THCS Candidate Partnership Draft Strategic Research and Innovation Agenda[1]

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Executive Summary

Challenges

Challenges faced by health and care systems can be summarised in three categories: 1) the needs of a changing population and society (social, cultural and demographics) and the assets and willingness of people to collaborate and take more control of their health with appropriate support together with need to continuous update of knowledge and training by professionals; 2) the rapid growth of science and technology that has important implications for how health and care systems can improve delivery and services. Introducing new technologies into a given system is not just about adding new, improved goods or services. They will affect the ways health services are organized and delivered requiring a focus on innovation in service organization and delivery in their own right, considering the entire care continuum. 3) public services need to act within environmental as well financial boundaries and under an increasing level of regulation and scrutiny.

Demographic changes should push us to build more collaborative, context-based and enabling approaches to help people live in good health and quality of life conditions as longer as possible taking into account vulnerable persons especially. Technology (all kind of technology including digital tools) should support creating the right conditions for people and communities to improve the health conditions and take much more control of their health avoiding unnecessary hospitalization, for example by personalising preventive care, etc…However, the successful embedding of new technologies requires changes at many levels to ensure that health systems remain effective, efficient and sustainable for the generations to come. Importantly, realising their full potential involves innovation of services and policies, too, to ensure that advances are systematically embedded in systems so that they benefit patients, populations and society more broadly[1]. Last but not least, operating within environmental limits will need to accelerate accountability, openness and innovation, stimulating a culture that promotes the involvement of users to shape better models of care.

Vision

The common vision of a Partnership on Transforming Health and Care Systems (THCS) is to maintain and improve health in Europe and participating countries by supporting improvement in and transformation of the health and care systems and by that delivering high quality, fairly accessible, sustainable, efficient, health promoting resilient health and care systems for all.

The vision is also in line with the policy priorities of the European Union and will contribute to achieve the objectives set by the European Commission for the years to come[2].

In order to successfully and sustainably address the increasing challenges a system level approach should be taken promoting the participation of all relevant actors involved. The

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[1] The role of service and policy innovations promoted by the Strategic Research Agenda of the TO REACH project in the https://to-reach.eu/wp-content/uploads/2021/02/Strategic-Research-Agenda-May-2019.pdf
[2] The Partnership will contribute to achieve the objectives of the "EU Green Deal", the Communication published by setting out an agenda aimed at building a *European Health Union*, the "Communication on effective, accessible and resilient health systems" (COM(2014) 215) and the "Communication on enabling the digital transformation of health and care in the Digital Single Market; empowering the population and building a healthier society" (COM(2018) 233). It further aims to support the objectives of the new EU4Health Programme.

value of the THCS Partnership lies in bringing together a broad range of research results and actors to work towards a common vision and translating it into coordinated implementation of activities and concrete impacts.

This Partnership should focus on understanding how we implement evidence we already have and future ones respecting different contextual factors and in order to shape the policies we need.

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, experimental development and innovation.

Objectives

The general objective is to catalyse the accelerated transformation of health and care systems, by building an open and supporting Partnership where all stakeholders can work together to stimulate and nurture research and innovation activities for optimized transformation to high quality, fairly accessible, sustainable, efficient, health promoting and resilient health and care systems in the EU ad for all participating countries.

The Partnership will be organised around the following specific objectives to be achieved by 2030, namely **accelerated transformation of health and care systems of Europe through:**

⇒ **SO1.** Intensifying cooperation for better evidence-based policies, investments and sustainability of the health and care systems
⇒ **SO2.** Strengthening and enlarging the research and innovation community in the field of health and care systems across Europe and beyond, mobilizing broad interest of multidisciplinary research and innovation on health and care systems.
⇒ **SO3.** Improving ability of participating countries and regions to implement innovation in health and care systems (organisational, service and policy and technological innovations).
⇒ **SO4.** Enabling the health and care systems of participating countries and regions to improve and to support people's health mainly through digitalisation and other tools, and increased access to new and improved solutions, developed in an ethically and ecologically friendly manner.
⇒ **SO5.** Strengthening and enlarging the health and care practice community.

Impacts

By achieving the objectives aforementioned will lead countries to reach significant impacts in the following aspects:

⇒ a sustainable mechanism for cooperation across countries and regions in the field of health and care systems supporting an easy transition of evidence into the decision-making process
⇒ Engaged researchers, innovators, enterprises, practicioners and policy makers in actions supporting the transformation of health and care systems
⇒ Innovative models of care, person- and population-centered ensuring the necessary integration of services across all health sectors and traditional health system boundaries

⇒ Representatives at National level but also at regional and local level know and understand how to better cooperate with respect to upcoming needs and crises

⇒ Health care professionals and providers are equipped with the skills and competences suited for the future needs of modernized health and care systems while a health-educated population will be able to manage their own health.

⇒ Specific needs of more vulnerable groups will be recognized and efficiently addressed by health and care systems

Approach

Transformation of the diverse health and care systems of Europe is an extremely complex endeavour that needs to be addressed from many angles simultaneously, using large toolboxes of instruments, involving different stakeholders and learning from previous experiences.

This Partnership will build on previous initiatives (see the project TO REACH, the AAL Programme, the JPI MYBL and the EIP AHA informing this Partnership); however it should not be considered as a continuity action.

Through its Strategic Research and Innovation Agenda (SRIA) the partnership has the ambition to trigger long term changes in the complex health research and innovation ecosystems. Moreover, synergies and collaboration opportunities will be identified and sought to support the activities of the Partnership avoiding overlaps while enforcing its range of action and its impact.

Thus, the fundaments of the proposed Partnership will:

⇒ Capitalise on the on-going so-called 'natural experiments' in Europe. Europe has a unique opportunity and a particular need for pooling of resources and research capacity to critically advance the quality of health and care services and systems research and optimising its use and usefulness for informing policy.

⇒ Be aligned with Horizon Europe's mission driven approach to bring tangible impact to the population of Europe and all participating countries. In this regard, an end-user centric development approach that includes ethical, legal and social implications (ELSI) is essential, in order to transform health and care systems in line with citizen needs.

⇒ Build an outcome based and holistic approach in line also with WHO, SDGs and 2030 Agenda recommendations, giving functional health and prevention an equal importance as cure and care.

⇒ Address the whole research and innovation cycle, including services, organisational and policy innovations to co-create and embed new technologies (digital solutions, new therapies and so on…) into an outcome based system.

⇒ Trigger changes in the health and care research and innovation ecosystems enhancing the interconnectivity between different research and innovation fields and communities (for example social sciences and humanities are key in understanding the mutual relation between innovations and target-users), especially when adopting a user centered approach in co-creating new solutions including technological ones with end users, health and health and care providers, payers, industries, enterprises and innovators.

Research and Innovation Priorities

To address the increasing challenges and fill the knowledge and innovation gaps, research and innovation should address all dimensions of health and care systems. The degree of urgency belonging to priorities in the field of health and care systems research and innovation rapidly evolves depending on health, political, social and economic contexts and, also, in response to these challenges and emerging global health issues (see the box on COVID 19).

The "Orientations towards the first Strategic Plan for Horizon Europe" document, published in December 2019, identifies a number of research and innovation areas in the health and care sector (see table 1 below) to be addressed through Horizon Europe's funding opportunities.

These topic areas indicate key health and care aspects that should be considered **from a system perspective** considering the mission and purpose of health and care systems (improving and maintaining people's health), the decision making processes, the resources, the need to measure the performance and the fact that health and care systems exist in wider systems and/or environments with which it interacts. The topics areas should be viewed in consideration of their potential to impact one another, given the interdependence of their relationship.

Broad topics identified as priorities in Horizon Europe should be considered of equal importance for the transformation of health and care systems. However, the Partnership's Annual Work Plans will prioritize those themes with especially high impact for health and care systems, trying to avoid overlaps and strengthen complementary actions based on synergies. To work together and learn from each other among different systems and countries involved in the Partnership will choose common important topics, to enable the necessary collaboration for this learning process. The topics will need to be meaningful for health and care systems and be relevant for the challenges that they face for the coming years.

In line with its vision and to meet its objectives, the Partnership will tackle the overarching priority action areas and develop research and innovation activities that:

- will boost the **knowledge sharing across countries and regions**,
- will improve **the capacity** of health and care systems to change and to respond effectively and efficiently to the growing demand for services
- will support **the implementation of innovation** (with a broad concept) in health and care.

The overarching priority action areas of the Partnership are:

⇒ **Integrate research and innovation findings in evidence based decisions in health and care systems**

⇒ **Generate and translate research and innovation findings for innovative health and care practices**

⇒ **Advance the co-creation and the uptake of user-friendly innovative solutions in health and care**

⇒ **Strengthen the health and care community for a sustainable dialogue among different actors**

Each priority action area will include a set of activities (explained in more detail below - section Priority Action Areas) activities that will require the development of a sophisticated Partnership structure, a clear governance and management model, the use of a wide range of instruments and transparent rules and procedures (the implementation paragraph will be developed in the next phase).

1. Context and Problem definition

The rapidly changing and ageing society urges countries to quickly and efficiently respond to increasing burdens on the health and care systems. The population in the EU and also beyond expect high quality in future systems and these have to rapidly respond, adapt and transform to deliver the appropriate care to the ones in need. Complex transformations are necessary, but these do take time and adjustment to the optimal direction. Action must be driven by evidence.[3]Additionally, stress on the health and care systems[4] has increased dramatically during the 2020 outbreak of the COVID-19 pandemic. An improvement in resilience[5] of health and care systems and coordination among them is urgently needed, as well as rethinking and redesigning of related services.

The European societies are under constant changes, such as demographic changes[6], technological development, climate changes, environmental factors, globalization, political and social landscape changes. All can pressure the functioning of health systems. Added to these challenges, COVID-19 has shown the vulnerability of our societies, hitting severely the economy at large and more particularly the health and care systems. There is a clear need to increase the capacity of these systems in terms of better use of resources[7]. The health and care systems still have much room for improvement in terms of prevention, vigilance, reactivity, coordination, information exchange, logistics, overall organization and importantly cooperation and solidarity.

The **demographic change**, also reflected in the workforce, is a big challenge for the health and care sector. This is already a reality in a large part of Europe due to the lack of qualified professionals. For this, important care associated tasks are being provided by social services and the informal sector. However, these essential complementary activities are not visible in the health and care budgets. Furthermore, the ageing population trend and the rise of chronic diseases will increase the percentage of people excluded from working life, resulting in reduced revenues for the states, thus contributing to more uncertainty around financing of health and care systems.

Another important driver is the **technological development and organisational as well as biomedical innovation** along with the need to foster implementation research to support the transformation of health and care systems. There is a need for a shift from intervention to prevention approach as a key transformation process, i.e. by stressing on positive health and well-being for sustaining mental and physical abilities, and promoting the best possible quality of life for the population. The development of technology and digitalization of the

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

[4] In this partnership "*health*" is understood according to the WHO definition of 1948 and revised in 1984 as "the extent to which an individual or group is able to realize 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, emphasizing 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.

[5] According to the definition developed at 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 it to sustain required operations, resume optimal performance as quickly as possible, transform its structure and functions to strengthen the system, and (possibly) reduce its 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.

[6] https://ec.europa.eu/futurium/en/system/files/ged/eprs-briefing-633160-demographic-trends-eu-regions-final.pdf

[7] "Beyond Containment: *Health systems responses to COVID-19 in the OECD*", OECD, March 2020

health and care services, utilization of health data, electronic medical devices, decision support systems, and the opportunities they offer as new ways of communication and interactions, are embraced by many as crucial in supporting the future health and care systems.[8] However, novel therapies, technologies, organisations and approaches face specific barriers and hurdles in implementation and scale-up before reaching health and care systems and population, including societal issues such as population' health literacy, their wishes and needs, technology acceptance or public outreach. These are complex questions the health and care sector must tackle to become robust, sustainable, efficient and to deliver accessible, solutions of high quality.

Health systems must also demonstrate capacity, robustness and knowledge to early detect and tackle emerging global threats and public health crisis raised by **climate/environmental change and/or globalization**. The unfamiliar and unpredictable health threats caused by climate and environmental changes call for evidence based and coordinated actions. To avoid future health disasters, the health and care systems of Europe need to improve to be prepared. Climate change causes extreme weather conditions, and extreme seasonal temperature variations. Heat and cold waves have, the last years, hit Europe hard. Vulnerable groups in our populations, especially the elderly and the chronically ill, suffer under extreme temperatures. As a consequence, it has been reported that deaths due to extreme weather conditions, are progressively increasing.[9] In addition, climate change is also affecting the emerging and spread of infectious diseases, especially the vector-borne. Health and care systems need to improve the preparedness for new challenges caused by climate changes[10]. Health and care systems transformation should be seen and implemented as part of the transition of our society to a more sustainable development. **Environmental change** is also a major driver in this transition. In the Lancet Countdown on Health and Climate Change Report 2019[1], one of the key messages is "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", indicating the importance of health as a driver of transition in many policy areas.Health and care systems are major contributors to carbon emissions. The development of well-functioning and efficient health and care systems, with less waste and greener processes, is a goal where we should put our efforts and investments towards a green transition.

Migration is one of the key issues in the international as well as European political and public debate, including health and care systems.[11] It represents a key global challenge for modern societies and one of the most compelling challenges consists in the adaptation of health and care systems to new needs caused by migration.[12] In particular, as observed during the COVID-19 pandemics, globalisation has dramatically contributed to the uncontrolled propagation of emerging infectious disease and its heavy impact on the population' health and on health and care systems over the world and notably in Europe.

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[8] 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

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

[10] 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/

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

[12] 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

The situation has testified the shortcomings and weaknesses of our current systems.[13] Globalisation has also an impact on health and care systems by the increasing movement of health professionals, with a brain drain' in the health sector as a result of health workers' migration from developing to developed regions.[14]

Finally, in terms of changes in the **political and social landscape**, main attention must be given on the fact that public spending on health and care is steadily rising in the EU in parallel with budgetary constraints[15], putting additional pressure on the Member States. It is therefore mandatory that health and care systems improve their effectiveness and efficiency, in order to increase overall sustainability. Financial constraints contribute to increase health inequalities across the EU where people with a low level of education can expect to live six years less than those with a high level of education. There are large inequities in the access and utilization of health and care services across EU where poorer Europeans are on average five times more likely to have problems accessing health and care than those financially better off.[16] The health of migrants is one of the biggest challenges for public health, often causing inequality and social exclusion in the destination countries. Migrants social inclusion poses an important issue of public finance in the health and care systems. Improving the financial sustainability of health and care systems is a prerequisite for tackling this great challenge in Europe.[17]

When it comes to health and care systems transformation, to improve populations' health and ensure that systems are **sustainable, resilient, innovative, accessible, of high quality and people-centred**, there are indeed many difficulties at multiple levels for innovative solutions and research results to reach health and care systems.

Gaps stand at several levels, in particular referring to the lack of knowledge sharing, capacity and implementation of innovation into health and care systems:

1. Insufficient understanding among countries of the common health and care systems challenges and themes (e.g demographic change, lack of integration, low digitalisation, quality of life improvement) also in light of the COVID-19 impact.
2. Knowledge gaps within the field of implementation research and the suboptimal understanding of the prerequisites for implementation prevent transfer (cross-system learning) and scale up, hurdles that prevent the adoption of solutions, as well as identification of conditions for wider dissemination and implementation across countries.
3. Missing link between the practical experience, needs and expectations of the health professionals and practitioners, and the actors that design the R&I processes.
4. Insufficient development of the relevant "ecosystems" (consisting of a variety of interconnected stakeholders and entities, from regulators to end-users, enterprises and innovators) for designing, developing and implementing innovations, whether organisational or technological, in health and care systems, in a cost-efficient way.

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[13] Useful sources from Global Health Summit and the Pan European Commission on Health and Sustainable development (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

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

[15] https://ec.europa.eu/health/sites/health/files/state/docs/2018_healthatglance_rep_en.pdf

[16] "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

[17] 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

The complexity of contexts and stakeholders, from national to local levels, need to be taken into consideration. All key stakeholders need to buy in to a shared vision of health and care ecosystems built on better understanding of each other's needs.

5. Gaps in the availability of specific digital solutions.
6. Insufficient engagement of patients and patient's associations in the decision making process leading to (mainly) local implementation of innovations.
7. Suboptimal health and digital literacy skills among the population and policy makers with regards to the first and also health and care professionals with regards to the second one. Better information, training and tools need to be available, to improve uptake and maintain the pace of digitalisation and modernisation of health and care systems.
8. Siloed and non-inclusive approach to health and care policy making. Better integration across all health and care sectors and across traditional boundaries (e.g. social care, occupational health, prevention) is needed.

European and international collaborations on research and innovation would provide a solid basis for addressing the challenges of health and care systems transformation and help to maximize learning between health and care systems and the transferability of innovation across countries and settings. The Partnership will look at innovation embracing a broader concept and giving the necessary emphasis on the service and policy innovations needed to successfully embed any technology. Contextual factors play crucial role and recent understandings have moved away from the idea of context as a static concept and emphasized the dynamic nature of implementing and transferring innovations, noting that context comprises "a physical location but also roles, interactions and relationships at multiple levels". This also means that the process of transfer will be influenced by and shape the innovation, and these relationships are likely to change over time. This will all impact the transferability of innovative practices requiring a Partnership approach that can support a timely and coordinated response.

2. Vision

2.1 Background

In order to successfully and sustainably address the increasing challenges listed in chapter 1 (Context and Problem Definition) a system level approach should be taken promoting the participation of all relevant actors involved. It is necessary to combine the individual challenges we face into a set of solutions fundamental to sustainable, affordable and fairer system of health and care – improve our health today in ways that do not disproportionately harm the health of others elsewhere in the future.

A Partnership on Transforming Health and care systems and its Strategic Research and Innovation Agenda should focus on understanding how we implement evidence we already have and future ones respecting different contextual factors and in order to shape the policies we need.

The value of a Partnership on Transforming Health and Care Systems (THCS) **lies in bringing together a broad range of research and innovation results and actors to work towards a common vision and translating it into coordinated implementation of activities and concrete impacts.**

2.2 Common Vision

The common vision of the partnership is to maintain and improve the population' health in Europe and in other participating countries by supporting improvement and transformation of the health and care systems and by that delivering of high quality, fairly accessible, sustainable, efficient, health promoting resilient health and care systems for all, defined by the respective dimensions as follows:

- Quality[18]: safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity.
- Accessibility[19]: approachability; acceptability; availability and accommodation; affordability; appropriateness
- Sustainability[20]: long-term strategic perspective and innovativeness, disease prevention and health promotion, quality, institutionalization 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.

The vision is also in line with the main policy priorities of the European Union and will contribute to achieve the objectives set by the European Commission for the years to come[23].

The Partnership will adopt a life-course approach to health and care with a focus on prevention, health monitoring and further analyse the concept of 'positive health'[24]

2.3 General objective

The general objective is to catalyse the accelerated transformation of health and care systems, by building an open and supporting partnership where all stakeholders can work together to stimulate and nurture research and innovation activities for optimized transformation to high quality, fairly accessible, sustainable, efficient, health promoting and resilient health and care systems for the population in the EU c and participating countries in the partnership.

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[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.

[23] The Partnership will contribute to achieve the objectives of the "EU Green Deal", the Communication published by setting out an agenda aimed at building a *European Health Union*, the "Communication on effective, accessible and resilient health systems" (COM(2014) 215) and the "Communication on enabling the digital transformation of health and care in the Digital Single Market; empowering the population and building a healthier society" (COM(2018) 233). It further aims to support the objectives of the new EU4Health Programme.

[24] A scientific discipline of Positive Health—wellbeing beyond the mere absence of disease—barely exists (cf. Ryff, Singer and Love, 2004; Seeman, 1989). However, in 2008 the Positive Psychology Center of the University of Pennsylvania undertook a Positive Health initiative (Seligman, 2008). Critical to this was first defining what is meant by positive physical health identifying health assets "psychological" domains that seem relevant to health: biological, subjective, and functional

To this aim, the partners will commit to work together to achieve:

- Supporting multidisciplinary R&I to fill knowledge gaps, produce evidence and develop guidance and tools in priority areas for the transformation of health and care systems,
- Supporting the interdisciplinary development of service, policy and organisational innovations for health and care systems,
- Strengthening the R&I community in the field of health and care systems,
- Improving the capability of health and care actors to take up innovative solutions,
- Gathering stakeholders to develop the ecosystems needed for a swift uptake of innovations by health and care systems.

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.

2.4 Specific (SO) and operational objectives

The Partnership will be organised around the following specific and operational objectives to be achieved by 2030, namely **accelerated transformation of health and care systems of Europe through:**

SO1. To intensify cooperation for better evidence-based policies, investments and sustainability of the health and care systems

The operational objectives for this SO are to:

1. Identify common priority areas for improvement and transformation of the health and care systems and consolidate on a common strategic research and innovation agenda.
2. Promote a holistic approach for the evaluation and monitoring of health outcomes for better organization and management of health and care systems.
3. Bringing forward evidence and systemic know-how to raise the capacity of health and care authorities, providers and professionals so they can prioritize and prepare investment strategies by appropriate policymaking, for financing of health and care systems.
4. Support efficient sharing of knowledge, and mutual learning between policymakers and other stakeholders of health and care systems in Europe to support policies for accelerated implementation and translation of research and innovation into practice.
5. Support the development of evidence-based strategies and policies on how to better cooperate with respect to upcoming needs and crises including different capacity of developed and developing countries.
6. Contribute to the capacity of the European health and care systems to respond rapidly and efficiently to changes in the society.

SO2. To strengthen and enlarge the research and innovation community in the field of health and care systems across Europe and beyond, mobilize broad interest of multidisciplinary research and innovation on health and care systems.

The operational objectives for this SO are to:

1. Increase collaboration between funding bodies/agencies in the field of health and care systems' research and innovation in Europe and beyond.
2. Enable better coordination of research and innovation funding on health and care systems research and innovation, maximizing the output of research and innovation investments.
3. Enhance and support funding of collaborative transnational implementation research[25] applied research[26], experimental development[27], and innovation activities[28] on e.g. technological and interdisciplinary aspects, digitalization, organisational innovations, innovative service models, and more while exploiting potential synergies among funding programmes.
4. Fund research and innovation of relevant solutions for all dimensions of the health and care systems, as defined in the priority areas in the SRIA
5. Promote networking and coordination activities at EU, national and regional levels in this research and innovation field.
6. Bring together existing research and innovation initiatives across countries to increase mutual learning,
7. Facilitate exploitation and uptake of results and deliverables from this partnership, through involvement of the users on a demand-driven approach in all research and innovation activities, including all relevant actors in health and care systems.
8. Increase dissemination and exploitation of results from research and innovation activities.

SO3. Improve ability of participating countries and regions to implement innovation in health and care systems (organisational, service and policy and technological innovations).

The operational objectives for this SO are to:
1. Identify the facilitators and barriers to guide the transfer and scaling up of successful innovative solutions across regions and countries
2. Identify existing best practices and enable a faster exchange across different countries and regions
3. Support efficient and mutual learning between research and innovation communities and health and care practice, to support accelerated implementation and translation of research and innovation into evidence-based practice.

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[25] Implementation research specifically takes into account the 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
[26] Applied research is original investigation undertaken in order 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
[27] Experimental development is systematic work, drawing on existing knowledge gained from research and practical experience, that is directed to producing new materials, products and devices; to installing new processes, systems and services; or to 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
[28] 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

4. Strengthen the participation of human resources in health and care systems at regional, national and European levels to support implementation in health and care

5. Give support to demonstrators, pilots, twinning projects and capacity building activities.

SO4. Enable the health and care systems of participating countries and regions to improve and to support people's health through digitalisation and increased access to new and improved solutions, developed in an ethically and ecologically friendly manner.

The operational objectives for this SO are to:

1. Establish a multi-stakeholder/eco-system collaboration platform for providing practical implementation schemes supporting upscaling and deployment.

2. Support development of new solutions that will be useful and in response to the needs of a changing and ageing society, both in crisis and in normal situations.

3. Filling in innovation gaps defined in the priority areas and SRIA.

4. Ensure access to relevant, need-based solutions for the health and care systems, by support of co-creation approaches with end-users and policy makers and involvement of stakeholders.

5. Support the development, testing and scale-up of validated, new or improved business models, based on user needs and to accelerate the transformation of health and care systems to become accessible, efficient and give people high quality services.

6. Support the development of innovative digital tools to deliver care, both by professionals and informal health and care providers.

7. Support development, testing and upscaling of innovations to increase the digital literacy of health and care providers professionals, formal and informal carers and end-users.

8. Support the development of innovative tools to promote healthy lifestyles and maintaining population health.

SO5. To strengthen and enlarge the health and care practice community

The operational objectives for this SO are to:

1. Intensify networking and collaboration between health and care providers, formal, informal cares, and other stakeholders in health and care.

2. Supporting and aligning capacity building and training initiatives

3. Promote the exchange of know-how on different health and care models in different contexts based on evidence and collaborative approaches.

4. Supporting exchange of data on health and care between the public funding authorities and the health and care authorities.

5. Bringing together and align different resources and infrastructures on research data and health data.

6. Strengthen the knowledge of current and future health care users and leaders (e.g scientists, policy makers, providers, the general population/ patients and other stakeholders) on health and care systems, to improve collaboration among EU-Member States and Associated Countries.

Expected Impacts and outcomes:

Expected impacts

- All people have equal and improved access to quality health and care services offered by more effective, efficient, accessible, resilient, safe, trusted and sustainable, both fiscally and environmentally health and care systems.
- A sustainable mechanism for transnational exchange of evidence-based strategies and innovative practices for health and care systems policies, management and organization.
- Health and care systems will take advantage from the efficient exchange of best practices throughout Europe to address existing and new challenges, including cross-border challenges, aiming to maintain a healthy population.
- Health and care systems have improved governance mechanisms, based on evidence and holistic monitoring of health outcomes.
- Health and care services are shifted from hospital-centered to community- and person- and population-centered successfully embedding technological innovations that meet public health needs increasing patient safety and quality of services.
- Health care providers will be trained and equipped with the skills and competences suited for the future needs of modernized health and care systems while health-educated people will be able to manage their own health.
- Specific needs of more vulnerable groups will be recognized and efficiently addressed by health and care systems

2.5 Expected outcomes

To fulfil the set objectives in THCS, researchers, innovators and enterprises, economic forces, health and care administrations and the society should work together in the same direction making use of a co-creation procedure where relevant. To accelerate the transformation of Europe's health and care systems, the THCS-partnership will deliver results that are directed towards and contributing to all of the following expected outcomes:

- Health and care policy makers and system owners have adopted a holistic approach for the evaluation and monitoring of health outcomes and value of public health interventions, and for organization of, and decision-making in, health and care systems.
- Efforts on transforming health and care systems of policymakers, researchers, innovators, enterprises and other stakeholders are aligned and synchronized in a common framework guided by a shared SRIA focusing on agreed priorities.
- Health and care authorities, policymakers and other stakeholders develop evidence-based strategies and policies on transforming health and care systems and learn from good practices of European countries and regions.
- Countries and regions know and understand how to better cooperate with respect to upcoming needs and crises.
- Health and care authorities, policymakers and other stakeholders know how to plan and carry out efficient investments in health and care systems at national and regional level.
- Health and care providers and professionals know how to implement innovative ways of delivering care and maintaining population health and have adequate tools at hand.

- Researchers, innovators, enterprises across European countries and regions are engaged in enhanced collaborative research and innovation actions on transforming health and care systems in an ethically and ecologically friendly manner.
- Researchers, policymakers and other stakeholders use widely disseminated research and innovation results based on Open Science principles.
- Relevant actors in the health value chain implement innovative technologies and services to maintain population health and support the self-health management where relevant.
- Critical mass of innovators, enterprises strong local and regional ecosystems of stakeholders are in place and know how to facilitate uptake of successful innovations; systems, solutions and tools are available.
- The general population and policy makers have increased their health literacy and both of them including also health and care professionals their digital literacy.
- The sustainability of health and care systems will be strengthened based on procedures, business models and integrated approaches that meet citizen's wishes, needs and societal challenges

3. Our approach to Health and Care System Transformation

Europe is a diverse community, also when it comes to health and care systems. Provision of health and care policy in Europe is organized differently and involves numerous actors at national and regional levels, each system having its own specificities and context that have evolved differently. Transformation of the diverse health and care systems of Europe is an extremely complex endeavour that needs to be addressed from many angles simultaneously, using large toolboxes of instruments, involving different stakeholders and actors.

In fact, European health and care system owners, policy makers, research funders, health and care professionals, organisations representing population'needs, researchers, developers, innovators and enterprises in this field have already worked together under different umbrellas, focusing on some solutions for more sustainable systems in Europe. In particular, under the framework of Horizon 2020, some initiatives have been developed, that now participant Countries and relevant stakeholders are ready to consolidate under a single synergic approach to build upon and achieve an increased impact. The TO-REACH project has already delivered a Member State and Associated Country supported strategic research agenda on how to identify more effective and sustainable ways to organize, manage, finance, and deliver high quality health and care to the population in the EU and all participating countries. The 'Active and Assisted Living Programme' (AAL), has for several years successfully provided bottom up ICT-based innovation opportunities and solutions for the ageing society. The European Innovation Partnership on Active and Healthy Ageing (EIP AHA) brought together relevant actors at EU, from national and regional levels across different health policy areas to handle societal challenges in this area with the aim to meet and exchange ideas with peers involved in all the innovation chain levels. The Joint Programming Initiative More Years Better Life (JPI MYBL) 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 that attempt to integrate social and care services in the different health and care systems have the potential to empower people from control over their lives and thus over their wellbeing.

Those four initiatives through their increased cooperation over the last two years have demonstrated significant complementarities by not only addressing the whole R&I value chain but also including the institutional as well as non-institutional part of the health and care systems. Evidence-based research for policymakers, targeted in particular by TO-REACH and JPI MYBL is coupled with the innovation drive of the AAL programme in health and care service delivery through public and private enterprises/entities and EIP on AHA's focus on integrating learning into regional eco-systems. . In addition, views and experiences from other relevant programmes and initiatives across EU will be taken into consideration, **e.g.** the **ICPerMed Vision Paper**[29], the IHI Strategic Research and Innovation Agenda, The EU Beating Cancer Plan and the actions proposed by the Mission Board on Cancer etc…

However, this partnership should not be considered as a mere continuity action 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 health and care levels, but also at national, regional and local scales will also be a clear strength.

In summary, the fundaments of the proposed partnership will:

- Capitalise on the on-going so-called 'natural experiments[30] in Europe. Europe has a unique opportunity and a particular need for pooling of resources and research capacity to critically advance the quality of health and care services and systems research and optimising its use and usefulness for informing policy.

- Be aligned with Horizon Europe's mission driven approach to bring tangible impact to the population in the EU and all participating countries. In this regard, an end-user centric development approach that includes ethical, legal and social implications (ELSI) is essential, in order to transform health and care systems in line with citizen needs.

- Build an outcome based and holistic approach in line with WHO, SDGs and 2030 Agenda recommendations, giving functional health and prevention an equal importance as cure and care.

- Address the whole research and innovation cycle, including services, organisational and policy innovations to co-create and embed new technologies (digital solutions, new therapies and so on…) into an outcome based system.

- Trigger changes in the health and care research and innovation ecosystems enhancing the interconnectivity between different research and innovation fields and communities (for example social sciences and humanities are key in understanding the mutual relation between innovations and target-users), especially when adopting a user centered approach in co-creating new solutions including technological ones with end users, health and health and care providers, payers, industries, enterprises and innovators

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[29] https://www.icpermed.eu/en/activities-vision-paper.php
[30] 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) DOI:10.1146/annurev-publhealth-031816-044327

The involvement of local and/or regional stakeholders in the ecosystems are decisive to allow health and care systems innovation and possible transformation. Many member states' health and care services are organised and funded at municipal (local government) and regional levels. In some countries it is difficult to achieve a proper coordination between the national policies and the municipal and regional self-governance, leading sometimes to regional disparities within the same country.[31]Local and regional levels play key roles in the interaction of the different actors, such as concerned people/patients, for the education and training of health and care professionals and informal caregivers, or for the piloting and integration of innovative solutions, e.g. as a result of digitalization, into the health and care services. A cross-policy approach based on the interaction of all relevant actors will be critical: the use of the local eco-systems in mobilizing local communities for public health work, supporting informal care and end-user's involvement will help the partnership producing results that will facilitate the delivery and implementation of innovations.

The creation of a *research and innovation partnership* with a focus on transformation of *health and care systems* represents a fundamentally novel approach to the problem and appears as a unique strategic opportunity for coordinated, relevant, timely and evidence-based research and innovation (R&I)[32].

4. Research and Innovation Priority Topic/Action Areas

To address the increasing challenges and fill the knowledge and innovation gaps listed in chapter 2, it is relevant to support research and innovation actions addressing all dimensions of health and care systems. The degree of urgency belonging to different priority topics in the field of health and care systems research and innovation rapidly evolves depending on health, political, social and economic contexts and, also, in response to these challenges and emerging global health issues (see the box on COVID 19).

Several strategic documents developed at EU level[33] identify a number of major broad topics that should be addressed by multiple health and care actors through policy initiatives and research and innovation actions, that aim at improving the effectiveness, accessibility and resilience of health and care systems, as well as the health and quality of life of the population in the EU and all participating countries

The "Orientations towards the first Strategic Plan for Horizon Europe" document, published in December 2019, identifies a number of research and innovation areas in the health and care sector (see table 1 below) to be addressed through Horizon Europe's funding opportunities.

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[31] https://ec.europa.eu/health/sites/health/files/state/docs/2018_healthatglance_rep_en.pdf
[32] 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 regulation at the national levels the categories basic research, industrial research and experimental development are applied.
[33] Among others:
"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)

These topic areas indicate key health and care aspects that should be considered **from a system perspective** considering the mission and purpose of health and care systems (improving and maintaining people's health), the decision making processes, the resources, the need to measure the performance and the fact that health and care systems exist in wider systems and/or environments with which it interacts.

Broad topics should look at key elements of health and care systems like on one hand the pre existing conditions in health and care (the inputs to health and care) that are the resources needed to function, for example the health and care workforce, the financing, the technology and on the other hand the use of these resources or the activities (processes of health and care) put in place to achieve the overall goal of maintaining and improving people's health like for example the health and care governance, the involvement of users, the organisation of care.

In addition it is important to mention that consistent with shift towards more person- and population-centered health and care, it is increasingly becoming relevant an outcome-based approach focusing on rigorous measures to assess and improve the quality of health and care.

Table 1. Major broad research and innovation topics

- Involving and empowering people (in particular patients) within the prevention and care process (including issues such as enhancing self-management of people/patients, improving digital and health literacy, enhancing doctor-patient communication, supporting informal carers, involving patients in decision-making processes etc.)

- Community based - People-centred - integrated care (including issues such as integrating services across primary and secondary care, reorganising long-term care or mental health care, better connecting health care with community and social care, etc.)

- Health and care quality and safety (including issues such as improving public disclosure of quality and safety information, creating incentives for high-quality health and care services, better inter-professional collaboration, exchange of best risk practices etc.)

- Access to health and care services (including issues such as reducing waiting times and waiting lists, ensuring appropriate geographical distribution of providers, ensuring access to safe, effective, and affordable essential medicines and vaccines, reducing financial barriers to access for vulnerable groups, etc.)

- Health and care system financing and sustainability (including issues such as controlling expenditure, strengthening strategic purchasing of health services from providers, increasing the effectiveness of procurement of goods and pharmaceuticals in healthcare, strengthening of local ecosystems etc.)

- Health and care workforce (including issues such as forecasting and reducing regional and national shortages, improving task delegation and shifting from medical to non-medical staff, interplay between health and care professionals and networks of person cared for; enhance efficiency; peer to peer coaching and peer education etc.)

- Digitalisation of health and care systems (co-creation of new concepts of care and co-creation of innovative solutions for supporting health; technology assessment and acceptance of solutions digital solutions should support prevention and should be used for the management of

chronic disease, enhancing administrative support in healthcare through electronic health records, ePrescription, eReferrals and patient/caregiver distance learning programs etc.)

- Health and care system governance (including issues such as rethinking how to organize public participation, collaboration, co-design, co-creation and co-production, improving and supporting policy-making capacity, improving how innovation in health and care is implemented, managing vast datasets to improve decision-making etc.)

- Public health promotion and disease prevention (including issues such as how to design an environment and public policies that support healthy eating, how substance abuse can be better addressed by healthcare services, what measures are needed to make lower alcohol consumption socially desirable, etc.)

- Adapting health and care systems to complex health and social issues and needs (including issues such as improving the way health care systems address global health threats, antimicrobial resistance, improving emergency preparedness, etc.)

- Inequities in health (including issues such as reducing inequities in health, monitoring social determinants of health, etc.)

These topic areas should be viewed in consideration of their potential to impact one another, given the interdependence of their relationship. For example, accessibility should be addressed jointly with inequity. The strong relationship between people/patients' empowerment and decreasing health inequities is often affecting groups with a lower socio-economic/educated status, stressing how particular attention should be dedicated to involve vulnerable groups, while supporting and motivating collaborations between the social and health sectors. Digitalising of health and care systems not only encompasses, among other things, improving population' and healthcare professionals' digital health literacy, but is also instrumental to improving access to services (e.g. in remote areas) and to supporting evidence-based policy making. Similar examples can be found by performing needs assessment for health and care workforce and in developing skills for a better integration of care, public health promotion, disease prevention and people' and patients' involvement in public health.

Such examples have been provided to shed the light on the interconnections between the listed topics and stress the necessity of a more integrated approach rather than a siloed one, as called for by several care delivery approaches or models (the Value-Based healthcare model[34] for example).

The different research and innovation topics should be considered of equal importance to support the transformation of health and care systems and reach the ambitious goals set by the Partnership for the next seven years. However, the Partnership's Annual Work Plans will prioritize yearly those themes with especially high impact for health and care systems, trying to avoid overlaps and strengthen complementary actions based on synergies. To work together and learn from each other between different systems, countries involved in the Partnership will choose common topics important to enable the necessary collaboration for this learning process.

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[34] Porter ME. Value-based health care delivery. Ann Surg. 2008 Oct;248(4):503-9. doi: 10.1097/SLA.0b013e31818a43af. PMID: 18936561.

Priorities and Lessons emphasized by the COVID 19 Pandemic in Europe

While Stress on the 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 in an effort 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 shown how difficult 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 to jointly tackle common challenges: eg extending ICU capacities, cooperation for transferring patients, exchanging information within and across border, boost medical innovation such as the record-breaking development time for vaccines and the related successful large scale vaccine administration policies. In this multifaceted context, with both positive and negative elements related to the COVID-19 response, it is possible to highlight few theme-specific lessons learned during the current pandemic.

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

In this regards for what regards health and care systems, the **digitalisation,** while clearly accelerated by the pandemic, faces specific barriers and hurdles in implementation and scale-up, including societal issues such as technology acceptance or public outreach, ideally contributing to better access to good, equal and safe services for all. 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, while also exposing structural issues such as interoperability of different digital solutions or lack of common frameworks for data sharing .

At the same time not all persons are equals in terms of access to networks or connected devices, or when it comes to the skills required to navigate computerized spaces optimally. **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 a number of 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.

Within the inequalities discussion, it is essential to mention the particular impact that the pandemic had on disruption of care for chronic patients. With regards to cancer, the sever disruption of cancer care, for instance, represented a major issue with clear effect throughout the entire patient pathway: disrupted screening and early detection programmes, missed and delayed diagnosis, delayed or discontinued treatments, slowed down clinical trials and a diffused increased mental health stress and feeling of insecurity.

The cancer pathway is just an example of how the pandemic activated a cascade negative effect beyond its direct severe impact. 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, particularly those with serious neurodegenerative conditions for example. The weakness of these patients make them more vulnerable to SARS CoV-2 infection, adding also more stress to difficult psychological and mental conditions. With regards to the mental health issues, more in general the COVID 19 crisis highlighted the lack of preparation and measures at the level of our health and care systems to deal with the important mental health impact of such a large-scale health crisis, but also new potential issues going forward related to the management of the 'long-covid' chronic aspect of the pandemic.

The increasing challenges faced by health and care systems in particular in managing 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 by involving a broad range of stakeholders and strengthening the capacity of translating evidence into practice not only for healthcare professionals but also for decision-makers. Person- and people centeredness not only requires involving people to explore their needs and become more empowered, but reassessing and redesigning professional orientations and organisation of services at a system-wide level, to meet the needs of people and their capacities, rather than the other way around. To this end, co-creation of technologies and methodologies with end users, including patients and the wide populatio, healthcare professionals and care givers, should play a more central role. COVID-19 also highlighted the well-known issue of limited investment in the field of prevention but also health literacy. Throughout the different 'stages' of the pandemic, health and care systems had to invest additional efforts and resources to engage with the population to strengthen the importance of prevention (from hand-washing to wearing masks to vaccination) and further explain how to engage with national, regional or local health services.

Priority Action Areas

The creation of a research and innovation Partnership focused on the transformation of health and care systems appears as a unique strategic opportunity to launch coordinated, relevant, timely and evidence-based research and innovation (R&I) activities,), which constitutes an absolute must for a successful health and care systems' evolution. Each health and care system is organized, governed and financed differently and what works in one place will not necessarily work identically in another place showing that the process of learning from each other is not straightforward. Much focus should be therefore given to fill existing gaps on how we can improve the way we collaborate to innovate health and care systems in Europe and beyond.

In line with its vision and to meet its objectives, the Partnership will tackle the following overarching priority action areas (outlined in section Priorites above) and develop research and innovation activities that can boost the **knowledge sharing**, **improve the capacity** of health and care systems to change and to respond to respond to health needs and to the growing demand for services and **support the implementation of innovation** (with a broad concept) in health and care.

> ## Integrate research and innovation findings in evidence-based decisions in health and care

⇒ Actions supporting the development of new tools and methodologies, including recommendations and guidance supporting the integration of the research and innovation findings into innovative evidence policies, decisions, programmes and effective measures.

⇒ Actions helping to understand the range of approaches countries and regions have adopted to address similar problems and offer opportunities for reconsideration of policies, cross-fertilization or even policy transfer, through rigorous comparative cross-national research

⇒ Actions promoting a holistic and multi-sectoral approach in health and care, also reinforcing integration of services, be it integration across health and care sectors or beyond healthcare (social care, occupational care etc.)

⇒ Actions supporting the availability and capacity of data sharing and usage, bringing together and aligning different resources and infrastructures on research and health data for health and care systems upscale

⇒ Actions supporting the production of evidence focusing on the impact of innovation on the performance of health and care systems within a holistic approach in the monitoring and evaluation of health outcomes

⇒ Actions supporting synergies and cooperation between health and care systems, programmes and policies, also through an "Health in all policies" and "One Health" approach.

Generate and translate research and innovation findings for innovative health and care practices

⇒ Actions supporting the recognition, collection and exchange of existing best practices for the implementation and scale-up of research and innovation findings in health and care practices
⇒ Actions supporting the translation and uptake of research and innovation findings into health and care practices promoting knowledge management, data sharing, knowledge brokering mechanisms
⇒ Actions supporting the standardization and use of innovation assessment frameworks, to be adopted and adapted to specific contexts for the evaluation and monitoring of health and care practices
⇒ Actions supporting the identification of facilitators and barriers for the transferability of research and innovation findings across regions and countries
⇒ Actions supporting the active participation and the engagement of health and care professionals, care givers (including formal and informal care) into the development and adoption of innovation in health and care practices

Advance the co creation and the uptake of user-friendly innovative solutions in health and care

⇒ Actions to establish a multi-stakeholder/eco-system collaboration platform for providing practical implementation schemes supporting upscaling and deployment of innovations.
⇒ Actions supporting the adoption of a quadruple helix model aimed at bridging the gaps between innovation, civil society and policy making.
⇒ Actions supporting co-creation approaches with end-users, policy makers and relevant stakeholders for the development of new solutions responding to the needs of a changing and ageing society, both in crisis and in normal situations
⇒ Actions supporting the development, testing and scale-up of validated, new or improved business models, based on user needs
⇒ Actions contributing to the development of innovative tools to promote healthy lifestyles and maintaining population health
⇒ Support the development, testing and upscaling of innovations to increase the digital literacy of health and care professionals, formal and informal carers and end-users.

Strengthen the health and care community for a sustainable dialogue among different actors

⇒ Actions enabling better coordination of research and innovation funding in the field of health and care systems, maximizing the investments

⇒ Actions enabling better coordination of research and innovation initiatives in the field of health and care between the national, regional and local level

⇒ Actions bringing together existing research and innovation initiatives at EU level and across countries and regions to increase mutual learning

⇒ Actions promoting and facilitating networking activities (and tools) involving key stakeholders at national, regional and/or local level

⇒ Actions supporting the dissemination and exploitation of results from research and innovation activities

⇒ Actions supporting better and more structured interaction with the general population, patients and civil society organisations, including the reinforcement of health literacy (including digital literacy) and the use of health and digital data

⇒ Actions supporting the capacity building and development of new skills and competences in health and care sector

⇒ Actions supporting the integration of the One Health approach into the health and care community dialogue

⇒ Actions supporting the creation of the framework conditions for a sustainable cooperation on research and innovation funding in this field

When selecting and implementing the research and innovation priority actions, the Partnership will take into consideration the differences between existing health and care systems, including budgets and responsibilities, to identify what can be the added value and efficiency of EU level measures, while respecting the subsidiarity principle (article 5.3 TEU). Furthermore, promoting concrete solutions can tackle problems directly and provide clear evidence of related benefits, that could then be used for evidence-based policy making and included the respective national plans.

Practical examples: how the Partnership will tackle specific needs

The THCS Partnership has a broad scope and a variety of objectives and activities. Here are two examples on what the partnership can mean for different addressees, namely, in the first example the elderly citizen and in the second example healthcare professionals and caregivers involved in cancer care. These examples do not intend to express in an exhaustive way all the issues that need to be taken under each example but just 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 persons

Problem definition

Specific health and care challenges for older persons may be:

- older persons need support to stay healthy[1] (positive health) and to remain independent and socially active;
- older persons may have limited health literacy and/or digital literacy;
- older persons often have to deal with multimorbidity and/or difficulties in mobility du[e] 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 persons may enhance their quality of life, because:

- older persons receive support to stay healthy, active and independent;
- older persons are supported in self-management, also using technology; the COVID-19 pandemic illustrated that the use of technology to offer online care can help to meet the older persons' needs;
- older persons enjoy accessible, integrated, person-centred care.

Approach

The ways to address the challenges older persons face in health and care can 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:

- identify needs and wishes of older persons, mainly based on existing research and experiences;
- explore and develop adapted means to improve older persons' health literacy and digital literacy;
- implement technology together with older persons.

Health professional and care givers dealing with Cancer

Problem definition

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

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

Vision

Translation of the partnership's general vision to the fight against cancer can be a focus on:

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

Approach

The solutions to solve the problems and to effect the vision are reached through:

- consultation on perceived flaws in health and care systems ;
- active involvement of professionals and caregivers in reshaping the organisation of 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 competencies throughout the entire cancer care pathway.

5. Creating Synergies

THCS Partnership will foster synergies with other EU and Horizon Europe initiatives either in terms of its design, implementation, and funding. Through synergies with other EU Initiatives such as partnerships from other Clusters, Missions or with other EU Programmes, the THCS Partnership will be able to define complementary actions to achieve bigger and wider objectives, preventing efforts duplication and an unnecessary use of resources, either human, financial or other.

Below, it is presented an overview of synergies that should be established in terms of **design and planning** the THCS, like with the EU4Health programme and DEP. THCS should take into account many issues that are present in these other programmes and, on the other hand, should take into consideration the needs and priorities reflected in those programmes and contribute to them. Regarding THCS **implementation**, many synergies should be promoted with other partnerships like the Personalized Medicine or the Rare Disease partnerships. Governance mechanism of THCS could consider the presence of the other relevant partnerships as observers to promote and coordinate complementary areas. The same could be proposed to the other relevant partnerships. In terms of **funding** synergies, THCS 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 specialization strategies must be accomplished.

Relevant European "instruments" with whom Transforming Health and Care Systems (THCS) should interact

Areas for collaboration	Candidate Partnerships/Missions/ EU Programmes/	Areas for possible synergies – from publicly available documents
Design and Planning	EU4Health	▪ Supporting actions for disease prevention and health promotion 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 to 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 care professionals; ▪ Strength the use and re-use of health data for the provision of healthcare and for advance the uptake of digital tools and services. ▪ including by supporting the creation of a European health data space ▪ Support actions that improve the health and care systems in terms of prevention, preparedness and rapid response to serious cross-border threats to health
	DEP	▪ Support Digital transformation in health care and large-scale deployment of digital innovations contributing to 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	▪ 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 may contribute to formulating the unmet public health needs, as well as to inform the R&I activities pursued by IHI. ▪ The THCS partnership will facilitate the uptake of effective and efficient innovative solutions developed by IHI. It will also research and test the context specific conditions for scaling-up and transfer of 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 for 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 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 to inform 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 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 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 and 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 by providing context-specific knowledge and evidence on their scalability and transfer.
	Pandemic Preparedness	▪ The THCS partnership will enable the development of new (digital) solutions that will contribute to strength the health systems preparedness and resilience for pandemics or climate changes challenges. ▪ THCS solutions will help to monitor and manage pandemics also by improving people' autonomy in relation to the health and care systems.

	Cancer Mission	▪ THCS shall contribute to the Mission on Cancer through the promotion of deployment and uptake of digital tools to support quality of life. ▪ THCS will contribute to equitable access by cancer patients through research on best practices on 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/multi stakeholder care models can be a key driver of their cooperation with EIT Health
Funding	ERDF	▪ To support deployment of innovations aimed at strengthening health and care systems in the regions. It might include investments in health and care infrastructure, procurement of health goods, building capacities, supporting regional networks, etc. necessary for scaling-up 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.

6. Principle of Implementation (MS Governance, Co-creation, Contribution in kind, Launching calls and monitoring projects and other support activities)

This Paragraph will be developed in the next weeks/months

Reference