

Environmental sustainability in clinical research

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Greenhouse gases have a significant impact on the global climate. The healthcare sector is one of the main sources of CO₂ emissions. Globally, it represents the fifth largest source. Clinical research is an integral part of this sector; it drives innovation, but also places an additional burden on the environment. Therefore, efforts to minimize the carbon footprint are also permeating the methodology and design of clinical trials as well as clinical research in general.

Digitization and decentralization of clinical trials can help to reduce the environmental burden. However, these benefits remain largely hypothetical now due to limited supporting data. In order to develop more sustainable clinical trial methodologies, it is necessary to quantify emissions in clinical research more precisely and identify key areas for reducing emissions in clinical research.

This article aims to raise awareness of sustainable clinical research and present relevant initiatives and activities.

Key words: sustainability, clinical trials, healthcare, clinical research, education.

Environmentální udržitelnost v klinickém výzkumu

Skleníkové plyny zásadně ovlivňují globální klima. Sektor zdravotní péče představuje jeden z významných zdrojů emisí CO₂, v celosvětovém měřítku se řadí na páté místo. Klinický výzkum je jeho nedílnou součástí; přináší inovace, ale i další environmentální zátěž. Snaha minimalizovat uhlíkovou stopu proto postupuje i do metodologie a designu klinických studií a klinického výzkumu jako celku.

Prvky jako digitalizace a decentralizace klinických studií mohou přispět ke snížení environmentální zátěže. Stále jde ale spíše o předpoklad podložený omezenými daty. K dosažení udržitelnějších metodik je třeba cílenější kvantifikace a identifikace klíčových oblastí pro redukci emisí v klinickém výzkumu.

Článek si klade za cíl zviditelnit problematiku udržitelného klinického výzkumu, představit iniciativy a aktivity v této oblasti.

Klíčová slova: udržitelnost, klinické studie, zdravotnictví, klinický výzkum, vzdělávání.

Does sustainable healthcare matter?

The global healthcare sector has emerged as a significant contributor to anthropogenic climate change. Current estimates indicate that it represents 1–5% of the total impact on climate change, producing approximately 2.0–2.6 billion tons of CO₂ emissions globally per year corresponding to 4.4–5% of the global greenhouse gas emissions. Thus,

the healthcare sector ranks fifth among the largest CO₂ producers. The production of CO₂ emissions contributes to climate change and health issues or deaths related to climate change (often expressed in disability-adjusted life years – DALYs). Treating them imposes monetary costs for the healthcare system and simultaneously generates additional CO₂ emissions. This creates a downward spiral and is precisely why healthcare represents

DECLARATIONS:

Declaration of originality:

The manuscript is original and has not been published or submitted elsewhere.

Ethical principles compliance:

The authors attest that their study was approved by the local Ethical Committee and is in compliance with human studies and animal welfare regulations of the authors' institutions as well as with the World Medical Association Declaration of Helsinki on Ethical Principles for Medical Research Involving Human Subjects adopted by the 18th WMA General Assembly in Helsinki, Finland, in June 1964, with subsequent amendments, as well as with the ICMJE Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals, updated in December 2018, including patient consent where appropriate.

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