



University College London Hospital praises AI-boosted lung screening & streamlined workflow, integrated by SynApps, for transformed radiology efficiency & improved lung cancer outcomes

Lung cancer is the leading cause of cancer-related deaths worldwide, yet it is notoriously challenging to spot early enough to enable positive treatment outcomes.

This is prompting new approaches to disease detection, harnessing advanced technology including artificial intelligence and machine learning, and University College London Hospital (UCLH) is a pioneer here. The goal is not only to detect the disease much earlier, improving patient outcomes, but also to help overstretched radiologists manage soaring workloads.

Dr Arjun Nair, a Consultant Radiologist specialising in cardiothoracic imaging at UCLH, has been using an AI-powered lung screening solution since 2017 – initially within a research environment and then as part of NHS England’s National Lung Screening programme.

Earlier detection & more precise monitoring of disease progression/regression

MeVis Veolity is a dedicated software solution for supporting detailed lung diagnostics. It detects solid, part-solid, non-solid, and calcified nodules very quickly and accurately thanks to its deep-learning AI capabilities. As well as being highly efficient (radiologists can typically read images 47% faster than processing them manually), Veolity is impressively accurate and consistent in its detection, measurement and reporting.

Since the outset, Dr Nair has been impressed by the accurate clinical baseline metrics delivered by the Veolity platform, as well as the ability to automatically propagate those results when the patient returns. This enables accurate comparison and monitoring of disease progression/regression - via exact growth or shrinkage metrics, and precise pinpointing of any changes in nodule type/structure.



“The software not only helps to provide a baseline and a lot of interpretation upfront, it can also do this over time, providing particular value on successive scans”

Dr Arjun Nair

Consultant Radiologist
specialising in
cardiothoracic
imaging at UCLH



Boosting collective cancer knowledge

Veolity provides rich reporting, controlled by the radiologist, as well as the ability to exchange clinical data with other platforms, saving a lot of time that would otherwise be spent re-entering findings.

"This means we can use all the data as part of a more comprehensive evaluation in lung cancer screening - for instance send it into a research environment or to a clinical platform for wider reporting," Dr Nair explains.

Importantly, Veolity supports British Thoracic Society guidelines on standardised reporting, ensuring reliable and intuitive decision support. *"The format is extremely user-friendly, so that I can see at a glance where the metrics are changing,"* Dr Nair notes.

Veolity: a vital safety net

As a radiologist, Dr Nair sees Veolity as a vital safety net. On one hand, the platform improves speed and productivity in identifying nodules, while providing a dependable second read. If the radiologist doesn't find a nodule, he or she can ask Veolity what its findings are.

Although by its nature, Veolity must be extremely sensitive to detect potential nodules, any false/irrelevant findings are easy to identify and discount by the radiologist. Knowing the very low risk of anything slipping past Veolity's sharp detection means Dr Nair and his colleagues can focus their attention on possible 'blind spots' that an AI solution might be less sensitive to - something radiologists, through their experience, are attuned to.

To maximise the impact of Veolity, and with the support of MeVis's UK systems integration partner systems integration partner SynApps Solutions, UCLH has also introduced Nelson+, a dedicated screening workflow platform, alongside and directly integrated with Veolity. This helps to manage the end-to-end screening process, from patient appointment scheduling to managing the reporting list and sending out letters to the patient to scheduling screening review meetings.

The easy integration of the two systems, in conjunction with the trust's electronic patient record (ePR) system, streamlines all lung screening-related work and avoids the complexity of trying to incorporate use of the trust's picture archiving and communication system (PACS) or radiology information system (RIS) for reporting or for on-demand access to specific insights.

Says Dr Nair, *"We felt this would actually give us better oversight/governance, and an end-to-end pathway, rather than trying to take data out of the general electronic health reporting system."*

Adding statistical credibility to marginal findings

Crucially, Dr Nair sees direct value in Veolity's support for screening findings that don't obviously fall into a clear category for next actions. *"With more incidental findings, readers are more confident that their opinion will count - something that can be managed within the system itself, which has oversight over everything else,"* he says.

Of the integration with Nelson+, he adds, *"As a Responsible Radiologist, it's particularly useful to have the screening review meeting module. It means we can conduct a meeting, enter the outputs and even perform a second read of the scan if needed. The fact that all of the workflow is happening in one place is beneficial to both radiologists and to the clinical assessors."*

As instances of cancer and demands on specialist screening services continue to rise, it is critical that medical professionals are able to draw on every tool available to them, to keep ahead of symptoms and apply early treatment.



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