EHDEN

EUROPEAN HEALTH DATA & EVIDENCE NETWORK

The European Health Data and Evidence Network (EHDEN) Project

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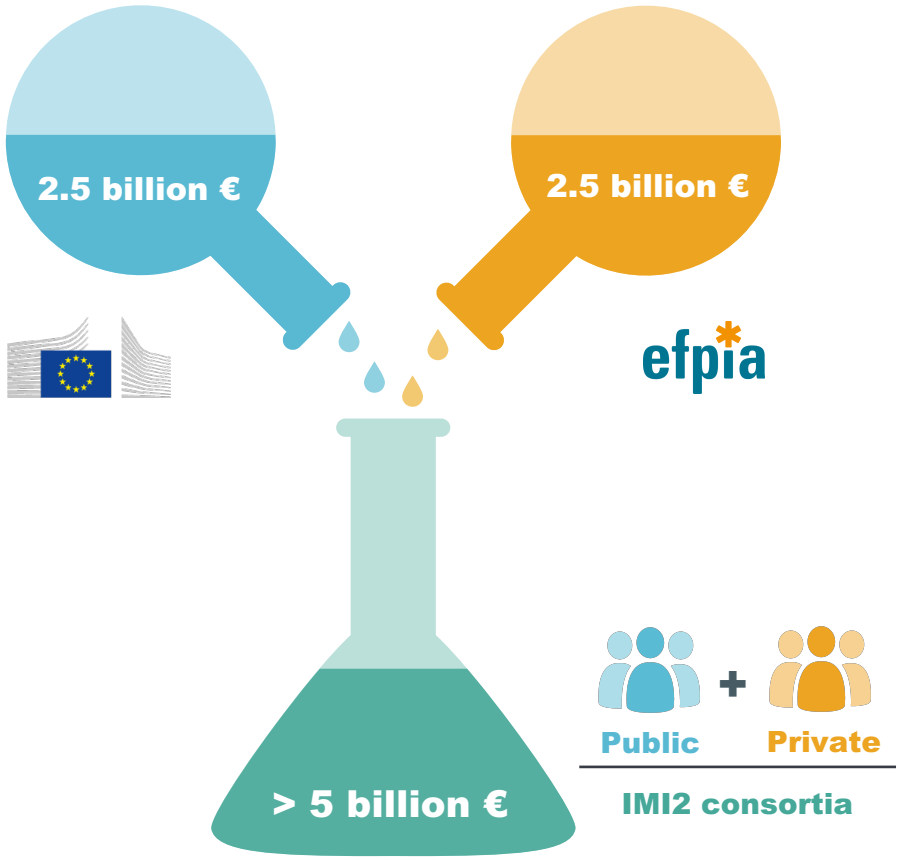
imi efpia



IMI 1 (2008-2014)

2 bn € budget

59 projects

IMI 2 (2014-2024)

3.3 bn € budget

More ambitious, more open & greater scope

EHDEN Project Facts

Start date: 1st Nov 2018

End date: 30th Apr 2024

Total duration: 66 months

EHDEN
EUROPEAN HEALTH DATA & EVIDENCE NETWORK

Total budget: 28,917,357€

IMI2 Funding: 14,105,750€ (7M Harmonization Fund)

EFPIA contribution: 14,811,607€ (10M Harmonization Fund)

EHDEN HAD ITS KICK-OFF MEETING IN JANUARY

EHDEN: Vision and Mission

EHDEN
EUROPEAN HEALTH DATA & EVIDENCE NETWORK

Vision

The European Health Data & Evidence Network (EHDEN) aspires to be the trusted observational research ecosystem to enable better health decisions, outcomes and care

Mission

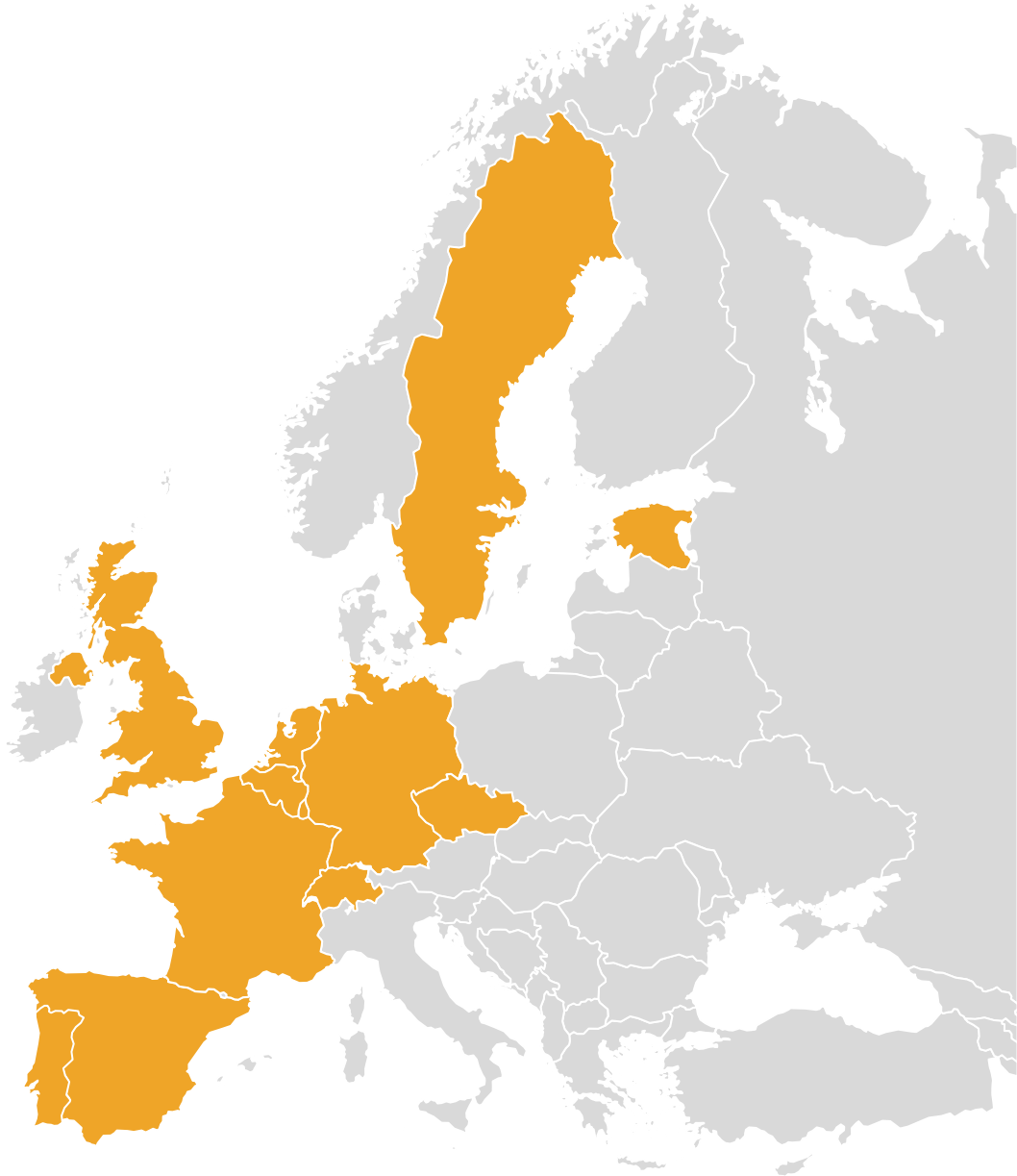
Our mission is to provide a new paradigm for the discovery and analysis of health data in Europe, by building a large-scale, federated network of data sources standardized to a common data model

EHDEN CONSORTIUM

BAYER · AstraZeneca · Celgene · Lilly · janssen · abbvie · Pfizer · SERVIER · NOVARTIS · SANOFI · ucb

22 PARTNERS

Erasmus MC · SYNAPSE RESEARCH MANAGEMENT PARTNERS · TARTU ÜLIKOOL 1632 · EPF European Patients Forum · ODYSSEUS DATA SERVICES INC · NICE National Institute for Health and Care Excellence · ICHOM · UNIVERSITY OF OXFORD · universidade de aveiro · Uppsala Monitoring Centre · thehyve



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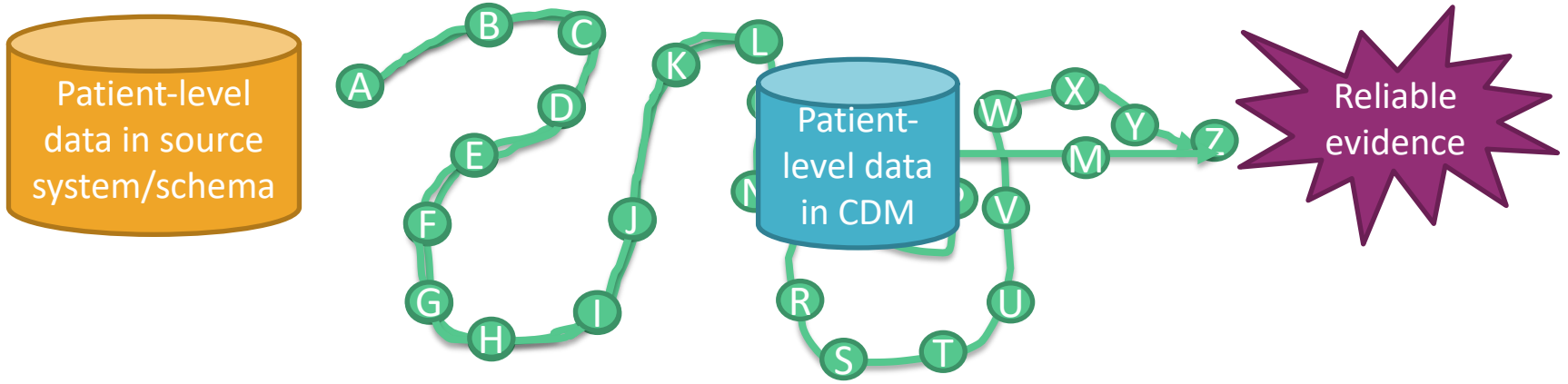
GENERATING RELIABLE EVIDENCE USING THE OMOP CDM



EHDEN will build on expertise and tools from prior IMI projects, such as EMIF, and will collaborate intensively with the global OHDSI community.

OHDSI
OBSERVATIONAL HEALTH DATA SCIENCES AND INFORMATICS

BUILDING THE ECO-SYSTEM: PUTTING THE PIECES TOGETHER

BUILDING THE ECO-SYSTEM: HARMONISATION

The aim is to map 100 million health records across the EU via a common data model (OMOP), supporting research within a federated network, the BD4BO IMI2 programme, and outcomes-based healthcare

OHDSI
OBSERVATIONAL HEALTH DATA SCIENCES AND INFORMATICS

- Standards development within OHDSI
- Certified & qualified Small to Medium-sized Enterprises (SMEs) in the EU
- Harmonisation fund to support mapping to CDM

The EHDEN Open Call Process

EHDEN's Data Source Prioritisation Committee governs the scope of the open calls for data sources.

Community of data sources

Open calls

Series of in-project calls across the EU

Tailored for project objectives and sustainability

Grant awarding

Grant applications are evaluated via a pre-defined set of criteria

Data source prioritisation committee, consisting of both internal and external experts, ranks the grant applications

Supporting SMEs

Open calls

Series of in-project calls across the EU

Focusing on SMEs able to support mapping and sustainability

Training & Certification

Training and certification will ensure high-quality mapping procedures

SME certification committee prioritizes SMEs for training and certification

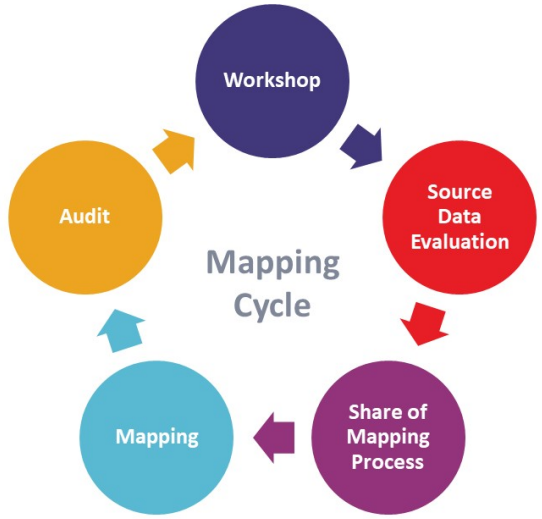
Widespread geographic coverage of Europe by certified SMEs is desired.

EHDEN Harmonisation fund (up to 100 000 € / grant)

Data sources can choose the SME they want to work with from the pool of EHDEN certified SMEs

SMEs performing mappings will be paid by the data sources, via a grant from the harmonisation fund

Payments are milestone based



Mapped data sources are encouraged to be active members of the EHDEN community, participating in research studies.

Open Call for Data Sources

- Call will be initiated before the Summer.
- Different types of grants (max 100.000 Euro): Full Mapping, Mapping Extension, Mapping Validation.
- Data Sources from the following countries are eligible:

  EU Member States: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom

  H2020 associated countries: Albania, Armenia, Bosnia and Herzegovina, Faroe Islands, Georgia, Iceland, Israel, Moldova, Montenegro, North Macedonia, Norway, Serbia, Switzerland, Tunisia, Turkey, Ukraine

VALUE PROPOSITION FOR DATA SOURCES

What's in it for me?

Financial support for uptake, extension and validation of mappings (**EHDEN grants**).

Facilitates **scientific collaboration**, facilitates the connections with peers by becoming part of a thriving **academic network and community.**

Scientific independence: freedom to perform studies following own approval procedures.

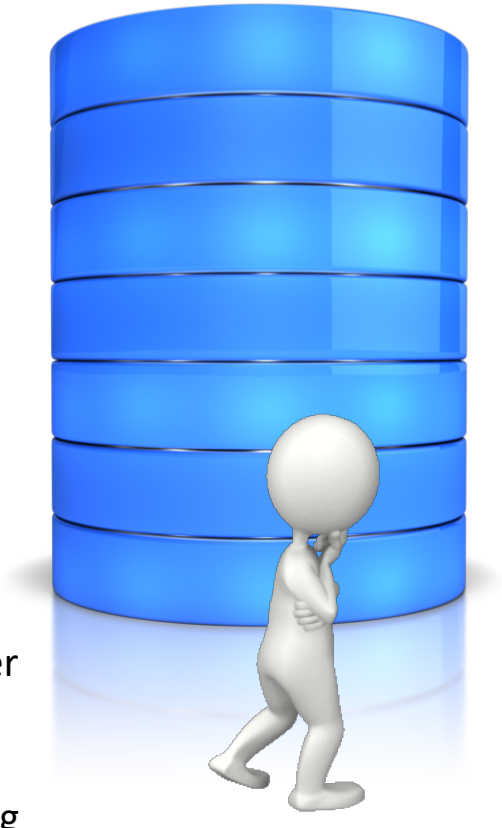
Increased capability for **analysis** thanks to a host of **open source tools** to use.

Faster performing studies, improved performance, accelerated research (months/years to days): undertake **more studies in less time.**

Increased **transparency** of analyses and **reproducibility**, enabling studies to be easily 'transposed' to other data sources for multiplied impact (e.g. in publications).

Increased **visibility** for your data, expanding opportunities to be approached for sponsored studies helping long term sustainability of the data source with stable revenue streams.

Platform for **training** of young researchers and new staff.



SME Certification Procedure: Pilot Call

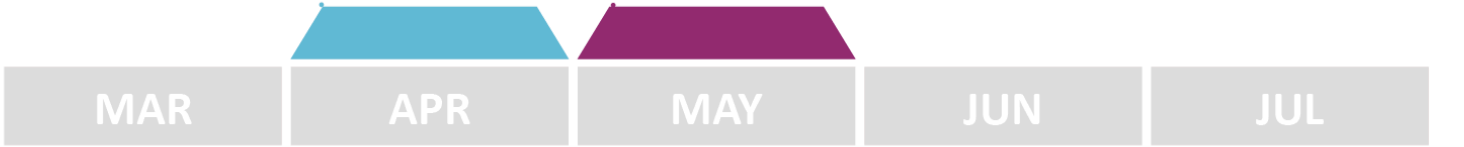
SME call proces overview

Open call

You will be able to submit applications for the open call for SMEs from the 1st of April untill the 30th of April via the EHDEN website.

Evaluation

Following an eligibilty check, applications will be evaluated by the SME certification committee.



Training & Certification

Certification and training of selected SMEs in all necessary competencies.

Eligibility criteria

The call is open to Small and Medium-sized Enterprises under the official EU definition:

- Less then 250 staff headcount.
- <= 50m € turnover or <= 43m € balance sheet total.
- Legally established as a business and based in an EU member state or H2020 associated country.

For more details, see **bit.ly/EU_SME**

SME Certification: Value Proposition

What's in it for me?

- Possibility to contribute to a change of paradigm bene-fitting health of citizens
- Free training and certification
- Expand your existing market
- Contribute to the creation of emerging, new markets for data sciences
- Early adopters will gain a competitive advantage on a specialised skill set
- Short-term income generation to offset skill investment
- Synergic ecosystem facilitiates exposure and brand recognition with key stakeholders
- Open source community boosts opportunities

SME Certification Procedure

Training

EHDEN's aim is that all selected SMEs as companies will obtain all the necessary competencies to work with a data source within the EHDEN federated network following the established quality standards.

Training topics include, but are not limited to:

- The EHDEN project and its objectives
- OMOP-CDM and the Standardized Vocabularies
- ETL steps and their implementation with OHDSI tools and approaches developed in EHDEN.
- Fundamentals of proper documentation of the ETL process to assure transparency and reproducibility.
- Expertise in the installation and use of the OHDSI Tools for federated data analyses

The course material will be made available through our online learning platform, the EHDEN academy (**https://academy.ehden.eu**).

Certification

The final step in the certification program is a face-to-face training and assessment.

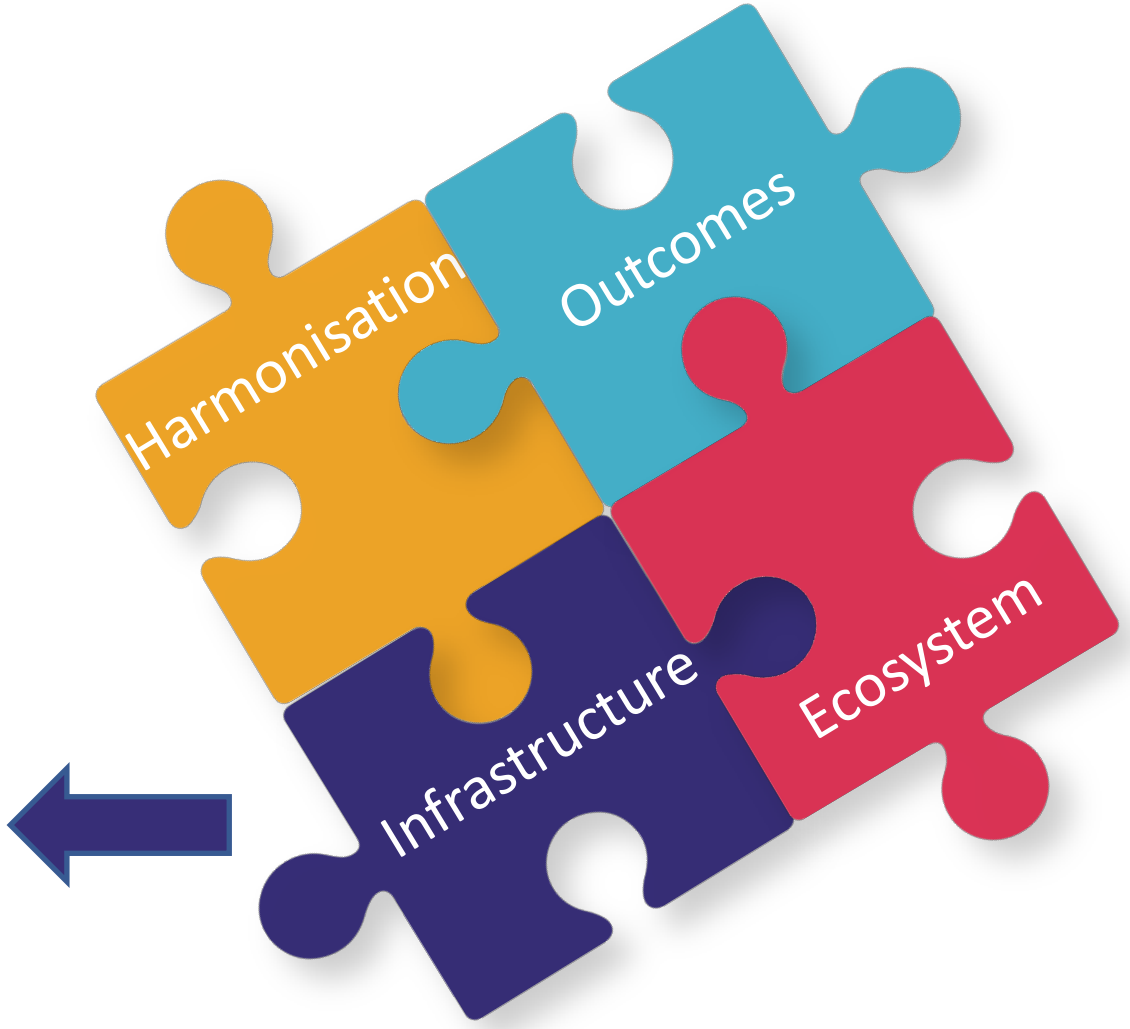
Once the SME receives the certificate it obtains the following privileges:

- Member of the EHDEN SME Community
- Listed in the Certified SME Catalogue
- Use of the EHDEN Certification Badge

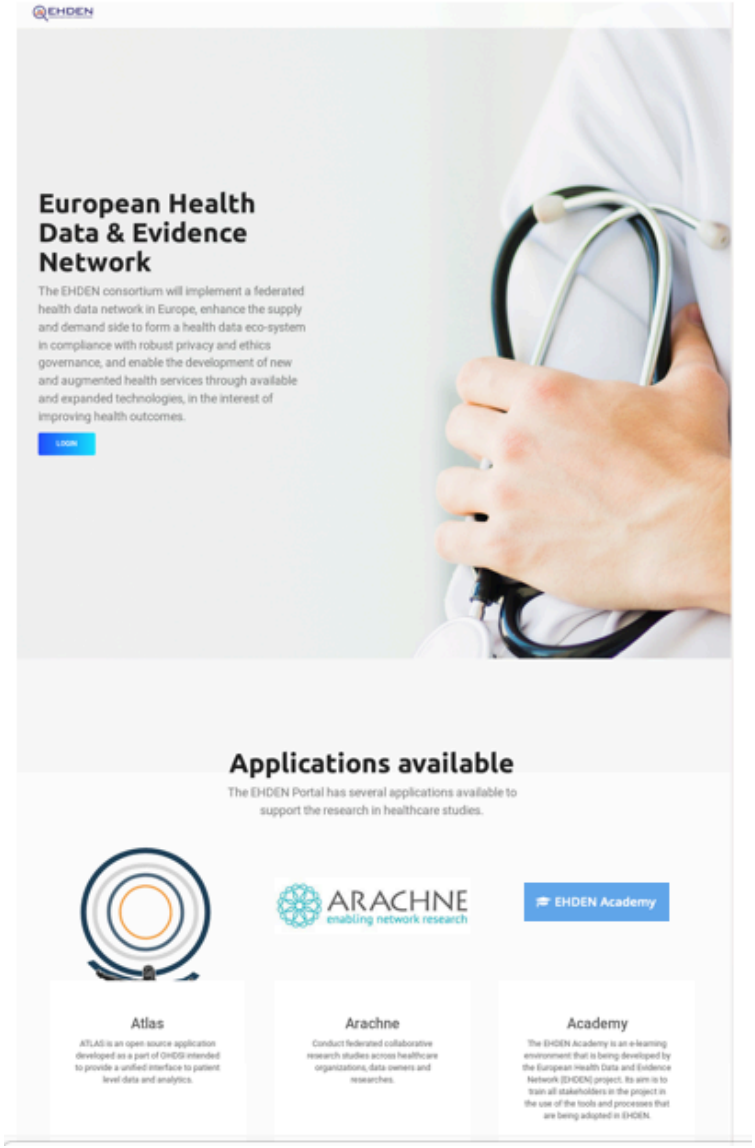
Following certification, SMEs can support and map data sources which have received an EHDEN grant.

BUILDING THE ECO-SYSTEM: INFRASTRUCTURE

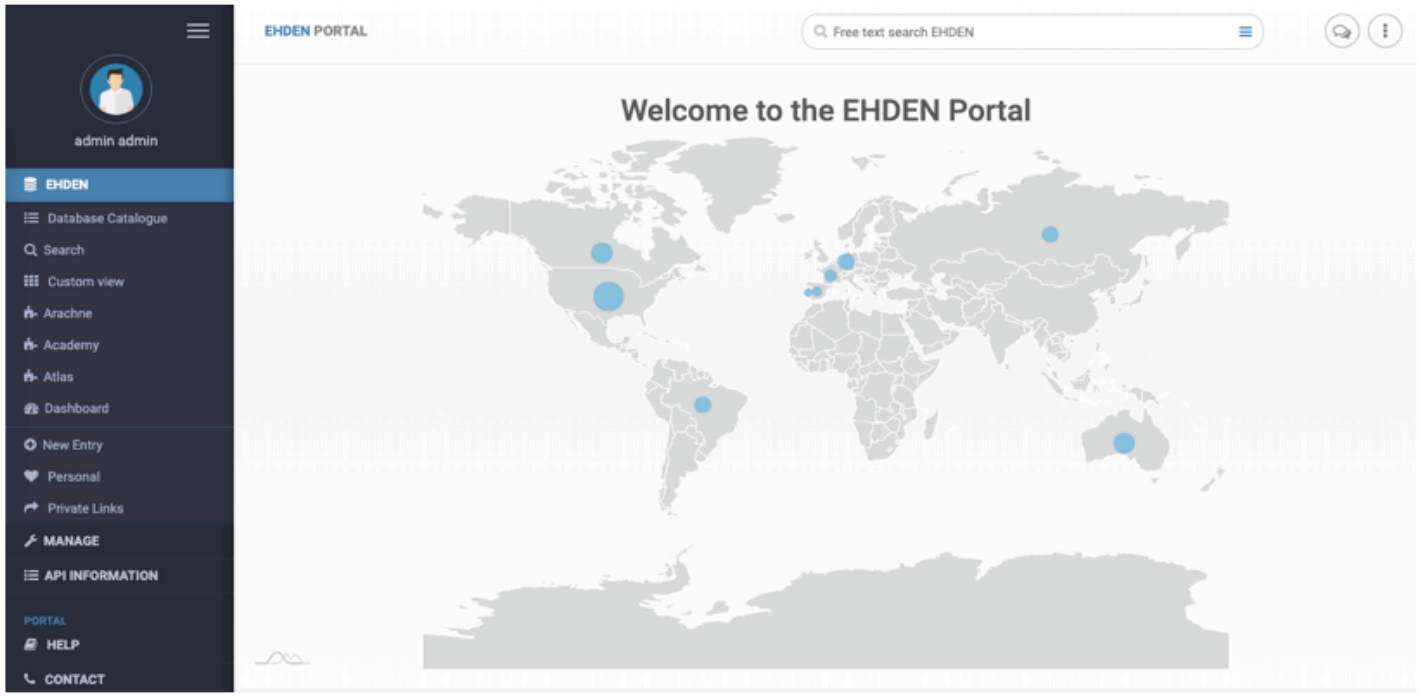
- Build the infrastructure to enable federated studies on an unprecedented scale in Europe
- Leverage and further develop OHDSI and other tools for high quality analyses
- Use Case driven development
- Ensure interoperability on a global level



Work in Progress: The EHDEN Portal



- The EHDEN Portal will integrate all the tools used in EHDEN, e.g. Central Atlas Instance, Arachne Central, EHDEN Academy, etc.
- It will host a Database Catalogue that can be maintained by the data custodians themselves containing a landing page per data with meta data, a questionnaire with, advanced search functionality, documents and publications, etc.
- Authorisation and Authentication using Single Sign On where possible.
- And more..



THE EHDEN ACADEMY

EHDEN is developing the EHDEN Academy (academy.ehden.eu):
an online learning platform that will host courses from OHDSI and EHDEN.

EHDEN Academy

It will contain: Video Lectures, Quizzes, SQL Questions, OHDSI-IN-A-BOX VM integration, and more..

There are a number of implicit and explicit conventions that have been adopted in the CDM. Developers of methods that run methods against the CDM need to understand these conventions. The table below shows the most important conventions.

Field name	Purpose	Example
<entity>_id	Unique identifiers for **entities** (row numbers, or IDs imported from source)	person_id 1234567 visit_occurrence_id 7654321 could be a person identifier or an autogenerated number by the CDM builder
<entity>_concept_id	Foreign key into the Standard Vocabulary for **Standard Concept**	condition_concept_id 313217 (SNOMED "Atrial Fibrillation")
<entity>_source_concept_id	Foreign key into the Standard Vocabulary for **Source Concept**	condition_source_concept_id 44821957 (ICD9CM "Atrial Fibrillation")
<entity>_source_value	Verbatim information from the source data, **not to be used** by any standard analytics	condition_source_value 427.31 (ICD9CM "Atrial Fibrillation")
<entity>_type_concept_id	Foreign key into the Vocabulary for the **origin of the information**	condition_type_concept_id 38000199 ("Inpatient header – primary")

Which of the following statements is true?

Select one or more:

- a. If we cannot map to a standard code we loose the record
- b. all fields ending with _concept_id refer to the VOCABULARY table
- c. an ICD-9 code should be placed in the condition_source_value field
- d. a entity_id value is unique for the domain not for the whole CDM

Check

Question 1

Correct

Marked out of 1.00

Flag question

Edit question

We like to know how many different vocabularies are available in this CDM? Write a query to get that number.

Answer: (penalty regime: 10, 20, ... %)

Reset answer

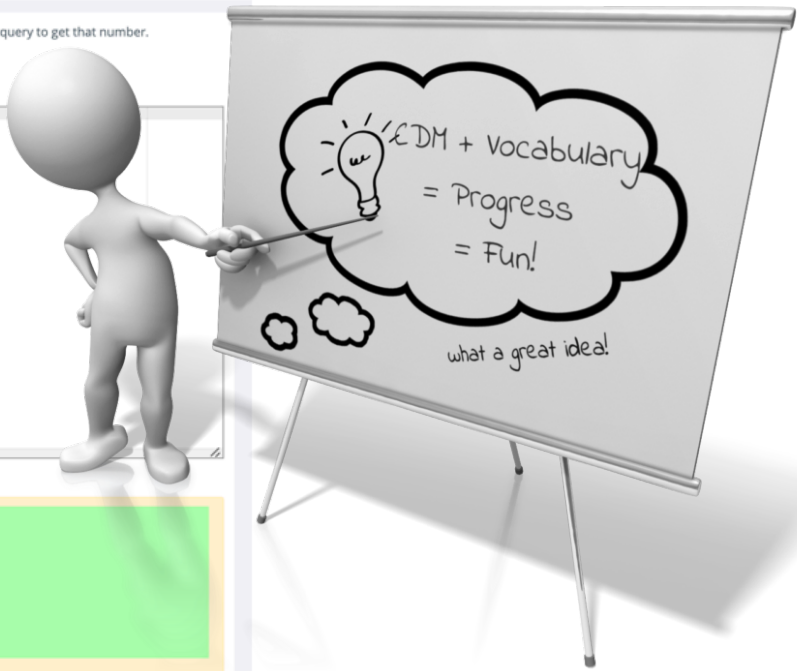
```
1 select count(*) from vocabulary
```

Check

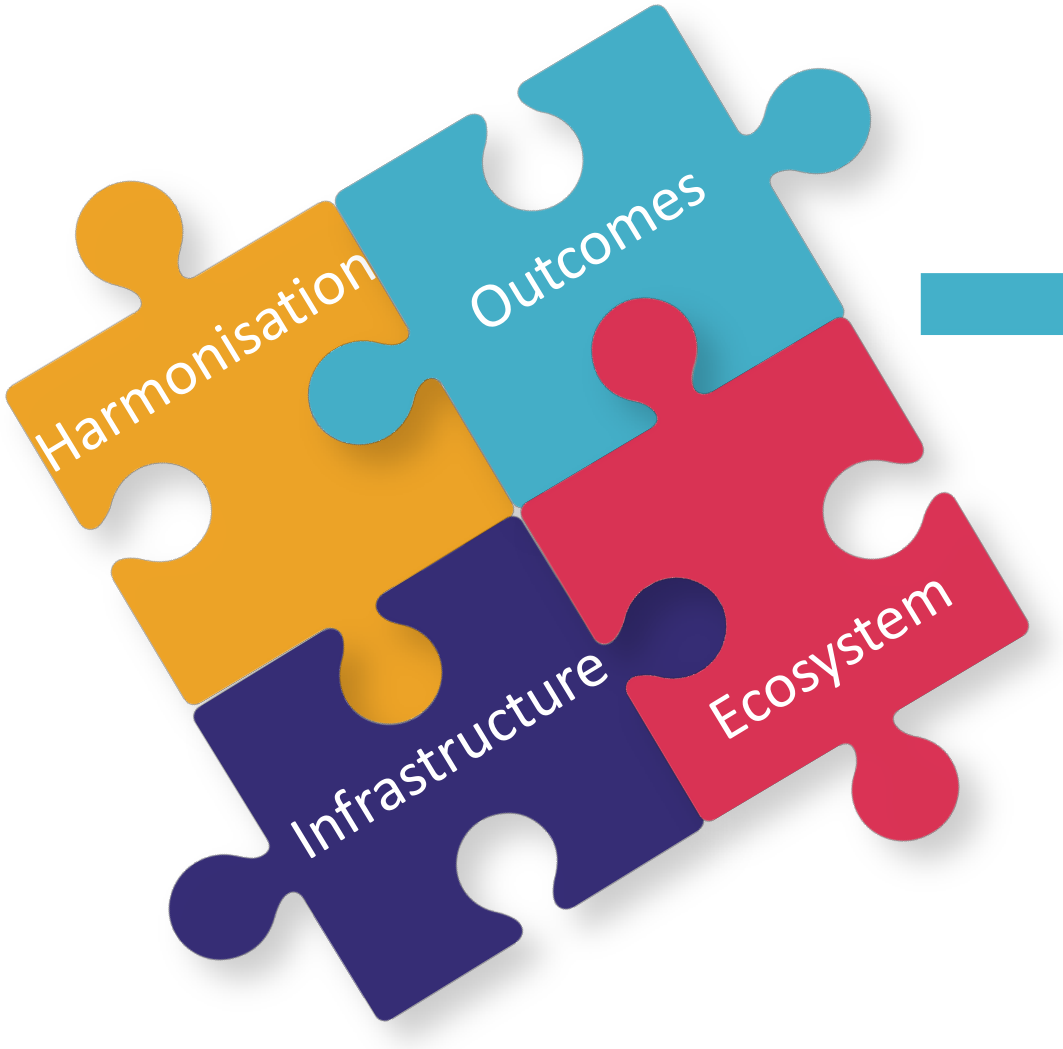
	Expected	Got	
✔	count(*) 46	count(*) 46	✔

Passed all tests! ✔

Next page



BUILDING THE ECO-SYSTEM: OUTCOMES

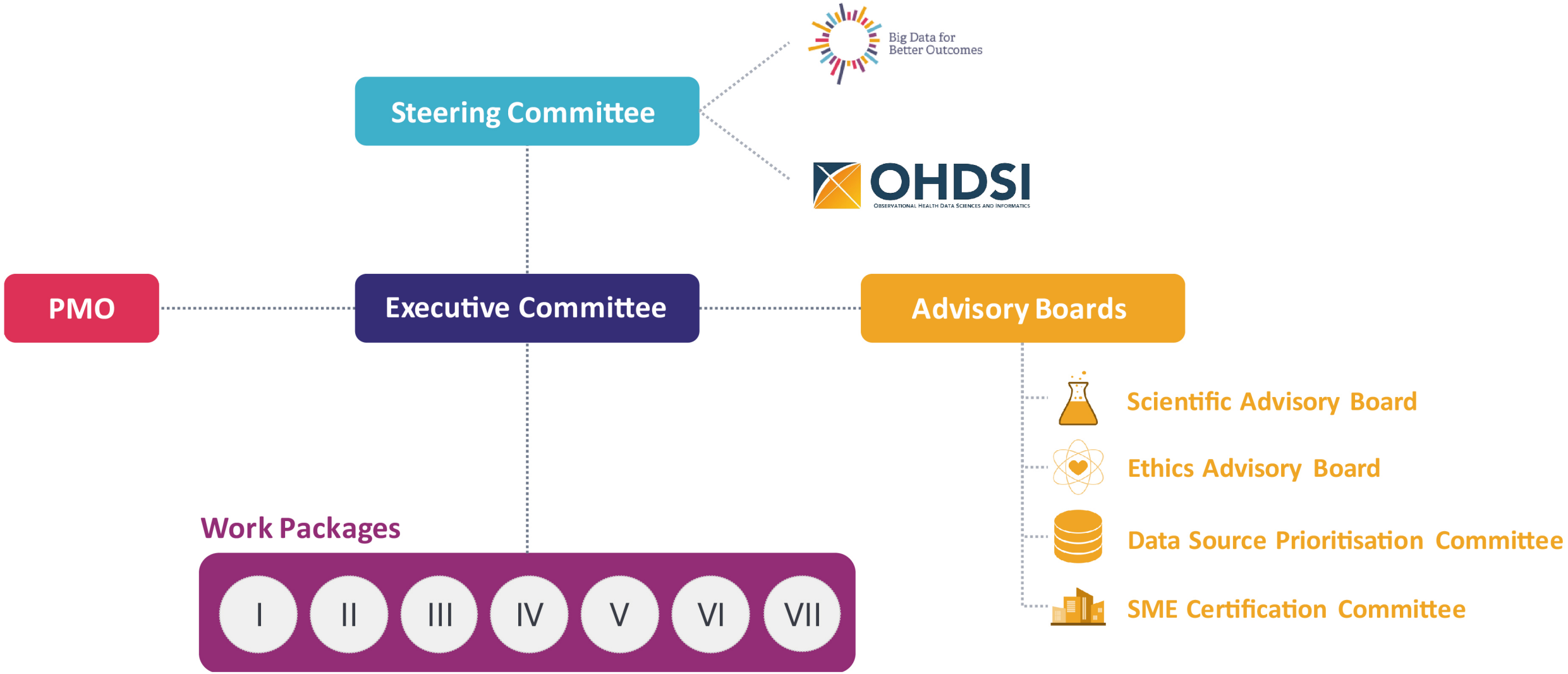


- Incorporation of outcome standards (ICHOM)
- Supporting outcomes-based research and medicine
- Demonstrate the additive value of EHDEN through use cases

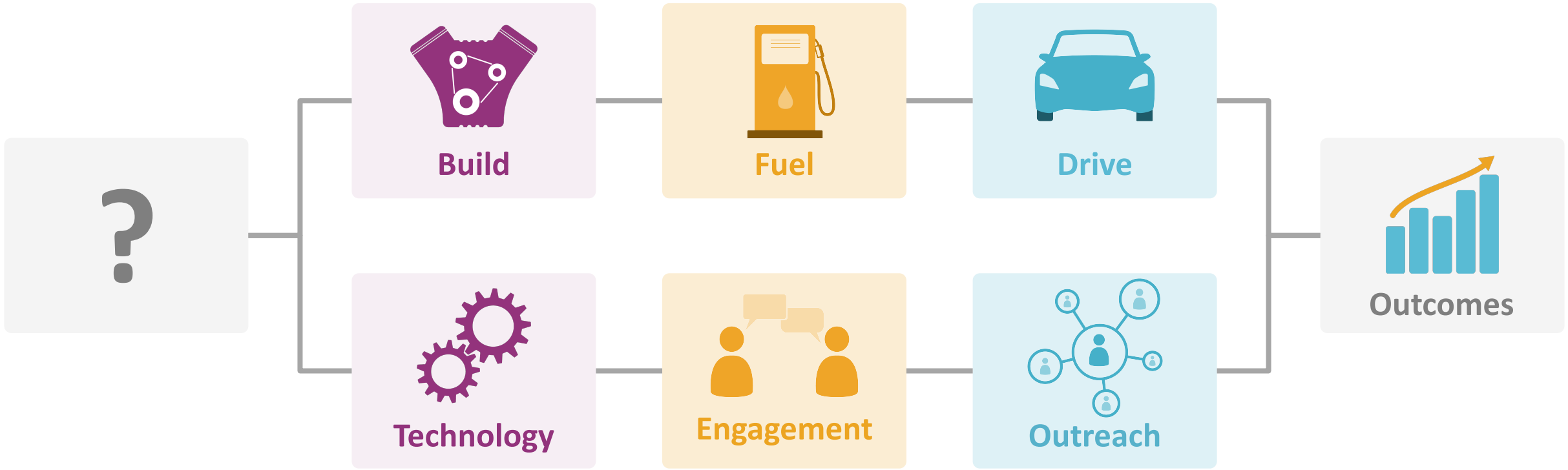
BUILDING THE ECO-SYSTEM: ECOSYSTEM

- A trusted federated data network expanding beyond EHDEN project lifetime
- European-wide network of certified SMEs
- Enable new and augmented health services during and after EHDEN
- Stimulate active collaboration within the community
- Sustainability is a responsibility of all stakeholders

GOVERNANCE STRUCTURE



KEY COMPONENTS FOR EHDEN



Work Package Structure

WP1: Evidence Workflow Development

Incorporating the use cases for supporting development and validation of the EHDEN socio-technical approach, inclusive of BD4BO projects

WP2: Outcome Driven Healthcare

Related to all activities specific to e.g. BD4BO projects outcome focus, and ICHOM standards incorporation

WP3: Personalized Medicine

Focusing on the support of outcomes/value based healthcare, inclusive of clinical prediction models, with the incorporation of 'novel' patient data

WP4: Technical Implementation

Key priority is socio-technical development of the EHDEN federated framework and relevant services

WP5: Data Workflow Implementation & Service Deployment

Development, oversight and evaluation of the ecosystem development from SME qualification/ certification to data source engagement, OMOP CDM mapping and evaluation

WP6: Outreach and Sustainability

Ensuring the development of value propositions for key stakeholders, and developing the sustainable operational model for EHDEN during and post IMI phase

WP7: Project Management and Dissemination

Concentrating on intra-project project management, internal communications and external dissemination, and responding to IMI deliverables

NEED MORE INFORMATION?

EHDEN
EUROPEAN HEALTH DATA & EVIDENCE NETWORK

Please visit the EHDEN stand

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github.com/EHDEN

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