Global Counsel

Health UK

Global developments and the future of UK cancer screening

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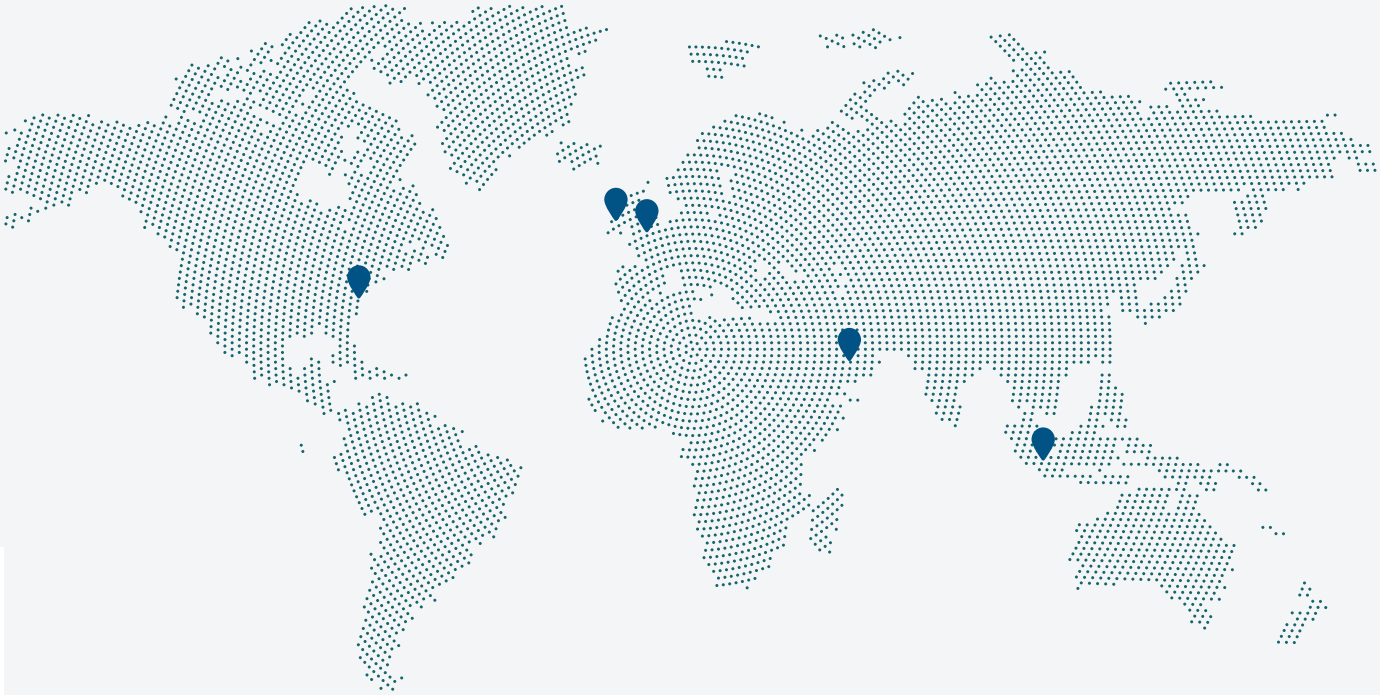


About Telstra Health

At Telstra Health, we work to improve lives through digitally-enabled care for our community. Our purpose drives us as we strive to realise a connected and improved digital health experience for all.

By providing software products, solutions and platforms, we work with care providers in primary, secondary and system-level healthcare settings to connect health information, care providers and their populations.

Our clinical and administrative systems, health data analytics, population health solutions, and information exchange platforms help providers to improve the quality, safety and efficiency of the healthcare they deliver.

We help enable clinicians and care providers in all settings to deliver care in new ways and enable ideal health.

Introduction

Rapid scientific developments across information technology, diagnostics, medical devices and pharmaceuticals have revolutionised the landscape for cancer treatment globally.

For patients given a timely cancer diagnosis, survival rates have never been better and, with revolutions in genomics and Artificial Intelligence (AI) gathering pace, the tide could soon turn comprehensively in favour of patients.

However, key to ensuring patients can benefit from this innovation is providing a comprehensive and accessible national screening service, allowing for timely access to dedicated care and appropriate treatments. Implementing such services will be crucial to delivery of major screening commitments, and to addressing shortcomings in current screening systems.

This report looks to provide an overview of the global work underway to improve access to – and the operation of – cancer screening services. The report then provides a deep-dive into cancer screening services in England, including the chronic challenges faced prior to and since the covid-19 pandemic. Finally, we examine the change in Australia's approach to cancer screening – including the importance of proactive public policymaking working in tandem with leading digital solutions, setting out how this could be brought to bear to the benefit of patients in England.

Key observations

Investment in future-proofed systems is key: Amid an ecosystem brimming with innovation, investment in future-proofed, scalable systems will be vital to ensure the UK is well-placed to accommodate and roll-out novel developments in cancer screening, diagnostics and treatments, along with new developments in polygenic risk scoring. Although the UK government is facing a period of fiscal restraint, investment in such a crucial area should be prioritised in order to maintain economic competitiveness and deliver world-leading services to patients. As programs shift to a more personalised screening approach in future, for example based upon HPV vaccination, digital algorithms that are underpinned by clinical guidelines will be critical to ensure the right people are screened at the right time.

Rapid implementation can be achieved: Telstra Health's solution in Australia was operational by the end of 2017 to support the introduction of HPV screening and fully operational by mid-2018. The NCSR was then expanded to implement the NBCSP by the end of 2019. With the UK government demonstrating bold thinking and rapid implementation during the covid-19 pandemic, significant benefits for patients can be achieved at an early stage. What is more, Telstra Health's system is constantly fine-tuned through a process of continuous improvement based on data insights, thereby iterating the future-proofing process.

Screening systems operate least effectively in isolation: As highlighted by the Richards Review, and other global examples, a focus on system consolidation through interoperability should be the lodestar for policymakers. It is encouraging to see the work initially launched by NHSX to address the complex systems in operation across the UK – this should continue to focus on harmonisation of distinct healthcare providers, ensuring that the fleet of speedboats can become a convoy.

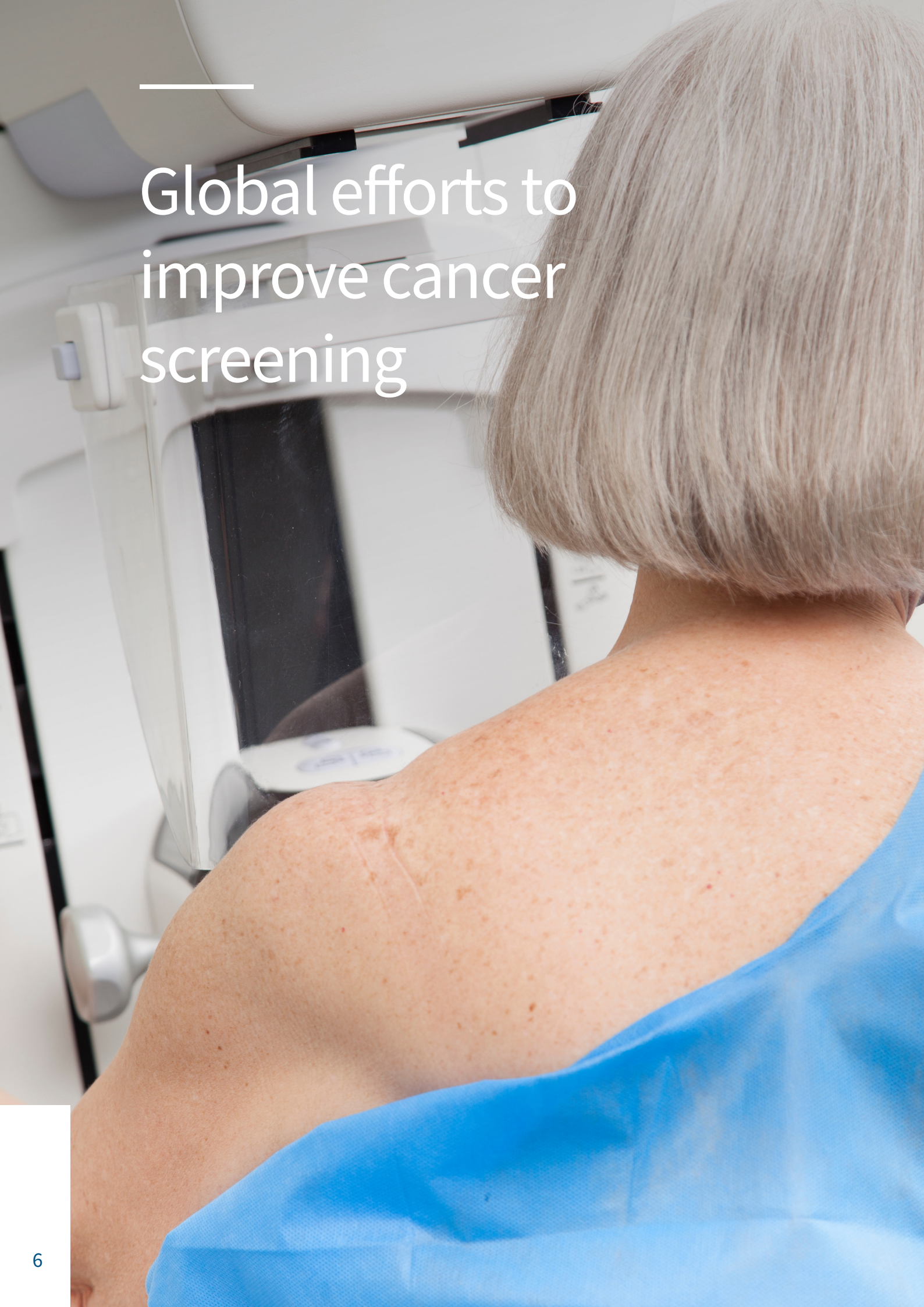
Investment can drive improvement in health inequalities: Telstra Health's previous work with Cancer Research UK further revealed the widening cancer inequalities for those from areas of higher deprivation, or those from ethnic minority backgrounds. Through greater system integration, services working closely in these communities can be more effectively brought into the fold, enhancing outreach and access initiatives.

Digital solutions can be the "fourth factor of production": As workforce pressures continue to mount across the NHS, appropriately harnessed digital solutions can reduce the administrative burden on healthcare workers. Targeted investment in cancer screening solutions can play a critical role, providing automatic follow-up alerts, improved online access and potentially presentation of patients with more advanced cancers in clinical settings.

Strong clinical governance and oversight of implementation are key: Delivering digital technology in a safe and effective manner is crucial to the roll-out of screening solutions. This requires deep subject matter and clinical expertise in co-designing and delivering population health programs, as well as working closely with clinical and programme stakeholders.

Future-proofed digital systems are only one piece of the puzzle: Digital systems on their own are not a panacea for challenges in cancer screening and access. Global evidence shows that a strong and well-supported range of policies is needed alongside digitisation to drive improvements in access. The government's commitments in the NHS Long Term Plan, along with subsequent initiatives particularly in bowel screening, demonstrate the importance of a whole system effort.

Global efforts to improve cancer screening



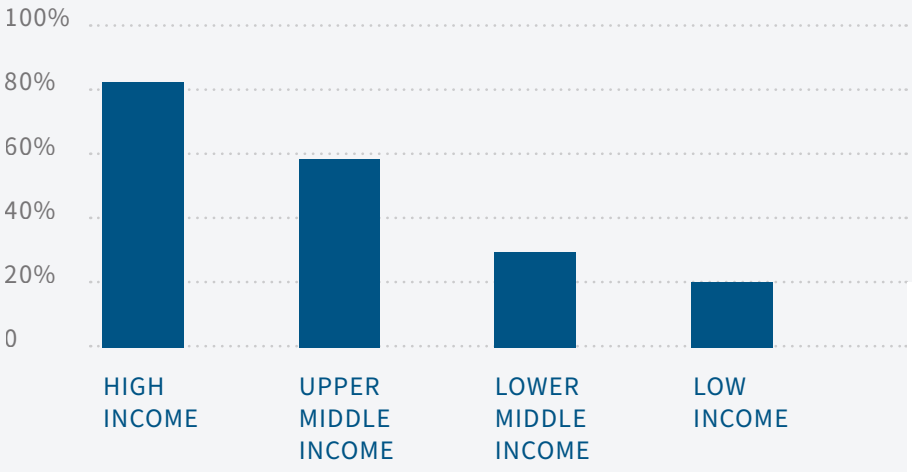
In the aftermath of the covid-19 pandemic, scientific advances coupled with behavioural changes and digital health innovation have brought a renewed focus on cancer screening. The social and economic impact of cancer continues to be substantial; the total annual economic cost of cancer in 2010 was estimated at approximately $1.16 trn[1], while in the UK, bowel cancer alone costs the NHS £1.74 bn annually[2].

In part to tackle these longstanding issues, along with the backlog in screening and cancer care brought about by the pandemic, policymakers have shown new impetus to update previous screening programmes, harnessing scientific expertise to drive substantial improvements across a range of cancers.

WORLD HEALTH ORGANIZATION

Co-ordinating and driving much of the global activity on cancer screening is the World Health Organization (WHO), focussing primarily on breast and cervical cancer. With breast cancer the most common form of cancer among women worldwide – and cervical cancer the fourth most common – work has primarily focussed on overcoming substantial health inequalities.

PERCENTAGE OF COUNTRIES WITH HPV VACCINE IN THE NATIONAL IMMUNISATION SCHEDULE, BY WORLD BANK INCOME GROUP (2020)



SOURCE: WHO DATA, 2020

Since 2018, the WHO has set out the following ambitions and strategies to stimulate improvements in lower- and middle-income countries.

Cervical cancer: Ensuring 90% of girls are fully vaccinated against HPV by the age of 15, and that 70% of women have been screened at least once by the age of 35, and again by age 45.

Breast cancer: Diagnose at least 60% of invasive breast cancers by stage 1 or 2, complete evaluation and pathology within 60 days, and ensure 80% of those testing positive undergo treatments and safely return home.

SUB-SAHARAN AFRICA

Closely linked to the strategy and commitments of the WHO, along with GAVI, the Vaccine Alliance, has been the major screening activity currently underway in sub-Saharan Africa. Due to an ageing and growing population in these countries, cervical cancer rates have grown substantially, with rates in Malawi now the highest in the world: rates currently stand at 75.9 per 100,000, nearly ten times that in the USA (8.1 per 100,000)[3].

With cervical cancer constituting 59% of cancer cases occurring in countries without HPV vaccination access, and only 16.9% of women in the region having access to screening, GAVI's decade of work working with screening services and vaccinating women and girls in sub-Saharan Africa has been crucial in turning the tide against the cancer. Since 2012, 19 sub-Saharan African countries (29 countries in total) have introduced HPV vaccination programmes, with Burkina Faso, Lesotho and Sierra Leone implementing these in 2022 alone.

With vaccination rates set to increase on the back of GAVI and the WHO's work, the scope for greater HPV self-testing is likely to improve for women and girls across the region.

EUROPEAN UNION

In the European Union (EU), a previous political reluctance to engage with substantive health-related policy across Member States has, in the aftermath of the pandemic and the commencement of the von der Leyen presidency, made way for a host of policy proposals designed to drive prevention, improve patient access to innovation and develop a European Health Union.

One of the EU's flagship proposals in this vein is the Beating Cancer Plan. Described by the European Commission as a "key pillar of a stronger European Health Union", the Beating Cancer Plan has been launched to "mitigate the impact of the covid-19 pandemic on cancer care" while, at the same time, initiating and supporting "structural improvements for a more sustainable cancer pathway".[4]

Throughout 2022, the Commission's proposals have become more fully developed, with a robust focus on driving access to screening services. Guiding this is the Commission's aim of ensuring that "90% of the EU population who qualify for breast, cervical and colorectal cancer screenings are offered such screening by 2025."[5] The Beating Cancer Plan, which in part looks to update previous Commission screening proposals based on the latest scientific evidence and innovation, sets out a range of policy recommendations to deliver on this ambition (and others) across distinct cancers. These include the following:

- **Breast cancer:** Lowering the age at which women are eligible to access screening to 45-74, plus promoting the roll-out of MRI scans for women with very dense breasts
- **Cervical cancer:** Providing HPV testing for women aged 30 to 65, every five years (with HPV vaccination status taken into account)
- **Lung cancer:** Testing for current and former heavy smokers aged 50-75
- **Prostate cancer:** Improving access to prostate specific antigen testing in men up to 70, along with MRI scans for follow-up treatment
- **Gastric cancer:** In places with high gastric cancer incidence and death rates, screening for Helicobacter pylori and surveillance of precancerous stomach lesions
- **Colorectal cancer:** Providing triage testing for colorectal cancer in people aged 50-74 through faecal immunochemical testing (FIT) to determine follow-up via endoscopy/colonoscopy.[6]

Alongside this suite of policy measures, the European Commission has provided substantial financial backing, releasing €38.5m from the EU4Health programme to drive access to cancer screening services, along with €60m from Horizon Europe.[7] This funding is set to support a systematic monitoring system – the European Cancer Information System (ECIS) - allowing the Commission to understand how the cancer screening recommendations are being implemented at a Member State level. Through ECIS, Member States will be required to report on progress against the new targets by the end of 2025, and subsequently every four years.

Overall, the European Commission's proposals stand as a step-change in the EU's approach to health prevention and intervention, setting out ambitious proposals to drive substantial improvements in cancer outcomes across Member States. With screening sitting at the heart of this aim, successful delivery across Member States could repair the damage of the covid-19 pandemic and revolutionise timely patient access to care.

SWEDEN

Beyond the enhanced activity of the European Commission, EU member states are increasingly delivering novel and innovative approaches to cancer screening, driving substantial progress against previously stubborn access standards.

One notable example of this is in Sweden where, in light of the covid-19 pandemic, home testing solutions have substantially improved access to – and engagement with – cervical cancer screening services. Under a scheme launched during the emergency phase of the pandemic, HPV self-testing kits were provided to eligible women, including those between 23 and 29 who had previously been offered Pap smear testing. As noted by the WHO, the roll-out of 330,000 home testing kits in Stockholm "saw a dramatic 10% increase in population test coverage – from 75% to 85% - in just one year".[8]

On the back of this successful scheme, the Swedish government introduced new regulations in July 2022 allowing women to either use at-home self-testing kits or see a clinician face-to-face for their screening appointments, allowing for wider and more appropriate access routes.

Such novel approaches to screening, stimulated by the unique circumstances of the pandemic and underpinned by robust information systems to track access, eligibility and follow-up, could see Sweden on the path to eliminating cervical cancer "five years from now".[9]

Spotlight on… England

As a high-income European country, the UK has a longstanding history in delivering advanced screening programmes, with over 15m people accessing such services each year. In England, there are currently three national cancer screening programmes: cervical screening, breast screening and bowel screening (with lung cancer screening also recommended). All three programmes share the same objective: to detect cancer, or abnormalities that could develop into cancer, early in order to reduce deaths.

ELIGIBILITY FOR CANCER SCREENING SERVICES IN ENGLAND

	CERVICAL SCREENING	BREAST SCREENING	BOWEL SCREENING
ELIGIBILITY	People with a cervix aged between 25-49 or 50-64	People registered as female with their GP who are aged between 50-71	Everyone aged between 60-74 (expanding to 50-59 year-olds by 2025)
FREQUENCY	Every three years for 25-49 year-olds Every five years for 50-64 year-olds	Every three years	Every two years

SOURCE: NHS ENGLAND

The national population screening programmes in England are implemented on the advice of the UK National Screening Committee (UK NSC). The UK NSC, which is accountable to the four UK Chief Medical Officers, is an independent committee that advises ministers and the NHS in England, Scotland, Wales and Northern Ireland on the case for introducing new screening programmes or making changes to existing ones. The UK NSC also supports implementation of screening programmes and maintains oversight of the cost effectiveness of programmes.

RECENT DEVELOPMENTS

Launched by former Prime Minister Theresa May, the NHS Long Term Plan outlined a new ambition that, by 2028, the proportion of cancers diagnosed at stages 1 and 2 would rise from half now to three-quarters of cancer patients. This would in part be achieved by maximising how many cancers were identified via screening through:

- → Modernising the Bowel Screening Programme with the FIT for haemoglobin;
- → Lower the starting age for bowel cancer screening to 50;
- → Implement HPV primary screening for cervical cancer across England by 2020;
- → Commissioning a review of the current cancer screening programmes and diagnostic capacity.[10]

In 2019 Sir Mike Richards, former National Cancer Director at the UK Department for Health and current Chair of the UK NSC, led an independent review concluding that, while national screening programmes saved approximately 10,000 lives a year through prevention and early diagnosis, urgent change was required to maximise their potential.[11]

There has indeed been progress since publication of both the NHS Long Term Plan and the Richards Review. Commitments on HPV primary screening and the roll-out of the FIT have been achieved, whilst Bowel Scope screening is also now being offered in 53% of GP practices in England. Moreover, in 2022, the remit of the UK NSC was expanded to include consideration of both targeted screening and stratified screening, and how these could complement population screening programmes.

There have also been new initiatives designed to improve early diagnosis and survival for those diagnosed with cancer. Following a recommendation from the UK NSC, the NHS has offered a Targeted Lung Health Check programme since autumn 2019.[12] This programme aims to work with Integrated Care Boards that cover areas with the highest rates of mortality from lung cancer. People aged between 55 and 75 years-old who have smoked will be invited to a free lung check, and those assessed at high risk will be offered a low dose CT scan. The programme is expected to be rolled out nationally across England from 2024 onwards.

Similarly, the UK has expanded access to home testing kits for cancers, most notably bowel cancer. As announced by the NHS in August 2022, those aged 58 in England are now automatically sent FITs once eligible, expanding the pool of those able to access screening services to over 800,000 and making substantial progress against the fourth most common type of cancer annually in the UK.[13]

CHALLENGES FACED IN NHS CANCER SCREENING DELIVERY

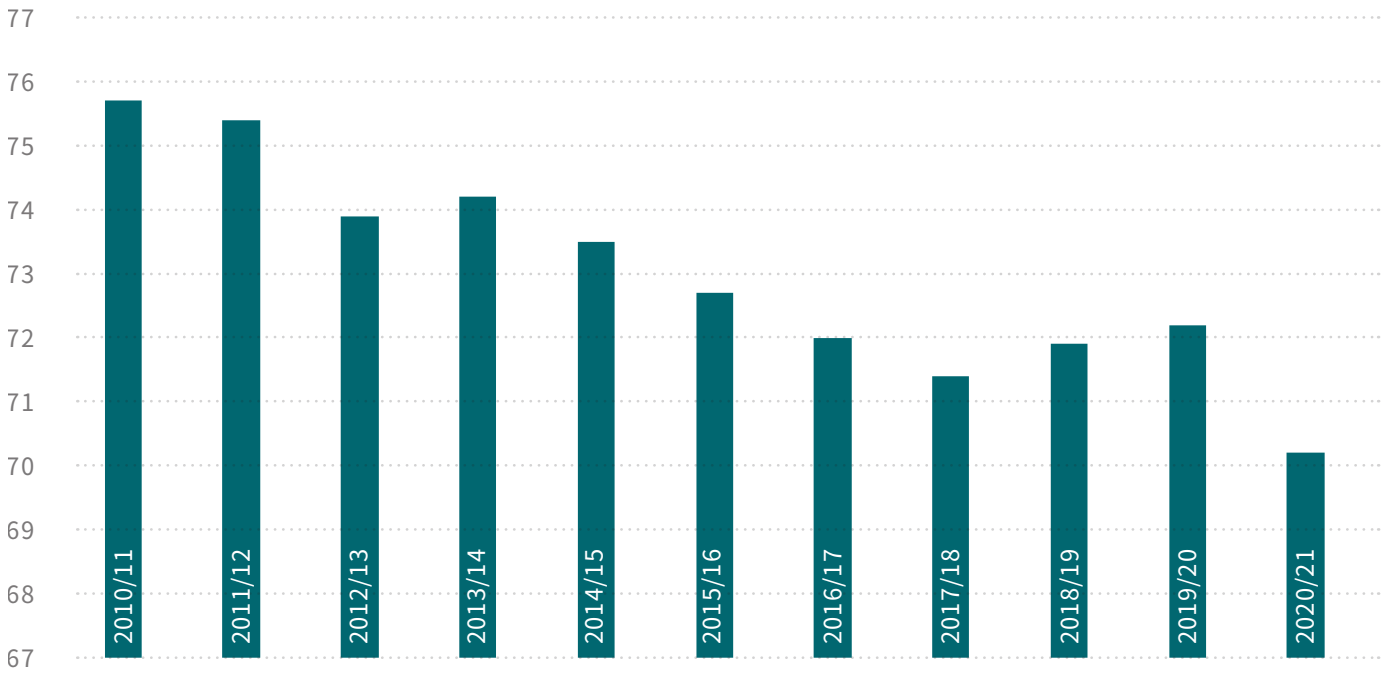
However, since the publication of the Richards Review, the impact of the covid-19 pandemic has significantly impacted progress on key cancer screening metrics, whilst access to treatment has similarly suffered amidst a compounding of the elective treatment backlog.

In the wider context, the NHS is currently facing unprecedented pressures, seriously affecting its ability to provide timely elective care, including for cancer services. At the time of writing, the number of patients in England waiting for routine hospital care has reached a record of 7 million, of which over 323,000 patients have waited over a year for elective treatments.[14] Across the UK as a whole, targets for cancer treatments have been missed, with Q3 2021/22 seeing the lowest performance on record as 79% of patients had their first consultant appointment within two weeks, far below the 93% target.[15]

In a recent report undertaken alongside Cancer Research UK, Telstra Health UK found that the pandemic had had a notable impact on patients entering the cancer treatment pathway, including:

- → A general decrease in patients undergoing cancer surgery at the start of the pandemic
- → Women aged 40-49 saw a decrease in surgery of 12.3% at the start of the pandemic, and 13.8% during the recovery period
- → Age-standardised cancer mortality rates for all cancers combined were also affected by the pandemic, with an increase in hospital deaths observed following the start of the pandemic.[16]

CERVICAL SCREENING COVERAGE (% AGED 25-64)



SOURCE: NUFFIELD TRUST, NHS DIGITAL - CERVICAL SCREENING PROGRAMME

Access to treatments, along with progress against a number of screening targets and policy initiatives, has understandably been significantly affected by the pandemic. In March 2020, the NHS in England was required to take a range of measures to limit circulation of covid-19 and prevent vulnerable patients from being exposed to the effects of the virus, limiting access to services and creating an unavoidable backlog.

COVID-19 TIMELINE FOR NHS SCREENING SERVICES

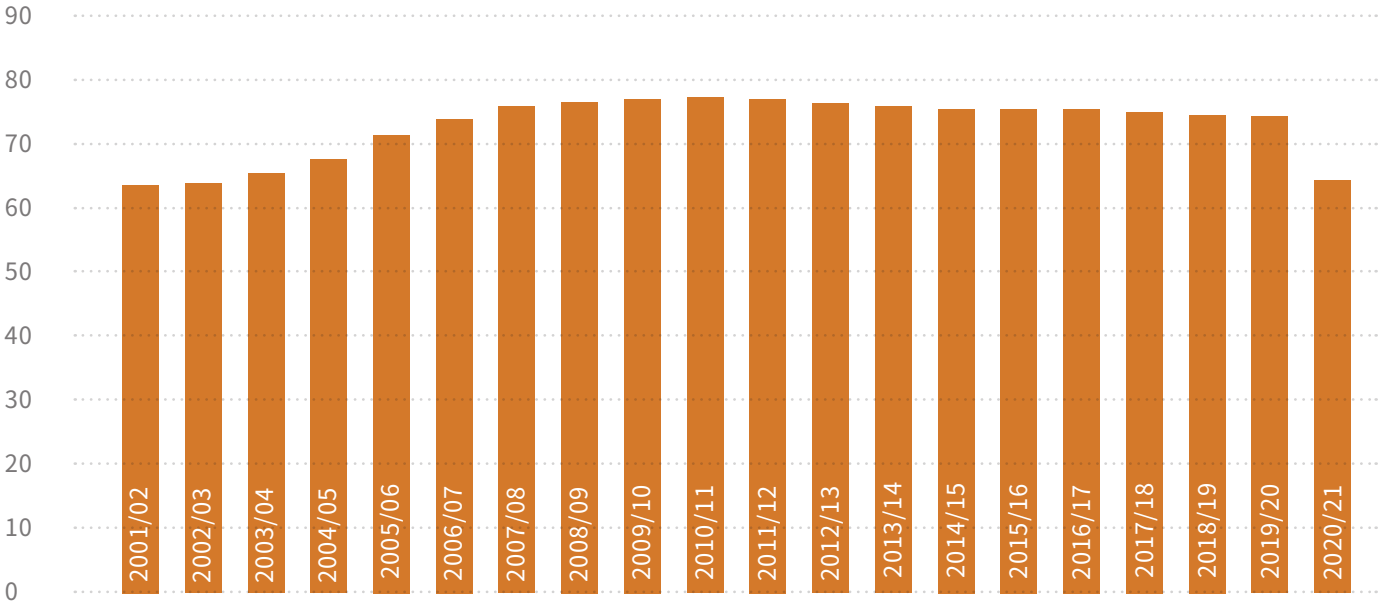
March 2020: NHS Breast Screening Units offered option of pausing screening for 3 months to allow staff redeployment to tackle covid-19

April 2020: NHS England letter states that screening services should recommence critical operations.

July 2020: Vast majority of screening services recommence activity. Backlogs in screening activity from service wind-down required to be addressed

Despite most services fully recommencing activity by July 2020 (and all services by September 2020), the impact of workforce sickness/burnout, staff redeployment, self-isolation, social distancing and infection prevention and control (IPC) measures) compounded the backlog exacerbated during the NHS's emergency response to the pandemic, necessitating delayed appointments, lengthened appointment slots and increased time between screening invitations. Equally, shielding and self-isolation among patients (varying across geographies throughout the pandemic) further impacted outreach programmes and campaigns, substantially affecting patient access to screening and timely treatment.

BREAST SCREENING COVERAGE (% AGED 53-70)



LONG-STANDING CHALLENGES PRIOR TO THE PANDEMIC

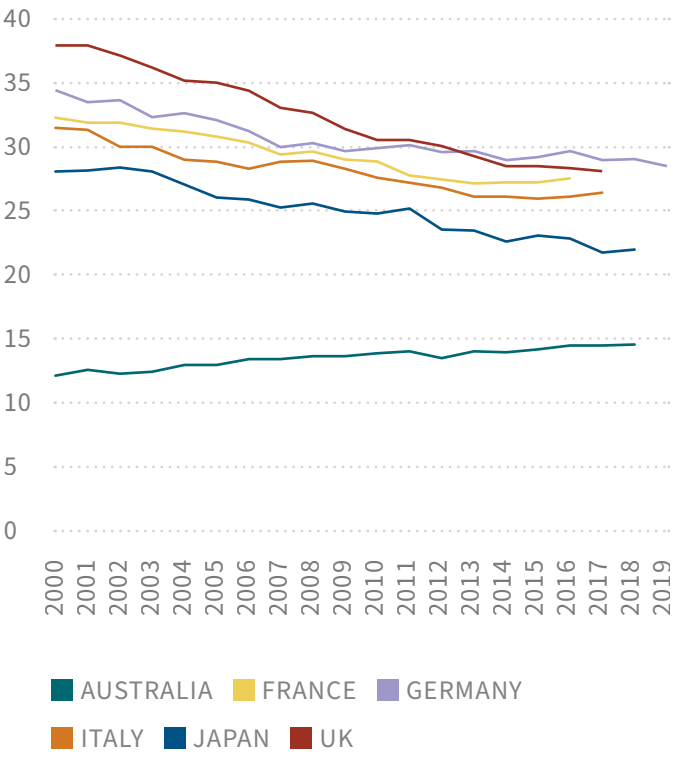
Nevertheless, it is important to note that access to services was already facing unprecedented challenge prior to covid-19. Across the UK, in March 2020 5.4m were waiting for consultant-led treatment, with substantial waiting lists in England (4.4m), Scotland (350,000), Wales (457,000) and Northern Ireland (307,000).[17] For diagnostic services too, services across the UK had been experiencing significant pressure before the pandemic, fuelled in part by lower levels of diagnostic capacity compared with other OECD nations. In England, 1.08m people had been waiting for scans in February 2020, the highest number since December 2006. Similar pressures were seen across other devolved nations, with diagnostic waiting lists standing at 88,000 in Scotland, 110,000 in Wales and 131,000 in Northern Ireland.[18]

For screening services too, progress on access had been showing notable decline since a peak in 2010/11. As noted by the Richards Review prior to the pandemic, "there is...a sense that we are now slipping"[19] following progress in the preceding decade. Indeed, as shown in the accompanying charts, progress against breast and cervical cancers fell by the following:

- → Breast cancer coverage: 77.2% (2010/11) to 74.2% (2019/20)
- → Cervical cancer screening (ages 25-64): 75.7% to 72.2% (2019/29)

When compared internationally, breast cancer mortality rates in the UK - although declining - have long remained below major comparator nations, including France, Japan, Italy and Australia. However, it is encouraging to note that access to bowel cancer screening has seen good progress, with the proportion of those able to access screening rising from 45.9% (2010/11) to 63.8% (2019/30).[20]

BREAST CANCER MORTALITY RATES, %



SOURCE: NUFFIELD TRUST, OECD (HEALTH STATUS, MORTALITY)

INEQUALITIES

As noted by Cancer Research UK, "in theory, almost everyone who's eligible for screening has the same opportunities to access it. But in reality, this isn't always the case".[21] Research from Cancer Research UK has shown that 20,000 more cancer cases each year are diagnosed in areas of the UK with higher rates of deprivation. In terms of screening, academic studies into ethnic groups' access to screening in the UK have shown:

- → Fewer patients from black ethnic groups were diagnosed via screening compared to white, Asian or mixed ethnicity groups, most notably for breast and colorectal cancers.
- → Lower rates of diagnosis are "consistent with [black patients'] lower uptake of screening opportunities"[22]

The Richards Review has equally shone a light on the screening access challenges faced by those in under-served groups, noting that "screening has a huge potential to reduce health inequalities" and, consequently, "it is critical that active steps are taken to promote equity" in these groups.[23]

The government has looked to address these challenges, particularly in light of covid-19. NHS England and the newly-established Office for Health Improvement and Disparities (OHID) continue to work to reduce inequalities within the CORE20PLUS5 approach, including recommitting to ensuring 75% of cancer diagnoses occur at stage 1 or 2 by 2028. This is a highly welcome development during a period of intense pressure for NHS services, most notably in deprived communities.

INFORMATION SYSTEM CHALLENGES IN SCREENING

Screening services in England face a range of challenges, including those related to staffing, governance, funding and financial incentives. In addition, it has long been recognised that there are chronic challenges in the operation and roll-out of IT systems; the House of Commons' Health and Social Care Committee noted in June 2022 that "even before the pandemic there were serious concerns about the effectiveness of national cancer screening services, particularly over IT systems and the speed at which innovations have been implemented".[24]

The Richards Review has been critical in shining a light on information system challenges in particular. Noting that "information systems…currently sit in an over-complicated landscape which hinders the delivery of screening programmes"[25], the Review called attention to key challenges in the following areas:

Data extraction: A complex variety of systems have emerged across the UK, each designed to extract demographic information from a range of data systems. However, the review noted that "some information which could enable service providers to contact invitees more easily (such as mobile phone numbers for text messaging) is not routinely extracted."

Number and variety of IT platforms: Although the Review notes that bowel and abdominal aortic aneurysm screening programmes benefit from single nationwide IT systems, this is not the case for older systems, such as those for breast and cervical cancer ("effectively one per provider").

Interoperability: The scale and complexity of systems required to analyse and update screening records frequently creates interoperability challenges, both between local and national systems and within trusts themselves.

Personalisation and patient control: Complexity within systems has also limited the ability for patients to proactively manage and update their screening information and appointments; indeed the Richards Review noted that "none of these functions are currently available" for patients in the UK.

Prioritisation: Local or central long-term strategy for developing up-to-date systems has been challenging to achieve, particularly given the 'lumpiness' of capital spending commitments in the past decade. The Richards Review found that work to drive much-needed improvements has "at times been slowed, stopped or duplicated."[26]

To address these issues, the Richards Review recommended NHSX (now merged into NHS England) should establish a roadmap for the roll-out of new IT systems, with a strong focus on "functionality needed to support improvements in uptake and coverage of screening". The Department of Health and Social Care has, since the review and subsequent inquiries from the Health and Social Care Committee, undertaken important work to address the Review's recommendations. These include:

- → Supporting the roll-out of Community Diagnostic Centres through a dedicated multi-year programme of capital spending, with a focus on lung and breast cancer screening in particular.
- → Expanding the remit of the UK NSC to make recommendations on national targeted and stratified screening programmes.
- → NHSX's establishment of the Digital Transformation of Screening Programme (DToS), focussing on rolling out "future-proofed, interoperable digital systems".
- → New national campaigns to improve cervical and bowel cancer screening[27].

However, as the NHS enters further into a period of operational strain, along with a tighter fiscal settlement, delivering efficient, proven and cost-effective solutions to these chronic challenges will be ever more vital. In the following section, we will set out recent experience in Australia and the opportunities afforded by the implementation of a National Cancer Screening Register (NCSR), contracted to Telstra Health by the Australian Government.

The opportunity to transform: cancer screening in Australia

In understanding the distinct challenges, and potential solutions, to current issues within England's approach to cancer screening, it is valuable to look abroad to the roll-out of national digital platforms, using Australia's NCSR as an example.

AUSTRALIA'S APPROACH TO SCREENING

Currently, Australia has three nationally funded population-based cancer screening programmes:

- **National Cervical Screening Programme (NSCP):** Provides routine cervical screening for infection with HPV every five years for women aged between 25 and 74. The current programme replaced the Pap test in 2017, with the Australian Government expecting the programme to reduce mortality by 30%.
- **National Bowel Cancer Screening Programme (NBSCP):** Provides at-home immunochemical faecal occult blood tests (iFOBT) to those aged between 50 and 74. Participants with blood detected in samples are followed up by colonoscopy.
- **BreastScreen Australia**: Operated and delivered at state and territory level, BreastScreen Australia invites women aged 50 to 74 for a biennial mammogram, with women aged between 40 and 49 (and over 75) also eligible for a free mammogram (although not proactively invited).

The NCSP and NBCSP are underpinned by Australia's National Cancer Screening Register, enabled by the National Cancer Screening Register Act (2016). For the NCSP, the eight state and territory-based systems previously in use were merged and a single national record created.

TELSTRA HEALTH'S WORK WITH THE AUSTRALIAN GOVERNMENT

In May 2016, Telstra Health was contracted to implement and operate the NCSR, with the result being a world-leading platform facilitating single national electronic records of those eligible for screening. Based upon Telstra Health's Kyra Electronic Health Record infrastructure platform, Telstra Health has been able to provide a robust and scalable platform, securely accessible electronically by authenticated health professionals, pathologists, Federal and State governments, government agencies and participants of the screening programmes.

The primary functions of the NCSR are:

- → Identifying and inviting eligible participants and distributing home testing kits (where applicable)
- → Allowing for a digital exchange of information between the NCSR and the screening eco-system, in particular with laboratories and healthcare providers
- → Providing online user defined portals and integrations with clinical software for secure access to screening information
- → Providing a safety net by enabling follow up with healthcare providers to ensure patients with abnormalities undergo follow-up testing, in line with clinical guidelines
- → Providing harmonised data on outcomes to aid national reporting and inform clinical practice

WHAT HAS BEEN ACHIEVED?

The NCSR is a vital part of Australia's successful public policy achievements in cancer screening. Alongside the implementation of the NCSR, the introduction of HPV testing, cervical self-collection expansion, HPV vaccination and improved access to bowel testing kits, Australia is now on track to be the first country in the world to eliminate cervical cancer as a public health problem by 2035, and save 80,000 lives from bowel cancer by 2040 by increasing screening coverage.[28]

Through collaboration with the Australian Government, clinicians and participants, the NCSR has also enabled:

- → **Broader identification:** The NCSR has enabled a call-recall system with invitations to all eligible women for cervical screening who previously had not been screened for cervical cancer. This is crucial since more than 70% of those presenting with cervical cancer in Australia have not been screened (or are under-screened).
- → **Harmonised patient records:** 20% of cervical records migrated to the NCSR previously existed in duplicate form. Merging of duplicate records creates a more complete and harmonised electronic record.
- → **Greater interconnectivity:** All major Australian public and private laboratories are connected to the NCSR and are now submitting results electronically (and for the first time adhering to a nationally consistent standard required by law).
- → **Addressing health inequalities through digital integration:** With survival and access rates lower among Indigenous peoples, the NCSR's integration with Communicare (Australia's leading health software supporting Aboriginal and Torres Strait Islander Health Services) the NCSR is making screening data more accessible for Aboriginal Health Workers to identify under-screened people and improve participation.
- → **Improved online access:** Over 80% of cervical screening histories are now accessed online, rather than via time-consuming phone calls or fax requests to the NCSR. The number of fax requests for cervical screening histories has reduced by 94% in just one year.

Can the NHS learn from work in Australia?

The NHS in England and Australia's health system are clearly distinct systems, with differing patient pathways, funding systems and governance structures. However, since the screening programmes offered are highly similar, we believe that Telstra Health's work in Australia can help inform much of the approach underway in England, delivering improved access to screening tools for patients, clinicians and policymakers alike.

With significant policy changes underway globally, and with a renewed focus on how to deliver screening services to patients regardless of their social or ethnic background, our observations are:

Investment in future-proofed systems is key: Amid an ecosystem brimming with innovation, investment in future-proofed, scalable systems will be vital to ensure the UK is well-placed to accommodate and roll-out novel developments in cancer screening, diagnostics and treatments, along with new developments in polygenic risk scoring. Although the UK government is facing a period of fiscal restraint, investment in such a crucial area should be prioritised in order to maintain economic competitiveness and deliver world-leading services to patients. As programs shift to a more personalised screening approach in future, for example based upon HPV vaccination, digital algorithms that are underpinned by clinical guidelines will be critical to ensure the right people are screened at the right time.

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Screening systems operate least effectively in isolation: As highlighted by the Richards Review, and other global examples, a focus on system consolidation should be the lodestar for policymakers. It is encouraging to see the work initially launched by NHSX to address the complex systems in operation across the UK – this should continue to focus on harmonisation of across distinct healthcare providers, ensuring that the fleet of speedboats can become a convoy.

Investment can drive improvement in health inequalities: Telstra Health's previous work with Cancer Research UK further revealed the widening cancer inequalities for those from areas of higher deprivation, or those from ethnic minority backgrounds. Through greater system integration, services working closely in these communities can be more effectively brought into the fold, enhancing outreach and access initiatives.

Digital solutions can be the "fourth factor of production": As workforce pressures continue to mount across the NHS, appropriately harnessed digital solutions can reduce the administrative burden on healthcare workers. Targeted investment in cancer screening solutions can play a critical role, providing automatic follow-up alerts, improved online access and potentially presentation of patients with more advanced cancers in clinical settings.

Strong clinical governance and oversight of implementation are key: Delivering digital technology in a safe and effective manner is crucial to the roll-out of screening solutions. This requires deep subject matter and clinical expertise in co-designing and delivering population health programs, as well as working closely with clinical and programme stakeholders.

Future-proofed digital systems are only one piece of the puzzle: Digital systems on their own are not a panacea for challenges in cancer screening and access. Global evidence shows that a strong and well-supported range of policies is needed alongside digitisation to drive improvements in access. The government's commitments in the NHS Long Term Plan, along with subsequent initiatives particularly in bowel screening, demonstrate the importance of a whole system effort.

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