

Volv Global Model Flags Early ARDS Risk in Pneumonia

Developed on US claims, validated on external ICU data and against independent clinical review, results will be presented at ERS Congress 2026.

ÉPALINGES, SWITZERLAND, August 28, 2026 /EINPresswire.com/ -- In brief

□ In retrospective analysis, the model flagged patients likely to progress from community-acquired pneumonia (CAP) to [ARDS](#) up to five days before diagnosis.

□ The model achieved strong discriminative power (ROC-AUC 0.89 on US claims data) and was validated on independent ICU data (ROC-AUC 0.88).

□ Model predictions were in high agreement with 3 external KOLs performing chart review.



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Vahid Esmaeili, Data Science and Digital Health Director at Volv Global

□ Following prospective validation, findings could support patient enrichment in ARDS trials and earlier clinical decisions.

A machine learning model can flag community-acquired pneumonia (CAP) patients likely to progress to acute respiratory distress syndrome (ARDS) up to five days before diagnosis. Developed by [Volv Global](#) and tailored to CSL Behring's research question, the results will be presented at [ERS Congress 2026](#) in Barcelona.

ARDS is a life-threatening lung injury: an estimated 3 million people are affected worldwide each year, around 10% of ICU admissions, with hospital mortality of 35 to 46 percent. CAP is a common trigger, and half of those who

develop ARDS do so within two days of diagnosis. Clinicians often have just two to six hours to identify those at risk.

The model was trained on de-identified US claims data covering 341,697 patient records (2016–2023). In retrospective testing, it remained predictive up to five days before the ARDS code



Volv Global logo

appeared or at the time of diagnosis with CAP, and three independent specialists in the US, UK and Germany confirmed the flagged phenotypes matched ARDS pathophysiology and had high concordance with patients flagged by the model as high-risk (95% for model's top 20 high-risk cases). Behind the result is inFlow, one of Volv Global's solutions for prognostic modelling and outcome prediction. By learning disease-specific biomarkers directly from population-scale real-world data, it surfaces at-risk patients earlier than routine coding allows – work that could, subject to prospective validation, give clinical teams valuable extra time to act.

CSL Behring, a global biotechnology company, worked with Volv Global to shape the clinical questions behind the model and how its results could inform trial design and patient care. Academic collaborators in the US, UK and Germany contributed clinical expertise throughout.

"ARDS progresses fast, and CAP patients don't have days to spare," said Christopher Rudolf, CEO and Founder of Volv Global. "We see this as a lighthouse project: a template for how we can partner with any pharma team facing a disease that is just as hard to catch in time."

"Our methodology is built to recognise disease-specific patterns in real-world data, regardless of the disease," said Vahid Esmaeili, Data Science and Digital Health Director at Volv Global. "ARDS is one proof point; the same approach can apply wherever a disease leaves a distinct signature in the data."

Note to editors

The model was developed using de-identified US claims data from the Komodo Health database and validated on the MIMIC-IV ICU dataset. Full results appear in the ERS Congress 2026 abstract, "Early prediction of ARDS in community-acquired pneumonia patients using machine learning."



Press Release

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This is a retrospective analysis; prospective validation has not been conducted. The model supports clinical decision-making and research, and does not diagnose ARDS or replace clinician judgement. For the ARDS mortality figures cited above, see Bellani G, Laffey JG, Pham T, et al. JAMA. 2016;315(8):788–800.

About Volv Global

Volv Global is a healthcare AI company founded in 2017 and headquartered in Épalinges, Switzerland. Its mission is to generate new knowledge at speed, close the diagnostic gap, as well as other gaps in the care pathway, to improve patient outcomes. Volv Global works across conditions where patients are difficult to detect, where the window for effective treatment is narrow, and where understanding which patients will progress or need therapy beyond standard care can meaningfully change outcomes. It is a trusted partner to leading pharmaceutical organisations across the USA and Europe, with solutions deployed in live clinical programmes. Applying a proprietary machine learning methodology to population-scale real-world data – accessed through trusted data partners covering more than 400 million patients – Volv Global generates disease intelligence that enables pharmaceutical teams to de-risk clinical programmes, detect and stratify patient populations with greater precision, and build stronger real-world evidence. For clinicians, Volv Global's insights are designed to surface actionable signals within existing care pathways. For patients, they translate into earlier diagnosis, better-informed treatment decisions, and a faster path to the treatment that can help them, through a diagnostic system that too often leaves difficult-to-diagnose diseases unrecognised for years. Volv Global's solutions each address a distinct clinical question across the patient journey, and are configured to the client's specific research question, disease area, and healthcare setting. Volv Global does not hold patient data; all work is conducted within the governed environments operating under applicable privacy and regulatory frameworks.

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