Digital Transformation of Health and Care

empowering citizens and building a healthier society

**DG Communications Networks, Content and Technology (DG CONNECT)**

Directorate H Digital Society, Trust & Cybersecurity

Unit H3, eHealth, Well Being and Ageing

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Call 2020 Info Day AAL Programme
Vienna - 30 January 2020
Policy Drivers
Smart Active & Healthy Ageing
Digital Health and Care

TRANSFORMATION OF HEALTH AND CARE IN THE DIGITAL SINGLE MARKET - Harnessing the potential of data to empower citizens and build a healthier society

European health challenges

- Ageing population and chronic diseases putting pressure on health budgets
- Unequal quality and access to healthcare services
- Shortage of health professionals

Potential of digital applications and data to improve health

- Efficient and integrated healthcare systems
- Personalised health research, diagnosis and treatment
- Prevention and citizen-centred health services

What EU citizens expect...

90% agree
To access their own health data (requiring interoperable and quality health data)

80% agree
To share their health data (if privacy and security are ensured)

80% agree
To provide feedback on quality of treatments

Support European Commission:

1. Secure access and exchange of health data
   - Ambition: Citizens can securely access and share (e.g., with doctors or pharmacists) their health data anywhere in the EU
   - Actions:
     - eHealth Digital Service Infrastructure will deliver initial cross-border services (patient summaries and prescriptions) and cooperation between participating countries will be strengthened.
     - Progress to reduce scope of eHealth cross-border services to additional cases, e.g., full electronic health records.
     - Recommended exchange formats for interoperability of existing electronic health records in Europe.

2. Health data pooled for research and personalised medicine
   - Ambition: Shared health resources (data, infrastructure, expertise) allowing targeted and faster research, diagnosis and treatment.
   - Actions:
     - Voluntary collaboration mechanisms for health research and clinical practice (starting with “one million genomes by 2022” target).
     - Specifications for secure access and exchange of health data.
     - Pilot actions on rare diseases, infectious diseases and impact data.

3. Digital tools and data for citizen empowerment and person-centred healthcare
   - Ambition: Citizens can monitor their health, adapt their lifestyle and interact with their doctors and carers (including and providing feedback).
   - Actions:
     - Facilitate supply of innovative digital-based solutions for health, also by SMEs, with common principles and certification.
     - Support demand uptake of innovative digital-based solutions for health, notably by healthcare authorities and providers, with exchange of practices and technical assistance.
     - Mobilise more efficiently public funding for innovative digital-based solutions for health, including EU funding.
Challenges and Opportunities

- Access to health data (across borders)
  - Interoperability of data / systems / technologies
  - Cybersecurity and Data Protection

- Innovative solutions for prevention, diagnosis, treatment, care
  - Artificial Intelligence, clinical decision support systems
  - HPC, Blockchain, Big data analytics, IoT, cloud computing

- Efficiency of health and care systems, better outcomes, personalised medicine, person-centred care, community-based care models, well-being, citizen empowerment, ...
STRENGTHENING STRATEGIC VALUE CHAINS FOR AN EU INDUSTRY FIT FOR THE FUTURE

SMART HEALTH

→ EU facing ageing population, health staff shortages, rises in preventable diseases.
→ Healthcare costs in Europe represent 9.6% of GDP and will likely rise further.
→ Key in Sustainable Development Goals and European Pillar of Social Rights.

RECOMMENDATIONS:

• Create a European Health Data Space, based on a network of federated and GDPR-compliant health databases with a public-private data governance model.
• Create an EU Investment Platform for Smart Health to support new products and services.
• Stimulate demand and uptake of Smart Health products and services.
• New European Smart Health Innovation Hub to assess and promote Smart Health solutions.

Economic, technological and social changes in advanced services for the elderly (own-initiative opinion)

This page is also available in fr

Adopted on 15/05/2019 - Bureau decision date: 12/07/2018

Reference: CCMI/165-EESC-2018
Opinion Type: Own-initiative opinion
Rapporteur: Marian KRZAKLEWSKI (Workers - GR II / Poland)
Co-rapporteur: Jean-Pierre HABER (France)
Plenary session: 543 - May 15, 2019 May 16, 2019
Transforming the future of ageing

Local and regional elected representatives call for the silver economy and health promotion to be firmly embedded in the EU’s political priorities

Press release 18/10/2019 | Public health

The European Committee of the Regions (CoR), at the initiative of member of Dalarna County Council Birgitta Sacrédeus (SE/EPP), has adopted an opinion on Active and Healthy Ageing at its October plenary session. Europe is growing older and so the CoR stresses the need for preventive action and the crucial role that new technologies play in ensuring the active and healthy ageing of EU citizens. "Physical and mental balance as well as the silver economy will make it easier to meet this challenge, in the face of a demographic imbalance," said rapporteur Birgitta Sacrédeus.

Birgitta Sacrédeus

The ageing population is a problem that concerns all EU countries. It is estimated that the share of people aged over 80 in the EU-28’s population will double between 2017 and 2080, rising from 5.5% to 12.7%. In the EU-28, the number of people of retirement age, which in 2017 amounted to 29.9%, is expected to almost double to 52.3% by 2080, pointing to changes in the age structure in Europe.

EIP-AHA put regions at the core of innovation and transfer

Launched to increase the average healthy lifespan by two years by 2020 and to pursue a Triple win for European citizens
Digital Health in current EU funding programmes

- Horizon 2020:
  - More than 1 Billion EUR of investments in Research & Innovation under Societal Challenge 1 (Health, demographic change and wellbeing)
    - ICT solutions for prevention, diagnosis, treatment, care
  - Almost a similar amount in ICT LEIT
    - Big Data, AI and robotics, Smart systems and wearables, biophotonics etc.

- Connecting Europe Facility (CEF) - eHealth Digital Service Infrastructure:
  - Around 80 M€ for eHealth deployment and interoperability
    - Cross-border health services: patient summary, ePrescription, patient access etc.
Health, demographic change and wellbeing
Work Programme 2018-2020

Better access to healthcare and sustainability of health and care systems
To empower the participation of citizens and facilitate the transformation of health and care services to more digitised, person-centred and community-based care models
eHealth and mHealth
ICT for Active and Healthy Ageing

**IMPACT**: maximise the potential of the digital economy in the health and care sectors

**POLICY DRIVERS:**

- Connected Digital Single Market
- European Cloud Initiative
- European Free Flow of Data initiative
- Silver Economy initiative
Calls close: April 2020

- SC1-DTH-02-2020: Personalised early risk prediction, prevention and intervention based on Artificial Intelligence and Big Data technologies, RIA, 32 MEUR
- SC1-DTH-04-2020: International cooperation in smart living environments for ageing people, RIA, 8 MEUR
- SC1-DTH-06-2020: Accelerating the uptake of computer simulations for testing medicines and medical devices, RIA, 32 MEUR
- SC1-DTH-12-2020: Use of Real-World Data to advance research on the management of complex chronic conditions (41 MIO)
- SC1-HCC-08-2020: Scaling up innovation for active and healthy ageing, CSA, 2 MEUR
- SC1-HCC-09-2020: Supporting deployment of eHealth in low and lower middle income countries in Africa for better health outcomes, CSA, 2 MEUR
- DT-TDS-04-2020: AI for Genomics and Personalised Medicine, RIA, 35 MEUR
- DT-ICT-12-2020: AI for the smart hospital of the future, IA, 15 MEUR from SC1 + 25 MEUR from ICT-LEIT
- SC1-BHC-06-2020: Digital diagnostics – developing tools for supporting clinical decisions by integrating various diagnostic data (40 MIO)
- SC1-DTH-14-2020: Pre-commercial Procurement for Digital Health and Care Solutions, PCP, 9 MEUR
- SC1-BHC-20A-2020: Pre-commercial procurement (PCP) for integrated care solutions
- SC1-BHC-20B-2020: Public procurement of innovative solutions (PPI) for diagnostics for infectious diseases (25 MIO 20 for 20A and 20 B)
Scope

- Introduce **innovative ICT solutions**: data, data analytics, novel digital technologies, services, products, organisational changes
- Develop **personalised early risk prediction**, prevention and intervention approaches
- Support better **understanding** of disease symptoms and effects and behavioural changes
- Solutions that meet the **needs of individuals**
- Active **stakeholder engagement** in the design and **validation** of technologies & scenarios

Expected impact

- Adequate **information** on personalised risk prediction, prevention and intervention
- Clear improvements of **outcomes** for individuals, care systems and wider society and contribution to new health and care pathways
- Large-scale collection of **user-generated data** in compliance with data protection, privacy and security rules and principles
- Integration with European Open science Cloud

**RIA, 32 M€, 4-6 M€/proposal**

Call open 19/11/2019, deadline 22/04/2020
Scope

• Develop and validate new solutions for smart living environments for ageing people, supporting independent active and healthy lifestyles and fostering social inclusion
• Provide personalised advice, guidance and follow up in daily life based on active user engagement
• Validation in realistic test sites (e.g. home or care centres)
• Collaboration with Japan: interoperability, standards
• Collaboration with Canada: support care transitions

Expected impact

• Improve independent living, and quality of life of older persons;
• Usefulness and effectiveness of personalised recomm. and follow-up
• Evidence of user-centred design and innovation and user acceptance
• Fostering social participation and reducing social exclusion’s risks
• Validation of non-obtrusive technology for physical, cognitive, social and mental wellbeing
• Strengthened international cooperation in R&I on ICT for AHA

RIA, 8 M€ - 2-4 M€/proposal

Call open 19/11/2019, deadline 22/04/2020
SC1-DTH-06-2020: Accelerating the uptake of computer simulations for testing medicines and medical devices

Scope

• Develop innovative scientific and technological computer modelling solutions for testing medicines and/or medical devices based on multidisciplinary research
• Also explore and inform of the reasons for failure and suggest improvements
• Measures for validation of the in-silico results
• Benefit for human health, environment and animal welfare should be analysed
• Engagement with regulators and consideration of the regulatory framework

Expected impact

➢ Adoption of computer simulations and translation into the clinic and the market
➢ Increasing the trust of users, investors and stakeholders at industry and academia
➢ Redesigning current drug clinical trials by integrating in-silico methods using digitised, personalised testing environments
➢ Engagement with regulators, consideration of the regulatory framework
➢ Reducing size and duration of human clinical trials and/or reducing animal testing
➢ Increased efficacy and patient safety
➢ Reducing development costs and/or shorter time-to-market
➢ Setting standards for computer modelling solutions for testing
➢ Open, reusable data and in-silico models

RIA, 32 M€ - 6-8 M€/proposal

Call open 19/11/2019, deadline 22/04/2020
SC1-DTH-12-2020: Use of Real-World Data to advance research on the management of complex chronic conditions

Scope

• Clinical research **integrating Real World Data (RWD)**, either newly acquired or from existing sources, and linking them with data collected with a research purpose if relevant.
• Use of RWD to improve the clinical management of **adults with complex chronic conditions (CCC)**.

Expected impact

- **Demonstrate** the potential of the use of Real World Data to advance clinical research on complex chronic conditions;
- Demonstrate potential and use of RWD by **health authorities** to understand safety, quality and effectiveness of therapies;
- Improve the clinical **outcomes** as well as **quality of life** of CCC patients;
- Advance the understanding of **management of complex diseases**;
- Contribution to the **cross-border health data exchange** and to the DSM.

**RIA, 41 M€, 4-6 M€/proposal**

Call open until 07/04/2020
SC1-BHC-06-2020: Digital diagnostics – developing tools for supporting clinical decisions by integrating various diagnostic data

Scope

- **Tools, platforms or services** resulting in an accurate, detailed, structured, systemic and prioritised assessment of the health status in a patient;

- **Integration** of various **data sources** such as medical records, *in vitro* and/or *in vivo* diagnostics, medical imaging, -omics data, functional tests (lab-on-a-chip) etc.;

- Taking into account the actual **needs** of **healthcare practitioners**;

- Tested and validated in **real-life settings** in **pilot centres**, facilitating future Health Technology Assessment;

- Solutions towards concrete patient and public sector needs, having the citizen and healthcare providers at the centre.

Expected impact

- **Increase EU's capacity to innovate** in the area of medical instruments technologies through the development of new diagnostic tools, platforms or services integrating various diagnostic data and providing quick, detailed, accurate and highly personalised diagnostics for optimal decision in clinical practice.

- **Improve** the quality and sustainability of **healthcare systems** through quicker and more encompassing diagnosis of medical conditions, leading to quicker and better clinical decisions and timely delivery of effective personalised treatments, with reduction of errors and delays (and costs associated to them).

- **Contribute to the growth of the European diagnostics sector**, in particular for SMEs.

- **Reinforce EU's role among world leaders in the production of medical diagnostic devices.**

RIA, 40 M€, 8-15 M€/proposal

Call open until 07/04/2020
Scope

- Facilitate further uptake by actively involving partners from the European Innovation Partnership on Active and Healthy Ageing as well as other relevant stakeholder groups and R&I projects, at European, national and regional levels
- Focus on successful support to supply and demand sides (also facilitating regular exchanges) in implementing scaling up strategies and large-scale deployment (incl. twinning programmes, capacity building for local and regional authorities)
- Long-term investment strategy leveraging and blending funding sources from European, national and/or regional programmes/promotional banks and private investments, also involving new players
- Recommendations or guidelines for public health authorities
- Fields: mHealth solutions for active and healthy ageing, smart age-friendly homes and independent living, chronic disease management

Expected impact

- Accelerated progress on scaling-up digital innovation for active and healthy ageing across the EU.
- Contribution of the policy activities to i) The Quality of Life of the EU population, ii) The Sustainability of Health and Care delivery and iii) Economic growth and job-creation
- Increased levels of investment by public authorities and private investors in digital innovation for health and active ageing.
- Wider commitment to investment leading to successful and cost-effective implementation of digitally-enabled, person-centred care solutions
- Enhanced market conditions that can facilitate economies of scale for the suppliers of technology and services

CSA, 2 M€, 1.5-2 M€/proposal

Call open 19/11/2019, deadline 22/04/2020
SC1-HCC-09-2020: Supporting deployment of eHealth in low and lower middle income countries in Africa for better health outcomes

Scope

• Support the coordination of a registry of relevant existing e-Health solutions with their services and potential for low and lower middle income African countries or regions
• Roadmap and strategic implementation plans building on the requirements of end-user communities and policy makers
• Take into account national and regional policies and (best) practices regarding health and care services and health infrastructures, incl. lessons learned from existing eHealth policies and programmes at all levels of the health system
• Build on relevant existing and emerging initiatives and capacities in Europe and Africa for future cooperation and deployment
• Consideration of ethics and data protection of health data, socio-economic and gender issues
• Involvement of relevant stakeholders (incl. end-users) through national, regional and international workshops and communication and dissemination actions

Expected impact

➢ Higher level of international cooperation and networking in eHealth programmes and policies between European countries or regions and low and middle income African countries, focusing on areas that are beneficial to the target countries / regions and their citizens in eHealth
➢ Increased opportunities for e-health innovators, patients, medical staff and health system stakeholders in Europe and Africa
➢ Better accessibility of eHealth Services

Third countries eligible for funding:
http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/international-cooperation_en.htm#support-non-eu-countries

Call open 19/11/2019, deadline 22/04/2020

CSA, 2 M€, 1.5-2 M€/proposal
• Multidisciplinary technologies and solutions in health and care with a focus on cybersecurity
• Secure and user-driven ICT-based solutions in early risk detection and interventions
• Aggregation of a variety of new and existing data sources

**FOCUS AREAS**
• Digitising and transforming European industry and services
• Boosting the effectiveness of the Security Union

**POLICY DRIVERS**

*Connected Digital Single Market*  
*Big Data in healthcare*  
*European Data Protection Regulation*
Scope

- Demonstrate the potential and **benefits of AI** for research and **personalised medicine** through linking relevant genomics data
- Develop and test **AI solutions** for linking genomics repositories across the EU (+"omics" and related data)
- Support clinical research, decision making, diagnostic capacity
- Potential to build a **large-scale distributed repository** of relevant genomic data (+"omics") for **AI solutions**
- Ensure **compliance** with the relevant privacy, cybersecurity, ethical and legal rules (cross-border data exchange)

Expected impact

- Development and **testing of AI** on genomics and other linked –omics
- Promoting the **sharing of data** and infrastructure for **prevention and personalised medicine research**
- Measuring patient-based value healthcare **outcomes**
- Contributing to **standards** for genomic data generation, analysis, privacy and **interoperability**
- Providing **open, reusable data** for prevention, genomics and PM research
- Increasing **users’ trust** in AI solutions

**RIA, 35 M€, up to 10M€/proposal**

**Call open 19/11/2019, deadline 22/04/2020**
Pre-commercial Procurement (PCP)  
Public procurement of innovative solutions (PPI)

- PCP to steer the development of solutions towards concrete public sector needs, whilst comparing/validating alternative solution approaches from various vendors

- PPI to act as launching customer / early adopter / first buyer of innovative commercial end-solutions newly arriving on the market
Pre-commercial Procurement (PCP)
Public procurement of innovative solutions (PPI)

Roles

Beneficiaries
- Minimum of 3 independent participants from 3 different MS or AC: undertake the PCP or PPI procurement, the buyers group & the lead procurer + possibly other beneficiaries that assist the procurers in coordination/networking activities

Buyers group (subset of beneficiaries)
- Minimum 2 public procurers from 2 different MS or AC: provide the financial commitments to buy the R&D (PCP) or the innovative solutions (PPI)
- Public procurers are contracting authorities or contracting entities as defined in the EU public procurement directives
- They can be complemented by other types of procurers that are providing services of public interest and share the same procurement need e.g. NGOs or private procurers

Lead procurer (subset of beneficiaries)
- Public Procurer appointed by the buyers group to lead and coordinate the PCP or PPI procurement.

*A consortium can include third parties (e.g. end-users such as Patient Associations) putting resources (e.g. test sites, testers) at the disposal of the beneficiaries (e.g. ministry of health that is the procurer) to carry out the action

*Sub-contractors/suppliers: Successful tenderers, selected by the buyers group & lead procurer as result of the PCP or PPI call for tender, to provide the R&D services (PCP) or innovative solutions (PPI). They do 'NOT' become partners in the MGA.
Pre-commercial Procurement (PCP)
Public procurement of innovative solutions (PPI)

**CURRENT PROJECT PORTFOLIO**

Ongoing PCP and PPI projects, Coordination & Support Actions:

**ADDITIONAL INFORMATION**

The general FAQs for PCP actions

The proposal template for PCP actions

What is a PCP – Objectives & Design – Assistance & complementary funding opportunities

Advice & Toolkit from the European innovation Partnership on Active & Healthy Ageing
**Scope**

- Support health and care service provider to procure the development of digital services, facilitating the transition to integrated care models across services and country-specific cross-institutional set-ups
- Address key challenges (patient empowerment, self-management, patient safety, involvement, disease management, hospital logistics, skills, telemedicine, mHealth..)
- Driven by clearly identified user needs and public and/or private procurers
- **Interoperable** solutions based on open platforms and standardisation
- Facilitate the early adoption, scale-up and and transferability
- Compliance with ethical standards, patients’ rights and privacy protection

**Expected impact**

- Established **path to innovation**, evidence of benefits of disruptive technologies - support the development of sustainable business models
- Improved **user and market engagement**, strengthened procurement community, evidence of **healthy innovation ecosystems**
- Evidence in key performance areas i.e. quality in health and care, sustainability of the delivery system and economic value
- Increased opportunities for **solution uptake** across wider international procurement markets - **interoperable solutions** validated through field testing

**PPP, 9 M€ - 4-5M€/proposal**

**Call 19/11/2019, deadline 22/04/2020**
**Scope**

- Innovative **integrated care solutions** to modernise public services whilst creating growth opportunities for industry and researchers;
- For example, formal or informal **organisational solutions**, **personal-health and self-care solutions**, **professional care solutions** and **ICT-based solutions**;
- Open to all areas of public sector interest requiring innovative integrated care solutions;
- Should demonstrate **sustainability** of the action beyond the life of the project;
- Should include **cooperation** with policy makers to reinforce the national policy frameworks and mobilise substantial additional national budgets for PCP and PPI
- **Collaborating** with respective EU funded projects in the area, as well as awareness raising, technical assistance and/or capacity building to other procurers

**Expected impact**

- **Reduced fragmentation** of demand for innovative solutions in the area of integrated care;
- Increased opportunities for **wide market uptake** and **economies of scale** for the supply side through the use of **joint specifications** and wide publication of results;
- Where relevant, contribution to standardisation, regulation or certification.

25 M€ (20A and 20B) - 5-6 M€/proposal

Call open until 07/04/2020
Scope

- Implementation of **rapid diagnostic tools** for infectious diseases in **clinical practice**;
- Specifications that are applicable for **EU-wide deployment** of the innovative diagnostics;
- Driven by **public and/or private procurers** (at national, regional or local level) that have responsibilities and budget control in the relevant area of supply of health and care services;
- Clear communication and outreach strategies aiming to **actively promote and support public health procurement** organisations and health care providers across regions and borders of the EU in adopting relevant innovation procurement approaches;
- Ensure the sustainability of solutions beyond the lifespan of the proposed project.

Expected impact

- Innovative procurement practices for **diagnostics for infectious diseases** in the EU, involving newly acquired rapid diagnostic tests in **hospital and ambulatory settings**.
- Contribute to the **EU One Health Action Plan on Antimicrobial Resistance**, in particular in relation to ‘Better Prevention and Control of AMR’ and the goal to address patient safety in hospital environments by supporting good practices in infection prevention and control.
- New opportunities for **market uptake and economies of scale** for the supply side of rapid diagnostics in the area of respiratory tract infections across the EU.
- Reduced fragmentation of demand for innovative solutions.

25 M€ (20A and 20B) - 3-5 M€/proposal

Call open until 07/04/2020
DT-ICT-12-2020: AI for the smart hospital of the future

Scope

- **Pilot demonstrators** that deliver **innovative AI-based solutions** in health and care settings (e.g. hospital, primary care facility or care home)
- **Support clinical diagnosis and treatment**, etc. carried out with clinical outcomes comparable to human delivered procedures and with comparable results
- May address any aspect of health facility operations across their range of functions, such as diagnostics, treatments, logistical aspects, measured against health and care metrics
- Consider wider dimensions such as impact on resources, staff training and alignment with existing practice
- Build **AI-based systems** that **combine digital and physical services** that support individualised and integrated care solutions in care facilities
- Integrate health and care partners in the design of the pilots
- At scale” benefits in efficiency or cost reduction and **demonstrate the effectiveness** of any novel service models in providing **economic justification** for scale-up investment
- Address **privacy** and **cybersecurity** issues
- Align with actions of DT-ICT-02-2018: Robotics -Digital Innovation Hubs

Expected impact

- European-led **AI based pilots for the smart hospital** of the future, enabled by open system platforms
- Effectiveness of AI based technologies, such as smart robots, in a range of healthcare tasks, developing deployable applications
- Engagement of healthcare policy makers, investors, stakeholders
- Reaching a high leveraging effect on other sources of funding, in particular regional and national funding
- **Trust and acceptance** building in the AI technology among all stakeholders (including patients, their formal and informal caregivers, decision makers, etc.).

**RIA, 40 M€, 7-10 M€/proposal**

**Call 19/11/2019, deadline 22/04/2020**
• Call topics
• National Contact Points (NCPs)
• Expert registration
• Documents
• FAQs
• Rules for participation
• Upload project reports

https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home
Thank you!

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R&D&I: http://ec.europa.eu/horizon-europe
Participants Portal: https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home