

A survey of the use of nitrous oxide across health professional groups and their understanding of its environmental impact



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Introduction

Nitrous oxide (N₂O) is a potent greenhouse gas with a global warming potential approximately 273 times that of carbon dioxide (CO₂) [1] and is “now the dominant ozone depleting substance released into the atmosphere” [2]. N₂O is recognised as a significant contributor to the CO₂ emissions of health services; “N₂O alone contributes 2% of the total NHS England carbon footprint, and 75% of the total anaesthetic gas footprint” [3]. We aimed to survey N₂O usage patterns, and knowledge of its environmental impacts among multidisciplinary clinical staff at a large metropolitan public health network.

Methods

Ethics approval was obtained. An anonymous online survey was distributed via email to doctors, nurses and midwives in anaesthesia, adult and paediatric emergency medicine, paediatrics, and obstetrics. Data were analysed using descriptive statistics in Microsoft Excel.

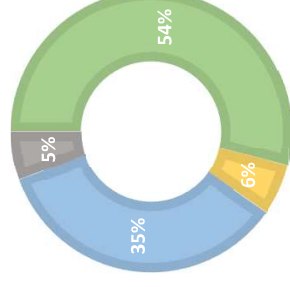
Results

There were 407/1320 (31%) responses. The majority (239/407, 59%) reported that they currently use N₂O, with the main reason differing between groups. Of those that use it, 184/239 (77%) felt there were alternatives to N₂O for the purpose for which they use it, but identified a range of barriers to their use. The vast majority (227/239, 95%) said they either would or might be willing to use alternatives if they are available and practical to use.

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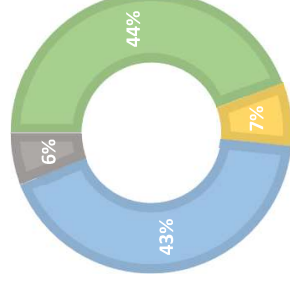
Is N₂O a greenhouse gas?

■ Yes ■ No ■ I don't know ■ Not answered



Does N₂O deplete the ozone layer?

■ Yes ■ No ■ I don't know ■ Not answered



Conclusion

This survey demonstrated that a significant proportion of healthcare staff working in areas that use N₂O don't know its harmful environmental characteristics. There was a difference between groups; 96% (45/47) of anaesthetists knew that N₂O was a greenhouse gas, but only 41% (32/79) of midwives did. These are targets for future intervention and research.

Declaration of interests

All authors are members of Doctors for the Environment Australia.

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