Impact Surgery

Conference abstract

e-ISSN: 3033-4470

N2Ovember, Entonox Waste Reduction Project

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Abstract

Introduction: Entonox (N_2O) is a widely used and effective analgesic, particularly valued for its role in supporting women during labour. However, its use has significant environmental and occupational health implications. Nitrous oxide is a potent greenhouse gas with a global warming potential 298 times that of CO_2, and it remains stable in the atmosphere for up to 115 years. It is exhaled almost entirely unchanged, contributing substantially to climate change. Additionally, Entonox poses occupational risks to healthcare staff, including associations with miscarriage and B12 deficiency. A considerable proportion of Entonox is wasted due to leaks in pipework and bedhead connections. Even with a functioning demand valve, leakage can reach 2 litres per minute, while faulty valves may leak even more, often silently and unnoticed.

Methodology: A multidisciplinary team, including an anaesthetist, estates manager, pharmacist, and obstetrics and gynaecology trainee, collaborated to address Entonox wastage. Initial tests identified and rectified leaks in the pipework system. Subsequently, the focus shifted to encouraging staff to unplug Entonox connectors at the bedhead when not in use. Visual reminders were placed at each bedhead, and staff were provided with educational posters and information about the issue. Monthly Entonox usage was tracked via pharmacy records, comparing data from before and after implementing the intervention.

Results: Following the intervention, Entonox usage decreased by approximately one cylinder (16,000 litres) per month from November 2023, equating to an annual reduction of 195,300 litres.

Conclusion: As obstetricians and gynaecologists, our aim is to ensure the birth of healthy babies into a healthy world. Simple practice changes, such as minimising Entonox waste, can significantly reduce healthcare's carbon footprint, decrease costs, and limit staff exposure to associated risks.

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Cite as: Manning, A. N2Ovember, Entonox waste reduction project. *Impact Surgery*, 2(2), 55. https://doi.org/10.62463/surgery.139