



24 Sustainability Success Stories in 2024

Story 15 of 24: Surgical Service Line and Sustainability

Reducing Anesthetic Emissions Helps Save the Planet

It usually comes as a surprise when health care professionals learn that anesthetic gases are released directly into the atmosphere as greenhouse gases hundreds of times more damaging than carbon dioxide.

UPMC's low-flow anesthesia project aims to reduce anesthetic gas use while maintaining high-quality patient care. The project began in 2021 with a crucial question: How can UPMC optimize its use of inhaled anesthetic agents?

To tackle this challenge, Joe Ferreiro, a certified nurse anesthetist at UPMC Presbyterian, leads a dedicated team of anesthesiologists, CRNAs, anesthesiology residents, and students from the University of Pittsburgh Nurse Anesthesia School in transforming our approach to inhaled anesthesia. His team analyzed anesthetic records and found that UPMC emits more than 1.5 million pounds of carbon dioxide equivalents annually into the atmosphere. This equates to emissions released from driving 4,000,000 miles.

Recent advancements have enabled practitioners to automatically and safely reduce the flow of anesthetic gases to much lower levels. The project requires robust educational efforts as clinicians are accustomed to higher flow rates.

A partnership with the Information Technology and translational research teams has enabled the development of a software package that provides practitioners with real-world information on the greenhouse gas emissions generated as they care for patients. At UPMC Presbyterian, the project has been received enthusiastically, and there has been an uptick in the adoption of low-flow anesthesia techniques.

To cut UPMC's greenhouse gas emissions from anesthetic gases in half, the low-flow anesthesia project is growing and now includes UPMC Mercy, UPMC Magee-Womens Hospital, UPMC Shadyside, and the UPMC Bethel Park surgery center. In addition to being safe for patients, these changes reduce UPMC's carbon footprint and negative environmental impact. There are also significant cost savings, making it an all-around win.

Stay tuned for more updates on this project and other innovations in our surgical service line. Your support and engagement are vital as we work towards a greener and more efficient future.

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