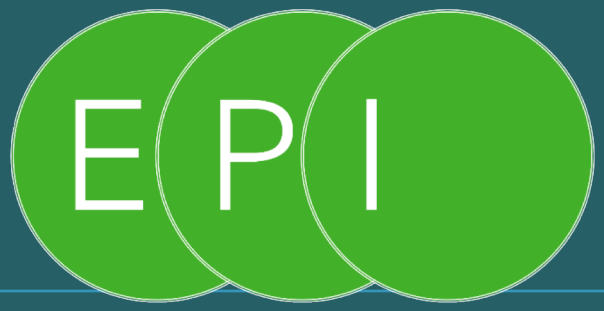
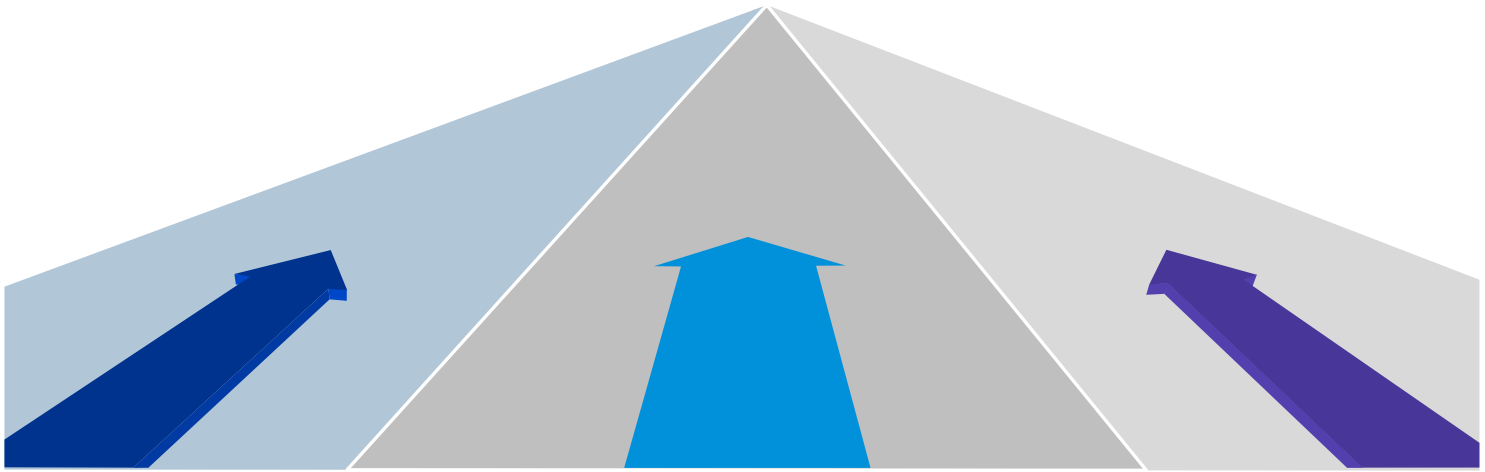
Enabling Personalized Interventions

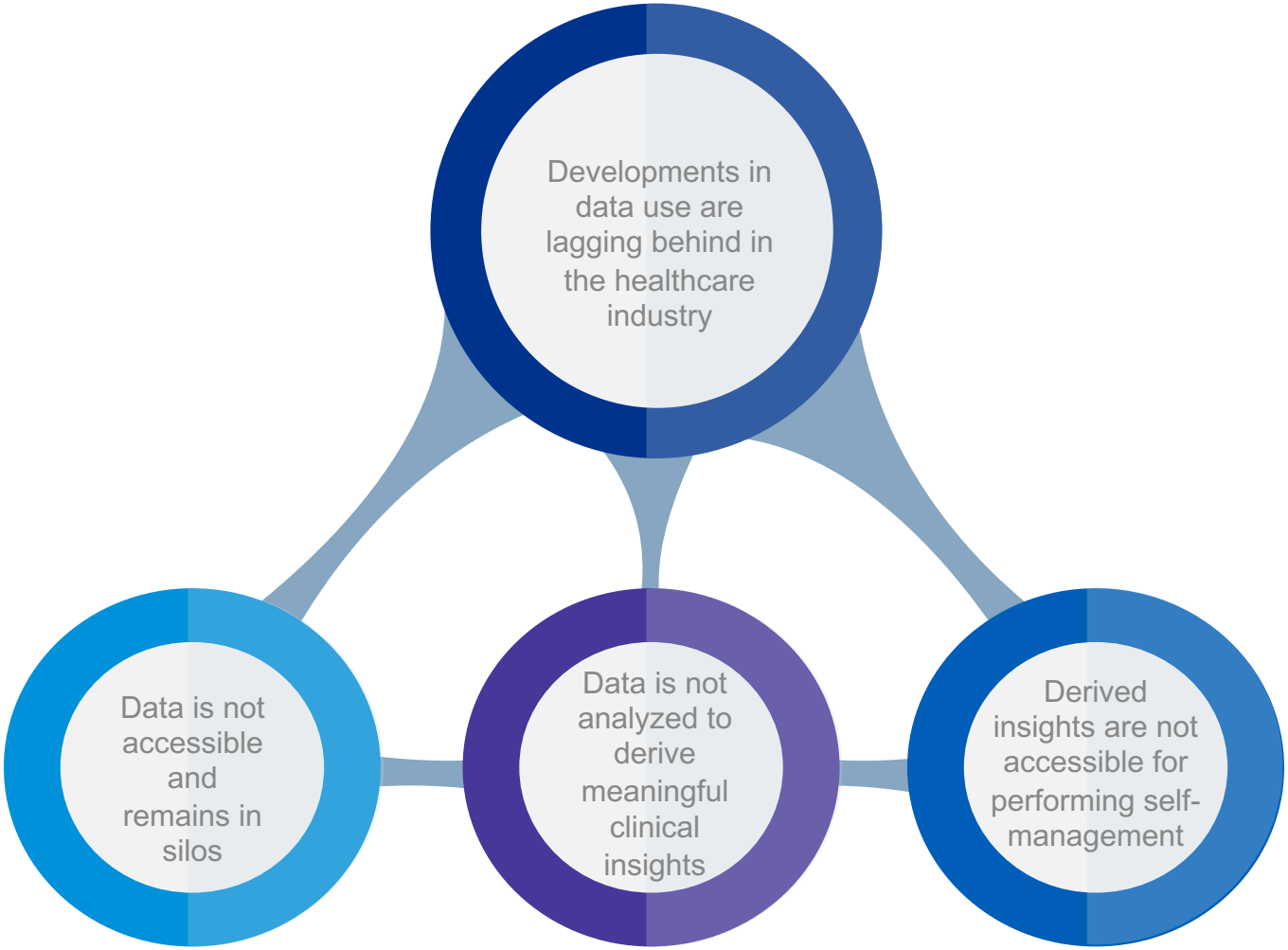


EPI will find a solution for distributed data in healthcare to support patients and providers

01	02	03
Empower patients and providers by medical and lifestyle interventions	Support patients and providers by taking personalized decisions	Advice based on data from various sources



Healthcare is lagging behind because it is difficult to make data available for analysis



EPI brings research institutions, healthcare providers and the private sector together

Research institutions

vrije Universiteit

CWI

Universiteit van Amsterdam

Healthcare providers

St Antonius ziekenhuis – een santeon ziekenhuis

Prinses Máxima Centrum kinderoncologie

UMC Utrecht

Antes

Private sector

SURF

KPMG

Philips

Ministerie van Economische Zaken

Commit 2 Data – connecting business and science

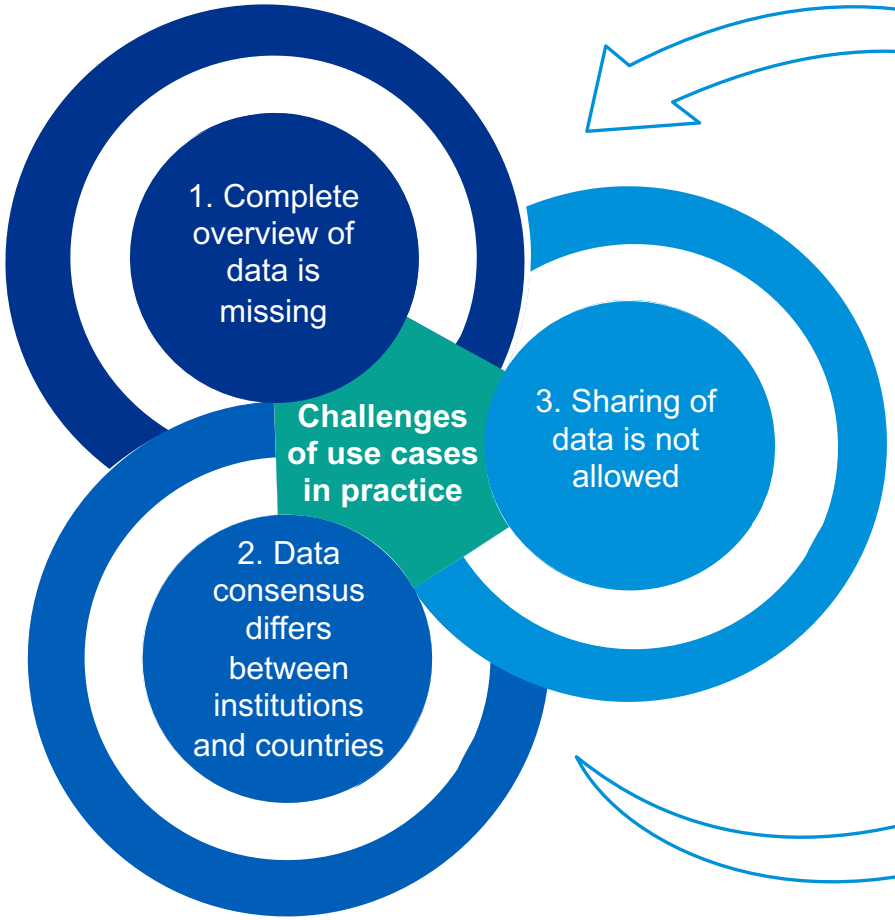
santeon

white box

ZonMw

NWO

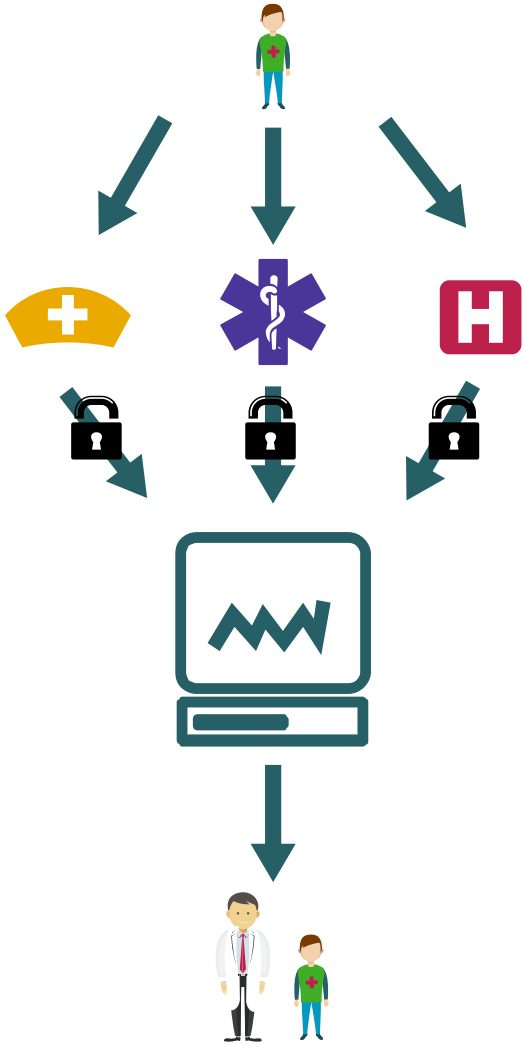
Solutions to use data in healthcare are developed and translated into practice



Conceptual solutions

- Develop machine learning methods and health decision support algorithms
- Link multiple disparate health and lifestyle datasets
- Focus on a secure and trustworthy distributed data infrastructure

Use case 1: A complete overview of data of CVA patients is missing



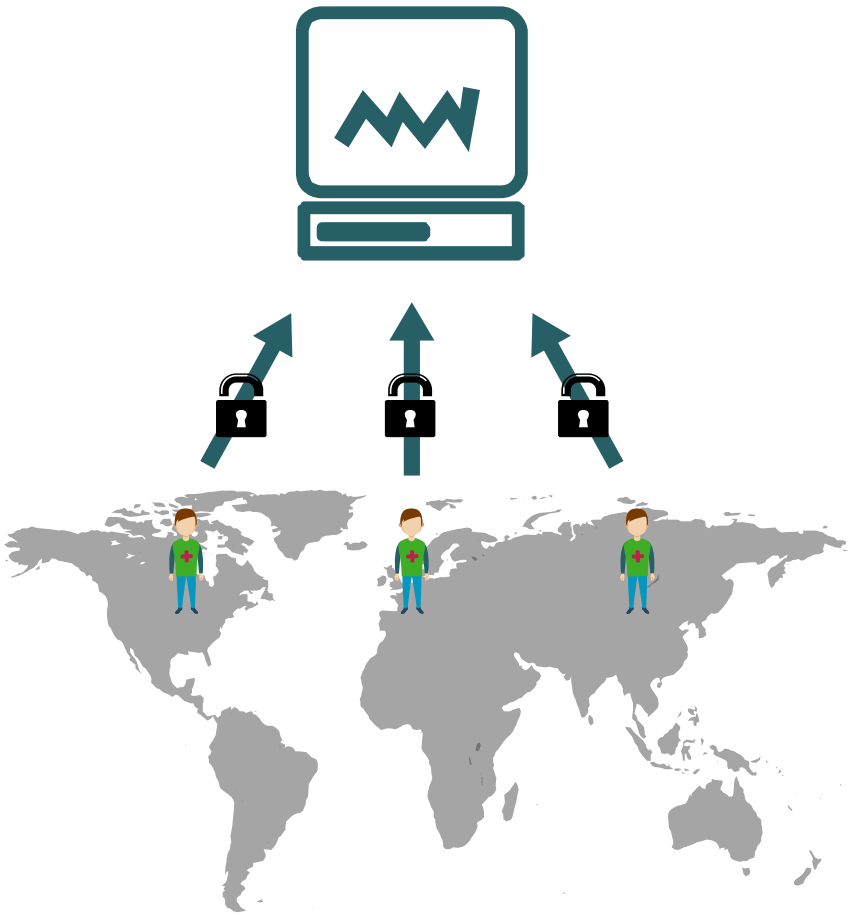
ISSUE
- Patient data is spread over institutions
- A complete overview of the patient data is missing, which makes prediction of outcomes (survival, functional status, quality of life) difficult

AIM
- Understand how prediction can support shared decision-making and self-management and result in better health outcomes
- Set up a prediction model for individual patients to inform them on their outcomes
- The tool will be used in shared decision making

METHOD
- Using incomplete data to predict outcomes

ST ANTONIUS
een santeon ziekenhuis

Use case 2: Data consensus differs between institutions and countries of DIPG patients



ISSUE

- Number of Diffuse Intrinsic Pontine Glioma (DIPG) patients is small
- Patients are spread across different countries with different data consensus
- Which makes it difficult to get results on treatment effects

AIM

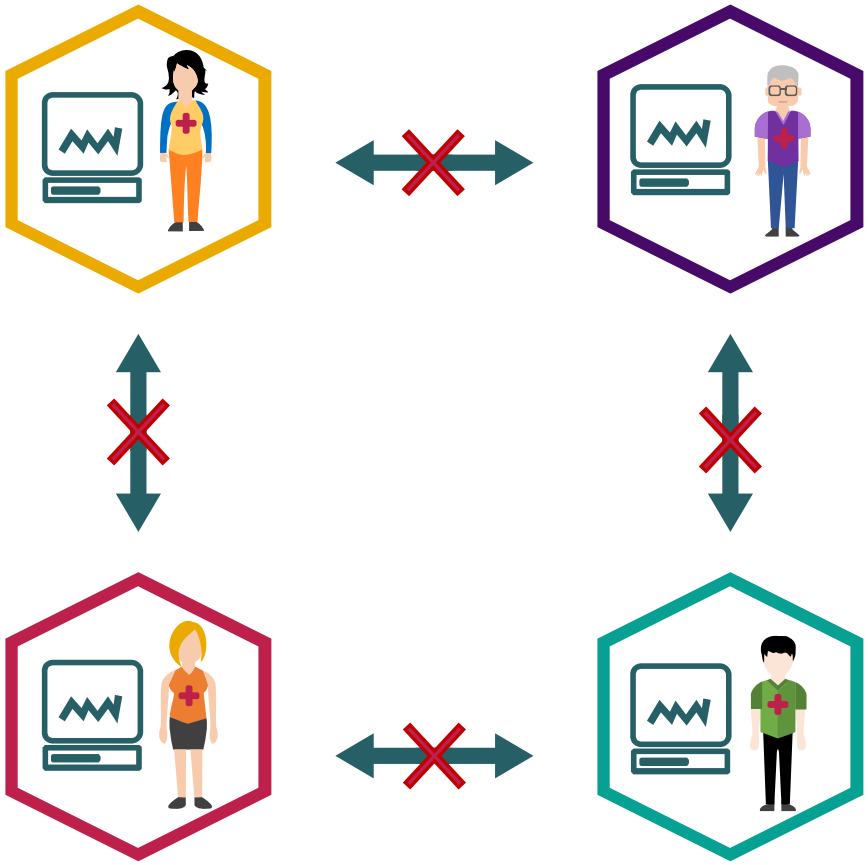
- Integrate different data platforms into one communicating data infrastructure
- Find patterns in data that predict (length of) survival and QoL of DIPG patients
- Create self-learning algorithms that will improve predictive capacities of the DIPG survival prediction model

METHOD

- Use advanced prediction methods and overcome legal issues such as working with consent

prinses máxima centrum kinderoncologie

Use case 3: Data of psychiatry patients has to stay in its hub complicating integral research



ISSUE

- There is a huge variability between patients in trials.
- Adjust patients to the right medication takes too long
- In daily practice, the variation between patients is even bigger because of strong selection bias in most clinical trials, because data can not be shared

AIM

- Support in decision making about medication and adjustment to medication, which accelerates the process
- Confidence in medication treatment and adherence is increased
- Duration of treatment and suffering are decreased

METHOD

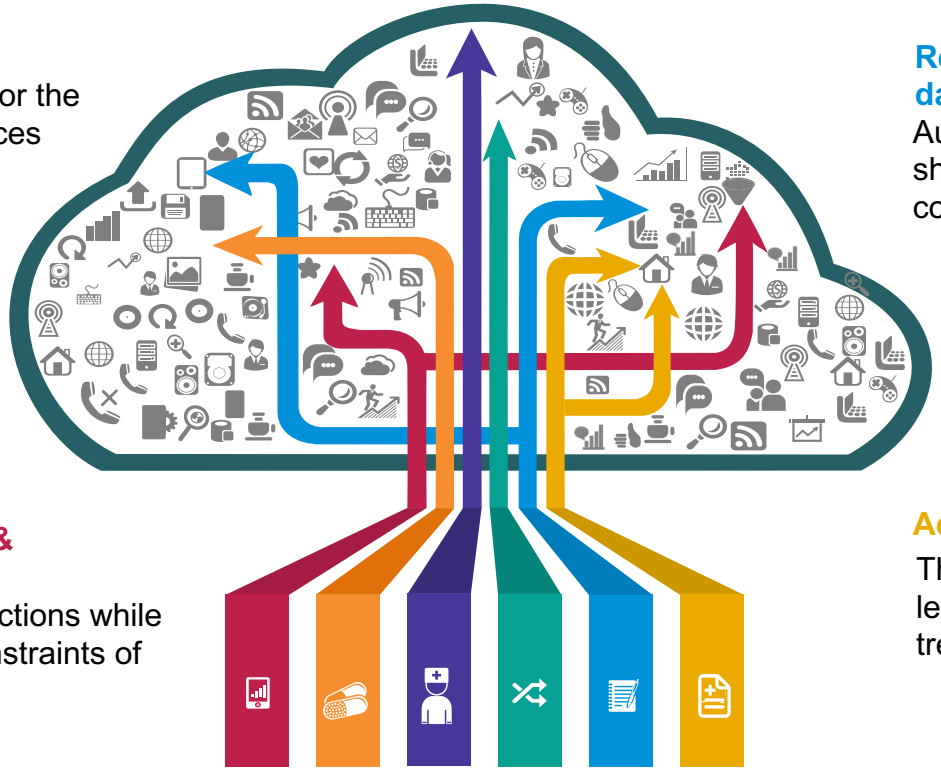
- Developing an algorithm to predict best treatment, while not sharing data, only algorithms and expertise

UMC Utrecht

Research is focused on designing, distributing and saving adaptive data in a secure infrastructure

Analyzing interventions
Develop models that can predict the effectiveness interventions

Data infrastructure
Design an architecture for the data from different sources



Regulatory constraints and data governance
Automating the process of data sharing with different legal constraints

Distribution of Data & Algorithm
Making accurate predictions while preserving privacy constraints of remote data sources

Adaptive health diagnosis
The models should be able to keep learning from new data and treatments

The outcome of the EPI project is a digital health twin for self-/joint management

A methodology to create digital health twin

- All data will be collected of a patient
- Inform health decisions and avoiding unnecessary treatment
  Empower self/joint management of disease

Preconditions creating digital health twin

- Able to perform with data gathered from different sources
- Deal with the variability, ownership, data protection and privacy issues

To stay informed of the developments of the EPI project please join our LinkedIn group

EPI Linked-in group:
Enabling Personalized Interventions (EPI)

For more information please contact:
Marloes Bons
bons.marloes@kpmg.nl
+31 6 23593759