NHS
North Central London
Cancer Alliance

Transforming Curative Cancer Treatment and Establishing North Central London as a Leader in Precision Ablation and Advanced Margin Assessment

Project lead and organisation - Dr Priti Dutta and Dr Gayathri Yogarajah, Royal Free London NHS Foundation Trust

Partner organisation(s) involved – N/A

Funding requested (£) - Part or whole funding - £350,000

Proposed start and end dates - July 2026, aim to complete implementation by Dec 2026

Summary

This bid proposes introducing advanced stereotactic navigation technology (CAS-One IR) to transform liver tumour ablation services at the Royal Free Hospital and expand access to curative-intent treatment across North Central London (NCL). While image-guided ablation is already an established treatment, current approaches rely heavily on operator judgement, limiting precision in targeting tumours and achieving adequate margins—key factors for successful outcomes and preventing recurrence. As a result, some patients with technically challenging tumours are deemed unsuitable for curative treatment and instead receive palliative care.

The project will implement CAS-One IR technology to enable accurate treatment planning, real-time navigation, and objective margin assessment during procedures. This will improve confidence in treating small or difficult-to-access tumours and standardise ablation quality. The system will integrate into existing workflows without additional staffing, using current infrastructure and multidisciplinary pathways.

Expected benefits include increased access to curative treatment, improved tumour control, reduced need for repeat procedures, and faster procedure times. Patients are likely to experience shorter hospital stays and better quality of life due to less invasive treatment.

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	**Transforming Curative Cancer Treatment and Establishing North Central London as a Leader in Precision Ablation and Advanced Margin Assessment**	**Project lead and organisation**	**Dr Priti Dutta and Dr Gayathri Yogarajah, Royal Free London NHS Foundation Trust**
Partner organisation(s) involved		**Funding requested (£)***	**Part or whole funding - £350,000**
Proposed start and end dates*	**July 2026, aim to complete implementation by Dec 2026**		
Section 2 – The Idea			
1. What is the challenge you are seeking to address?*	Image-guided thermal ablation is an established curative-intent treatment for selected patients with primary and secondary liver malignancies, including hepatocellular carcinoma (HCC) and colorectal liver metastases. Successful treatment depends on accurate tumour targeting with a percutaneous thermal ablation probe and achievement of an adequate ablative margin; a key determinant of local tumour control. Unlike surgery, where pathological margins can be assessed directly from the pathology specimen, image-guided ablation has traditionally relied on operator experience and visual estimation, particularly for small or technically challenging lesions. Follow-up imaging helps to guide assessment of how successful the treatment has been. The Royal Free has an established and successful liver tumour ablation service. However, early results from a recent audit within the Royal Free's liver ablation service have identified local tumour control and repeat treatment as important areas for ongoing quality improvement. This is supported by emerging international consensus guidance and growing evidence from high-volume centres, which increasingly emphasise the importance of procedural standardisation, stereotactic navigation and objective, real-time assessment of ablative margins to optimise local tumour control and reduce the need for repeat treatment. To clarify, these capabilities are not currently available within our current hospital pathways. They represent a significant opportunity to further improve treatment quality, consistency and long-term outcomes for patients		

	undergoing curative-intent ablation. Despite having an established ablation service at the Royal Free, we regularly encounter patients whose disease is potentially amenable to curative treatment but who are instead directed towards palliative pathways because lesions are considered too difficult to access safely and effectively using conventional freehand techniques. This is particularly relevant for small lesions in challenging anatomical locations

	(under the diaphragm, close to the heart or other organs, very deep lesions), where confidence in accurate targeting and adequate margin 'burn' may limit treatment options. If surgery is also deemed too risky, then these patients will be directed to palliative treatment options. Expanding access to curative ablation has the potential not only to improve patient outcomes – curing more patients of cancer - but also to reduce reliance on more invasive surgical procedures and other resource-intensive treatments. We, as a group of interventional radiologists at the Royal Free, are united in wanting to offer more efficient and patient-centred cancer pathways. We want to offer more patients curative treatments. CAS-One IR is an advanced stereotactic navigation platform that enables precise treatment planning, probe placement and margin assessment during liver tumour ablation. In addition to expanding access to treatment for technically challenging lesions, the technology supports a more standardised and quality-assured approach to ablation, incorporating treatment verification and margin assessment. These are factors that are increasingly recognised as key components of high-quality ablation practice. This has the potential to reduce incomplete treatment, local recurrence and the need for repeat intervention. Put more simply, by using this system, we will be able to perform ablations quicker and expand the range of lesions that can be treated safely and confidently. We have the potential to increase access to curative-intent treatment and improve oncological outcomes across North Central London. Just as adequate margins are central to successful cancer surgery, they are increasingly recognised as critical to successful tumour ablation. Investment in this programme would build on the Royal Free's expertise as a tertiary hepatobiliary centre and establish a new capability within North Central London for stereotactic navigation, treatment verification and prospective evaluation of liver tumour ablation. The project would create a platform for innovation, training and future service development, supporting wider adoption of best practice across the region. Most importantly, it would enable more patients to access potentially curative treatment who would otherwise be offered palliative alternatives.
2. What is your proposed project and – at a high level – how would it be delivered?	We propose implementation of CAS-One IR stereotactic navigation technology within the Royal Free's established liver tumour ablation service.

	We are very fortunate at the Royal Free in that we do not face the challenges that other hospitals face when trying to integrate the CAS-One IR system. The ablation service is established. We have the correct MDT infrastructure and support of our stakeholders. Our referral stream is steady and grows year-on-year through the MDT pathways. The pathways are established for patient selection, admissions and in-patient

	care. We have timetabled anaesthetic support and access to CT scanners on a weekly basis. The software and hardware of the CAS-One IR system is compact and would easily integrate into our existing CT suites. The technology will support treatment of patients with small, poorly visualised and technically challenging liver tumours that may otherwise be considered unsuitable for curative ablation. The existing patient referral system stays the same. The pre-assessment and patient consent process remains the same. There are no additional staffing requirements. There are no additional bed-day requirements. Patient recovery remains the same. This system will require collaboration with our anaesthetic colleagues to achieve satisfactory, replicable volumetric acquisition of patient CTs during the procedure. The implementation will likely start with a core user group, who will learn, through peer coaching and mentoring, how to get the best results from the CAS-One IR system. The knowledge and expertise gained will then be disseminated to all the interventional radiologists at the Royal Free. The CAS-One IR system itself comprises small markers (fiducials) placed on the patients' body, a small and moveable metal arm which attaches to any CT bed and software that allows for trajectory planning and ablation margin confirmation. Delivery will include installation and integration of the technology within existing CT suites, workforce training for interventional radiologists and supporting staff, and prospective evaluation of clinical, patient-reported and health-economic outcomes. The Royal Free will act as an evaluation centre for the programme, generating evidence to inform future service development and wider adoption of best practice across North Central London.
Section 3 – Impact & Strategic Alignment	
3. Which NCL strategic objectives and/or National Cancer Plan ambitions does your project align with?	This project aligns strongly with the North Central London Cancer Alliance ambition to improve cancer survival through earlier access to effective and potentially curative treatments. By enabling more patients with technically challenging liver tumours to access curative-intent ablation, the project will improve local tumour control and support better long-term outcomes for patients who may otherwise be directed towards non-curative treatment pathways (SA1, SO1a). The project also supports NCL's objective of improving patient

	experience and quality of life. Image-guided ablation is a minimally invasive treatment that can reduce the physical and psychological burden associated with more invasive treatment approaches, while reducing the need for repeat procedures and supporting faster recovery (SA2, SO2b). A key ambition of the Cancer Alliance is to reduce unwarranted variation in access to high-quality cancer care. The introduction of stereotactic

	navigation and treatment verification technology would establish a new capability within North Central London, helping ensure that access to advanced liver tumour ablation is determined by clinical need rather than technical limitations of conventional treatment approaches (SA3, SO3b). The proposal supports the development of innovative, high-performing and sustainable cancer services by enabling more precise treatment delivery, improving confidence in treatment quality, and making more efficient use of existing healthcare resources. It also provides a platform for future adoption of emerging image-guided therapies and precision cancer technologies (SA4). Finally, the project aligns with NCL's ambition to create a learning health system through innovation, evaluation and collaboration. Prospective collection of clinical, patient-reported and health-economic outcomes would generate evidence to inform future service development, support wider adoption of best practice, and strengthen North Central London's position as a leader in precision interventional oncology (SA6). The proposal also aligns closely with national ambitions to expand access to minimally invasive cancer treatments, reduce variation in outcomes, accelerate adoption of proven innovation and improve the use of data to drive service improvement.
4. What impact do you expect the project to have on NCL cancer outcomes and/or patient experience?	Impact and expected benefits include: • Increased access to curative-intent liver tumour ablation for patients who would otherwise be directed towards palliative treatment pathways • Improved targeting accuracy, confidence in achieving adequate ablative margins and local tumour control for poorly visualised and technically challenging lesions; thereby leading to improved tumour-free survival rates • Reduce the time it takes to perform the procedure • Thereby increase our capacity for tumour ablations • Reduce the need for re-treating 'missed' or incompletely ablated tumours • Reduced variation in access to advanced interventional oncology treatments across London • Reduced reliance on major hepatic surgery and other costly, resource-intensive treatment pathways, while offering selected patients a less invasive curative treatment option • Shorter hospital stays, faster recovery and reduced

	treatment burden, improving patient experience and quality of life. CAS-One IR will help to establish a platform for the integration of emerging technologies such as irreversible electroporation (IRE), reversible electroporation and electrochemotherapy, helping future-proof cancer services within North Central London.
Section 4 – Resources	

5. What do you see as the likelihood of attracting external funding?	Successful implementation would create a strong platform for future external funding through clinical research collaborations, multicentre evaluation studies and industry-supported innovation programmes. As a high-volume tertiary hepatobiliary centre, the Royal Free would be well positioned to generate prospective clinical, patient-reported and health-economic evidence that could support future NIHR, charity and industry-funded research focused on precision image-guided cancer treatment.
6. High-level indication of how the budget would be used*	Funding would support acquisition and implementation of the CAS-One IR stereotactic navigation platform, workforce training, service development, prospective evaluation activity and initial consumables required for clinical deployment. The project would utilise existing clinical, operational and MDT infrastructure within the Royal Free's established liver tumour ablation service.
Section 5 – Anything Else	
7. Is there anything else you would like to flag?	The Royal Free is uniquely positioned to deliver this project as a tertiary hepatobiliary centre with an established liver tumour ablation service, regional referral network and extensive experience in complex liver cancer care. This proposal addresses a genuine unmet clinical need that is encountered regularly within current practice: patients with potentially curable liver tumours who are unable to access ablation because of technical limitations associated with conventional image-guided techniques. CAS-One IR offers a realistic opportunity to expand access to curative treatment for this patient group while also supporting a more standardised and quality-assured approach to ablation. Through objective treatment verification and assessment of ablative margins, the project has the potential to improve local tumour control, reduce the need for repeat intervention and further enhance outcomes for patients undergoing curative-intent treatment. Importantly, this is not a continuation of existing activity. It represents the introduction of a novel capability that is not currently available within North Central London and has the potential to transform liver cancer treatment pathways, improve patient outcomes and establish a regional centre of excellence for precision image-guided liver tumour ablation.

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.