

## **PRECISION-RECTAL NCL: Building the UK's First Integrated AI-Enabled Platform for Personalised Rectal Cancer Care Across an Entire Cancer Alliance**

**Project lead and organisation** - Mr Reza Mirnezami & Mr Chet Bhan, North Central London Cancer Alliance / Royal Free London NHS Foundation Trust

**Partner organisation(s) involved** - Royal Free London NHS Foundation Trust, University College London Hospitals NHS Foundation Trust, University College London, North Middlesex University Hospital, Barnet Hospital, North Central London Cancer Alliance

**Funding requested (£)** - £250,000

**Proposed start and end dates** - October 2026 – March 2029

### **Summary**

This bid proposes developing an Alliance-wide AI-enabled precision medicine platform for rectal cancer across North Central London (NCL). It responds to increasing complexity in rectal cancer care, where multiple treatment options exist but decisions are often variable due to underuse of available clinical, imaging, and pathology data. This can lead to inconsistent treatment selection, inequitable access to organ-preserving approaches, and suboptimal outcomes.

The project will integrate multi-source patient data into a unified digital platform, using advanced machine learning to support clinical decision-making. It aims to predict treatment response, assess recurrence risk, guide personalised surveillance, and identify patients suitable for organ-preserving treatments. Developed through collaboration between NCL providers and UCL, the platform will embed AI tools into multidisciplinary team (MDT) workflows and clinical pathways.

Expected benefits include increased organ preservation, reduced unnecessary radical surgery and stoma formation, and more consistent, data-driven decision-making. The programme also aims to improve patient outcomes and experience through more personalised care.

## **NCLCA Big Ideas Fund – Expression of Interest**

*Submit by 25 June 2026. Only NCLCA colleagues may submit.*

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

<b>Section 1 – Project Details</b>			
<b>Proposal title</b>	PRECISION-RECTAL NCL: Building the UK’s First Integrated AI-Enabled Platform for Personalised Rectal Cancer Care Across an Entire Cancer Alliance	<b>Project lead and organisation</b>	Mr Reza Mirnezami & Mr Chet Bhan North Central London Cancer Alliance / Royal Free London NHS Foundation Trust
<b>Partner organisation(s) involved</b>	Royal Free London NHS Foundation Trust, University College London Hospitals NHS Foundation Trust, University College London, North Middlesex University Hospital, Barnet Hospital, North Central London Cancer Alliance	<b>Funding requested (£)*</b>	£250,000
<b>Proposed start and end dates*</b>	October 2026 – March 2029		
<b>Section 2 – The Idea</b>			
<b>1. What is the challenge you are seeking to address?*</b>	Rectal cancer care is entering an era of increasingly complex decision-making. Patients now have multiple treatment pathways available, including total neoadjuvant therapy, organ preservation, local excision, radical surgery and intensive surveillance. Across NCL, large volumes of clinical, imaging and pathology data remain underutilised, leading to variation in treatment selection, surveillance strategies and access to organ-preservation opportunities. There is a pressing need for advanced tools that support clinicians and MDTs in predicting treatment response, recurrence risk and optimal treatment selection.		
<b>2. What is your proposed project and – at a high level – how would it be delivered?</b>	PRECISION-RECTAL NCL will establish the first Alliance-wide AI-enabled precision medicine platform for rectal cancer. Working through a Royal Free–UCLH clinical partnership with UCL machine-learning expertise, the programme will integrate clinical, imaging, pathology and treatment data to develop predictive models for response prediction, organ-preservation selection, recurrence-risk stratification, personalised surveillance and MDT decision support. Funding will support data infrastructure, governance, AI development, prospective evaluation and stakeholder		

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	engagement.
<b>Section 3 – Impact &amp; Strategic Alignment</b>	
<b>3. Which <u>NCL strategic objectives</u> and/or National Cancer Plan ambitions does your project align with?</b>	Directly supports NCL ambitions to improve cancer outcomes, reduce variation in care, enhance equity of access, strengthen research and innovation capability and improve productivity through data-enabled healthcare. Aligns strongly with National Cancer Plan priorities around personalised medicine, AI-enabled healthcare, digital transformation, earlier intervention and improved outcomes.
<b>4. What impact do you expect the project to have on NCL cancer outcomes and/or patient experience?</b>	Expected benefits include increased organ-preservation rates, reduced unnecessary radical surgery and permanent stoma formation, improved prediction of treatment response and recurrence risk, more consistent MDT decision-making and improved patient experience. Key measures will include organ-preservation rates, treatment variation across NCL, patient-reported outcomes, recurrence detection metrics and external research income leveraged. The programme will establish the foundations of a digitally enabled Alliance-wide rectal cancer service.
<b>Section 4 – Resources</b>	
<b>5. What do you see as the likelihood of attracting external funding?</b>	Very high. The funding will act as strategic pump-priming investment to establish infrastructure, datasets, partnerships and proof-of-concept outputs required for major future applications to NIHR, Cancer Research UK, Innovate UK, NHS AI Lab, MRC programmes and industry partnerships. The Alliance-wide scale and UCL academic partnership provide a highly competitive platform for substantial follow-on funding.
<b>6. High-level indication of how the budget would be used*</b>	Dedicated data-science expertise; clinical research and project management capacity; protected clinical leadership time; data integration and governance infrastructure; machine-learning model development and validation; prospective evaluation; health-economic assessment; patient and public involvement activities.
<b>Section 5 – Anything Else</b>	
<b>7. Is there anything else you would like to flag?</b>	This proposal is designed as a flagship NCL AI-enabled cancer innovation programme rather than a standalone research project. It will create a sustainable Alliance-wide platform capable of supporting future innovation initiatives, attracting substantial external funding and establishing NCL as a national leader in AI-enabled cancer care. A successful pilot would provide a blueprint for extension into other tumour pathways across the Alliance and position NCL to compete for multi-million-pound national research and innovation funding.

## Additional Guidance on Completing this EOI

### General

- All EOIs must not exceed 2 pages.
- Please submit to [uclh.nclcanceralliance@nhs.net](mailto:uclh.nclcanceralliance@nhs.net) by 25<sup>th</sup> 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.