TRANSMURAL BIOTECH

USE CASES

quantusTX

Medical Imaging with Artificial Intelligence

quantusTX — Diagnostic Support for Thoracic Pathology in Chest X-rays

Product Description

quantusTX is a non-invasive, artificial intelligence-based test that analyzes chest X-rays to estimate the risk of atelectasis, consolidation, pneumothorax, or pleural effusion. Developed by Transmural Biotech, it generates a clinical decision support report in just a few minutes from a conventional chest X-ray, without the need for additional tests, acting as an automated second opinion that complements the assessment of the physician or radiologist.

Epidemiological Context

Chest X-rays are among the most commonly ordered imaging tests in both primary care and emergency departments, due to their low cost, speed, and ability to guide the diagnosis of a wide range of respiratory and cardiac conditions. However, a radiologist does not always interpret the results immediately, and diagnostic concordance studies show significant differences between the attending physician's initial reading and the specialist's subsequent review, which can affect decisions such as the patient's admission, treatment, or discharge. Furthermore, findings that require urgent intervention—such as pneumothorax or significant pleural effusion—must be identified without delay to prevent avoidable clinical deterioration.

Use Cases

CU-TX-01: Screening in Primary Care

Actors	Primary care physician, patient with suspected thoracic pathology
Main Workflow	In primary care, the physician orders a chest X-ray when a thoracic condition is suspected. quantusTX automatically analyzes the image and generates a report with risk estimates for atelectasis, consolidation, pneumothorax, and pleural effusion. The physician uses the report to support clinical decision-making, which streamlines patient screening, optimizes workflow, and reduces costs.
Key Benefit	Streamlines the screening for thoracic conditions without relying on the immediate availability of a radiologist. Optimizes the facility's workflow and helps prioritize referrals when necessary.
Success Metrics	Reduction in time to diagnostic guidance, appropriate referrals to the emergency department or pulmonology, and cost per diagnostic process.

CU-TX-02: Support for the Detection of Urgent Findings in the Emergency Department

Stakeholders	Emergency physician, patient with dyspnea, chest pain, or chest trauma
Main Workflow	When a patient presents with acute respiratory or chest symptoms, a chest X-ray is performed, which quantusTX analyzes immediately, alerting the physician to the possible presence of findings requiring urgent action—such as pneumothorax or significant pleural effusion—while awaiting the definitive radiological interpretation.
Key Benefit	Provides an early alert for potentially serious findings when a radiologist is not immediately available. Supports the emergency physician's decision-making without replacing clinical assessment.
Success Metrics	Time to detection of urgent findings, agreement with the definitive radiological interpretation, and reduction in delays in the treatment of severe cases.

CU-TX-03: Second Opinion and Prioritization in Radiology Departments

Stakeholders	Radiologist, radiology department with a high volume of chest X-rays awaiting reporting
Main Workflow	quantusTX systematically analyzes chest X-rays awaiting reporting and provides a risk assessment for each one, helping to organize the radiologist's workload and prioritize the reading of studies most likely to reveal relevant findings.
Key Benefit	It acts as a systematic second reading that can reduce the likelihood of undetected findings. It helps manage peaks in demand in the radiology department.
Success Metrics	Average time to reporting for prioritized cases, concordance rate between the prediction and the radiology report, reduction in findings not reported on first reading.