## Health research in Horizon 2020

### Collaborative health research (SC1)
- Public-private partnership
- Frontier research

### Support to innovation
- Modelling & predictive (neuro)sciences

### Research Education Innovation

### Loans for de-risking R&I

### Deployment of innovative solutions
- Human Brain Project
- InnoLife
- EIT Health
- JPI-AMR
- ESFRI
- InnoFin
- European Investment Bank

**Public-private partnership**

**Frontier research**

**Support to innovation**

**Modelling & predictive (neuro)sciences**

**Research Education Innovation**

**Loans for de-risking R&I**

**Deployment of innovative solutions**
Healthcare opportunities: more personalised medical interventions

Avalanche of new –omics and molecular information, which needs to be translated from basic to clinical research → better understanding of health and disease

Innovative approaches needed for changing the focus from treatment and cure to prediction and prevention
Personalised medicine to address significant challenges...

...and benefit from opportunities

- Burden of non-communicable diseases (loss of €35 trillion over next 20 years)
- Pressure on healthcare systems
- Gap between EU and global innovation leaders
- Challenges of drug development in Europe

- Better outcomes for patients and potential cost savings (as suggested by early studies of stratified approach)

Europe can lead implementation of personalised medicine thanks to favourable conditions
History of personalised medicine at EU level

2010: Preparatory workshops (-omics, biomarkers, clinical trials/regulatory, uptake)

2011: European Perspectives conference

2013: Commission Staff Working Document on "use of '-omics' technologies in the development of personalised medicine"

2015: Council conclusions on Personalised Medicine
Council Conclusions on personalised medicine for patients (2015/C 421/03)

"Personalised medicine refers to 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"

Definition developed by the Advisory group for the H2020 Health, demographic change and well-being challenge
Framework for Personalised Medicine

R&D the basics

“Omics” Technologies
Data
Samples
Statistics

R&D stratifying tools

Biomarkers Identification Qualification Validation
Data modelling tools
Technical aspects & challenges

R&D test in human

Clinical trials methodologies
Patient - recruitment

Towards the market

Diagnostics & Therapies
Approval processes
Regulatory aspects

Uptake in healthcare

Pricing & Reimbursement
Health economy
HTA
Novel models of healthcare organisation

In patients

Availability & usability in the clinic
Patient perspective
Equal treatment
Social and legal issues
Education and training

Prediction - Prevention – Treatment - Cure
Identified key research challenges

Breaking barriers & speaking the same language

"cross-disciplinarity", capacity building, education & training

Translating knowledge to medical applications

disease taxonomy, biomarker validation, clinical trials

Generating knowledge & developing the right tools

standards, clinical bioinformatics, adaptation of tools

Understanding the value & economic aspects

health care pilots, HTA, comparative effectiveness research, value chain
EU Health Research Programme
Enabling personalised medicine 2007-2015

Large scale data gathering and "-omics"
Technology development
Statistics
Diagnostics
Biomarkers
Clinical trial methodologies
Pre-clinical and clinical research
Rare diseases: small patient populations
Omics for health promotion and disease prevention
Piloting personalised medicine in healthcare

Support and coordination actions
History of IC PerMed

- **PerMed** - FP7 funded Support and Coordination Action
  

- **Aiming to:** step up coordination efforts, allow synergies and avoid duplication or competition, to ensure maximum transparency and openness preparing Europe for leading the global way.

- Coordinated by DLR engaging a variety of stakeholders throughout Europe and beyond

- **Deliverable:** PerMed Strategic Research and Innovation Agenda (SRIA)
History of IC PerMed

- 4 meetings organised by the EC to bring together representatives from research funders and policy makers in the EU Member States and in countries Associated to H2020

- Participants agreeing to establish International Consortium for Personalised Medicine (IC PerMed) aiming to implement the PerMed SRIA

- Organisation inspired by other large scale international research consortia such as IRDiRC (rare diseases)
International Consortium for Personalised Medicine (IC PerMed)

**WHAT**
Collaboration of research funders and policy makers from EU Member States and beyond

- Establish Europe as a global leader in PM research
- Support the PM science base through a coordinated approach to research
- Provide evidence to demonstrate the benefit of PM to citizens and healthcare systems
- Pave the way for PM approaches for citizens

**WHY**

**HOW**
Implementation of a Roadmap based on PerMed Strategic Research Agenda (SRIA)
5 Challenge Groups

Lead by "Facilitators":

- Developing awareness & Empowerment
  - Maria Judith Molnar, Health Ministry, HU

- Integrating Big Data & ICT solutions
  - Wolfgang Ballensiefen, Ministry of Research (DLR-PT), DE

- Translating Basic to Clinical Research & Beyond
  - Hemma Bauer, Ministry of Research, AT
    - and Natalia Martin & Daria Julkowska, National Research Agency, FR

- Bringing Innovation to the Market
  - Peter Andersen, Innovation Fund, DK

- Shaping Sustainable Healthcare
  - Gaetano Guglielmi, Ministry of Health, IT
Challenge Groups tasks

**Consortium Roadmap** - building on the challenges of the PerMed SRIA

- Actionable research activities
- **Mapping of ongoing activities** (for proposed actions)
- **Proposed means for implementation** (instruments/initiatives at regional, national, EU, international level)
  (+ Specific metrics to measure progress)

**Conference program for each challenge** -
Personalised medicine conference 1-2 June, Brussels
How can you contribute?

**Consortium Roadmap** - building on the challenges of the PerMed SRIA

- Propose actionable research activities
- Tell us about ongoing activities (for proposed actions)
- How you can help to implement proposed actions

**Participate in** *Personalised medicine conference 1-2 June, Brussels*
Personalised Medicine
Conference
1-2 June 2016
Charlemagne
Brussels

Thank you for your attention

Find out more:
www.ec.europa/research/horizon2020