

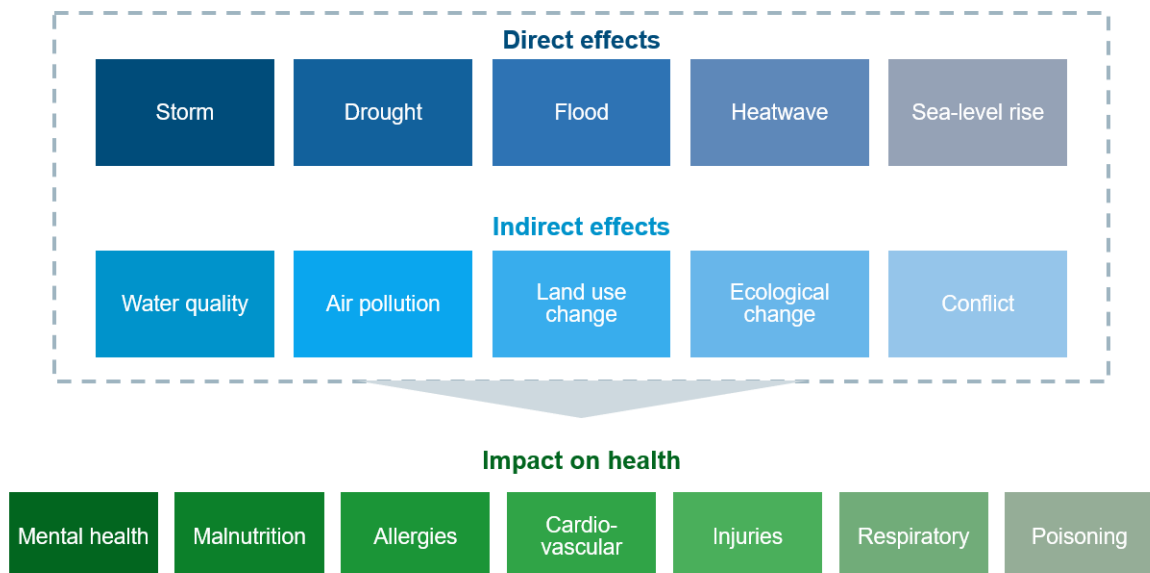
3 ways healthcare systems can reduce their carbon footprint

Nov 7, 2022

- **Rapid climate change has a direct impact on human health, but many healthcare systems have not yet committed to net zero.**
- **Medicines account for between 25-33% of all healthcare emissions.**
- **The pharmaceutical industry needs more data on emissions, and companies need to collaborate to reduce their carbon footprint.**

Rapid climate change has a direct impact on human health. These damaging effects arise from [multiple causes](#), such as increased allergens, changes in the ecology of disease vectors and conflicts over resources (see figure 1, below). This risk to human health bears down heavily upon healthcare systems.

Figure 1: Direct and Indirect effects of climate change on health and wellbeing



Source: Adapted from [https://doi.org/10.1016/S0140-6736\(15\)60854-6](https://doi.org/10.1016/S0140-6736(15)60854-6)



Figure 1: The pharmaceutical industry needs more data on emissions, and companies need to collaborate to reduce their carbon footprint. Image: IQVIA

Ultimately, healthcare should be a sector that cares for the whole population, healthy and sick. This can be a challenge when resources are scarce; for example, a [report](#) in 2021 suggested less than half (44%) of the public believed that the National Health Service (NHS) in England should be responsible for reducing its carbon footprint, and most had given it a lower priority than competing concerns, such as reducing waiting times or boosting staff morale. We recognise these immediate challenges, but also believe that health systems need to reduce their emissions which, collectively, is a significant step towards fostering wellness.

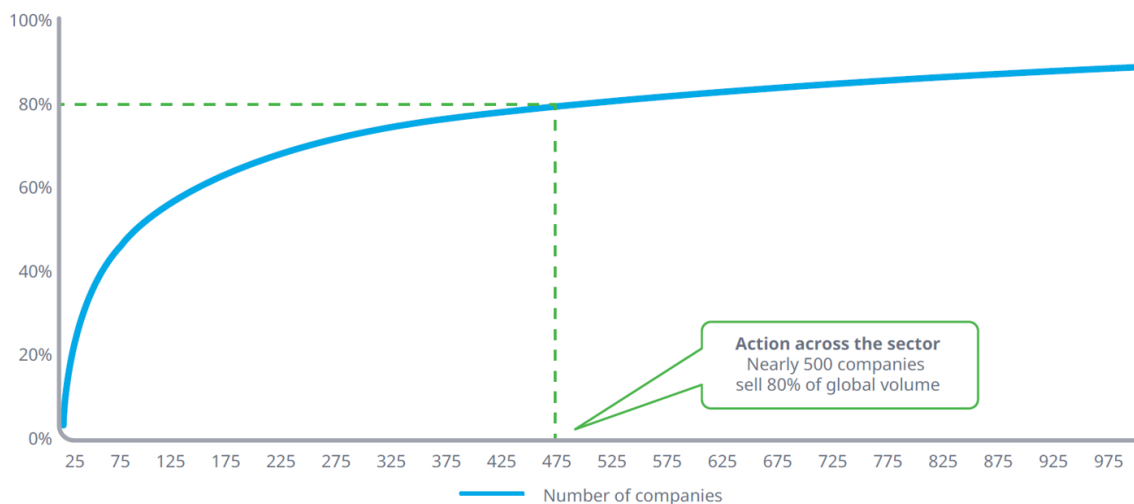
The carbon footprint of medicines

The NHS in England was the first healthcare system to commit to becoming [net zero by 2045](#). During COP26, an additional 13 national health systems set net-zero dates, but large countries have yet to [make this commitment](#), including Germany, France, Italy and the US.

To achieve net zero in healthcare, providers first need to take stock of the current situation. In the past decade, a small number of healthcare systems have attempted to identify their sources of carbon emissions. Recent figures from the [UK](#) and [France](#) suggest the contribution from medicines ranges between 25-33% of all healthcare emissions. It is likely that medicines will continue to be a focus area for emissions reductions in the foreseeable future.

This means addressing the volume use of the majority of medicines. IQVIA calculates that 500 pharmaceutical manufacturers are responsible for 80% of the volume of all medicines consumed by patients worldwide (e.g. pills, ampoules, pens, containers etc.) – it is these manufacturers who need to make the biggest changes (see figure 2, below).

Figure 2. Percent of all medicines sold globally (Standard Units, 2021)



Source: IQVIA EMEA Thought Leadership; IQVIA MIDAS MAT Q2 2021; Rx-only



Figure 2: The contribution from medicines ranges between 25-33% of all healthcare emissions. Image: IQVIA

Of these 500 companies, 20% have their headquarters in the US, 30% in Europe and 40% in India or China. With Europe and the US leading on policies to reduce emissions by manufacturers, further enforcement could yield meaningful results. However, for companies headquartered in India and China, where there has historically been lower regulatory oversight, the industry needs to do more to promote supply chain transparency and greener manufacturing. Actions such as introducing stricter procurement practices or introducing certifications could help.

Quantifying the pharmaceutical industry's carbon footprint

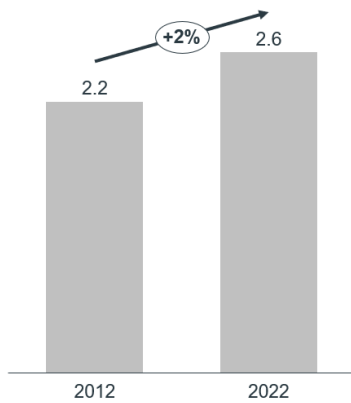
Some types of medicine have especially high carbon footprints. Health systems can identify where to make reductions by mapping the carbon footprints of medicines to global use. Two areas highlighted by the NHS are [anaesthetic gases and inhalers](#).

The global use of anaesthetics has increased steadily over the past decade, roughly matching population growth. Yet the resulting carbon footprint has decreased, especially in the past five years (figure 3, below), primarily driven by the conscious substitution of desflurane, a common anaesthetic gas, with greener gases such as sevoflurane. Amongst anaesthetic gases, desflurane is one of the most harmful, having 20 times the global warming effect than alternatives in a clinical setting.

Figure 3: Global use of anaesthetic gases

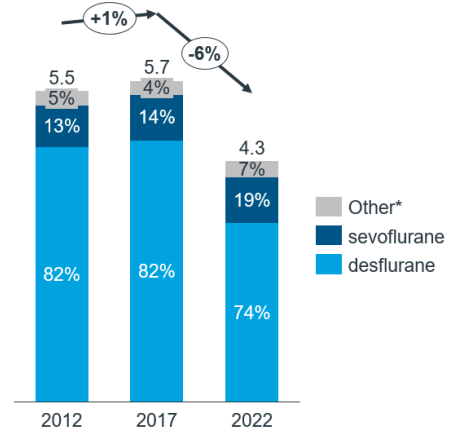
Steady increase of anaesthetics use...

Volume use of anaesthetics
(bn Standard Units)



... but emissions have fallen.

Carbon footprint of anaesthetics
(Mt CO2e)



Notes: *Other consists of NO2, enflurane, halothane, isoflurane
Source: IQVIA EMEA Thought Leadership



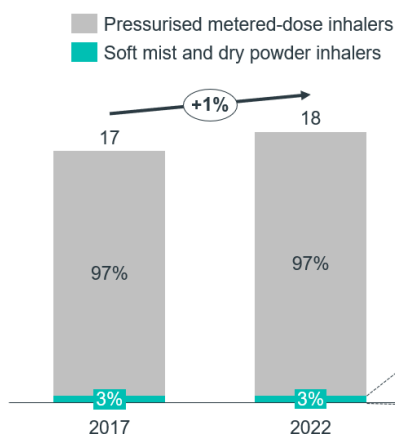
Figure 3: The global use of anaesthetics has increased steadily over the past decade, but their carbon footprint has decreased. Image: IQVIA

This is a clear case study showing how the industry can enact meaningful change. On the other hand, inhalers are yet to undergo this inflection point in their global emissions. As with anaesthetics, the use of inhalers for asthma and other respiratory conditions has increased steadily over the past decade, and their total carbon footprint has also increased (figure 4, below).

Figure 4: Global use of inhalers

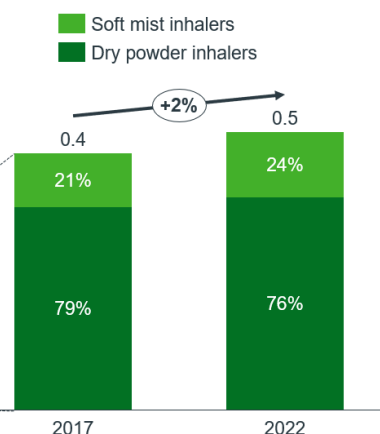
Emissions driven by metered-dose inhalers...

Carbon footprint of inhalers (Mt CO2e)



... and greener alternatives yet to supplant them.

Carbon footprint of inhalers (Mt CO2e)



Source: IQVIA EMEA Thought Leadership



Figure 4: The use of inhalers has increased steadily over the past decade, and their total carbon footprint has also increased. Image: IQVIA

Pressurised metered-dose inhalers, the cheapest and most popular type, are the main carbon footprint drivers owing to their use of propellants that have a high global warming potential. Propellant-free inhalers have not yet taken over as the dominant technology, due to low availability amongst generic inhalers, lack of awareness and institutional inertia.

Three ways we can shape greener healthcare systems

There are many ways to reduce the carbon footprint of healthcare systems, and stakeholders are beginning to understand the key next steps. The first is to identify the areas where immediate impact can be made – but we simply do not have the research to give us the knowledge on which processes and products emit the most greenhouse gases.

We hope that greater clarity can be achieved to make smarter, evidence-based decisions, and recommend three key steps:

1. Commission lifecycle studies for relevant insights

For medicines, generating data across a wider range of product classes can get us closer to pinpointing areas to address. The progress made globally with anaesthetic gases highlights how effective this can be.

2. Collaborate to share information across sector boundaries

Emissions do not happen in isolation, and some initiatives could have counterproductive consequences further down the line; as exemplified by the negative impact of replacing [plastic bags with cotton totes](#). We need to take a holistic approach, in which public and private institutions can collaborate to share data and agree on reporting frameworks.

3. Create an environment of accountability across all pharmaceutical players

Real change requires global action across pharmaceutical manufacturing, with shared responsibility for this at all levels within organisations. Companies should adapt procurement practises to influence purchasing decisions with external and international organisations. Holding everyone to a minimum standard is important and purchasers wield a lot of power here.

These steps will ultimately help us understand and improve the impact of healthcare provision on our environment, giving us the chance to collectively move towards improving population wellness and better outcomes for the healthy and the sick.

Accessed from: <https://www.weforum.org/agenda/2022/11/3-ways-healthcare-systems-carbon-footprint/>

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