NHS
North Central London
Cancer Alliance

Real-time assessment at point of lung biopsy for immediate diagnosis and treatment (RAPID-Tx)

Project lead and organisation - Ricky Thakrar, UCLH

Partner organisation(s) involved - UCLH, NCL

Funding requested (£) - £168,000

Proposed start and end dates - Phase I: Q4 26/27 | Phase 2 (treatment): Q4 28/29

Summary

This proposal requests £168,000 to implement RAPID-Tx, an innovative pathway enabling real-time diagnosis of lung cancer at the point of biopsy using the Van Gogh CelTivity™ system at UCLH.

The bid addresses a key challenge in lung cancer care: delays between biopsy, diagnosis, and treatment. Current pathways often require multiple procedures due to non-diagnostic samples and rely on laboratory processing, resulting in delays of days or weeks. These delays can worsen outcomes, with evidence suggesting increased mortality when treatment is delayed, and contribute to patient anxiety and inefficiencies.

The proposed solution introduces real-time tissue assessment during biopsy procedures (including robotic bronchoscopy, EBUS, and CT-guided biopsy). The technology provides immediate feedback on whether tissue is malignant and sufficient for molecular testing, allowing clinicians to take additional samples during the same procedure if needed.

Phase 1 will pilot real-time diagnosis, reducing time from biopsy to confirmed diagnosis from days to minutes. Phase 2 will integrate this capability with emerging bronchoscopic treatments to enable same-session diagnosis and treatment for selected early-stage patients.

Expected benefits include fewer repeat biopsies, faster treatment, improved survival, reduced patient anxiety, and more efficient pathways. The project aims to position NCL as a national leader in real-time cancer diagnostics and scalable innovation.

NHS North Central London Cancer Alliance

NCLCA Big Ideas Fund – Expression of Interest

Questions marked with an asterisk indicate additional guidance on page 2 of this document.

Section 1 – Project Details			
Proposal title	**Real-time assessment at point of lung biopsy for immediate diagnosis and treatment (RAPID-Tx)**	**Project lead and organisation**	**Ricky Thakrar, UCLH**
Partner organisation(s)	**UCLH, NCL**	**Fund request (£)***	**£168,000**
Proposed start & end*	**Phase I: Q4 26/27 | Phase 2 (treatment): Q4 28/29**		
Section 2 – The Idea			
1. What is the challenge you are seeking to address?*	Lung cancer remains the leading cause of cancer mortality in the UK. Despite advances in Lung Cancer Screening (LCS) and rapid diagnostic pathways, delays between biopsy, diagnosis and treatment remain common, and even modest delays matter, with a 16% increase in mortality when diagnosis-to-surgery exceeds 40 days (Yun 2012). Two factors contribute. Diagnostic yield from robotic-assisted bronchoscopy (RAB) is ~80%, meaning non-diagnostic biopsies require repeat procedures, MDT review and further appointments, increasing patient anxiety, cost and delay. Even when adequate tissue is obtained, diagnosis depends on laboratory assessment, delaying results by days, while insufficient material for genomic testing can delay treatment further. These issues apply not only to RAB but to CT-guided biopsy and EBUS, all biopsies in patients with suspected lung cancer. There is an opportunity for NCL to become the first system in England to deliver real-time confirmation of lung cancer at the point of biopsy, creating a platform for future same-day biopsy and treatment pathways.		
2. What is your proposed project and – at a high level – how would it be delivered?	This project will introduce the Van Gogh CelTivity™ system into the NCL lung cancer pathway, at UCLH as the sector's specialist centre for RAB. The platform uses light 'echoes' to assess biopsy tissue in real time during the procedure, generating a heat-map that distinguishes cancer from benign tissue within minutes. Clinicians receive immediate feedback on tissue adequacy and malignancy whilst the patient remains under anaesthesia. Further biopsies can be taken there and then if needed, or the procedure stopped early once adequate tissue has been obtained, with all tissue kept intact for molecular testing. **Project Phase 1 (2026-27): Immediate diagnosis at point of biopsy** **(A)** Pilot implementation of Van Gogh technology for RAB, EBUS and other lung biopsy procedures. **(B)** Evaluate diagnostic concordance, biopsy yield, molecular testing adequacy, time to diagnosis, patient experience and pathway impact. **(C)** Reduce the interval between biopsy and confirmed diagnosis from days to minutes. **Project Phase 2 (2027-29): Immediate diagnosis and treatment**		

	(A) Integrate real-time diagnosis with emerging endoluminal and bronchoscopic ablative therapies. **(B)** Pilot same-session biopsy and treatment pathways for selected patients with early-stage lung cancer. **(C)** Create a scalable model that can be adopted across other cancer pathways and NHS organisations, with NCL the first NHS system to implement this novel diagnostic and treatment approach.
Section 3 – Impact & Strategic Alignment	
3. Which NCL strategic objectives and/or National Cancer Plan ambitions does your project align with?	• Earlier diagnosis and achievement of 75% early-stage diagnosis. • Improved cancer survival via faster diagnosis and earlier treatment. • Enhanced patient experience by eliminating waiting for results. • Delivery of innovative, technology-enabled cancer care. • Improved operational performance through earlier closure of diagnostic pathways and reduced demand for repeat procedures. • Preparing NCL services for increased screening activity and rising numbers of early-stage lung cancers. The proposal also aligns with the national ambition for faster, more personalised cancer pathways enabled by AI and advanced diagnostics.
4. What impact do you expect the project to have on NCL cancer outcomes and/or patient experience?	• Reduced patient anxiety by removing the wait for diagnostic results. • Fewer repeat biopsies via real-time confirmation of sample adequacy. • Reduced time from diagnosis to treatment; helping prevent early-stage cancers progressing and preserves curative options. • Improved pathway efficiency and utilisation of specialist workforce. • Enhanced access to precision medicine by ensuring adequate tissue is obtained for molecular testing. • Reduced hospital attendances via fewer follow-up appointments. • Increase procedural capacity and reduce RAB waiting times
Section 4 – Resources	
5. Likelihood of external funding?	Potential to split funding with the UCLH Charity. This can be explored.
6. High-level indication of how the budget would be used*	£168k for purchase of machine (CE marked and commercially available). Staff training, implementation & operational resource absorbed by UCLH.
Section 5 – Anything Else	
7. Is there anything else you would like to flag?	NCL is actively expanding LCS and increasing numbers of patients with early-stage disease. Around 70% of patients at UCLH are stage 1, compared to ~30% through symptomatic presentation. This innovation will help the system absorb the resulting demand whilst improving outcomes and patient experience. We would extend the "RAPID-Tx" pathway across NCL wherever rapid diagnosis is critical; including patients needing accelerated systemic therapy, such as those with stage III disease at risk of progression or on a neoadjuvant pathway. This widens equitable access to real-time diagnosis regardless of biopsy modality. The project will establish NCL as the national demonstrator site for real-time cancer diagnostics and create a blueprint that could subsequently be adapted for other tumour pathways.

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Additional Guidance on Completing this EOI

General

- All EOIs must not exceed 2 pages.
- Please submit to uclh.nclcanceralliance@nhs.net by 25th June 2026.
- Only NCLCA colleagues may submit.

Section 1 – Project Details

- Our current expectation is that we will fund a small number of projects from a total funding pot of ~£600k.
- Proposed end date for the project must be no later than March 2029.

Section 2 – The Idea

- Question 1 - Describe the problem or unmet need. Include relevant data or evidence where possible.

Section 4 – Resources

- Question 6 - e.g., staffing, clinical time, technology, evaluation, overheads. Precise costings are not required at EOI stage.