Horizon Europe
THE NEXT EU RESEARCH & INNOVATION INVESTMENT PROGRAMME (2021 – 2027)

#HorizonEU

Based on the Commission Proposal for Horizon Europe, the common understanding between co-legislators and the Partial General Approach, both approved in April 2019
Horizon Europe Commission proposal for budget: €100 billion* (2021-2027)

Specific objectives of the Programme

- Support the creation and diffusion of high-quality knowledge
- Strengthen the impact of R&I in supporting EU policies
- Foster all forms of innovation and strengthen market deployment

Optimise the Programme’s delivery for impact in a strengthened ERA

Pillar 1 – 25.8M€
Open Science

- European Research Council
- Marie Skłodowska-Curie Actions
- Research Infrastructures

Pillar 2 – 52.7M€
Global Challenges and Industrial Competitiveness

- Health 7.7
- Inclusive & Secure Society 2.8
- Digital and Industry 15
- Climate, Energy & Mobility 15
- Food & natural resources 10

Joint Research Centre 2.2

Pillar 3 – 13.5M€
Open Innovation

- European Innovation Council
- European innovation ecosystems
- European Institute of Innovation and Technology

Strengthening the European Research Area – 2.1M€

- Sharing excellence
- Reforming and Enhancing the European R&I system
Lessons Learned from Horizon 2020 Interim Evaluation

- Support breakthrough innovation
- Create more impact through mission-orientation and citizens' involvement
- Strengthen international cooperation
- Reinforce openness
- Rationalise the funding landscape

Key Novelties in Horizon Europe

- European Innovation Council
- R&I Missions
- Extended association possibilities
- Open science policy
- New approach to Partnerships
European Parliament and Council reached a common understanding on Horizon Europe on 19 March 2019

- Cluster inclusive and secure society is split
- Fast track procedure in pillar II and in the EIC Pathfinder for bottom-up proposals, small consortia and time-to grant not exceeding 6 months
- EIC to provide two types of support: blended and grants-only
- Areas for possible missions and institutionalised partnerships based on Article 185/187 TFEU are listed
- Widening participation: additional measures and increased budget prospect
- Strategic planning as Commission implementing act to facilitate implementation

- Budget, synergies and third country association still pending, depending on the overall MFF negotiations
1. Specific Programme Cluster 2 - Health
Pillar 2 – Cluster Health
Six main areas of intervention

- Health throughout the Life Course
- Environmental and Social Health Determinants
- Non-communicable and Rare Diseases
- Infectious diseases
- Tools, Technologies and Digital Solutions for Health and Care
- Health Care Systems
#1 Health throughout the Life Course

People in vulnerable stages of life have specific health needs, that require better understanding and tailored solutions.

- Early development and the aging process
- Maternal and child health
- Health needs of adolescents
- People with disabilities and injuries
- Active life for the elderly
- Health education and digital health literacy
#2 Environmental and Social Health Determinants

We need to better understand how the social, economic and physical environment impacts our health and mitigate health risks and threats.

- Health hazards of chemicals, pollutants and environmental stressors
- Capacity and infrastructure to collect, share and combine exposure data with health and diseases
- Environmental, occupational, social and behavioural factors impacting physical and mental health
- Risk assessment, management and communication
- Health promotion and prevention
Non-communicable diseases remain a major health and societal challenge requiring personalized approaches.

- Earlier and more accurate diagnoses
- Prevention and screening programmes
- Treatments and cures
- Palliative care
- Comparative effectiveness of interventions
- Scale up of health interventions
#4 Infectious Diseases

We must protect people in the world from the threats of infectious diseases and AMR.

- Drivers for the emergence and re-emergence of infectious diseases and their spread
- Prediction, early detection and surveillance of infectious diseases and AMR pathogens
- Vaccines, diagnostics, treatments and cures
- Emergency preparedness, response and recovery measures
- Uptake of medical interventions in clinical practice, health systems
- Specific challenges in low- and middle-income countries (LMICs)
#5 Tools, Technologies and Digital Solutions for Health and Care

New technologies are vital for public health and the competitiveness of European Health related industries.

- Tools and technologies for medical indications
- Integrated solutions for health incl. mobile and telehealth
- Piloting and large-scale deployment of healthcare technologies and tools in real-life settings
- Innovative processes for development, manufacturing and rapid delivery
- Safety, efficacy, quality and ethical and social impact
- Regulatory science
#6 Health Care Systems

Health systems are a key asset of the EU social system. We shall keep them accessible, resilient and sustainable and harness the potential of data-driven and digital innovation.

- Reforms in public health systems and policies
- New models for health and care and future workforce
- Improving health technology assessment
- Use of health data respecting security, privacy and interoperability
- Health systems resilience – crises and disruptive innovation
- Patient empowerment, self-monitoring, user-centered integrated care
2. Strategic planning process
Strategic Plan for implementing Horizon Europe

The Strategic Plan (*new implementing act by the Commission*) will prepare the content in the work programmes and calls for proposals for the first four years

- Strategic orientation for R&I support, expected impacts
- Partnerships and missions
- Areas for international cooperation
- Issues such as:
  - Balance between research and innovation
  - Social Sciences and Humanities
  - Key Enabling Technologies and strategic value chains
  - Gender
  - Ethics and integrity
  - Dissemination and exploitation
Strategic planning to define multiannual work programmes and calls for proposals

- Transparency and stakeholder involvement
- Prioritisation and flexibility to align to political priorities
- Internal programme coherence & synergies with other programmes

Multiannual Strategic R&I Plan
- Multiannual orientations and priorities in one document
- Areas for partnerships and missions

Strategic discussions with Member States and European Parliament
Consultation with stakeholders

Work Programmes
3. R&I Partnerships
New approach to European Partnerships

New generation of objective-driven and more ambitious partnerships in support of agreed EU policy objectives

Key features

- Simple architecture and toolbox
- Coherent life-cycle approach
- Strategic orientation

Co-programmed
Based on Memoranda of Understanding / contractual arrangements; implemented independently by the partners and by Horizon Europe

Co-funded
Based on a joint programme agreed and implemented by partners; commitment of partners for financial and in-kind contributions

Institutionalised
Based on long-term dimension and need for high integration; partnerships based on Articles 185 / 187 of TFEU and the EIT-Regulation supported by Horizon Europe
Institutionalised Partnership Area 1: Faster development and safer use of health innovations for European patients, and global health

Rationalisation and reform: Overall number reduced from 13 to 7, of which
- 4 are reformed continuations of current partnership topics;
- 3 partnerships that would build on existing actions or merge existing partnerships;
- No discontinuation, but merging

<table>
<thead>
<tr>
<th>Preliminary list of candidates for European Partnerships for Cluster 1 - Health</th>
<th>Currently envisaged implementation mode(s)</th>
<th>Predecessors</th>
<th>Relevance for clusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU-Africa partnership on health security to tackle infectious diseases</td>
<td>Article 185 or Article 187 or co-programmed or co-funded</td>
<td>EDCTP2 (Art.185)</td>
<td>Cl.1</td>
</tr>
<tr>
<td>Innovative Health Initiative</td>
<td>Article 187 or Co-programmed</td>
<td>IMI2 (Art.187)</td>
<td>Cl.1</td>
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<tr>
<td>European partnership for chemicals risk assessment</td>
<td>Co-funded</td>
<td>HBM4EU + other actions</td>
<td>Cl.1, 3, 5</td>
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<tr>
<td>Large-scale innovation and transformation of health systems in a digital and ageing society</td>
<td>Co-funded</td>
<td>AAL2 (Art.185), JPI ‘More Years, Better Lives’ + others</td>
<td>Cl.1</td>
</tr>
<tr>
<td>Pre-clinical/clinical health research</td>
<td>Co-funded</td>
<td>Around 10 existing ERA-NET actions</td>
<td>Cl.1, 5</td>
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<tr>
<td>Personalised Medicine</td>
<td>Co-funded</td>
<td>ERA-PerMed + other actions</td>
<td>Cl.1</td>
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<tr>
<td>Rare Diseases</td>
<td>Co-funded</td>
<td>EJP Rare diseases</td>
<td>Cl.1</td>
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Health Institutionalised Partnership Area 1:
Innovative Health Initiative - Faster development and safer use of health innovations for European patients, and global

Context:
Europe has an ageing population and a rising burden of diseases. • Developing innovations is often long, costly and risky, while healthcare systems are under budgetary pressure. • Opportunity of convergence of industry sectors (pharma, med. tech., digital).

Problem:
Innovations are slow to reach the patients and users, or do not reach them at all if companies are unable to prove their safety and efficacy or if payers of the healthcare systems cannot afford them.

Causes:
• Lack of complete understanding of diseases • Weak translation of research into actual products and services • Insufficient integration of technologies and health interventions • Barriers to digitalisation • Market failures • Lack of adequate business models.

Earlier interventions:
IMI and IMI2 partnerships • Excellent in promoting public-private cooperation • Fostered knowledge sharing between pharmaceutical companies • Established critical mass for drug development • Initiated collaborations with non-pharmaceutical companies • Opportunity now for broader cross-sectoral collaboration
Innovative Health Initiative

What are the objectives, expected impacts and scope?

**Partnership:**
EU and health related industries (such as pharmaceuticals, diagnostics, medical devices, imaging, biotech and digital industries) • European collaborative platform for precompetitive and integrative R&I.

**Overall objective:**
Accelerate the development of safer and more effective innovative healthcare interventions that respond to unmet public health needs, and that can be taken up by healthcare systems.

**Specific objectives:**
• Facilitate technology integration to: progress disease understanding; enable the delivery of innovative health products and services; enable the combination of innovations along the healthcare pathway; overcome barriers to digitalisation, via standards, interoperability, etc. • Contribute to methodologies for better assessing the value of innovative interventions.

**Expected impacts:**
• Contribute to the sustainability of the healthcare systems • Faster time-to-market for innovative products • New business models • Incentive for industry to invest in unmet public health needs • Facilitate the delivery of cost-effective interventions • Improved health outcomes • Cross-sectoral industry collaborations.
2. EU-Africa Global Health on health security to tackle infectious diseases

What is the context and problem definition?

- Infectious diseases affect 1 billion people worldwide with 3 million deaths every year;
- Particularly sub-Saharan Africa suffers a huge health and economic burden.

Lack of effective interventions caused by key problem drivers:

(i) Insufficient purchasing power of most affected patients (market failure);
(ii) Insufficient capacities for clinical research in developing countries;
(iii) Fragmentation of public funding (EU and beyond) impedes funding of costly large late-stage clinical trials.

The European and Developing Countries Clinical Trials Partnership (EDCTP), launched in 2003 and renewed in 2014 (Article 185), addresses these problems.

This new partnership supports:

- Towards a Sustainable Europe by 2030;
- 2030 Agenda for Sustainable Development; SDG 3 and 17;
- Africa-Europe Alliance for Sustainable Investment and Jobs;
- President Juncker’s 2018 State of the Union Address; for an EU-Africa partnership of equals.
EU-Africa Global Health

What are the objectives, expected impacts and scope?

Objectives: To increase health security in sub-Saharan Africa and Europe by:
- accelerating clinical development of effective, safe, accessible, suitable and affordable health technologies and health systems interventions for infectious diseases;
- in partnership with Africa and international funders.

Timeframe: Duration of Horizon Europe and beyond.

Expected impacts:
- Increased health security: decrease the threat of spread of outbreaks/pandemics and the growing threat of antimicrobial resistance (AMR);
- Reduced economic and social burden of infectious diseases;
- Strengthened European and African scientific capacity;
- Better and more integrated health research & health services in Africa;
- Retaining a new generation of African scientists & addressing the chronic shortage of health workers in developing countries.

Scope:
- Clinical development of new health technologies for detection, prevention and treatment of infectious diseases.

Key changes: Inclusion of health security and antimicrobial resistance in the scope, and additional partners (international funders) to increase impact.

Links with other partnership candidates: Innovative Health Initiative; Pre-clinical/Clinical Health Research Partnership; Animal Health Partnership; Neighborhood, Development and International Cooperation Instrument and External Investment Plan.
Tentative timeline and process for the preparation of Article 185/187 initiatives

3 May – 27 June: Structured consultation of Member States (as part of strategic coordinating process)

Mid-June: Kick-off meeting for Impact Assessment study
Publication of draft Inception Impact Assessments

July until mid-September: Open Public Consultation on future European Partnerships based on Article 185/187

24-26 September: European R&I Days (policy discussion and validation with stakeholders, covers all European Partnerships)

End of 2019: Submission of Impact Assessment drafts to Regulatory Scrutiny Board

Early 2020: Adoption of Commission proposals for Article 185/187 initiatives

During 2020: Negotiation with Council (and EP), adoption

Early 2021: Launch of first European Partnerships under Horizon Europe
4. Missions
R&I Missions

Relating EU's research and innovation better to society and citizens' needs; with strong visibility and impact

A mission is a portfolio of actions across disciplines intended to achieve a **bold and inspirational and measurable goal** within a set timeframe, with **impact** for society and policy making as well as relevance for a significant part of the European population and wide range of European citizens.

Horizon Europe defines mission characteristics and elements of governance, and 5 missions areas. Specific missions will be programmed within the Global Challenges and European Industrial Competitiveness pillar (drawing on inputs from other pillars).
Adaptation to climate change, including societal transformation

Mission areas

Healthy oceans, seas, coastal and inland waters

Cancer

Climate-neutral and smart cities

Soil health and food
Mission Boards

• **Boards:**
  - Up to 15 members
  - Individuals appointed in a personal capacity
  - Diverse profiles: industry/academia/policy makers and practitioners/end-users and key stakeholders

• **Expression of Interest**
  - Call on published on 13/5 – **deadline EXTENDED 16/6 at 12.00**

**Cancer mission**

• 295 unique application received so far
• Academia overrepresented
Cancer mission Board

Expertise sought in:

- cancer prevention, prediction, detection, diagnosis and treatment including clinical expertise in these areas;
- quality of life and end of life care;
- public health policy and practice;
- patient representation incl support groups and family counselling;
- innovation and business development;
- ethics.

5. Next Steps
Preparation of consultation of “stakeholders and wider public” (including EU R&I Days)

- **Launch of web-based consultation by end of June**, with **consultation document** (general and cluster specific orientations) + structured feedback through **questionnaire** (with mainly closed questions):
  - Level of agreement with expected impacts (from first four years of R&I investment under HE)
  - R&I priorities, including cross-cutting issues (valorization and ranking)
  - Open questions (“tweet-like”)
  - plus possibility to hand in position paper that will be published

- **Evaluation of feedback** in early September

- **Discussion/valorization of consultation results at EU R&I Days** (24-26/09/2019) in dedicated sessions and feedback possibly through an ‘Horizon village’

- **Further round of feedback in autumn**
Cluster 1 - Health
Targeted impacts

**EU policy objectives**

- **SDG 3** - Ensure healthy lives and promote well-being for all at all ages
- **European Social Pillar** - Everyone has the right to timely access to affordable, preventive and curative health care of good quality
- **Protect and improve the health of EU citizens**, including cross-border health threats, epidemics preparedness and global health security
- **Support equal access to modern, efficient and safe health care for all EU citizens**, incl. cross-border health care
- **Improve the efficiency of Europe's health systems**, incl. via the digital transformation of health and care

**Targeted impact - Long term (2030-2050)**

**Societal impact**

- Improved health promotion and disease prevention throughout the life course
- Better accounting for the environmental factors for health and well-being
- Better fighting communicable and non-communicable diseases (including a faster response to epidemic threats) and reducing the social and societal burden that they entail
- More efficient, accessible, sustainable and high-quality health care services and systems

**Economic and technological impact**

- Better, safe and affordable health technologies, tools and digital solutions for health
- More innovative, sustainable and globally competitive health industries (including SMEs)
What else is needed to achieve impact beyond Horizon Europe - Synergies and framework conditions
- Actors on the ground to accept, support, promote, take-up, scale-up and implement the recommendations and innovative solutions developed - Supportive health policy and investment, environmental action, food policy, climate policy, urban investment, health care at EU/national, regional level

EU policy objective
SDG 3 - Ensure healthy lives and promote well-being for all at all ages
European Social Pillar - Everyone has the right to timely access to affordable, preventive and curative health care of good quality

Protect and improve the health of EU citizens, incl. cross-border health threats, epidemics preparedness and global health security

Support equal access to modern, efficient and safe health care for all Europeans, incl. cross-border health care

Improve the efficiency of Europe’s health systems, incl. via the digital transformation of health and care

SDG 3 - Ensure healthy lives and promote well-being for all at all ages

HE Cluster 1 - Health

Targeted R&I impact
Long term (2030-2050)

Societal impact
Improved health promotion and disease prevention throughout the life course
Better accounting for the environmental factors for health and well-being
Better fighting communicable and non-communicable diseases (including a faster response to epidemic threats) and reducing the social and societal burden that they entail
More efficient, accessible, sustainable and high-quality health care services and systems

Economic/technological impact
Better, safe and affordable health technologies, tools and digital solutions for health
More innovative, sustainable and globally competitive health industries (including SMEs)

Targeted R&I impact
Medium term (2025-2030)

Better understanding of human health, specific health and care needs, and individual aspects of health promotion and disease prevention
Innovative tools and digital solutions fostering health literacy and citizen/patient health empowerment
Better understanding, identification, assessment and management of environmental, occupational, social and economic factors on human health and wellbeing
Better collection, sharing, combination and analysis of environmental, occupational and human health-related data
Better methodologies for assessing health outcomes, and better estimation of economic, societal and health costs
Better prediction, monitoring, and surveillance of risk factors, early warning of health emergencies, and evidence for informed policy making
Better understanding of diseases and their drivers as well as better methodologies for diagnosis, treatment, monitoring and outcome assessment
Improved and safe health technologies and medical interventions validated and tested in clinical practice, including personalised medicine approaches
Innovative solutions to inform reforms and transformation of health care systems, including simulation models supporting policy-making
Methods, tools and pilots for take-up and scale-up of innovation in health care systems as well as for assessment of health system performance
Strengthened framework with interoperable data sources and infrastructures for [Secure] sharing, access, use and analysis of real-world health data
Data-driven tools and digital solutions for biomedical research, prevention, diagnosis, therapy, health monitoring and disease surveillance designed, developed, validated, tested and deployed in health
More efficient up-scaling and production systems for targeted and personalised health interventions
New standards and methodologies for validation, monitoring and approval of new health technologies and interventions by regulatory authorities
developed, validated, tested and deployed in health care systems that are shifting hospital-centered health care to more community-based and integrated health care

Horizon Europe Areas of Intervention
1.2.1. Health throughout the Life Course
1.2.2. Environmental and Social Health Determinants
1.2.3. Non-Communicable and Rare Diseases
1.2.4. Infectious Diseases, including poverty-related and neglected diseases
1.2.5. Tools, Technologies and Digital Solutions for Health and Care, including personalised Medicine
1.2.6. Health Care Systems

Collaboration/dialogue between academia, businesses, policy makers, health care and media for the health benefit of citizen
Where, When, What?

*Kanal - Centre Pompidou, Brussels*  
24, 25 and 26 September 2019

- A Policy conference; an Innovative Europe Hub; the “Science is Wonderful!” exhibition altogether;

- Bringing together policy-makers, world leaders from industry, finance, academia and business

- Debating and shaping the future R&I landscape:
  - contribute to co-designing the HE Strategic Plan
  - provide a space and meeting opportunities for inventors, investors, businesses and intermediaries
6. Questions?