

Strategies to decrease the environmental impact of inhaled anaesthetics

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INTRODUCTION

Anaesthetic gases significantly contribute to the environmental impact of the healthcare sector contributing to around 5% of hospital emissions and approximately 3% of healthcare emissions.¹ Anaesthetic gases have a high global warming potential, brought about by their volatility and persistence within the atmosphere for an extensive period. The implementation of mitigation strategies has become an urgent need to reduce this impact.

AIMS

To identify green measures being implemented to mitigate the environmental impact of anaesthetic gases

METHOD

- A literature review was conducted to identify green measures being implemented to lower the impact of anaesthetic gases on the environment.
- The databases Pubmed, Scopus and Science Direct were used for the literature review. Keywords used for the literature search, which made use of Boolean operators, included anaesthetic gases, greenhouse effects, climate change, and mitigation strategies.
- The inclusion criteria used included that the researcher had access to the full text of the articles, and that the literature was published in peer-reviewed journals within the last 15 years.
- The identified articles were analysed thematically.

RESULTS

- A total of 21 articles were selected for the study.
- Desflurane and nitrous oxide are major contributors to environmental impact due to a high Global Warming Potential (GWP) and prolonged atmospheric lifespan.
- Sevoflurane and isoflurane tend to pose a comparatively lower environmental impact.
- Strategies adopted to decrease the environmental impact of anaesthetics were thematically grouped into 4 main categories (Figure 1).
- Implementation of greener measures was mainly achieved through:
 - Development of policies within healthcare institutions,
 - Shifting to greener technologies such as those which enable gas capture and
 - Raising awareness about the environmental impact of anaesthetics amongst anaesthetists and related healthcare professionals, through seminars and other educational activities.

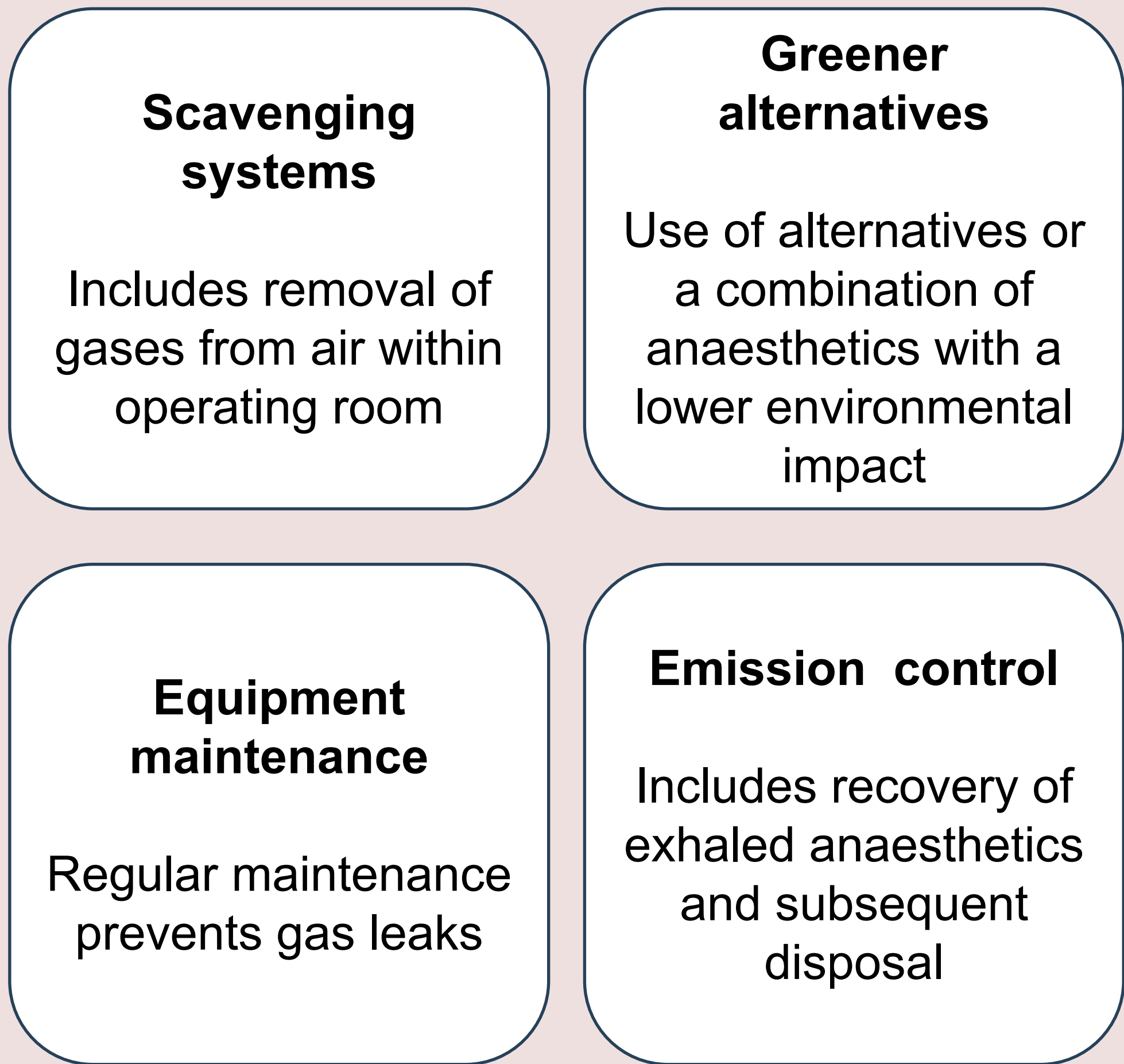


Figure 1: Thematic categories identified for the mitigation of the environmental impact of anaesthetics.

CONCLUSION

There is an increase in awareness about the environmental impact of anaesthetics and some healthcare institutions are already implementing mitigation strategies to lower the impact of inhaled anaesthetics. A standardised measurement and reporting practice is required to enable direct comparison of data across multiple studies. Further research and awareness are required to decrease the environmental footprint of activities related to anaesthesia while safeguarding patient safety.

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