Transforming Health and Care Systems Candidate Partnership

Strategic Research and Innovation Agenda

Document Version: 06/05/2022

Authors

This Strategic Research and Innovation Agenda (SRIA) was written by the **core team** of the Transforming Health and Care Systems Candidate Partnership in cooperation with the European Commission (DG RTD, DG CONNECT, DG SANTE). The core team was composed of representatives from the following Member States and Associated Countries in alphabetical order:

Gerda Geyer	Austrian Research Promotion Agency (FFG)	Austria
Vera Mikkilä	Academy of Finland (AKA)	Finland
Marko Uutela	Academy of Finland (AKA)	Finland
Diane Tiassy	Ministry of Health	France
Arnaud De Guerra	French National Institute of Health and Medical Research (INSERM)	France
Gaetano Guglielmi	Ministry of Health	Italy
Sabrina Montante	Delegate Ministry of Health	Italy
Jacqueline Hoogendam	Ministry of Health	The Netherlands
Denice Moi Thuk Shung	The Netherlands Organisation for Health Research and Development (ZonMW)	The Netherlands
Kristin Andersen	Research Council of Norway (RCN)	Norway
Dagmara Robakowska	The National Centre for Research and Development (NCBR)	Poland
Afonso Duarte	Agency for Clinical Research and Biomedical Innovation (AICIB)	Portugal
Isabel Carvalho Oliveira	Agency for Clinical Research and Biomedical Innovation	Portugal
Staffan Arvidsson	The Swedish Research Council for Health, Working Life and Welfare (FORTE)	Sweden

The process was in particular **supported** by the contribution of the following key scientific experts:

Walter Ricciardi, Americo Cicchetti, Stefania Boccia, Antonio Giulio De Belvis, Chiara De Waure, Chiara Cadeddu, Fidelia Cascini, Maria Rosaria Gualano, Alisha Morsella, Maria Teresa Petrangolini, Alessandro Solipaca, Laura Motta and Michele Calabro from Università Cattolica del Sacro Cuore (UCSC), Italy

Silvio Brusaferro, Luisa Minghetti and Anna Ceccarelli from Istituto Superiore di Sanità (ISS), Italy

Johan Hansen from the Netherlands Institute for Health Services Research (NIVEL), The Netherlands

Joseph Figueras, Nicholas Fahy, Dimitra Panteli European Observatory on Health Systems and Policies WHO/Europe

Klaus Niederlander, Nicola Filizola Active Assisted Living Programme (AAL Programme)

John Farrell Reference Site Collaborative Network (RSCN) and Valentina Polylas European Regional and Local Health Authorities (EUREGHA)

Contact emails: thcspartnership@gmail.com;

Transforming Health and Care Systems (THCS) Candidate Partnership - Strategic Research and Innovation Agenda

Table of Contents

Executive Summary

The rapidly changing and ageing society and the occurrence of health emergencies are urging countries to efficiently respond to increasing burdens on their health and care systems, and deliver on their common commitment to high-quality health and care services. Furthermore, our systems share challenges that require harmonised and coordinated solutions, devised through a process that allows all stakeholders involved in health and care systems to design, research and implement such issues in a timely manner.

Within this context, we need to identify how health and care systems can achieve such harmonised responses. This Strategic Research and Innovation Agenda (SRIA) defines the framework on which the Partnership for transforming health and care systems (THCS) is set to respond to this context, building on its solid background, existing key initiatives in the field, and common vision**: to maintain and improve people's health in Europe and participating countries by supporting the transformation of health and care systems to achieve high-quality, fairly accessible, sustainable, efficient, resilient and inclusive health and care systems for all.**

To move towards the realisation of its vision, the Partnership will focus on its ambition to address and trigger global and long-term changes in the complex health and care research and innovation ecosystems. More specifically, the objective will be reached by embracing the whole knowledge and innovation cycle, with a specific focus on the need to foster implementation, inform policy and practice, and provide the necessary inputs for improving health and care capacity. This will be achieved through a Partnership in which all stakeholders can work together to stimulate and nurture research and innovation activities.

As indicated in Chapter 3 of this SRIA, the achievement of the abovementioned goal will be enshrined in a series of specific objectives to be achieved by 2030: increase funding opportunities and strengthen the research and innovation community; fill knowledge gaps; increase the ability to implement innovation; intensify cooperation among countries and beyond healthcare; and increase stakeholders' involvement.

These objectives, through a series of specific activities, will seek to deliver clear outcomes. They include: increased engagement of researchers in collaborative research; use of research results to develop evidence-based strategies; implementation of innovative care delivery methods; planning and implementation of efficient investments for novel solutions and models; stronger ecosystems and boosted uptake of innovation; increased digital and health literacy for citizens and professionals; and, ultimately, better cooperation and use of knowledge and evidence across countries. The SRIA also identifies specific impacts for key stakeholder categories, highlighting the concrete improvements the Partnership can bring.

Within such a broad and complex topic, prioritisation and framing are essential. Chapter 4 of the SRIA addresses this issue, identifying clear thematic priorities set against frameworks that include efficiency and sustainability, quality and safety, digitalisation, people needs and user involvements, and the health and care workforce. Such frameworks are closely intertwined with the specific health

and care sectors demanding attention and change, including long-term care, primary care, and the redefinition of hospital care.

Chapter 4 also lays out the Partnership roadmap. This is developed around three overarching work streams that address the specific objectives and describe the ambitious outcomes expected within the agreed time frame: filling knowledge gaps; implementing and transferring solutions; and boosting health and care system capabilities. To progress from these work streams to implementation and results, the SRIA also identifies a tentative roadmap with short-, medium- and long-term objectives linked to expected 2030 results.

This leads us to the implementation approach of the Partnership, which is presented in Chapter 5 alongside the organisational structure of the Partnership. In brief, the **identification of the problems and challenges** to be addressed, together with the definition of any **missing knowledge**, will help **identify the priority topics** to be included in the Partnership's Annual Work Plans. **Existing practices will need to be regularly mapped** to avoid any duplication of efforts, to help tailor the best actions, and to understand context-based obstacles and barriers to implementation and transfer. Addressing **research and innovation funding** will be a core issue for the Partnership and **sustainable mechanisms for the alignment of resources** will be promoted.

Within this framework, the **Partnership's implementation will be guided by a set of principles**: joint investments in health and care research and innovation; co-creation, capacity-building and science-policy cooperation across all activities and instruments; the establishment of a knowledge hub for ecosystem development support; international cooperation and broader participation with selected countries in order to compare approaches, test solutions, exploit results, exchange experiences and needs, and support the transfer of knowledge; strategy development to strengthen programme management, dissemination, and exploitation.

Finally, as the Partnership's endeavours will not achieve the desired results on their own, the SRIA maps out the main **synergies** that the Partnership will seek and foster with other EU initiatives, from Horizon Europe to the EU4Health Programme, covering other important partnership and funding streams such as the Innovative Health Initiative and the European Social Fund+.

1. Context and Problem definition

1.1 Health and care system challenges

The rapidly changing and ageing society and the occurrence of health emergencies are urging countries to efficiently respond to increasing burdens on their health and care systems.[1] At the same time, populations are expecting the high-quality health and care promised by the European Union's common commitment to providing universal access to good quality healthcare, financed on the basis of equity and solidarity, and delivered in a financially sustainable way.

Decisive improvements in the resilience[2], organisation and coordination of health and care systems are therefore needed to respond to future health threats more effectively, while also enabling the evidence-based [1] transformation, redesign and integration of care services to better respond to people's needs. This requires knowledge, long-term vision and political will to achieve optimal impact while simultaneously improving the way systems use the available and often scarce resources [2].

A further dimension to this scenario, are the vastly different health and care systems implemented across Europe. Furthermore, many Member States have health and care services that are organised and funded at local and regional levels, thereby creating an additional layer of complex coordination between national policies and local and regional governance. This can lead to disparities within the same country or even the same region or local reality [3].

Within this general context, it is however possible to identify a set of core challenges faced by health and care systems that call for more harmonised and coordinated solutions. These include demographic changes [4], health and care workforce dynamics, climate change and environmental factors, globalisation, political and social landscape changes, technological and organisational development, and innovation.

Demographic changes represent the first major issue facing all health and care sectors. People are living longer and, thus, tending to develop multiple chronic diseases that require more complex health and care solutions. With about 50 million European citizens suffering from two or more chronic conditions, chronic diseases represent around 70-80% of healthcare costs [5], so exerting a clear and growing impact on the sustainability and management of systems. Furthermore, the rise

[1] In this Partnership, **health and care systems are organisations of people, institutions and resources that deliver services that help people maintain their health**. In this Partnership, "**health**" **is understood according to the WHO definition of 1948 and revised in 1984,** namely "the extent to which an individual or group is able to realise aspirations and satisfy needs and to change or cope with the environment. Health is a resource for everyday life, not the objective of living; it is a positive concept, emphasising social and personal resources, as well as physical capacities". Furthermore, the approach to care is inclusive, encompassing formal and informal care as well as health-related social care.

[2] According to the definition developed at an EU level by the Expert Group on Health Systems Performance Assessment, health systems are resilient when they show "the capacity to absorb, effectively respond, and adapt to shocks and structural changes in a way that allows them to sustain required operations, resume optimal performance as quickly as possible, transform their structure and functions to strengthen the system, and (possibly) reduce their vulnerability to similar shocks and structural changes in the future". Thus, resilient, and adaptive health systems would be able to protect themselves and human lives from the public health impact of disasters, and are critical to achieving good health outcomes before, during and after disasters.

of chronically ill patients and multiple morbidities increases the percentage of people not participating actively in the workforce, resulting in reduced revenues for Member States; this, then, increases financial uncertainty and budgetary limits, with an indirect impact on health and care financing.

Addressing the chronic diseases challenge requires a particular focus, considering the mix of environmental, occupational, and lifestyle-related risk factors that have led to an increasing burden of conditions like cancer, cardiovascular diseases, neurodegenerative diseases, as well as mental health problems and related social problems. This highlights the importance of health determinants, made clear by the recent important EU activities in this field: the European Beating Cancer Plan[3], and the Healthier Together – EU Non-Communicable Diseases Initiative[4], which also illustrate the European dimension of the chronic diseases challenge. Finally, it is essential to mention the importance of health promotion, prevention, and early diagnosis as crucial elements in tackling chronic diseases and creating better care pathways, so improving quality of life and leading towards a better use of resources in our health systems.

The **health and care workforce, its organisation and needs** also represent a core challenge. This was further exposed during the COVID-19 pandemic, where lack of preparation, planning and resources led to excessive levels of stress and pressure on the workforce. Examining the issue in more detail, the lack of qualified professionals is already a reality in large parts of Europe, aggravated by the perceived low attractiveness of the health and care sector. This is further complicated by limited digital skills development and adequate strategies taking into consideration organisational and technological innovation. Skills gaps, however, go beyond the digital dimension. Leadership and multidisciplinary abilities should also be addressed and boosted within the workforce, to facilitate a more integrated approach to care delivery. Furthermore, the intersection with care-associated tasks provided in some contexts by social services, as well as by the informal sector [6], is often not reflected in the organisation and budgeting of health and care systems.

Health and care systems, however, do not exist in a vacuum, experiencing pressures and challenges linked to other external factors. Systems must demonstrate the ability to timeously detect and tackle emerging global threats and public health crises, recognising the link between **human health, climate change and underlying environmental issues, as per the planetary health[5] approach.** This calls for evidence-based and coordinated actions to address their impacts[6]. For instance, climate change causes extreme weather conditions and extreme seasonal temperature variations. Heat and cold waves have, in recent years, hit Europe hard with a strong impact and progressively more deaths, in particular among vulnerable groups such as the elderly and chronically

[3] European Beating Cancer Plan https://ec.europa.eu/info/strategy/priorities-2019-2024/promoting-our-european-way-life/european-health-union/cancer-plan-europe_en

[4] Healthier together Initiative: call for best practices on non-communicable diseases https://ec.europa.eu/health/latest-updates/healthier-together-initiative-call-best-practices-non-communicable-diseases-2022-04-25_en

[5] The Rockefeller Foundation-Lancet Commission on Planetary Health recognizes that human health and the health of our planet are inextricably linked, and that our civilization depends on human health, flourishing natural systems, and the wise stewardship of natural resources. https://unfccc.int/climate-action/un-global-climate-action-awards/planetary-health

[6] Future actions to prepare for climate change according to the WHO can be found on: https://www.who.int/globalchange/resources/vulnerability_adaptation/case_studies/box_13/en/

ill [7]. In addition, climate change is also affecting the emergence and spread of infectious diseases, especially those that are vector-borne.

The transformation of health and care systems should also be seen and implemented as part of our society's transition to a more **sustainable development**. In the Lancet Countdown on Health and Climate Change Report 2019 [8] one of the key messages was "placing health at the centre of the coming transition will yield enormous dividends for the public and the economy, with cleaner air, safer cities, and healthier diets", highlighting the importance of health as a driver of transition in many policy areas. Furthermore, health and care systems are also direct contributors to carbon emissions, an additional secondary dimension to be considered in the move towards developing well-functioning and efficient systems, with less waste and greener processes.

Migration is another key issue in the international political and public debate that is connected to the health and care systems discussion. Its management represents a key issue for modern societies and includes the adaptation of health and care systems to meet the associated new needs [9]. I**nternational mobility in a globalised world** was acutely observed during the COVID-19 pandemic to be a factor in the rapid propagation of emerging infectious diseases, with significant impacts on the health of populations and on health and care systems globally[7].

Another dimension of migration that affects health and care, is the increasing **movement of health and care professionals** from developing to developed regions. This has resulted in a health sector 'brain drain' and significant repercussions in certain countries, regions and local areas, which are ultimately left behind [10].

The **political and social landscapes also impact health and care systems.** Great attention must be given to the fact that public spending on health and care is steadily rising in the EU in parallel with budgetary constraints [3], putting additional pressure on policy-makers. The related need for innovative budgetary mechanisms addressing fiscal constraints makes it mandatory for health and care systems to improve their effectiveness and efficiency, so as to increase overall sustainability. In addition to national and regional spending and budgeting, financial constraints on individuals have also contributed to the growing health inequalities across the EU. This has seen people with a lower level of education already having recognised shorter life expectancies than those with higher levels of education. There are large inequalities in the access and use of health and care services across the EU, with poorer Europeans being on average five times more likely to experience problems accessing health and care than those who are financially better off [11].

An additional element of pressure linked to the political and social landscape, is the **decreasing trust in science, evidence and government decisions**. This has led to a growing number of groups reluctant to follow evidence-based health policies, as experienced during the COVID-19 crisis. Such a trend can have a detrimental effect on collective efforts to control epidemics and, more generally, deploy public health measures, prevent, and tackle chronic diseases, so creating an additional stress for health and care systems.

[7] Useful sources from Global Health Summit and the Pan European Commission on Health and Sustainable development can be found at https://www.euro.who.int/en/health-topics/health-policy/european-programme-of-work/pan-european-commission-on-health-and-sustainable-development/rethinking-policy-priorities-in-the-light-of-pandemics-a-call-to-action

Finally, the move towards better health and care systems also requires recognising the difficulties in getting innovative solutions (technological and organisational) and related research results to reach and have an impact on health and care delivery and organisation.

Focusing on **technological innovation**, the digitalisation of the health and care services (including the use of health data, electronic medical devices, and telemedicine) is offering crucial opportunities to support and develop the future of health and care systems [12]. Alongside these opportunities, however, health and care digitalisation also entail a series of shared challenges. These include, for instance, inequalities in technology access within and between countries, unequal levels of digital health literacy and skills gaps for the health and care workforce, limited technological interoperability, a lack of trust and acceptance of digital solutions, and the additional issue of cybersecurity and data protection.

Concluding this assessment of health and care systems, the complexity of the context, and the intertwined nature of the challenges and their widespread impact at a European and global level, is evident. Equally evident is the urgent need to devise a path for all stakeholders involved in health and care system design, research, and implementation to take, in order to address these issues in a timely manner. Understanding and shaping this path is what ultimately constitutes the core problem discussed in the following paragraph of this introductory chapter.

1.2 From challenges to solution – core problem definition

Having identified the general context, the scene was set for defining the **problem** that this SRIA will focus on. More specifically, while the challenges are clear, it is necessary to **identify how health and care systems can achieve an adequately harmonised response to these issues**.

Given the pressures that health and care systems are facing with an ageing population and public finance pressures, careful planning, and investment around the broader goals of system accessibility and universality will be needed, so as to ensure that all innovations are well-integrated and do not exclude the most vulnerable in society. There is considerable potential for strategic learning across countries, as well as - given the emergent nature of technological innovation - a significant opportunity to prospectively explore the effectiveness and consequences of different approaches in different settings so as to optimise scarce resources.

The first step towards a harmonised response and objectives, involves transforming the abovementioned challenges into specific research problems and priorities. This would support the identification of the '**what'**, i.e. the topics that health and care systems research and innovation should focus on, their key components, and the underlying questions that would need answering in order to achieve transformation [13]. For instance, effective integration of health and other services could be seen as a key topic to focus on in order to address the growing ageing population and the rise in multiple morbidities associated with this.

Knowing the 'what', however, is not sufficient. Once the cross-cutting priority topics providing answers to the challenges have been characterised, it is necessary to identify innovative approaches and solutions that can offer tangible results. These would represent the building blocks for transforming the organisation and delivery of health and care systems. Ensuring that such innovation is researched and identified in the right way, however, is only one additional step. There is also a clear need to study '**how'** any innovation can be both implemented in a single context and then transferred to different contexts to achieve the needed common response to common challenges [14]. Understanding how this can work is part of a complex question that can be answered through coordinated, relevant, timely and evidence-based research and innovation (R&I)[8] in the field of health and care systems transformation[9].

At the moment, said evidence and research needed to answer to the questions lined above is still lacking. Such gap is reinforced by a lack of concrete exchanges, pilots, and other activities to stress-test the transfer of innovation, create and evaluate the knowledge base about existing barriers, how to overcome them in practice, and what policies can facilitate this process. These constitute the main issues addressed by this SRIA.

In the next chapters, the SRIA will present how the Partnership on transforming health and care systems (THCS) is set to respond to this context, building on its solid background, vision, and ambitions to achieve objectives and deliver clear impacts to health and care systems stakeholders.

To move towards this goal, a Research, and Innovation Pipeline (figure 1) will be used as a general framework to shape the vision, objectives and actions implemented by the Transforming Health and Care Systems Partnership. The approach put forward by the Partnership will tackle all steps of the cycle by: investing in research; filling the knowledge gaps on key priorities for health and care systems; demonstrating positive outcomes for citizens, patients and all health and care systems stakeholders; triggering improvements in the delivery of care; and adequately supporting decision-making and health and care system capacities.

[8] In this Partnership, R&I are used according to the common terminology of the framework programme. In funding various activities, and in line with existing national regulations, the categories of basic research, industrial research and experimental development are applied.

[9] TO REACH Strategic Research Agenda: https://to-reach.eu/wp-content/uploads/2021/02/Strategic-Research-Agenda-May-2019.pdf

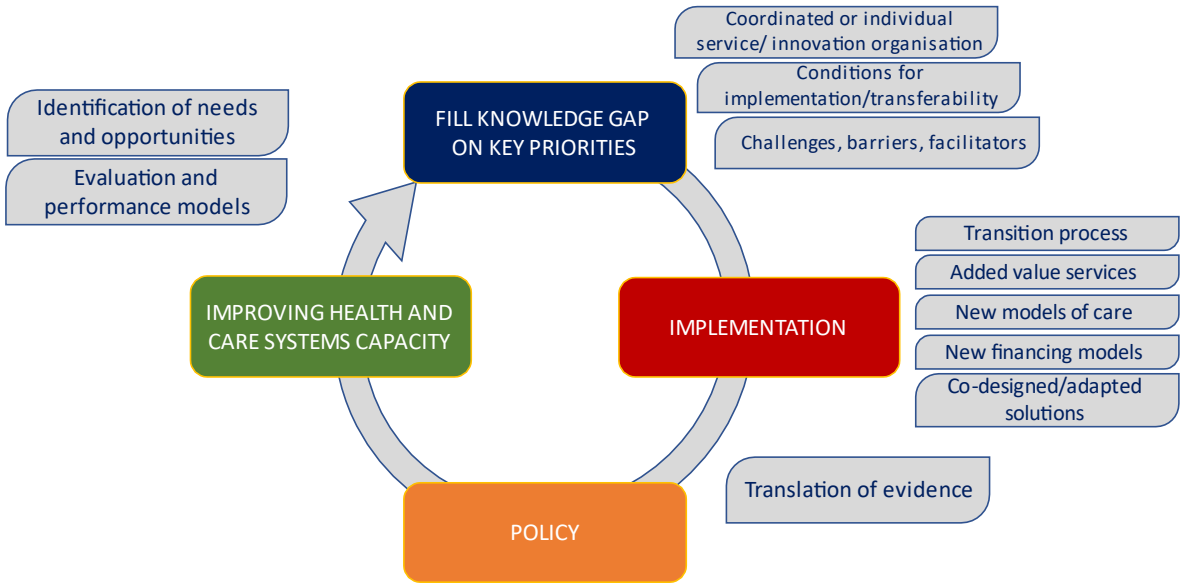


Figure 1 - Research and Innovation Pipeline

2. The Partnership background, vision, and ambitions

2.1 The Partnership background

European health and care system owners, policy-makers, research funders, research and innovation organisations, health and care professionals, organisations representing population needs, developers, innovators, and enterprises in this field have already worked together under different umbrellas within the framework of Horizon 2020, focusing on a number of solutions for more sustainable systems in Europe. More specifically, a number of initiatives have been developed that are now ready to be consolidated under a single synergistic approach in order to build upon them and increase their impact. The **TO-REACH**[10] project has already delivered a Member State and Associated Country-supported strategic research agenda informed by a systematic analysis of priority challenges for service and policy innovations and aimed at strengthening health systems. It has also delivered a conceptual framework that identifies the steps and research inputs needed to inform the potential transfer and joint development of service and policy innovation across countries and sectors. Over the past decade, the **'Active and Assisted Living Programme' (AAL)**[11] has gained substantial experience through end-user involvement and co-creation in RDI Projects, developing business plans for innovative solutions and related ecosystem needs, as well as through the operational procedures of running a complex multiannual European funding activity. The **European Innovation Partnership on Active and Healthy Ageing (EIP AHA)**[12] brought together relevant actors across different health policy areas, both at an EU as well as national and regional level, to handle societal challenges in the area of ageing and innovation and to meet and exchange ideas with peers involved at all stages of the innovation chain. The **Joint Programming Initiative More Years Better Life (JPI MYBL)**[13] consolidates the activities of more than 15 countries to enhance coordination and collaboration between European and national research programmes related to demographic change. The JPI MYBL's Strategic Research Agenda emphasises that effective policy and decision-making processes aimed at integrating social and care services in the different health and care systems, have the potential to empower people to manage their lives and thus their wellbeing.

These four initiatives, through their increased cooperation over the last two years, have demonstrated significant reciprocities by not only addressing the whole R&I value chain but also including the institutional and non-institutional sectors of the health and care systems. However, this Partnership should not be considered as a mere continuity of these initiatives.

Through its Strategic Research and Innovation Agenda (SRIA), the Partnership has the ambition to address and trigger global and long-term changes in the complex health and care research and innovation ecosystems. Significantly enhanced collaboration between key actors at the R&I and

[10] https://to-reach.eu/
[11] http://www.aal-europe.eu/
[12] https://digital-strategy.ec.europa.eu/en/policies/eip-aha
[13] https://jp-demographic.eu/

health and care levels, but also at national, regional, and local levels, will be an added obvious strength.

In addition, views and experiences from other relevant programmes and initiatives across the EU will be taken into consideration, including ICPerMed (in particular its Vision Paper [15]), the EU4Health Programme, the Innovative Health Initiative[14], the EU Beating Cancer Plan and the actions proposed by the Mission Board on Cancer.

The Partnership will also work closely with other international organisations working in the field of health and care systems transformation, including the World Health Organisation, the Organisation for Economic Cooperation and Development, the European Observatory on Health Systems and Policies, and non-governmental organisations such as the European Public Health Association (EUPHA) and the European Health Management Association (EHMA). Further indications on the Partnership synergies are indicated in the chapter 'Creating Synergies'.

2.2 Vision

The value of the THCS Partnership lies in bringing together a broad range of research and innovation results and actors to work towards a common vision and then translate this into coordinated implementing actions, evidence-based policies, and concrete hands-on outcomes. To successfully and sustainably address the increasing challenges and underlying core problems listed in Chapter 1 (Context and Problem Definition), the participation of all relevant actors should be promoted. It is necessary to combine the individual challenges we face into a set of solutions essential to a sustainable, affordable, and fairer system of health and care – improving our health today in ways that do not disproportionately harm the health of others elsewhere in the future. Following this Strategic Research and Innovation Agenda, the Partnership on Transforming Health and Care Systems will focus on filling the knowledge gaps in identified key priorities and understanding how to implement future or already existing evidence, taking into account different contextual factors, in order to shape the policies we need.

The **common vision** of the Partnership on Transforming Health and Care Systems (THCS) is to maintain and improve people's health in Europe and participating countries by supporting the transformation of health and care systems in order to achieve **high-quality, fairly accessible, sustainable, efficient, resilient and inclusive health and care systems for all.**

The Partnership will foster the **transition towards people-centred health and care systems[15]**, enabled by **integrated services** both across and beyond traditional health and care boundaries and by focusing on all the relevant dimensions for the delivery of health and care systems for all.

[14] https://www.ihi.europa.eu/

[15] According to the World Health Organisation, person-and population-centredness can be defined as "putting the comprehensive needs of people and communities, not only diseases, at the centre of health systems, and empowering people to have a more active role in their own health".

2.3 Ambitions

The vision of the Partnership will be reached by embracing the whole knowledge and innovation cycle, from fundamental research to implementation, applied research, innovation, and development. The main focus will be on the need to foster implementation, inform policy and practice, and provide the necessary inputs for improving the capacity of health and care systems.

In summary, the proposed Partnership will:

- Capitalise on Europe's so-called "natural experiments" [16], exploiting its unique resources pool and research capacity to critically advance the quality of health and care services and systems research, optimising its use and usefulness for informing policy.
- Address the whole research and innovation cycle, including services, as well as technological, organisational and policy innovations, in order to co-create and embed new solutions into a system that addresses key outcome-based indicators such as quality and sustainability.
- Develop a common language and mindset regarding the transformation of health and care systems in order to achieve greater alignment of research and innovation funding in this field.
- Promote a context-based approach, identifying the enablers of and barriers to the implementation and transferability of innovation. It was also foster digitalisation of health and care systems, including the development of new business models, taking into consideration an ecosystem-wide approach.
- Trigger changes in health and care research and innovation ecosystems, enhancing the interconnectivity between different research and innovation fields and communities, including at regional and local levels.
- Promote the use of strategic transformation process tools to support health and care system partners in their transformation journey.
- Align with the goals of Horizon Europe, EU4Health and other EU funding programmes to have a tangible impact on the populations of the EU and all participating countries.
- Build an outcome-based and holistic approach in line with WHO, Sustainable Development Goals (SDGs) and 2030 Agenda recommendations.

3. The Partnership objectives, outputs, expected outcomes and impacts

3.1 General objective

The general objective of the Partnership on Transforming Health and Care Systems is to contribute to the transition towards more sustainable, efficient, resilient, innovative, and high-quality people-centred health and care systems which are inclusive and equally accessible to all people. The idea is to catalyse such transformation by building an open and supporting Partnership where all stakeholders can work together to stimulate and nurture research and innovation activities.

The vision and objectives of the Partnership will be reached by embracing the whole knowledge and innovation cycle, from fundamental research to implementation, applied research, innovation, and development.

The above general objective and the following specific objectives will cover the period between 2023-2030 and are the described in the following paragraphs. *Figure 2* below summarises the intervention logic of the Partnership, including specific objectives, expected outcomes and expected impacts. **However, more detailed explanations, in particular of outcomes, impacts and KPIs, are included in the Partnership proposal.**

3.2 Specific objectives (SO) and operational objectives (OO)

The Partnership will be organised around the following specific and operational objectives to be achieved by 2030; these objectives will apply at every step, from knowledge creation to the implementation, translation into policy, and improved capacity of health and care systems.

To this aim, the Partnership will commit to work towards the following:

- **SO1: Increase funding opportunities and strengthen the research and innovation community.**
- **SO2: Fill knowledge gaps.**
- **SO3: Increase the ability to implement innovation.**
- **SO4: Intensify cooperation among countries and beyond healthcare.**
- **SO5: Increase stakeholder involvement and capacity building.**

To fulfil these objectives, researchers, innovators and enterprises, economic forces, health and care administrations, and society as a whole will work together in a common direction, making use of co-creation where relevant.

3.2.1 SO1: Increase funding opportunities and strengthen the research and innovation community

State of play and needs assessment

European and international collaborations among research and innovation funding bodies supporting health and care system transformation is, for the first time, at the core of European funding and cofounded action supporting the European Research Area. This responds to a need for strengthened cooperation between Ministries of Research and Innovation, which are usually in charge of funding research and innovation, and Ministries of Health, which are responsible for national health and care system policies.

Excellence in the field of research and innovation is widespread across Europe; however, funding institutions and Ministries are highly fragmented at a national and regional level. By avoiding such fragmentation and rather optimising funding allocation among projects and promoting sustainable cooperation mechanisms through multi/transdisciplinary consortia, countries can optimise resources and ensure a more comprehensive approach to addressing health and care system transformation.

There is a lack of understanding of the potential in mutual learning, cross-country comparisons, and the exchange of practices that support the transformation of health and care systems and the implementation of innovation. COVID-19 has shown the extent to which cooperation among countries can contribute to addressing critical pressures on health and care systems; examples include increasing the access and sharing of improved solutions tailored to users' needs, as well as larger health data sets and evidence to design more coordinated responses. By strengthening cooperation within the research and innovation community, it will be possible to create a facilitating and sustainable framework supported by adequate resources.

Key operational objectives (OO)	Key outputs
1. Enable better alignment of priorities and coordination of funding to support health and care system research and innovation	• Stronger network of research and innovation funders at national and regional level. • Sustainable and harmonised framework for research and innovation funding.

2. Allocate resources promoting collaborative transnational methodological research, experimental development[16], implementation research[17], applied research[18], and innovation activities[19] on, for instance, technological and interdisciplinary aspects, digitalisation, organisational innovations and innovative service models, while exploiting potential synergies among funding programmes.	• Validated methodologies for need based prioritization for definition of activities and topics for funding opportunities • A strategy for exploring and managing synergies with other EU research and innovation actions and infrastructures. • Sustainable and easily accessible database of R&I experts in the field of health and care system innovation and transformation.
Key Performance Indicators (KPIs) ⇒ Alignment of R&I priorities through the identification of common themes for calls and of strategies to coordinate funding opportunities ⇒ Establishment and use of sustainable mechanisms of collaboration promoting R&I through dedicated budget	

[16] Experimental development is systematic work, drawing on existing knowledge gained from research and practical experience, that is directed towards: producing new materials, products, and devices; installing new processes, systems, and services; or improving substantially those already produced or installed. OECD: "Frascati Manual 2002: The measurement of scientific and technological activities - Proposed Standard Practice for Surveys on Research and Experimental Development", OECD, Paris, 2002

[17] Implementation research specifically considers context and real-life conditions, and engages concerned population groups, leading to more successful translation and scale-up of public health interventions. http://www.gacd.org

[18] Applied research is original investigation undertaken to acquire new knowledge. It is, however, directed primarily towards a specific, practical aim or objective. https://www.oecd.org/sti/inno/Frascati-2015-Glossary.pdf

[19] An innovation is a new or improved product or process (or combination thereof) that differs significantly from the unit's previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process). Page 60, point 2.6 in https://www.oecd-ilibrary.org/docserver/9789264304604-en.pdf?expires=1618153887&id=id&accname=guest&checksu008C534DF18B74C0F2D5FF429FC2A6E4

3.2.2 SO2: Fill knowledge gaps

State of play and needs assessment

The increasing number of challenges faced by health and care systems in managing people's health and care needs, have made clear the importance of moving towards a more integrated, community- and people-centred care. This is linked to the need to strengthen relevant health and care sectors and find new ways of delivering services and maintaining health by involving a broad range of stakeholders and strengthening the capacity and tools for translating evidence into practice.

However, there is a lack of understanding around the most suitable solutions and innovations needed in different contexts to respond to end users' health and care needs. While technological innovation remains key to improving and restoring the health of Europe's inhabitants, innovative service organisation and delivery, and the policies themselves, will be central. This also includes a sustained investment in improving or developing new innovative health promotion and disease prevention policies to reap the long-term health and economic benefits of addressing the causes of ill health.

Furthermore, knowledge gaps exist when assessing whether a given innovation is worth introducing (the value proposition): who will benefit, and how to minimise unintended consequences, such as the exclusion of more marginalised groups from accessing the innovation. Evidence and research findings are needed to identify innovative prevention strategies, personalised approaches and concepts of care, supporting their translation into practice.

Several conceptual frameworks exist as well as studies that outline the problems and what should be done to improve the outcomes of health and care systems. However, countries still lack shared methods, measurements, approaches, and strategies for supporting the adoption and integration of research findings and evidence into health and care policy and practice.

Knowledge gaps also still exist in the identification and study of barriers and enabling factors for a successful implementation and transferability of innovations across countries and settings. Said gaps cover, for instance, the implementation process, including structured evaluations of the cost effectiveness vs health benefits of existing interventions and, in particular, including end-users' perspectives**.**

Key operational objectives (OO)	Key outputs
1. Support comparative analyses of national or regional strategies and approaches in order to advance health and care services and uptake research findings into policy. 2. Support the understanding of the evidence required to effectively inform the transferability of innovation, based on different contexts. 3. Support the identification of context-based new solutions that respond to the challenges of the health and care sector and beyond. 4. Promote the assessment of the adoption and use of innovation, focusing on the concept of value proposition: who will benefit and how to minimise unintended consequences. 5. Foster harmonisation of methodologies and frameworks for the monitoring and assessment of innovative solutions.	• Mapping of research and innovation gaps, approaches and tools for addressing the challenges facing health and care systems in taking up innovations and responding to end users' needs in Europe and beyond. • Common measures and indicators increasing the use of qualitative data to move towards more sustainable, efficient, resilient, inclusive, innovative and high-quality people-centred health and care systems equally accessible to all people • New/adapted sustainable concepts of care, prevention models, personalised approaches in prevention and care on different intervention areas (i.e. NCDs and CDs, cancer) to be translated in different contexts • Co-created new/adapted business and delivery models for innovative solutions with established evidence on the effects and efficiency • Guidance that supports the development of strategies tackling health and care system governance and financing. • Data on effectiveness and value of the interventions

Key Performance Indicators (KPIs)

⇒ Development of studies with common measure and indicators increasing the use and quality of data
⇒ Type and representativeness of stakeholders involved to assess the knowledge gaps and barriers for transferability of innovation
⇒ Identification of intervention areas where context-based new solutions are needed (organizational - concepts of care, prevention models, business and delivery models, personalized approaches – and technological)
⇒ Publications in peer reviewed/relevant journals
⇒ Availability and use of the framework for the assessment of innovative solutions towards their transferability

3.2.3 SO3: Increase the ability to implement innovation

State of play and needs assessment

There is a strong need to improve the ability of countries to implement innovation and maximise resources through the 'learning' of health and care systems. Transferability of innovations across countries and settings with the involvement of all stakeholders and users is key. Challenges faced by health and care systems across countries are similar, as could be the related solutions. However, decision-makers lack the guidance and instruments for actually adopting and integrating research findings and evidence-based practices into different settings. There is a missing link between those actors that design the R&I processes and those involved in the decision-making and implementation. Contextual factors play a crucial role.

Recent interpretations have moved away from the idea of context as a static concept. They emphasise the dynamic nature of implementing and transferring innovations, noting that context comprises "a physical location but also roles, interactions and relationships at multiple levels" [17]. In this regard, there are several barriers that need to be overcome, e.g. the lack of engagement of health and care professionals, and the dissatisfaction and lack of incentives that can impact the implementation of innovation in health and care systems. More needs to be done to tackle all steps of the implementation process, involving also end users and adjusting solutions to their needs.

Key operational objectives (OO)	Key outputs
1. Promote a faster exchange of best practices, and test and upscale innovations using existing tools across different countries and regions. 2. Support accelerated implementation and translation of research and innovation into evidence-based practice. 3. Strengthen the capacity and use of research to better inform the implementation of innovations in health and care systems. 4. Promote research and innovation that integrates end-users' perspectives.	• New tools and guidance for different stakeholders and countries, supporting the implementation process with a context-based focus. • Validated, customized and largely adopted solutions for health and care delivery • Frameworks for collecting and exchanging best practices, focusing on innovation in health and care systems.

	• Strengthened ecosystems and networking schemes that connect the key actors in R&I and implementation in health and care. • Identified barriers and successful factors enabling transferability of research and innovation findings and the uptake of innovation. • Sustainable mechanism for assessing the needs of different stakeholders in health and care, sharing the tools and results of research and innovation actions. • Tools and recommendations for better integrating users into implementation.

Key Performance Indicators (KPIs)

⇒ Increased demonstration and pilot activities of good practices identified at small scale of local or regional level

⇒ Use of tools/frameworks developed/made available by the Partnership for implementation and transferability of existing practices

⇒ Development and use of recommendations, strategies and guidelines informing various levels of decision-making on how to translate and implement R&I into practice

⇒ Improve the skills of decision-makers/stakeholders in using research results to implement innovative solutions in health and care systems

⇒ Events (workshops and/or trainings), materials, and projects promoting the integration of users' perspective in R&I

3.2.4 SO4: Intensify cooperation among countries and regions and beyond healthcare

State of play and needs assessment

There is a siloed and non-inclusive approach to health and care policy-making across countries and regions. Better integration across all health and care sectors and across traditional boundaries (e.g. social care, occupational health, prevention) is needed. The Partnership should work to address the lack of sustainable mechanisms for informing policy-makers of research and innovation achievements under its scope. Cooperation should be envisaged not only between representatives of the Ministries of Health and Ministries of Research and Innovation, but also those of other ministries such as Finance/Economy, etc.

This is in line with the important achievements of the G20 Joint Finance and Health Ministers meeting, which formally announced the establishment of a Task Force to explore new financing solutions. Its aim is to foster stronger post-pandemic recovery but also better prepare our health and care systems to respond to possible future emergencies. The lessons learned from the COVID-19 crisis will need to be further explored within the framework of the Partnership, including the reinforcement of dialogue between science and policy, and the focusing on strategies and approaches to help people maintain their health, enabling health and care systems to provide health to all people while remaining fiscally and financially sustainable.

An inclusive approach to health and care policy-making should be reinforced, not only at national level but also at regional and local levels. In regional and local contexts, examples of successful integration between policy initiatives and actors have been already achieved across Europe and beyond, allowing for useful cross-country fertilisation.

Key operational objectives (OO)	Key outputs
1. Foster the capacity of health and care policy-makers and other relevant stakeholders through the sharing of knowledge. 2. Build synergies and promote networking to support coordination activities at EU, international and national levels.	• New tools and methodologies, including recommendations and guidance that support the integration of research and innovation for evidence-based policies. • Strategies and plans that support synergies across policy areas to address the challenges facing health and care systems and support their transformation. • New strategies, programmes, and tools for capacity-building activities. • Sustainable mechanism for promoting cooperation among policy-makers to support the alignment of research and innovation priorities with concrete policy needs.

Key Performance Indicators (KPIs)

⇒ Number and type of science-policy interactions/ communications

⇒ Number of policy actors involved in key initiatives (workshops, trainings) promoting the sharing of knowledge

⇒ Identification of shared policy priorities and common areas of interest at EU, national and regional levels involving a wide spectrum of stakeholders from the policy field

⇒ Integrate Partnership results on national/regional/ local strategies, programmes, and plans supporting synergies across policy areas towards health and care systems transformation.

3.2.5 SO5: Increase stakeholders' involvement and capacity building

State of play and needs assessment

Existing ecosystems at country, regional and local levels that comprise a variety of interconnected stakeholders and entities, from regulators to end-users, enterprises and innovators, could support the design, development, and implementation of innovations. There is still an insufficient development of health and care ecosystems that take a comprehensive and broad perspective towards supporting health and care system transformation across Europe and, in particular, at regional and local levels. All key stakeholders need to have a mutual understanding of the challenges, and buy into a shared vision built on better understanding of each other's needs. The use of local ecosystems not only brings together public and private actors but also mobilises local communities for public health work while promoting and supporting informal care and end-user involvement. It will also help the Partnership to produce results that will facilitate the delivery and implementation of innovations.

The involvement of users in co-creation strategies that support the transformation of health and care systems, is a key issue in addressing existing gaps in the availability and use of technologies in health and care, so avoiding resource wastage and cost inefficiencies.

However, health literacy is still quite low among the population. People with low health literacy are at higher risk of poorer health behaviours, worse health outcomes and a deeper impact from health crises. Innovative approaches to improving health literacy among the population may encourage positive lifestyle changes and empower people to promote their own health, effectively managing long-term health conditions and reducing the burden on health and care systems.

Furthermore, to benefit from digital solutions and services, end users need to understand them and know how to use them. Health and care professionals also have a role to play in assisting people and explaining the use of digital solutions. For this reason, health and care professionals don't just need to understand how digital services work, but must also be able to train and instruct patients in their use.

Key operational objectives (OO)	Key outputs
1. Establish a multi-stakeholder/ecosystem collaboration platform to provide schemes that will support upscaling considering a Quadruple-Helix Model approach.[20] 2. Create enabling environments for the use of technologies by applying standard methodologies for their assessment and appraisal (in particular, real-life validation). 3. Increase dissemination and exploitation of results from research and innovation activities involving also patients and the general public.	• Networks of health and care providers and formal and informal carers, particularly at regional and local levels. • A detailed picture of regional and local ecosystems and their needs in order to support health and care system transformation. • A sustainable mechanism for supporting exchanges among health and care sector stakeholders. • New strategies and innovative structured mechanisms for effective stakeholder engagement and interactions with the general population, patients and civil society organisations. • Innovative strategies for the reinforcement of health and digital health literacy, and the collection and use of digital data for health and care. • Innovative training programmes, study visits, twinning projects, and capacity-building activities. • Uptake and exploitation of successful projects that support health and care system transformation.

Key Performance Indicators (KPIs)

⇒ Promotion of funded projects and good practices in order to increase their visibility and encourage the matchmaking between innovators and decision makers at EU level and across national/regional ecosystems.
⇒ Number of initiatives aiming at supporting a better use of technology, in particular of digital tools
⇒ Number of interactions with stakeholders, including patients and general public, aiming at increasing digital and health literacy

[20] The Quadruple-Helix approach recognises four major actors in the innovation system: science, policy, industry, and society.

3.3 Expected outcomes and intervention logic

To fulfil the objectives set out in the THCS Partnership, all relevant stakeholders should work together and adopt co-creation procedures where relevant. To accelerate the transformation of Europe's health and care systems, the above-mentioned outputs are directed towards and contribute to the following expected outcomes:

- Researchers across European countries and regions are engaged in enhanced collaborative research on transforming health and care systems.
- Health and care authorities, policymakers and other stakeholders use the research results to develop evidence-based strategies and policies on transforming health care systems, and to learn from the good practices adopted in European countries and regions.
- Health and care providers and professionals implement innovative ways of delivering care and maintaining population health.
- Health and care authorities, policy-makers and other stakeholders plan and carry out efficient investments in health and care systems at national/regional level in order to use innovative solutions and care models.
- An increased number of innovators and stronger local/regional stakeholder ecosystems are in place and facilitate the uptake of successful innovations for health and care.
- Citizens and health and care professionals have increased digital and health literacy.
- Countries cooperate better and use context-specific knowledge and evidence to make their health and care systems more resilient with respect to upcoming needs and crises.

The following section of the document illustrates the expected impacts according to the stakeholder category they are addressed to.

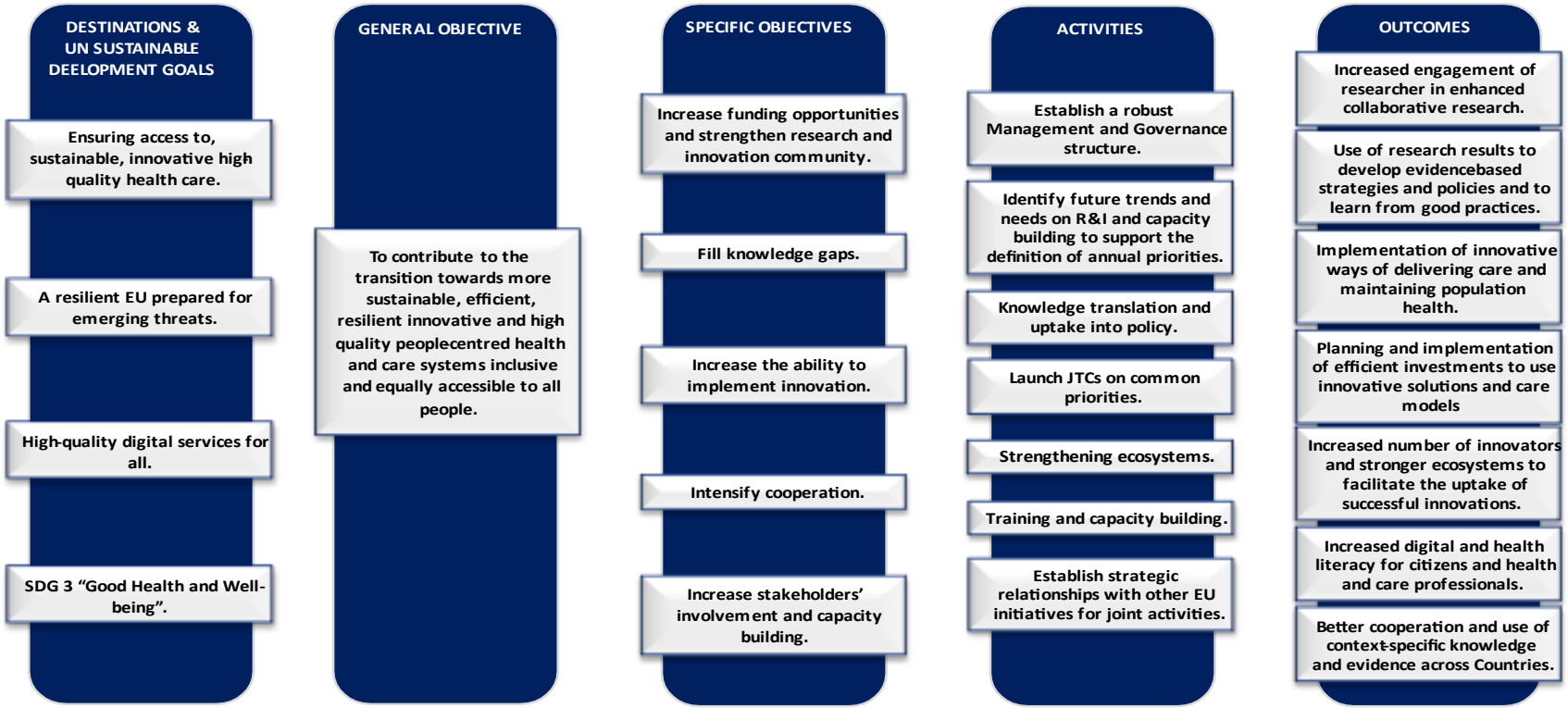


Figure 2 - Intervention Logic

3.4 Impacts by stakeholder categories

INDIVIDUALS	
	Providing high quality care to all European populations is a crucial challenge of today's health and care systems. Policies and research should centre on and involve people. Being involved in an EU-wide research and innovation initiative allows individuals, as patients and members of the public (also referred to as "primary end-users"), to identify the gaps and barriers they experience in current health and care systems, and provides the opportunity for active engagement and, potentially, the co-designing of services.
Impacts	• An increasing number of people, from all social strata, have improved access, and improved equity in access, to quality health and care services, offered by more effective, efficient, accessible, resilient, safe, trusted, and fiscally and environmentally sustainable health and care systems. • Specific needs of more vulnerable groups are recognised and equally addressed by health and care systems. • Access to person-, community-, and population-centred services. • Increased patient safety and quality of services. • Technological and organisational innovation responds better to the needs of individuals. • Increased health literacy levels and self-management. • Improved integration of individuals in the design and management of health and care systems and services.

NATIONAL POLICY-MAKERS	
	In order to develop research and innovation actions that inform policy effectively, we need to respond to the continuously emerging challenges faced by policy-makers (also referred to as "tertiary end-users") and jointly set priorities for innovative health and care models that include a forward-looking perspective. The Partnership will help them interact between relevant health stakeholders and EU countries. This will help them set priorities and facilitate the creation of concrete action plans and guidelines.
Impacts	• Use the research results to develop evidence-based strategies and policies on transforming health and care systems, and learn from the good practices adopted in European countries and regions. • Plan and carry out efficient investments in health and care systems at national/regional level in order to use innovative solutions and care models.

	• Learn from other countries and use context-specific knowledge and evidence to make their health and care systems more resilient to upcoming needs and crises. • Take advantage of the efficient exchange of best practices throughout Europe to address existing and new challenges, including cross-border challenges, so aiming to maintain a healthy population. • Stronger alignment with other stakeholders in a common framework guided by shared priorities. • Wider availability of interoperable, quality health and care data, respecting FAIR principles.

LOCAL AND REGIONAL AUTHORITIES	
	Local and regional authorities (also referred to as "tertiary end-users") play a crucial role in that they need to take evidence-based decisions to ensure high quality care. These decisions need to be evidence-based and focus on data and empirical research. At the same time, they need to be based on engagement with patients and their caregivers, considering also the population impact. Being involved in the Partnership will give local and regional authorities easy access to knowledge that can help them assess which strategies they can best employ. This will facilitate the authorities' decisions around the efficient use of resources.
Impacts	• Plan and carry out efficient investments in health and care systems at regional and local level, in order to use innovative solutions and care models. • Increase cooperation within and beyond national borders to use context-specific knowledge and evidence to make health and care systems more resilient to upcoming needs and crises. • Stronger local/regional stakeholder ecosystems are in place and facilitate the uptake of successful innovations for health and care.

RESEARCH AND INNOVATION FUNDERS	
	To stimulate research that contributes to the delivery of high-quality care throughout Europe, research funders need to know what the research priorities in current and future health systems are. By bringing research funders together in an EU-wide research initiative, effective research allocation will be ensured through better dialogue and exchange of information, also with other relevant stakeholders.
Impacts	• Improved dialogue between research and innovation funders.

	• Improved dialogue between research and innovation funders and external stakeholders. • Access to up-to-date knowledge on research and innovation needs to better orientate funding strategies. • Access to an environment that stimulates synergies between the different existing funding programmes at European level.

PAYERS	
	High quality care needs an effective and sustainable finance system. Payers, such as health insurers (also referred to as "tertiary end-users"), need to have evidence and data to find the most cost-effective ways to allow high quality health and care. They need to know how quality health and care can be measured and improved in a practical way. The Partnership will allow them to address their needs but also to access data and, as such, develop an evidence-based health insurance system.
Impacts	• Wider availability of interoperable, quality health and care data and research results to develop an evidence-based health insurance system. • Access to evidence to achieve more cost-effective ways for allowing high quality health and care. • Access to research and best practices on the measurement of quality in health and care. • Access to a consolidated network of stakeholders and experts, enabling more informed decisions to shape effective and sustainable finance systems.

HEALTH AND CARE PROFESSIONALS (HCPs)	
	Health and Care Professionals, but also informal caregivers (also referred to as "secondary end-users" as they are directly in contact with primary end-users), are central players in delivering high quality health and care. As such they play a critical role in improving access and quality healthcare for the population. These stakeholders benefit from improved health and care systems both directly, as in the case of primary end-users, and indirectly, when the health and care needs of primary end-users are reduced or more effectively and/or efficiently met. Insight into the problems of HCPs is crucial for identifying and implementing more effective ways to organise and manage health and care and implement innovation.
Impacts	• Health and care professionals are equipped with the skills and abilities suited for the future needs of modernised health and care systems. • Health and care professionals are involved in the design and implementation of health and care system research priorities and innovation based on their needs.

	• Health and care professionals are given the tools, data and information to implement innovative ways of delivering care and maintaining population health.

HEALTHCARE PROVIDERS	
	Providers such as health centres or hospitals (also referred to as "secondary end-users") provide the structure in which health and care can be provided. Therefore, their organisation and management are crucial to the delivery of high quality care. The Partnership can help providers use the available research evidence to shape and improve their organisation and management (e.g. more efficient use of resources, better care for patients and the population they are responsible for, and innovation preparedness in health).
Impacts	• Wider availability of interoperable, quality health and care data, respecting FAIR principles, so facilitating research, policy-making and the implementation of integrated health and care services. • Health care providers are equipped with the skills and abilities to meet the future needs of modernised health and care systems. • Healthcare providers are supported in the shift from hospital-centred to community-, person- and population-centred care, successfully embedding technological innovations that meet public health needs and increasing patient safety and service quality.

RESEARCH and INNOVATION ORGANISATIONS	
	To organise, manage and finance health and care systems, data and evidence should be collected according to the 'what' (e.g. research on transferability, absorptive capacity, scalability, and performance enhancement) and 'how' (e.g. methodological approaches). Moreover, research and innovation findings should be translated, transferred and implemented within the real world. The Partnership will help research institutions get real world input and focus their research on the main EU priorities.
Impacts	• Access to interoperable, quality health and care data, respecting FAIR principles, so facilitating research and the exchange of information. • Facilitated exchanges of information and support for the translation, transfer, and implementation of research findings.

	• Access to evidence that facilitates the identification of research priorities and evidence needs, enabling gap assessment and adequate planning.

HEALTH AUTHORITIES	
	Health authorities (also referred to as "tertiary end-users") are national and international governmental or public entities in charge of administering health laws, regulations and standards, governing certain activities in the field of health, and providing public health supervision. Regulatory agencies are a clear example of health authorities and can be defined as bodies that carries out regulatory activities relating to medicines, including the processing of marketing authorisations, the monitoring of side effects, inspections, quality-testing and monitoring the use of medicines (EMA definition).
Impacts	• Access to better knowledge and evidence for improving and implementing governance mechanisms, including the holistic monitoring of health outcomes. • Access to a wide European network of peer Authorities and stakeholders to facilitate transnational exchange of best practices. • Wider availability of interoperable, quality health and care data to support the work of health authorities.

HEALTH and CARE ENTERPRENEURS, INNOVATORS	
	Health innovation seeks to develop new or improved health policies, systems, products and technologies, and services and delivery methods that improve people's health. Entrepreneurship in the Healthcare sector has received increased attention over the last two decades, and the bond between entrepreneurship and healthcare is constantly growing stronger. Entrepreneurial activities and innovations have emerged from, and will continue to be driven by, several actors along the healthcare value chain but especially by non-traditional healthcare players. Innovators and Entrepreneurs in Health and Care are typically from medium- and small-sized companies, and their work is aimed at producing and distributing new products, technologies and services to support health and care delivery.
Impacts	• Access to wider and better organised ecosystems to facilitate the uptake of successful innovations in health and care. • Access to data and research outcomes to develop innovation that better matches people's needs. • Increased access to investments targeted in a more efficient and evidence-based way.

4. The Strategic Process – From Priorities to actions

4.1 Moving towards people-centred health and care systems

According to its vision and general objective**, a key overarching priority of the Transforming Health and Care Systems Partnership is the transition towards** more sustainable, efficient, resilient, innovative, and high-quality people-centred health and care systems, inclusive and equally accessible to all people. As such, person- and people-centredness not only requires involving people to explore their needs and become more empowered, but also a system-wide reassessment and redesign of professional orientations and service organisation to adjust to the needs of people and their abilities, rather than the other way around.

To address the increasing challenges and fill the knowledge and innovation gaps and specific objectives listed in chapter 4, it is important to support research and innovation actions addressing all dimensions of health and care systems:

- **Quality of care** [18]: safety, effectiveness, patient-centredness, timeliness, efficiency, and equity.
- **Accessibility** [19]: approachability, acceptability, availability and accommodation, affordability, appropriateness, equity, and one-way entry and navigation in a well-integrated, people-centred and de-siloed system.
- **Sustainability** [20]: long-term strategic perspective and innovativeness, disease prevention and health promotion, rehabilitation, quality, financial sustainability, institutionalisation of environmental concerns, and institutional accountability and individual responsibility.
- **Efficiency** [21]: cost-effectiveness and value for money.
- **Resilience** [22]: knowledge, management of uncertainties, interdependence, legitimacy.
- **Inclusiveness**: diversity-sensitive, non-discriminatory, stigma-free.

Within the overarching theme of people-centred health and care systems, particular issues are centred around creating conditions that enable people as service users, patients, carers, their families, and communities to play a more central and directing role in their own care as well as in shaping the system that serves them. It also touches upon the implications of personalised medicine for individuals and societies that will have considerable implications for how health and care systems are organised and funded.

Several **key questions** can be considered while focusing on this overarching priority:

- What are the most effective approaches to engagement that consider people's values and preferences? These should take into consideration the individual person-professional relationship, the organisation, the co-creation of innovation, the governance and financing, and the wider societal perspective to implementing people-centred strategies.
- What are the most effective investment strategies for supporting the public (e.g. patients, clinicians, or decision-makers) to acquire the skills and abilities for critical engagement, to express their needs and understand risks?

- How do we ensure optimised links between the different tiers of the health and care system to guarantee the systematic and systemic implementation of effective people-centred strategies?
- Which types of measures can best increase health literacy and digital literacy by targeting people and/or health and care professionals?
- How should preventive and curative services be designed for those with lower health literacy and fewer possibilities for self-management?
- How should the potential of health promotion and disease prevention be unlocked by means of concrete strategies, involving multiple actors and sectors?
- What measures are effective to support informal carers?
- What are the skills and contextual conditions needed to deliver personalised medicine, and how will personalised medicine affect health and care in the future?

Consistent with the shift towards more people- and population-centred health and care, a holistic and outcome-based approach that focuses on rigorous measures to assess and improve the quality of health and care is becoming increasingly important.

4.2 Key thematic priorities and the building blocks of people-centred health and care systems

The degree of urgency of various priority topics in the field of health and care systems research and innovation evolves rapidly, depending on health, political, social and economic contexts as well as in response to the challenges and emerging global health issues described in previous paragraphs.

Several strategic documents developed at EU level[21] have identified a number of major priorities for research and innovation that should be addressed, and which aim at improving the effectiveness, accessibility and resilience of health and care systems, as well as the health and quality of life of the populations in EU and other participating countries. These strategic documents, together with the experience gained in previous initiatives, have been used to identify existing research and innovation gaps that must be filled in order to support health and care transformation. The review of work previously implemented at European level helped countries and regions to make their own internal assessments during the Partnership's proposal development and identified common priorities that future joint funding opportunities and activities could seek to address.

When addressing a broad topic like people-centred health and care systems, the following components should be tackled by multiple health and care actors through research and innovation actions, the exchange of best practices, policy initiatives, and capacity-building activities:

[21] Including, for instance:
- "Health at a Glance: Europe" reports (https://ec.europa.eu/health/state/glance_en)
- "Companion Report of the State of Health in the EU" (https://ec.europa.eu/health/state/companion_report_en)
- "Assessing the resilience of health systems in Europe: an overview of the theory, current practice and strategies for improvement" developed by EU Expert Group on Health Systems Performance Assessment (HSPA) in 2020 (https://ec.europa.eu/health/sites/health/files/systems_performance_assessment/docs/2020_resilience_en.pdf)

- **Involving and empowering people:** self-management of care, co-creation/co-production/health literacy. This would include support for informal carers, recognising their needs.
- **A whole population approach:** Taking responsibility for the health of the whole population requires **the integration of strong health promotion and disease prevention**, support for people and communities, and the creation of an enabling environment. A whole population approach also includes a focus on vulnerable groups who have difficulties accessing health services. This is essential to **decrease health inequalities** and improve overall health.
- **Organising services and systems that are person- and population-centred**: By placing individuals and populations at the centre, it is also of key importance that the services and systems themselves change. **Optimisation of the different settings** where health and care services are being delivered is central. This is strictly linked to a need to strengthen outpatient care, community-based care, and the decentralisation of health and care services.

Fragmented services lack coordination. Scarce or poorly framed information transfer can easily lead to reduced quality of care and affect cost efficiencies. **Integrated services are often seen as a solution and, therefore, a key overarching priority and requisite to enabling people-centred care**, as illustrated by the WHO Framework on integrated people-centred health services.

Two relevant components of service integration should be tackled:

- **Integration across traditional health and care sectors,** such as between primary care and specialists and hospital care, to improve access to and navigation through health services. Avoid fragmentation that affects vulnerable and frail groups by coordinating services and designing care around new treatment, optimising resources, etc.
- **Integration beyond traditional health and care sectors**: integration cannot meet its full potential when confined to healthcare only. Health-related problems, e.g. those related to housing, family relations, employment, schooling, etc, can only be tackled by cooperating with services outside of what traditionally is understood as healthcare. It is difficult to confine the boundaries of these broader health services.[22]

To create the necessary conditions to better link a population's health and care needs to the financing and sustainability of services, improvements in **health and care system financing and governance** are needed. Seeking a compromise between the different health and care sector groups, while ensuring public health needs and goals are met within the available resources, is becoming increasingly challenging. These are complex areas to be tackled and are tightly interrelated to different thematic priorities.

[22] For example, social care, community care and long-term care to be better integrated with each other and with other parts of the health sector; integration of health promotion and disease prevention with primary care; integration with occupational health services; impact of service integration on vaccination coverage (new vaccination locations, IT for test reminders).

While addressing this overarching priority, special attention should simultaneously be given to two key elements of health and care systems.

Firstly, **the health and care sectors** that demand particular attention and change, including:

- Development and integration of **long-term care** to meet future needs.
- Strengthening of **primary care** to support the integration of services.
- Redefining of **hospital care** and help in developing new roles, tasks and organisational structures.

These sectors are seen as **key components in the shift towards integrated people-centred care**, but also as priority areas in their own right.

Secondly, one should look at **pre-existing conditions in health and care (**the inputs to health and care) which are the basic resources needed for health and care systems to function:

- An adequate mix of **health and care workforce skills**: A health and care workforce that is suited for the future needs of society is a priority area, not confined to specific sectors. In most cases the development of the workforce addresses three major problems: shortages of staff and their unequal distribution in relation to the population; a lack of the right skills and abilities; and an inadequate assignment of tasks and responsibilities.
- Cognisance of people's needs and user involvement to ensure people's voices are heard so that they can actively shape and improve the services they use and influence local and national policy.
- **Digitalisation of health and care systems**: using E-health to support an effective and appropriate use of promising and innovative solutions and tools.[23]
- Addressing **quality concerns – patient safety and quality of care** and the need for common standards.
- Efficiency and sustainability of innovation, aiming at an efficient use of resources to support innovation and technological progress and its appropriate use.

These are considered key thematic priorities and building blocks that should be addressed considering the vision and general objective of the Partnership on Transforming Health and Care Systems as well as, more generally:

- the mission and purpose of health and care systems (improving and maintaining people's health);
- the different organisations at national and regional level;
- the decision-making processes, resources, and ethical and legal framework;
- the availability, access and responsible use of data;

[23] e.g. co-creation of new concepts of care and co-creation of data-driven innovative solutions for supporting health and healthy lifestyles, also taking into account social integration and personal safety; technology assessment and acceptance of solutions; digital solutions supporting prevention and the management of chronic disease, use of various electronic tools, including AI, and Big Data for the identification of patients at risk and to improve the efficiency of the health care system and support in healthcare through electronic health records, ePrescription, eReferrals and patient/caregiver distance learning programmes, etc.

- the need to measure performance;
- the fact that health and care systems exist in wider systems and/or environments with which they interact.

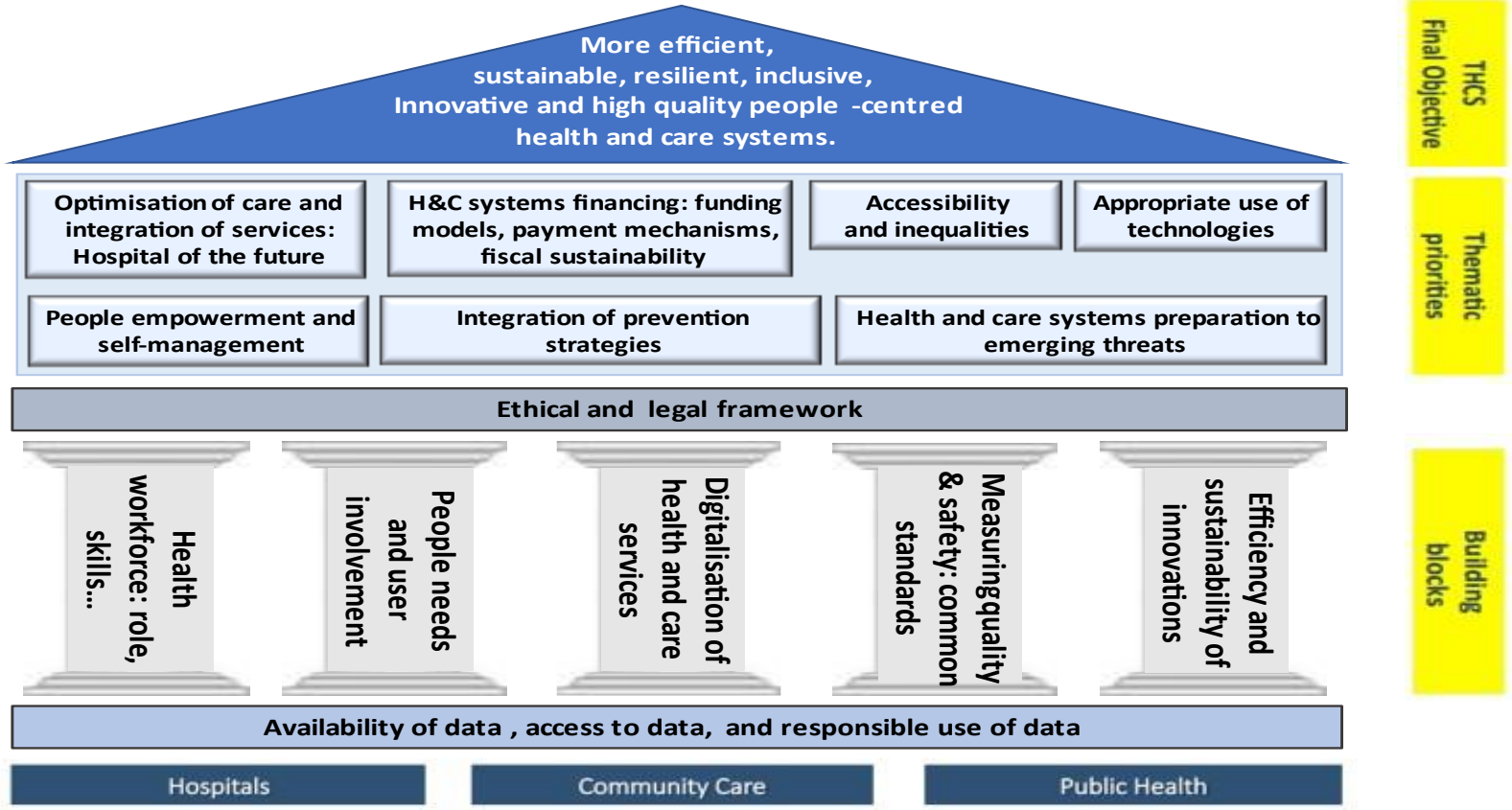


Figure 3 – The Partnership Priorities and Building blocks

Thematic priorities and building blocks should be viewed in consideration of their potential to impact one another, given their interdependent relationship. For example, accessibility should be addressed jointly with inequality. The strong relationship between people/patients' empowerment and decreasing health inequalities often affects groups with a lower socio-economic/educational status, stressing how particular attention should be dedicated to involving vulnerable groups, while supporting and motivating collaboration between the social and health sectors. Digitalising health and care systems not only improves the digital health literacy of populations and health and care professionals, but is also instrumental in improving access to services (e.g. in remote areas), supporting evidence-based policy-making (e.g. evidence-based, data-driven disease prevention programmes), and empowering people by giving them access to and control over their health data. Similar examples can be found in the performing of health and care workforce needs assessments and in the development of skills for a better integration of care, public health promotion, disease prevention, and people's and patients' involvement in public health.

Such examples have been provided to shed light on the interconnections between the listed priorities and to stress the need for a more integrated, rather than siloed, approach (as called for in several care delivery approaches or models, such as the Value-Based healthcare model[24]).

4.3 The Partnership roadmap to achieving people-centred health and care systems

In addressing its specific objectives, three main work streams have been identified for the Partnership on Transforming Health and Care Systems:

1) **Filling the knowledge gaps** with research actions aiming at providing the necessary evidence on the key priorities listed.
2) **Implementation and transfer** aiming at supporting actions focused on the testing of existing and/or co-designed/adapted solutions and their scalability across countries and regions.
3) **Boosting health and care systems**: Not only Joint Transnational Calls are needed but also dedicated workshops and capacity building activities to tackle the different priorities and building blocks.

Topics for the funding of calls and other parallel activities in the Partnership will need to be seen in light of the relevance of specific themes (prevention and management of non-communicable diseases and cancer, resilient health and care systems responding to cross border health threats), in order to horizontally address all the building blocks identified, simultaneously support research and innovation in one or more sectors (to strengthen primary and long term care and avoid hospitalisations), and tackle all dimensions of health and care systems.

[24] See for example the opinion of the Expert Panel on effective ways of investing in Health (EXPH) on Defining value in "value-based healthcare" adopted on 26 June 2019 https://ec.europa.eu/health/sites/default/files/expert_panel/docs/024_defining-value-vbhc_en.pdf

A tentative roadmap with a short-, medium- and long-term perspective has been developed to guide the Partnership's implementation with a clearer perspective of the necessary steps to take in addressing the relevant priorities identified. The roadmap has been shaped around the needs and missing knowledge shared by countries and regions during the development of the Partnership proposal, while also reflecting on key interconnected components of the identified priorities. Starting from the key elements of the overarching priority and the knowledge gaps that must be filled, increasing attention will need to be given, over the coming years, to the most effective strategies and tools for supporting implementation transferability and the sustainability of innovations.

A certain degree of flexibility in choosing the priorities is also needed, as unexpected challenges may arise and influence the prioritisation process.

The Partnership will need to develop Annual Work Plans to annually prioritise the themes in line with the overarching goals and the impacts on health and care systems, so seeking to avoid overlaps and strengthen synergy-based complementary actions. In order to work together and learn from each other between different systems, the countries involved in the Partnership will choose topics of common importance to enable the necessary collaboration for this learning process.

THE PARTNERSHIP ROADMAP – ACHIEVING PEOPLE CENTRED HEALTH AND CARE SYSTEMS				
Timeframe / **Work Streams**	**Short Term (first two years)**	**Medium Term (second two years)**	**Long Term (last three years)**	**Expected Results by 2030**
Fill the knowledge gaps *To fill the knowledge gaps, research and innovation activities should include **mapping, knowledge collection and co-development.***	• Innovative health and care models starting from personalised preventive interventions to rehabilitation. • Common measures and indicators of health and care system performance, including quality and safety, within the European Health Data Space (EHDS). • Value-based classification, financing, and payment schemes for integrated care pathways. • Innovative tools and practices for people involvement and engagement, access to and responsible use of data and participation in health decision-making processes.	• Alternative public funding on welfare and the population' health status. • Innovative green health and care systems (impact measures and identification of determinants). • Innovative tools supporting unmet needs and vulnerable groups and addressing inequalities in health and care.	• Evolution of complexity science and network analysis in decision-making and health and care models. • Addressing inequalities among countries and regions by linking population metrics with level of financing and socio-economic variables.	• Agreed common measures and indicators supporting person- and population-centred health and care systems • Strategies for the involvement of users in R&I collaborative projects in health and care agreed among stakeholders • Demand-driven R&I Programmes and Projects focusing on people's needs • Methods for comparative R&I on health and care governance and financing schemes • Identified key innovative people-centred care models on different intervention areas across a large spectrum of countries and regions • Guidelines for assessing impacts and determinants of green health and care systems in relevant policies and initiatives
Implementation and Transfer	• Solutions supporting integrated personalised	• Integrated learning systems supporting	• Sustainable mechanisms for the management of	• Mechanisms and tools to transfer knowledge on

Support for implementation and transfer of innovation-related research and activities should include ***testing and large-scale piloting for transferability and uptake of innovations.***	people-centred care models based on innovative and digital interventions for health promotion, disease prevention, treatment, and follow-up. • Holistic approach supporting a new care management of fragile/ complex patients. • Effectiveness of integrated and personalised preventive interventions and their use in health and care. • Solutions supporting people empowerment based on innovative and digital interventions for health promotion, disease prevention and self-management. • Nudging solutions for people acceptance and development of innovations.	governance improvement and decision-making processes. • Interventions for individual and community involvement in decision-making, planning and appropriate use of technology. • Implementation of a value-based and people-centred approach in health and care financing and payment schemes.	diseases, including non-communicable diseases, cancer, and rare diseases. • Sustainable models for empowering people and their participation in decision-making processes.	implementing support for people-centred care models across health and care organisations • Mechanisms and tools to transfer knowledge on how to implement people-centred key solutions • Mechanisms and tools to ensure participation of users in the implementation process • Increased data on the effectiveness and value of interventions
Boosting Health and Care Systems *To support the boosting of health and care systems, activities should include* ***Capacity-building and training, twinning, coaching, and networking involving different health and care stakeholders.***	• Courses on national research and innovation in health funding schemes and the uptake of results on health and care systems.	• Skill-mix and task shifting in health and care. • Leadership, career incentives and coordination skills in different care settings. • Integration of social and health services in	• Achieving a wide cultural transformation that supports an evidence-based and people-centred approach. • Alignment of policy priority-setting, RDI strategies, and health and	• Materials/training modules available to health and care stakeholders, including patients and citizen associations, to ensure equal access to relevant knowledge on

	• Improving skills in data collection and its use in health and care. • Increasing knowledge in skills transfer and a better understanding of different stakeholders' needs within an ecosystem approach. • People empowerment, self-management and literacy (including digital).	supporting the planning and implementation of people-centred care. • Networking and partnerships with private sector for improved and sustainable health and care. • Raising awareness on the green deal /and? sustainable health care	care governance and financing towards a people-centred approach.	health and care system functioning • Networking and partnership opportunities among stakeholders • Innovative tools for mutual learning and a co-creation approach supporting the alignment of priorities and sustainability • Tools/methods that encourage involvement of key experts to develop community research, development and innovation

Priorities and Lessons emphasised by the COVID-19 Pandemic in Europe

While stress on health and care systems has increased dramatically across Europe with the outbreak of the COVID-19 pandemic, the current crisis has also highlighted pre-existing challenges, like the need to rethink and redesign services to best optimise the complementarity of inpatient and outpatient care, and to integrate digital technologies into all care services in order to respond to a growing demand. The COVID-19 emergency has clearly demonstrated the complexity and interconnectedness of our health and care systems and has shown how important it is to introduce change - and then adequately manage it - in such a rapidly evolving environment. At the same time, the crisis has demonstrated a certain capacity to adapt and collaborate in order to jointly tackle common challenges: e.g. extending ICU capacities, cooperation in transferring patients, exchanging information within and across borders, and boosting medical innovation (such as the record-breaking development time for vaccines and the related successful large-scale vaccine administration policies). Within this multifaceted context, with both positive and negative elements related to the COVID-19 response, it is possible to highlight a few theme-specific lessons learned during the current pandemic.

Through the long periods of isolation, the **connection to digital devices was considered a necessity** as they became not only the main way to access information and services, but were also one of the only remaining vectors for economic, educational, and leisure activities, as well as social interactions, to take place.

With regard to health and care systems, this **digitalisation -** while clearly accelerated by the pandemic - faced specific barriers and hurdles in its implementation and upscale. In addition, the rapid deployment of many digital health solutions showed how e-health is still often supply-led, with insufficient attention to making such innovation better available and user-friendly for both patients and care-givers. It also exposed structural issues such as the interoperability of different digital solutions and the lack of common frameworks for data sharing.

At the same time not all individuals are equals in terms of access to networks or connected devices, or when it comes to the skills required to optimally navigate computerised spaces. **COVID-19 has strongly exposed the issue of inequalities**, including digital inequalities, within and across countries.

In particular, the pandemic had a stronger direct and indirect impact on certain population groups due to several very diverse underlying issues: socio-economic status, age, access to and understanding of digital health tools to cope with the forced digitalisation of health and care services (e.g. telemedicine), overall health literacy level, and even geographical distribution.

When discussing the inequalities, it is essential to mention the particular impact that the pandemic had on disruption of care for chronic patients. With regards to cancer, the severe disruption of cancer care, for instance, represented a major issue, with clear effects throughout the entire patient pathway: disrupted screening and early detection programmes, missed and delayed diagnoses, delayed or discontinued treatments, slowed down clinical trials, and a widespread increase in mental health stress and feelings of insecurity.

The cancer pathway is just an example of how the pandemic activated a cascade of negative consequences for health. Cancer is indeed not the only example. In particular, by focusing on the older population, the COVID-19 pandemic has had a drastic impact on the lives of individuals worldwide, patients with serious neurodegenerative conditions being another example. The weakness of these patients made them more vulnerable to SARS CoV-2 infection, adding even more stress to a difficult psychological and mental condition. Regarding mental health issues, the COVID-19 crisis highlighted more generally the lack of preparation and measures taken within our health and care systems to deal with the significant mental health impact of such a large-scale health crisis; it also revealed new potential issues going forward related to the management of the pandemic's 'long-covid' chronic aspect (including mental health).

The increasing challenges faced by health and care systems in managing, particularly, chronic patients, have made clear the importance of **moving towards a more integrated, community- and people-centred care**. This is linked to the need to strengthen primary care and find new ways of delivering services and maintaining health; this should involve a broad range of stakeholders and the strengthening of evidence implementation, not only for health and care professionals but also for decision-makers.

People-centredness requires not only the involvement of people to explore their needs and become more empowered, but also a reassessment and redesigning of professional orientations and service organisation at a system-wide level and around people's needs and their capacities. To this end, the co-creation of technologies and methodologies with end users - including patients and the broader population, health and care professionals, and care givers - should play a more central role. COVID-19 also highlighted the well-known limited investment in the field of prevention including health literacy. Throughout the different 'stages' of the pandemic, health and care systems had to invest additional effort and resources to engage with the population to reinforce the importance of prevention (from handwashing to wearing masks to vaccination) and explain how to engage with national, regional or local health services.

5. The Partnership Implementation

5.1 Approach

The Transforming Health and Care Systems Partnership is committed to challenge-driven research and innovation. It aims to not only **create new knowledge and scientific evidence** but to **co-design new solutions and support their transfer and up-scaling across countries and regions while also fostering capacity-building**.

The approach for a successful and smooth implementation of the Partnership will focus on the three main work streams that address the specific objectives and seek to reach the ambitious outcomes expected within the set time frame.

The actions put forward by the Partnership and responding to the above work streams will concentrate on thematic priorities and building blocks identified by this Strategic Research and Innovation Agenda that will be checked and assessed with national and regional organisations involved throughout the Partnership implementation. The **identification of problems and challenges** to address, together with the definition of **missing knowledge**, will help **identify the priority topics** included in the Partnership's Annual Work Plans. **Existing practices will need to be regularly mapped** to avoid any duplication of efforts, help tailor the best actions, and understand any context-based obstacles and barriers to implementation and transfer. Addressing **funding of research and innovation** will be a core issue in the THCS Partnership and **sustainable mechanisms for the alignment of resources** will be promoted.

In parallel, other **strategic side activities will help to build the research and innovation community** within this field and reach the overall general objective. These additional tasks will aim to strengthen the capacity of health and care organisations involved at macro, meso and micro levels, and support ecosystems and innovation transferability to achieve the uptake of key recommendations into policy.

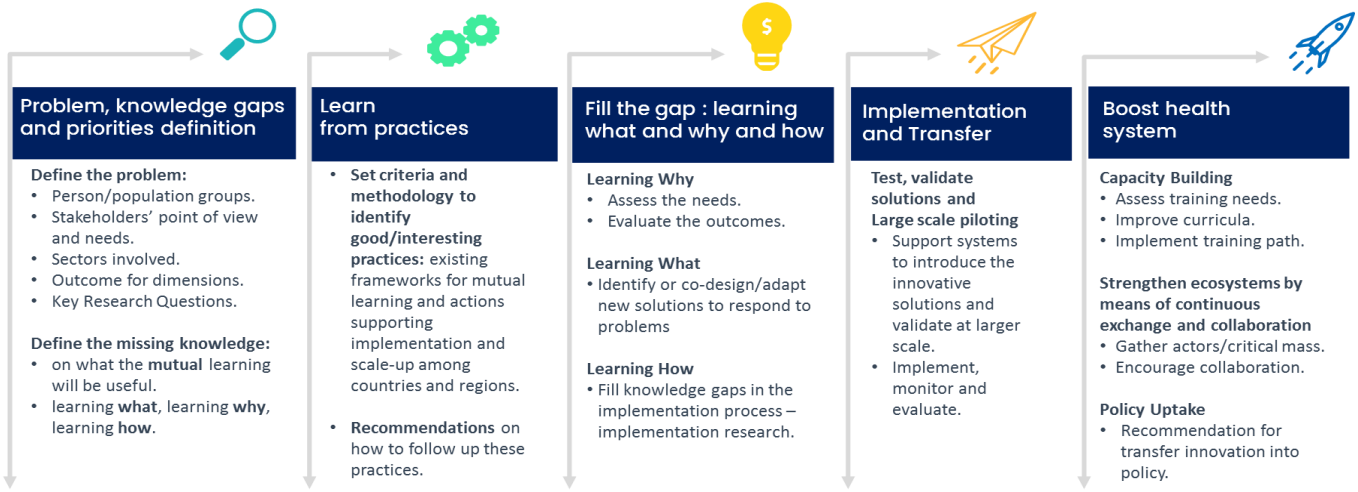
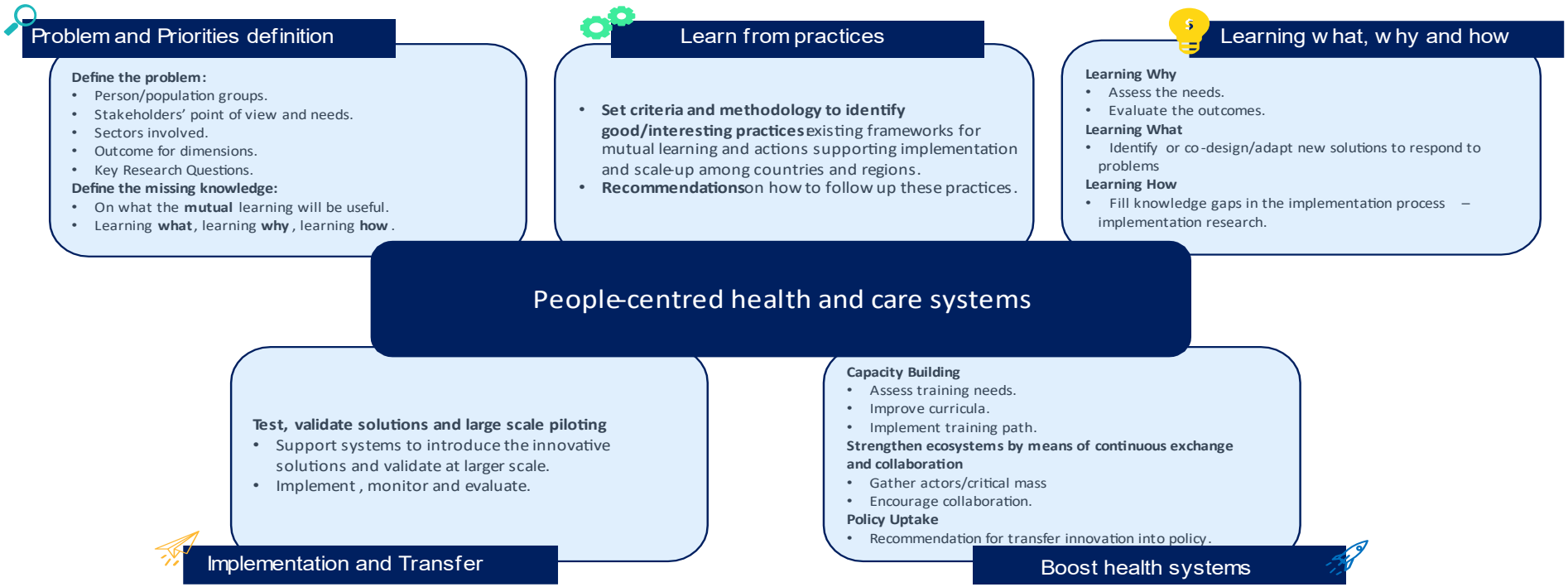


Figure 4 - The Partnership approach


Problem and Priorities definition
Define the problem:
• Person/population groups.
• Stakeholders' point of view and needs.
• Sectors involved.
• Outcome for dimensions.
• Key Research Questions.
Define the missing knowledge:
• On what the mutual learning will be useful.
• Learning what, learning why, learning how.
Learn from practices
• Set criteria and methodology to identify good/interesting practices existing frameworks for mutual learning and actions supporting implementation and scale-up among countries and regions.
• Recommendations on how to follow up these practices.
Learning what, why and how
Learning Why
• Assess the needs.
• Evaluate the outcomes.
Learning What
• Identify or co-design/adapt new solutions to respond to problems
Learning How
• Fill knowledge gaps in the implementation process – implementation research.
People-centred health and care systems
Test, validate solutions and large scale piloting
• Support systems to introduce the innovative solutions and validate at larger scale.
• Implement, monitor and evaluate.
Implementation and Transfer
Capacity Building
• Assess training needs.
• Improve curricula.
• Implement training path.
Strengthen ecosystems by means of continuous exchange and collaboration
• Gather actors/critical mass
• Encourage collaboration.
Policy Uptake
• Recommendation for transfer innovation into policy.
Boost health systems

The implementation of the THCS Partnership requires a comprehensive programme management and a portfolio of measures, including advanced funding instruments, community building and formats for dissemination and mainstreaming of good practice.

To achieve such objectives, the THCS Partnership is **built around 4 pillars that group together different types of activities** (*Figure 5*). While not all member organisations of the partnership will participate in the entire range of funding options, a combination of different types of activities will help funders and stakeholders to find appropriate ways for participation.

Figure 5 - The Partnership pillars

The link between the overarching Partnership approach and the different pillars can be illustrated with the figure below.

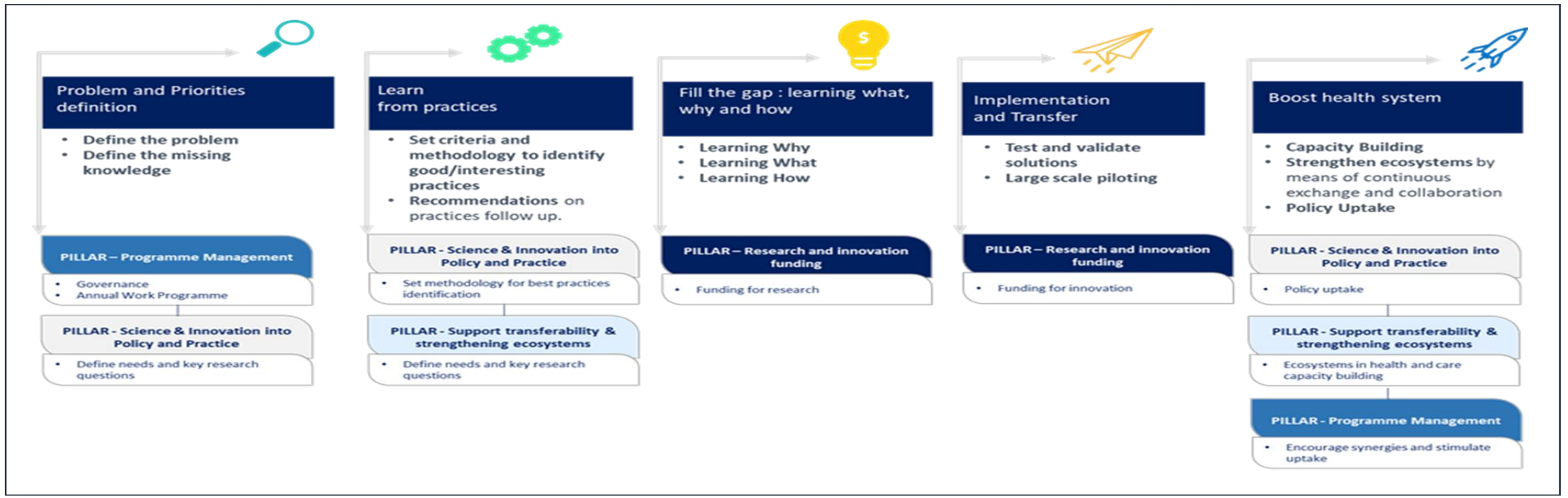


Figure 6 - Link between the Partnership approach and Pillars

5.2 Key Principles for implementation

The **guiding principles** for the Partnership implementation are as follows:

1. Joint investments in health and care research and innovation

The funding of Joint Transnational Calls (JTC) for collaborative research and innovation projects is critical to: enhance cooperation between researchers and innovators working on Health and Care Systems Research and innovation across Europe and beyond; reduce the fragmentation of research and innovation in this field; synergise and align efforts/initiatives across MS/AC in Europe and beyond; and ensure a wider and more comprehensive perspective in addressing health and care system transformation.

Building upon the current portfolio of instruments for R&I projects, innovation actions, twinning and the alignment of national projects, the Partnership will address the whole research and innovation value chain and promote the funding of actions that provide concrete answers to the health and care challenges and support practices in different contexts and intervention areas.

The Partnership will develop a common strategy among Research and Innovation Funders to align research and innovation funding programmes and topics. This will facilitate: (1) increased funding opportunities, (2) a strengthened research and innovation community, (3) the provision of validated evidence for uptake, through research and innovation results, and (4) the attraction of researchers to health and care systems research. Joint Transnational Calls will be launched and managed through a shared Joint Secretariat that will also monitor project implementation and assess project results.

2. Co-creation, capacity-building and science-policy cooperation throughout all activities and instruments.

The Partnership will also support in-kind activities aimed at advancing evidence-based methodological frameworks that support the selection of priorities and the uptake of results in policy and practice. THCS will foster policy dialogue between the science and innovation community and the policy-makers responsible for regulating the health sector and funding research, involving also ad hoc key relevant stakeholders in the health and care sector. Promoting a bottom-up approach to the diverse health and care systems will help in assessing the needs related to research and innovation and capacity-building, as well as the key tools for supporting the implementation process and transferability of practices across countries, regions and settings. Tools will be used to better tailor the funding of research and innovation, support funded projects, and sensitise stakeholders in those countries participating in the Partnership, especially through their national mirror groups.

This regular exchange among partners will also help improve mutual learning, the development of a common vocabulary, and a better understanding of priorities responding to real needs in policy

and practice. In the long term, it will help the alignment of priorities reflected in possible updates of this Strategic Research and Innovation Agenda and the sustainability of cooperation in this field.

3. *Knowledge hub for ecosystem development support.*

Transformation of health and care systems is put into action at national, regional and local levels. Inspiration often derives from the larger European context. The implementation of innovation - whether organisational or technological - in health and care systems also requires ecosystems to be in place and functioning.

In-kind resources will be allocated by interested partner organisations, promoting different levels of commitment and participation, to support the strengthening of ecosystems and the transferability of innovations. Ecosystems consist of a variety of interconnected stakeholders and entities, from regulators to end-users, enterprises and innovators that are willing to collaborate and follow the same aim. Being complex entities with no unified governance, the ecosystems may operate suboptimally. Researchers and innovators are not always sufficiently informed about the health and care system needs. Moreover, RDI projects are often not sufficiently related back to the levels where the results should be implemented, while it is also true that stakeholders are often not sufficiently aware of what is being developed. Communication and collaboration activities will be set up by the THCS Partnership to ensure the stakeholders' needs and wishes are elaborated upon and reflected in RDI projects and that the transformation of the health and care systems is accelerated.

The development of a Knowledge Hub will be promoted, which will support exchanges (both physical and virtual) between different health and care actors at a macro, meso and micro level. It will be built using a co-creative approach, where stakeholders and potential users will be asked to provide inputs on the modules and activities to be included and to define the usability/access/data sharing requirements, which will be continuously fed by the needs identified.

Different activities and instruments to foster capacity-building and to facilitate the transfer of best practices are foreseen.

4. *International cooperation and widening participation with selected countries to compare approaches, test solutions, exploit results, exchange experiences and needs, and support the transfer of knowledge.*

The Partnership will perform key activities to enhance cooperation among countries and regions across Europe and beyond in this field. By creating synergies and actively engaging with relevant EU and international stakeholders and initiatives connected to the transformation of health and care systems and the development and maintenance of effective, transparent external communication and dissemination, the Partnership will pave the way to a sustainable cooperation between policy-makers and research funders of the countries involved in the Partnership. This, in

turn, will ensure a long-term alignment of priorities for health and care system transformation and will promote a bottom-up approach to the diverse health and care systems.

A wide spectrum of stakeholders, both at an EU level and, in particular, from the countries and regions involved, will be kept informed of successful funded projects to stimulate the exchange and exploitation of results at policy level. Representatives of Ministries and funding agencies will meet regularly to learn about key national and regional policies in the field and to discuss common challenges and transferability issues. In the long term, this will help achieve the priority alignment reflected in possible updates of the Strategic Research and Innovation Agenda and the sustainability of cooperation in this field.

5. Strategic synthesis to strengthen programme management, dissemination and exploitation.

The Partnership will ensure an efficient and effective functioning of the grant consortium at a governance, strategic and operational level, including appropriate programme management, knowledge transfer, and operational platform development. It will also facilitate the information flow and cooperation between pillars and work-packages.

A centralised communication and dissemination framework will be implemented. This includes both internal and external communication rules/guidelines, capacity-building events such as training, conferences, webinars and workshops, as well as dissemination through different channels. The framework will be effectively used also by all Grant Signatories and Affiliated entities to communicate Partnership activities at National/Regional and Local Level.

A Communication and Dissemination plan, listing all the communication products and planned dissemination activities focused on each target group, will be elaborated and regularly updated. The plan will include internal and external communication and dissemination rules/guidelines, as well as policies and procedures, and will be shared among the THCS partners. A roadmap to producing communication and dissemination materials and tools will be included. Specific attention will be given to communication to the general public. Relevant communication materials will be translated into partners' native languages.

An important goal of the Partnership is to support the implementation process and the health and care authorities in transforming health and care systems through evidence-based decisions. Attention will then be focused on the adequate dissemination of results from funded projects and of exchanges promoted by those involved in the Partnership to a wide spectrum of health and care stakeholders, so making them aware of possible innovative opportunities.

The Partnership Consortium and Governance

The Partnership Consortium will mainly comprise Ministries of Research and Innovation, or Agencies for funding research and innovation in the field of health, and/or Ministries of Health. The

main focus of the Partnership will be the funding of research and innovation. However, countries will also involve their national public health institutions and research organisations in supporting the prioritisation and adequate translation of research and innovation findings into the national and regional context. To reflect the complex organisation of health and care systems and of research and innovation related to health and care systems in the Member States and Associated Countries, it is envisaged that individual countries may have several Affiliated entities within the Partnership.

Beneficiaries of the calls should involve different stakeholders - from public health institutes, research and innovation organisations, health and care authorities, providers, end-user organisations, innovators and enterprises, health and care regulatory agencies, etc., depending on the national context and procedures - and support cooperation between them.

The governance of the Partnership will need to include both a strategic and an operational level, linked by a coordination level. Mechanisms for synergies between the different Pillars and the Partnership, and parallel initiatives and programmes, will need to be established and carefully monitored. Governance will also need to take into consideration the relevance of national context and facilitate the establishment of National Mirror Groups to bring together the national stakeholders in each country that represent its own system. These National Mirror Groups will reflect the national specificities of the respective Health and Care Systems, which will then feed the Management of the Partnership, in particular the Dissemination and Exploitation activities, and will support and ensure the transparency of partnership activities and strengthen the co-creation process of the annual work programme.

To assess the progress of SRIA's implementation and its contribution to achieving the defined objectives (see chapter 3), requires monitoring and evaluation.

A monitoring and evaluation framework, with measurable performance indicators, will be defined and piloted during the first year of the Partnership. It will be put in place by the second year of the partnership and thus accompany the SRIA's implementation, providing strategic and operational feedback on the appropriateness of selected instruments and the results of specific implementation measures. In addition, the evaluation processes will be set up to collect evidence on the mid- to long-term impact of the Partnership and the SRIA.

6. Creating Synergies

The Partnership will foster synergies with other EU and Horizon Europe initiatives, starting with Health Cluster calls followed by Partnerships and Mission, and either in terms of design, implementation and funding. Through synergies with other EU Initiatives, such as partnerships with other Clusters, Missions or other EU Programmes, the Partnership will be able to define complementary actions, so preventing any duplication of efforts and unnecessary use of resources - whether human, financial or other - to achieve bigger and broader objectives.

In the table below is presented an overview of synergies that should be established in terms of the Partnership's **design and planning**, such as the EU4Health programme and the Digital Europe Programme (DIGITAL). The Partnership should consider many of the issues present in these programmes, also taking into consideration the needs and priorities reflected in such programmes and contributing to them. Regarding the Partnership's **implementation**, many synergies should be promoted with other partnerships like the Personalised Medicine or Rare Diseases partnerships. The Partnership's governance mechanism could consider the presence of the other relevant partnerships as observers, to promote and coordinate complementary areas and align activities. The same could be proposed to the other relevant partnerships. In terms of **funding** synergies, the Partnership should have a very strong action at regional level. For this, a shared strategy with the ERDF funds, namely through the coordination with regional agendas and smart specialisation strategies, must be accomplished.

Relevant European "instruments" with whom the THCS Partnership should interact

Areas for collaboration	Candidate Partnerships Missions EU Programmes	Areas for possible synergies based on publicly available documents and specific comments
Design and Planning	EU4Health	▪ Support disease prevention and health promotion actions through transfer, adaptation and roll-out of best practices and innovative solutions. ▪ Support knowledge transfer actions and EU level cooperation to assist national reform processes towards improved effectiveness, accessibility and resilience. ▪ Support the digital transformation of health and care systems (including development, deployment and uptake of innovative tools and technologies), including the support of a European health data space; benchmarking and capacity-building; digital upskilling of health and care professionals. ▪ Strengthen the use and re-use of health data for the provision of healthcare and to advance the uptake of digital tools and services.

		▪ Support actions that improve health and care systems in terms of prevention, preparedness and a rapid response to serious cross-border health threats.
	DIGITAL (DIGITAL)	▪ Support bringing digital technology to businesses, citizens and public administrations, specifically high impact deployments in areas of public interest, such as health. ▪ Support European public administrations and health and care providers to deploy and access state-of-the-art digital technologies (such as blockchain) and build trust in sectorial digital transformation. ▪ Support, encourage cooperation within, and strengthen the network of (regional) European Digital Innovation Hubs and existing artificial intelligence testing and experimentation facilities within the health and care area. ▪ Support Digital transformation in health care and large-scale deployment of digital innovations that contribute to the provision of effective, efficient and high-quality health and care services along the continuum of care. Priority areas would include: secure and effective management of personal health data across borders; better data for research; disease prevention and personalised health and care; and use of digital tools for people empowerment and for person-centred care.
Implementation	Innovative Health Initiative	▪ The IHI aims to accelerate the development of scientific and technological innovations to address unmet public health needs (in a pre-competitive context). The THCS Partnership could contribute to formulating the unmet public health needs, as well as to informing the R&I activities pursued by the IHI. ▪ The THCS Partnership will facilitate the uptake of effective and efficient innovative solutions developed by the IHI. It will also research and test the context specific conditions for scaling-up and transferring IHI innovations.
	Personalised Medicine	▪ The PM partnership will support coordinated multidisciplinary PM research across Europe, aimed at bringing personalised solutions into clinical practice. It also plans to provide socio-economic evidence on the uptake of personalised medicine by health and care systems. ▪ The THCS Partnership will facilitate the uptake of effective and efficient PM solutions. It will provide context-specific evidence on the scalability and transfer of PM innovations.

	Rare Diseases	▪ The RD partnership will contribute to coordinated and joint R&I to develop diagnostics, treatments and cures for rare diseases, as well as informing policies in this area. ▪ The THCS Partnership will contribute to aligning the RD research to the priority needs of health and care systems across Europe. It will also facilitate the uptake of efficient research results delivered by the RD partnership by providing context-specific knowledge and evidence on the scalability and transfer of RD innovations.
	One Health/AMR	▪ The One Health/AMR partnership will contribute to aligning national research and improving EU coordination of research activities to provide novel solutions for AMR diagnosis, treatment and control. ▪ The THCS Partnership will facilitate the uptake of effective and efficient AMR solutions. It will provide context-specific evidence on the scalability and transfer of innovations delivered by the One Health/AMR partnership.
	ERIA4Health	▪ The ERIA4Health partnership will support joint calls for proposals in priority areas identified by partners. One of the specific objectives of the ERIA4Health is focused on new, better, more cost-effective health services, technologies, tools, and digital solutions. ▪ The THCS Partnership will contribute to informing joint calls launched by the ERIA4Health, based on priority needs of health and care systems across Europe. It will also facilitate the uptake of cost-effective innovative services, tools and solutions, including through the provision of context-specific knowledge and evidence on their scalability and transfer.
	Pandemic Preparedness	▪ The THCS Partnership will enable the development of new (digital, technological) solutions that will contribute to strengthening health systems' preparedness and resilience in the face of pandemics or climate change challenges. ▪ THCS solutions will help to monitor and manage pandemics by also improving people's autonomy in relation to health and care systems.
	Cancer Mission	▪ THCS will contribute to the Cancer Mission by promoting the deployment and uptake of digital tools to support quality of life. ▪ THCS will contribute to ensuring equitable access for cancer patients through research on best practices regarding the organisational dimension of health and care systems.

	EIT Health	▪ Collaboration on knowledge transfer and capacity-building in R&I in health and care systems. ▪ Activities related to integrated/multiple stakeholder care models can be a key driver of their cooperation with EIT Health. ▪ AI-powered digital technologies will help to transform the healthcare sector, including a transition to new care models and value-based healthcare (VBHC). ▪ THCS will contribute to the identification of healthcare needs and measures to improve the successful implementation of new care models and VBHC.
Funding	ERDF	▪ Support deployment of innovations aimed at strengthening health and care systems in the regions. This might include investments in health and care infrastructure, procurement of health goods, building capacities, supporting regional networks, etc., all necessary for the upscaling and transfer of innovative health and care policies, services and systems.
	ESF+	▪ Investing in education and training of health and care professionals to support implementation of innovative models and solutions in health and care systems.

7. Annexes

Practical examples: how the Partnership will tackle specific needs

The THCS Partnership has a broad scope and a variety of objectives and activities. Two examples are presented here on what the Partnership can mean for different recipients: (1) older adults and (2) health and care professionals and caregivers involved in cancer care.

These examples do not intend to cover all the issues that would need to be considered in each case, but rather to provide some useful insights on how the research and innovation activities implemented by the Partnership relate to the concrete daily challenges faced by the general population, patients, and health and care professionals.

Older Adults

Problem definition

Specific health and care challenges for older individuals may be:

- Older adults need support to stay healthy (positive health) and to remain independent and socially active.
- Older adults may have limited health literacy and/or digital literacy.
- Older adults must deal with multiple morbidities and/or difficulties in mobility due to their age and/or specific disorders such as limited eyesight or hearing; a different specialist and care arrangement for every disease makes it difficult for them to navigate through the healthcare system, both physically and virtually.

Vision

Translation of the partnership's general vision to older individuals could enhance their quality of life, because:

- Older adults would receive support to stay healthy, active and independent.
- Older adults would be supported in self-management, including the use of technology; the COVID-19 pandemic illustrated how the use of technology to offer online care can help to meet the needs of older adults.
- Older adults could enjoy accessible, integrated, person-centred care.

Approach

Ways to address the challenges older individuals face in health and care may be:

- consultation on perceived flaws in health and care systems.
- active involvement in the innovation/transformation of health and care services.
- active involvement in the development/implementation of technology.

Research and innovation priorities

The above points may lead to the following priorities in research and innovation:

- identifying needs and wishes of older adults, mainly based on existing research and experiences.
- exploring and developing adapted means to improve older adults' health literacy and digital literacy.
- assessing needs and best strategies through organised ad hoc workshops, providing recommendations – roadmaps – guidelines.
- research and innovation actions looking at how to uptake innovations that consider the needs of end users.

Health professionals and care givers dealing with cancer

Problem definition

Health and care professionals and caregivers (formal and informal) face specific challenges:

- overall shortage of health and care professionals, increased workload and a lack of innovating incentives, potential difficulties in of coping with stressful conditions.
- lack of continuity of care (e.g. primary care) and fragmentation of skills.
- unequal availability of professional training, performance and outcomes.
- differences in the development of information systems with limited current sharing of data.
- unclear collaborative care planning and shared decision-making approaches.
- market pressures and risk of unequal access to innovation across settings and facilities.

Vision

Translation of the partnership's general vision to the fight against cancer could focus on:

- continuity of care supporting effective consultations.
- more skilled, multidisciplinary and multi-professional health and care teams.
- more informed and empowered caregivers/families.
- better organised, integrated and digitally advanced cancer prevention and care.

Approach

Ways to solve the problems and implement the vision could include:

- consultation on perceived flaws in health and care systems.
- active involvement of professionals and caregivers in reshaping the organisation of the cancer care pathway.
- active involvement of professionals and caregivers in the development and implementation of innovation.
- optimisation of existing networks and integration of different health and care skills throughout the entire cancer care pathway.

8. References

[1] Gabbay, J., le May, A., Pope, C. et al. Uncovering the processes of knowledge transformation: the example of local evidence-informed policy-making in United Kingdom healthcare. Health Res Policy Sys 18, 110 (2020). https://doi.org/10.1186/s12961-020-00587-9

[2] OECD. "Beyond Containment: Health systems responses to COVID-19 in the OECD", March 2020 https://www.oecd.org/coronavirus/policy-responses/beyond-containment-health-systems-responses-to-covid-19-in-the-oecd-6ab740c0/

[3] OECD/European Union (2020), Health at a Glance: Europe 2020: State of Health in the EU Cycle, OECD Publishing, Paris https://doi.org/10.1787/82129230-en.

[4] European Parliamentary Research Service. Demographic trends in EU regions, January 2019 https://ec.europa.eu/futurium/en/system/files/ged/eprs-briefing-633160-demographic-trends-eu-regions-final.pdf

[5] European Commission, Report on the Impact of Demographic Change, 2020 https://ec.europa.eu/info/sites/default/files/demography_report_2020_n.pdf https://data.consilium.europa.eu/doc/document/ST-12983-2013-INIT/en/pdf

[6] Task shifting and health systems design » opinion of the Expert Panel on effective ways of investing in health (EXPH) adopted on 26 June 2019

[7] IHME (2016), "Global Burden of Disease Study 2016 Results", Seattle, United States http://ghdx.healthdata.org/gbdresults-tool

[8] Watts N., Amann M., Arnell N. et al. The 2019 report of The Lancet Countdown on health and climate change: ensuring that the health of a child born today is not defined by a changing climate. (2019). The Lancet, 394 (10211), pp. 1836-1878.

[9] Caterina Francesca G., Petretto A. (2019) Health Care and Migration: What Data Can Tell Us of the Hard-to-Measure Impact of Migrants on the European Health Systems. In: Dobrescu P. (eds) Development in Turbulent Times. Springer, Cham

[10] MMTE Huynen, P. Martens and HBM Hilderink. The health impacts of globalisation: a conceptual framework. Globalization and Health 2005, 1:14-26.

[11] "Health inequalities in the EU Final report of a consortium." Consortium lead: Sir Michael Marmot, UCL Institute of Health Equity. Funded by the European Commission, 2013

[12] The SAPEA (EC's 'Science Advice for Policy by European Academies') Report on "Transforming the Future of Ageing" (2019) https://www.sapea.info/wp-content/uploads/tfa-report.pdf

[13] Hansen J, Haarmann A, Groenewegen P, et al. What are the key priority areas where European health systems can learn from each other? [Internet] Copenhagen (Denmark): European Observatory on Health Systems and Policies; 2021. (Policy Brief, No. 41.)

[14] Nolte E, Groenewegen P. How can we transfer service and policy innovations between health systems? [Internet] Copenhagen (Denmark): European Observatory on Health Systems and Policies; 2021. (Policy Brief, No. 40.)

[15] The ICPerMed vision for 2030 (2019) https://www.icpermed.eu/media/content/Vision_Paper_2019.pdf

[16] Craig, Peter, Katikireddi, Srinivasa, Leyland, Alastair, Popham, Frank 2017/04/21 "Natural Experiments: An Overview of Methods, Approaches, and Contributions to Public Health Intervention Research" April 2017 Annual Review of Public Health 38(1) https://DOI:10.1146/annurev-publhealth-031816-044327

[17] World Health Organization. Regional Office for Europe, European Observatory on Health Systems and Policies & Nolte, Ellen. (2018). How do we ensure that innovation in health service delivery and organization is implemented, sustained, and spread? World Health Organization. Regional Office for Europe. https://apps.who.int/iris/handle/10665/331980

[18] Crossing the Quality Chasm: A New Health System for the 21st Century. Washington, D.C: National Academy Press; 2001.

[19] J.F. Levesque, M. F Harris, G. Russell. Patient-centred access to health care: conceptualising access at the interface of health systems and populations. Int J Equity Health. 2013; 12: 18-26

[20] M. Fischer. Fit for the Future? A new approach in the debate about what makes healthcare systems really sustainable. Sustainability 2015, 7, 294-312

[21] Health system efficiency. How to make measurement matter for policy and management. J. Cylus, I. Papanicolas and P. C. Smith (eds.). WHO 2016

[22] Blanchet K, Nam SL, Ramalingam B, Pozo-Martin F. 2017. Governance and capacity to manage resilience of health systems: towards a new conceptual framework. International Journal of Health Policy and Management 6: 431–5.