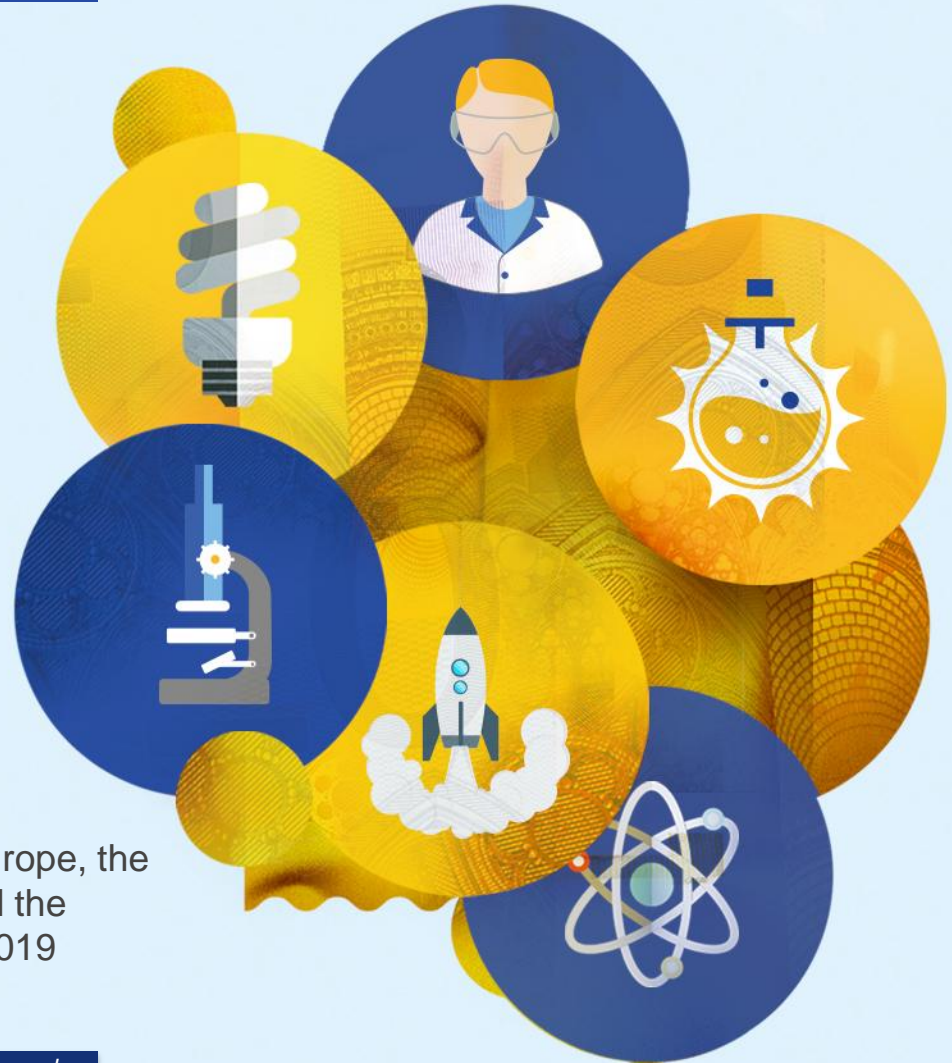


# Horizon Europe

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

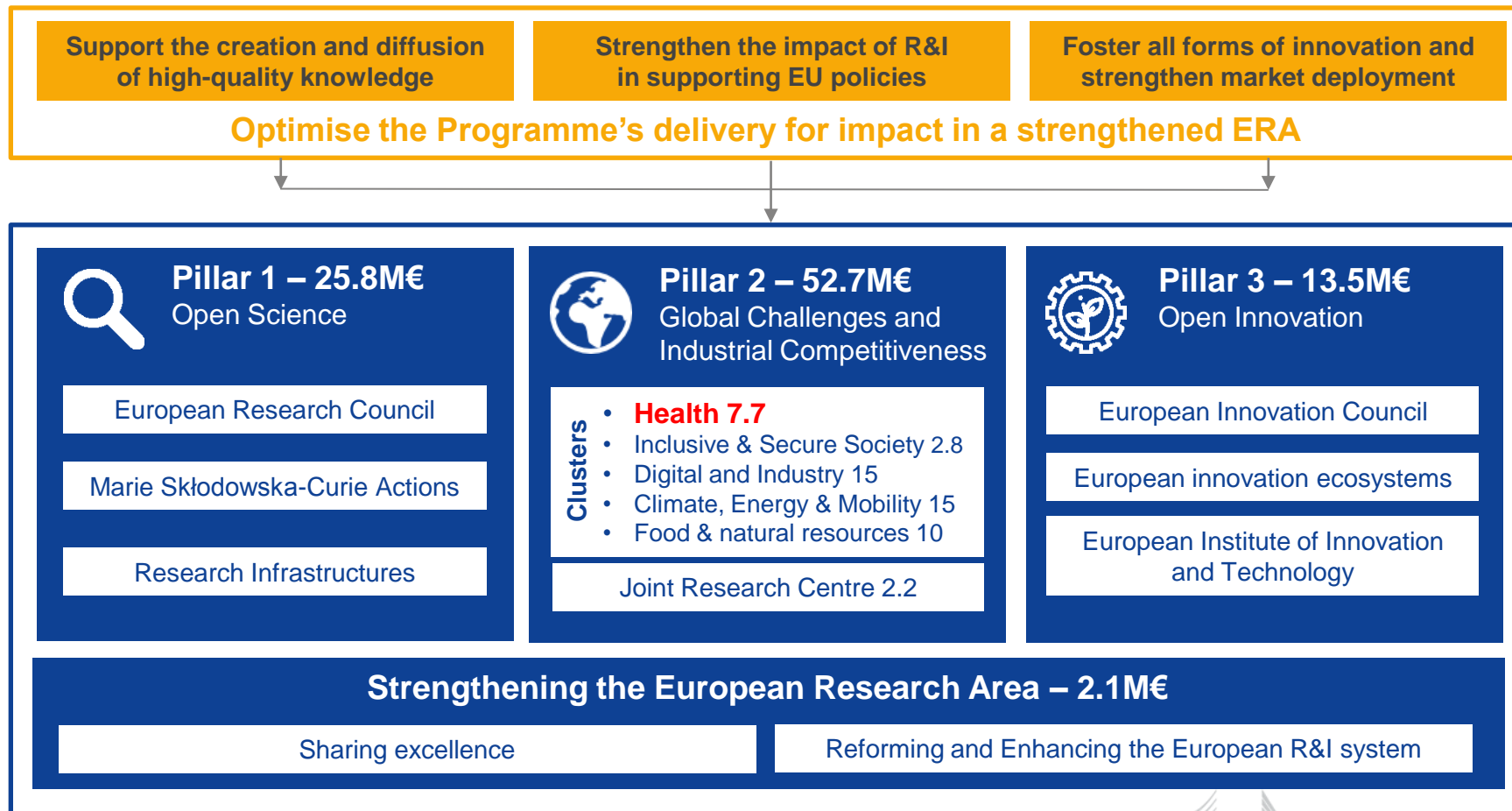
#HorizonEU

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



# 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

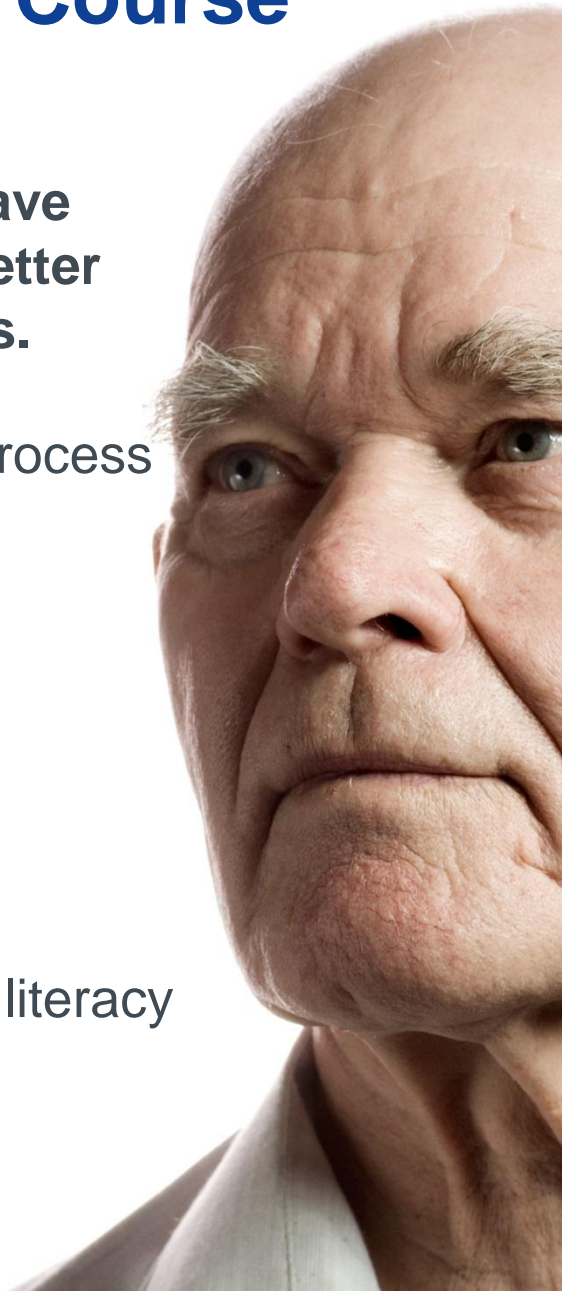


Health Care Systems

# #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



# #3 Non-Communicable and Rare Diseases

**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

# European Partnerships on health research & innovation

## 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

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

## 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](#);

21 May 2019 | Version 25  
for an EU-Africa partnership of equals.



## 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

<b>3 May – 27 June:</b>	Structured consultation of Member States (as part of strategic coordinating process)
<b>Mid-June:</b>	Kick-off meeting for Impact Assessment study Publication of draft Inception Impact Assessments
<b>July until mid-September:</b>	Open Public Consultation on future European Partnerships based on Article 185/187
<b>24-26 September:</b>	European R&I Days (policy discussion and validation with stakeholders, covers all European Partnerships)
<b>End of 2019:</b>	Submission of Impact Assessment drafts to Regulatory Scrutiny Board
<b>Early 2020:</b>	Adoption of Commission proposals for Article 185/187 initiatives
<b>During 2020:</b>	Negotiation with Council (and EP), adoption
<b>Early 2021:</b>	Launch of first European Partnerships under Horizon Europe

# 4. Missions



# R&I 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**  
[http://ec.europa.eu/transparency/regexpert/index.cfm?do=calls.calls\\_for\\_app](http://ec.europa.eu/transparency/regexpert/index.cfm?do=calls.calls_for_app)  
[RTD-HORIZON-EUROPE-MISSION-BOARDS@ec.europa.eu](mailto:RTD-HORIZON-EUROPE-MISSION-BOARDS@ec.europa.eu)

## 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.

[http://ec.europa.eu/transparency/regexpert/index.cfm?do=calls.calls\\_for\\_app](http://ec.europa.eu/transparency/regexpert/index.cfm?do=calls.calls_for_app)

# 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)**

## 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

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

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## 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

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)

# HE Cluster 1 - Health

## 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

New health services, methodologies, technologies, 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

New and innovative health services designed, developed, validated, tested and deployed in health care systems that are shifting hospital-centered health care to more community-based and integrated health

## 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

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

# 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 ?