

Study protocol

Development and awareness of sustainable practices by anaesthetists

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Persons in charge:

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SIGNATURE PAGE


We, the undersigned, confirm that this protocol contains all the provisions and information necessary for the conduct of this study. We sign this protocol in agreement on the details of the scientific project and the methods of data collection.

We agree to abide by all instructions and provisions set forth herein, as well as the provisions of the current Declaration of Helsinki, the ICH-GCP guideline and applicable Austrian laws and regulations.

Changes to this protocol require the written consent of the persons in charge and the team members.



Sascha Hammer, MD MBA



Priv-Doz. Helmar Bornemann-Cimenti, MD, MBA, MSC

CONFIDENTIALITY OBLIGATION

The information provided in this study protocol is confidential and will only be made available to potential or participating investigators and their study team as well as the medical director of the conducting clinic, hospital and health authorities for inspection, review or implementation. Publication or disclosure of even parts of the study protocol to third parties without the prior written consent of the sponsor and the people in charge is prohibited. With the signature of the persons in charge under the study protocol, the regulations of this study protocol are binding for all parties.

STUDY TEAM

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SUMMARY

Title Development and awareness of sustainable practices by anaesthetists
Study design Prospective survey
Study population Members of national Societies of Anesthetists of will be contacted and asked to participate. The Executive Boards of the societies will be contacted to distribute the Survey link to their members.
Primary outcome-factor Awareness and measurements of sustainability in anaesthesia of different countries
Secondary outcome-factors Differences in sustainability practices of different countries

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1 Scientific Background

The healthcare sector contributes to around 4-5% of all greenhouse gas emissions globally, and in industrialized countries up to 8% or more (1). Nearly half of the greenhouse gas emissions from hospitals are from the surgical sector, such as anesthesia and intensive care medicine. The biggest part of this issue are volatile anesthetics, waste and energy loss (2) A part of the anaesthesia community tend to prioritize Intravenous instead of volatile anesthetics. However, they also cause relevant problems in terms of environmental pollution owing to their direct environmental persistence and toxicity or via their metabolites (3).

2 Study objectives

The aim of this prospective survey study is to determine the frequency of sustainability measures in anesthesia and intensive care medicine in summer/autumn 2024.

2.1 Primary Outcome-Fact

Awareness and measurements of sustainability in anaesthesia of different countries

2.2 Secondary Outcome-Fact

Differences in sustainability practices of different countries

3 Methods

3.1 Study design

- Prospective online survey
- No intervention
- Voluntary participation

3.2 Duration of the study

The study duration is an online data collection in spring/summer 2024.

3.3 Study population

Inclusion criteria

- Physicians working as anaesthesiologists (including in training)

Exclusion criteria

- No provision of information (no data entry)

3.4 Number of study participants

With the email distribution list of the different societies, it is possible to reach a high number of anaesthetists globally. We aim for a participation rate of 5-20%, which is quite common in these types of surveys.

4 Study realisation

4.1 Inclusion of participants

The following text will be sent via the E-mail distribution lists:

Dear Members of (insert society)!

The health sector makes a relevant contribution to climate and environmental pollution. Nearly half of the greenhouse gas emissions from hospitals are from the surgical sector, such as anesthesia and intensive care medicine, we would like to gather more information on that issue.

Questionnaire Overview:

The questionnaire aims to gather valuable insights on the practice of sustainable anaesthesia measurements. The information collected will contribute to ongoing research efforts aimed at lowering the global carbon footprint of anaesthesia and refining the strategies to do so.

Benefits for Participants:

Participants will play a crucial role in contributing to the advancement of sustainable anaesthesia. By sharing their current strategies and work environments, we can engage in a meaningful dialogue that fosters professional development within the anaesthesia community.

Time Commitment:

*The estimated time required to complete the questionnaire is **approximately 5-10 minutes**. We understand the value of your time and have designed the questionnaire to be concise yet comprehensive to ensure an efficient and effective data collection process.*

Surveylink:

<https://survey.medunigraz.at/index.php/127557?lang=en>

We hope you can spare 5 to 10 minutes of your precious time and help us to identify global differences in sustainability practices.

Kind regards,

Sascha Hammer MD

Helmar Bornemann-Cimenti MD DSc MSc MBA EDPM

4.2 Data collection

4.2.1 Online-Platform and server

Limesurvey is a secure web platform for the creation and administration of online databases and surveys. The Medical University of Graz provides Limesurvey server for scientific survey projects that are not carried out on behalf of or in cooperation with companies (<https://survey.medunigraz.at>). Communication takes place via a Secure Sockets Layer Certificate (SSL)-encrypted website. Data is backed up automatically and backups are stored for a maximum of twelve months. After completion of the first and second data collection, we will export the data in Excel and SPSS format for the team of examiners but delete the original data on the server of the Medical University of Graz. The Excel and SPSS files will be stored for 10 years in accordance with data protection regulations.

The servers are physically located in Graz, Austria. Therefore, all data are handled according to Austrian and European regulations.

4.2.2 Questionnaire

The content of the questionnaire itself is listed under point 4.3. and is attached to the protocol as a separate file.

The following welcome text can be found on the first page of the online survey:

Dear colleague, thank for following our invitation to this survey. The healthcare sector contributes a significant amount of all greenhouse gas emissions globally. Nearly half of the greenhouse gas emissions from hospitals are from the surgical sector, such as anaesthesia and intensive care medicine. The biggest part of this issue are volatile anesthetics, waste and energy loss. In many countries all over the globe, there is little to no data available, especially what measures different departments of anaesthesia are currently taking. With this survey we want get a glimpse of what is happening right now in healthcare systems globally. The data acquired will be anonymous and can not be traced back.

By clicking the "Next" button to enter the survey, you indicate that you have read the informed consent and are willing to voluntarily take part in this survey.

Full informed

consent: /upload/surveys/127557/files/Informed%20Consent%20for%20Anonymous%20Survey(1).docx

This survey will take approximately 5-10 minutes.

5 Data management

All data collected in this survey will be treated in strict confidence in accordance with the applicable principles (European General Data Protection Regulation and corresponding adaptation laws, Styrian Hospital Act and internal data protection rules. The investigators will not use the collected data for any purposes other than those necessary for conducting this study.

Important study documents such as the study protocol, correspondence, CVs and others will be stored in an investigator file.

Data collection is carried out by the person in charge and the study staff. A corresponding data protection declaration is signed by all participants and stored in the investigator folder.

Data collection is carried out using Excel and SPSS. Both files with anonymous data is stored for at least ten years.

Before the data is analyzed, it is checked for quality and plausibility by the person in charge.

Any necessary data cleansing is the responsibility of the principal investigator. Any necessary procedures are documented accordingly.

Publications of the collected data or the knowledge gained from it will only be made in anonymized form.

The study folder including all study documents (correspondence, test forms, etc.) and the backup copy of the study data are stored in locked cabinets at the Department for Anaesthesia and Intensive Care Medicine.

6 Ethics

Benefits and risks

Due to the survey design without personal data that won't allow conclusions to be drawn about the person of several hundred participants and the lack of traceability options, there are no risks for the participants. They also do not benefit from it. So there is no agreement of the ethic committee needed.

Informed consent

Due to the voluntary participation of physicians with full capacity of judgement, information about informed consent will be displayed on the first page of the online survey. Participants must confirm that they have read and understood this information by clicking on the "Next" button.

Outlook

This survey is intended to provide information for the planning of further surveys and studies, but also for targeted information campaigns. At the same time, this survey is intended to increase vigilance for the topic of sustainability to bring this important topic to many clinics globally.

7 Publications

All study staff will be involved in the data analysis and the preparation of a scientific publication and will be listed as co-authors. The order of authorship will be based on the guidelines of the International Committee of Medical Journal Editors: Defining the Role of Authors and Contributors (5).

8 REFERENCES

1. Karliner J, Slotterback S, Royd R, et al. HEALTH CARE'S CLIMATE FOOTPRINT HOW THE HEALTH SECTOR CONTRIBUTES TO THE GLOBAL CLIMATE CRISIS AND OPPORTUNITIES FOR ACTION [Internet]. 2019 [cited 2024 Jan 9]. Available from: https://noharm-global.org/sites/default/files/documents-files/5961/HealthCaresClimateFootprint_092319.pdf
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3. Gillerman R, Browning R. Drug use inefficiency: a hidden source of wasted health care dollars. *Anesth Anal*. 2000;91(4):921–4.
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