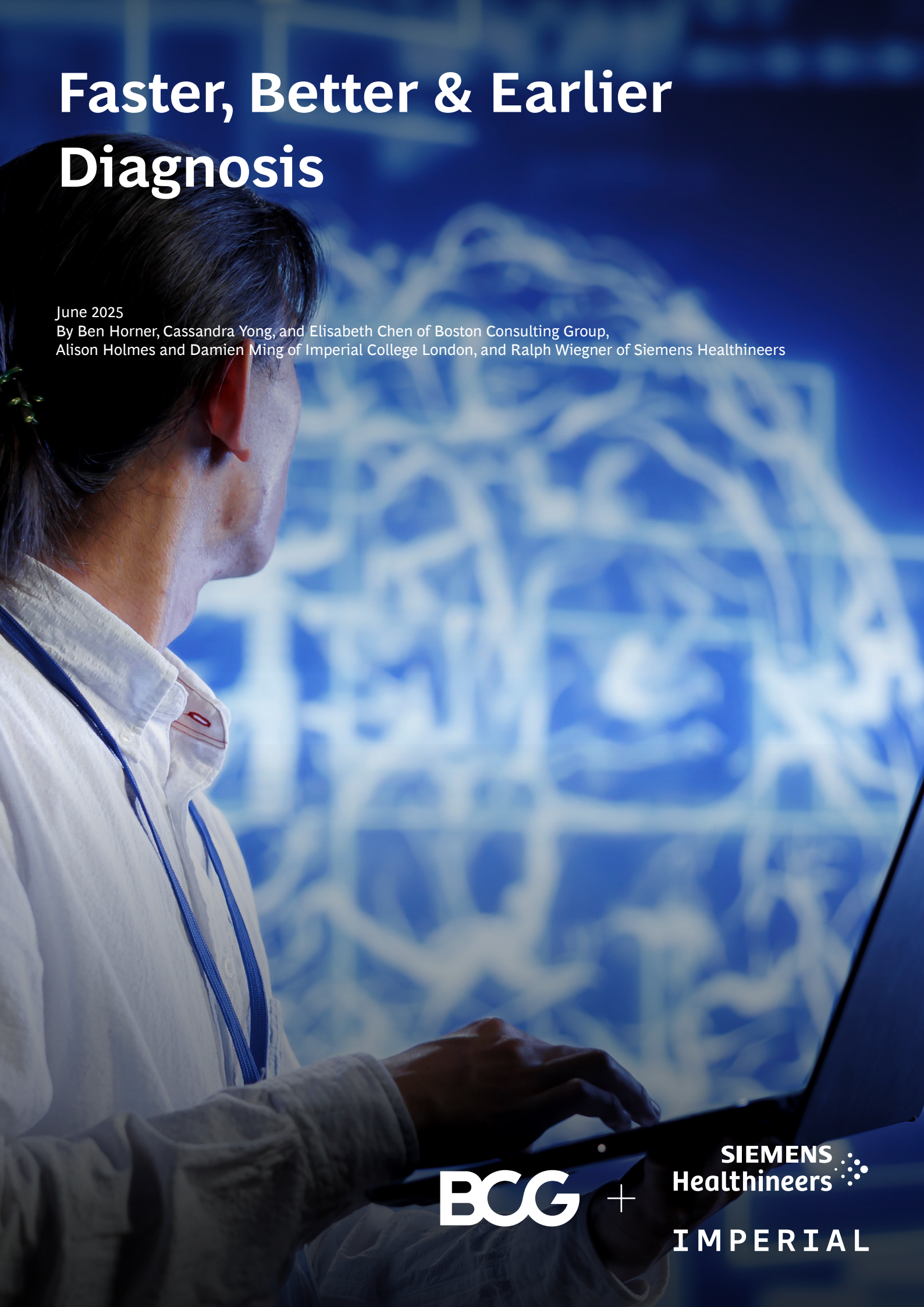
Faster, Better & Earlier Diagnosis



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BCG + SIEMENS Healthineers IMPERIAL

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Executive Summary

Innovation will enable a paradigm shift in the definition of diagnosis—**from isolated tests that inform single patient treatment decisions, to integrated multi-modal diagnostic data streams** that impact end-to-end clinical journeys, adaptive health systems and R&D.

The future vision for **faster, better and earlier diagnosis** could radically shift the provision of prevention and care. We outline key 'vision journeys' that illustrate the potential for transformative improvements in quality of life and health outcomes for individuals, NHS productivity and wider society.

An ambitious, fully implemented technology-driven vision for the NHS could **boost GDP by approximately £40 billion per year** and generate up to **£18 billion in NHS productivity gains**.

To unlock this future vision, the UK now has the opportunity to lay the foundations for **rapidly adopting and scaling (near-)mature technologies** for immediate benefits while **building a long-term innovation ecosystem** to drive future advancements.

Redefining ‘Diagnosis’

A Paradigm Shift Towards a Broader Perspective in Data Collection, Utilisation and Impact

The UK stands at a pivotal moment in time. Advancements in diagnostic technology and data science, along with the integration of multi-modal data over time, allow us to move away from a classical view of diagnosis—where diagnostic data from one patient at a single timepoint informs therapeutic decisions.

Now, there is an opportunity for a significant paradigm shift in the definition of diagnosis, moving towards:

1. **Faster** access to prevention, early diagnosis and clinical care
2. **Earlier**, proactive population health planning and healthcare delivery
3. **Better** innovation through diagnostic data-driven R&D

Across all three elements of faster, earlier and better diagnosis is a self-reinforcing learning cycle—where insights from diagnostics, research, and population health continuously refine one another.

Faster Access Across the End-to-end Clinical Journey

Exponential advances in computing power, diagnostics and AI-enabled technologies—in addition to strides made towards better specificity, sensitivity and portability of point of care devices—offer an unprecedented opportunity to radically reshape the end-to-end clinical journey.

Before individuals even become ‘ill’, the rise of increasingly affordable and powerful wearable devices combined with AI-driven integration of multi-modal diagnostic and broader personal and civic data (ranging from genomic data to shopping habits and social media activity), could risk-stratify individuals in real-time. Behavioural data could provide a broader picture of health, e.g., shopping data could aid early cancer diagnosis[1], voice analytics could help detect early relapse of mental health disorders[2], and speech changes could signal the progression of Alzheimer’s disease[3].

Targeted interventions and behavioural nudges could be truly personalised, notifying individuals on their personal devices, e.g., AI-enabled chatbots could proactively call people to help them to seek care and provide tailored behavioural advice.

Where care is required, individuals could first seek help via a digital front door. AI-enabled triage could go beyond basic symptom checkers by integrating clinical history and personal data to direct individuals to appropriate pathways, including personalised self-care recommendations.

When a diagnostic test is needed, testing could take place much closer to individuals. Rather than relying on hospitals or specialised clinics for complex tests, decentralised testing—e.g., point-of-care tests (POCTs), wearables and advanced imaging—could open novel care pathways in locations such as pharmacies and community diagnostic centres (CDCs). This shift could bring care within minutes of the majority of the population, enhancing access and uptake.

Within existing healthcare settings, AI could also enhance the accuracy and efficiency of diagnostic tools, e.g., AI and decision support systems could automate the interpretation of imaging or pathology data. Not only could this reduce radiologist workload and release capacity for complex cases, it could also further enable a shift into the community, by enabling a broader range of healthcare professionals—including pharmacists and community healthcare workers—to interpret outcomes from complex diagnostic tests.

For long-term health conditions, home monitoring devices, wearables and lab-grade diagnostic POCTs at the fingertips could form an integrated system that continuously collects data[4], such as sleep patterns, health vitals and advanced metrics (e.g., blood chemistry analysis via minimally invasive skin sensor patches, even in hospital settings[5]). This system could then predict and identify potential medical issues in advance, proactively enabling clinical assistance as needed before conditions snowball into more serious presentations.

Earlier, Proactive and Adaptive Health Systems

By integrating diagnostic data into Real-World Data (RWD), and using AI-driven analytics, healthcare systems could make significant strides in tailoring public health initiatives to individuals, regions and diseases where they will have the greatest impact.

The integration of patient-generated data (e.g., wearables, social media sentiment) with civic data (e.g., demographics, misinformation trends, societal determinants of health) could enable early identification of at-risk communities[4]. This, in turn, would allow for the pre-emptive deployment of resources and the implementation of real-time health countermeasures at scale. Real-time data—supported by algorithms such as digital twins of healthcare systems—could be used to monitor demand[6], predict surges, optimise resource allocation, and suggest, as well as monitor potential interventions (e.g., targeted vaccinations).

Over time, AI-powered population health monitoring could build a comprehensive picture of long-term public health trends, enabling better informed policy decisions, smarter healthcare infrastructure planning and the radical redesign of care pathways.

Better Innovation Through Diagnostic Data-Driven R&D

Better innovation, leveraging multi-modal diagnostic insights, could power a continuous research and learning ecosystem that accelerates scientific discovery and translational research to further enable improved long-term outcomes.

A fully integrated lifetime diagnostic record—from ‘cradle to grave’—capturing clinical, genetic, behavioural and environmental factors could drive research and unlock new insights in disease modelling and digital biomarker discovery. Within an integrated data ecosystem, AI and advanced diagnostic data could automatically identify novel patient cohorts for deeper research and rapidly find and enrol suitable patients into clinical trials.

Instead of relying on large-scale, in-person control arms, AI could facilitate the creation of ‘virtual control arms’, comparing trial participants to real-world patients with similar health profiles. Additionally, real-world diagnostic data from wearables and cloud-linked clinical diagnostic data could radically transform the clinical trial participant experience, reducing the need for frequent study visits, and minimising administrative burdens for clinicians. This shift would further blur the boundaries between research and everyday life.

Four Vision Journeys to Illustrate the Future

To illustrate the potential of innovation within this framework, we outline four future ‘vision journeys’. Each explores a different angle of common clinical pathways, highlighting how technological advances and an interconnected ecosystem can transform individual and population health management and as well as care delivery.

A paradigm shift towards an integrated ecosystem of diagnostic data, powering the clinical journey, adaptive health systems and R&D

Four visions to illustrate the future

Vision 1

FROM
an overburdened primary care system

TO
seamless self-management and real-time population health intervention

Vision 2

FROM
elderly people deteriorating in isolation

TO
independent living enabled by enhanced home monitoring

Vision 3

FROM
delayed diagnoses and poor outcomes

TO
earlier detection saving lives – while powering future research

Vision 4

FROM
undetected chronic diseases as ‘silent killers’

TO
targeted early detection and prevention on a national scale

Vision 1 | **From** an overburdened primary care system…

…to seamless self-management and real-time population health intervention

Scenario:

Viral respiratory illnesses

Why it matters

3.3m of UK population
visit their GPs for upper respiratory tract infections in a year[1]

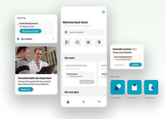
76% of GPs
more likely to prescribe antibiotics due to diagnostic uncertainty[2]

1 Amira's 5 year-old son Amit is on day 3 of a low fever and cough. As symptoms worsen, she seeks help

2 On her NHS App, the AI companion auto-syncs Amit's wearable data and suggests a likely viral infection requiring self management

Apple Watch & Fitbit offer tailored health insights for recreational use

Platform 24 & KLINIK redirect demand to right pathways and reduce GP wait



3 The app auto-orders a viral point of care test, drone-delivered within 3h; with positive viral results instantly uploaded

Proton Dx provides multi-pathogen testing, while Cepheid's Flu & COVID tests offer near-equal sensitivity and specificity to labs

4 An AI GP agent advises antibiotics are not needed, provides safety net advice & daily symptom check ins

Doctronic & Hippocratic AI offer chatbots for patient interaction and insight into treatment options

5 **Amit makes a full recovery, and his data auto-integrates into a centralised health system**

6 Amit & others' multimodal data (e.g., wearable, EHR, social media) feed into an AI population surveillance system, tracking spikes in flu-like symptoms

Bluedot integrates clinical & RWD (e.g., social media, flights) to predict disease

7 Operational digital-twin powered dashboards forecast spread and simulate interventions. With one click, UKHSA approves optimal responses

Siemens Healthineers model simulates resource utilisation in a hospital: scope to scale to systems in future

SIEMENS Healthineers

8 Interventions target high-risk areas, incl. real-time isolation alerts via AI, phone calls for elderly, self POCTs and increased staffing at local community diagnostic centres

NHS App and GP software can send personalised alerts; scope to link to population surveillance

NHS App

9 **The initial outbreak is contained. Pathogenic genome sequencing tracks virus variants, informing future vaccine development**

Oxford Nanopore uses long-read sequencing to monitor potential bacterial and viral outbreaks

Legend

- Technology examples [3 - 14]
- Clinical journey
- Adaptive health systems

Vision 2 | **From** elderly people deteriorating in isolation… **…to** independent living enabled by enhanced home monitoring

Scenario:
Elderly care

Sue, **an elderly woman living alone**, has been unwell for a few days

Why it matters

~220k admissions /yr
related to falls in people aged ≥65[1]

~£1.1b hospital costs /yr
from hip fractures alone[1]

Start

Current State

1
As her urinary tract infection worsens, Sue grows increasingly confused and weak, then falls and breaks her hip

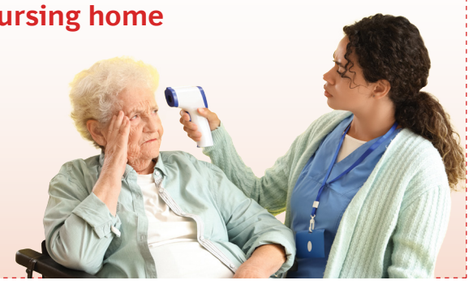
2
Unable to get up, she lies on the floor all night in pain, until her daughter, who visits by chance, calls an ambulance

3
Paramedics rush Sue to hospital where she waits 8 hours in an A&E corridor before evaluation and diagnosis

4
Sue undergoes emergency hip replacement surgery, complicated by severe infection and co-morbidities

5
Despite an extended hospital stay and rehabilitation, she remains too frail to return home safely

With limited options, Sue moves into a nursing home



Future Vision

1
Wearable and home smart devices flag low mobility, high pulse, high urinary frequency and mild confusion via voice analysis

2
An AI algorithm uses this data to flag early urinary tract infection and high falls risk, recommending antibiotics

3
An auto alert notifies a community health worker, who prioritises a home visit, confirms the assessment and prescribes the antibiotic

4
An AI home assistant reminds Sue to take her antibiotics as prescribed and tracks medication adherence

5
The home monitoring system tracks her recovery and falls risk and updates family on symptoms and mobility progress

A week later, Sue is fully recovered and back to her usual routine

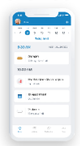
Enabling Technologies[2-8]

CPR Guardian
offers continuous monitoring and two-way calling to family

Innominds AMRx
AI algorithm predicts UTIs with clinical history, and identifies pathogens and antibiotic resistance for UTIs

Torbay & South Devon NHS FT
piloted remote monitoring to inform nurse care for frailty

Medisafe
offer apps to enable personalised reminders and adherence tracking



Doccla & Siemens Healthineers DigitalHands
offer virtual wards and home-monitoring

Whzan
offers integrated smart homes, tracking movement, etc., with auto-updates to family

Vision 3 | **From** delayed diagnoses leading to poor outcomes... **...to** earlier detection saving lives - while powering future research

Scenario:

Lung cancer

Why it matters

~50% diagnosed late
in stage 3 or 4 disease[1]

~80% 5-yr survival increase
through early diagnosis of bowel cancer, for example[2]

~£20b per year
total health, social and economic cost of cancer[3]

1

Cancer Loyalty Card Study
linked shopping data (esp. pain and indigestion drugs) to early ovarian cancer

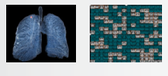
IMPERIAL

AI risk stratification flags a cancer risk for Mrs Liu from clinical, genomic and shopping data, and invites her for community diagnostic centre screening

2

Her 360° assessment includes a CT scan and liquid biopsy and an AI workflow and Clinical decision support system flags a suspicious lung nodule

Rayscape & Siemens Healthineers
offer AI algorithms to distinguish normal vs. abnormal images



Guardant360
detects >700 tumour mutations from blood

3

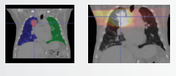
100k Genomes Project
found markers for adverse drug reactions to top cancer drugs

Digital twin simulations use Mrs Liu's full clinical and genomic data to predict responses to treatments and adverse drug reactions

4

The AI tool recommends a personal radiotherapy plan over radical surgery to optimize Mrs Liu's quality of life. This is approved by a clinician

Siemens Healthineers
AI models stratify patients and create optimal radiotherapy plans for lower failure rates



SIEMENS Healthineers

5

Mrs Liu continues normal life throughout treatment and has complete remission

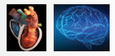
6

Mrs Liu opts to integrate her clinical, wearable and omics data into a research data network

UK BioBank
enables research via biological samples, lifestyle and health data from 500k people

7

Siemens Healthineers & Virtual Brain Project
offer virtual organ models to simulate treatment and R&D safety & efficacy testing



Dr Olu's research team use lung digital twins to predict safe doses for Ph1 & 2 trials

8

For the virtual control arm, data is auto-collected from EHRs, real-time clinical diagnostic and wearable

Recruitment software auto-selects trial candidates from the network, and randomises them into trial arms

Mendel
AI model automates the retrieval of patient cohorts from extensive longitudinal data sets

9

ACR's Assess-AI
algorithm tracks AI effectiveness post-deployment using real-world clinical data

10

For the adaptive treatment arm, medicines are home-delivered and adjusted in real-time via continuous home diagnostics and wearable monitoring

Medable and Science 37
decentralised virtual trials are enabled by wearables, mobile apps and remote monitoring

11

Novel drugs and devices to market 2x faster

AI post-market surveillance tracks real-world EHR and wearable data, and auto-reports to regulators and companies

Legend

- Technology examples [4 - 16]
- Clinical journey
- R&D

Vision 4 | **From** undetected chronic diseases as ‘silent killers’… **…to** targeted early detection and prevention on a national scale

Scenario:
Hypertension

Why it matters

~26% of all deaths
due to heart and circulatory disease[1]

~5m adults
with high blood pressure (BP) are undiagnosed[1]

NYC Macroscope
tracks HTN prevalence via EHR for 700K citizens, and guides targeted prevention strategies

AI algorithms use population-level data incl. clinical, demographic & behavioural, to identify regional hotspots for hypertension (HTN)

Operational digital twins simulate and tailor local intervention scenarios, incl. AI nudges, pharmacy campaigns and new local test stations

OptiBP app
measures blood pressure with a fingertip on a phone camera

As part of population-level response, 58yo James receives an NHS app nudge for an app-based BP check due to his risk. His BP is mildly raised

Singapore’s Health Promotion Board sends AI personalised nudges based on real-time wearable data

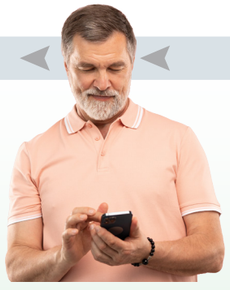
His AI companion suggests exercise and diet changes, tracking metrics via wearables and digital biomarkers. Deviations trigger AI agent checks

1 2 3 4 5 6 7 8 9

Novel care pathways and public health interventions are evidence-based on James and others' data

Going forward, James has 2x/yr checks at a self-testing kiosk, supported by a virtual AI GP and maintains ownership of his health

Singapore self-testing kiosks
offer 24/7 convenient access to health monitoring and personalised advice



James' digital twin predicts stable disease – he avoids risky, invasive and unnecessary interventions

James undergoes a rapid troponin POCT & photon counting CT at the CDC. He has mild Coronary Artery Disease and HTN

Siemens Healthineers

Rapid troponin POCT expands cardiac assessment beyond hospital settings

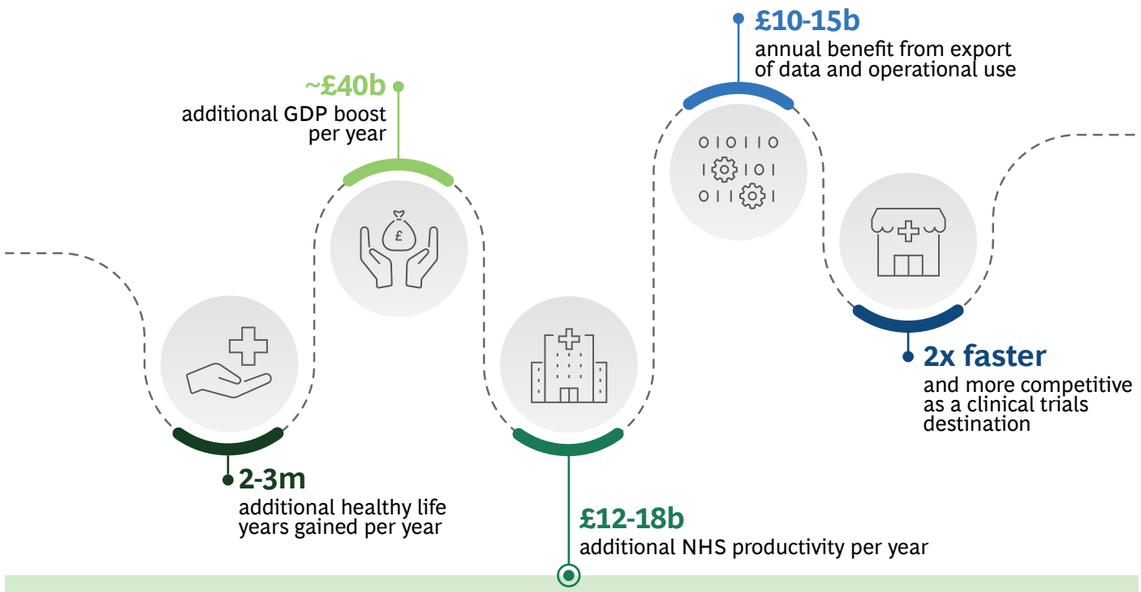
Photon counting CT enhances accuracy, resolution & material differentiation, for earlier detection & better treatment

SIEMENS Healthineers

2yrs later, James experiences mild chest pain. His AI companion prompts a Community Diagnostic Centre (CDC) visit after a virtual AI GP check-in

Legend
- Technology examples [2-8]
- Clinical journey
- Adaptive health systems

A fully implemented technology-driven vision for NHS could generate ~£70bn per year in total financial impact



	Primary care activity	A&E visits	Outpatient appts	Admission days
Potential change	**50%** redirected	**30%** redirected	**25%** redirected	**15%** avoided
Equivalent new capacity	**~4500** GP surgeries	**~65** A&E departments	**~50** outpatient departments	**~30** NHS trusts
Equivalent value impact	**£5-6b**/year	**£1-2b**/year	**£4-6b**/year	**£2-4b**/year

Disclaimer: Illustrative top-down estimates – further validation needed to establish full business case

Population outcomes: ~2-3m years gained across 5 most deprived deciles by increasing expectancy to current population median, assuming linear distribution of population between 0-80 years (ONS). GDP boost calculated by multiplying additional healthy life years by the mean yearly salary of each decile (£14k-£26k – UK Gov), assumes all additional years are in employment.
Primary Care: Assumes mean ~40k appointments per practice per year (~365m appointments across 9085 registered GP surgeries – NHS data), and mean cost £30 per appointment (benchmarked against cost per GP appointment & 'other HCP' appointment – King's Fund, Unit Costs of Health and Social Care Report PSSRU); primary care figures exclude dental/optician appointments.
A&E: Assumes ~124k visits per year per A&E department (median of all A&E departments - NHS data 2024/25) and mean costs of ~£188 per A&E visit weighted across type 1-3 (NHS data).
Outpatient: Assumes ~500k OP appointments per trust/department per year (NHS data 2023/24) and mean cost per OP consultant appointment ~£190 (HFMA).
Admission days: Assumes ~600 hospital beds per trust (median across all trusts – NHS data Q2 2024/25) and mean costs of ~£420 per A&E admission day (NHS Data).
R&D: based on prior estimates on value of NHS data (Realising the value of health care data: a framework for the future, EY 2019) and international best-in-class models (Optum Insight 2024 revenue ~£15b)
Please see Appendix for further assumption details and representative examples

Enhanced Patient Outcomes and Health System Benefits Arising from Better Population Health and Optimised Clinical Journeys

Innovation in diagnosis has the potential to significantly impact not only population outcomes—through risk stratification and intervention to prevent disease—but also healthcare systems.

Addressing health inequalities through predictive, personalised and preventative care, could yield up to **2-3 million** healthy life years per year*, boosting GDP by approximately **£40 billion** annually. Increasing the healthy life expectancy of individuals in deprived deciles of the population to the median could represent a gain of around 3-7 years* and could primarily be driven by innovative early diagnosis and disease prevention.

For example, AI assisted early diabetes diagnosis—such as AI interpretation of incidental ECGs predicting diabetes years prior to blood glucose level rises[7]—could enable proactive disease prevention through targeted interventions and lifestyle modifications. Similarly, diagnosing and treating undiagnosed hypertension could prevent numerous cardiovascular events (e.g., stroke, myocardial infarction)[8]. Furthermore, earlier diagnosis of cancer, which is currently diagnosed late in approximately 50% of cases[9], could significantly improve survival rates.

The impact for NHS healthcare systems could also be substantial, generating an equivalent of around **£12-18 billion*** in productivity gains per year, equating to approximately £8-£13 billion* in annual net cost savings†. Primary and outpatient care could represent the most significant value impact, as novel care pathways have potential to alleviate significant system pressures.

Key drivers of these potential changes include: intelligent triage through a digital front door; novel streamlined care pathways, such as image recognition software, which could reduce skin cancer referrals by ~65%[10]; and decentralised testing advancements, such as at-home cervical smear tests, reducing the need for in-person appointments[11].

Better Innovation Through Diagnostic Data-Driven R&D

Integrating diagnostic data into research and development could significantly reduce end-to-end drug development timelines, bringing new and transformational drugs to patients up to **twice as fast**. The integration of diagnostic data into adaptive, decentralised virtual trials could make clinical development more efficient, accessible and scalable, as described in vision 3 above. Overall, technologies that increase the probability of success and accelerate timelines could reduce drug development costs, potentially leading to more affordable drug prices for the NHS in the long term.

Holistic data integration could also deliver substantial financial value to the NHS—not only through operational cost savings but also via commercial data revenue. Based on prior estimates[12] and benchmarking against international best-in-class models[13], integrated NHS data could be worth up to **£10-15 billion** annually.

* **Note**: impact ranges based on high-level triangulation of the outcomes using various data sources and do not represent statistical certainty of the findings

† **Cost savings**: Novel care pathways often ~70% more cost effective vs. existing inefficient pathways (BCG analysis).

Unlocking the Future Vision

Key Opportunities for Action

With the development of the 10-year plan for health, the UK now has a unique and exciting opportunity to turn the future vision of diagnosis into reality. The country already benefits from a strong base in talent, world-class-research and internationally-recognised health data resources (e.g., UK Biobank, Our Future Health and Genomics England).

To further nurture a thriving innovation ecosystem and accelerate adoption, we identify five key opportunities for action—delivering immediate impact, while laying the foundation for a sustainable future.

Opportunities to realise immediate impact from (near-)mature technologies:

1. **Streamline regulation and approval pathways to fast-track adoption** of AI-powered diagnostics. Enhance integration across regulatory bodies (incl. MHRA, NICE), adapt regulatory frameworks to accommodate novel innovations, and build novel regulatory approaches that leverage real-time monitoring and post-market surveillance to enable low-risk, high-impact innovations to reach patients sooner.

2. **Adopt innovation at scale via National Innovation Zones** to pilot, rapidly assess impact and expand diagnostic innovation and novel care models. Success should be evaluated through a more holistic health economics approach, considering whole-economic impact over an extended time frame. Successful pilots should lead to rapid scale-up across the whole of the NHS, supported by clear changes and directives in commissioning and procurement that actively incentivise adoption.

Opportunities to build a self-reinforcing innovation ecosystem for long-term future innovation:

3. **Interconnect data and algorithms for delivery**, by building an integrated ecosystem that as a first step connects NHS diagnostic data (e.g., imaging, medical history), with existing interfaces (e.g., NHS app) and AI algorithms for implementation. Future iterations could incorporate personal (e.g., consumer shopping behaviour, wearables) and civic data (e.g., demographics, traffic, weather), to further enable personalised and real-time health insights. This ecosystem could also serve as a unique sandbox environment, attracting public and private innovators and investment.

4. **Cultivate the innovation pipeline and attract public and private collaboration** by launching AI training data sets and innovation sandboxes to test new technologies that align with NHS data interoperability standards, streamlining current data access and governance frameworks, aligning on innovation moonshots to drive public-private engagement and investing in NHS digital talent.

5. **Build public trust in innovation** from the outset by promoting innovation as an enabler for health equity and access and actively consulting end users in the shaping of new technologies and care models, while simultaneously deploying education policies that introduce new technologies from an early age.

In addition to preparing for and implementing innovative technologies, there are short term levers for immediate opportunities that can be addressed. For instance, bowel cancer screening currently reaches only 70% of eligible individuals[14], and breast cancer screening even fewer[15]. Expanding these programmes, especially for high-risk individuals, would enable the NHS to detect diseases earlier, leading to better treatment outcomes and lower healthcare costs. Lastly, the UK has fewer MRI and CT scanners per capita than other developed nations[16], contributing to longer wait times for critical tests. Investing in diagnostic infrastructure will help ensure faster diagnoses and earlier interventions, ultimately improving patient outcomes and easing the strain on the NHS.

A Pivotal Moment for Transforming Diagnosis and Health Care

The UK stands at a pivotal moment, where technology, AI and data-driven innovation could reshape the future of diagnosis and health care at large.

Realising this vision will require a balanced approach, with **strong alignment across providers, Integrated Care Boards (ICBs), regulators, the data, and the broader innovation ecosystem**. This will be essential for **seamlessly integrating proven technologies and adapting care pathways for maximum impact**. Strategic public-private partnerships can serve as a powerful lever to drive innovation and implementation by leveraging industry expertise, investment and technology.

However, while AI and technological advancements hold immense potential in diagnostics, treatment and operational optimisation, they are not standalone solutions. To ensure that innovation benefits all communities, rather than deepening existing disparities, **solutions must be designed with accessibility, sustainability and inclusion in mind**—particularly in underserved areas where digital transformation can have the greatest impact.

With a bold, coordinated effort today, the UK has the opportunity to set a new global benchmark, not only for the future of "faster, better and earlier diagnoses", but also for strengthening the resilience, efficiency and accessibility of the entire NHS.

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Appendix

Value at Stake Assessment Assumptions and Representative Examples

Disclaimer: Illustrative top-down estimates – further validation needed to establish full business case

	Potential change	**Representative examples to illustrate potential scale of change** (non-exhaustive)

Population outcomes	**~3-7** year increase *in mean healthy life expectancy*	• Addressing inequality: predictive and personalised care, leveraging more decentralised and accessible diagnosis, could play a significant role in raising disability-free life for most deprived 50% to the median: a mean gain of ~6 years[1]
		• Early diagnosis and prevention of common diseases will play a key role, e.g.,
		  • Diabetes: 70% could be detected early by AI ECG screening[2]; 53% early cases preventable by lifestyle modifications[3]
		  • Cardiovascular Disease (CVD): 5m hypertensive individuals currently undiagnosed[4]; minor blood pressure reductions associated with 17-28% decreased risk of major CVD events[5]
		  • Cancer: ~50% of all cancer diagnosed late (stage 3/4)[6]; early diagnosis drastically improves survival[7]

Primary care activity	**50%** redirected	• 20% redirected to self-care for appropriate management through Platform 24 intelligent triage tool[8] • 63% of acute face-to-face appointments successfully directed to telemedicine through Knok's digital health platform[9] • 73% of women would use home cervical testing, highlighting potential for home testing to reduce appt demand[10] • 27% of GP appts could potentially be saved through better coordination with hospitals[11]
A&E visits	**30%** redirected	• ~12% fewer A&E visits through intelligent triage as can be managed at other sites of care[12] • ~20% of A&E attendees say primary reason for attending was inability to get a GP appt[13] • 21% reduction in ambulance conveyance to A&E with POCT at paramedic assessment[14], which may increase with increasingly portable imaging/monitoring devices • 79% of patients using the video triage service in Moorfields A&E avoided a hospital visit[15]
Outpatient appts	**25%** redirected	• ~20% of all outpatient visits are for Vision, Skin, ENT, MSK & Mental Health[16]: novel pathways could transform these high-volume specialties • 65% reduction in urgent skin cancer referrals in one pilot of skin cancer image recognition software[17] • ~50% reduction of in-person diabetic foot checks with foot image recognition software[18] • ~50% reduction in diagnostic coronary angiogram cath lab requirement with high resolution photon-counting CT[19]
Admission days	**15%** avoided	• 15% reduction in length of stay for respiratory illness by using viral POCTs[20] • Up to 73% increase in MRI scan speed with AI tools for noise reduction[21], and up to 50% of radiologists' time saved with AI reporting[22] • Virtual wards already facilitating early discharges[23], highlighting potential for advanced home monitoring

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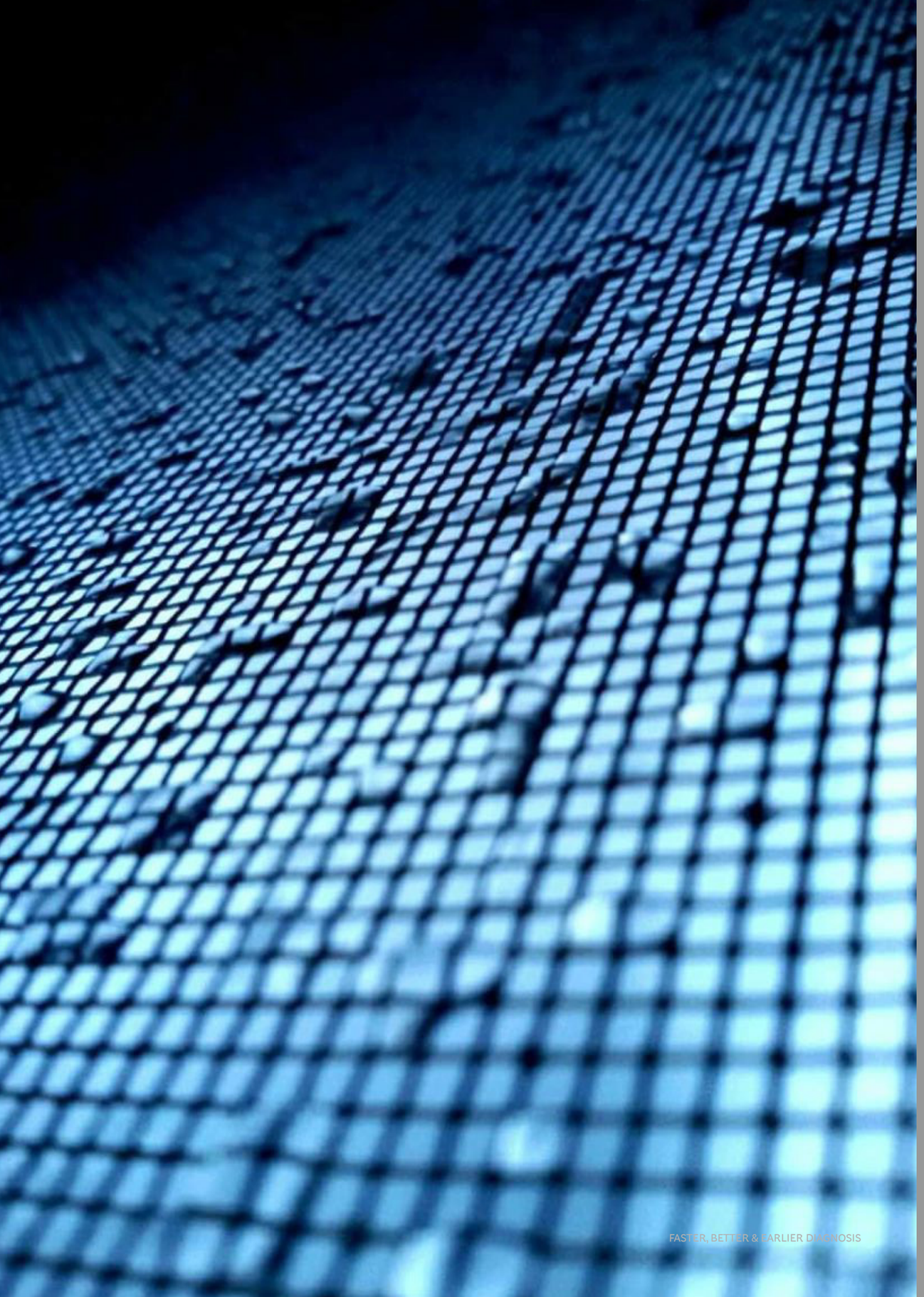

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