



University of Michigan study presentation at ANESTHESIOLOGY 2025 supports clinical and environmental benefits of End-tidal Control

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- The retrospective analysis of nearly 15,000 general anesthesia cases of adults (18 years and older) at the University of Michigan demonstrated End-tidal Control's association with reduced anesthetic agent usage and greenhouse gas emissions.
- End-tidal Control is the first and only FDA-approved software that automatically adjusts to maintain end-tidal oxygen and end-tidal anesthetic agent concentrations set by the clinician, with more accuracy in reaching the clinician's targets versus manual control.
- The GE HealthCare booth (#1314) at ANESTHESIOLOGY 2025 showcases the company's advancing perioperative care portfolio that supports clinical workflows and individualized patient care.

CHICAGO--(BUSINESS WIRE)--Oct. 13, 2025-- GE HealthCare (Nasdaq: GEHC) today announced the presentation of findings from the largest real-world evidence study to-date on End-tidal Control anesthesia delivery* software conducted at the University of Michigan. The results demonstrated the environmental and clinical benefits of End-tidal Control software and were presented at ANESTHESIOLOGY® 2025 taking place from October 10-14, in San Antonio, Texas.

End-tidal Control software supports the clinician in maintaining clinician-set targets for end-tidal anesthetic agent and oxygen concentrations with greater accuracy than manual adjustments.ⁱ End-tidal Control supports low-flow anesthesia,** which may help reduce the amount of anesthetic agent utilized, lowering greenhouse gas emissions and costs.ⁱⁱ

"Our research explored the usage and impact of End-tidal Control software in a real-world surgical setting," said Principal Investigator Douglas Colquhoun, MB ChB, MPH, Assistant Professor of Anesthesiology at the University of Michigan.*** "The findings underscore End-tidal Control's ability to reduce fresh gas flows, anesthetic agent usage and greenhouse gas emissions, which can improve resource utilization and environmental sustainability."

The retrospective observational study conducted by the University of Michigan analyzed 14,730 general anesthesia cases of adults (18 years and older) to evaluate the usage patterns and impact of End-tidal Control in a hospital setting. Preliminary results showed:ⁱⁱⁱ

- **End-tidal Control utilization in approximately half of the cases (50.5%)** at the institution
- **Reductions greater than 35% in fresh gas flow, sevoflurane utilization and carbon dioxide emissions** during the maintenance phase of anesthesia**
- **Consistent End-tidal Control usage**, with the software active for 82.1% of the anesthesia maintenance phase

"Efficient and consistent care delivery is a top priority for healthcare systems today, as workforce shortages and increasingly complex patient needs continue to evolve," said John Beard, MD, anesthesiologist and Chief Medical Officer of Patient Care Solutions at GE HealthCare. "Automation in anesthetic delivery can reduce variability in care and cognitive burden for clinicians, allowing them to focus on the most critical decisions for their patients. Preliminary findings from the University of Michigan study support the broad applicability of End-tidal Control in a large multisite academic medical center and the real-world results."

In addition to the University of Michigan study, GE HealthCare presented other research at ANESTHESIOLOGY 2025 showcasing the value of End-tidal Control across clinical settings:

- **From Pilot to Practice: Rolling Out Enhanced Targeted Control-Low Flow Anesthesia Across an Academic Medical Center [abstract Q156]**
- **Regional Differences in Anesthetic Practice as Described by a Global Anesthetic Database [abstract A1281]**
- **Anesthetic Consumption and Emissions Best Practice at Evangelisches Diakoniekrankenhaus Freiburg, Germany [abstract A1292]**
- **The Impact of Introducing End-Tidal Control to the Operating Rooms [abstract A1309]**
- **Anesthetic Gas Waste and Pollution – Are We Doing Our Best? [abstract A1310]**

These conference abstracts support the potential clinical and economic benefits of End-tidal Control software.

Additionally, a recent retrospective study from Missouri University Hospital, published in [Anesthesiology](#), shows real-world results of End-tidal Control. The analysis evaluated 238 cases over a six-month period following End-tidal Control implementation compared to manual control, showing decreased fresh gas flow (1.1 L/min in EtC cases vs 2.1 L/min in manual cases).^{iv} The study also showed reduced anesthetic agent usage (9.1 vs 16.6 ml/h – 45.6% reduction),** which resulted in lower greenhouse gas emissions (1.8 vs 3.3 kgCO₂e/h) and costs (2.3 vs 4.2 \$/h).

GE HealthCare designs anesthesia solutions to support care that can think one step ahead. End-tidal Control software can be used with the Aisys™ CS² Anesthesia Delivery System to enhance perioperative care. For more information on GE HealthCare anesthesia solutions, please visit the

company's booth (#1314) at ANESTHESIOLOGY 2025 or [gehealthcare.com](https://www.gehealthcare.com).

* *End-tidal Control in the United States is indicated for patients 18 years of age and older.*

** *Refer to the anesthetic agent labeling for information regarding indications for use, warnings, and other relevant clinical information specific to that anesthetic agent. For example, labeling for sevoflurane includes specific warnings related to the potential risk associated with use at a low flow rate and under certain clinical conditions. Any decisions regarding selection of anesthetic agent and flow rate should be made at the discretion of the clinician and in their medical judgment based on available information.*

*** *The University of Michigan study was funded by GE HealthCare. The views expressed are solely those of Dr. Douglas Colquhoun, do not reflect the opinions or beliefs of University of Michigan and are based on his own opinions and on results that were achieved in the trial. Since there is no "typical" hospital/clinical setting and many variables exist, i.e. hospital size, case mix, staff expertise, etc. there can be no guarantee that others will achieve the same results.*

About GE HealthCare Technologies Inc.

GE HealthCare is a trusted partner and leading global healthcare solutions provider, innovating medical technology, pharmaceutical diagnostics, and integrated, cloud-first AI-enabled solutions, services and data analytics. We aim to make hospitals and health systems more efficient, clinicians more effective, therapies more precise, and patients healthier and happier. Serving patients and providers for more than 125 years, GE HealthCare is advancing personalized, connected and compassionate care, while simplifying the patient's journey across care pathways. Together, our Imaging, Advanced Visualization Solutions, Patient Care Solutions and Pharmaceutical Diagnostics businesses help improve patient care from screening and diagnosis to therapy and monitoring. We are a \$19.7 billion business with approximately 53,000 colleagues working to create a world where healthcare has no limits.

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ⁱ McCabe MD, Dear GL, Klopman MA, Garg K, Seering MS. End-Tidal Control Versus Manual Control of Inhalational Anesthesia Delivery: A Randomized Controlled Noninferiority Trial. *Anesth Analg*. 2024 Oct 1;139(4):812-820. https://journals.lww.com/anesthesia-analgesia/fulltext/2024/10000/end_tidal_control_versus_manual_control_of.17.aspx. doi: 10.1213/ANE.00000000000007132. Epub 2024 Jul 19.

ⁱⁱ Tay, S., Weinberg, L., Peyton, P., Story, D., and Briedis, J. 2013. "Financial and Environmental Costs of Manual versus Automated Control of End-Tidal Gas Concentrations." *Anaesthesia and Intensive Care* 41 (1): 95–101. <https://journals.sagepub.com/doi/10.1177/0310057X1304100116>. doi:10.1177/0310057X1304100116

ⁱⁱⁱ Colquhoun D, Zhao X, Jewell ES, et al. "Analysis of Use and Outcomes of GE Healthcare End Tidal Control Across a Major US Academic Health System." Conference poster presentation abstract at ANESTHESIOLOGY 2025, San Antonio, Texas, October 12, 2025. <https://www.abstractsonline.com/pp8/#!/21028/presentation/7568>

^{iv} Mraovic B, Cardonell B, Johnson Q, Luchetti M, Beard JW. Automated Volatile Anesthetics Delivery with End-tidal Control: Early Results from Adoption at Missouri University Hospital. *Anesthesiology*. 2025 Aug 1;143(2):464-467. https://journals.lww.com/anesthesiology/fulltext/2025/08000/automated_volatile_anesthetics_delivery_with.32.aspx. doi: 10.1097/ALN.0000000000005498. Epub 2025 Jul 8. PMID: 40626802.

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