AI for TB screening explained: from chest X-ray algorithms to open MedGemma and MedSigLIP models

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Short answer: on 23 October 2026 Google Research described how its work on AI reading of chest radiographs for tuberculosis (TB) screening moved from research benchmarks to a certified device deployed by a partner, and to open models that health systems can fine-tune. It reports a CE-marked tool from Nexus AI, deployments in about 40 facilities in six countries, and open models called MedSigLIP and MedGemma. It matters because it is a worked example of the “translation gap” between a published model and regulated clinical use.

TL;DR The short version

- Google Research described how its chest X-ray AI for tuberculosis screening moved from research to a CE-marked tool from partner Nexus AI.
- Google reports deployment in about 40 facilities across six countries, and open MedSigLIP and MedGemma models that health systems can fine-tune.
- It is Google's own summary; local validation, certification and offline operation matter as much as model accuracy.

Read online, listen to it, or change the text size: https://blogs.iictp.org/tb-screening-ai-chest-x-ray-medsiglip-medgemma-explained

What is AI-based TB screening?

Chest radiography is the frontline imaging test for pulmonary screening, but spotting subtle TB signs such as apical infiltrates or cavitary lesions needs specialist skill that rural clinics often lack. Computer-aided detection (CAD) software reads the X-ray and flags people who should get confirmatory testing. The post says TB claims an estimated 1.23 million lives each year. This is information, not medical advice.

The evidence trail the post cites

- A 2019 benchmark in Radiology reported deep learning matching experienced radiologists for active pulmonary TB, per Google.
- In 2021 the Stop TB Partnership evaluated CAD software in The Lancet Digital Health, and Google says its model ranked among the top performers. WHO recommended CAD for TB screening and triage that year.
- A prospective multi-site validation in NEJM AI in September 2024 reported high sensitivity across diverse patients, per the post.

Closing the translation gap

- Google’s partner, Nexus AI of Pretoria, turned the algorithms into a clinical tool. The post says it obtained CE MDR Class IIb certification under EU Regulation 2017/745 and ISO 13485 quality-management compliance.
- Nexus AI signed an agreement with FIND to pursue WHO prequalification, with a pathway toward FDA clearance described as ongoing.
- Software must also work across varied X-ray machines and offline settings, which is as much engineering as modelling.

Deployment figures reported by the source

- About 40 healthcare facilities across six countries: South Africa, Sierra Leone and Côte d’Ivoire, with expansion under way in the DRC, Zambia and Cameroon.
- Over 90 clinicians have evaluated more than 25,000 chest radiographs; turnaround fell from weeks to under 45 seconds, with clinicians making the final call.
- A deployment at the Mponeng Gold Mine in South Africa used ultra-portable digital X-ray kits and offline AI four kilometres underground, per the post.

Open foundations: MedSigLIP and MedGemma

Google says it open-sourced chest X-ray embeddings and MedSigLIP, a lightweight model aligning medical images with clinical text, so teams can classify or search images with plain-language labels or fine-tune on small local datasets. MedGemma is a family of open-weight multimodal models in 4B and 27B sizes that Google says runs locally and has passed 10 million downloads. Indonesia’s Ministry of Health is reported to be fine-tuning both on domestic radiographs so data stays in the country.

Limitations and open questions

- This is Google’s summary of its own programme. Sensitivity and specificity figures for the new deployments are not in the post.
- False negatives and false positives have different costs in TB programmes; local validation matters before use.
- Regulatory status varies by country and over time.

What it means for clinical informatics teams

- Plan for certification, device quality systems and offline operation, not only model accuracy.
- Open models allow local fine-tuning and data residency, but you own the validation.
- Keep a clinician decision step; the reported tool supports triage.

Frequently asked questions

- **Does AI diagnose TB?** The post describes screening and triage of chest X-rays; confirmation uses molecular testing.
- **Is MedGemma open?** Google describes it as open-weight, in 4B and 27B parameter sizes.

- **Is the tool cleared everywhere?** The post reports CE MDR Class IIb and ISO 13485, with WHO prequalification and FDA clearance still in progress.

Related reading

- Smartwatch hypertension detection with PPG and AI
- Responsible AI in practice
- Edge AI inference with small models
- AI Practitioner

Sources and currency

Sources were read on 23 November 2026. Products, rules and standards change, so check the linked originals before you rely on any detail.

> Related credential: AI Practitioner. Explore the exam facts and syllabus.

Sources and further reading

1. Preeti Singh and Shravya Shetty, Google Research. Bringing foundational models to the front lines of TB screening. 23 October 2026. research.google/blog/bringing-foundational-models-to-the-front-lines-of-tb-screening.

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