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The E in ESG: Activity-Based Strategies Can Address Climate Impact Of Clinical Research

by

A partnership approach is required to reduce greenhouse gas emissions generated by pharma clinical studies. That is the advice in this guest contribution by the Sustainable Healthcare Coalition and Johnson & Johnson's Janssen company to *In Vivo's* rolling series on issues in sustainability for healthcare product manufacturers and providers.

Pharma companies view clinical trials as playing a big part towards achieving the overriding goal of improving patients' health. But of late, there has been a collective rise in awareness that our work often has an environmental impact that we can help mitigate.

In the process of serving and supporting patients, the combined healthcare sector produces up to 2.6 billion tons of carbon dioxide (CO_2) per year. This is equivalent to about 5% of worldwide greenhouse gas (GHG) emissions, according to a Healthcare Without Harm green paper published in collaboration with *Arup* in 2019.

The US healthcare system alone is responsible for about a quarter of all global healthcare GHG emissions – and more than the emissions produced by other nation's healthcare systems.

As to how much of that is a result of clinical studies, one study estimated that the emissions attributed to more than 350,000 historical trials worldwide are comparable to 27.5 million tons of GHG

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emissions – which is equivalent to a year's worth of emissions from 5.3 million gasoline-powered passenger vehicles in the US. (See US Environmental Protection Agency's *Greenhouse Gas Equivalencies Calculator*).

These clinical trial emissions are due to everything from manufacturing and research to drug distribution and electricity usage at clinical trial sites.

This global problem cannot be solved by a single entity; the industry needs all stakeholders to collaborate and focus on a shared ambition.

'It Takes a Village'

Awareness of this need is rising. Groups working to enable knowledge sharing and collaborative innovation on a regional and global level include consortiums such as:

- The not-for-profit *Sustainable Healthcare Coalition*, a sector-led group that looks for opportunities to inspire sustainable practices in healthcare by sharing data and developing best-practice guidance for use in health systems; and

- The *Pistoia Alliance*, a global, not-for-profit membership organization which aims to lower the barriers to innovation in life science and healthcare R&D

We are also witnessing an ever-changing operating landscape for organizations eager to remain compliant with the rising demands of sustainability initiatives.

Governments and regulators are raising the bar for environmental standards, implementing circularity plans, setting ambitious emission reduction targets, increasing investments and deploying stricter corporate sustainability reporting and disclosure requirements.

The expectations of healthcare stakeholders – from hospitals and pharmacies to government organizations and patients – are rising; their common goal is to limit the speed – and effects – of climate change by opting for more sustainable healthcare products and solutions.

Increasingly, organizations such as the UK's National Health Service (NHS) are requesting product sustainability performance transparency as a condition of doing business. Many healthcare industry employees expect proactivity when it comes to the climate, so investing in sustainability can be important to retaining and attracting future talent.

Quantifying Our Impact

Reducing the climate impact of clinical research must begin with gaining a better understanding of the current scope of the problem. One approach is to identify the "hot spots," or major drivers of emissions within the clinical research process, and quantify those emissions to set

measurable, attainable goals toward reducing climate impact.

To achieve this, we are collaboratively mapping the climate footprint of clinical research via an "activity-based approach" – one in which we treat each clinical trial activity as a defined module with measurable emissions. As we begin to build out and reference this defined inventory of activities – the modules – we can add the emissions of each module to generate an overall estimate for the emissions from that study design.

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The idea of establishing common methodologies for measuring the GHG emissions of individual trial activities works because clinical research is highly regulated and process-oriented, with individual trial activities set up to be repeated the same way every time.

This predictability allows industry organizations to measure the emissions from an activity once, and thereafter estimate that the same quantity of GHG emissions will be generated each time the activity is performed.

Common methodologies and aligned standards for measuring the climate impact of clinical trials will allow direct comparisons of activities and facilitate the identification and sharing of best practices. This will also enable effective collaboration with regulators and healthcare providers for establishing industry standards and certifications.

Measure Today, Change Tomorrow

The Sustainable Healthcare Coalition, in collaboration with pharma companies including the Janssen pharmaceutical companies of *Johnson & Johnson*, is developing a measurement framework and eco-design tool linked to a database for the capture and exchange of these activity-based measures for all types of clinical trials and sponsors.

This measurable, activity-based approach will enable pharmaceutical developers, CROs, academic institutions and others to find opportunities for emissions reductions in their trials. The aim is to present these GHG emissions estimates in such a way that clinical trial designers can easily consider them alongside other variables such as scientific, operational and budgetary objectives.

A collaborative approach to methods development and standardized measures will also enable benchmarking and GHG emissions data sharing, which, on an industry-wide scale, can help speed drug development timelines, reduce the risk of effort duplication and potentially save costs.

Being able to benchmark emissions for individual activities across sponsors, suppliers and sites, sharing best practices and finding opportunities to reduce the environmental impact of clinical research will offer considerable advantages and insight for pharma companies.

We invite trial sponsors, both industry and academic, CROs and suppliers to work together to reduce the climate footprint of clinical research.