

Chest X-ray AI

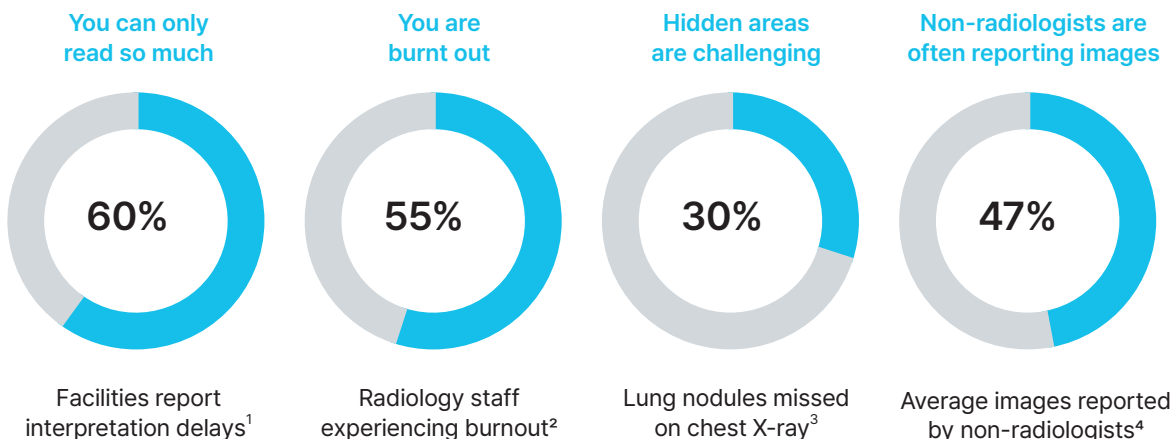
ONE solution for your entire CXR pathway



Under pressure, accuracy counts

Chest x-ray departments around the world are under strain - facing mounting workloads, radiologist shortages, and a growing demand to work faster and expedite the most critical patients to care.

Realities that cannot be ignored

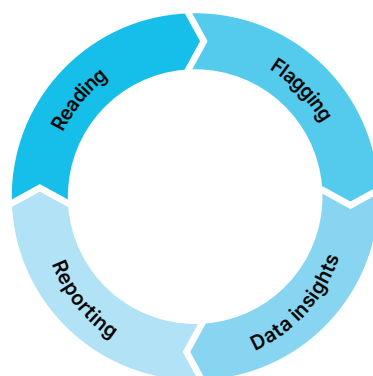


Under the stress of these and additional challenges, AI is becoming an indispensable collaborator in the reading suite. Choosing the right AI partner has never been more important.

AI that works as a trusted partner – at scale

Lunit INSIGHT CXR4 is a comprehensive AI solution designed to support the full spectrum of chest x-ray interpretation across diverse clinical environments. This holistic solution helps radiologists utilise one tool to work smarter and achieve a higher level of precision.

- Improved workflows with enhanced accuracy and efficiency in thoracic imaging and screening
- Normal flagging with normal report generation for quick and confident reading of normal cases
- Enhanced diagnostic accuracy for abnormal CXRs
- Detects fractures and other trauma-related findings across the appendicular and axial skeleton in both adults and pediatrics*
- Enhanced Current-Prior Comparison (CPC) for tracking changes over time
- Intuitive user interface and performance analysis tool
- Superior integration into existing IT environments



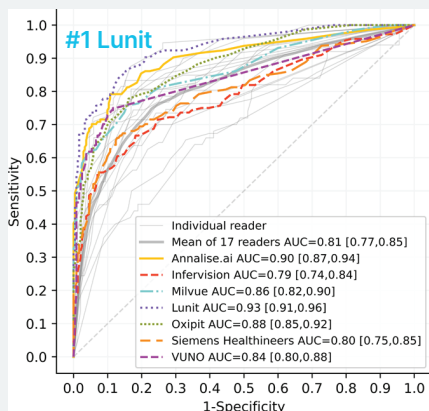
*In collaboration with Radiobotics; please refer to their Instructions for Use for full guidance

High performance is your starting point

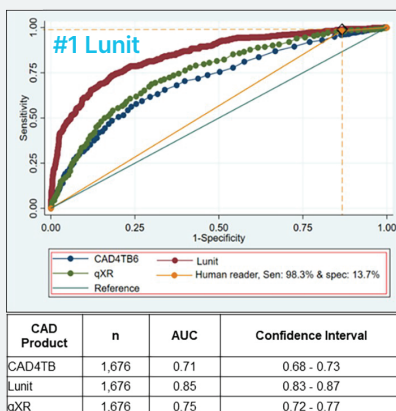
Extensively validated in international studies, Lunit INSIGHT CXR is proven superior over other available AI platforms and has outperformed human readers, reduced false negatives, and increased diagnostic confidence in multiple studies. Lunit has strong clinical evidence and a wide global deployment which demonstrates superiority and scalability.

A key performance factor for improved workflow is helping radiologists reduce noise and focus on what matters most. Lunit INSIGHT CXR4 detects major thoracic abnormalities with exceptional precision, including findings that may be missed by the human eye. This innovative and comprehensive solution helps surface abnormal cases and enables efficient handling of normal studies to streamline daily workloads. The evidence is in the results:

- Detects 11 major thoracic findings with 95-99% accuracy⁵
- Proven best in nodule⁶ and tuberculosis detection⁷
- Outperformed radiologists in all lesion category detection⁸
- Trained on over 1.2 million images



Lung nodule detection:
Kicky G. van Leeuwen, MSc et al. - Radiology 2024



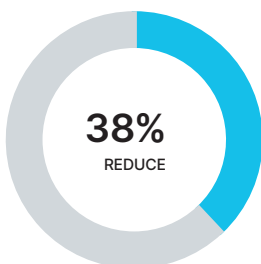
TB detection:
Gelaw, Sifresh Meseret, et al. "Diagnostic Accuracy of Three Computer-Aided Detection Systems for Detecting Pulmonary Tuberculosis on Chest Radiography When Used for Screening: Analysis of an International, Multicenter Migrants Screening Study." PLOS Global Public Health, 2022

- Highest accuracy in head-to-head studies
- Compared on same data set
- Independent studies

Real results, real impact.

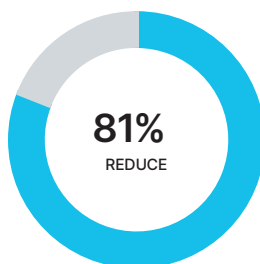
Radiologists around the world are seeing more and missing less with Lunit INSIGHT CXR.

Reduced time reading CXRs



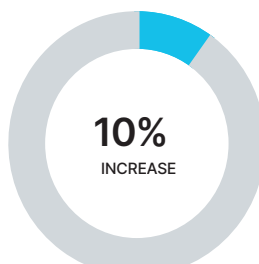
Reading time reduction on CXRs⁹

Faster turnaround of critical cases



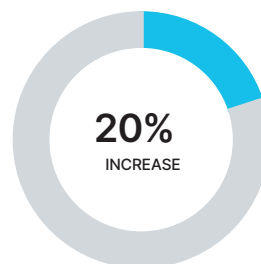
Reduction in time-to-report for critical patients¹⁰

1 more cancer for every 10 detected



Increase in lung cancers found on chest x-rays¹¹

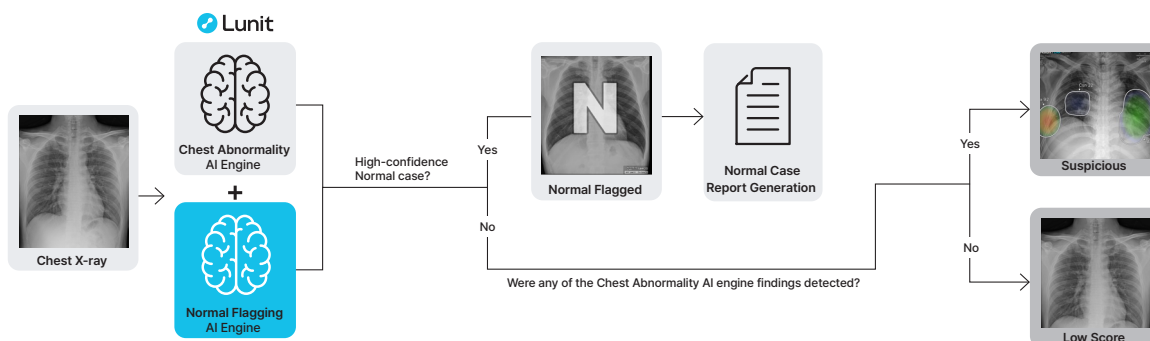
Empowering non-radiology physicians



Increase in non-radiology physicians' AUC¹⁰

A new superpower in chest x-ray interpretation

The **DualScan System** is an innovative AI solution that combines the **Chest Abnormality AI engine** for detecting clinically relevant abnormalities with a new **Normal Flagging engine**[^] to deliver unparalleled accuracy and efficiency.



Chest Abnormality AI engine findings – Nodule, consolidation, pneumothorax, pneumoperitoneum, pleural effusion, mediastinal widening, cardiomegaly, calcification, fibrosis, atelectasis, acute bone fracture (clavicle, scapula, humerus, ribs), plus tuberculosis.

- High-accuracy detection of 11 major thoracic abnormalities plus tuberculosis.
- Addresses the overwhelming number of normal cases with quick resolution and reporting.
- Provides a complete package to streamline your workflow – from reading to flagging, reporting to data insights.
- Driven by deep learning technology, a quantifiable abnormality score is generated for all abnormal findings to reflect the probability of the lesion presence.

Keeping focus where it's needed

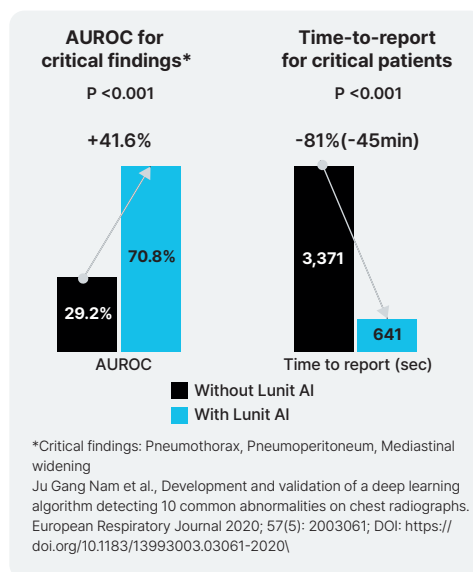
Approximately 40% of chest x-ray workload is normal cases¹². Flagging of high confidence normal cases by Lunit INSIGHT CXR4 streamlines workflow and allows radiologists to focus their expertise on findings and more complex cases.

AI integration with the worklist helps doctors focus care on critical patients and reduce treatment delays.

For critical patients this means a 41% increase in identification of critical findings and a 81% decrease in time to report them¹⁰

“Our hospital is overflowing with patients, while the number of radiologists remains low. Lunit INSIGHT CXR is providing great help, especially for patient triage and monitoring.”

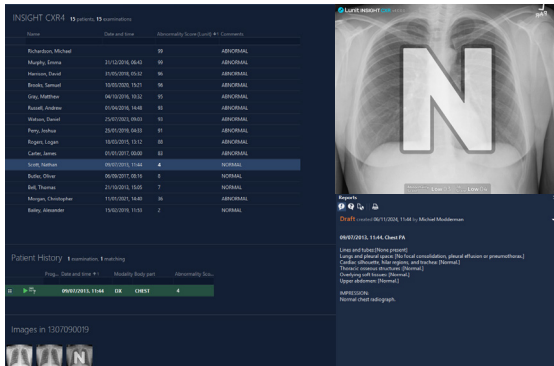
- Dr. Fabricio Prospero Machado,
MD, Radiologist at PreventSenior, Brazil



More findings in less time

Ingenious, timesaving features help clinicians streamline workflows and manage caseloads efficiently by quickly resolving interpretation challenges to expedite patient care.

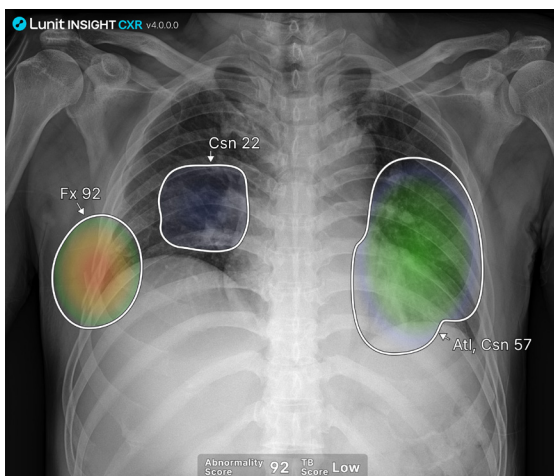
Normal flagging



Enjoy effortless workflow for high confidence normal cases with normal flagging and customisable normal case report generation.

- Streamline workflow by quick identification of normal cases, allowing focus on more complex cases
- Single-click 'Confirm'
- Pre-populated report for high-confidence normal cases
- Complements visual outputs
- Streamlined reporting process

Abnormality detection



Gain confidence in reporting abnormal CXRs with support for 11 major thoracic abnormalities (enabling identification of 45 different diagnoses*) plus tuberculosis:

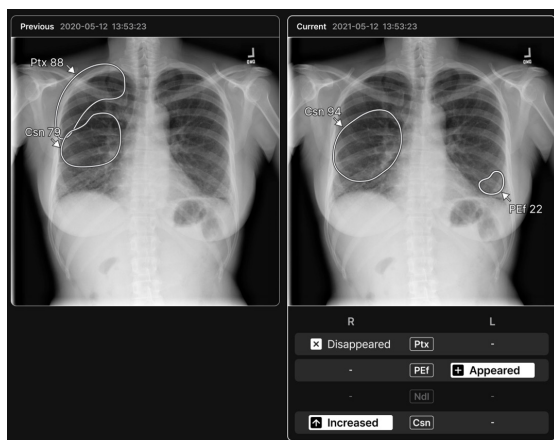
- Enhanced primary detection and accuracy
- Advanced clarity for complex anatomy and overlapping structures.

11 Target Findings:

- Nodule
- Consolidation
- Pneumothorax
- Pneumoperitoneum
- Cardiomegaly
- Pleural effusion
- Mediastinal Widening
- Atelectasis
- Calcification
- Fibrosis
- Acute bone fracture (clavicle, scapula, humerus, ribs)

*supports tuberculosis screening

Current-Prior Comparison



Achieve easy comparison of priors to detect changes and help guide the next step of your diagnosis.

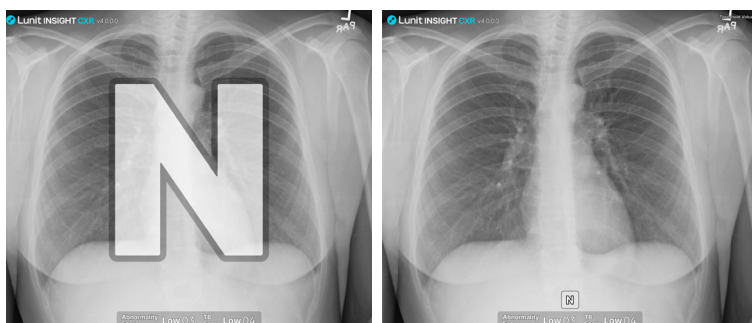
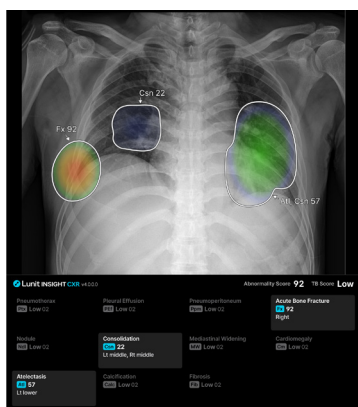
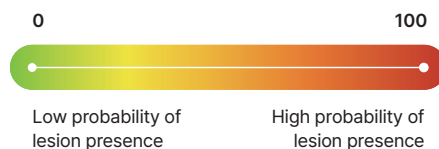
- Effective for nodules progression, pneumothorax, pleural effusion, and consolidation
- Empowers interval change assessments essential for monitoring disease progression and evaluating treatment response
- Helps reduce time spent on complex comparisons

Maximise reading performance

Designed to enhance convenience and streamline workflow, the enhanced user interface is both intuitive and smart, enabling clinicians to spend more time on complex cases and less time navigating systems. The customisable user interface integrates seamlessly into PACS and RIS, elevating speed and reliability.

Lunit INSIGHT CXR4 marks the suspicious lesion and generates a confidence bar that displays an abnormality score for all abnormal findings. The score reflects the probability of the lesion presence in a quantified range between 0~100.

- Quick differentiation of normal/abnormal cases in the workflow supports earlier review of critical cases to assist in low staff coverage situations.
- The layout and design elements are refined to enhance overall readability and usability.
- The Lunit INSIGHT CXR solution has been shown to reduce turnaround times in real-world settings by up to 77%¹³

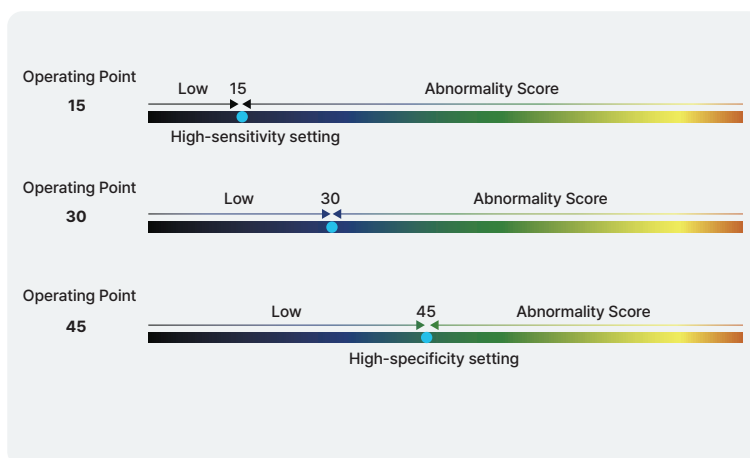


Intuitive labeling ('N' mark) are incorporated to make Normal Flagging instantly recognisable.

Refined layout and design enhances overall readability and usability

Customise for your population

Lunit empowers radiologists with Adjustable Threshold/operating points, enabling them to modify the threshold for each finding type. Some users may consider certain findings to be more critical and lower the threshold (increase sensitivity). Or, if the user prefers a more specific detection model, they may raise the threshold (increase specificity). Also, if the focus should be on only a few findings, other findings can be turned off. This flexibility helps keep you focused on what's most important.

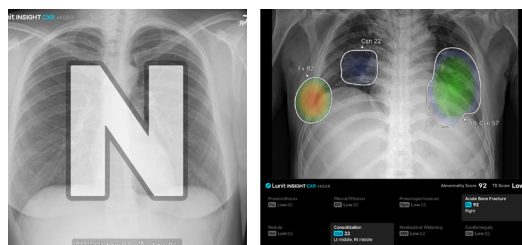


Intuitive and convenient

Ease your workday with new features and enhancements for your reading and reporting experience.

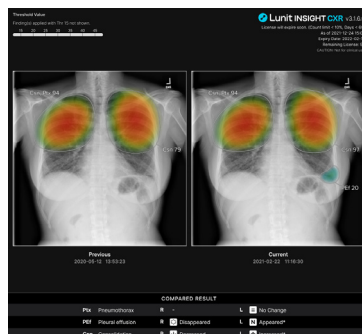
Secondary Capture map design and report layout updates

- New layout and design elements enhance overall readability and usability, for example labeling marks to make 'normal' instantly recognisable.
- New patented product Secondary Capture report design incorporates extensive user feedback to help users more intuitively identify radiologic findings.



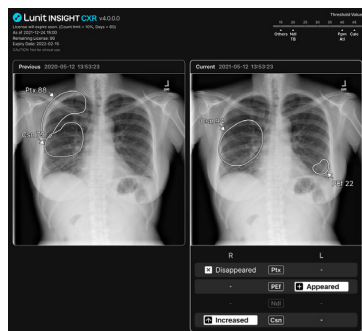
CPC Secondary Capture image update

- Enhanced design helps users visually identify changes in findings between the left and right regions at-a-glance.
- New 'Greyscale mode only' helps make comparisons clearer.
- Multiple new design elements help improve satisfaction with CPC output.



Admin Display Option configuration update

- Improved and expanded configuration options allow users to easily apply settings for the features of Lunit INSIGHT CXR4.
- Preview feature allows visualisation of expected outcomes before applying changes, significantly enhancing usability.



What's behind the high performance?

Developed with a large curated dataset (1.2M exams)

Positive cases

~60% cases with abnormal finding(s)

Chest CT images

Chest CT ground truth for higher accuracy on subtle findings

Tuberculosis cases

120K+ TB-specific training data for enhanced TB screening performance

Broad vendor coverage

>30 models of 24+ X-ray device vendors

Diverse patients

US, European, Middle Eastern, and Asian patient data

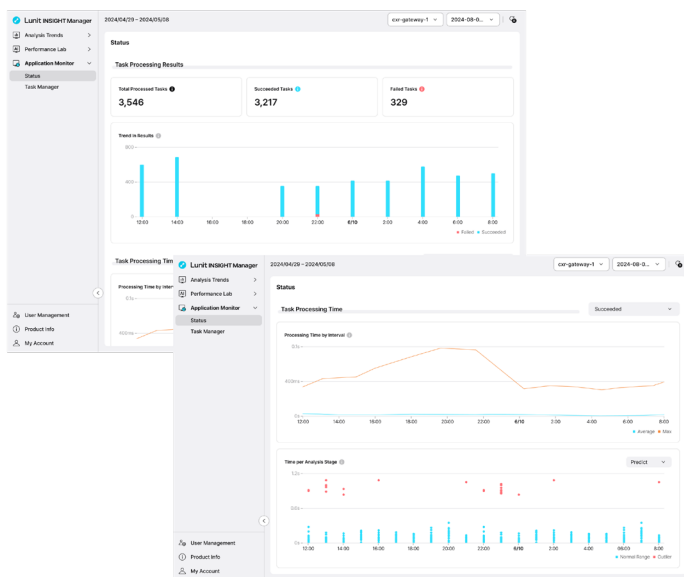
Stay on top of performance (without the guesswork)

INSIGHT Manager helps you understand how Lunit INSIGHT CXR4 is being used in your everyday settings. It empowers you to make smarter decisions, improve efficiency, and get the most out of your system.

By monitoring the streaming of your data day-to-day, it helps you identify the best settings for your needs and optimise how Lunit INSIGHT CXR4 supports your team.

INSIGHT Manager gives you a clear, easy-to-read dashboard that shows how your AI is running, what it's analysing, and whether anything needs your attention.

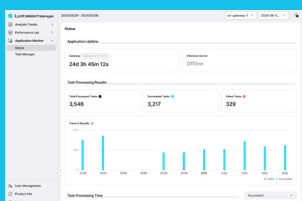
It helps you quickly spot any unusual changes – like delays in processing or changes in the type of images being analysed – so you can take action before they impact your workflow.



What can you do with INSIGHT Manager 2.0?

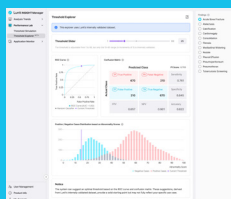
- **Track AI usage and trends over time** with simple dashboards that show what is being analysed and how the AI is performing.
- **Dig deeper into trends** with new tools that let you explore input/output patterns and identify areas to improve efficiency or accuracy.

Application Monitoring (Status, Tasks)



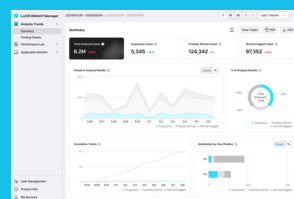
Monitor task status, processing time, and component uptime to check if the application is running reliably. Helps detect failed tasks or delays.

Performance Lab (Threshold Explorer)



View sensitivity, specificity, and other key metrics based on internal validation. Explore how different thresholds impact AI analysis outcomes.

Analysis Trends Monitoring



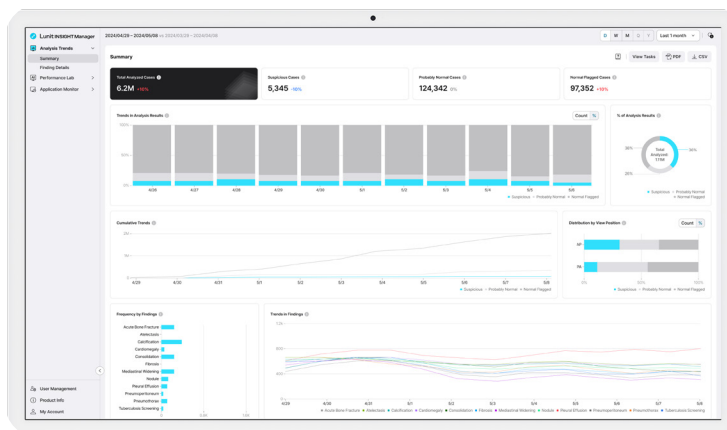
Monitor distribution and trends in AI output results. Helps break down findings by result categories and understand overall analysis volume.

Customise for your population

Striking the right balance between sensitivity and specificity is key to optimising performance. With the Threshold Explorer, radiologists can explore and adjust thresholds for each finding in a simulated environment, using real AI results* rather than relying on guesswork.

This empowers users to make data-driven decisions based on clinical needs - whether prioritising higher detection rates or minimising false positives - all without requiring support from Lunit.

Monitoring



Adjustment (CXR Admin)

Threshold Explorer to simulate sensitivity and specificity* when adjusting threshold values.

Enables fine tuning of threshold (15~45)** for each finding according to specific clinical needs and desired balance between false positives and false negatives.

*Simulation based on Lunit's internal validation dataset (data from each hospital/site to be used for simulation in the upcoming versions).

**Lunit INSIGHT CXR4 comes with a fixed threshold of 15 - this is based on a rigorous process of internal validation and optimisation to ensure a high sensitivity. There are other approved threshold values (20, 25, 30, 35, 40, 45) to choose from to optimise sensitivity vs specificity.

Built for your clinical reality

Lunit INSIGHT CXR4 seamlessly integrates into your existing workflow for a variety of clinical settings, supporting the full spectrum of chest x-ray interpretation.

Radiologists and Physicians

Time savings, efficiency, and increased precision

Normal flagging fuels normal report generation, reduces backlogs and allows focus on complex cases.

Consistency and standardisation

AI decreases variation in performance.

Diagnostic support

AI enables early detection and improves diagnosis through the current-prior comparison feature.

Emergency and ICU

Timely treatment of critical patients

- AI integration with the worklist helps doctors focus care on critical patients and reduce treatment delays.
- Decreases time-to-report for critical findings.
- Detects acute findings – fractures, pneumothorax, pneumoperitoneum, consolidation, and pleural effusion.

Support for front-line decisions and patient management

- AI decision support for non-radiologist physicians.
- Reduces diagnostic variability, especially in rural and resource-limited hospitals.
- Reduces cost of reliance on remote reading centres.

Public Health and Screening Programs

Handle high volumes confidently with AI that highlights suspicious findings so clinicians don't miss what matters in lung cancer or TB screening programs.

Early detection

Ideal for lung cancer, TB and annual check programs - proven best in lung nodule⁶ and TB detection⁷.

Opportunistic findings

Detecting incidental abnormalities may lead to early treatment and better prognosis.

Streamlined workflow

- Optimises processes through identifying normal scans and automates normal reports.
- Scales lung health programs by detecting abnormal studies from high-volume screenings.

"There was a case where Lunit AI detected a nodule in the chest x-ray taken before bile duct cancer surgery. The patient was very satisfied with the AI diagnosis."

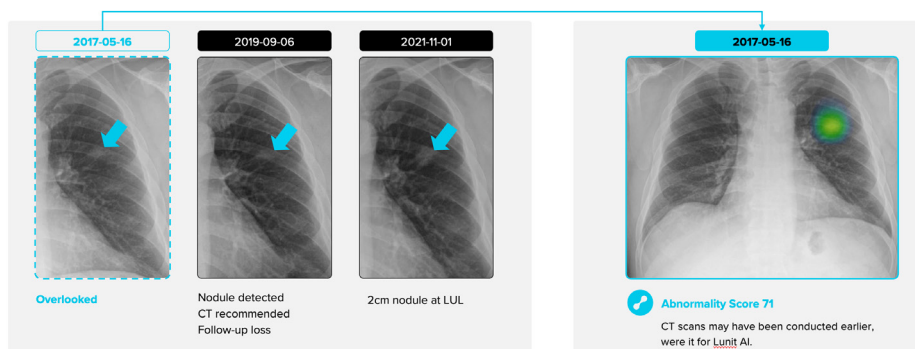
- Dr. Eun-Hye Lee

Pulmonology and Allergy Dept., Yongin Severance Hospital,
South Korea

"Using Lunit AI, I sped up the interpretation of chest x-rays and this allowed me to improve the relationships with the referring doctors from various hospital units, such as the Emergency Room or Intensive Care."

- Dr. José Riva Palacio,

Grupo Diagnosti-K, Mexico



Expanding the spectrum of care

Lunit INSIGHT CXR4 enhances diagnostic confidence through precision AI and seamless workflow integration. By extending support beyond traditional radiology, it helps remove barriers in clinical care, empowering more physicians and reaching more patients, including pediatric cases and frontline providers.

Pediatric patients

Delivering reliable performance in pediatric cases, Lunit INSIGHT CXR supports clinical decisions for children as young as 4 years old.

This single AI-powered CXR solution helps provide consistent performance across all age groups—from childhood through adulthood.

	Children aged 2-14-years (n=958)
AUC	0.94
Accuracy	83.4%
Sensitivity	87.5%
Specificity	82.3%
PPV	56.6%
NPV	96.1%

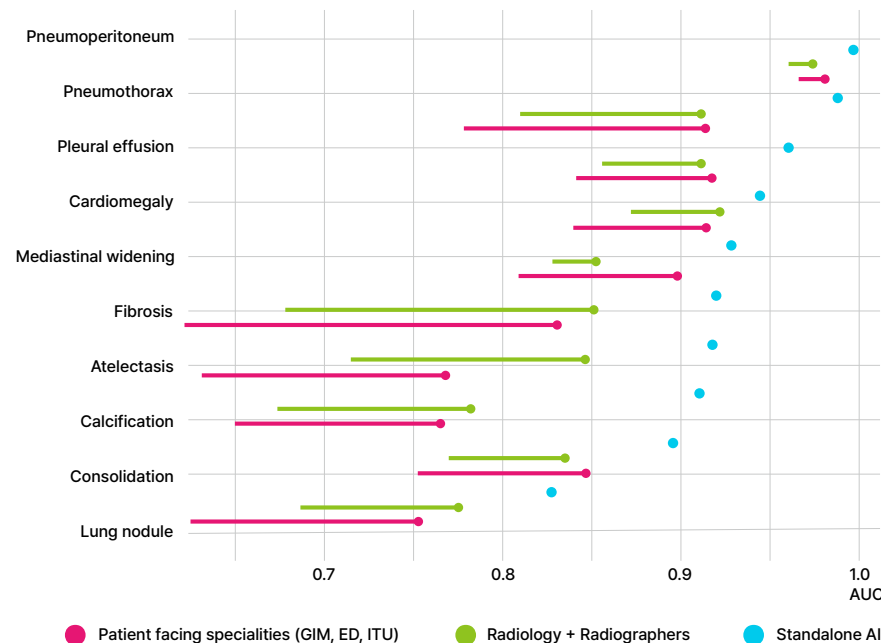
Helen. Ngo, et al., Deep Learning for Chest Radiograph Evaluation in Children: Repurposed Use of a Commercially Available AI Tool Developed for Adults. ECR 2024

Consistently high performance in pediatric images

- CE-certified for age 4+
- Consistently high performance on pediatric population, as on adults
- Independent study

Support for non-radiologist physicians

As non-radiologists are increasingly required to take on image interpretation, Lunit INSIGHT CXR becomes an essential reading ally. This single end-to-end solution helps identify critical findings fast and determine next steps with greater confidence, even when radiologist access is limited.



Shah et al., Does AI Assistance Improve Clinician Interpretation of Inpatient and Emergency Department Chest X-rays?, abstract presented at RSNA 2024

Why Lunit INSIGHT CXR4?

- **One solution, every setting** – Covers the full CXR pathway across all clinical environments
- **Smarter support** – AI that actively contributes to clinical decisions
- **Proven performance** – Backed by strong clinical accuracy
- **Built to scale** – Ready to grow with your needs
- **Easy to use** – Intuitive interface with built-in performance insights
- **Seamless integration** – Integrates seamlessly into your current IT setup

Global reach, local presence

Deployed in **65+** countries, with **6,400+** customers

Validated with **400+** prospective & retrospective studies

Partnering with top-tier international institutions

As of June 2025

Strong clinical evidence

400+ publications in peer-reviewed journals

100+ research partnerships

39 PhDs, **16+** radiologists and physicians on the Lunit staff

References

1. Toma S Omofoye, et al., Backlogs in formal interpretation of radiology examinations: a pilot global survey, *Clinical Imaging*, 2023
2. Jay R Parikh, et al., Radiologist Burnout According to Surveyed Radiology Practice Leaders, *Journal of the American College of Radiology*, December 2023 Volume 20 Issue 12
3. Geffer, Warren B et al. "Commonly Missed Findings on Chest Radiographs: Causes and Consequences." *Chest* vol. 163, 3 (2023): 650-661. doi:10.1016/j.chest.2022.10.039
4. National Imaging Data Collection 2017/18, NHS Improvement
5. Clinical Evaluation Report of Lunit INSIGHT CXR4, SOP-CEV-Form-031-CER Rev.1
6. Van Leeuwen KG, et al. "Comparison of Commercial AI Software Performance for Radiograph Lung Nodule Detection and Bone Age Prediction". *Radiology* 2024
7. Gelaw, Sifresh Meseret, et al. "Diagnostic Accuracy of Three Computer-Aided Detection Systems for Detecting Pulmonary Tuberculosis on Chest Radiography When Used for Screening: Analysis of an International, Multicenter Migrants Screening Study." *PLOS Global Public Health*, 2022
8. Shah et al., Does AI Assistance Improve Clinician Interpretation of Inpatient and Emergency Department Chest X-Rays?, abstract presented at RSNA 2024
9. Jae Hyun Kim et al., Clinical Validation of a Deep Learning Algorithm for Detection of Pneumonia on Chest Radiographs in Emergency Department Patients with Acute Febrile Respiratory Illness. *Journal of Clinical Medicine*. 2020; 9(6):1981. <https://doi.org/10.3390/jcm9061981>
10. Ju Gang Nam et al., Development and validation of a deep learning algorithm detecting 10 common abnormalities on chest radiographs. *European Respiratory Journal* 2020; 57(5): 2003061; DOI: <https://doi.org/10.1183/13993003.03061-2020>
11. Jang, Sowon et al. "Deep Learning-based Automatic Detection Algorithm for Reducing Overlooked Lung Cancers on Chest Radiographs." *Radiology* vol. 296,3 (2020): 652-661. doi:10.1148/radiol.2020200165
12. Nam, Ju Gang et al. "Undetected Lung Cancer at Posteroanterior Chest Radiography: Potential Role of a Deep Learning-based Detection Algorithm." *Radiology. Cardiothoracic imaging* vol. 2, 6 e190222. 10 Dec. 2020. doi:10.1148/ryct.2020190222
13. Sridharan S., Seah Xin Hui, A. et al. (2024). "Real-world evaluation of an AI triaging system for chest X-rays: A prospective clinical study". *European Journal of Radiology*, Volume 181, December 2024, 111783.

*The NF engine has been trained to flag high confidence normal exams by assessing whether a chest X-ray is normal or not, based on extensive training on a large volume of data that included the full spectrum of real-world abnormalities, including varying image quality parameters and medical devices/foreign bodies. During clinical validation of this product, the following findings were categorised as abnormal findings and the engine's ability to accurately classify chest X-rays without and with these findings was validated. Abnormal findings - Central venous line, Nasogastric tube, Chest tube, Endotracheal tube, Subcutaneous emphysema, Congestion, Pulmonary alveolar edema, Acute rib fracture, Hilar prominence, Increased interstitial markings, Widened mediastinum, Airspace disease, Subsegmental or lobar collapse, Pleural effusion, Pneumomediastinum, Pneumoperitoneum, Pneumothorax, Enlarged cardiac silhouette, Pleural thickening and/or plaque, Chronic rib fracture, Hyperinflation and/or emphysema, Cyst(s) or large bulla(e), Calcification in lymph node or lung field, Elevated diaphragm, Fracture or severe arthrosis in shoulder, Cardiac device, Hiatal hernia, Foreign object (internal), Other abnormality with possible patient impact, Aortic calcification, Anatomic variants (eg, azygos lobe), Other abnormality without patient impact, Linear atelectasis, Nipple shadow and/or other pseudonodules, Spinal osteophytes, Spine arthritis, Spine curvature, kyphosis, or scoliosis, Sternotomy wires.

Reference - Clinical Evaluation Report of Lunit INSIGHT CXR_Rev.9

Lunit INSIGHT CXR is not an FDA cleared device

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The product fulfils the requirements for CE certification.

5F, 374, Gangnam-daero, Gangnam-gu, Seoul, 06241, Republic of Korea

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