Navigating AI for cancer diagnosis: evidence-based decision making

Cancer Research UK Early Diagnosis Event Series

Thursday 2 July 2026

CANCER RESEARCH UK

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Contents

Acknowledgements

We are grateful for the contributions of speakers, guest commentators and attendees to the webinar held on Thursday 2 July 2026.

Speakers

Dr Sarah Cook
Senior Strategic Evidence Manager,
Cancer Research UK

Rob Dale
Head of AI, Diagnostics,
NHS England (NHSE)

Professor Alastair Denniston
Executive Director at CERSI-AI,
Chair of the National Commission into the Regulation of AI in Healthcare

Samantha Harrison
Head of Strategic Evidence and ICBP Lead,
Cancer Research UK (Chair)

Dr Chris Johns
Consultant Thoracic Radiologist,
Sheffield Teaching Hospitals

Jason White
National Head of Innovations,
Centre for Sustainable Delivery (CfSD)

Guest commentators

Dr Rachel Gemine
Assistant Director of Evidence,
Evaluation and Effectiveness,
NHS Wales Joint Commissioning Committee

Dr Emma Hughes
Transformation Lead (Innovation),
NHS England Cancer Programme

Claire Portsmouth
Healthcare Communications Director,
Health Innovation Network

Executive Summary

On 2 July 2026, Cancer Research UK hosted an online event to address an increasingly urgent question facing the cancer community: how do we navigate the rapidly expanding Artificial Intelligence (AI) landscape and decide which tools to adopt to support the earlier diagnosis of cancer?

Policy makers are heralding AI as a means to alleviate health system pressures, support cancer diagnosis and thus improve patient outcomes. The key message that ran throughout the event was that AI likely holds real promise for the cancer community but that the ambition to embrace AI must be matched by health system readiness to do so. The presentations and discussions emphasised that we will only deliver meaningful patient benefit if health systems are well-equipped to prioritise, evaluate and identify the most promising innovations amongst a complex, crowded and competitive AI marketplace.

Our expert speakers drew on real-world initiatives and activities to illustrate how health systems are approaching this task at a regional and national level and highlighted what system readiness needs to look like if we're to make evidence-based decisions about AI.

Presentations highlighted that there are multiple barriers to effectively evaluating AI technologies. These include issues around evidence generation and uneven evidence appraisal capabilities across health systems. While these barriers are not unique to AI, AI can amplify these challenges due to the pace of technological developments, the pressure to adopt and the need for ongoing performance monitoring. Systems will need to prepare and respond accordingly.

The speakers pinpointed the ways in which we'll need to adapt if we're to generate the evidence required to decide which tools to implement - decisions that are underpinned by a whole host of considerations, such as the tool's safety, value and advantage over competing innovations. We heard about the role of head-to-head comparisons at a local level, as well as the efforts underway to set up national innovation pathways and adapt regulatory frameworks which would enable more robust appraisals of AI technologies.

Other enablers for the prioritisation and adoption of AI included well-informed and confident adopters or users of technology and strong demand signalling from the health system to innovators. Several speakers underlined the opportunities for the cancer community to set and communicate clinical priorities, so that emerging technologies (AI and non-AI alike) are developed to address the most pressing concerns in cancer.

Indeed, the need for a strategic, clear-sighted and collaborative approach to AI was at the heart of the event. Moving forwards, it is imperative that researchers, policymakers and system leaders build on the vital work that's underway to better navigate and regulate a busy AI marketplace and step up efforts to tackle the many remaining questions in a co-ordinated way.

Introduction

Cancer survival has improved significantly in the past few decades, largely thanks to improvements in treatment options and quality of care. However, too many cancers are still diagnosed at a late stage, limiting treatment options and affecting patient outcomes and experience. Improving early diagnosis remains one of the most important opportunities to improve cancer outcomes. This requires action across the pathway, from increasing participation in screening programmes and reducing delays in help-seeking, to improving access to diagnostic tests and specialist assessment. Achieving this will also require sufficient diagnostic capacity, yet cancer services continue to face growing demand, workforce shortages and long waiting times.

Against this backdrop, AI is increasingly being positioned as a potential enabler of both earlier diagnosis and more efficient use of limited healthcare resources.

The challenge facing the cancer community now is identifying which innovations are most likely to benefit patients in a rapidly evolving landscape and how to successfully evaluate, adopt and deploy them. To explore this topic, Cancer Research UK (CRUK) brought together cancer and AI experts from research, policy and healthcare delivery to discuss how evidence-based decisions about AI for cancer diagnosis can best be supported.

This event write-up summarises the key steers and approaches that emerged from the presentations, which health systems can draw upon to support their efforts to capitalise on emerging AI technologies in an efficient yet considered way.

Summary of presentations and reflections from speakers

Prioritising for impact: harnessing AI to improve cancer outcomes

Dr Sarah Cook set out the context health systems are operating in – speaking to AI's potential role in improving cancer outcomes and the challenges health systems are grappling with to harness that potential.

Cancer remains the leading cause of death in the UK. There has been limited progress to reduce the number of late-stage diagnoses and health system pressures are contributing to longer waiting times for diagnostic tests. The challenge will only grow as cancer cases are set to increase and grow more complex due to a rise in comorbidities.

Policy initiatives and cancer strategies across the UK are urging health systems to tackle these challenges by adopting and using innovative AI technologies at pace.

AI technologies are many and varied, and their evolving capabilities may indeed help tackle challenges along the cancer pathway (e.g. spotting potential signs and signals of cancer in complex data). However, in a resource constrained system, it's tough for health systems to navigate the AI marketplace and decide which tools to prioritise, generate evidence for, evaluate and adopt.

The evidence principles we use to assess AI are the same as for other health technologies (i.e. regarding safety, accuracy, benefit and value). However, the processes currently used to generate evidence don't always fulfil these criteria. Additionally, AI characteristics often pose unique challenges. For example, AI is more sensitive to context (e.g. organisational workflows, the populations they serve and the ways humans interact with the tools) which means evidence is less generalisable across different organisations and local validation is essential. Performance can also change over time, due to changes in practice, population, how the tool is used, which means it is crucial to have robust ongoing monitoring mechanisms.

The system doesn't consistently have the infrastructure, resources and expertise in place across the UK to efficiently assess, identify and evaluate the most promising AI tools. Health systems require support to help prioritise what to focus on, and how to effectively evaluate and deploy AI technologies. This is a pressing issue as AI tools continue to proliferate, with varying levels of evidence underpinning them. Sarah concluded that a whole system approach is needed to appraise and harness AI for cancer.

Key takeaways

- The system must get better at clarifying, prioritising and signalling our clinical priorities and system demands and not let the market set the agenda with a technology-first approach.
- The system needs to better coordinate horizon scanning to find appropriate solutions to clinical problems, which may include AI solutions.
- Health systems need to be more agile to enable dynamic assessment and monitoring of AI tools over time rather than assess AI tools based on evidence from a single snapshot in time.
- We need to better co-ordinate evidence generation and standardise how evidence is appraised across the system.
- There must be clarity and transparency on the evidence required to substantiate industry claims, which is a challenge for both health system decision makers and innovators to navigate. CRUK is currently working to support efforts to clarify evidence requirements for diagnostic products.

Head-to-head comparison of AI devices for lung cancer detection on chest radiographs

Dr Chris Johns described the approach his team took to compare the diagnostic accuracy of multiple AI devices for lung cancer detection on chest radiographs in a representative patient cohort with real-world disease prevalence. They hypothesised that AI could help address late-stage diagnosis by making diagnostic services more efficient and improving chest X-ray reporting times.

They gathered 5,000 chest X-rays and ran a comparison between seven vendors. Images were analysed by the vendors for the presence and absence of lung cancer, and Chris' team analysed the diagnostic accuracy of those radiology reports.

Despite all products being regulated as medical devices, they found performance varied greatly across the vendors. Some vendors identified many more false positives than others which would require further investigation and downstream activity instead of improving diagnostic efficiency. Others missed critical features in the X-rays which could lead to mis- or missed diagnoses.

Chris emphasised the importance of validating tools in real world populations that represent the prevalence of the disease. Many tools are trained on data that overinflate the number of lung cancer cases meaning that the number of false positives increases dramatically when deployed in a real-life population.

Yorkshire Cancer Research has funded a larger-scale version of Chris' initial research project to determine if product performance varies across the Yorkshire population and to tease out any inherent biases. The second part of this research will be to determine whether the best performing AI product will benefit the lung cancer pathway. The goal is to see if implementing an AI tool reduces time to diagnosis and the wider impacts to the workforce and follow up pathways.

Key takeaways

- There is huge performance variability in AI devices on the market for the same use case.
- Significant resource and time are required to thoroughly benchmark and compare vendor performance.
- Further work is required to determine whether the AI tools contain data bias (skewed data that leads to unfair or prejudiced outcomes for certain groups) or how deep that unfairness goes, as well as understanding how to fix these harmful flaws.
- Funding is not readily available, or easily accessible for this type of research largely due to an assumption that there was no need to test tools that have received regulatory approval for use.

Using AI technology to improve the lung cancer pathway in Scotland via the Accelerated National Innovation Adoption (ANIA) Pathway

Jason White spoke to NHS Scotland's processes for identifying and prioritising innovation for national adoption and the evaluation of AI chest X-ray technologies as an example.

The Scottish government recognises that technology could play a key role in delivering an efficient NHS. However, there wasn't a single national approach to identify and assess innovations at pace. This led NHS Scotland to develop ANIA – a partnership with national boards and Scottish Government, which harnesses expertise across evidence review, procurement, economic modelling and clinical leadership to determine how to assess and act on emerging technologies. ANIA's goal is to identify a select number of effective innovations for deployment across Scotland.

Jason summarised the five key stages to the ANIA pathway: quarterly horizon-scanning, strategic case building, building a value case, implementation and continued assessment of the technology's benefits.

Through ANIA, they developed the case for an 18-month service evaluation of an enhanced lung cancer diagnostic pathway, which uses AI to identify high risk chest X-rays, with a dedicated, national radiology review and diagnostic CT scans. The programme builds on previous research in the NHS Greater Glasgow and Clyde and Grampian Health Boards, which compared two different AI products and sought to help deliver a new optimal national lung cancer pathway.

Jason emphasised that AI is there to enable wider pathway transformation, which is required to reduce time to diagnosis. The pathway was adapted so that cases AI flagged as high-risk were reviewed within 24 hours by radiology, and an urgent CT scan was booked directly by secondary care radiology admin teams within 72 hours. This change eliminated the need for a letter to a GP to request a referral. Evidence from the programme will be collected with a final report going to the Innovation Design Authority within the Scottish Government for review.

Jason noted Scotland will take a national approach to funding so that they will only implement technologies that benefit all areas of Scotland.

Key takeaways

- ANIA provides a valuable, single process for assessing new technologies and enables decision-making in Scotland.
- The most important point is whether AI will enable change to the clinical pathway. Focusing only on the technology isn't enough, delivering pathway transformation alongside technology adoption is essential.
- Without a national approach, islands of excellence will predominate.

System readiness for evidence-based decision making for AI

Professor Alastair Denniston's presentation dealt with system readiness for new AI technologies. It explored how evidence-based decisions can be enabled by ensuring the system is ready and equipped with the right expertise, capability, processes, infrastructure and funding.

Alastair opened with a note of caution: decisions should not be overly influenced by rhetoric or emotional responses to AI but instead we should ground our appraisal of AI technologies in the evidence.

Attendees were encouraged to consider the "value intersect" - the overlap between what we need, what AI is good at, and what we're ready for. AI capabilities are increasingly able to serve our needs so it's essential that the system is ready to take advantage of these capabilities. The question is no longer whether AI is "ready" for adoption but whether the right enablers are in place across the system to support the adoption of AI technologies.

Alastair noted a key characteristic of system readiness is demand signalling. The health system needs to get better at communicating to innovators what the needs are to meet cancer challenges and health priorities, and what a good product looks like from the system point of view. The innovation pipeline needs to be optimised, and this can be achieved by strengthening evaluation and regulation. The MHRA, alongside advice from the National Commission into the Regulation of AI in Healthcare (which Alastair chairs), must ensure our regulatory system accommodates the distinct features and challenges associated with AI technologies. Challenges include AI bias, performance drift over time and continuous model updates which make it harder to determine if an AI tool is safe. Additional features of system readiness include: the efficient procurement and adequate funding of devices; well-informed and confident adopters/users of technology; and a safe, patient-centred, innovative culture.

Alastair summarised the evaluation pathway for AI, which is not as mature as pathways for other technologies. Post-market surveillance is a cornerstone of safe AI deployment but is burdensome and the processes are hard to navigate.

Unlike in drug trials, AI can get regulatory approval and enter the market with just retrospective validation evidence. This means there is more dependency on post-market surveillance to understand safety and performance in real world scenarios. Depending on the use case of AI tools, products on the market will have been subject to a diverse range of testing and are therefore supported by varying levels of evidence.

Alastair concluded by highlighting that the UK Government has committed to review and create a regulatory framework for AI technologies, which is due to report in 2026. The National Commission into the Regulation of AI in Healthcare has published two reports so far: **the summary of findings from the call for evidence**; and a **summary of the research and engagement programme**.

Key takeaways

- Decision makers must ground assessments of AI in the evidence and clinical need.
- Health systems must become more adept at 'demand signalling' to ensure AI technologies address relevant concerns and are fit for purpose.
- Systems must be ready to take advantage of the opportunities in AI.
- Regulatory frameworks for innovations need to accommodate the distinct challenges associated with AI technologies. Work is underway to address this via the National Commission into the Regulation of AI in Healthcare.

AI in diagnostics: national delivery strategy

Rob Dale discussed NHS England's flagship AI in diagnostics programme and how they plan to support future AI deployment as part of the Spending Review 2026. This will see considerable investment in digital diagnostics and AI.

Previous activity

Four years ago, the Royal Colleges of Radiology, Emergency Medicine and Pathology convened to discuss promising application areas for AI. They identified the lung cancer pathway as a priority for transformation due to high mortality, poor survival, the fact an optimal pathway had been established, and concerns around reporting turnaround times. They established a programme to deliver an AI intervention that would support clinical reporting in diagnostics. The five core principles to the programme were: collaborative delivery amongst networks; to focus on specific technologies; to have local delivery and procurement, with national oversight; standardised benefits metrics; and to secure an AI Diagnostics Fund from the Treasury.

66 trusts across England took part in the two-year initiative to support AI deployment with the aim of demonstrating the impact of AI on reducing turnaround times. The programme was deemed a success with modest but significant improvements to turnaround times, reporting and time to follow up investigations. Importantly, Rob noted this initiative has been crucial to understanding the implementation requirements and potential benefits of deploying AI at scale, and the success has resulted in a continuation of funding from Government.

Future delivery

The vision of the Digital Diagnostics Capability (DDC) programme is to achieve faster, better diagnostics for all, as demand for these services, outsourcing costs and waiting lists are on the rise. One of its key missions is to enable personalised data and AI to support diagnostic decision-making. AI is positioned as a fundamental pillar of the DDC programme with around £110 million funding attached. The programme will scale up AI across all diagnostic areas and Rob is leading a dedicated central team to coordinate this work. Some of their key aims are to ensure AI use is sustainable (and systems don't succumb to 'pilot-itis'), to build on lessons from the AI Diagnostics Fund, to avoid duplication of effort across the country, and to gather high-quality real-world evidence to support further investment in AI.

The AI part of the DDC programme will see a blend of national coordination with local decision making and delivery (e.g. for procurement, selection of solutions to meet the local context, and developing business cases). The vision is to transfer funding to localities, to give them more control, whilst running national projects (such as the second phase of the AI diagnostic fund) to continue to spread the use of AI in the lung cancer pathway. Rob again highlighted the learnings from the original AI diagnostic fund initiative being central to the success of this new phase – collaboration, transparency and agility.

Rob concluded by highlighting opportunities for NHS organisations, suppliers and NHS staff to engage with the DDC programme. The team intend to establish communities of practice in each of the main diagnostic areas and to start providing sessions as part of this in the coming months. Sessions will be small-scale initially, so stakeholders may wish to look to their local diagnostic networks in the meantime.

Key takeaways

Rob outlined key learnings from the lung cancer diagnostics pathway programme, which will shape future delivery.

- It is important to accommodate local variations in pathways, workforce and IT infrastructure when deploying an AI tool.
- Timescales can't be underestimated, particularly when building in time for learning and procurement.
- Success depends on securing buy-in at all levels (network, trusts, staff, suppliers).
- Ensure to set up a community of practice between participating networks from the start.
- The quality of evidence must be strong.
- Similarly to Jason, Rob emphasised how important pathway transformation is alongside the technology. The impact of this programme was largely due to the AI tool as well as the actions taken to unblock bottlenecks and streamline existing pathways.

Reflections on the challenges and opportunities

Dr Rachel Gemine reflected on challenges and opportunities in this space from her position in NHS Wales Joint Commissioning Committee (JCC), who have been tasked with establishing a cancer innovation adoption pathway. Rachel noted that the biggest challenge is knowing where to start when it comes to navigating such a busy landscape. She noted the JCC is now trying to shift away from a technology-first to a population-first approach when deciding what AI tools to review. On this theme, Rachel saw real opportunity for better demand signalling for innovators to help shape what technology is developed and adopted in line with complex, real-world population needs.

Similarly to Scotland's ANIA pathway, the JCC is working towards a national model for the adoption and spread of proven innovations to avoid small pockets of excellence and reduce inequity in the system. They are in conversation with Scotland and NICE to explore taking a more joined up approach to innovation across nations, and she emphasised the opportunity for more of this type of collaboration and shared learnings.

Claire Portsmouth began by acknowledging the potential opportunity of AI and what she has observed in her role as Healthcare Communications Director at the Health Innovation Network. She challenged whether there is enough support to realise its potential and tackle the fundamental and well-recognised challenges, such as ensuring we have the right digital and data infrastructure to assess the benefits of AI technologies.

Claire also noted a challenge-meets-opportunity is the political push to articulate the need for an innovation through a "health and wealth" lens - i.e. the role of innovation in getting more people into the workplace and driving economic growth. A key challenge is how the system currently thinks about and values these important impacts of innovation.

Claire commented on our ability to implement proven innovations at scale. Adoption of innovation is a specialist skill, and we need to ensure the workforce is equipped to embrace this responsibility. She questioned if the right enablers are in place.

Claire's closing point queried whether we have the patience within the system to prove an innovation works before embedding and moving to the next promising product. Funding cycles are short, and innovation takes time and resource to bed in before benefits are realised.

Dr Emma Hughes from NHS England's Cancer Programme reiterated the overall challenge of keeping up with the pace of change – specifically, keeping up with the proliferation and rapid evolution of AI technologies, as well as evaluation methodologies.

Emma welcomed the opportunity to review how our regulatory system works for AI. Responding to Chris's comparison study, she questioned whether the current system is fit for purpose and what thresholds should apply to allow tools to enter the market if there can be such variation. Emma agreed that post-marketing surveillance is key to ensuring safety and monitoring the ongoing performance of tools but emphasised the critical need to define who is responsible for this across system.

Emma concluded by querying how we prospectively evaluate AI technologies to ensure safety and value whilst keeping up with the pace of change. The gold standard is a randomised control trial, but these are very time- and resource-intensive and the rapid pace of change for AI tools mean they can become quickly obsolete. Emma therefore asked whether we should consider more real-world designs (e.g. comparative cohort studies), the purpose they serve, and how we ensure the research community is comfortable with that approach.

Key themes and takeaways

Sam Harrison chaired a panel discussion which followed the talks and reflections from invited audience members. The key themes and takeaways from the talks and panel discussions are detailed here.

Start with the problem, not the technology

All talks and comments from the panel confirmed that a cornerstone of good decision making for AI is to spend time defining the challenges facing the system. Technology should be viewed as an enabler of pathway transformation rather than a solution by itself. Importantly, the narrative needs to shift from asking where AI can have impact for cancer diagnosis to asking what the challenges are that need to be overcome and what are the solutions. AI may be part of those solutions but will seldom be the only solution.

The discussion highlighted the opportunity to shift from a reactive model, where technologies become available and stakeholders determine whether they are useful, towards a more strategic and coordinated approach in which priority challenges are clearly articulated and innovation is directed towards solving them.

This notion raised an important question: when there are so many competing priorities facing the system, how should individual organisations and we as an entire ecosystem decide where to focus effort first? The panel agreed that this is perhaps one of the most difficult challenges we face but is not new for AI. Decision makers must constantly make tough choices about what to spend finite resources on and justify opportunity costs of investing in one thing over another. It is no different when it comes to deciding which interventions and tools to evaluate and adopt.

Additional questions to consider: is the cancer community sufficiently aligned on the priority challenges in cancer diagnosis and the solutions that may help us overcome them? Do we have the mechanisms in place to direct innovation towards solving them in a systematic, coordinated way?

AI tools should be held to the same evidential principles as other diagnostic technologies, but validation and evaluation need to be dynamic

A recurring theme was that AI should not be held to different evidential principles than other health technologies. We still need to understand whether innovations are safe, effective, beneficial to patients and represent good value to the system. However, AI can make evidence assessments more complex, particularly given that performance is more dependent on context than other health technologies. This means evidence generated in one setting may not translate reliably to another placing a greater need for robust local validation, ongoing monitoring and continual assessment of performance after implementation. Evaluation, therefore, needs to be dynamic and not based on a single snapshot in time.

When asked about the optimal types of evidence (ie. randomised control trials or real world evidence) the panel returned to point all speakers covered, that the term "AI" encompasses a broad range of technologies with different use cases, capabilities, opportunities and risks – the types of evidence needed and the thresholds that apply will therefore differ. Whilst most tools on the market now perform narrow, task-based functions, the next wave of AI technologies will have multiple functions and use cases in one tool, increasing the complexity of evidence generation, evaluation and monitoring.

Different decisions require different evidence points

Speakers highlighted that there are a range of decision points before a tool is implemented into the health system, starting with the challenges we choose to focus on and then how we decide which solutions to pursue. Each decision point asks different questions of the evidence base. Importantly, panellists stressed that regulatory approval provides assurance around aspects such as safety and technical performance but does not tell decision makers whether a tool improves outcomes, represents good value for money, or should be prioritised over competing innovations. Chris's comparator study illustrated the latter profoundly.

The discussion also revealed that generating evidence is only one part of the challenge. Different stakeholders require different evidence to answer different questions, and evidence alone does not support good decision-making if organisations lack the capability, infrastructure or processes to interpret and apply it consistently. As a result, the conversation increasingly shifted from evidence generation towards the broader question of how health systems can support evidence-informed decision-making.

Evaluating AI products and evaluating AI-enabled pathways are not the same thing

A notable nuance that emerged was the distinction between evaluating individual AI products and evaluating AI-enabled pathways.

National programmes in Scotland and England have generated encouraging evidence that AI can support improvements in pathway performance at scale when the entire pathway is transformed alongside the technology. These programmes illustrate how generating evidence while adopting technologies, particularly for a rapidly evolving area like AI, can improve the pace of change, rather than treating evaluation and implementation as sequential activities. They are designed to answer an important question: can AI-enabled pathways improve outcomes at scale?

Separately, and crucially, Chris's independent benchmarking work comparing several vendors of products with the same use case highlighted substantial variation, answering a different question: which product works best? Together, these perspectives show that demonstrating the value of an AI-enabled pathway is not the same as identifying the most effective AI product. Both questions matter, and each requires different evidence.

Harnessing AI requires system readiness as well as technology readiness

The golden thread throughout the event was the idea that our ability to successfully harness AI will depend not only on whether AI technologies are ready for use, but whether the health system is equipped to make evidence-based decisions about which tools and use cases to prioritise and how to evaluate them appropriately.

Alastair used a bridge analogy to demonstrate the point. If we only focus on building one side of a bridge that represents "technology", but don't build the other side, representing "system" readiness", we'll have a bridge that takes us nowhere. The question is not simply whether AI tools are ready for deployment, but whether health systems are ready to evaluate them, compare them, implement them and monitor them effectively. This includes the ability to identify priority problems, generate and assess evidence consistently, make informed procurement decisions, support workforce adoption, and monitor performance over time. In this sense, building system readiness is just as, if not more important, than improving the technology itself.

Many of the issues discussed are longstanding challenges in innovation adoption that AI is making more visible. Variability in evidence appraisal expertise, capability and capacity, challenges implementing innovation, limited evaluation capacity, and difficulties scaling successful interventions apply to all types of innovations in healthcare. AI may amplify these challenges because of the speed at which technologies are developing, but many of the solutions discussed, such as improving demand signalling, stronger evidence generation, clearer standards, better coordination and greater system capability, would benefit innovation adoption more broadly.

Generating evidence at the speed of innovation remains an open challenge

The panel were asked if there is such variation in products doing the same thing, do we need to always run resource intensive head-to-head comparisons of tools in real settings before deciding which product to select? The answer is more nuanced than it might appear.

Generating comparative evidence is itself challenging, and not only in terms of the resources needed and processes to navigate. AI products are updated more frequently than other health technologies. By the time a robust comparative evaluation has been completed and published, vendors may already be several versions ahead. This creates a tension between the ideal situation of performing an independent comparison prior to selection and sharing learnings, and the pace of technological development. This raises important questions about how health systems can generate timely evidence and reduce duplication while keeping up with a rapidly evolving market. The panel was clear that there is a role for head-to-head comparison but that we need to consider carefully which use cases require robust, large-scale investigation and whether there are lower resource ways to perform comparisons. For example, running several tools in silent mode on a real-world dataset. There are many emerging AI orchestration and observability platforms (e.g. Newton's Tree) that enable systems to compare, evaluate and continuously monitor AI tools.

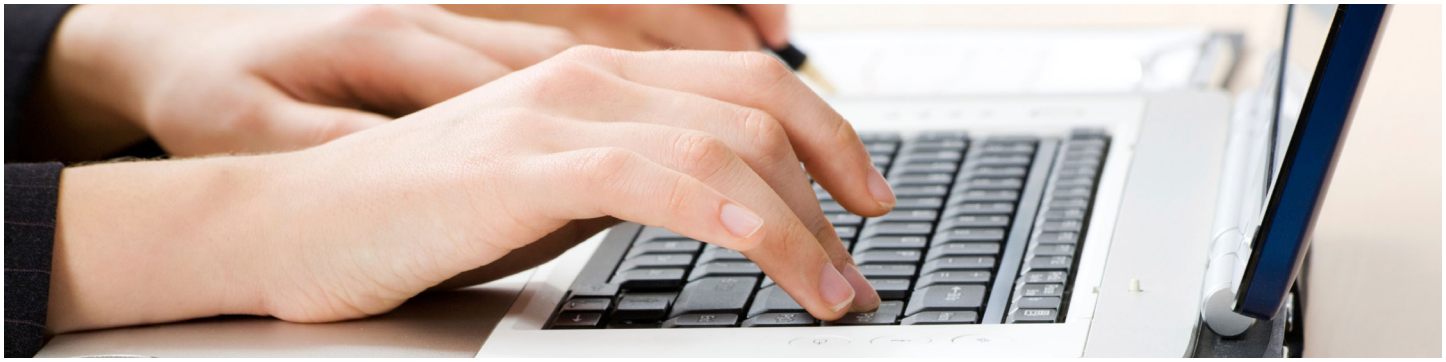
The message to the audience is clear: relying solely on vendor claims and product specifications is not enough to know which product will work best in each organisation.

Collaboration and coordination are key to translating promise into patient benefit

Questions from the audience reflected a sense of cautious optimism. There was broad recognition that AI is likely to play an increasingly important role in cancer diagnosis, alongside enthusiasm for its potential to address real-world challenges facing patients and healthcare services. At the same time, participants raised important questions about opportunity costs and priorities more broadly, particularly given the strong evidence supporting interventions such as screening and investment in the diagnostic workforce. Broader discussions about how we are tackling challenges across cancer and health system domains are crucial for surfacing, and making trade-offs, transparent.

What emerged most clearly was that the future success of AI in cancer diagnosis will depend on more than technology alone. While local organisations will always need to make decisions that reflect their populations, pathways and workforce needs, there remains an open question about how best to support those decisions nationally – what infrastructure, guidance and forums should be available. Finally, greater coordination in identifying priorities, generating evidence and sharing learning and expertise will be essential. For the cancer community, there is a clear opportunity to help shape where and how AI is deployed so that it delivers meaningful improvements in outcomes and experience for people affected by cancer and we at CRUK will continue to consider our role in this space.

A summary of key questions



The webinar sought to tease out and provide clarity on important challenges facing the cancer community regarding the prioritisation, evaluation and deployment of AI technologies. The event also served to highlight the many uncertainties that remain and some of the potential opportunities to address them.

The key questions and challenges posed throughout the event are captured here by theme for easy reference and further consideration.

Understanding and co-ordinating optimal evidence generation

- How can we continue to co-ordinate and capitalise on efforts to clarify evidence requirements for new technologies, regulate their development and enable real-world evaluation and post deployment monitoring?
- Is there a greater role for benchmarking and comparative evaluation in establishing clearer expectations around product performance and clinical value?
- How can greater clarity be achieved when comparative evaluation is warranted?
- What methodological approaches are most appropriate for comparing products across different technologies, use cases, and deployment settings?

Crystalising collective priorities

- How should organisations and the wider cancer ecosystem prioritise where to focus effort and investment?
- Is there sufficient alignment across the cancer community on the most important challenges in diagnosis and the solutions needed to address them?
- Do existing mechanisms effectively direct innovation towards priority unmet needs in a coordinated and systematic way?
- Is there a need for a cancer-wide forum to bring together key stakeholders, agree shared priorities, and coordinate action?
- Could Target Product Profiles (TPPs) play a greater role in signalling demand, guiding innovation, and aligning product development with health system needs?

Centralised support vs local decision-making

- How can national bodies provide greater national coordination and support to help localities assess, prioritise and adopt new innovations?
- How do we do this while retaining flexibility for local decision-making and implementation?

Looking ahead

CRUK will share the takeaways from this event with relevant stakeholders and continue our efforts to support health systems and policy makers to navigate AI and wider innovation landscape with regards to cancer.

If you have any questions or feedback from the event report or wish to discuss opportunities in AI with the Strategic Evidence team, please email **SEinbox@cancer.org.uk**

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