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# Do no harm:

healthcare professionals address  
sustainability and climate change



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**Economist Impact researched and created this report, which was initiated and funded by Johnson & Johnson. Economist Impact retained full editorial control, and Johnson & Johnson reviewed the material for compliance with relevant regulations.**

# Contents

- 4 *About this report*
- 6 *Executive summary*
- 9 *Chapter 1: Climate change is a health emergency*
- 13 *Chapter 2: Changing roles and expectations of individual HCPs*
  - 14 Individual HCPs prioritise patient education, the multiplier effect
  - 16 Personal initiatives come second
  - 18 Incentives to support HCP in action
  - 19 HCPs are at the forefront of change
  - 22 Sustainability efforts can improve HCP morale
- 23 *Chapter 3: Healthcare systems confront their own role in climate change*
  - 25 Decarbonisation priorities
  - 27 Moving towards a net-zero ecosystem
  - 30 Emission reporting
  - 31 Most HCPs know their practice's sustainability plan
- 33 *Conclusion*
- 34 *Appendix: Survey questions and results*

# About this report

*Do no harm: healthcare professionals address sustainability and climate change*, is an Economist Impact report, sponsored by Johnson & Johnson, a global healthcare company. This independent research covers the intersection of climate change and healthcare systems in Europe, the health impacts of climate change, and how healthcare professionals are responding to climate change and improving the system's sustainability.

This research was undertaken in three phases, starting with a literature review of how healthcare systems in France, Germany and the United Kingdom are responding to climate change and the role of healthcare professionals (HCPs), followed by a survey of 75 doctors and 75 nurses working in hospitals in France, Germany and the UK in February and March 2022. Additionally, Economist Impact interviewed experts from government, hospitals, medical professional associations and non-government organisations (NGOs) to build on the research and shed light on its survey findings. Our thanks are due to the following for their time and insights (listed alphabetically):

- Dr Petra Becker, head of development and sustainability, Dr Becker Unternehmensgruppe, Germany

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- Dr Christian Schulz, managing director, German Climate Change and Health Alliance (KLUG), Germany
- Dr Richard Smith, chair, UK Health Alliance on Climate Change, UK
- Dr Nick Watts, chief sustainability officer, NHS England, UK

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Impact and do not necessarily reflect the views of the sponsor. Economist Impact researched and created this report, which was initiated and funded by Johnson & Johnson. Economist Impact retained full editorial control, and Johnson & Johnson reviewed the material for compliance with relevant regulations.

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### **The Hippocratic Oath—“First, Do No Harm”**

“Health facilities are the operational heart of service delivery, protecting health, treating patients, and saving lives. Yet health sector facilities are also a source of carbon emissions, contributing to climate change. The world’s health sector facilities churn out CO<sub>2</sub> through the use of significant resources and energy-hungry equipment.

This is perhaps ironic—as medical professionals our commitment is to ‘first, do no harm.’ Places of healing should be leading the way, not contributing to the burden of disease.”

- Tedros Adhanom Ghebreyesus

Director-general, World Health Organization<sup>1</sup>

<sup>1</sup> World Health Organization, 72nd World Health Assembly, Geneva, Switzerland, May 25th 2019, <https://www.pscp.tv/w/1IDGLrerprqxmt=1h6m38s> (minute 39)

# Executive summary

Healthcare professionals (HCPs) are actively treating an increasing number of patients affected by climate change factors. But healthcare facilities, activities and supply chains are a large contributor to climate change, unintentionally reinforcing the very problems they aim to solve. In total, healthcare represents 4-5% of total global carbon emissions.<sup>2</sup>

Fortunately, the healthcare sector is starting to understand the significant role it can play in decarbonisation efforts to better protect patients and the planet from climate change. How then, can healthcare move forwards in the best interests of its patients and the planet?

This topic is gaining traction across Europe, and globally. At COP26 in Glasgow in 2021, the Health Programme was extensive.<sup>3</sup> Proposals to build climate resilient and low-carbon, sustainable health systems were presented. Initiatives were raised around research for healthcare adaptation and inclusion of health priorities in Nationally Determined Contributions. Raising the voice of HCPs as climate change advocates was also highlighted.

To bring new insight to this conversation and help decision-makers navigate the big issues, Economist Impact, with sponsorship from Johnson & Johnson, spoke with subject experts and surveyed hospital doctors and nurses in three major carbon-emitting countries in Europe—France, Germany and the UK. They shared their perspectives on how healthcare systems and professionals can play a role in decarbonisation and better support patients.

The results highlight a passionate reaction from HCPs, who are deeply concerned about the growing impact of climate change and eager to see sustainability rise on the agenda in their workplace and at a national level. Additionally, interviews with senior experts shed light on priority issues, and how healthcare bodies can better overcome common roadblocks.

## Notable findings include:

- **HCPs say they want to educate patients about climate change—but first, they need more education themselves.** When asked what personal responsibility they'd like to take

<sup>2</sup> Health Care Without Harm and ARUP, "How the Health Sector Contributes to the Global Climate Crisis and Opportunities for Action", September 2019, [https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint\\_092319.pdf](https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint_092319.pdf)

<sup>3</sup> World Health Organization, "COP26 Health Programme", <https://www.who.int/initiatives/cop26-health-programme> (accessed June 29th 2022)

around sustainability, most selected the role of educator to patients around sustainable lifestyles (33%) and various climate risk factors (25%). However, sustainability education is not part of HCP's core responsibility, so it is unsurprising that others expressed that they lacked the time and resources (12%) and education (9%) to do this effectively. Most (74%) said that thus far they have not been supported in green literacy efforts.

- **HCPs might be more proactive if they had more support and incentives.** On the theme of personal responsibility, following educating patients, HCPs gave a moderate response to taking proactive personal responsibility. For example, 18% said they would like to help redesign clinical pathways to be more sustainable. This is disappointing, as HCPs can be a powerful force in addressing the climate footprint of their practice across all emission areas. To change this, particularly in areas where national plans are absent, incentives and a greater sense of empowerment and support will be needed, ideally coming from their employers.
- **Small changes add up, and the healthcare ecosystem will transform.** To reach zero carbon emissions (net zero) across the value chain of hospitals, change needs to happen at every level. Several experts we spoke with are calling on HCPs to push for sustainable changes in clinical pathways, models of care, the types of prescriptions they give patients and beyond. To reach ambitious sustainability goals, the system will be much different than it is today—and nobody is quite sure what that outcome will look like.
- **Healthcare systems protect patients but are also major producers of carbon.** In our survey, hospital doctors and nurses confirmed that they are already seeing patients impacted

by climate change factors, and they expect to see a rise in those visits in the decade ahead. Yet the European region's healthcare system produces nearly 5% of the region's carbon footprint. Making healthcare systems more sustainable is now paramount to reaching national net-zero goals and to the wellbeing of populations.

- **Emissions need to be addressed across healthcare's entire value chain.** There is a collective rise in consciousness around the issue of sustainability in healthcare, but much of the attention is landing on Scope 1 and Scope 2 areas (direct emissions and indirect energy). When asked to identify priority sustainability areas in their practise, only about a third (31%) of healthcare professionals in our survey name Scope 3 (medical supply chain). However, Scope 3 is where the bulk of emissions come from. Education is needed to raise collective awareness of all emission sources and how they can be jointly reduced.
- **National plans to address the system's sustainability vary across Europe.** Of the three countries studied for this report, only the UK has a detailed plan for reaching net zero in the healthcare sector. Germany and France lack commitments and roadmaps for this. Even so, grassroots actions may be under way, as many (63%) HCPs surveyed are aware of some form of sustainability plan in place or soon to be in place at their hospital. Still, HCPs are sensitive to direction from above, and the absence of national plans (other than in the UK) is likely delaying progress.

## Conclusion

Big, systematic change is time-consuming and often slow. And health services are already resource constrained. But there is no time to wait. The climate emergency is only worsening.

Our survey confirms that HCPs are already aware of the impact of climate change on the health of the populations they serve. However, they would benefit from:

- More information and more support at all stages of their educational and employment journey to better understand the risks to their patients.
- Help and support in putting advocacy into practice in their healthcare institutions or clinical settings.
- Support for proposed changes to clinical pathways that can help reduce any unnecessary medical production and waste in patient treatment and long-term care.

From a clinical perspective, further evaluation to support mitigation and adaptation initiatives is required. This includes:

- Establishing an evidence base to support any changes to clinical activities and ensure that there is no ambiguity that doing the right thing for the climate is also the best thing for the patient.
- Understanding how clinical practices could change to help patients and especially target vulnerable groups (eg, elderly and chronically ill people) adapt to climate risk.

Out of the three European countries assessed (France, Germany and the UK), only the UK is showing leadership in measuring healthcare emissions and setting targets. For further effectiveness, healthcare systems need to:

- Measure their emissions on a regular and systematic basis (including indirect Scope 3 emissions from the supply chain, a major contributor).
- Bring in well-thought-out activation plans with key roles specified for HCPs, consider resourcing changes with local healthcare sustainability leaders, and transforming industry production lines and supply chains.

## Methodology

This research was undertaken in three phases, starting with a literature review of how healthcare systems in France, Germany and the UK are responding to climate change and the role of healthcare professionals (HCPs), followed by a survey of 75 doctors and 75 nurses working in hospitals in France, Germany and the UK in February and March 2022. We also interviewed experts from government, hospitals, medical professional associations and NGOs to build on the research and shed light on our survey findings.



# Chapter 1: Climate change is a health emergency

The climate crisis is a health threat multiplier and poses significant threats to the global population. So much so that an increasing number of nations and organisations have declared the climate emergency a health emergency.<sup>4,5</sup>

We asked our survey respondents what the most significant climate risks to the health and wellbeing of patients are over the next ten years. [Q2 : see Appendix] They prioritised an increasing occurrence and intensity of heatwaves, increasing air pollution, the emergence of infectious diseases, flooding and droughts. (See table 1)

These are indeed risks to the European population,<sup>6,7</sup> although there are nuances.

For example, the severity and frequency of extreme weather events will differ across Europe's longitudes.<sup>8,9</sup> And impacts will be disproportionately felt by socioeconomically disadvantaged communities and the old, the very young and those with chronic diseases.<sup>10,11,12,13</sup>

These nuances are often reflected in our survey findings. For example, hospital doctors and nurses in France and Germany are more concerned about increasing heatwaves, perhaps due to their respectively warmer climates.

Similarly, changing infectious disease vectors are a significant concern for hospital HCPs in France. Vector-borne diseases are infections transmitted

<sup>4</sup> United Nations Development Programme, "Peoples' Climate Vote", January 26th 2021, <https://www.undp.org/publications/peoples-climate-vote> (accessed June 29th 2022)

<sup>5</sup> *The Lancet*, "The Lancet Countdown on health and climate change", <https://www.thelancet.com/countdown-health-climate>

<sup>6</sup> Health Care Without Harm and ARUP, "How the Health Sector Contributes to the Global Climate Crisis and Opportunities for Action", September 2019, [https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint\\_092319.pdf](https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint_092319.pdf).

<sup>7</sup> Germanwatch, "Global Climate Risk Index 2021", [https://germanwatch.org/sites/germanwatch.org/files/Global%20Climate%20Risk%20Index%202021\\_1.pdf](https://germanwatch.org/sites/germanwatch.org/files/Global%20Climate%20Risk%20Index%202021_1.pdf)

<sup>8</sup> *Nature*, "Climate change implicated in Germany's deadly floods", August 26th 2021, <https://www.nature.com/articles/d41586-021-02330-y> (accessed June 29th 2022)

<sup>9</sup> World Weather Attribution, "Rapid attribution of heavy rainfall events leading to the severe flooding in Western Europe during July 2021", August 2021, <https://www.worldweatherattribution.org/wp-content/uploads/Scientific-report-Western-Europe-floods-2021-attribution.pdf>

<sup>10</sup> Kendrovski, V, Schmoll, O, "Priorities for protecting health from climate change in the WHO European Region: recent regional activities", *Bundesgesundheitsbl* 62, 537–545 (2019), <https://doi.org/10.1007/s00103-019-02943-9>

<sup>11</sup> Wolf T, Lyne K, Martinez GS, Kendrovski V, "The Health Effects of Climate Change in the WHO European Region", *Climate*, 2015; 3(4):901-936, <https://doi.org/10.3390/cli3040901>

<sup>12</sup> Paavola, J, "Health impacts of climate change and health and social inequalities in the UK", *Environ Health* 16, 113 (2017), <https://doi.org/10.1186/s12940-017-0328-z>

<sup>13</sup> Martha K Swartz, "Taking on Climate Change Through a Health Care Lens", *Journal of Pediatric Health Care*, Volume 33, Issue 6, P623, December 2019, <https://doi.org/10.1016/j.pedhc.2019.09.002>

**Table 1: Top climate factors impacting health.**

**HCPs say increased heatwaves and air pollution are the greatest concern for their patients' health, with some variation among countries.**

"Which climate change factors will have the greatest impact on the health and wellbeing of patients in Europe in the next ten years?" Select up to three.

	Total	France	Germany	UK
Increased heatwaves	62%	68%	66%	52%
Increased air pollution	55%	56%	46%	64%
Emergence of infectious diseases through the rise of disease vectors	41%	54%	40%	28%
Increased flooding	33%	20%	30%	50%
Droughts	23%	28%	22%	20%
Poor food security	20%	14%	20%	26%
Increased water pollution	17%	12%	22%	18%
Pollen level changes	17%	18%	16%	16%
Forest fires	11%	2%	18%	14%
Thunderstorms	10%	20%	8%	2%

Source: Economist Impact survey results

by the bite of infected organisms, for example, mosquitos transmitting malaria. Weather greatly impacts the survival and reproduction rates of vectors.<sup>14</sup> As a country with some of its regions stretching into Southern Europe, France is on the front lines of vector-borne diseases that thrive in warm environments.<sup>15</sup>

UK responders are more concerned about air pollution and flooding than those in France and Germany. The issue has received widespread

national coverage in recent years as parts of the UK report levels of air pollution above the legal limit.<sup>16, 17, 18, 19</sup> And, significantly, in 2020 a coroner made legal history—and national headlines—when naming excessive air pollution as a factor in the death of a nine-year-old girl.<sup>20</sup>

The primary risks will likely shift in the longer term. "It's an evolution," says Dr Richard Smith, chair of the UK Health Alliance on Climate Change, which was set up in 2016 to bring HCPs

<sup>14</sup> European Centre for Disease Prevention and Control, "Vector-borne diseases", <https://www.ecdc.europa.eu/en/climate-change/climate-change-europe/vector-borne-diseases> (accessed June 29th 2022)

<sup>15</sup> Shlomit Paz, "Climate change impacts on vector-borne diseases in Europe: Risks, predictions and actions", *The Lancet Regional Health Europe*, Volume 1, February 2021, 100017. <https://doi.org/10.1016/j.lanepe.2020.100017>

<sup>16</sup> *The Guardian*, "UK has broken air pollution limits for a decade, EU court finds", March 4th 2021, <https://www.theguardian.com/environment/2021/mar/04/uk-has-broken-air-pollution-limits-for-a-decade-eu-court-finds> (accessed June 29th 2022)

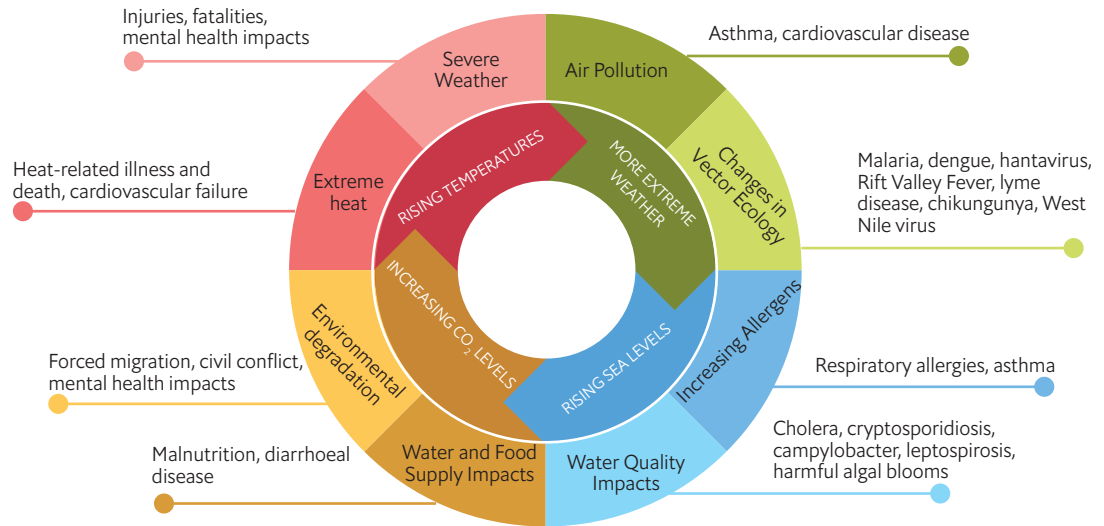
<sup>17</sup> Air Quality News, "75% of air quality zones are in breach of the legal limits", October 8th 2020, <https://airqualitynews.com/2020/10/08/75-of-air-quality-zones-are-in-breach-of-the-legal-limits/> (accessed June 29th 2022)

<sup>18</sup> Client Earth. UK Air Pollution: How clean is the air you breathe? October 2020. <https://www.clientearth.org/latest/latest-updates/news/uk-air-pollution-how-clean-is-the-air-you-breathe/>. (accessed June 29th 2022)

<sup>19</sup> Annaleen Kenis et al., "The role of the media in staging air pollution: The controversy on extreme air pollution along Oxford Street and other debates on poor air quality in London." January 2021. Sage Journals. <https://doi.org/10.1177%2F2399654420981607>

<sup>20</sup> BBC News. Ella Adoo-Kissi-Debrah: Air pollution a factor in girl's death, inquest finds. December 2020. <https://www.bbc.com/news/uk-england-london-55330945>. (accessed June 29th 2022)

**Figure 1: Impact of climate change on human health**



Source: US Centers for Disease Control and Prevention/Health Care Without Harm Climate Footprint report<sup>22</sup>

together to advocate for responses to climate change that protect and promote public health.<sup>21</sup> “While air pollution, flooding and heatwaves are top of the pile in the UK, the longer-term effects are going to come from hunger, forced migration and fighting over water and other resources. Even extending disease patterns are coming down the line—you’ll be able to get malaria in Clapham and that kind of thing—but that’s not where we’re at now.”

But there is no need to look a decade ahead to understand the health emergency. In our survey, 89% of respondents believe that climate change is already negatively affecting the physical and mental health of their patients. [Q1]

Many (43%) said they already see one or more patients clinically impacted by climate change

monthly. Few said they see affected patients on a weekly or daily basis. But when asked about their predictions for the next ten years, weekly and daily rates jump significantly. (Correspondingly, expected monthly visits drop to 27%.) (See table 2) [Q4&5]

When asked which patients are most at risk, the top responses were those living with chronic conditions, the elderly and those in lower socioeconomic status groups. [Q3]

Indeed, older people and those living with chronic diseases are disproportionately sensitive to climate change impacts.<sup>23, 24</sup> This has a significant, widespread population impact in Europe, as more than a third of each focus country’s citizens have at least one chronic disease,<sup>25</sup> and roughly one in five citizens are over the age of 65.<sup>26</sup> (See table 3)

<sup>21</sup> UK Health Alliance on Climate Change. <http://www.ukhealthalliance.org/about/>. (accessed June 29th 2022)

<sup>22</sup> Health Care Without Harm and ARUP, “How the Health Sector Contributes to the Global Climate Crisis and Opportunities for Action”, September 2019, [https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint\\_092319.pdf](https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint_092319.pdf)

<sup>23</sup> Paavola, J, “Health impacts of climate change and health and social inequalities in the UK”, *Environ Health* 16, 113 (2017), <https://doi.org/10.1186/s12940-017-0328-z>

<sup>24</sup> The LeadingAge LTSS Center @UMass Boston, “The Impact of Climate Change: Why Older Adults are Vulnerable”, 2020, [https://ltsscenter.org/reports/The\\_Impact\\_of\\_Climate\\_Change\\_Why\\_Older\\_Adults\\_are\\_Vulnerable.pdf](https://ltsscenter.org/reports/The_Impact_of_Climate_Change_Why_Older_Adults_are_Vulnerable.pdf)

<sup>25</sup> Eurostat, “People having a long-standing illness or health problem, by sex, age and labour status”, [https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=hlth\\_silc\\_o4&lang=en](https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=hlth_silc_o4&lang=en) (accessed June 29th 2022)

<sup>26</sup> OECD, “Elderly population”, <https://data.oecd.org/pop/elderly-population.htm> (accessed June 29th 2022)

**Table 2: Climate-impacted patient visits.**

HCPs are already seeing patients impacted by climate change, and they expect to see affected patients more frequently in the next ten years.

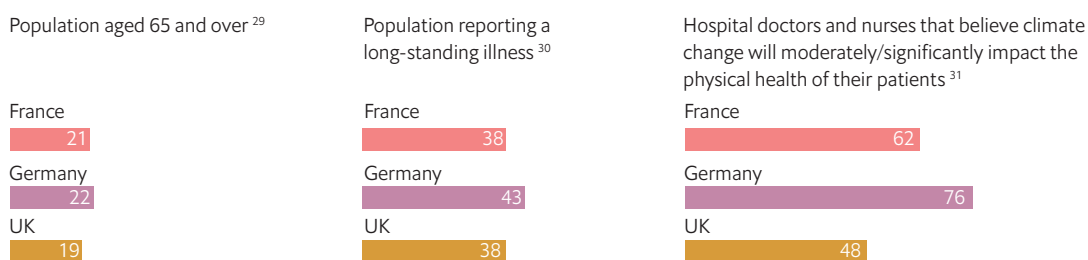
	Daily	Weekly	Monthly	Every three months	Every six months	Once a year	Never
In the past year, how often have you seen a patient(s) clinically impacted by climate change?	4%	13%	43%	11%	13%	9%	3%
In ten years from now, how often do you expect to see a patient(s) clinically impacted by climate change?	15%	24%	27%	13%	12%	6%	1%

Source: Economist Impact survey results

And, unfortunately, lower socioeconomic status groups tend to live in areas with lower air quality and in some cases may be more prone to disease from flooding and drought.<sup>27,28</sup> “We have to pay attention to where vulnerable groups are located,

as this can compound the issues,” says Will Clark, executive director, of the NGO Health Care Without Harm Europe, a network of hospitals, healthcare leaders and HCPs championing sustainability.

**Table 3: A significant percentage of France, Germany and UK’s population fall into at-risk categories from climate change. Most HCPs understand that climate change will negatively impact patient health.**



<sup>27</sup> World Health Organization – Europe, “Environment and health risks: a review of the influence and effects of social inequalities”, 2010, [https://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0003/78069/E93670.pdf](https://www.euro.who.int/__data/assets/pdf_file/0003/78069/E93670.pdf)

<sup>28</sup> S Nazrul Islam and John Winkel, United Nations Department of Economic and Social Affairs, “Climate change and social inequality”, October 2017, [https://www.un.org/esa/desa/papers/2017/wp152\\_2017.pdf](https://www.un.org/esa/desa/papers/2017/wp152_2017.pdf)

<sup>29</sup> OECD, “Elderly population”, <https://data.oecd.org/pop/elderly-population.htm> (accessed June 29th 2022)

<sup>30</sup> OECD, “Healthcare at a glance 2021: OECD indicators”, <https://www.oecd-ilibrary.org/sites/908b2da3-en/index.html?itemId=/content/component/908b2da3-en> (accessed June 29th 2022)

<sup>31</sup> Economist Impact survey

# Chapter 2:

## Changing roles and expectations of individual HCPs

Research in 2010 suggested that few organisations representing HCPs had tried to reframe climate change as a public health issue in the public domain.<sup>32,33</sup>

This is no longer the case. “There’s a huge contingent of health professionals that are really concerned about climate change and the implications for health,” says Mr Clark.

In the build-up to COP26 in 2021, over 450 organisations representing over 45 million HCPs wrote an open letter to heads of state calling for urgent climate action to protect people’s health. This letter included an ask for

governments to build climate resilient, low-carbon, sustainable health systems.<sup>34</sup> But in more recent statements, organisations have been calling on HCPs themselves to act.

This trend is promising because individual HCPs have important roles to play in championing sustainability. This includes roles as advocates on the policy and institutional level for sustainable changes, clinical advocates with patients, and personal advocates.<sup>35</sup>

“Workers in the healthcare sector have a high reputation in the societies. Changing their narrative to include climate change with patients has multiplicities,” explains Dr Christian Schulz, managing director of the German Climate Change and Health Alliance (KLUG). “At KLUG, we are beginning to educate healthcare personnel to deal with this when speaking to their patients.”

**When given the opportunity to say if sustainability should not be part of their role, only 3% of HCPs said so.**

<sup>32</sup> R. Issa et al, “Mapping the Movement for Climate Change and Health in England: A Descriptive Review and Theory of Change Analysis”, *Perspectives in Public Health*, November 2021, Volume: 141 issue: 6, page(s): 328-337, <https://doi.org/10.1177/17579139211058303>.

<sup>33</sup> Maibach, E W, Nisbet, M, Baldwin, P et al, “Reframing climate change as a public health issue: an exploratory study of public reactions”, *BMC Public Health* 10, 299 (2010), <https://doi.org/10.1186/1471-2458-10-299>

<sup>34</sup> Healthy Climate Letter, <https://healthyclimateletter.net/> (accessed June 29th 2022)

<sup>35</sup> Ipsos MORI, “Ipsos MORI Veracity Index 2020”, <https://www.ipsos.com/ipsos-mori/en-uk/ipsos-mori-veracity-index-2020-trust-in-professions> (accessed June 29th 2022)

Fortunately, when given the opportunity to say if sustainability should not be part of their role, only 3% of HCPs said so. [Q8 & Q11] We can conclude that the vast majority of hospital doctors and nurses would like to do more to help patients deal with the health impacts of climate change and—to an extent—play a part in helping their hospitals to reach net zero.

**Individual HCPs prioritise patient education, the multiplier effect**

Decarbonising takes many forms, some of which are more palatable to HCPs than others.

We asked hospital doctors and nurses what personal responsibilities they would most like to take on to help decarbonise their workplace. [Q8] In every country, nearly a third chose to educate patients on sustainable and healthy lifestyles as a preventive measure. (See table 4)

Nurses are particularly enthusiastic (43% vs 24% of doctors). “This is not surprising because nurses tend to feel very strongly that counselling patients’ lifestyles is a part of their role, and of course sustainability is part of that,” says Bernadette Klapper, CEO of the German Nurses Association.

And 25% of surveyed HCPs said they would like to provide patients with more information on the health effects of climate change—particularly in the UK, where 30% selected this versus 18% in France.

“Doctors and nurses have trusting relationships with their patients, and when they educate, they have a highly motivational impact. And I think they are multipliers because they have contact with so many people,” says Dr Petra Becker, head of development and sustainability at Dr Becker Unternehmensgruppe, Germany. “And the

**Table 4: HCP’s preferred actions to help decarbonise. HCPs say they prefer to educate patients around climate change impacts far more often than taking personal, proactive measures.**

How would you like to participate in achieving net zero in your hospital? Select up to two.<sup>36</sup>

	Total	France	Germany	UK
I would like to educate patients on sustainable and healthy lifestyles as a preventive measure	33%	32%	34%	34%
I would like to provide information to patients about the health effects of climate change	25%	18%	28%	30%
I would like to help redesign clinical pathways so that we have sustainable models of care	18%	12%	18%	24%
I would like to take a more leadership/organisational lead on the matter	17%	18%	14%	18%
I would like to take a more proactive and personal approach	15%	10%	22%	12%
I do not have enough information to understand the health impacts of climate change	9%	26%	0%	2%
I do not have the time or the resources to take part in this	12%	12%	8%	16%

Source: Economist Impact survey results

<sup>36</sup> Economist Impact Survey

impact could be exponential because if a patient changes their lifestyle their whole family could change lifestyle too.”

As for the actual advice HCPs should provide to patients, respondents most often select “be aware of climate risk factors for an individual condition and avoidance strategies” (41% ranked this as number one out of a list of options). Doctors are particularly adamant (48% vs 33% of nurses). [Q10]

Dr Smith gives some examples of how more doctors can bring up climate change in a consultation: “When a patient comes to an appointment with a cough or lung issue, doctors will always ask ‘Do you smoke?’ It isn’t necessarily in the guidelines or training to ask about air pollution, such as how close they live, work or travel to a main road, and to recommend side streets and more time in nature. But these are rational recommendations, especially for anybody with a respiratory problem.”<sup>37</sup>

Climate change can be relevant to conversations about mental health, too. “Perhaps instead of prescribing antidepressants, doctors can suggest going into nature more often because a lot of people find that very helpful,” says Dr Smith.<sup>38</sup>

A distant second position (23%) is providing patients with mental health coping strategies

(29% nurses vs 16% doctors). This reflects a notable rise in eco-anxiety among younger people.<sup>39, 40</sup>

“Unfortunately, there are a lot of people, particularly young people, who find it quite hard to handle. And in some ways, it’s completely rational. There are a lot of people suffering from anxiety and depression, and some die by suicide over what’s going to happen,” says Dr Smith.<sup>41, 42</sup>

The next leading advice choices are providing information/warnings before a heatwave (19%). Notably, in the wake of recent heatwaves in the WHO European Region, the WHO developed a Heat Plan containing recommendations for managing at-risk populations. These heavily weigh on HCPs to provide pre-summer assessments for vulnerable people, being prepared to manage the effects of heat stroke, and on HCPs educating, counselling and informing patients regarding the adjustment of different medicines, and fluid intake.<sup>43</sup>

German respondents are particularly keen on heatwave-related warnings (26% ranked this as number one). Dr Klaus Reinhardt, president of the German Medical Association (Bundesärztekammer), confirms this is a major issue under discussion. “The increasing frequency of extreme events will compel healthcare facilities to implement considerable adaptive

<sup>37</sup> The BMJ Opinion, “Matthew Sawyer: How to discuss the climate crisis with patients”, March 3rd 2021, <https://blogs.bmj.com/bmj/2021/03/03/matthew-sawyer-how-to-discuss-the-climate-crisis-with-patients/> (accessed June 29th 2022)

<sup>38</sup> The BMJ Opinion, “Matthew Sawyer: How to discuss the climate crisis with patients”, March 3rd 2021, <https://blogs.bmj.com/bmj/2021/03/03/matthew-sawyer-how-to-discuss-the-climate-crisis-with-patients/> (accessed June 29th 2022)

<sup>39</sup> Pauline Baudon and Liza Jachens, “A Scoping Review of Interventions for the Treatment of Eco-Anxiety”, *Int. J. Environ. Res. Public Health* 2021, 18(18), 9636; // [doi.org/10.3390/ijerph18189636](https://doi.org/10.3390/ijerph18189636)

<sup>40</sup> Caroline Hickman et al, “Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey”, *The Lancet Planetary Health*, December 2021, Volume 5, Issue 12, E863-E873, [https://doi.org/10.1016/S2542-5196\(21\)00278-3](https://doi.org/10.1016/S2542-5196(21)00278-3)

<sup>41</sup> Haris Majeed and Jonathan Lee, “The impact of climate change on youth depression and mental health”, *The Lancet Planetary Health*, June 2017, Volume 1, Issue 3, E94-E95, [https://doi.org/10.1016/S2542-5196\(17\)30045-1](https://doi.org/10.1016/S2542-5196(17)30045-1)

<sup>42</sup> The BMJ opinion, “The climate crisis and the rise of eco-anxiety”, October 6th 2021, <https://blogs.bmj.com/bmj/2021/10/06/the-climate-crisis-and-the-rise-of-eco-anxiety/> (accessed June 29th 2022)

<sup>43</sup> World Health Organization, “Heat-Health Action Plans”, <https://www.who.int/publications-detail-redirect/heat-health-action-plans> (accessed June 29th 2022)

measures,” he says. “Fortunately, in recent years many decision-makers in the health sector have recognised the need to provide consistent heat protection. Heat action plans will soon be standard in the health sector.”

Finally, only 11% selected advising patients to avoid going outside on high pollen/air pollution days. The majority (65%) did not even rank this in their top three advice choices—an interesting result given more than half (55%) previously answering that increased air pollution will have the greatest impact on patient health and wellbeing.

French respondents are most keen to provide warnings around high pollen/air pollution days (20% vs 8% in Germany and 6% in the UK). This may reflect research showing warming temperatures such as those experienced in Southern Europe are exacerbating the impacts of air pollution<sup>44</sup> and is behind allergy seasons starting earlier and lasting longer.<sup>45, 46</sup>

Experts are content to see these toplined results around patient education. “The most important thing they can do is help patients be prepared for the multiple crises they are increasingly confronted with, from diseases to heatwaves,” says Dr Schulz.

### Personal initiatives come second

After educating patients, nearly 20% said the responsibility they most want to take on is “to help redesign clinical pathways so that we have sustainable models of care”. This is followed by

“taking a leadership role” (selected by 25% of doctors and 8% of nurses) and “taking a more proactive and personal approach” (20% doctors vs 9% nurses).

Mr Clark is glad to see momentum here, but would like more progress. “Taking action is incredibly important, especially if they’re able to make this a strategic priority within their own institutions. If policymakers were told several thousand doctors and nurses believe this should be a political priority, it can make a big difference.”

Ms Klapper thinks the low response from nurses around proactive roles is due to their perception of weak professional power, as their collective action can also be quite powerful. “Try to imagine if the entire nursing staff of a hospital goes to their managers to ask for a change, such as to purchase other products or institute a recycling programme. I think this could work.”

But ultimately, experts understand why personal action is not a top priority. Our survey and interviews highlight the prominent factors that limit HCP involvement in climate change advocacy: time, resources and education.

### Time and resources

In our survey, 12% said they did not have the time or resources to be involved. Other research in this area has found more than half (54%) of HCP participants said time constraints reduced their willingness by a moderate amount or a great deal to communicate with the public about climate change and health.<sup>47</sup>

<sup>44</sup> Science for Environment Policy, DG Environment News Alert Service Special Issue, “Air Pollution and Climate Change”, [https://ec.europa.eu/environment/integration/research/newsalert/pdf/24si\\_en.pdf](https://ec.europa.eu/environment/integration/research/newsalert/pdf/24si_en.pdf)

<sup>45</sup> Anenberg, S C, Haines, S, Wang, E et al, “Synergistic health effects of air pollution, temperature, and pollen exposure: a systematic review of epidemiological evidence”, *Environ Health* 19, 130 (2020), <https://doi.org/10.1186/s12940-020-00681-z>

<sup>46</sup> William RL Anderegg et al, “Anthropogenic climate change is worsening North American pollen seasons”, *The Proceedings of the National Academy of Sciences (PNAS)*, February 2021, Volume 118, No 7, e2013284118. <https://doi.org/10.1073/pnas.2013284118>

<sup>47</sup> John Kotcher et al, “Views of Health Professionals on Climate Change and Health: A Multinational Survey Study”, *The Lancet Planetary Health*, May 2021, Volume 5, Issue 5, E316-323 [https://doi.org/10.1016/S2542-5196\(21\)00053-X](https://doi.org/10.1016/S2542-5196(21)00053-X)



“I suspect they’re overworked,” reflects Mr Clark. “Demand is sky high, particularly off the back of covid. Every health system in Europe is facing the same sort of existential issues: dwindling resources, workforce skill gaps. This is not new.”

“Nursing professionals are exhausted,” confirms Ms Klapper. “In Germany, especially, we have a serious shortage compared to other countries. And the pandemic is only just—maybe—coming to an end. People are very busy going through their work, day by day and are missing the energy to do more.”

#### Information and education

A common issue around engaging individual HCPs with climate change is that, often, they have insufficient knowledge about the topic.<sup>48, 49</sup> Information gaps span from how to educate patients to how to enact change within their own institutions. In our survey, 74% agree with the statement that HCPs have not been supported in gaining carbon and green literacy skills. [Q12] Results are similar across subgroups.

Additional investigations into this issue suggests continuing professional development on climate change and health is lacking,<sup>50, 51, 52</sup> but it is nevertheless important for positive outcomes in clinical practice.<sup>53, 54, 55</sup>

Notably, 26% of French respondents said they do not have enough information to understand the health impacts of climate change, implying this is a hindrance to them helping to achieve net zero at their hospital.

Marie Kerneć is an independent health consultant in France. She is also involved with the SHIFT project, a French think-tank working on the decarbonisation of the French economy, and in particular health.<sup>56</sup> She says this also reflects a lack of guidance and resources to address the “perceived, overwhelming obstacles to change.” “However, what is important is to start, to waste less and consume less. Everyone has a role to play in the organisations,” she says.

But the strong preference for patient education in our survey supports the notion that there is a desire to improve and accelerate climate change education opportunities.

As to where this education and training should take place, according to our survey, educational institutions, associations and journals are clearly important, but about half of our respondents (52%) most often say it should come from their employers (eg, hospitals, healthcare clinics). And 43% selected governments and policymakers. [Q9]

<sup>48</sup> Hathaway and Maibach, “Health Implications of Climate Change: A Review of the Literature About the Perception of the Public and Health Professionals”, *Curr Envir Health Rpt* 5, 197–204 (2018), <https://doi.org/10.1007/s40572-018-0190-3>

<sup>49</sup> John Kotcher et al, “Views of Health Professionals on Climate Change and Health: A Multinational Survey Study,” *The Lancet Planetary Health*, May 2021, Volume 5, Issue 5, E316–323, [https://doi.org/10.1016/S2542-5196\(21\)00053-X](https://doi.org/10.1016/S2542-5196(21)00053-X).

<sup>50</sup> IFMSA, “Climate Change & Medical Schools”, September 2020, <https://ifmsa.org/climate-change-medical-schools/> (accessed June 29th 2022)

<sup>51</sup> The Shift Project, “Plan de Transformation Du Shift (PTEF) - Focus Sur Le Secteur de La Santé”, <https://theshiftproject.org/plan-de-transformation-de-leconomie-francaise-focus-sur-la-sante/> (accessed June 29th 2022)

<sup>52</sup> Shea B, Knowlton K, Shaman J, “Assessment of Climate-Health Curricula at International Health Professions Schools”, *JAMA Netw Open*. 2020;3(5):e206609, doi:10.1001/jamanetworkopen.2020.6609

<sup>53</sup> John Kotcher et al, “Views of Health Professionals on Climate Change and Health: A Multinational Survey Study,” *The Lancet Planetary Health*, May 2021, Volume 5, Issue 5, E316–323, [https://doi.org/10.1016/S2542-5196\(21\)00053-X](https://doi.org/10.1016/S2542-5196(21)00053-X).

<sup>54</sup> General Medical Council, “Outcomes for Graduates”, <https://www.gmc-uk.org/education/standards-guidance-and-curricula/standards-and-outcomes/outcomes-for-graduates/outcomes-for-graduates> (accessed June 29th 2022)

<sup>55</sup> Vanita Gandhi et al, “Integrating Sustainability into Postgraduate Medical Education”, *Future Healthcare Journal*, June 2020, Volume 7, Number 2, 104–4, <https://doi.org/10.7861/fhj.2020-0042>.

<sup>56</sup> The Shift Project, <https://theshiftproject.org/en/home/> (accessed June 29th 2022)

Perhaps as a nod to the advanced green and sustainability plans of the NHS, British respondents are the only ones to select “governments and policymakers” (60%) ahead of “my employer” (52%). Compare this with France, where 40% of respondents selected government and 52% employer; and Germany, where the respective figures are 28% and 52%.

The experts we interviewed agree that education has to be available on all fronts and provided throughout their work life. There have been improvements on this front. In Germany, Dr Reinhardt explains the correlations between climate change and health are now a part of specialty medical training for all physicians. “In May 2021, the 124th German Medical Assembly decided to incorporate the effects of climate change on health into the general content of the (Model) Specialty Training Regulations.”<sup>57</sup>

He adds that in the field of continuing medical education, which supplements specialty medical training, the State Chambers of Physicians are also offering content on this subject.<sup>58</sup>

“To make it sustainable, it must be in the universities,” says Dr Becker, whose organisation has 1,800-2,000 beds. “But for the professionals already in the hospital, it’s very important for hospitals and associations to take up the topic through several different communication themes—such as online training and newsletters.”

“We want to raise the awareness with employees because although sustainability is usually there in a personal context, it’s not in the professional

context. We try to make them think ‘might there be a relationship?’ ‘What can I do?’”

## Incentives to support HCP in action

Incentives are also needed for HCPs to feel supported and empowered to act. Survey respondents again show a desire for this direction to come from above: 37% say effective change can best come from employers providing education and training. (See table 5) Nurses are most enthused about encouragement through education (47% vs 27% of doctors). [Q11]

And 29% say it would be helpful if their employers encouraged the adoption of more green procedure practices. Meanwhile, 24% said financial rewards would best encourage sustainable change—particularly in Germany (32% vs 26% in France and 14% in the UK).

Ms Kernec agrees that messaging and incentives are best when they come from the employer, especially in countries without national-level agendas. “It is about investing in experimentations at all levels and reinvesting financial gains.”

“Without incentives, systems are blocked,” she explains. “For example, we know that so much medicine is wasted in France, many older patients have long lists of medicines that have not been reviewed.” She believes GPs and pharmacists will get more engaged if they are properly incentivised for prevention actions. “There is major work to do here, and we can use incentives to encourage change.”

<sup>57</sup> *The Lancet*, “The Lancet Countdown on Health and Climate Change Policy Brief for Germany”, 2021, [https://www.helmholtz-munich.de/fileadmin/HZM-Corporate-Website/Bilder/HZM/News/Pressemitteilungen/2021/PDF/EN\\_Germany\\_2021\\_-\\_Lancet\\_Countdown\\_Policy\\_Document.pdf](https://www.helmholtz-munich.de/fileadmin/HZM-Corporate-Website/Bilder/HZM/News/Pressemitteilungen/2021/PDF/EN_Germany_2021_-_Lancet_Countdown_Policy_Document.pdf)

<sup>58</sup> Accreditation Council for Continuing Medical Education, “Accreditation Council for CME Awards Substantial Equivalency Status to Federation of the German Chambers of Physicians”, January 2018, <https://www.accme.org/news-releases/accreditation-council-for-cme-awards-substantial-equivalency-status-federation-german>. (accessed June 29th 2022)

**Table 5: HCP’s top incentives for action.**

**If HCPs are to be encouraged to act on sustainability, they will need guidance from above. Specifically, more education, encouragement and rewards.**

In your opinion, which of the following will best encourage healthcare professionals to take action to be more sustainable and to help make their hospital become net zero? Select up to two.<sup>59</sup>

Employers providing education and training	37%
Employers encouraging the adopting of more green procurement practices	29%
Employers providing financial rewards	24%
Healthcare professional bodies ensuring sustainability is within a healthcare professional's mandate	21%
Encouraging a more active role for the healthcare professional provision of patient education	20%
Employers including it as a metric in annual appraisals	13%
Regulators including it as a metric in revalidation/registration	11%
Healthcare professionals should naturally want to take action without encouragement	10%
Employers making it a condition of employment	7%
I do not think healthcare professionals should be encouraged to take action	2%
I think sustainability roles should be held by specialist healthcare staff only	2%

Source: Economist Impact survey results

**HCPs are at the forefront of change**

The NHS chief sustainability officer, Dr Nick Watts, needs all 1.4 million healthcare professionals in the NHS to tackle climate change and improve care for their patients.

“We’re not talking about just changing the lights and turning them off every now and then. We’re talking about transforming the face of medicine, rethinking what a hospital ‘is’, and expanding our scope of practice to the broader determinants of health,” says Dr Watts.

“We can always do more, and every health professional in the country will have one action that they uniquely can take, be it replacing harmful gases in surgery, pioneering innovative

**The NHS chief sustainability officer, Dr Nick Watts, needs all 1.4 million healthcare professionals in the NHS to tackle climate change and improve care for their patients .**

waste reduction schemes, or piloting the world’s first zero emission ambulance.”

“The topic is so broad, so everybody and everything counts,” adds Dr Becker. “You have to

<sup>59</sup> Economist Impact Survey results

## **“It’s hard to change medical practice because of medical reasons. It’s even harder to change medical practice, because of sustainability reasons.”**

Dr Petra Becker, head of development and sustainability, Dr Becker Unternehmensgruppe, Germany

reach HCPs and try to find tips and behaviours they can relate to.”

The barriers can feel immense, though. “It’s hard to change medical practice because of medical reasons. It’s even harder to change medical practice, because of sustainability reasons,” says Dr Becker. And experts acknowledge that the breakdown of Scope 1, 2 and 3 emissions can at first feel disheartening. Many feel their practice has little to no agency over their Scope 3 emissions.

But HCPs’ hands aren’t tied. Regardless of where they work, experts say there are ways to change how care is delivered if the workforce is educated and determined.

Consider a recent study by a medical student in Lille, France, that found a bespoke, single use Intravitreal Pack (IVT) for a single surgery, often used for only seconds, if at all, had travelled 225,150km over the course of its production—equivalent to five trips around the planet.<sup>60</sup>

“It’s just unbelievable because it is only economic logic that prevailed for this decision. Today,

that must be dramatically reviewed to take into account the environmental factors,” says Ms Kernec. An ecological (and ultimately more economic) alternative solution in this case might be for HCPs to campaign for reusable medical devices.

Another eye-opening example: emissions from inhalers account for approximately 3% of the NHS’s carbon footprint.<sup>61, 62</sup> This is largely due to the hydrofluoroalkanes propellant used in metered dose inhalers (MDIs), which account for 70% of inhalers prescribed in England. Lower-carbon and clinically equivalent options are available, such as dry powder inhalers and soft mist inhalers.

While many inhaler recycling programmes are available across the country, the carbon impact would be more significant if HCPs routinely factored in environmental considerations alongside clinical considerations when recommending inhaler devices. In this instance, HCPs across the UK have been asked to discuss trying lower-carbon alternatives to MDIs with their patients.<sup>63</sup>

Food waste can also be addressed at the source. Christian Schulz says it’s not unusual for hospitals to save money by purchasing food from abroad, and that much of it is thrown away. (A 2016 report on food waste in European healthcare settings found food waste can range from 6% to 65%.<sup>64</sup>) A food composting programme might seem sensible, but from a sustainability standpoint it would be better if HCPs

<sup>60</sup> Santé-achat, Jean-Marc Binot, “La Vision Plus Durable D’un Acte D’ophtalmologie”, November 25th 2021, <https://sante-achat.info/durable/la-vision-plus-durable-dun-acte-dophtalmologie/> (accessed June 29th 2022)

<sup>61</sup> Greener Practice, “High Quality and Low Carbon Asthma Care”, <https://www.greenerpractice.co.uk/high-quality-and-low-carbon-asthma-care/>. Accessed on 29 June 2022

<sup>62</sup> Greener Practice, “How to Reduce the Carbon Footprint of Inhaler Prescribing”, October 2021, <https://s40639.pcdn.co/wp-content/uploads/Reducing-Carbon-Footprint-of-Inhaler-Prescribing-v3.3.2.pdf>

<sup>63</sup> Greener Practice, “How to Reduce the Carbon Footprint of Inhaler Prescribing”, October 2021, <https://s40639.pcdn.co/wp-content/uploads/Reducing-Carbon-Footprint-of-Inhaler-Prescribing-v3.3.2.pdf>

<sup>64</sup> Health Care Without Harm, “Food waste in European healthcare settings”, October 2016, [https://noharm-europe.org/sites/default/files/documents-files/4336/HCWHEurope\\_FoodWaste\\_Flyer\\_Oct2016.pdf](https://noharm-europe.org/sites/default/files/documents-files/4336/HCWHEurope_FoodWaste_Flyer_Oct2016.pdf)

**“The very fact that the UK Health Alliance exists shows people are recognising the need to respond at every single level: globally, nationally, regionally, within the health system, and individually—both in how you live your life and in your professional life. All of those are going to have to change if we’re going to make progress.”**

Dr Richard Smith, chair, UK Health Alliance on Climate Change, UK

campaigned their workplace to buy locally to reduce transport emissions.<sup>65</sup> And, if it is higher quality, this could reduce waste and improve the patient experience.

It is not clear what a net-zero system will ultimately look like, but experts say we can expect the changes to be far-reaching.

“The reality is that if a country or the world is going to reach net zero, everything, everybody’s got to change. The NHS can’t do it without all its suppliers,” says Dr Smith. “It’s going to be very tough to get to net zero. The reality is that nobody knows how to do it. And we’re going to end up with a very different kind of health system.”

“The very fact that the UK Health Alliance exists shows people are recognising the need to respond at every single level: globally, nationally, regionally, within the health system, and individually—both in how you live your life and

in your professional life. All of those are going to have to change if we’re going to make progress.”

Survey respondents understand that many changes are necessary to make the system more sustainable. A majority say clinical pathways need to be reassessed with sustainability in mind (78%). Only 9% disagree. Furthermore, 70% of UK respondents agree that some green policies may affect the treatment choices for their patients compared with only 26% of German respondents and 48% of French respondents.

Future systems may also leverage more telemedicine to decrease travel for patients and doctors, thereby reducing the carbon footprint of each consultation.<sup>66</sup> But respondents have mixed feelings about telemedicine as a future model of care to help decarbonise. Only a small majority (59%) agree it has a place: 20% are indifferent, 21% disagree. British respondents are most enthusiastic (70% agree).

<sup>65</sup> Health Care Without Harm, “Fresh, healthy, and sustainable food: Best practices in European healthcare”, December 2016, [https://noharm-europe.org/sites/default/files/documents-files/4680/HCWHEurope\\_Food\\_Report\\_Dec2016.pdf](https://noharm-europe.org/sites/default/files/documents-files/4680/HCWHEurope_Food_Report_Dec2016.pdf)

<sup>66</sup> Purohit, Smith, Hibble, “Does Telemedicine Reduce the Carbon Footprint of Healthcare?”, *Future Healthcare Journal*, March 2021, vol. 8 no. 1, e85-e91, <https://doi.org/10.7861%2Ffhj.2020-0080>

### **Sustainability efforts can improve HCP morale**

When so many health systems are facing staff shortages, it's important to consider how the theme of sustainability can be embedded in the HCP role while keeping morale and wellbeing in mind.

At Health Care Without Harm Europe, Mr Clark explains a lot of research has gone into how to best activate sustainable behaviours in HCPs. "You don't preach about the environment or cost savings, even though these are important," he says. "We want to make sustainability a routine part of their role because this is about better patient health and quality of care. And because it's the right thing to do."

"Our approach is centred on doing little things because collectively they make a difference and might even make them feel more positive about their work," he says. "I think that's the message

that's going to turn more health professionals onto this."

Ms Kernec agrees that HCPs have a lot to gain from supporting sustainable practices. "When teams are able to appropriate a project—for example to replace single-use medical devices or use less of a medicine for a treatment—and do something intelligent and better for the patient, they feel empowered and happier with their jobs," she says. "There are often, if not always, some real economic gains as well as some real motivation gains."

After almost a decade of decarbonisation efforts, Dr Watts can confirm that the NHS workforce is feeling activated by the changes: "It is something our patients love and it's something that nine out of ten NHS staff want to see us do more of. And when you think about it, nine out of ten NHS staff agree on almost nothing. But they agree that they want their NHS to keep tackling climate change—and that is remarkable."

# Chapter 3: Healthcare systems confront their own role in climate change

With climate change recognised as a health emergency, those on the front lines of healthcare delivery are increasingly acknowledging the sector's emissions and trying to take responsibility.

Globally, the healthcare sector is responsible for 4-5% of greenhouse gas emissions.<sup>67,68</sup> If it were a country, it would be the equivalent of the fifth-largest emitter on the planet.<sup>69</sup> In particular, the

EU's healthcare sector is a mighty contributor: it produces 4.7% of the EU's total emissions, and the region ranks third globally as the largest healthcare sector carbon footprint.<sup>70,71</sup> (See table 6)

According to Health Care Without Harm, the UK's National Health Service (NHS) produces about 5.4% of the greenhouse gas emissions in the UK—more than the EU's average for

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<sup>67</sup> Health Care Without Harm and ARUP, "How the Health Sector Contributes to the Global Climate Crisis and Opportunities for Action", September 2019, [https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint\\_092319.pdf](https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint_092319.pdf)

<sup>68</sup> Nick Watts et al, "The 2019 report of The *Lancet* Countdown on health and climate change: ensuring that the health of a child born today is not defined by a changing climate", *The Lancet*, November 2019, Volume 394, Issue 10211, P1836-1878, [https://doi.org/10.1016/S0140-6736\(19\)32596-6](https://doi.org/10.1016/S0140-6736(19)32596-6)

<sup>69</sup> Health Care Without Harm and ARUP, "How the Health Sector Contributes to the Global Climate Crisis and Opportunities for Action", September 2019, [https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint\\_092319.pdf](https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint_092319.pdf)

<sup>70</sup> Health Care Without Harm and ARUP, "How the Health Sector Contributes to the Global Climate Crisis and Opportunities for Action", September 2019, [https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint\\_092319.pdf](https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint_092319.pdf)

<sup>71</sup> Peter-Paul Pichler et al, "International comparison of health care carbon footprints", *Environmental Research Letters*, Volume 14, Number 6, 2019. <https://doi.org/10.1088/1748-9326/ab19e1>

**Table 6: Europe's healthcare's carbon footprint.**

The EU's healthcare system has the third-largest healthcare carbon footprint. Furthermore, the top ten healthcare carbon emitters represent 75% of the total global healthcare emissions.

Rank	Healthcare country/region emissions ranking	Total country/region emissions ranking
1	US	China
2	China	US
3	EU	EU
4	Japan	India
5	Russia	Russia
6	Brazil	Japan
7	India	Brazil
8	South Korea	Canada
9	Canada	South Korea
10	Australia	Mexico

Source: Top ten healthcare carbon emitters compared with total top ten emitters by country/region. Extracted from HEALTH CARE'S CLIMATE FOOTPRINT, Health Care Without Harm and ARUP, How the Healthcare sector Contributes to the Global Climate Crisis and Opportunities for Action. 2019.<sup>72</sup>

**Table 7: Our focus countries' healthcare sector carbon footprints.**

The UK and Germany are above average carbon emitters in the EU region.

	UK	Germany	France	EU
Estimated healthcare carbon footprint (% of national footprint, 2019) <sup>73</sup>	5.4%	5.2%	4.6%	4.7%
The figures comprise CO <sub>2</sub> , methane and nitrous oxide emissions.				

<sup>72</sup> Health Care Without Harm and ARUP, "How the Health Sector Contributes to the Global Climate Crisis and Opportunities for Action", September 2019, [https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint\\_092319.pdf](https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint_092319.pdf)

<sup>73</sup> Health Care Without Harm and ARUP, "How the Health Sector Contributes to the Global Climate Crisis and Opportunities for Action", September 2019, [https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint\\_092319.pdf](https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint_092319.pdf)



comparable health systems.<sup>74</sup> As for France, the recent SHIFT Project report found a higher carbon footprint for the French healthcare system, around 8% of national emissions.<sup>75</sup> (See table 7)

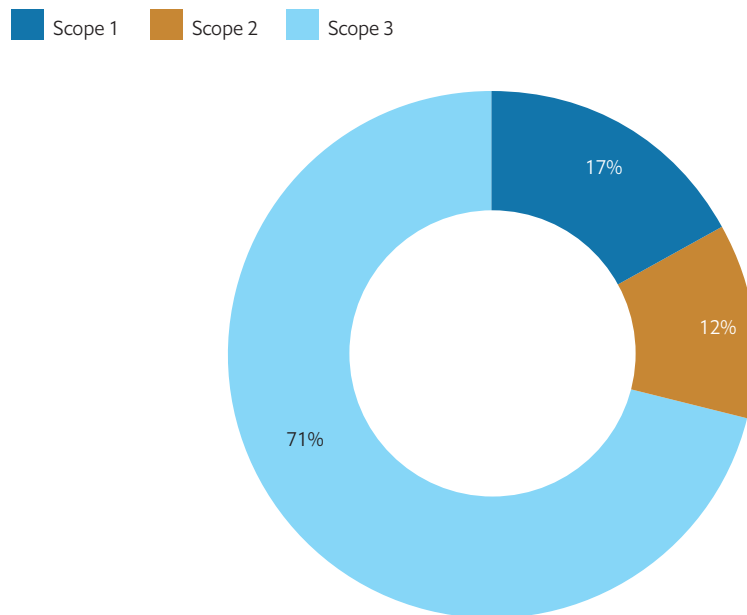
How the whole healthcare sector contributes so much carbon is a complex answer. Using Health Care Without Harm Europe’s reporting as a guide,<sup>76</sup> few of the emissions (17%) come from Scope 1 areas, which are the direct emissions from healthcare facilities, including buildings’ on-site energy consumption, waste from clinical operations, single-use plastics, personal protection equipment and ambulance fleets. Slightly less (12%) come from Scope 2, which

are the indirect emissions such as electricity, steam, cooling and heating. The remaining bulk (71%) is Scope 3, which covers indirect emissions that occur in producing and transporting services and the medical supply chain, including pharmaceuticals, chemicals, medical devices and instruments and food.

### Decarbonisation priorities

Despite the prominence of Scope 3 emissions in the healthcare sector, in our survey, most HCPs chose Scope 1 and 2 areas when asked what actions they believe are most important for their hospital to decarbonise. (See table 8) [Q7]

**Figure 2. Healthcare sector emissions by scope type, with scope 3 dominant.**



Source: Taken from “Health care’ climate footprint: How the Healthcare Sector Contributes to the Global Climate Crisis and Opportunities for Action” September 2019.<sup>77</sup>

<sup>74</sup> Health Care Without Harm and ARUP, “How the Health Sector Contributes to the Global Climate Crisis and Opportunities for Action”, September 2019, [https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint\\_092319.pdf](https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint_092319.pdf)

<sup>75</sup> The Shift Project, “Décarboner la santé”, November 2021, <https://theshiftproject.org/wp-content/uploads/2021/11/211125-TSP-PTEF-Rapport-final-Sante.pdf>

<sup>76</sup> Health Care Without Harm and ARUP, “How the Health Sector Contributes to the Global Climate Crisis and Opportunities for Action”, September 2019, [https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint\\_092319.pdf](https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint_092319.pdf)

<sup>77</sup> Health Care Without Harm and ARUP, “How the Health Sector Contributes to the Global Climate Crisis and Opportunities for Action”, September 2019, [https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint\\_092319.pdf](https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint_092319.pdf)

**Table 8: HCP's prioritise decarbonising what's in front of them.**

**Given a selection of decarbonisation measures, most HCPs in the three study countries selected Scope 1 and 2 areas.**

In your opinion, which actions are the most important for your hospital to take to decarbonise? Select up to five.<sup>78</sup>

Improving waste management (clinical and food)	55%
Modernising the hospital estate (including energy efficient heating)	53%
Reducing the use of single-use plastics (eg, disposable gloves, personal protective equipment, plastic cups) by introducing re-usable items	46%
Recycling paper and cutting printing costs	41%
Switching to renewable electricity and installing low energy lighting	39%
Reprocessing and recycling medical devices	34%
Purchasing medical supplies with a low carbon footprint (including pharmaceuticals, devices etc)	31%
Reducing patient journeys to hospitals through the use of telemedicine	24%
Promoting active travel for healthcare staff to work (eg, walking, cycling)	23%
Reducing overdiagnosis for patients	19%
Transitioning the hospital vehicle fleet to electric or low carbon (eg, hydrogen ambulances)	16%
Encouraging healthcare professionals to take part in climate action initiatives	15%
Cutting down the use of anaesthetic gases/inhalers that harm the environment	10%

Source: Economist Impact survey results

Topping the list: "improving waste management", "modernising the hospital estate (including energy efficient heating)", "reducing the use of single-use plastics" and "recycling paper and cutting printing costs".

When looking at the survey results by country level, France and Germany are most steadfast about waste management (58% each chose this option), while the UK prioritises modernising the hospital estate (60%) and single-use plastics (54%).

Seventh down the list, we see that only about a third of all respondents (31%) pointed to Scope 3's supply chain as a priority (purchasing medical supplies with a low carbon footprint). This was more popular with nurses (39%) than doctors (24%).

Interviewed experts were not surprised by the Scope 1 and 2 heavy answers. Dr Schulz explains that it reflects daily work. "If you're a surgeon or anaesthesiologist in the operating theatre, you produce what seems like one tonne of waste per hour per procedure per patient. This is what you

<sup>78</sup> Economist Impact Survey results

are seeing every day,” he says. Indeed, single-use equipment in the operating theatre can account for a quarter of all hospital waste.<sup>79</sup>

“But it does not reflect where the greatest emissions come from,” he continues. “So we need more education. We need to understand where waste comes from and ask if the best investment of time is to reduce waste or to work on the supply chain.”

This is echoed by Mr Clark. “People can be very focused with recycling because it feels easy, it’s visible and tangible. There’s nothing wrong with that, but it’s negligible to reducing healthcare providers’ carbon footprint.” Instead, he says, for big impact, healthcare bodies should focus on their energy, supply chain and travel and transport.<sup>80</sup>

### Moving towards a net-zero ecosystem

Responding to the climate and healthcare crisis requires all hands on deck. But there is currently no co-ordinated attack. “Health in Europe is devolved, so in practice there is no such thing as European health policy. Sustainability work happens on a national level,” says Mr Clark.

To his point, looking at the three countries of focus, we see vastly different approaches and tactics to healthcare’s carbon footprint.

#### UK

The UK—specifically NHS England—has a clear pathway for decarbonising healthcare. The UK’s “Delivering a Net-Zero NHS”<sup>81</sup> report was delivered in October 2020. It’s the first national health strategy of its kind. It contains a clear

**Table 9: NHS interventions**  
**Multiple intervention approaches are presented in NHS England’s “Delivering a Net Zero NHS report” (2020) in order to reduce its carbon footprint.**

Direct Intervention Category	Illustrative direct interventions from “Delivering a Net Zero NHS” (2020)
Estates	NHS Energy Efficiency Fund will upgrade lighting across the NHS, saving £14.3m and 34 ktCO2e per year
Transport	Transitioning the fleet to zero-emission vehicles, reducing unnecessary journeys and enabling healthier, active forms of travel such as cycling and walking
Supply chain	A 10% reduction in clinical single-use plastics in the short term, eventually saving a total of 224 ktCO2e
Medicines	Shared decision-making between patients and clinician to enable faster uptake of low carbon inhalers (eg, dry powdered inhalers)  Shift from desflurane to lower carbon alternatives such as sevoflurane in anaesthetics
Research, innovation and offsetting	Increasing green space on site, where possible  Bio sequestration and technology-based carbon capture and storage

<sup>79</sup> Chantelle Rizan et al, “The Carbon Footprint of Surgical Operations: A Systematic Review”, *Annals of Surgery*, December 2020, Volume 272, Issue 6, p986-995, <https://doi.org/10.1097/sla.0000000000003951>

<sup>80</sup> Health Care Without Harm, “Global Road Map for Health Care Decarbonization”, 2020, [https://healthcareclimateaction.org/sites/default/files/2021-06/Health%20Care%20Without%20Harm%20Road%20Map%20for%20Health%20Care%20Decarbonization%20Annex%20C\\_final.pdf](https://healthcareclimateaction.org/sites/default/files/2021-06/Health%20Care%20Without%20Harm%20Road%20Map%20for%20Health%20Care%20Decarbonization%20Annex%20C_final.pdf)

<sup>81</sup> NHS England and NHS Improvement, “Delivering a ‘Net Zero’ National Health Service”, 2020, <https://www.england.nhs.uk/greenernhs/wp-content/uploads/sites/51/2020/10/delivering-a-net-zero-national-health-service.pdf>.

plan with interventions on how to cut total carbon emissions by 80% by 2040 and reach net zero—inclusive of indirect Scope 3 emissions—by 2045.<sup>82</sup> It is critically enabled by £1.4bn in public financing to the public sector to support the changes.<sup>83</sup> Some of its interventions are presented in table 9.

A major trend is to address emissions from the supply chain. The strategy makes clear that the NHS would no longer purchase from suppliers that are not aligned with their ambition to be net-zero by 2027.<sup>84</sup>

Suppliers can show their progress through published reports and continued carbon emissions reporting through the supplier framework. To support this, some NHS supply-chain companies have already committed to 100% renewable electricity in their operations by 2050 or earlier.<sup>85</sup> Others have committed to net-zero value chains working alongside the NHS; a pilot has seen 27 suppliers voluntarily sharing their carbon reduction plans, and it was expected that this would expand to 500 NHS suppliers in 2021.<sup>86</sup>

### “If the NHS can...”

Dr Nick Watts, the energetic, no-nonsense chief sustainability officer at NHS England, has heard a broad range of excuses for inaction across the world. Often, he says, these perceived barriers don't hold past first contact.

For example, he is often told the NHS is at an advantage due to its single payer model. “That’s a particularly boring excuse. Every healthcare system in the world is structured differently, and yet all find different and varied ways to deliver for their patients. The same is true in the response to climate change. Not all of them can structure their response like the NHS, but that is not the same as saying not all of them can respond.”

Dedicated funding is another common defence. In our survey alone, 77% of respondents across countries agreed that without sufficient financing and resourcing, the green agenda will fail in hospitals. He disagrees whole-heartedly. “‘It costs too much’ is a bit of a ‘non-argument’ on a whole bunch of fronts. Firstly, you can act on over 75% of your emissions with minimal-to-no additional funding; secondly, investments in low-carbon healthcare have an excellent ROI, with energy efficiency schemes in the NHS averaging an exceptional 3.8-year payback period.

“Besides, the argument ignores the counterfactual. If you don't act, you can guarantee that un-mitigated climate change will bring significant costs when a hospital floods, or overheats, or when you have to retrain healthcare professionals to tackle a new infectious disease.”

Sometimes, people say it's simply hard to do. Sure, he agrees, whether it's calculating a carbon footprint or replacing an on-site energy system, there will be challenges. “But do we have time to wait? Absolutely not. The science is clear, and the end-point is even clearer. We have more than enough information to get on with it.”

People also say they don't have agency over their emissions, particularly Scope 3, but this is misleading, he counters. “Healthcare systems have an enormous amount of choice and agency over their supply chains, and regularly use their weight to influence it through the medical choices their clinicians make, or the national policy decisions their procurement teams make.

“When it comes down to it, they probably haven't tried,” he says. “Yes, it's complicated. Yes, it requires thought. But it's also essential. Companies right the way around the world are directly taking responsibility for their supply-chain emissions... anyone who says it can't be done needs to get out of the way of the people that are already doing it.”

<sup>82</sup> NHS England and NHS Improvement, “Delivering a ‘Net Zero’ National Health Service”, 2020, <https://www.england.nhs.uk/greenernhs/wp-content/uploads/sites/51/2020/10/delivering-a-net-zero-national-health-service.pdf>.

<sup>83</sup> UK Government, “COP26 and the NHS: Sajid Javid's open letter to all NHS trusts in England”, November 2021, <https://www.gov.uk/government/publications/open-letter-to-nhs-trusts-on-net-zero-commitment/cop26-and-the-nhs-sajid-javids-open-letter-to-all-nhs-trusts-in-england> (accessed June 29th 2022)

<sup>84</sup> NHS England, “Blog: Healthier future inspires major NHS suppliers to step-up net zero ambitions”, November 2021, <https://www.england.nhs.uk/greenernhs/2021/11/blog-healthier-future-inspires-major-nhs-suppliers-to-step-up-net-zero-ambitions/> (accessed June 29th 2022)

<sup>85</sup> NHS England, “Blog: Healthier future inspires major NHS suppliers to step-up net zero ambitions”, November 2021, <https://www.england.nhs.uk/greenernhs/2021/11/blog-healthier-future-inspires-major-nhs-suppliers-to-step-up-net-zero-ambitions/> (accessed June 29th 2022)

<sup>86</sup> NHS England and NHS Improvement, “Delivering a ‘Net Zero’ National Health Service”, 2020, <https://www.england.nhs.uk/greenernhs/wp-content/uploads/sites/51/2020/10/delivering-a-net-zero-national-health-service.pdf>.

## At COP26, Germany joined the commitment to make its health services more sustainable by 2030.

### Germany

Germany has yet to formulate a clear plan towards net zero. Germany's Climate Action Plan 2050, adopted in 2008, describes the areas of action as energy, industry, buildings, transport, agriculture, land use and forestry, but it does not include a specific objective for its healthcare service.<sup>87</sup>

The German Federal Ministry of Health has more recently set up a dedicated department on health protection and sustainability responsible for climate-related matters, and the federal conference of health ministers has for the first time released a resolution on climate change and health.<sup>88</sup> But, to date, there is still no published national sector specific roadmap or commitments for healthcare. A consistent national strategy is made more challenging by

Germany's 16 federal states, which are each responsible for healthcare delivery.<sup>89</sup>

At COP26, Germany joined the commitment to make its health services more sustainable by 2030. "This goal has been published without any idea of transformation paths to achieve this goal," says Dr Schulz. "I think no one feels responsible at the moment, and this is a disaster."

"Germany doesn't have a net-zero trajectory in healthcare," echoes Ms Klapper. She also says the German Nursing Association should strengthen its efforts: "The Action Program of the Nurses Association for 2030 does not include climate change. However, the board of trustees now raises awareness on this point."

These limitations mask growing grassroots progress; while national top-down healthcare specific sector plans are absent, bottom-up actors and initiatives, including KLUG (founded in October 2017), are making noise in this area through academic initiatives and their partnerships with medical societies, institutions and NGOs to raise awareness and support sustainable actions.<sup>90,91,92,93</sup>

### Discussions about climate change and health are happening

"I do not have the impression that there is a lack of awareness of the impact of climate change on health within the medical profession in Germany. On the contrary, the topic is being discussed in many contexts: in the chambers of physicians, the medical societies and the professional associations, in various initiatives like the German Alliance on Climate Change and Health (Deutsche Allianz Klimawandel and Gesundheit, KLUG), in the medical schools of universities. I receive invitations on nearly a weekly basis to panel discussions, professional and continuing education events. There may be deficiencies in terms of the extent to which these steps have been successfully implemented so far, but I cannot detect a lack of awareness within the medical profession."

—Dr Klaus Reinhardt, president of the German Medical Association (Bundesärztekammer)

<sup>87</sup> Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection, "Climate Action Plan 2050 – Germany's long-term low greenhouse gas emission development strategy", <https://www.bmuv.de/en/topics/climate-adaptation/climate-protection/national-climate-policy/climate-action-plan-2050-germanys-long-term-low-greenhouse-gas-emission-development-strategy>. (accessed June 29th 2022)

<sup>88</sup> The Lancet Countdown on Health and Climate Change, "Policy Brief for Germany", 2020, [https://klimagesund.de/wp-content/uploads/2020/12/Lancet-Countdown-Policy-Brief-Germany\\_ENG.pdf](https://klimagesund.de/wp-content/uploads/2020/12/Lancet-Countdown-Policy-Brief-Germany_ENG.pdf).

<sup>89</sup> John Grosser and Wolfgang Greiner, "Sustainability and Resilience in the German Health System", February 2021, [https://www3.weforum.org/docs/WEF\\_PHSSR\\_Germany\\_Report.pdf](https://www3.weforum.org/docs/WEF_PHSSR_Germany_Report.pdf)

<sup>90</sup> German Alliance for Climate Change and Health (KLUG), <https://www.klimawandel-gesundheit.de> (accessed June 29th 2022)

<sup>91</sup> Health for Future, <https://healthforfuture.de/> (accessed June 29th 2022)

<sup>92</sup> Stiftung Mercator, "Klimaschutz", <https://www.stiftung-mercator.de/de/woran-wir-arbeiten/klimaschutz/>. (accessed June 29th 2022)

<sup>93</sup> Zukunft Krankenhaus, "ZUKE GREEN KONGRESS - NACHHALTIGER EINKAUFEN & WIRTSCHAFTEN IM KRANKENHAUS", <https://www.zukunft-krankenhaus-einkauf.de/zuke-green/kongress/> (accessed June 29th 2022)

## France

While there is a national low-carbon strategy and a national plan for adaptation to climate change, France does not list clear goals for its healthcare sector.<sup>94,95,96</sup> And while Germany and the UK committed to transforming their healthcare systems to be more sustainable and low carbon at COP26, France has been absent. However, France did commit to raising awareness and doing research on the intersection of health and climate.<sup>97</sup>

Bernard Jourdain, co-founder of the Collectif d'action face à l'urgence en santé et environnement in France, reflects that within the sector, interest in the issue was nearly non-existent until a couple of years ago. He is also the sustainable development lead at Centre Hospitalier de Niort and an active member of the Global Green and Healthy Hospitals Network.<sup>98</sup> "This is a sort of new preoccupation," he says. "There's no real national leadership and policy on the topic. Everything that has been done so far comes from the initiative of professionals on the field, who were personally inspired by the subject."

"A limited number of hospitals had been experimental around sustainability until two years ago," adds Ms Kernec. "But since Covid, there has been a growing understanding of what is at stake and there is an amazing energy for this subject, and development of initiatives on the field. Now what we deeply need is a national vision and strategy to accelerate the transformation."

Mr Jourdain is one of the few early pioneers of healthcare sustainability in France. He says he helped reduce his hospital's emissions by 30% from 2008 levels—much of which is due to a 2015 change to the hospital's heating system (from gas to wood, using a technologically advanced filtered system that only releases water as a by-product) and by improving the quality of food to reduce waste. The biggest part of his hospital's remaining footprint is the consumption of medicines and medical materials.

## Emission reporting

Emission reporting is a crucial pre-condition to any carbon footprint action plan in the healthcare sector. In our analysis, the UK's healthcare sector has been trailblazing in two ways: it has been reporting emissions since 2008 and has a solid action plan.

But, to date, most EU countries, including France and Germany, do not appear to have reported on health sector emissions independent of wider cross-sectoral commitments.

According to Mr Jourdain, who started measuring his hospital's carbon footprint in 2009, in France, it is compulsory for hospitals with over 250 employees to produce a carbon footprint.<sup>99</sup> "But in reality, only 20% have done it," he says. "They have mostly done Scope 1 and 2 and not the third one, which is the biggest issue. So it all relies on goodwill."

Furthermore, a 2021 study reports severe gaps in emission reporting from German healthcare

<sup>94</sup> Ministry for the Ecological and Inclusive Transition, "French National Adaptation Plan for Climate Change for the period 2018-2022", [https://www.ecologie.gouv.fr/sites/default/files/2018.12.20\\_PNACC2.pdf](https://www.ecologie.gouv.fr/sites/default/files/2018.12.20_PNACC2.pdf)

<sup>95</sup> The Shift Project, "Plan de Transformation Du Shift (PTEF) - Focus Sur Le Secteur de La Santé", <https://theshiftproject.org/plan-de-transformation-de-leconomie-francaise-focus-sur-la-sante/> (accessed June 29th 2022)

<sup>96</sup> Lancet Countdown on Health and Climate Change, "Policy Brief for France", December 2020, [https://www.researchgate.net/publication/349882510\\_Lancet\\_Countdown\\_on\\_Health\\_and\\_Climate\\_Change\\_Policy\\_brief\\_for\\_France](https://www.researchgate.net/publication/349882510_Lancet_Countdown_on_Health_and_Climate_Change_Policy_brief_for_France)

<sup>97</sup> OECD, "National Climate Change Adaptation: Emerging Practices in Monitoring and Evaluation. Measures and actions in France's national adaptation plan", [https://read.oecd-ilibrary.org/environment/national-climate-change-adaptation/measures-and-actions-in-france-s-national-adaptation-plan\\_9789264229679-12-en#page4](https://read.oecd-ilibrary.org/environment/national-climate-change-adaptation/measures-and-actions-in-france-s-national-adaptation-plan_9789264229679-12-en#page4)

<sup>98</sup> Global Green and Healthy Hospitals, <https://www.greenhospitals.net/> (accessed June 29th 2022)

<sup>99</sup> Bilans GES, "All sectors : French regulatory GHG reporting", [https://bilans-ges.ademe.fr/en/accueil/contenu/index/page/fr\\_art75/siGras/o](https://bilans-ges.ademe.fr/en/accueil/contenu/index/page/fr_art75/siGras/o) (accessed June 29th 2022)

## Nearly 80% of respondents want to see sustainability as a measurable domain in the quality of care that hospitals deliver.

providers—only 12% of hospitals have published emissions records, and only 3% of hospital records met the inclusion criteria for their analysis.<sup>100</sup> This was mostly due to reporting that ignores indirect Scope 3 emissions and does not consider non-CO<sub>2</sub> emissions.

Ms Kernec understands that emission reporting is challenging to do well, particularly if you want to estimate Scope 3, “but it must be done. You need to have some starting reference to compare with in the future.” Furthermore, she suggests it should be reported about every three years to check progress.

To boost compliance, Dr Becker adds that emission reporting should be undertaken for more than meeting national reporting requirements: “I think they have to make sustainability one of the criteria that the healthcare system is measured on.”

Surveyed HCPs agree. Nearly 80% of respondents want to see sustainability as a measurable domain in the quality of care that hospitals deliver.

This is a no-brainer, agrees Ms Kernec. “Sustainability initiatives are strongly linked with better care for the patient, as well as better for the environment, they are energising for the healthcare workforce, and you can make real financial savings.”

The “Delivering a Net-Zero NHS” report and subsequent policy could act as an emission

reporting guide for other European countries, but it has been constructed off the back of diligent carbon accounting for the whole system, which is lacking in other countries.

### Most HCPs know their practice’s sustainability plan

Despite top-down challenges to establishing sustainability goals, we found that many survey respondents in all three countries were aware of their own hospital’s current decarbonisation or sustainability plan or intention to implement one.

High levels of awareness are critical for creating buy-in among HCPs: “Awareness of an organisation’s goals is always a motivating factor for employees,” says Dr Reinhardt. “It stands to reason that this would also apply in the case of sustainability plans.”

Overall, 63% said their hospital has a plan or intentions to put one in place within the next few years. (See table 10) But more work is needed to raise awareness in Germany, where 26% said they did not know if their hospital has a plan in place or not—a significant figure compared with the 4% and 6% of respondents who did not know either way in France and UK, respectively. [Q6]

In support of the notion that England has advanced Greener NHS plans, 58% of UK respondents said their hospital already has a decarbonisation plan—a clear lead against 46% in France and 30% in Germany.

Doctors are more likely than nurses to be aware of their hospital’s plans. In fact, 20% of nurses say they “don’t know” compared with only 4% of doctors, suggesting more inclusion of hospital staff is necessary.

<sup>100</sup> Quitmann C, Sauerborn R, Herrmann A, “Gaps in Reporting Greenhouse Gas Emissions by German Hospitals—A Systematic Grey Literature Review”, *Sustainability*, 2021; 13(3):1430, <https://doi.org/10.3390/su13031430>

**Table 10: HCPs show high awareness of sustainability plans. Except for about quarter of German respondents, almost all HCPs were aware of their hospital's sustainability plans, or lack thereof.**

Which of the following statements best reflects the sustainability plans of your hospital? Select one.

	<b>Total</b>	<b>France</b>	<b>Germany</b>	<b>UK</b>
My hospital has a decarbonisation/sustainability plan with clear milestones and a net-zero target date	13%	20%	2%	18%
My hospital has a decarbonisation/sustainability plan, but without a net-zero target date	31%	26%	28%	40%
My hospital is planning to put a decarbonisation/sustainability plan in place within the next few years	19%	16%	22%	18%
My hospital has only initiated meetings on putting a decarbonisation/sustainability plan in place	12%	22%	8%	6%
My hospital has no plans to put a decarbonisation/sustainability plan in place	13%	12%	14%	12%
Don't know	12%	4%	26%	6%

Source: Economist Impact survey results



# Conclusion

Big, systematic change is time consuming and often slow. And health services are already resource constrained. But there is no time to wait; the climate emergency is only worsening.

Our survey confirms that HCPs are already aware of the impacts climate change is having on the health of the populations they serve. However, they would benefit from:

- More information and more support at all stages of their educational and employment journey to better understand the risks to their patients.
- Help and support in putting advocacy into practice in their healthcare institutions or clinical settings.
- Support for proposed changes to clinical pathways that can help reduce any unnecessary medical production and waste in patient treatment and long-term care.

From a clinical perspective, further evaluation to support mitigation and adaptation initiatives is required. This includes:

- Establishing an evidence base to support any changes to clinical activities, to ensure that there is no ambiguity that doing the right thing for the climate is also the best thing for the patient.
- Understanding how clinical practices could change to help patients and especially target vulnerable groups (eg, elderly and chronically ill people) adapt to climate risk.

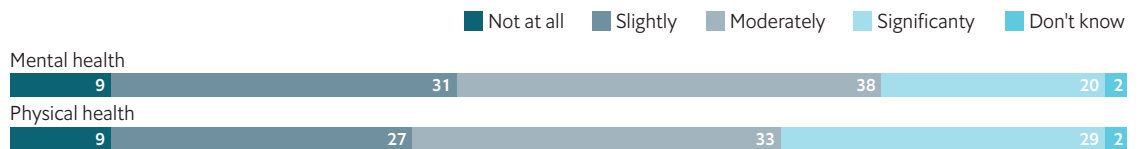
Out of the three European countries assessed (France, Germany and the UK), only the UK is showing leadership in measuring healthcare emissions and setting targets. For further effectiveness, healthcare systems need to:

- Measure their emissions on a regular and systematic basis (including indirect Scope 3 emissions from the supply chain, a major contributor).
- Bring in well-thought-out activation plans with key roles specified for HCPs, consider resourcing changes with local healthcare sustainability leaders, and transforming industry production lines and supply chains.

# Appendix: Survey questions and results

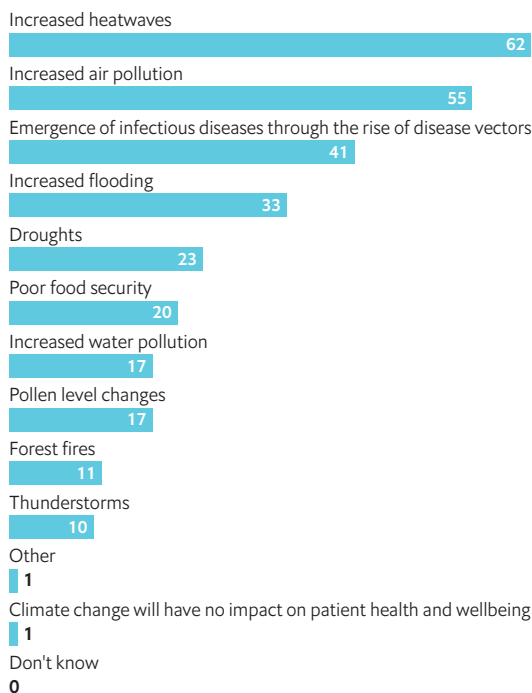
**Q1. To what extent do you think climate change is negatively affecting the health (physical and mental) of your patients today?** Please select one in each row.

(% respondents)



**Q2. Which climate change factors will have the greatest impact on the health and wellbeing of patients in Europe in the next 10 years?** Please select up to three.

(% respondents)



**Q3. In health terms, who do you think is most at risk from climate change in Europe?**

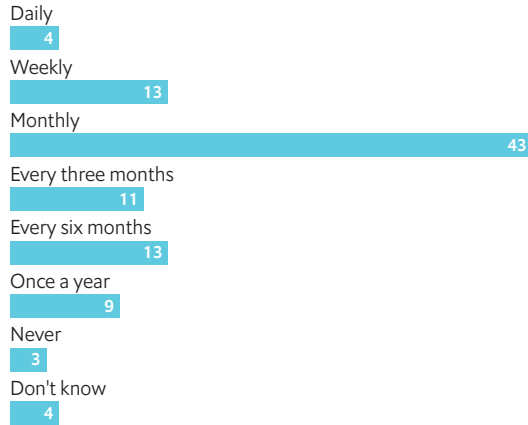
Please select up to three.

(% respondents)



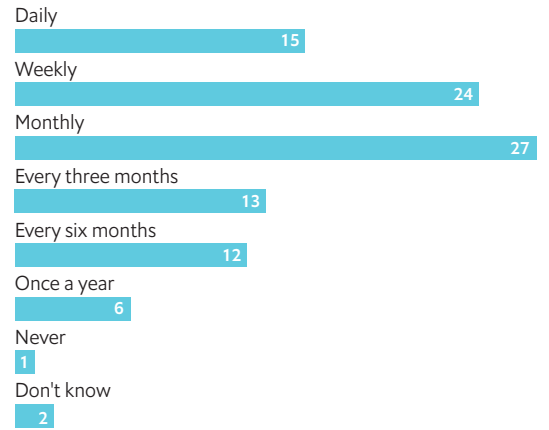
**Q4. In the past year, how often have you seen a patient(s) clinically impacted by climate change?** Please select one.

(% respondents)



**Q5. In ten years from now, how often do you expect to see a patient(s) clinically impacted by climate change?** Please select one.

(% respondents)



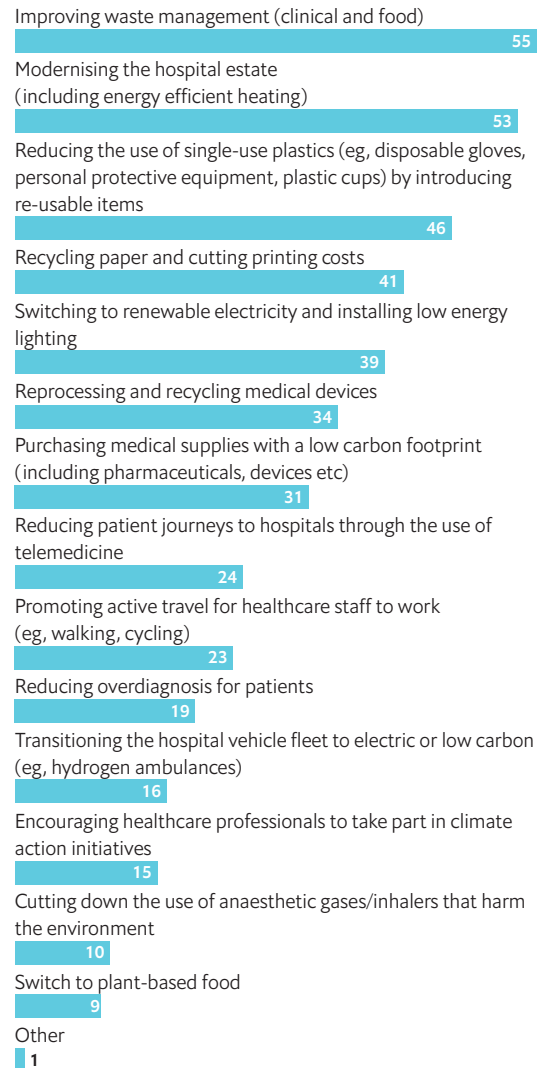
**Q6. Which of the following statements best reflects the sustainability plans of your hospital?** Please select one.

(% respondents)



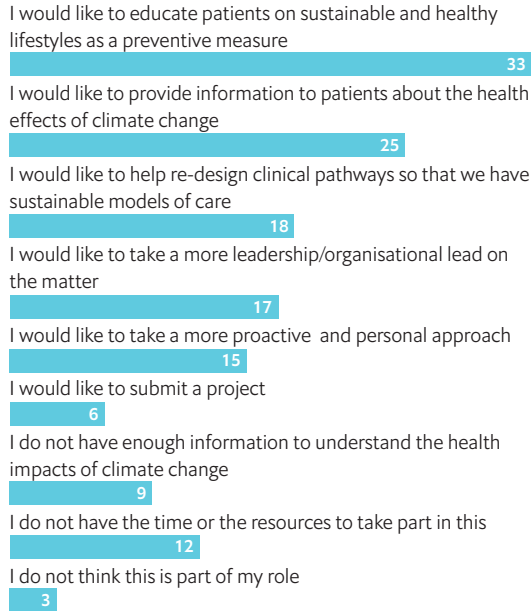
**Q7. In your opinion, which actions are the most important for your hospital to take to decarbonise?** Please select up to five.

(% respondents)



**Q8. Which of the following statements best reflects your view on how you would participate in achieving net zero in your hospital?** Please select up to two.

(% respondents)



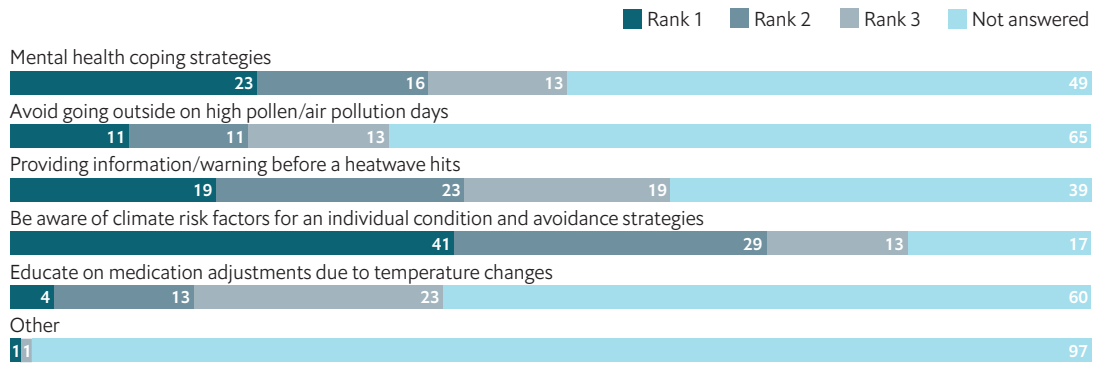
**Q9. In your opinion, who should provide education and training for healthcare professionals on sustainable healthcare and the health effects of climate change?** Select up to three

(% respondents)



**Q10. Which advice should healthcare professionals provide to patients on adaptation to climate change?** Please rank up to three where 1 is the most important advice.

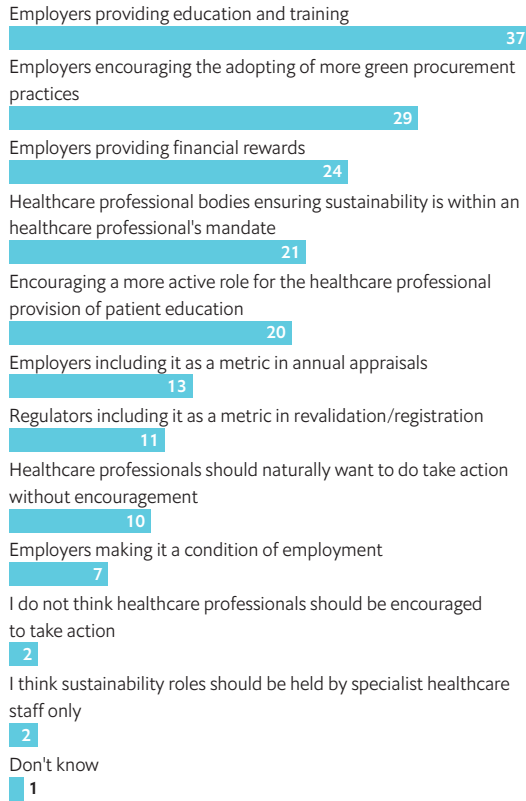
(% respondents)



**Q11. In your opinion, which of the following will best encourage healthcare professionals to take action to be more sustainable and to help make their hospital become net zero?**

Please select up to two.

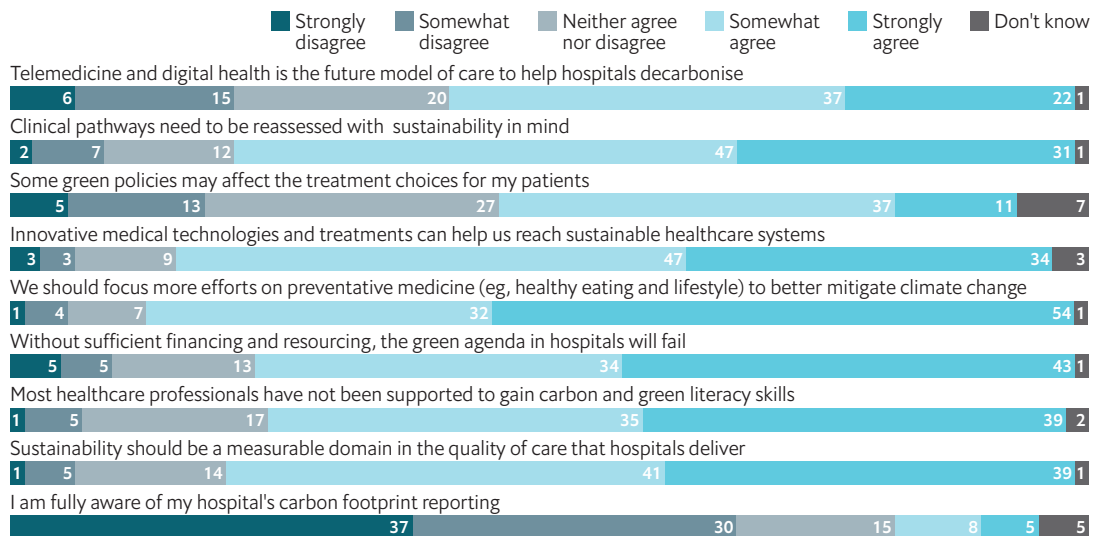
(% respondents)



**Q12. To what extent do you agree or disagree with the following statements?**

Please select one in each row.

(% respondents)



**QD1. In what country are you personally located?** Please select one.

(% respondents)



**QD2. Which of the following best describes your current profession?** Please select one.

(% respondents)



**QD3. Are you primarily based in a hospital?**

Please select one.

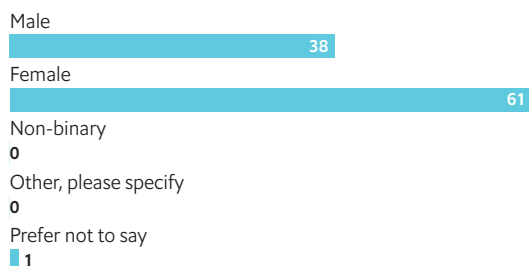
(% respondents)



**QD4. Which best represents your gender?**

Please select one.

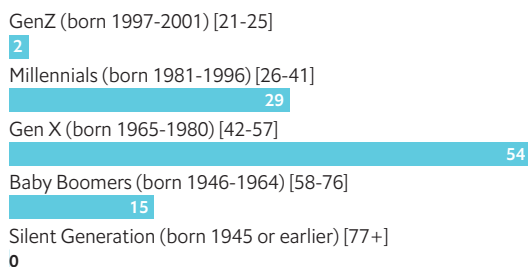
(% respondents)



**QD5. In what year were you born?**

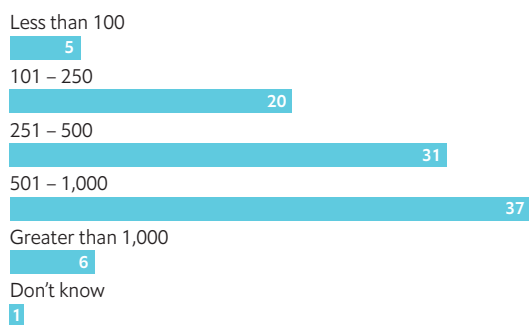
Please select one.

(% respondents)



**QD6. To the best of your knowledge, how many beds are there in the hospital where you work?** Please select one.

(% respondents)



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