UNFCCC) 26th Conference of the Parties (COP-26).

This is a relatively new area of work for many countries who are now beginning to articulate their needs for measuring greenhouse gas (GHG) emissions in the health sector or in HCFs. Several countries, through their Ministries of Health (MoHs) have started requesting specific support from WHO. Many national governments are making commitments to reduce their national GHG emissions and requesting sectors to do their part, and in the health sector there is growing awareness of the need to improve environmental sustainability and reduce carbon footprints; in addition, there is increasing awareness of the health and social benefits of environmental sustainability. In this context, this work responds to three WHO mandates with regards to climate change and health:

- To play our part in driving the change for carbon emission reductions across society, in the understanding that we have to cut deeply and fast, because we are off-track to safeguard ecosystems and human health.
- Actions to cut emissions are good for health. We must continue and intensify our work of protecting health from increasing climate risks, including through building resilience and adapting to climate change.
- Strengthen our focus on health systems and HCFs, building climate resilience and improving environmental sustainability. This includes providing sufficient services such as improved access to water, sanitation and energy services, and efficient health care waste disposal.

In order to rapidly advance in this area, and in the context of the COP-26, WHO proposes the following next steps:

Advocacy and partnerships

- Fully support the health-related campaigns and initiatives of the UK/Italian Presidency of COP-26 and reach-out to partners interested in maximizing their impact campaign at country level.

- Prepare a report on Climate Change and Health, to be presented at COP-26, including recommendations on sustainability and resilience in healthcare facilities. Experts participating in the meeting on *Measuring greenhouse gas emissions and other environmental sustainability concerns in HCFs* will be invited to contribute.
- Showcase this area of work in the Global Conference on Climate Change and Health to be held at the COP-26.
- Provide, in collaboration with interested partners, high level messaging and advocacy on the need for sustainability in the health sector.
- Discuss with governments and partners on approaches and mechanisms to work with global medical supply companies.
- Work with and support existing partnerships leading this effort.

Evidence and monitoring

- Preparation with partners of a brief report describing tools to measure GHG emissions, to be included as a section in WHO's report to the COP-26.
- In collaboration with interested experts, develop quality criteria for tools for assessing carbon emissions from the health sector, with an emphasis on bottom-up tools that can be used within facilities across different levels of development.

Capacity development and country support

- Begin pilot studies by promoting and supporting tools already made available by partners within current WHO-led country projects.
- Assist countries to include the issue in national climate planning mechanisms and commitments.
- Work with partners to make their GHG emission tools available to countries, supported by capacity building and training where required.

Meeting objectives

The health sector in many countries is taking steps to build climate resilient and environmentally sustainable health systems and health care facilities. In 2020, WHO published a guidance for *climate-resilient and environmentally sustainable health care facilities* with the overall goal of increasing the climate resilience of health care facilities to protect and improve the health of their communities in an unstable and changing climate, while optimizing the use of resources and minimizing the release of waste by becoming environmentally sustainable.

GHG emission reduction responds to environmental sustainability, that is, reducing the impact of health care facilities (HCFs) operations on the local and global environment. Specifically, HCFs, if not well managed, contribute to environmental degradation, through the release of pollution, in the form of waste, chemicals, air pollutants, and also GHGs. The latter contributes to the overall impact on the climate, which in turn impacts on the HCF (Box 1). In order to advance knowledge and action in this area, WHO convened an *Expert meeting on measuring greenhouse gas emissions and other environmental sustainability concerns in health care facilities* consisting of experts from several agencies and institutions, globally. There were 59 participants, including staff from all WHO Regions (Agenda in Annex A; List of participants in Annex B).

During the meeting, experts were invited to present and discuss on the following objectives:

- Validate and/or refine WHO's approach on Climate Resilient and Environmentally Sustainable Healthcare Facilities
- Get a high-level overview of the utility of the main approaches and tools on assessing carbon emissions and sustainability of HCFs
- Receive updates from leading partners on their initiatives
- Seek guidance on how WHO can contribute most effectively across awareness raising, norms and guidance, technical tools, capacity building and support to implementation
- Identify opportunities to raise awareness and political momentum, particularly in the context of the COP-26

These objectives were achieved through discussions with experts in the field about current needs and advances in countries regarding measuring GHG emissions in HCFs and in health systems in general; the different methods and approaches in circulation and the feasibility of their implementation in different settings; and importantly, the advice WHO should give to countries, noting large differences in data availability and expertise between and within countries. This report summarizes the information presented in each of the sessions, and the key points discussed from the open discussions. The report also includes suggested next steps to be taken by WHO.

Background

Demands, interest, motivation and opportunities to cut GHG emissions in every sector and across society has increased rapidly in the last few years. There is a great opportunity for the health community to play its part and also drive change. There is also a renewed and amplified focus in this area in WHO. COVID-19 has brought new urgencies to the health sector. This makes 2021 a very special year. In 2020, WHO launched a Manifesto for a healthy recovery from COVID-19, urging action in six areas: 1) Protect nature; 2) Ensure basic services; 3) Shift to clean energy; 4) Promote healthy, sustainable food systems; 5) Build liveable cities; and 6) Stop subsidizing pollution.

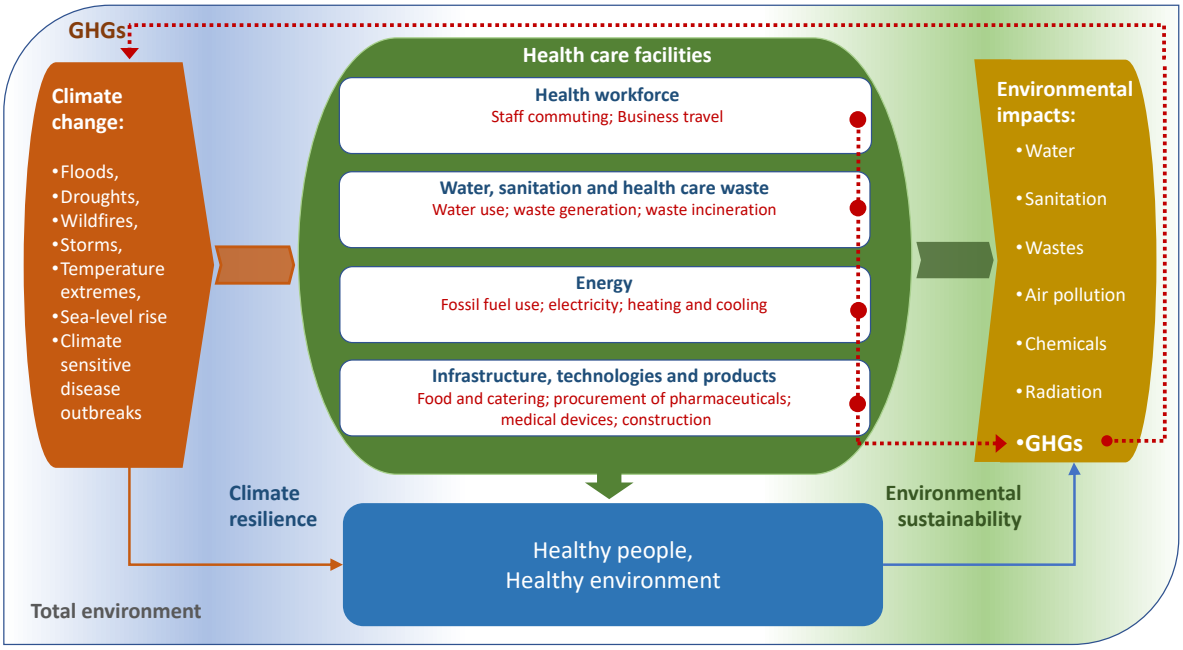
Health has now an even higher profile in the COP, in its 5-year renewal of the Paris Agreement. We know that the health sector emits around 5% of Global GHG with large variations between countries. We are also aware of the importance of health leadership. Nurses and medical doctors are amongst the most trusted professional everywhere. We have a clear responsibility to lead by example, and this is already occurring in many settings. Notably, the National Health Service (NHS) in England aims to become Net Zero by 2040. It is expected that many other health systems around the world will make similar commitments.

Many countries are now making national commitments to significantly reduce or reach net zero carbon emissions, driven by the accumulating evidence of the damages of climate change, and the responsibilities that they have taken on as signatories to the Paris agreement. In most countries, there are no clear mandates specific to emissions of the health sector or health care facilities, although this is now beginning to change. At the same time, there is a lack of access to reliable energy in many healthcare facilities in low-income countries, so that there is a need is to increase, not reduce, their energy access and use. The aim is for this work to support the needs of countries across different levels of development, in either driving down carbon emissions, or placing them on a greener development path as their energy consumption increases.

Different facilities are implementing different methods and ideas, doing their own assessments based on context-specific priorities and environmental concerns. In few places there are clear national mandates. In Canada, two provinces require reporting of GHG emission reductions. In France, there is a mandate for hospitals to report on GHG emissions. England's NHS has set firm targets and is implementing actions towards carbon neutrality. In this emerging field, methods are not fully developed. This is an opportunity for the health sector to align to their countries' goals, whether of emission reductions, becoming carbon neutral, or achieving zero emissions.

This is a relatively new area of work for many countries who are now beginning to articulate their needs for measuring GHG emissions in the health sector or in HCFs. Although some countries have initiated assessments (both at national and HCF level), these are mainly done by researchers, or Non-Governmental Organizations (NGOs). Several countries, through their MoHs have started requesting specific support from WHO. This may happen because the country is interested in reducing their national GHG emissions and requesting sectors to do their part. There is also growing awareness in all sectors of the need to use renewable energy. There is also awareness of the health and social benefits of environmental sustainability.

Box 1. Climate resilient and environmentally sustainable health care facilities



The *WHO Guidance for climate resilient and environmentally sustainable health care facilities* identifies four fundamental requirements to provide safe and quality care in the context of climate change. These are, having 1) Adequate numbers of skilled and informed health workforce with decent working conditions; 2) Sustainable and safe management of water, sanitation and health care waste; 3) Sustainable, clean energy services; and 4) Appropriate infrastructure, technologies, products and processes. These four areas are impacted by climate change, and they also contribute to environmental contamination and emission of GHGs. The figure shows examples of areas that generate GHG emissions.

In this context, this work responds to three WHO mandates with regards to climate change and health:

1. To play our part in driving the change for carbon emission reductions across society, in the understanding that we have to cut deeply and fast, because we are off-track to safeguard ecosystems and human health.
2. Actions to cut emissions are good for health. We must continue and intensify our work of protecting health from increasing climate risks, including through building resilience and adapting to climate change.
3. Strengthen our focus on health systems and HCFs, building climate resilience and improving environmental sustainability. This includes providing sufficient services such as improved access to water, sanitation and energy services.

Approaches to estimate GHG emissions in the health sector

The Greenhouse Gas Protocol sets standards to measure and manage GHG emissions, in three "Scopes":

- Scope 1 are direct emissions from health owned or directly controlled sources (on site);
- Scope 2 are indirect emissions from the generation of purchased energy (mostly electricity);
- Scope 3 are other indirect emissions from production and transportation of goods and services, which include the whole supply chain.

England's NHS, for example expands on these concepts and also considers in its aim of becoming *net zero*, patient and visitor travel, which are at present, outside the three Scopes. A global estimate of the health system carbon footprint (43 countries) shows Scope 1 emissions adding to 17%; Scope 2, 12%; and Scope 3, 71% (HCWH/ARUP, 2019). Box 2 shows the four fundamental elements of WHO's guidance for climate resilient and environmentally sustainable HCFs, and GHG emissions within the three Scopes.

From current studies, reports and discussions with experts, there are two general approaches to estimating GHG emissions:

1. Several studies have estimated the carbon footprint of the health sector in terms of GHG emissions and presented as a fraction of national GHG emissions. This "top down" approach analyzes the whole health sector in a country, using a similar methodology (input-output economic models). These studies require datasets that may not be available in many LMIC, and are technically and computing intensive, making its replication difficult in LMIC (Box 3).

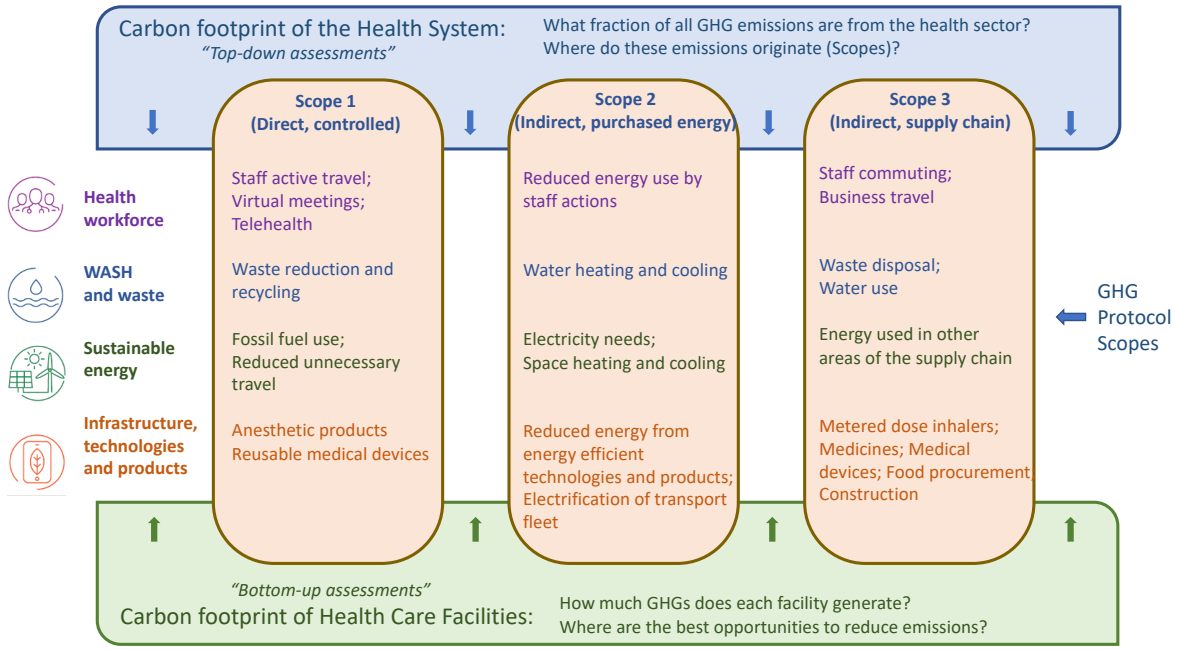
2. Other studies use local settings (e.g., hospitals) to track and calculate emissions (a "bottom-up" approach, which can be aggregated to national databases). This is generally a simpler method which can be applied to most HCFs in LMIC (Box 4).

The different approaches also respond to different questions. The top-down approach responds to questions such as *What fraction of all GHG emissions in a country are from the health sector?*; and *Where do these emissions originate?* (3 Scopes). The bottom-up approach can help respond to the question, *How much GHG does a given HCF generate?* and, *Where, in each HCF are the best opportunities to reduce emissions?* (Box 3 and 4)

There is a hybrid approach which results from a combination of the top-down and bottom-up approaches. NHS, for example does its carbon footprint modelling combining the accuracy associated with bottom-up approaches, and of the system wide supply chain top-down modelling (Box 5).

In any of these approaches, there are similar models and methods in circulation. This calls for further discussions, for example on whether WHO or another agency should develop quality criteria for the different methods; or to bring experts together to jointly develop one best practice method.

Box 2. Approaches to estimating GHG emissions from the health sector



There are many tools in the form of calculators, protocols, and models, mostly in sectors other than health.

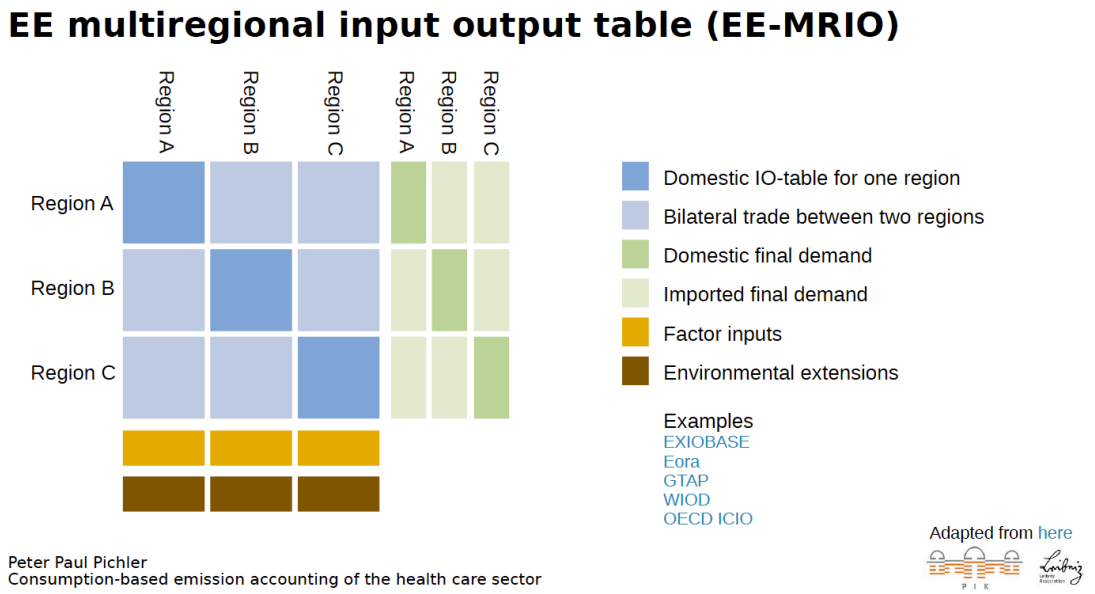
Estimates of the carbon footprint for the whole health system have been done in several countries. These use input-output modeling techniques, which are data and computer intensive, and as they currently stand, are challenging to implement. However, some global datasets are available although not for all countries. This "top-down" approach can be a good reference approach for a country and helps identify emissions by Scopes. It can best be done by a research institution with computing power and expertise.

"Bottom up" tools to estimate GHG emissions in HCFs are available from a few agencies (e.g., Health Care Without Harm, The Aga Khan Development Network, NHS). Several challenges have been identified: Scope 1 emissions are controlled by the HCF, however, there are often logistical problems in obtaining the necessary data, and nationally based factors are used when specific facility data is not known. Buildings (where the HCF operates) may not be owned or managed by the facilities, complicating the assessment and possible actions. Scope 2 emissions are the result of purchased energy, and the HCF has little control over them. Scope 3 emissions are those generated outside the HCF, with almost no control and are very hard to measure (supply chain). This approach is best conducted by a building engineer, with access to the HCF financial records.

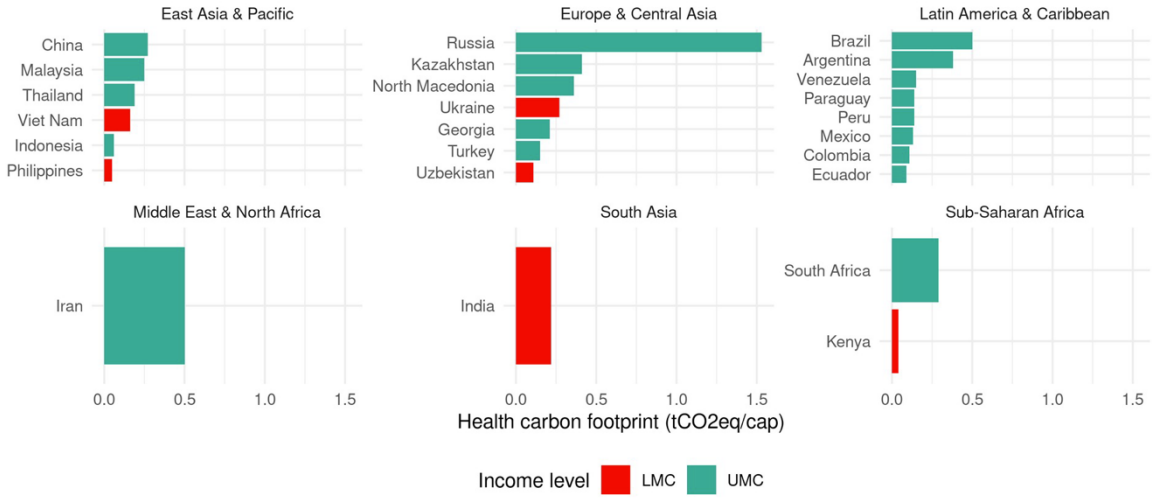
Both types of tool ("bottom-up", individual HCFs calculators, and "top-down", national health system modelling) offer valuable information for action, and the comparative advantages of both should be considered by WHO and countries to develop and implement.

Box 3. Implementation of the top-down approach (presented by Peter Paul Pichler)

Top-down assessment are typically calculated with environmentally extended multiregional input output models (EE-MRIO). The estimates are based on official statistical data (input output tables, trade data, health expenditure data) and so their quality depends on the existence and quality of these data. The EE-MRIO Eora, for example, has a resolution of about 15,000 sectors worldwide, but the health sector is not resolved as at least one separate sector in some countries, but is combined with other service sectors.



In a recent study, carbon footprints were calculated for LMICs with at least one health sector in their input output table (figure based on Lenzen et al, 2020). For other LMICs, no input output tables with a health sector are available, which makes an estimation of health emissions using this method impractical.



Box 4. Implementation of the bottom-up approach (presented by Jerome Baddley)

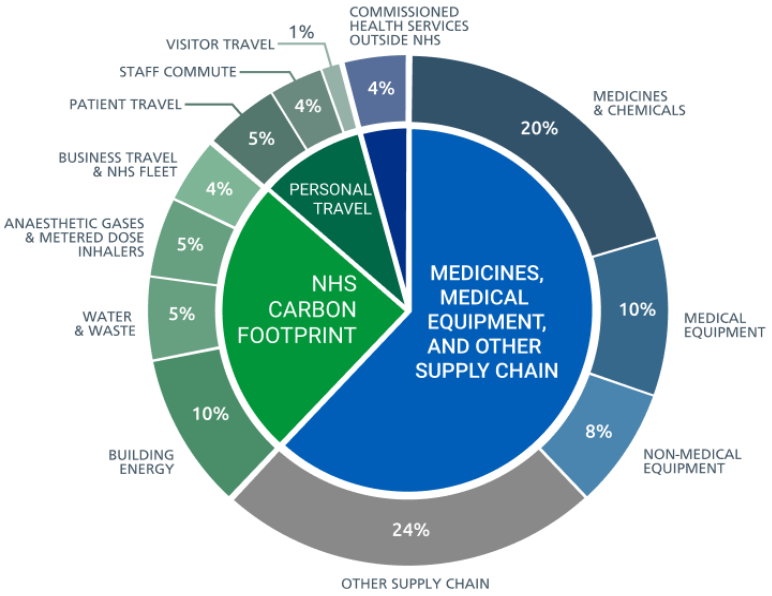
	AKHS, Tanzania	AKHS, Mombasa	AKHS, Kisumu	AKHS, Pakistan	AKHS, Afghan.	AKHS, India	AKHS, Kyrgy.	AKHS, Syria	AKHS, Tajikistan	AKUH, Nairobi	FMIC, Kabul	AKUH, Karachi
Pharmaceuticals	35%	48%	60%	7%	46%	42%	45%	0%	32%	43%	27%	21%
Medical Surgical Supplies	16%	21%	10%	9%	24%	32%	0%	0%	3%	25%	25%	25%
Medical Surgical and Laboratory Equipment	13%	13%	9%	12%	0%	3%	0%	0%	42%	8%	2%	20%
Laboratory Consumables, Chemicals & Supplies	9%	8%	10%	0%	3%	9%	29%	0%	4%	10%	14%	24%
Surgical Instruments	0%	0%	1%	0%	0%	0%	0%	0%	3%	0%	0%	0%
Imaging Supplies	0%	0%	0%	0%	0%	0%	3%	0%	0%	1%	3%	0%
IT Equipment	1%	0%	1%	1%	0%	0%	0%	24%	0%	0%	0%	2%
MRO Supplies	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%
Food Supplies	1%	1%	1%	0%	2%	2%	0%	0%	0%	1%	2%	2%
Construction	4%	1%	0%	6%	0%	0%	0%	0%	0%	4%	0%	2%
Electricity	13%	0%	5%	9%	1%	9%	19%	4%	7%	7%	19%	0%
Staff Travel (by Air) International + Domestic	1%	0%	0%	21%	4%	0%	2%	43%	1%	0%	0%	0%
Vehicles Fuel	0%	0%	0%	13%	2%	0%	0%	6%	1%	0%	4%	0%
Gas (Utility)	1%	4%	0%	0%	3%	1%	0%	0%	0%	0%	1%	0%
Aesthetic gases	1%	1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Refrigerant gases for cooling systems	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Fuel and lubricants	0%	0%	0%	5%	5%	0%	0%	0%	0%	0%	0%	0%
Building fuels, generator diesel, gas etc.	2%	0%	0%	9%	5%	0%	0%	1%	0%	0%	0%	0%
Total	95%	98%	98%	92%	95%	99%	98%	78%	96%	99%	99%	97%

Organizations including Healthcare Without Harm and the health providers of the Aga Khan Development Network (AKDN) have developed "bottom-up" tools suitable for use in individual facilities. Results are shown here from AKDN's excel-based benchmarking and environmental foot printing tool to cover all the types of emissions arising from health facilities and community-based operations. The tool converts data entered into instant carbon read outs. Inputs include readily available data on energy (electricity, diesel and the full range of local fossil fuels/gas as well as solar), travel, anaesthetic gases, inhalers, procurement spend, contractor logistics, waste, water (and costs to help identify and track the impact of choices and making changes). The tool produces simple diagnostic dashboards to identify hotspots.

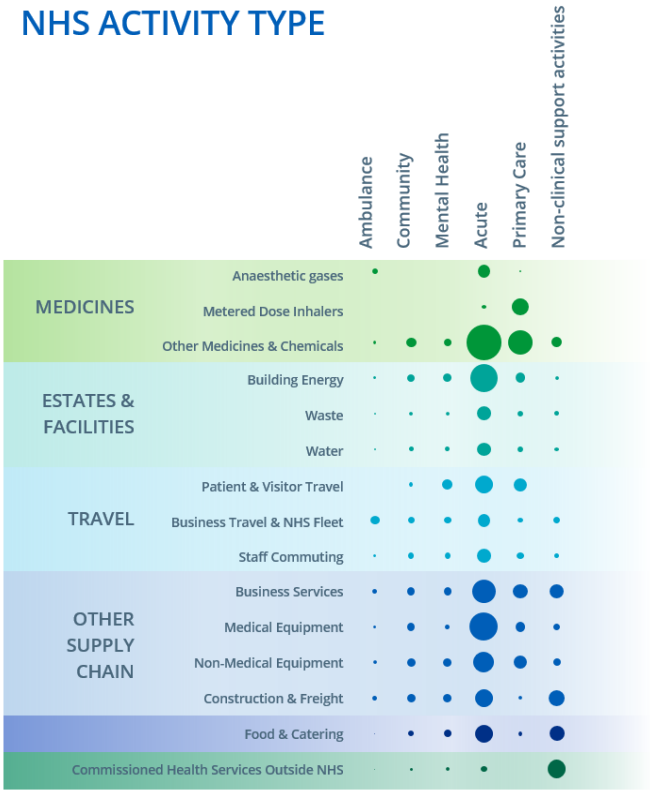
This table shows the split of both direct emissions from activities and emissions such as energy use, and the emissions allocated to procured items for a single quarterly report. The health networks method for foot printing, procured items uses bottom-up spending data grouped into categories of items purchased and UK supply chain emissions factors (top-down factors). These factors provide average carbon intensities for expenditure on similar groups of items. The data within the areas of the table highlighted in pink are not footprinted using financial data These use bottom-up data on resource use and bottom-up resource use carbon factors. The top half of the table highlights cost codes, which represent the highest contribution to the health network's supply chain emissions; 60% of spend in 4 costs codes, represents 80% of the emissions resulting from procurement. This data allows procurement teams to target work on carbon reduction with the largest suppliers in these cost codes.

Box 5. Example of carbon footprint questions (presented by Martin Caunt based on NHS, 2020).

1. *What are the sources of carbon emissions by proportion of NHS Carbon Footprint Plus?*



2. What are the sources of carbon emissions by activity type and setting of care?



Open discussion: supporting the implementation of these approaches in LMICs

Discussion Questions:

What advice would we give to countries wanting to make a start?

- *Where should they start?*
- *Should an incremental approach be proposed?*
- *What is the minimum support they would need? What should WHO's role be?*

WHO should focus its support on implementation of actions to reduce GHG emissions in LMIC, based on the experiences gained so far, mostly in some middle and high income countries (HICs). WHO should advise countries by guiding them on where should they start; what approach to follow; and identifying and providing the support they need.

- Countries need basic tools that will help them understanding where they are, what actions they can start to take and the impact these actions will have. WHO may develop a new tool, but in order to support more rapid progress and greater innovation, it may be more useful for WHO to develop quality criteria to assess, promote and improve existing tools.
- There needs to be an engagement approach that encourages health system suppliers to reduce their emissions. WHO can work with the health community calling for a more sustainable supply chain which is global in nature, and concentrated in a relatively small number of suppliers. Products are produced in a few countries, and about 50% of emissions come from around 80 suppliers. This would overcome current difficulties in responding to e.g., Scope 3 assessments.
- WHO can help develop diverse conceptual and implementation frameworks on different pathways to support greening health systems.
- Basic and early support that would be useful is training staff and helping with data analysis.
- Many countries have developed climate change (and health) adaptation plans but they are also engaged in efforts to reduce GHGs, so they need to find synergies between the two issues.
- Support can also include estimating GHG emissions, understanding data, setting goals and guidance to prepare action plans.
- The health sector in HICs follows a linear supply chain, of single use disposable medical supplies. This needs transformation towards a circular economy, reducing the number of disposable supplies, and gaining in GHG emission reductions.
- LMICs can face multiple shocks and stresses in their health systems and facilities like flooding, extreme weather events, and use of generators due to power cuts, which can be very challenging. They struggle with multiple stresses and health system priorities for action (e.g., managing extreme events and epidemics), so taking action on carbon footprint can appear to be too demanding. However, health co-benefits and cost savings are important incentives.

- There is a necessity for clear accounting of carbon footprints. It is important to have clear guidelines for doing calculations. A carbon accounting tool will be very useful, so that partners have tools to identify where carbon emissions are occurring in the sectors.
- It is very important that WHO continues to provide user friendly tools. WHO can also create generic guidelines for addressing each category requiring action (hotspots), which can include standard issues like travel, energy, food, incineration of waste (e.g., this can be provided in factsheets).
- Incentivizing companies to develop different ways of packaging and dispensing products, and alternatives to plastic based products can also be very beneficial.

Open discussion: Expertise and community of practice

Discussion Questions:

- *What would be the ideal mechanism, or mechanisms (e.g., community of practice), to exchange information and expertise about tools to estimate GHG emissions in health systems and health facilities?*
- *How can existing mechanisms be utilized to reach various users (e.g., health care planners, health facility managers)?*

WHO can act to increase global awareness and encourage action on this issue as a priority by:

- Highlighting that taking action can benefit healthcare facilities, reduce costs, and produce health benefits.
- High level clear statements (e.g. from the WHO Director General) about how the health care sector is a large polluter and needs to lead carbon emission reductions and become an example of leadership (i.e. to help further jump start action).

Basic promotion of the GHG emissions concept is needed before providing details on how to use the tools and calculate carbon footprint.

- All health practitioners, at every level, need to first understand that this is a health issue and that they should participate in environmentally friendly types of approaches.
- The first step here is convincing them on the need to take action and then provide them with the tools they need to achieve these objectives.
- Sharing good practices and experiences is also very important.

Increasingly, health practitioners want to know what they can do to help because they understand that their sector contributes to the climate change problem, and that they therefore have a role in addressing it.

- Providing carbon footprinting data can help them target certain areas especially if that data is broken down into concrete examples around how they can make savings (e.g., energy).

- It is also important to continue providing them with direction on what actions they can take that are effective.

It is very important to remember that we need simplicity and value.

- The focus should not be around providing something that is very comprehensive and complex but actually providing something that is practical and connected to the core values, objectives and activities of the health community.
- There is a real risk in providing a tool that ends up not being used.
- Linking to the priorities of other actors within organizations is also going to be key moving forward.
- We need to be aware of organizations' starting point of knowledge.

It is crucial to show the evidence to healthcare professionals.

- Showing individuals valuable data from their own organizations (e.g., the impacts of anesthetic gases, inhalers, etc.) is when they become very engaged and eager to want to know what actions they need to take.

Existing mechanisms can be utilized to reach various users (e.g., healthcare planners, health facility managers).

- WHO and partners can create a process to share and compare existing tools to see what each tool can contribute and discuss the audience it is intended to reach to help decide how these existing tools can be used to reach different users.
- Individuals who are in charge of procurement or administrations are usually not aware that they can do something about climate change and hence, it is important to implement strategies that communicate important roles to these groups in order to effectively reach them.

Actions towards COP-26

The UK Presidency has identified a range of priority areas for health to engage in COP-26. These are:

- Healthy diets delivered through sustainable food systems – The aim is to reduce the large source of GHG emissions from food systems, and ensure health diets and nutrition, which is a key aspect of a resilient population to climate change.
- Air quality – Mitigate the health impacts related to exposure to air pollution.
- Health leadership on emission' reductions and improving air quality – Ensure health leadership in this area, with commitments towards reductions in emissions by HICs as the higher emitters and showing the pathway for LMIC to follow.
- Developing climate-resilient health systems – Action aims to increase the number of countries doing systematic climate change and health vulnerability and adaptation assessments, and developing comprehensive plans linked to National Adaptation Plans (NAPs).

- All hazards approach – Integrate health into an all-hazards approach to disaster preparedness and response.

There are several initiatives to implement including on working with countries to increase ambitious targets and become net zero; and making improvements in air quality. The aim is to help LMIC get involved and discuss reasonable target years for becoming net zero, depending on feasibility of each. There is a need to work with countries to estimate how much carbon are they emitting, what can be controlled, and what are reasonable targets. There is an important argument for action with the co-benefits and the prevention agenda. Health professionals are a force for advocacy. We need to bring them on board with climate change as a health crisis and using their voice for advocacy. NHS will exhibit at COP-26 on their work and campaigns.

The NHS commitments are a valuable case study in the lead up to the COP. There is a huge challenge in becoming carbon net zero, with 1.3 million staff and 4% of the country's footprint. One priority is the health workforce and health leadership for carbon emissions. A campaign engaging with all 1.3 million staff will be put in place. There is an opportunity to accelerate a green and healthy recovery and inspire individual health care workers to take actions that support the net zero ambitions. Also, an opportunity to show the scale and support by health care professionals towards becoming net zero. This will be showcased with NHS Net Zero programme as an exhibit at COP. Of the range of interventions proposed, one is the construction of new hospitals with net zero standards (and innovative low Carbon material and designs) to be published prior to the COP. There is also the need to engage with key suppliers, to come on board and commit to the net zero target, in recognition that addressing Scope 3, needs partnerships with suppliers and health systems globally, to drive decarbonization of HS worldwide. Examples of actions:

- *Estates and Facilities*: Each of the 40 new hospitals will be Net Zero, and digitally flexible to support the delivery of future models of care.
- *Travel and Transport*: The NHS will lead the world, with the testing of a first of its kind zero-emissions emergency ambulance in the UK by 2022.
- *Medicines and supply chain*: By working with our suppliers to ensure that all of them meet or exceed our commitment on net zero emissions before the end of the decade.

In the lead up to the COP, both top-down and bottom-up approaches are important, in terms of getting commitments and building advocacy. We can see the COP as a springboard to move the efforts to measure health care footprint and promote mitigation, resilience and leadership in the sector. All health systems must take actions to achieve the Paris Agreement commitments, recognizing there are different trajectories for the health systems in different countries towards 2050. Argentina, for example, became the first country in the world to include health care decarbonization and measurement of health care footprint in their Nationally Determined Contributions (NDCs) to the Paris Agreement. The aim is to work with countries to make commitments in this direction. Health Care Without Harm (HCWH) is also working with hospitals and health systems of non-state health actors to make commitments.

In summary, health should be one of the main justifications for climate action. WHO will support health initiatives of the UK presidency and Race to Zero at the COP (in addition to other products and events). WHO needs to position itself to be able to supply technical expertise, tools and approaches for when countries ask for support to this work. This avoids countries making commitments they cannot follow up and implement. As a short-term objective, WHO will prepare a report on Health and Climate Change for the COP (the first was

done for the COP-24 at the invitation of the Fiji Presidency), including information on these tools. WHO will also hold the 4th Global Conference on Health and Climate change, over 2 days, during the COP-26.

Summary of key points and proposed next steps

There is great interest across HICs and LMICs to start or intensify this important work. This needs to be paired with health system resiliency efforts and the continued provision of basic services considering the situation of many HCF and health systems in LMIC.

- It is very important to start simple and not assume that everybody has the same level of understanding or knows where to start. There is a need for simple high-level messaging, which can be built upon by a phased approach while also building on what is already in place.
- In our globalized health industry, most of the emissions are from the supply chain. Vocal statements and a positive engagement strategy need to be made to major suppliers and industries to reduce these emissions.
- There is a need for new tools and information and WHO has a role in setting standards or partnering with others in their development as a starting point for health practitioners.
- The bottom-up approach is essential because that is where the action happens and where it is possible to actually engage with professionals that are responsible for change.
- The top-down approach can also be useful in terms of connecting to national decision makers responsible for broad commitments as it is important to know where the overall health sector fits into that.
- It will also be important to support advocacy, capacity building, technical support, and training for utilizing tools.
- Healthcare professionals are a critical resource. They are the backbone of health services and have a particular role of being advocates. They must see this as a health issue and become advocates for action.

Overall, the most positive message here is that it can be done. If the approach can be applied from some of the highest income countries in the world to facilities in LMICs, then it is clear that this is not an impossible or irrelevant agenda for the health sector.

WHO proposal for next steps towards COP-26 and beyond

Recognizing the importance of responding to countries' request for support to assess the carbon/environmental footprint in HCFs, the opportunity given to health by the COP-26 UK Presidency to increase ambition from countries to tackle climate change, and the importance of tapping into existing knowledge and experience from relevant partners, WHO proposes the following next steps:

Advocacy and partnerships

- Fully support the health-related campaigns and initiatives of the UK/Italian Presidency of COP-26 and reach-out to partners interested in maximizing their impact campaign at country level.
- Prepare a report on Climate Change and Health, to be presented at COP-26, including recommendations on sustainability and resilience in healthcare facilities. Experts participating in the meeting on *Measuring greenhouse gas emissions and other environmental sustainability concerns in HCFs* will be invited to contribute.
- Showcase this area of work in the Global Conference on Climate Change and Health to be held at the COP-26.
- Provide, in collaboration with interested partners, high level messaging and advocacy on the need for sustainability in the health sector.
- Discuss with governments and partners on approaches and mechanisms to work with global medical supply companies.
- Work with and support existing partnerships leading this effort.

Evidence and monitoring

- Preparation with partners of a brief report describing tools to measure GHG emissions, to be included as a section in WHO's report to the COP-26.
- In collaboration with interested experts, develop quality criteria for tools for assessing carbon emissions from the health sector, with an emphasis on bottom-up tools that can be used within facilities across different levels of development.

Capacity development and country support

- Begin pilot studies by promoting and supporting tools already made available by partners within current WHO-led country projects.
- Assist countries to include the issue in national climate planning mechanisms and commitments.
- Work with partners to make their GHG emission tools available to countries, supported by capacity building and training where required.

Annex A. AGENDA

Expert meeting on measuring greenhouse gas emissions and other environmental sustainability concerns in health care facilities

24 February 2021, 14:00-17:00 Geneva time

Agenda

Geneva Time	Topic	Presenter/Facilitator
14.00-14.05	Welcoming remarks	Maria Neira, Director, Environment, Climate Change and Health Department, WHO
14.05-14.20	WHO's approach towards climate resilient and environmentally sustainable health care facilities	Diarmid Campbell-Lendrum, Head, Climate Change and Health Unit, WHO Elena Villalobos Prats, WHO
14.20-14.30	Presentation of background to the Webinar	Carlos Corvalan, School of Public Health, University of Sydney
14.30–14.45	Tools to estimate GHG emissions in the health sector ("top down" approach)	Peter Paul Pichler, Potsdam Institute for Climate Impact Research
14.45-15.00	Presentation of tools to estimate GHG emissions in health care facilities ("bottom-up" approach)	Fawzia Rasheed, Aga Khan Development Network (AKDN) Fayaz Noormohamed, Aga Khan University Jerome Baddley AKDN/UK NHS
15.00-16.00	Open discussion: supporting the implementation of these approaches in LMICs - Applicability & Scope: focus on GHGs - Timing, Methods, Process; Piloting	Martin Caunt, UK NHS
16.00-16.15	Open discussion: Expertise and community of practice	Peter Berry, Health Canada
16.15-16.50	Actions towards COP-26	Dave McConalogue, FCDO Natalia Kurek , UK NHS Josh Karliner, HCWH Diarmid Campbell-Lendrum, WHO
16.50-17.00	Summary of key points discussed and proposed next steps	Diarmid Campbell-Lendrum

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