Major publication validates CT:VQ™ for lung surgery

19 May 2026

Highlights

- Study evaluating CT:VQ™ published in the American Journal of Respiratory and Critical Care Medicine (AJRCCM; the ATS Blue Journal), the world's leading respiratory medicine journal
- The study shows that a CT:VQ™-guided selection would deliver a patient group with a 76% response rate to lung volume reduction surgery (LVRS), dramatically superior to the current 46% rate
- Findings directly support the clinical value proposition of CT:VQ™, which derives functional ventilation and perfusion information from existing, non-contrast CT scans
- Improved pre-operative patient selection strengthens the economics of LVRS programs for hospitals, by concentrating high-value surgical resources on the patients most likely to benefit
- Research presented at the ATS 2026 Congress in Orlando, the world's largest respiratory meeting
- Thursday, 21 May, at 10:30am (AEST), 4DMedical will host a webinar featuring Dr Joseph Mammarappallil, Associate Professor of Radiology at Duke University School of Medicine

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Melbourne, Australia, 19 May 2026 – 4DMedical Limited (ASX: 4DX, "4DMedical" or the "Company") a global leader in respiratory imaging technology, today announces the presentation of CT:VQ™ data at the ATS International Conference 2026 in Orlando, Florida. The presentation follows publication of a peer-reviewed clinical study evaluating CT:VQ™ in the American Journal of Respiratory and Critical Care Medicine (AJRCCM; the ATS Blue Journal), the world's leading respiratory medicine journal.

Peer-reviewed data validates clinical value of CTVQ™ in LVRS planning

The manuscript, titled "Enhancing patient selection for lung volume reduction surgery: A novel quantitative CT approach", reports results from a clinical study evaluating the use of quantitative CT-derived emphysema and perfusion metrics, including CT:VQ™, to improve patient selection for lung volume reduction surgery (LVRS).

The study included patients with severe emphysema undergoing bilateral LVRS and analysed pre-operative non-contrast inspiratory and expiratory CT scans using quantitative imaging techniques, including CT-derived perfusion (CT:VQ™).

The authors conclude that integrating functional data from CT:VQ™ perfusion and anatomical (emphysema) information from routine CT imaging can enhance and streamline patient selection for LVRS, increasing successful outcomes from 48% to 76%, with potential to reduce reliance on additional perfusion imaging studies and improve clinical outcomes.

Relevance to CT:VQ™ and clinical workflow

While the study evaluated XV technology, the findings are directly relevant to 4DMedical's CT:VQ™ platform, which derives lobar ventilation and perfusion metrics from existing non-contrast chest CT scans without additional imaging, contrast agents, or radioisotopes.

CT:VQ™ is designed to integrate into routine radiology workflows and can analyse historical CT scans, enabling functional assessment earlier in the care pathway, including during LVR patient selection discussions.

LVRS is a specialised surgical intervention typically performed at advanced medical centres (AMCs). Efficient identification of suitable candidates is critical, as outcomes are strongly influenced by underlying lung physiology, including the distribution of emphysema and regional perfusion. By improving pre-operative selection, functional CT-based assessment has the potential to reduce unnecessary invasive procedures and optimise utilisation of high-value surgical respiratory services.

Economic outcomes improved

LVRS is a high-value surgical intervention delivering economic benefit across the full patient pathway rather than through the procedure alone. LVRS is a reimbursed, high-complexity inpatient procedure that anchors specialised thoracic surgery programs, driving incremental revenue from diagnostics, advanced imaging, multidisciplinary assessment and inpatient surgical care, while also strengthening regional referral flows for advanced emphysema. As hospitals increasingly focus on program-level profitability and efficient use of surgical resources, LVRS remains strategically important due to its demonstrated clinical benefit and role in specialised respiratory care pathways.

Hospital margins from LVRS are highly sensitive to patient selection, with variability in treatment response associated with increased length of stay, complications and overall cost. CT-based functional lung imaging directly enhances LVRS economics by enabling earlier, non-invasive identification of optimal candidates using existing CT scans. By reducing reliance on additional imaging, avoiding low-value surgical interventions and improving post-operative outcomes, functional CT imaging supports higher procedural success rates, more efficient use of surgical infrastructure and improved contribution margins per case, reinforcing LVRS as a precision-led, high-value service line for advanced medical centres.

Research presented at ATS 2026 – Orlando

Advance publication of this research coincides with the American Thoracic Society (ATS) International Conference 2026 currently being held in Orlando, Florida, the world's largest pulmonary and respiratory medicine meeting.

The ATS Congress represents the premier global forum for the presentation of new clinical and scientific advances in emphysema treatment and lung imaging. The findings from this AJRCCM publication are consistent with the growing body of research being presented at ATS, highlighting the importance of combining anatomical and functional lung assessment to improve patient selection and outcomes in lung volume reduction surgery.

This alignment with leading research presented at ATS reinforces the clinical relevance of 4DMedical's technology at a time when global experts are focused on advancing precision-based approaches to emphysema management.

Webinar: 10:30am (AEST) Thursday 21 May

4DMedical will host a live webinar on Thursday, 21 May at 10:30am (AEST). Dr Joseph Mammarappallil, Associate Professor of Radiology at Duke University School of Medicine, will present on the clinical use of CT:VQ™. The discussion will include 4DMedical's Founder and CEO, Andreas Fouras, and be moderated by John Hester, Senior Analyst at Bell Potter.

Please register in advance using the following links:

Webcast: https://ccmediaframe.com/?id=lvkUOlsi

Phone Registration: https://s1.c-conf.com/diamondpass/10054981-bc4izj.html

After registering, you will receive a confirmation email containing information about joining the webinar or dial-in-details for those who would prefer to join by telephone.

4DMedical MD/CEO and Founder Andreas Fouras said:

Seeing this work presented at ATS and published in AJRCCM, the most influential journal in respiratory medicine, is something our entire team is incredibly proud of. It represents not just scientific validation, but recognition of years of close collaboration between clinicians, engineers and commercial teams working together to solve important problems in respiratory care. This study shows that our functional lung imaging can objectively and non-invasively measure ventilation and perfusion with a level of accuracy that genuinely supports clinical decision-making.

Improving patient selection is fundamental to delivering better outcomes from surgical lung procedures such as LVRS, and the publication of these results confirms that 4DMedical can play a decisive role in that process. Equally important is what this means for healthcare providers. LVRS economics are highly sensitive to getting patient selection right. CT:VQ™ can help clinicians identify the right patients earlier, avoid unnecessary invasive assessments and focus resources on cases most likely to succeed. That translates directly into better procedural efficiency, stronger utilisation of specialist infrastructure and improved contribution margins.

The level of interest in CT:VQ™ at the ATS 2026 Congress, reflects how our platform is progressing simultaneously on both clinical and commercial fronts, reinforcing its credibility, scalability and growing global relevance across respiratory care pathways.

–ENDS–

Authorised by the 4DMedical Board of Directors.

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About 4DMedical

4DMedical Limited (ASX:4DX) is a global medical technology company revolutionizing respiratory care with advanced imaging and artificial intelligence. Its patented **XV Technology®** transforms standard scans into rich, functional insights that allow physicians to detect, diagnose, and monitor lung disease earlier and with greater precision.

4DMedical's expanding software portfolio includes the FDA-cleared **XV Lung Ventilation Analysis Software (XV LVAS®)**, **CT LVAS™**, and the ground-breaking **CT:VQ™** solution designed to set new benchmarks in cardiothoracic imaging by combining ventilation and perfusion analysis.

Delivered seamlessly through a Software-as-a-Service (SaaS) model, 4DMedical's solutions integrate into existing hospital infrastructure, enhancing physician productivity and enabling more personalized patient care. With the addition of advanced AI capabilities from its 2023 acquisition of **Imbio**, 4DMedical continues to push the boundaries of medical imaging to redefine how respiratory disease is understood and treated worldwide.

Learn more at www.4dmedical.com