European Medical Information Framework

Big data for research

September 2015
Big data defined – is it RWD ??

**Big Data**
- **Diverse**: Semi- and un-structured data types
- **Voluminous**: Massive, multi-petabyte data sets
- **Timely**: Fast-moving, perpetually current data capture and transmission
- **Distributed**: Sourced from inside and outside the organization
- **Adaptive**: Fuels analytics that are self-learning and improve with scale
## Big data value to pharma

### Research
- In silico target screening
- Genomic diagnostics
- Toxicity prediction

### Development
- Trial simulation
- Patient recruitment
- Trial design
- Asset prioritization
- Competitive insights
- Unmet need
- Reimbursable dossier development

### Market Access
- Formulary/protocol negotiation
- Value-based pricing
- Payor collaboration (e.g., patient selection, adherence)

### Commercial
- Customer insights (e.g., consumer data, social media)
- Multichannel optimization
- Launch excellence
- Brand positioning

### Medical
- Safety monitoring
- Targeted physician/patient education

### Operations
- Quality analytics
- End-to-end supply chain forecasting/planning
- Externalization
- Distribution channel strategy
Context

**Clinical Care**
- Incident monitoring & detection
- Outcome analysis
- Retrieval of similar patient history
- Care management patients at risk
- Re-admission prevention
- Diagnosis & treatment assistance

**Clinical Research**
- System biology
- Lead identification
- Biomarker definition
- Clinical trial Execution
- Market Access
- Ongoing safety tracking

**Clinical Data**
- Data Collection
- Data integration
- Clinical Workflow
- Research Workflow
- Medical Knowledge
- Decision support
- Knowledge
- Data exploration
Our vision

To be the trusted European hub for health care data intelligence, enabling new insights into diseases and treatments.

EMIF supports flow from:

Data Discovery

Data Access

Data Reuse
Project overview

- 57 partners from 14 European countries
- €56 million worth of resources
- Three projects in one
- Five year project (2013 – 2017)
Data available through consortium

- Large variety in “types” of data

- Data is available from more than 53 million subjects from seven EU countries, including

  - 25,000 subjects in AD cohorts
  - more than 94,000 subjects in metabolic cohorts
Significant societal need

“If dementia were an economy, it would be the 18th largest economy in the world. We spend about 1% of the global GDP in the treatment and care of dementia.”

Prof. Simon Lovestone
University of Oxford

“Obesity is a global epidemic, diabetes is a global epidemic.”

Prof. Ulf Smith
University of Gothenburg

“We need to learn from experience and find ways to unite the large volumes of data in Europe. At the end of the day, we are in this for better health care.”

Prof. Johan van der Lei
Erasmus MC University Medical Center
Access control to follow the level of interaction with the data

Fingerprinting

Level 1: Browsing metadata
Level 2: Access to profiles e.g. age breakdown
Level 3: Research Request Form to select data sources

Aggregated queries

Pre-fetched repository of aggregated query results for commonly needed data items

Granular queries

Subject-level fine grained data
- Enabled by data sharing agreements
- Covered by ethical approvals
- Governed by disclosure and usage policies
- Held by TTP
- Protected by PET
- Fully audited
- Limited availability

Access to data
In the end …

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Clinical Data

Clinical Workflow

Research Workflow

Medical Knowledge
Further Information

- **EMIF general**
  - Bart Vannieuwenhuyse (bvannieu@its.jnj.com)
  - Simon Lovestone (simon.lovestone@kcl.ac.uk)
  - Johan van der Lei (j.vanderlei@erasmusmc.nl)

- **EMIF-Platform**
  - Johan van der Lei (j.vanderlei@erasmusmc.nl)
  - Nigel Hughes (nhughes@its.jnj.com)

- **EMIF-Metabolic**
  - Ulf Smith (ulf.smith@medic.gu.se)
  - Dawn Waterworth (Dawn.M.Waterworth@gsk.com)

- **EMIF-AD**
  - Pieter Jelle Visser (pj.visser@maastrichtuniversity.nl)
  - Johannes Streffer (jstreffe@its.jnj.com)

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