

The Practice of Low Flow Anesthesia to Reduce Carbon Footprints Sustainability Project

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Abstract : Abstract: Background: Background Medical gases are estimated to contribute to 5% of the carbon footprints produced by hospitals, Desflurane has the largest impact, but all increase significantly when used with N₂O admixture. Climate Change Act 2008, we must reduce our carbon emission by 80% of the 1990 baseline by 2050. NHS carbon emissions have reduced by 18.5% (2007-2017). The NHS Long Term Plan has outlined measures to achieve this objective, including a 2% reduction by transforming anaesthetic practices. FGF is an important variable that determines the utilization of inhalational agents and can be tightly controlled by the anaesthetist. Aims and Objectives Environmental safety, Identification of areas of high N₂O and different anaesthetic agents used across the St Helier operating theatres and consider improvising on the current practice. Methods: Data was collected from St Helier operating theatres and retrieved daily from Care Station 650 anaesthetic machines. 60 cases were included in the sample. Collected data (average flow rate, amount and type of agent used, duration of surgery, type of surgery, duration, and the total amount of Air, O₂ and N₂O used. AAGBI impact anaesthesia calculator was used to identify the amount of CO₂ produced and also the cost per hour for every pt. Communication via reminder emails to staff emphasized the significance of low-flow anaesthesia and departmental meeting presentations aimed at heightening awareness of LFA, Distribution of AAGBI calculator QR codes in all theatres enables the calculation of volatile anaesthetic consumption and CO₂e post each case, facilitating informed environmental impact assessment. Results: A significant reduction in the flow rate use in the 2nd sample was observed, flow rate usage between 0-1L was 60% which means a great reduction of the consumption of volatile anaesthetics and also Co₂e. By using LFA we can save money but most importantly we can make our lives much greener and save the planet.

Keywords : low flow anesthesia, sustainability project, N₂O, Co₂e

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