Policy Brief:
Policy priorities for implementing personalised prevention in Europe

A work developed by the PROPHET consortium

PROPHET
a PeRsOnalized Prevention roadmap
for the future HEalThcare

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Policy priorities for implementing personalised prevention

European populations are ageing and the burden of non-communicable diseases (NCDs) such as cancer, cardiovascular diseases and diabetes is growing, causing 1.8 million avoidable deaths per year of which up to two thirds are preventable. To address this challenge, policy makers must accelerate the transition from reactive healthcare to prioritising prevention at the population and individual level for citizens of all ages, including personalised prevention. This has the potential to reduce the burden of disease, ensure more sustainable healthcare systems, and significantly improve citizen and population health.

The PROPHET project has developed a Strategic Research and Innovation Agenda (SRIA) and an accompanying Roadmap, to provide the infrastructure, evidence and governance strategies needed to realise the EU's prevention ambitions. We provide concrete recommendations for health policy makers in the EU and national governments to support this transition. These are:

Establish evidence and assessment strategies

Coordination is vital to improve awareness of personalised prevention strategies among all healthcare stakeholders and analysis of evidence to integrate them into routine care, as well as wider aspects of the healthcare system such as finance and data systems.

Build and regulate interoperable and trusted data infrastructure

Improved data collection and integration, and development of fit-for-purpose, regulation-compliant health data infrastructure, with appropriate ethical and legal safeguards in place, is needed. Efforts can build on existing initiatives such as European Health Data Space and 1+Million Genomes.

Empower and engage citizens, professionals and policymakers

Training and education for healthcare professionals and policy makers and investment in community engagement and building patients' trust will form the foundation of effective prevention strategies. Behavioural science research is required to understand what is most effective to facilitate behaviour change.

Embed equitable and ethical healthcare access and citizen trust

Secure and long-term structural funding for equitable access to personalised prevention technologies and services within and between countries, and support for vulnerable and underserved populations, is needed. Citizen engagement in, and co-creation of, research and prevention strategies, with equitable access for all is crucial.

Tackling these challenges requires strategic alignment with the EU's key initiatives, such as the Safe Hearts Plan, the Beating Cancer Plan, and the Healthier together initiative.

The PROPHET project Toolbox shares the results of our research and engagement on personalised prevention and supports education and capacity building with resources for citizens, healthcare professionals and policy makers.

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Personalised prevention - proactive healthcare

Personalised prevention is an emerging approach that uses individual data—such as biomarkers, lifestyle, cultural and socio-economic contexts, and environment—to help prevent diseases before they develop or progress. It shifts healthcare from reactive treatment to proactive risk reduction, empowering citizens and improving population health.

Example: **Genetic screening for *BRCA1/2* mutations**, primarily associated with breast, ovarian, and prostate cancer, in those with cancer family history or other risk factors. Those identified as high risk through testing may receive risk-reduction interventions, such as prophylactic surgery, lifestyle modifications, and preventive chemotherapy.

The growing burden of NCDs demands a decisive shift where personalised prevention must become the central pillar of European healthcare strategies at an individual and population level. While the potential is immense, turning this vision into reality requires us to actively tackle existing barriers in equity, governance, and cost-effectiveness, ensuring a consistent and effective implementation for all citizens. It will also require collaboration across multiple sectors beyond health care, such as agriculture and food, the built environment, energy and transport sectors, and education.

What are the costs of inaction?

Citizens are affected by preventable diseases which impact their wellbeing, ability to live their lives as they wish and contributions to the workforce

Health systems experience increased demand on services due to ageing, multimorbidity and complex long term conditions

Governments face decreased economic output, coupled with increased healthcare spending.

These challenges threaten healthcare systems' ability to provide equitable and accessible care for all, underscoring the need for more effective and person-centred approaches, supported by cross-sector interventions that make healthy choices the easiest choices.

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PROPHET: a roadmap for change

The PROPHET (a PeRsOnalised Prevention roadmap for the future HEalThcare) project is a project of the International Consortium for Personalised Medicine (ICPerMed) family, and endorses the ICPerMed vision of next generation medicine centered around personal characteristics, with equitable access for all. The project has developed:

- A Strategic Research and Innovation Agenda (SRIA), that outlines **ten challenges** and priorities for integrating innovative, sustainable and high-quality personalised prevention strategies into European health and care systems (see Appendix).

- An accompanying Roadmap that identifies the main barriers, priorities and implementation needs for integrating these strategies.

Here we provide an overview of the key gaps and the priority actions needed, to be addressed by health policy makers at the national and EU level.

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Priority areas identified for action

PRIORITY AREA 1

Establish evidence and assessment strategies

Personalised prevention strategies require evidence on how they can most effectively be implemented into clinical practice. Without coordination and support for learning health systems, strategies will not be effective.

Action is needed to support coordination across sectors including academia, industry, policy and government departments, in terms of the collection and analysis of data and evidence relevant to prevention and implementation of prevention in healthcare, and to embed this data in learning health systems. Particular areas requiring attention are Health Impact Assessments (HIA), evidence of clinical utility, and cost effectiveness where appropriate. These efforts can be supported by the establishment of an EU-wide data repository for the evidence, curated by an evidence team and guided by an expert panel, to support regional and national level decision making.

Frameworks to evaluate evidence and support implementation which are specific to personalised prevention strategies are needed. These decisions require implementation, acceptability and equity considerations, especially within new EU Health Technology Assessment/HIA rules. Currently, these only cover medicines and devices rather than the full range of prevention approaches. Frameworks to evaluate prevention should go beyond clinical efficacy to include feasibility, equity, acceptability and system impact. The **PROPHET Framework**, for example, offers a robust, ready-to-use model for policymakers and healthcare leaders to assess and realise the vision of personalised prevention implementation.

PRIORITY AREA 2

Build and regulate interoperable and trusted data infrastructure

Coordinated, interoperable, safe and equitable data infrastructures are the foundation of personalised prevention efforts. The advantage of these infrastructures is that they can bring together health (including electronic health records), biomarker, behavioural, and environmental data, which allows earlier identification of individual risk factors and timely, personalised interventions.

While we have the technology to create these infrastructures, governance, particularly around data sharing and varying interpretations of the GDPR between EU Member States, is behind, resulting in heterogenous and non-interoperable systems. Action is needed to harmonise data standards, to ensure that data are collected in interoperable ways and formats across Member States and data platforms. Guidelines are required to support Member States and data controllers to ensure consistency in the application of the GDPR, to ensure health data are used fairly and responsibly across the EU. This also includes core ethical and social safeguards and transparency for citizens around data privacy and choice around data use.

Efforts led by the EU in the implementation of the European Health Data Space (EHDS), and by other research initiatives such as 1+ Million genomes and the Global Alliance for Genomics and Health (GA4GH) will be critical in driving alignment.

PRIORITY AREA 3

Empower and engage citizens, professionals and policymakers

Citizens are at the heart of future healthcare and personalised prevention. Key areas for action are awareness raising and engagement with citizens, policy, public health and healthcare professionals. These initiatives are central to achieving successful implementation of personalised prevention strategies:

Making citizens and patient organisations active partners in the co-creation of personalised prevention initiatives is important. Combining participatory models, such as the **4P-CAN** 'Living labs', with dedicated capacity-building **resources** is vital to ensure these initiatives are understandable, accessible, and responsive to the real needs of communities.

For policymakers, they should be included in personalised prevention initiatives from the outset, to provide perspective on the wider health agenda and to empower them to act as champions for prevention in healthcare

For healthcare professionals, incorporating personalised prevention specific training into their education and on-the-job training is one step towards ensuring that prevention becomes business as usual, supported by essential wider health system integration and funding.

Underpinning these educational efforts, it is essential to understand how information relevant to prevention – such as genetics, lifestyle and other risk information – should be communicated to citizens and promote behaviour change. Mere communication of risk can be ineffective and investment in behavioural science research is needed to understand which information, and how it is communicated, empowers citizens to implement prevention strategies into their lives.

PRIORITY AREA 4

Embed equitable and ethical healthcare access and citizen trust

For personalised prevention to succeed, policy makers must enforce a coordinated, multi-modal approach that integrates health, labour, education, and environmental expertise both in research and implementation.

A critical challenge is the variable level of public health literacy, particularly among vulnerable populations. To address this, we must actively promote citizen training, awareness-raising activities, participation in research and community engagement to build participation and to share knowledge. Initiatives must not be top-down, but co-created with underserved populations to ensure they meet their specific needs and cultural contexts, guaranteeing that services are genuinely affordable, accessible, and appropriate for all.

Equitable access to healthcare and citizen trust in the healthcare system and personalised prevention initiatives are also vital and should be considered an inherent component of knowledge and engagement efforts. Actions to improve health data protection and security measures, and communicate these clearly to citizens will be vital. Civil society and patient advocacy groups can support actions to ensure that more vulnerable or underserved populations benefit equally from prevention efforts.

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PROPHET in context

PROPHET exists in a thriving ecosystem of European research and initiatives. We do not propose a parallel strategy, but rather a connecting framework that strengthens these initiatives. This enables coherence between prevention ambitions and the governance, evidence, and infrastructure needed to deliver them. For example:

Safe Hearts Plan

The Safe Hearts Plan signals a major shift in EU health policy towards prevention, early detection, and personalised approaches to cardiovascular disease. PROPHET directly supports this objective by synthesising evidence on the scientific basis of personalised prevention (including genetics, lifestyle, and environmental factors), identifying gaps in clinical utility and cost-effectiveness evidence, proposing continuous evidence evaluation systems and learning health systems to ensure prevention strategies remain adaptive and evidence-based.

Beating Cancer Plan

The Beating Cancer Plan sets out an ambitious and comprehensive political commitment to reduce the burden of cancer across the EU, with a strong emphasis on prevention and early detection, citizen engagement and health literacy, and reducing inequality in cancer care. PROPHET strengthens this dimension by treating trust, engagement and health literacy as enablers of prevention, not as secondary considerations.

Healthier together

Healthier together is a major initiative to reduce the burden of NCDs in the EU and promotes a holistic and coordinated approach to prevention and care including better knowledge and data, screening and early detection, diagnosis and treatment management. This speaks to some of the key findings from PROPHET, which has shown that a multi-modal approach is essential for prevention.

⚠ Significant investment has already been made in data infrastructures, research programmes, and pilot initiatives supporting personalised prevention. Withdrawing or slowing investment now risks fragmenting these efforts and undermining their returns, precisely at the point where they could deliver system-level benefits.

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How the PROPHET project can help

The PROPHET project **Toolbox** shares the results of our research and engagement on personalised prevention and supports education and capacity building:

- Resources for **healthcare professionals**, **policy makers**, and **citizens and patients** outline key concepts, implementation information, case studies and educational materials.
- More detailed **mapping results** show the depth of the evidence supporting personalised prevention.
- The full **SRIA and roadmap** cover in detail the challenges and recommendations highlighted above.

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Appendix

The 10 challenges discussed in the SRIA and Roadmap are:

1. **The broad scope of promotion and prevention**
2. **Continuous evidence synthesis system supporting personalised prevention**
3. **The PROPHET framework implementation**
4. **Data collection and integration, and data infrastructure**
5. **Community engagement and trust**
6. **Health professionals and policy makers involvement**
7. **Regulatory aspects and synergy with private sector**
8. **Access, equity and coverage**
9. **Ethical, legal, social issues (ELSI)**
10. **Changing behaviour**

The roadmap translates the strategic vision outlined in the SRIA into action by outlining goals, priority actions, timelines, expected outcomes and output indicators, responsible entities, funding sources, and synergies with other EU initiatives. Across the ten challenges, the Roadmap identifies a comprehensive set of 56 goals and 66 actions aimed at strengthening evidence generation, interoperability, real-world implementation and capacity building. These actions highlight both the opportunities and the potential barriers that may emerge during implementation. The anticipated implementation timeline spans the next five years, with the aim of generating long-term impact on European health systems.

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