



Reaping the benefits of big data use in healthcare

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Healthcare and data

Healthcare sector is a data-intensive industry

Various types of data:

- Clinical
- Genetic
- Behavioural
- Environmental

Collected from many sources:

- Electronic health records
- Genome sequencing machines
- Patient registries
- Social Networks
- mHealth Apps
- Etc.

Benefits of Big Data in healthcare

The use of Big Data in healthcare could:

- Improve diagnosis, clinical decisions and treatment
- Better predict the spread of infectious diseases
- Better management of health systems

Resulting in:

- Improved patients safety
- Better health outcomes
- Improve health systems performance (sustainability)

Key challenges for the uptake of big data (1)

- Technology-driven without the involvement of the patients and health professionals
- Reluctance by health professionals due to scale and pace
- Lack of digital skills with health professionals
- Lack of interoperability for data to travel cross-border

Key challenges for the uptake of big data (2)

From the results of the public consultation

MAIN CONCERNS AND EXPECTATIONS:



Privacy



Data quality



Cybersecurity



Standardised
electronic
health records

Role of the EU to overcome these challenges

Digital Single Market Priorities



Pillar 2: Connect and share health data for research, faster diagnosis and better health outcome

Connect, through a decentralised European digital infrastructure, different health data sets federated across borders

- For rare diseases (European Reference Networks)
- For anticipating epidemics and accelerating EU-wide identification of infectious threats
- To develop shorter lead times for therapy developments

EUROPEAN REFERENCE NETWORKS FOR RARE, LOW-PREVALENCE AND COMPLEX DISEASES

Share. Care. Cure.



> **300**
HOSPITALS



THOUSANDS OF
PATIENTS HELPED
BY **2020**



> **900**
HEALTHCARE UNITS



Summary results of the Public Consultation – a link to Pillar II: Connect and share health data for research, faster diagnosis and better health outcome

Positive view on the use of personal health data for research purposes – by almost 80% of respondents

73% would make their data available for progressing research and innovation – right above one's own personal treatment and the improvement of clinical practice

Wide support for the advancement of high-performance computing, big data analytics and cloud computing for health research and personalized medicine – by nearly 65% of respondents

There is a majority of positive responses on the further development of digital infrastructure to pool health data and resources across the EU – by nearly 65% of respondent

Other EU initiatives on big data -> Innovative Medicines Initiative

- IMI 2: world's biggest public-private partnership
- Budget: €3.3 billion (€1.638 billion H2020, €1.425 EFPIA companies, €213 million other life science industries or org.)
- Period: 2014- 2024
- Objective: Improve health through development of, and patient access to, innovative medicines
- Big Data for better outcomes (BD4BO) programme with a focus on hematology, Alzheimer's disease, cardiovascular disease, prostate cancer.
- Promoting innovative methods through harmonising, accessing and analysing data.

Horizon 2020 projects

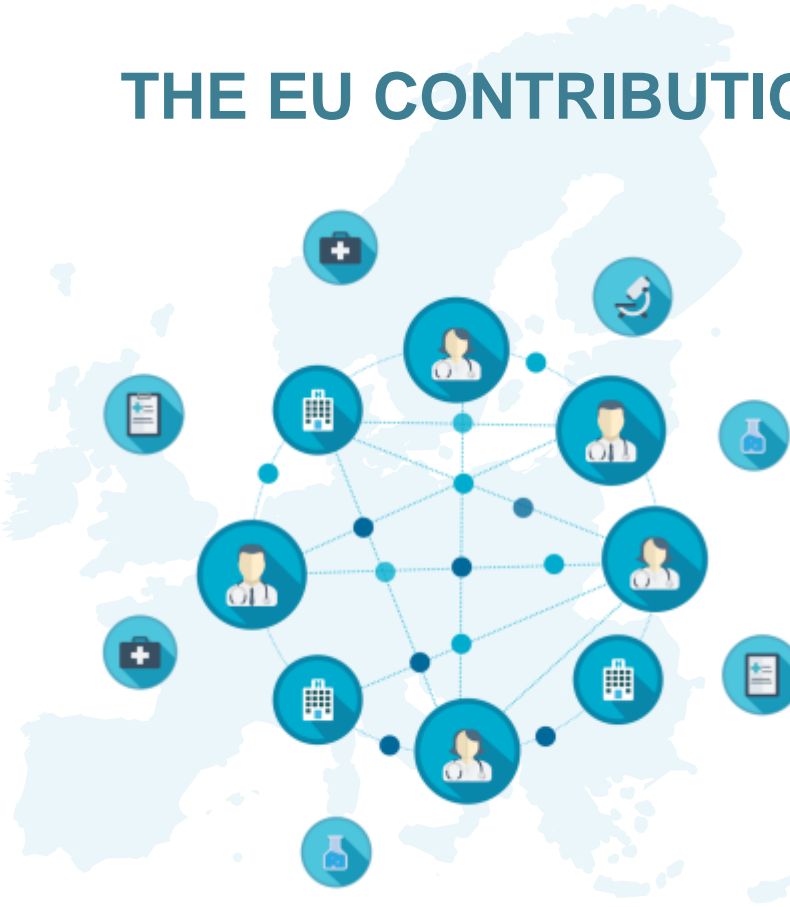
- Topic: Big Data supporting public health
- 4 projects funded:
 1. MIDAS: develop an integrated solution that allows the users to tap into evidence-based actionable information from various sources for health policy
 2. EVOTION: use of Big Data in supporting a holistic approach to hearing loss
 3. BigO: use of Big Data for childhood and adolescent obesity
 4. PULSE: use if Big Data from different sources to change public health from a reactive to a predictive system

THE EU CONTRIBUTION

THE STATE OF HEALTH
IN THE EU
POOLING EXPERTISE,
STRENGTHENING KNOWLEDGE.

#investEU

HORIZON 2020



▶▶ A DIGITAL SINGLE
MARKET FOR EUROPE

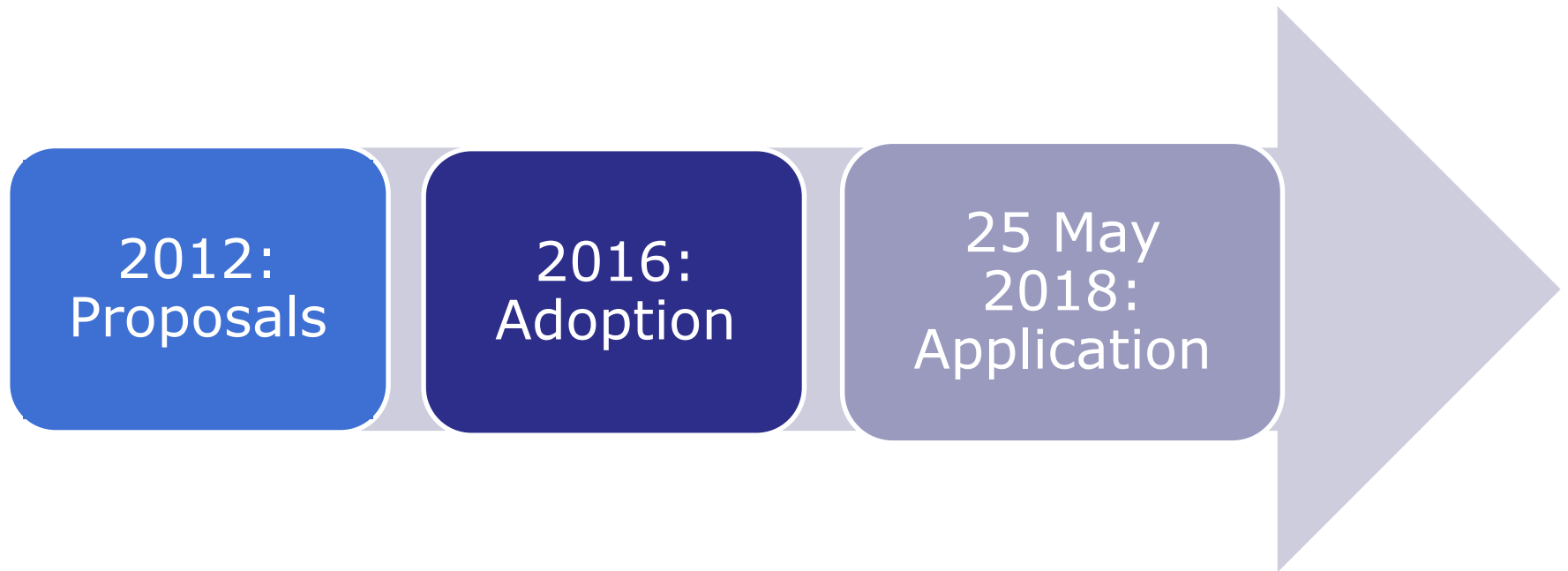
**CROSS-BORDER
HEALTH CARE DIRECTIVE**

European
Reference
Networks

eHealth Network &
eHealth Stakeholder
Group

General Data Protection Regulation

- 2016-2018 Transition period



GDPR implementation

- Support Member States and stakeholders with implementing the GDPR
 - Stakeholder workshop on GDPR implementation and health on 23 October 2017 – organised by JUST, CNECT, SANTE
 - Commission Expert Group on the GDRP (JUST) 6 December 2017 – afternoon session on sectorial implementation of GDPR in the health area – Member State representatives of MoH

Thank you!

DG Health and Food Safety

http://ec.europa.eu/health/ehealth/policy/index_en.htm

DG Connect

<http://ec.europa.eu/digital-agenda/en/eu-policy-ehealth>