UNIVERSITY OF CAMBRIDGE

CSaP centre for science and policy

Centre for Science and Policy
Policy Workshop

Leveraging innovation and technology to shift the dial for secondary prevention of cancer

Summary note of the discussion held on 13 February 2025
Newnham College, Cambridge

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Introduction

This Policy Workshop was organised by the Centre for Science and Policy (CSaP), University of Cambridge, in partnership with the Department for Health and Social Care (DHSC) and Professor Rebecca Fitzgerald, Director of Early Cancer Institute, University of Cambridge. The workshop was attended by a variety of representatives from relevant organisations. Its conclusions do not represent the considered views or policies of those organisations.

Workshop objectives

- To facilitate links and knowledge exchange between policy makers and academics.
- To enable policy makers to connect with evidence, adding value to ongoing policy work.
- To hear perspectives and insights on potential new ways of delivering cancer services in the UK.
- To identify opportunities for academia-to-policy engagement and collaboration in support of the Health Mission delivery and the development of the National Cancer Plan.

Core questions of the workshop

- Looking forward 10 years, what are the behavioural interventions and biomedical innovations/technologies that could transform the delivery of cancer services and support secondary prevention? How can we scale innovation?
- How can cancer services be delivered differently to support the reform shift from hospital to home?

Follow-up questions that were brought into the discussion

- What can we learn from other health and care prevention efforts that could be applied to cancer?
- Are there international examples, or examples from within the UK, that we should be learning from?

Setting the scene

The mission and its delivery

The Health Mission is one of five missions set by the UK Government in 2024. The Health Mission's aim is to 'Build an NHS Fit for the Future' with an early focus, through the Plan for Change, on returning to the elective standard within this Parliament.

More broadly, through the Health Mission the Government wants to reduce time spent in ill health. Working towards this ambition will drive wider benefits, including:

- supporting improved population health and addressing health inequality,
- developing a financially sustainable health and care system,
- driving economic growth through people remaining in work for longer,
- and reducing lives lost from the biggest killers, such as cancer.

The purpose of the 10 Year Health Plan is to outline the delivery of the Health Mission and deliver the three shifts of 'sickness to prevention', 'hospital to home' and 'analogue to digital'. The development of the plan is underway and has already involved public engagement activities and policy working groups. Whilst these shifts are not necessarily ambitions, the Plan will focus on how to reach these ambitions in a way that is different from previous government initiatives.

To reduce lives lost from cancer, cancers must be diagnosed and treated earlier. Forty per cent of cancers in the UK are preventable, and such cancers are forecast to cost the NHS over £1 trillion between 2023 and 2040[1]. A National Cancer Plan is being developed to reduce lives lost to cancer, in a context of rising cancer demand over the coming decades, while improving patient experience.

[1] Cost of preventable cancers in the UK to rise from £78 BN in 2023 to £1.26 TN by 2040 | Frontier Economics

Questions raised in the opening remarks

- What do we want our future health and care systems to look like, and how do we design for the future?
- How do we deliver impactful and affordable health services to the people who need it most?
- How can we work differently and collectively to reform an under-pressure complex system, while still delivering for patients?
- What lessons can we learn from and use in the 10 Year Health Plan and national cancer plan?

Successes and lessons learnt

Throughout the workshop, successful practices from the UK and abroad were shared alongside lessons learnt from the breadth of experience across the room.

Targeted screening shifts the dial of earlier cancer diagnosis

- There is a measurable impact of proactive screening programmes targeting specific cancer types on overall early cancer diagnoses.
- In some targeted screening programmes, traditional health inequality indicators now increase an individual's likelihood of receiving an early diagnosis.
- Table 1 Examples of targeted screening programmes in the UK and elements of success. lists the screening programmes mentioned, along with the elements identified for a successful targeted screening trial.
- Data shows that 'passive' screening, which relies on individuals self-presenting for tests, is ineffective.

Cambridge Cancer Research Hospital will enable greater collaboration

The recently announced Cambridge Cancer Research Hospital plan sets out a vision for a new way of delivering cancer care:

- Research will be central to the hospital's activities, making it easier for patients and the public to engage in research and clinical trials. This will include stakeholder engagement.
- An entrepreneurial culture will be nurtured, with space for spinouts and commercial partners to co-locate with researchers, patients, and clinicians.
- The new hospital could feature as a blueprint in the 10 Year Health Plan for future projects.

Table 1 Examples of targeted screening programmes in the UK and elements of success.

Examples	
NHS Lung Cancer Screening Programme NHS-Galleri multi-cancer early-detection blood test trial	Newham Prostate Health Drop-in Clinic NHS Faecal Immunochemical Test (FIT) for bowel cancer
Elements of success	
1. adopting a systems approach 2. agreeing the target who, when, how, what and where of the programme 3. developing an organised programme, with planned invitation, follow-up and monitoring 4. targeting regions with the highest rates of a particular cancer 5. understanding community readiness[2], to deliver tailored strategies and information	6. using digital tools for trial invitations, such as text messages 7. mobile testing units to reach remote communities 8. using innovative at-home test kits 9. using patient navigators (used in the USA)

Examples of biomedical and technological innovations

The capsule sponge: earlier diagnosis of oesophageal cancer

- The capsule sponge has been used in both targeted screening trials and rapid real-world implementation to reduce endoscopy waiting lists.
- Trial recruitment via text messages is being pioneered in collaboration with NHS Digital to enhance uptake of the ongoing large screening trial (BEST4[3]).

[2] Models for community health and development - community readiness | Community Tool Box

[3] Use of a non-endoscopic capsule-sponge triage test for reflux symptoms: results from the NHS England prospective real-world evaluation - Alimentary Pharmacology & Therapeutics | Pharmacology Journal | Wiley Online Library

- Evidence from the UK trials has been used to recommend the use of the capsule sponge in the US and Europe. Adoption of the capsule sponge has been slower in the UK; the capsule sponge has been adopted in Scotland based on real-world evidence evaluation.
- The BEST4 screening trial is using morbidity and mortality as co-primary endpoints.

Using the CanRisk tool to inform patient decisions

- Risk stratification tools like CanRisk are classed as medical devices by the National Institute for Health and Care Excellence (NICE).
- Such tools could target screening activity on the highest-risk groups, though not all cancers have reliable risk factors on which to base risk stratification.

Big, joined-up data could improve trial design and evaluations

- The COVID-IMPACT consortium analyses de-identified, linked, healthcare datasets from across the UK to study COVID-19's relationship with major diseases.
- Whole-population data for complex diseases like cancer could enhance screening trial assessments while enabling studies of representative cohorts and sub-groups with protected characteristics.[4]

Lessons in faster commercialisation and scaling from the US

- Capital funding is easier to acquire than in the UK. The reward size and speed of return on investment in the US market are more attractive to investors.
- The US better supports fast-tracking of breakthrough devices and devices comparable to an existing product on the market.
- The FDA electronic Submissions Template and Resource (eSTAR) streamlines the regulatory review process.
- The Medicare Coverage with Evidence Development (CED) framework allows for the conditional introduction of technologies whilst evidence is accumulated and evaluated.

[4] The Sudlow Review - HDR UK

Current limitations

The UK has a strong research reputation for scientific discovery, despite the limitations discussed below. However, the UK struggles to commercialise and scale research output from its universities. Many innovations are not sufficiently supported and fail before achieving broad NHS adoption.

Better data linkage and data governance is required

- There is unclear data privacy guidance for using large-scale patient data sets for prospective research, which can lead to prolonged delays in research projects.
- Research trial recruitment is under-resourced, as seen with NHS Digitrials. Using digital tools for more effective trial recruitment remains time-consuming and expensive. During the BEST4 capsule sponge trial, significant data privacy and permission barriers and delays were experienced when setting up text messages for more effective trial recruitment.
- Boundaries between local researchers and hospitals could be more permeable, with more effective data linkages to foster collaboration. There are concerns about future graphics processing unit (GPU) resource availability in the UK. Participants pointed out that the UKRI's plans to continue financial research support for GPU resources were uncertain.

The high threshold for evidence and a low-risk appetite bake inertia into adoption pathways

- Determining adequate surrogate indicators for mortality could enable faster or conditional technology adoption in the NHS, if satisfactory to the National Screening Committee.
- NHS adoption hinges on timely updates to guidance and regulation.
- The UK's lower risk appetite for biomedical technologies limits trial design, scale-up, and adoption within the NHS.
- Participants asked what incentives might rebalance risk-taking in the NHS.

There is a culture of inconsistent evaluation, making it hard to demonstrate impact

- Robust evaluation plans and follow-through after trials conducted in the NHS are often lacking.
- Some participants felt that no clear framework exists for determining the level of evidence required for NHS device adoption.
- The lack of clarity on thresholds for sufficient evidence and evaluations can lead to additional spending on consultancies, which drives more cost into the NHS adoption process.
- A UK phenomenon of endless pilot programmes was mentioned, where innovators struggle to develop a rigorous scientific foundation to show benefits.
- Inconsistent evaluation risks wasting taxpayer money by investing in ineffective or poor value-for-money devices.

There is a lack of funding for spinouts targeting the NHS

- While the NHS is admired as a single-payer system that should enable broad technology adoption, it isn't working in practice. Innovators prioritise larger markets like the US over the UK because they promise higher rewards over shorter timelines.
- Slow adoption of technological innovation by the NHS further deters international investors, resulting in undercapitalised ventures and difficulties attracting experienced industry leaders to UK academic spinouts.

More needs to be done to address the gap between product development and NHS adoption

- Delays in technology adoption in the NHS lead many innovations to fail or abandon the UK market.
- Participants questioned whether the NHS should be legally obligated to adopt devices recommended by NICE, as is the case for medicines.
- Hidden processes, such as Medicines and Healthcare products Regulatory Agency (MHRA) technical reviews, slow down patient access to technologies and are often significantly more prolonged in the UK than in Europe or the US.

- The Innovative Devices Access Pathway (IDAP) helps bring new medical technologies to the NHS and connects start-ups with regulators; however, it currently supports only eight technologies, and participants felt more could be done in this space.

Reflections

Community-based approaches are proven to be effective

- Evidence is necessary but insufficient without considering community readiness and psycho-social factors.
- Public mandates, derived through citizen assemblies and public dialogues, could lead to more effective policies addressing drivers of cancer such as tobacco, alcohol, diet, physical inactivity, and air pollution.

Invest in better education and health literacy

- Basic knowledge building and improving public health literacy are essential.
- Recent charity campaigns and high-profile individuals sharing their cancer diagnosis have demonstrated the power of awareness-raising efforts.
- Personal, social, health and economic (PSHE) education is a vehicle for building foundational knowledge and there is room to improve the current curriculum. Breast cancer is currently included in the PSHE curriculum, but prostate cancer is not and could be.

Continue to promote targeted screening

- Successful screening programmes tailor the services and information to the target communities and can address health inequalities.
- Awareness of different patients' perspectives is necessary; providing patients with too much information can lead to confusion and inaction rather than assisting patients in making an informed choice.
- Community champions have shown success in increasing early cancer screening uptake.

Utilise community pharmacies more

- Community pharmacies can boost public access to clinical trials by utilising their clinical capabilities, geographical coverage (notably in deprived areas) and strong brand trust.
- Pharmacies are already being used effectively in screening trials (BEST4) and programmes like Our Future Health and could be used for clinical trials more widely in the future.
- Trials involving community pharmacies have highlighted the need for shared data records and system-led pathway design to ensure continuity in patient care and effective GP referral.
- Automation is expected to free pharmacy staff to be available for additional responsibilities, such as screening, diagnosis and managing non-complex chronic conditions, subject to the availability of sustainable funding.
- Using customer purchasing patterns to identify and invite symptomatic individuals for cancer screening could be explored and ethically assessed.

Improve data and evaluative cultures

- Data such as family history of cancer is still not routinely collected despite being a key risk factor for cancer.
- Greater access to and homogenisation of NHS data and digital tools is needed.
- Effective methodologies for iterative, planned analyses exist and are well-reported by health economists.
- Better mechanisms for high quality and rapid evaluation of pilot programmes should be adopted using existing evaluation methodologies.
- Productivity- and capacity-saving innovations that demonstrate clear benefits could be prioritised for NHS adoption.

Foster greater collaboration

- Collaboration between research and hospitals should be made easier.
- A more integrated approach across different disease areas is needed.

- Pharmacies, as community hubs, are well-positioned to expand their role as the automation of prescription dispensing evolves.
- The Health Mission offers opportunities for broader cross-departmental cooperation to address the challenges raised during the workshop discussion.

Follow-up points for consideration

Potential next steps arising from this discussion include:

- **Health literacy** Leverage trusted community voices, including pharmacies and local health champions, to boost the uptake of cancer prevention efforts.
- **Screening uptake** Enhance the role of pharmacies and other community healthcare settings to improve screening accessibility.
- **Partnerships** Use examples like the Cambridge Cancer Research Hospital to increase the porosity between hospitals, research institutions and the private sector and foster collaboration.
- **Data linkages** Address regulatory and governance barriers in combination with long-term investment in data infrastructure to enable broader, ethically sound use of integrated health data.
- **Evaluation** Increase evaluative capacity and capability to allow the most promising innovations to be more easily identified and supported.
- **Conditional adoption** Develop a framework for conditionally adopting promising technologies while gathering trial outcome data and real-world evidence.
- **Approval pathways** Develop a timely, effective National Institute for Health and Care Excellence (NICE) pathway for devices that mandates similar legal obligations for NHS adoption to NICE drug adoption pathways.
- **Start-up support** Expand programmes such as the Innovative Devices Access Pathway (IDAP) to accommodate a wider range of emerging innovations.