

**PHG FOUNDATION
STRATEGIC DIRECTION
2025-2030**



OUR CHANGING CONTEXT

The PHG Foundation started life as the Public Health Genomics Unit in 1997, becoming a linked exempt charity of the University of Cambridge in 2018. Our mission to 'make science work for health' focused on the emerging field of genomics and was guided from the first by the conviction that to understand the science alone was not enough: to achieve genuine improvements in health, scientific and technical knowledge had to be brought together with understanding from humanities and social science scholarship, and insights from practical experience. This belief, together with our evidence-based and independent approach, has inspired our work over the last 25 years and secured our reputation as a trusted intermediary and advisor to health systems, national policy makers and international organisations.

It is now widely recognised that genomics has significance for almost every stage of healthcare, including prevention, diagnosis, treatment and prognosis, and across disciplines from embryology to epidemiology. The potential to anticipate and intervene to prevent disease challenges us to define new approaches and standards for health services that are effective, affordable and available to those in need. A fundamental shift to more personalised health systems that places the individual at their centre will be essential.

This new strategy sets out our views on what will be needed to use science and technology responsibly to underpin an effective health system in the coming decades, and our role in making this happen.



Dr Ron Zimmern
Founder, PHG Foundation

OUR STRATEGIC DIRECTION

A major aim of our work to date has been to ensure that policy makers were aware of the new developments in genetics and genomics that followed the completion of the Human Genome Project, and their potential to play a central role in the provision of future healthcare. As our understanding of genomics has matured it has been complemented by a variety of other omic, biomarker and biometric technologies capable of generating prodigious amounts of data. Meanwhile, major new initiatives seek to harness the computational power of emerging digital and AI technologies to discover how a vast array of factors interact to influence health and wellbeing.

The convergence of these evolving technologies not only increases technical complexity; it also requires the alignment of complicated infrastructures, legal and regulatory regimes, stakeholder interests and professional cultures. The organisation of health systems, the changing demands of diverse populations, and the societal values implied in policy and governance all shape and may, in turn, be shaped by these innovative developments. Their effects are magnified by the accelerating pace of change, the rapid diffusion of knowledge around the world, and the disruption of previously distinct fields of knowledge and practice.

The challenge before us now is to make sure that impressive advances in science and technology translate into healthier populations. This will depend on scientific discovery and technological innovation intersecting with people's lives in a way that provides genuine benefits, is publicly acceptable and is sustainable as a practice. This is the challenge that must be met by health systems for the 2030s and our ambition for the future of population health.



Dr Peter Mills
Director, PHG Foundation

HEALTH SYSTEMS FOR THE 2030s

What could effective health systems look like in the 2030s? And what do we see as the challenges they will present for clinical pathways, patient care and wider society?

Emerging technologies

Technologies that generate, process and apply genomic, other omic and biomarker data, promise significant clinical benefit if they can be used appropriately by health systems. They also pose challenging questions, such as how they should be assessed and regulated, when they can be said to provide clinical benefit, and how to evaluate their use in small populations or even single cases. By 2030 we anticipate that:

- the range and effectiveness of targeted pharmacogenomic, cell-based and gene therapies will grow
- increasingly powerful, AI-supported devices and approaches will automate steps in research, trials and diagnostic workflows, and support accelerated reporting and decision making
- there will be innovation in governance and clinical pathways, with corresponding changes to professional practice and roles



HEALTH SYSTEMS FOR THE 2030s

Use of data

The rate of data generation and the growth in capability of AI technology in the life sciences arena promise powerful insights into population and personal health. Combining data from biomarkers, biometrics and other sources offers a compelling vision for improved population health, of more effective healthcare, with better diagnosis, earlier detection and treatment of disease, and reduction of unnecessary interventions. By 2030 we anticipate that:

- routinely collected data from a variety of sources will be integrated to build dynamic personal health profiles, including routine access to personal genome sequence information, with debates continuing about data access and secondary uses of such data
- healthcare and research will be closely integrated leading to continual developments that require responsive but robust governance
- health systems will need to collect and use data more effectively, ensuring that they are used to support healthcare, research, service improvement and further innovation
- biological knowledge and information may be applied in fields beyond healthcare
- if innovation in governance fails to keep in step with technology, concerns about security and the potential for unintended or inequitable consequences could continue to keep data siloed and technology constrained

Evolving health systems

Genuine improvements in population health require concerted and long term commitment. How, where, by whom and on what terms services are delivered will need to change. By 2030 we anticipate that:

- there will be greater emphasis on the importance of population health and the role of prevention across public services
- people's interactions with health services will take an increasing variety of different forms, including in a range of non-medical settings, with a greater emphasis on screening, monitoring and early intervention
- consumer interest in lifestyle interventions will further blur the boundaries between lifestyle and health, and call attention to personal responsibility and opportunities for commercial actors
- high pricing of advanced therapies, and differences in commissioning, service organisation and health awareness will challenge equity of access
- governments will integrate action on climate and environmental issues with health policy



OUR PRIORITY AREAS

This strategy forms the basis for our approach between now and 2030.

Throughout this period, we will use our distinctive capabilities to focus on the policy, governance and ethics challenges that surround the application of biomedical science and technology in healthcare, especially where diverse perspectives and conflicting interests are in play.

Our priority areas are set out below in relation to five areas in which we intend to focus our work.

Our three principal priority areas reflect our intention to address the challenges and opportunities that increasing complexity presents for current clinical pathways, health systems and wider society.

These relate, respectively, to emerging health technologies, the handling and use of data, and the evolution of services.

We treat these three areas as inherently interrelated; all are subject to ethical, governance and policy frameworks within which we all operate and which are the main focus of our work.

Two further areas define our ambitions as an organisation. These define how we intend to develop our relationships with key actors, stakeholders and organisations in Cambridge and beyond, and how we intend to achieve a sustainable operating model in the longer term.



SUPPORT THE IMPLEMENTATION OF EMERGING HEALTH TECHNOLOGIES FOR PUBLIC BENEFIT



Developments in biological and information technology are significantly advancing our understanding of health and disease, and of how to preserve, improve and restore wellbeing. Implementing new technologies presents opportunities and challenges that may require us to rethink or redesign standards, practices, roles and institutions.

We aim to support the responsible implementation of emerging health technologies, focusing on understanding disease, risk and diagnosis, as well as advanced, genome-based therapies. This will require informed analysis and evaluation of both the technologies and the context of implementation, taking into account ethical, social and legal aspects. It will require us to explore new approaches to how technologies are regulated and assessed that are anticipatory, flexible and responsive.



What we want to see

- timely adoption of genome and biomarker-based innovations for better detection, diagnosis, treatment and management of disease
- clear, proportionate, robust and ethical regulatory approaches that are responsive to emerging technologies
- targeted interventions that make better use of healthcare resources, and reduce unintended harms through more appropriate care for each patient

What we will do to achieve it

- identify emerging health technologies with potential to meet clinical need and improve population health
- define conditions for adoption of new technologies taking into account clinical utility, regulatory preparedness and implications for services and for society
- provide a bridge between researchers, clinicians, industry leaders, and policy makers to identify barriers and opportunities for adopting new innovations
- put forward proposals and recommendations to address ethical, regulatory and practical considerations in the design, development and deployment of new health innovations

OPTIMISE THE USE OF DATA TO DELIVER BETTER POPULATION HEALTH



Future improvements in population health will be underpinned by data. The accelerating rate of data generation, increase in computing power and the growth in capability of AI and digital technology promise powerful benefits from personal to population health.

Harnessing this power will depend on ensuring that public and professional confidence can be placed in data being properly used and privacy protected.

We aim to define and secure the conditions that optimise the responsible use of health data from different sources through good data governance, and secure and trustworthy systems that respect the interests of all.



What we want to see

- the incorporation of diverse data into integrated data ecosystems to support improved individual care and public health, research, policy, planning and service development
- the implementation of digital technologies that provide genuine benefit to improve patient pathways
- legal, regulatory and policy development that keeps pace with advances in technologies
- the public, patients and professionals having confidence that data are used for the development and delivery of effective healthcare, while safeguarding individual and group interests

What we will do to achieve it

- identify gaps, ambiguities or inconsistencies in legal and regulatory frameworks or their application as a result of developments in digital, AI and data-driven technologies
- provide information and analysis to support policy makers, healthcare professionals and others to recognise opportunities, promote understanding and develop guidance on appropriate use of digital technologies for health
- bring together interdisciplinary expertise and insight to explore and address ambiguities, uncertainties, and differing values and interests in the use of data and digital technologies
- propose and advocate measures to ensure that ethical considerations are reflected in the design, development, and deployment of AI and digital technologies

SHAPE THE FUTURE OF PERSONALISED AND PREVENTATIVE HEALTH SERVICES



A shift in focus to more personalised and preventative approaches to health has the potential to enable people to live healthier lives for longer. The incorporation of new health technologies and the insights derivable from a connected data ecosystem will lead to new models of healthcare that prioritise prevention and early intervention.

As the balance shifts there must be a careful consideration of the benefits for individuals alongside equity across the wider population. The way this is done will have implications for individuals, professionals, businesses and communities whose values and priorities need to be taken into account.

We aim to build consensus around the optimum pace, place and process for these transformations to achieve better health across the population.



What we want to see

- prevention of disease in individuals leading to an increase in the quality and quantity of years lived in good health across the population
- better use of health resources and reduction of unintended harms owing to more appropriately targeted care for each member of the population
- professional and regulatory culture, systems and processes that support a learning, innovative and compassionate health system

What we will do to achieve it

- analyse implications of the adoption of new modes and models of care on pathways, systems and practices
- convene interdisciplinary expertise to foster dialogue and to develop consensus on appropriate principles, rules and standards to guide the operation of a learning and innovative health system
- define conditions, frameworks and governance measures to promote ethical and equitable provision of health services to the public
- provide thought leadership on appropriate steps for the development of more personalised and preventative health services

BUILD AND NURTURE NETWORKS FOR POSITIVE INFLUENCE AND IMPACT



As an independent think tank, the PHG Foundation provides thought leadership on the conditions needed to make science work for health. As the connective tissue between researchers, health services, professional organisations, regulators and policy makers, we operate at three different levels: among actors within the University and the wider Cambridge ecosystem, between Cambridge and national policy, and from the UK to the wider world. Our association with the University is a distinctive asset, giving us insight into the latest developments and access to researchers and academic collaborators. In turn, we support the University through our capabilities as a translator, intermediary and advisor in relation to policy, governance and ethics.

Achieving the outcomes we intend depends on our interactions with others and on forming trusting relationships.



What we want to achieve

- positive impact through better alignment between research, health service requirements and policy priorities
- effectiveness in influencing policy and governance, nationally and internationally
- consolidation of an international network of leaders in genomics, health data research and population health

What we will do to achieve it

- play an active role within the University of Cambridge to develop networks across disciplines and settings to secure impact for research
- work with stakeholders across sectors, including academic, healthcare, industry and public, to identify how challenges facing healthcare can be addressed through innovation in biological and information technologies
- through our public affairs function and external engagements, secure the positive impact of our insights and those of our colleagues in the University on national health and science policy
- through our networks, contribute expertise to inform the development of health policy, governance and the work of institutions internationally

SECURE OUR CONTINUING EFFECTIVENESS THROUGH A SUSTAINABLE OPERATING MODEL

The PHG Foundation is foremost a charity established to promote the public interest in the application of modern biological science to population health. Our income comes from a mixture of donations and funding for specific projects. The latter mostly takes the form of grants and commissions from the charitable, public and commercial sectors that align with our charitable mission and core values.

In the next five years we will evolve our operating model to ensure that we can continue to have a sustained and positive influence on health and science policy.

What we want to achieve

- the consolidation of mature and trusting relationships with partners, stakeholders and supporters leading to continuing recognition of the value of our services
- securing our capacity to fulfil our charitable purposes well beyond the current strategic period

What we will do to achieve it

- establish a robust and effective operating model to identify challenges and opportunities, build consensus and promote our priority areas
- nurture our relationships with key collaborators and clients, and expand our networks of those we are able to support in the UK and internationally
- embed impact evaluation and performance improvement processes as part of our operating model, helping to demonstrate impact and value to prospective clients and collaborators



OUR VISION

A world in which the responsible application of science and technology leads to better health for people and populations.

OUR MISSION

We want science to work for health. We support the responsible development and adoption of technologies based on knowledge of the human genome, other biomarkers and health information. We promote the conditions that enable such technologies to deliver genuine public benefit, while guarding against unethical or undesirable consequences for individuals or populations.

OUR VALUES

We value science and its profound impact on human health and wellbeing. We believe that the responsible pursuit and translation of scientific knowledge should be promoted.

We value all people in their individuality and diversity. We recognise that people are not all the same and that their health needs can be met better with a more personalised approach.

We value population health and appreciate that the health of each of us is entwined with the health of others. We recognise the important role that family and community play in health. We are committed to fairness in the expectations placed on people as patients, and as members of families and of the wider population, in respect of their own health and the health of others.

We value practical approaches that help address the challenges of health innovation in complex systems. We are committed to genuine engagement across disciplines and sectors, including the sciences, humanities and health services, to achieve workable, sustainable solutions.



making science
work for health



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