European Medical Information Framework

IMPROVING ACCESS TO HUMAN HEALTH DATA

www.emif.eu

efpia

innovative medicines initiative

EMIF Mission

EMIF provides tools and workflows to discover, assess, access, and (re)use human health data for improving life sciences research

DISCOVER ASSESS ACCESS (RE)USE

Project Overview

ACADEMIC PARTNERS 37

Universitätsklinikum Erlangen · EMBL European Molecular Biology Laboratory · University of Copenhagen · University of Exeter · Vestische Kinder- und Jugendklinik Datteln · Inserm · University of Glasgow · University of Cambridge · VUmc VU University Medical Center Amsterdam · EuroRec · universidade de aveiro · ARS Toscana · IDIAP Jordi Gol · University of Gothenburg · University of Oxford · Universitat Pompeu Fabra Barcelona · VTT · Universiteit Antwerpen · BIPS · Karolinska Institutet · University of Leicester · Università di Pisa · UCL · VIB · Aarhus Universitetshospital · Erasmus MC · Helsingin yliopisto Helsingfors universitet University of Helsinki · King's College London · Itä-Suomen yliopisto · Manchester · UPMC

SME PARTNERS 9

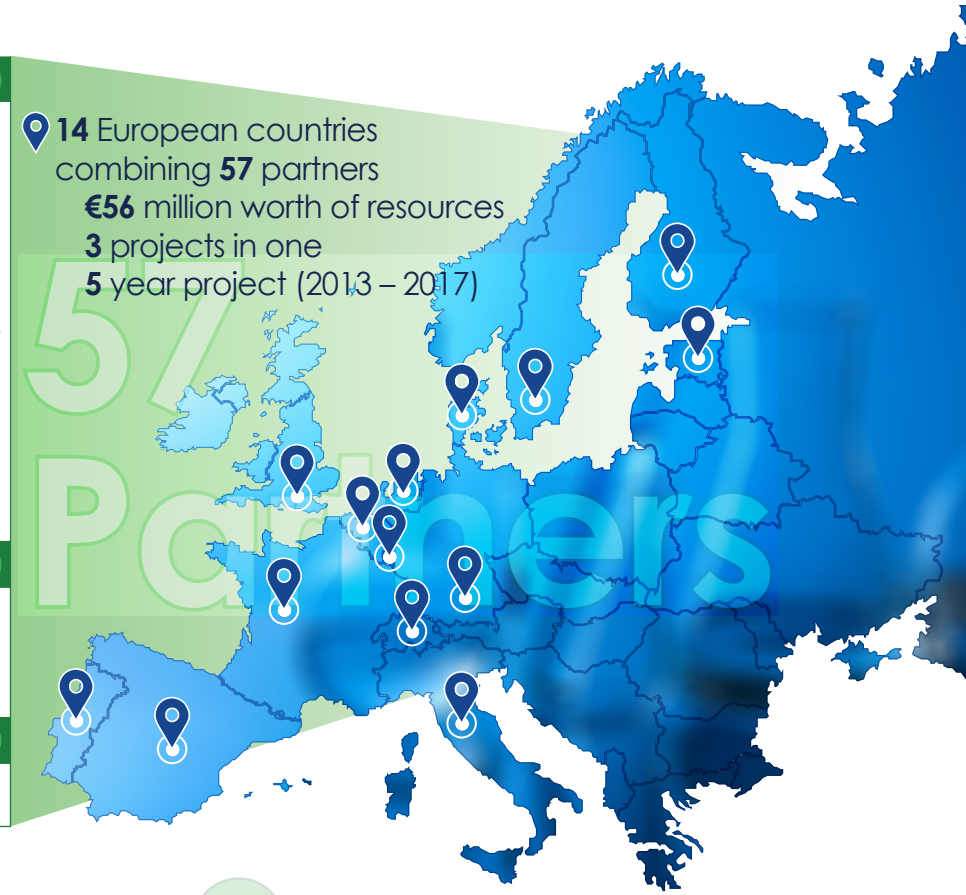
cambridge cognition · concentris · genomedics · PSPLC · STIZON · CUSTODIX · MAAT · SYNAPSE · pedianet

EFPIA PARTNERS 10

AMGEN · janssen · Roche · ucb · novo nordisk · MERCK · Pfizer · Boehringer Ingelheim · SERVIER · gsk GlaxoSmithKline

PATIENT ORGANISATION 1

Alzheimer Europe



14 European countries combining **57** partners
€56 million worth of resources
3 projects in one
5 year project (2013 – 2017)

EMIF Objectives

EMIF-Platform

A framework for evaluating, enhancing and providing access to human health data across Europe that supports EMIF-MET and EMIF-AD research and impacts how future RWE research will be done

EMIF-MET

Identify predictors of metabolic (MET) complications in obesity

EMIF-AD

Identify predictors of Alzheimer's Disease (AD) in the pre-clinical and prodromal phase

EMIF-Platform Tools

EHR data	*AD cohort data*

Jerboa	EHR Catalogue	**Discover**	Cohort selection tool (Catalogue)	Switchbox
	OMOP CDM/OHDSI Tools	**Assess**	Participant selecton tool	AD cohort explorer
TASKA	Work flow management	**Access**	Variable selection tool	
Octopus	Private remote research environment	**(Re)use**	Private remote research environment	tranSMART

(www.emif.eu/about/platform for more information)

Recent Achievements
September 2017

EMIF in Action

EMIF General Achievements

Dissemination

- ☑ **193 public presentations** orated on EMIF 2013–2017
- ☑ **136 scientific publications** published 2013–2017
- ☑ **74 posters presented** at conferences 2013–2017

Collaboration

- ☑ Closely **collaborated** with OHDSI initiative on common data model and analytical toolset
- ☑ Collaborating and **partnering** with other IMI-projects: EPAD, EHR4CR, ADVANCE, eTRIKS…
- ☑ **Sharing** of tools with Dementias Platform UK

EMIF-Platform

Tool Development

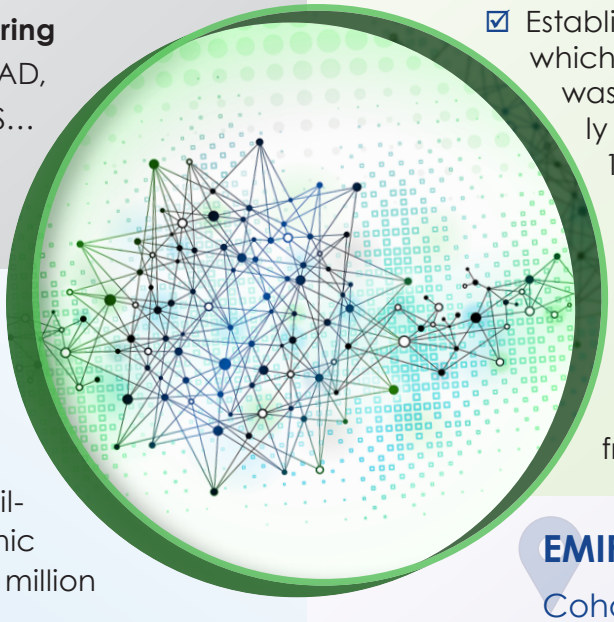
- ☑ **EMIF Catalogue** was launched and is a data "shop window" which facilitates the reuse of electronic health record data of >62 million subjects in 15 databases (www.emif-catalogue.eu)
- ☑ The Catalogue workflow allows **data extraction**, **harmonization**, **aggregation** and **analysis** and has been used to support 16 case studies

Common Data Model

- ☑ Adopted the **OMOP common data model** in the platform databases, unlocking its full potential towards data harmonization

Biomarker Discovery

- ☑ Implemented **tranSMART** research environment and complementary analysis tools to support biomarker discovery in EMIF-AD and EMIF-MET



EMIF-AD

Tool Development

- ☑ The **EMIF AD Catalogue** holds information on 47 AD cohorts and >84 000 subjects
- ☑ The **AD Cohort explorer** allows researchers to assess AD data suitability via the cohort, patient and variable selection tools—active engagement of AD cohorts is still ongoing

Cohort Development

- ☑ Established the **EMIF-AD biomarker discovery cohort** (1221 patients) by re-using data and multi -omics analyses on existing samples of 14 AD cohorts spread over Europe
- ☑ Established the **PreclinAD cohort** in which detailed AD phenotyping was performed in 260 cognitively normal subjects, including 196 monozygotic twins

Biomarker Discovery

- ☑ Developed a **multi-modal approach** for biomarker discovery studies which was applied in several (sub)populations from the different cohorts

EMIF-Metabolic

Cohort Development

- ☑ Identified **mannose** as a novel biomarker of insulin resistance via the multi-omics biomarker discovery study. Additionally, mannose was found to identify subjects at risk of developing Type 2 diabetes and cardiovascular disease

Natural History

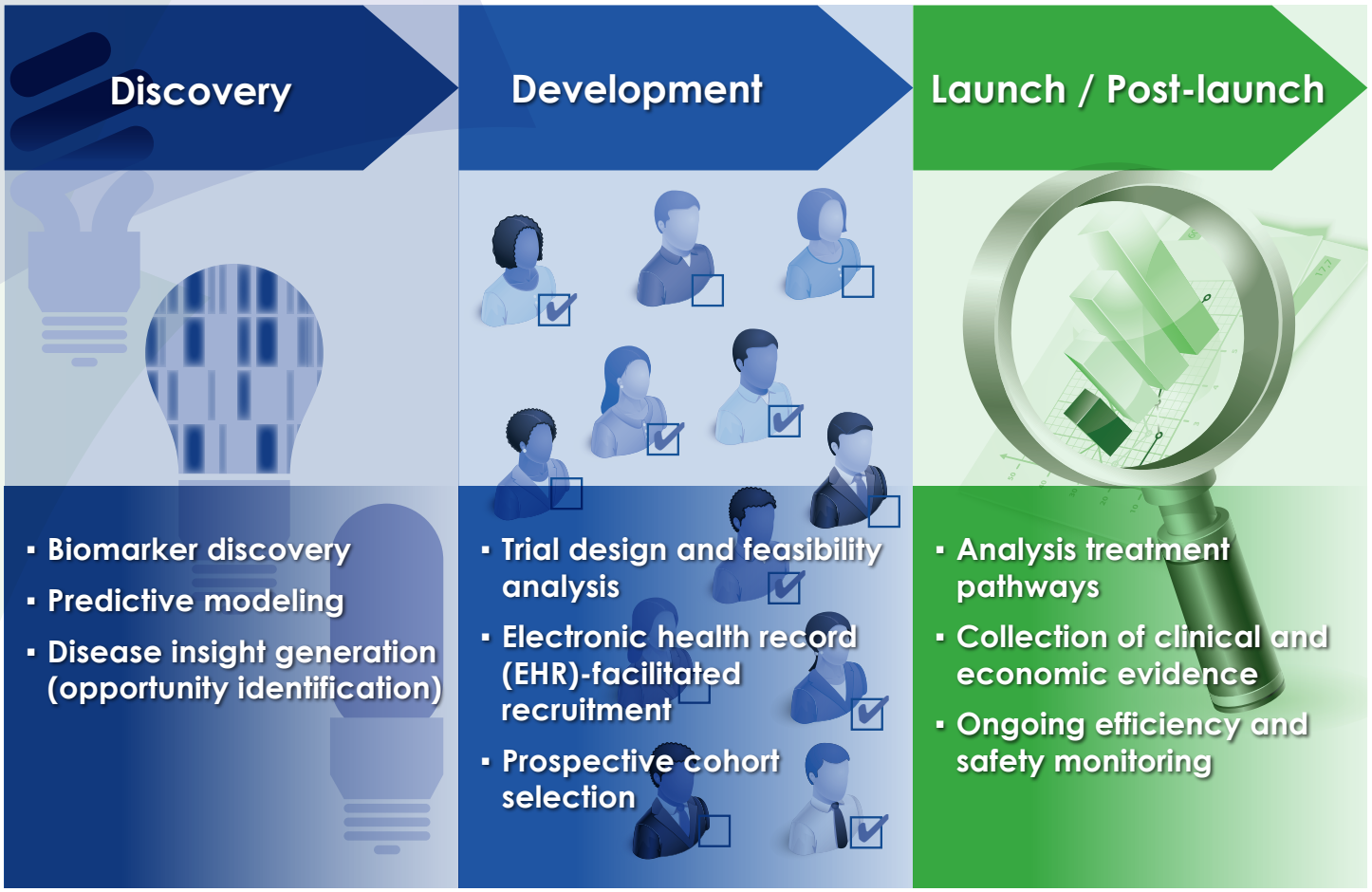
- ☑ Analysis of EFPIA collaboration **accessing placebo clinical trial data** completed

Discovery

- ☑ Potential **new therapeutic target for NAFLD/NASH** under investigation in Platform databases

Why EMIF is Needed

Potential Applications for Real World Data in Drug Development



The research performed in this project receives support from the Innovative Medicines Initiative Joint Undertaking under EMIF grant agreement n° 115372.

These resources are composed of financial contributions from the European Union's Seventh Framework Programme (FP7/2007-2013) and in-kind contributions from EFPIA companies.

EMIF

efpia

imi innovative medicines initiative

www.emif.eu

JRDBEFB170609 / Sept 2017