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IMPACT STATEMENT

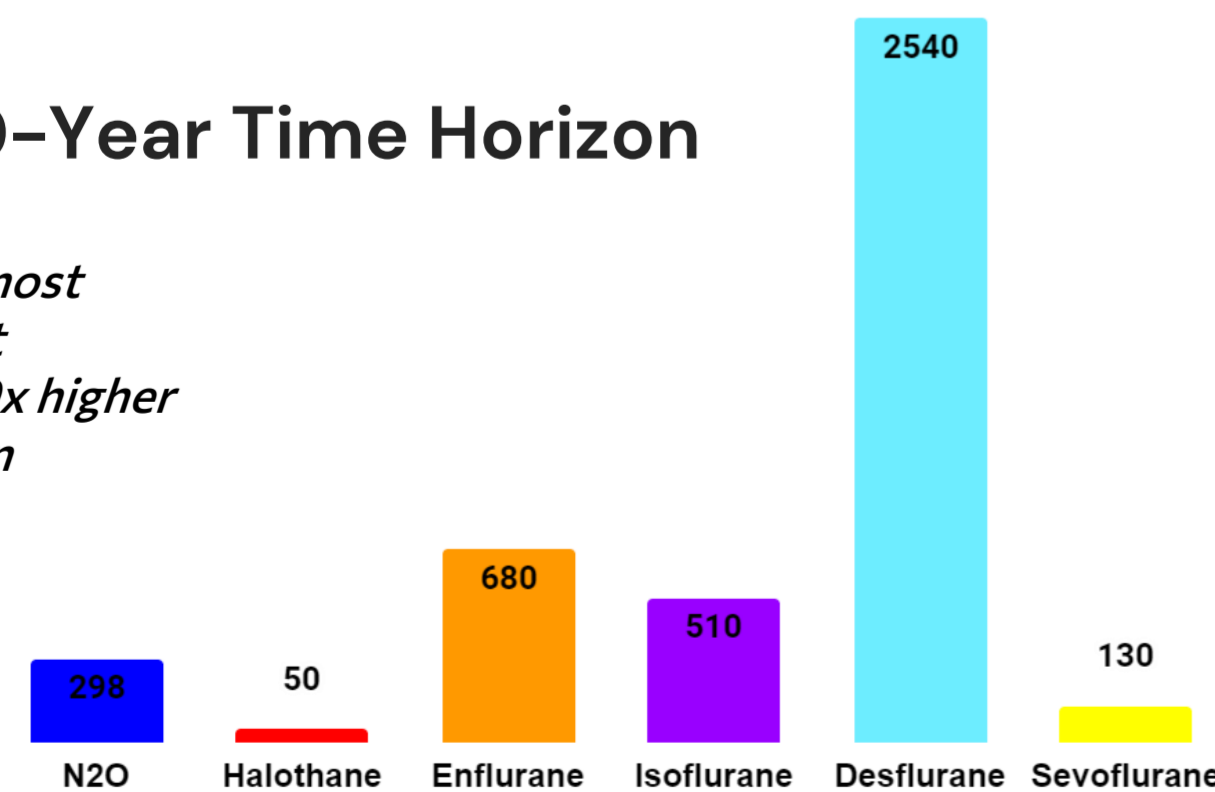
Green anesthesia practices can positively impact the delivery of care by reducing waste and improving efficiency through a commitment to sustainable practices. The purpose of this project is to promote sustainable practices in the delivery of anesthesia care, reduce greenhouse gas emissions associated with anesthesia, and reduce waste.

INTRODUCTION

- Inhaled anesthetics account for >3% of total climate impact of healthcare
- OR scavenging systems pump waste gas **directly into the atmosphere**, which contributes to atmospheric pollution
- Switching from desflurane to sevoflurane results in **66% reduction** in carbon emissions.
- F gases** = waste gases that contain fluorine, a component of volatile anesthetics, which are powerful greenhouse gases that contribute to stratospheric ozone depletion.

GWP 100-Year Time Horizon

Desflurane = most climate potent anesthetic (20x higher GWP-100 than sevoflurane)



GWP = Global Warming Potential, a metric used to compare the amount of energy emissions one ton of gas will absorb over 100 years, compared with the emissions of one ton of carbon dioxide.

METHODS

- A quality improvement project was implemented at a large academic healthcare institution to promote sustainable anesthesia practices by promoting use of low fresh gas flow (FGF) and total intravenous anesthesia (TIVA).
- Data was collected prior to and after an **online educational intervention** to evaluate FGF rates and total sevoflurane consumption.
- TIVA use was measured by the number of general anesthesia cases where inspired sevoflurane was > 0% for < 30 minutes.
- A knowledge test was conducted to evaluate change in anesthesia practitioner's knowledge regarding environmentally conscious anesthesia practices.

DISCUSSION

- Findings suggest that when provided education, anesthesia clinicians employ more environmentally conscious anesthesia techniques.
- Limitations include the relatively short observation period for data collection. Education should be reinforced as needed and shared periodically to ensure consistent exposure.
- Reduction of the healthcare sector's contribution to climate change by promoting sustainable anesthesia practices creates a healthier environment.

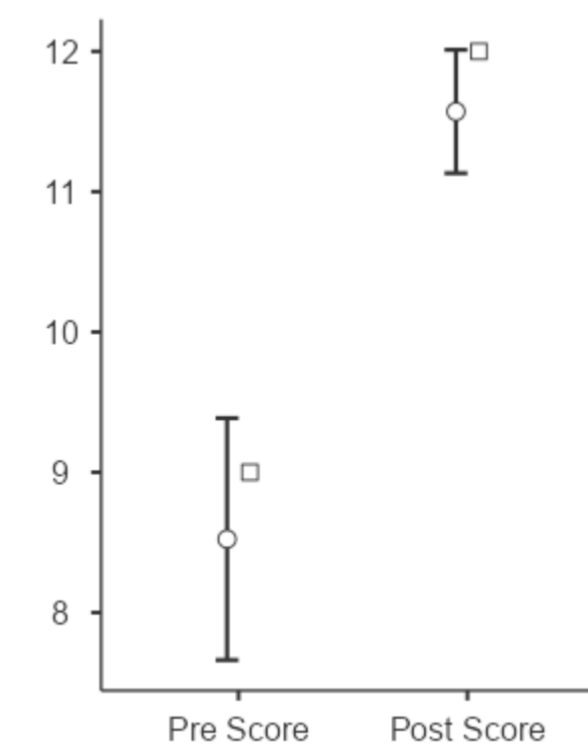
RECOMMENDATIONS

- FRESH GAS FLOW**
 - Fresh gas flow is directly connected to the amount of wasted anesthetic gas.
 - Use of **low fresh gas flows** (0.3 to 0.5 L/min) is a safe and effective method for reducing anesthetic gas waste, and subsequent air pollution and environmental impact.
- TIVA**
 - Using TIVA as primary anesthetic technique minimizes the environmental impact of anesthetic gas waste
 - Propofol** has a much smaller carbon footprint than volatiles
 - Adjuncts** (opioids, etc.) can lower MAC requirement and decrease gas waste and environmental impact

RESULTS

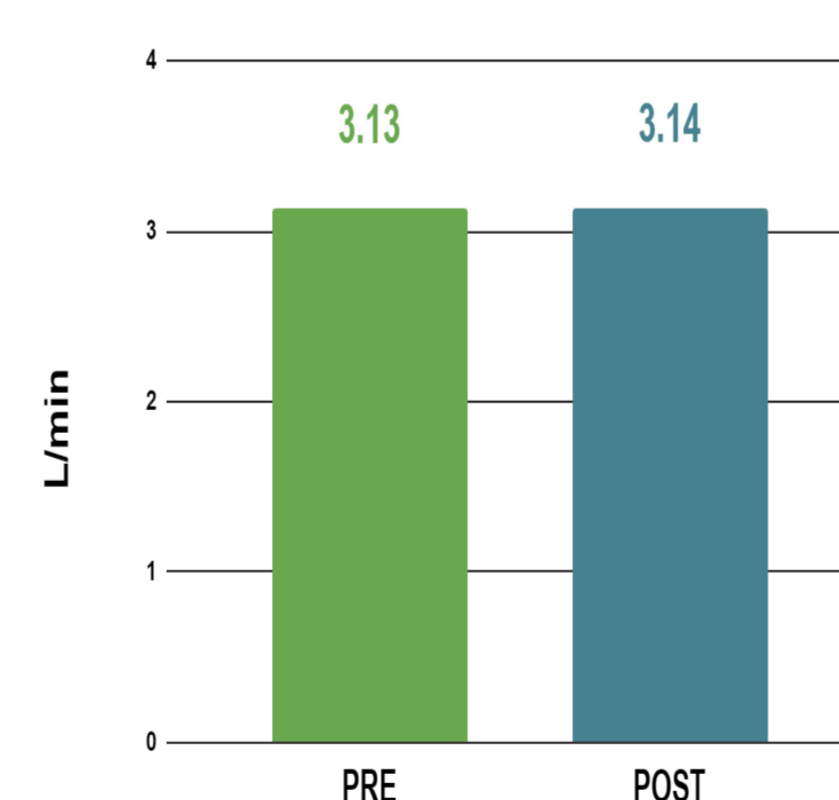
Knowledge Test Scores

- n = 21
- Result = 36% increase



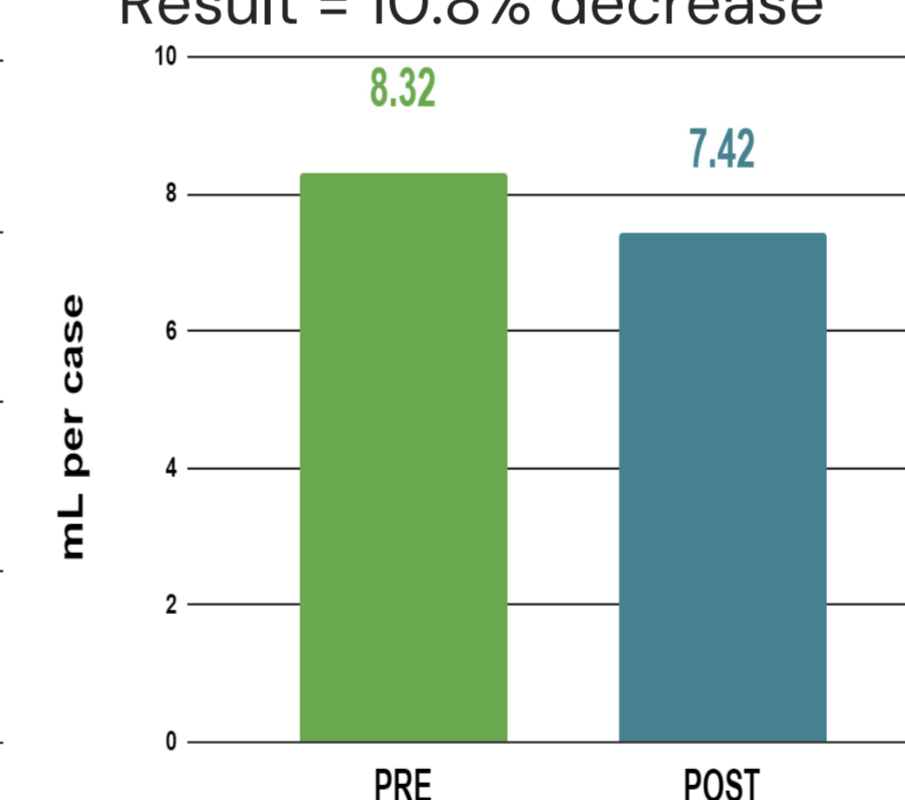
Mean FGF Rate

Result = 0.3% increase



Mean Sevoflurane Used per Case in mL

Result = 10.8% decrease



	PRE	POST
Number of General Anesthesia Cases (over a 7-day period)	215	211
Number of TIVA Cases	12	14

Result = Use of TIVA increased 16% after receiving education

Scan to view Educational Website & References

