General Information	
Preliminary title of the European Partnerships	European Partnership on personalised medicine
Short description of the partnership	To align priority setting and funding for research projects in the area of personalised medicine between the EU Member States and regions, associated countries and international partner countries.
Services directly involved	DG RTD, DG SANTE
Context and problem definition	Europe's health and care systems face serious challenges, some of the major ones being the rising burden of non-communicable diseases, which are the leading cause of death globally, and their associated multiple conditions. The recent report on the State of Health in the EU concluded that only by fundamentally rethinking our health and care systems can we ensure that they remain fit for purpose. Health and care systems require reforms and innovative solutions to become more resilient, accessible and effective in providing quality care to European citizens. Effectiveness can be achieved by promoting health, preventing disease and providing patient-centred care that is tailored to the citizens' needs. All this can happen through digital innovation which enables a wider use of health information such as molecular profiling, diagnostic imaging, environmental and lifestyle data to help doctors and scientists better understand disease and better predict, prevent, diagnose and treat. This is essentially the concept of personalised medicine. Personalised medicine is a medical model using characterisation of individuals' phenotypes and genotypes (e.g. molecular profiling, medical imaging, lifestyle data) for tailoring the right therapeutic strategy for the right person at the right time, and/or to determine the predisposition to disease and/or to deliver timely and targeted prevention. Personalised medicine holds a great promise, because through this approach healthcare providers can offer better-targeted treatment, avoid medical errors and reduce adverse reactions to medicinal products. Several national and regional initiatives already support the advances of personalised medicine. Similarly, the EU Framework Programmes FP7 and Horizon 2020 have collectively invested over 2200 million Euro in personalised medicine. It allowed the development of a strong technological basis that covers a wide range of areas, from molecular studies in health and disease to diagnostics and biomarkers development. However, knowledge translation and innovation uptake are complex and involve multiple stakeholders. It is important to capitalise on and better coordinate the existing efforts by bringing them under one strategic agenda to reach the necessary critical mass at EU level and bring personalised medicine to the clinic.
Objectives and expected impacts	Personalised medicine represents a paradigm shift away from a ‘one size fits all’ approach to the treatment and care of patients with a particular condition, to one which uses emergent approaches in areas, such as diagnostics, functional genomics, molecular pathways, data analytics and real-time monitoring of conditions to better manage patients’ health and to select therapies that achieve the best outcomes in the management of a patient’s disease or predisposition to disease. At the same time, one key objective of personalised medicine is to make health systems more sustainable by containing costs. Three specific research and innovation objectives are: 1) integrating big data and ICT solutions for Health; 2) translating basic research into clinical applications; 3) providing socio-economic evidence for the uptake of personalised medicine by the healthcare systems. The partnership will coordinate research efforts of the participating partners from Member States and third countries in the field of personalised medicine. The main focus is to create synergies between EU, Member States and regional

	programmes and implement a common action plan. The uptake of multidisciplinary research and innovation results into clinical practice will be a critical aspect. In order to have a natural structuring effect and maximise its impact, the partnership should be flexible to include new developments and open to additional regional and national partners. A permanent dialogue with European and other stakeholders is crucial in order to take into account changes in the area of personalised medicine that occur during the action, e.g. new developments in emerging technologies or healthcare challenges. This shall be done in close collaboration with existing networks, and taking into account priorities identified in the future updates of the Action Plan of the International Consortium for Personalised Medicine (ICPerMed) and other strategic activities linked to ICPerMed. Furthermore, the objectives of the partnership will be a major contributor to the aims of Horizon Europe. The expected impacts are: 1) the development of personalised prevention, diagnostics, monitoring and therapies for the benefit of the patient; 2) an increase of healthcare care systems efficiency through innovation; 3) a patient centred approach in the provision of healthcare, including via digital solutions; 4) the competitiveness of the health industry and the creation of growth and jobs. The long term impact of the partnership should be a complete overhaul of the way healthcare is operated in the EU in a modern, technology driven equitable and sustainable way.
Necessity test: rationale for a European Partnership	Personalised medicine is driven by research and innovation, but its development and implementation necessitate a continuum of actions along the healthcare value chain. For example, data are essential but their use involves collection, storage, sharing, processing and analysis by different actors who must collaborate. The effectiveness of an action also depends on the optimal level of intervention, i.e. international, European, national and regional. It needs to be demonstrated that the impact of the various personalised medicine initiatives taken across Europe would be increased by coordination and synergies, which would allow to streamline investments, reach the appropriate critical mass, facilitate multidisciplinary efforts, and develop common standards and good practice. In the face of the potential huge leap forward in this area, the fact that personalised medicine currently lacks the cooperation and coordination needed to reorganise the still very fragmented field is a severe drawback to its development. In this regard, major efforts must be directed towards creating the conditions for coordinating and aligning relevant stakeholders (public institutions, governments, healthcare professionals industry, civil society, patient organisations) in personalised medicine actions across Europe and beyond. This task cannot be achieved by funding research projects that would be operating in isolation, so a major coordination effort is needed. The current network represented by International Consortium for Personalised Medicine (ICPerMed) and the ongoing ERA-Net Cofund project ERA PerMed is a starting point in this direction. It is important to continue, expand and strengthen these efforts, which are strongly supported by the Member States and the research community. Concretely, still needed, among other things, is to: • Bring together in a holistic approach the various initiatives aimed at formulation of policy for personalised medicine research, the operation of funding mechanisms and the tools for ensuring implementation and take-up of research results. • Optimise efforts and focus on actionable research and support

	activities at the right level of intervention, and • Reach synergies and align initiatives through the timely implementation of the common action plan.
Relevant for the following parts of Horizon Europe	Pillar II 'Global Challenges and European Industrial Competitiveness' ☒ Cluster Health ☐ Cluster Culture, creativity and inclusive society ☐ Cluster Civil Security for Society ☐ Cluster Digital, Industry and Space ☐ Cluster Climate, Energy and Mobility ☐ Cluster Food, Bioeconomy Natural Resources, Agriculture and Environment ☐ Cross-cluster ☐ Pillar III 'Innovative Europe'
Currently identified links with other partnership candidates / Union programmes	• Future partnership "Innovative Health Initiative" to accelerate the development and uptake of health care innovations; • Future partnership "Rare diseases" as rare diseases can be seen as a forerunner in the personalised medicine field, to ensure the transfer of lessons learnt. • Digital Europe Programme for deploying digital data-driven solutions to help implement personalised medicine; • Connecting Europe Facility for supporting the connectivity between hospitals, medical centres and research centres; • InvestEU to attract private investment in research, innovation and digitisation in the area; • European Regional Development Fund for investments in research and innovation, human capital and innovative technologies and new care delivery models; • European Social Fund + for investing in people in terms of education and training and improving accessibility of healthcare systems.
Does the proposed partnership build on currently active ones?	The partnership builds on the success of the ERA PerMed partnership, established in 2018 in the context of the International Consortium for Personalised Medicine (ICPerMed), a Member States-led consortium, which debates and agrees on priority areas for research and innovation investment set out in its regularly updated Action Plan. ICPerMed is a consortium of over 40 partners from close to 30 countries. It includes several health and research/innovation ministries as well as regional authorities. Only public funders or policy making institutions are admitted as regular members. The consortium includes international partners, such as Canada and Brazil. The main purpose of ICPerMed is to boost personalised medicine by an enhanced coordination and alignment of research activities and an investigation of its benefits to citizens and healthcare systems. With the Action Plan, ICPerMed has designed a blueprint for a coordinated approach for personalised medicine research and the reasonable implementation of innovative and promising approaches in the health systems. ICPerMed members implement elements of this blueprint within their national or regional funding activities. The Action Plan is instrumental for the coordination of new transnational funding activities. As an outcome of ICPerMed, the current partnership ERA PerMed is an ERA-Net established in 2018 to implement the ICPerMed Action Plan. The ERA PerMed consortium comprises 32 partners from 23 countries (Member States, Associated Countries to Horizon 2020 and two partners from Canada). Through its very successful calls, as judged by the buy-in from funding agencies, ERA-PerMed is supporting cross-border collaborations in the field.

	Moreover, ERA PerMed works on aligning national research strategies and funding activities, promoting excellence, reinforcing the competitiveness of European players in personalised medicine and enhancing the European collaboration with countries outside the EU. ERA PerMed partners commit themselves to implement one call co-funded by the EU (the EU Contribution is approximately 9,5 million Euro, while the partners' contribution is approximately 23 million Euro), followed by several calls exclusively on their own resources. The partnership is scheduled to finish towards the end of 2022.
Expected type and composition of partners	The future partnership will link the setting of policy recommendations by ICPerMed and the management of joint calls. An even closer involvement of civil society could also be envisioned. It could cover both ERA-Net-like activities and at the same time support ICPerMed through its secretariat and other support actions involving regional, national and international stakeholders. The partnership will be composed of European and international stakeholders such as health and research/innovation ministries, regional authorities, research funding agencies and healthcare institutions.
Contributions and commitments expected from partners	The future partnership will build on the outcome and the approach of the ERA PerMed project and will take into account any developments in the field as identified by the Member States-led consortium ICPerMed. It will contribute to the implementation of the action plan of ICPerMed through cofund activities (expected EU contribution of 30 million €). In order to achieve its objectives and impacts, and to efficiently make use of existing resources/initiatives, the partnership should start in the final year of the current ERA PerMed, or immediately thereafter, i.e. in 2022 or 2023, and last for 5 years. The last projects likely to be funded from the partnership can then operate until 2030 and ensure a long-term impact.
Currently envisaged implementation mode(s).	☒ Co-programmed European Partnership ☒ Co-funded European Partnership ☐ Institutionalised European Partnership ☐ Article 185 ☐ Article 187 ☐ EIT-KIC
Justification of the implementation mode	A co-programmed European Partnership (option 1) would allow partners to align their research agendas. However, it would not deliver the close strategic collaboration and integration of activities that is needed. A co-funded European Partnership (option 2) with an annual programming provides the flexibility for funding a broad range of activities enabling a pipeline approach supporting translation of research results into clinical application and uptake by healthcare systems. Open calls for proposals address large community of rare disease researchers. Support for demonstration activities and pilots involving ERNs ensure that end-users can test and validate research results, which is crucial to deploy and scale-up validated approaches in the clinical practice. Training activities enhance the spread of this knowledge to larger stakeholder groups. Regarding the governance model, lessons are to be learned from the current ERA PerMed to design an optimal model. An institutionalized European Partnership (option 3) would not be fit for purpose, as it is more demanding, rigid and complex in terms of governance and management.
Proposed starting year	2023