

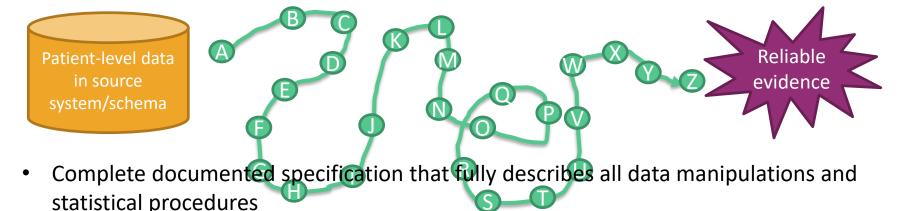
EHDEN: Approach & Strategy

Courtesy of: Peter Rijnbeek & Nigel Hughes

Project Coordinator and Project Lead



THE JOURNEY TO REAL-WORLD EVIDENCE: A FULLY REPRODUCIBLE DATA FLOW



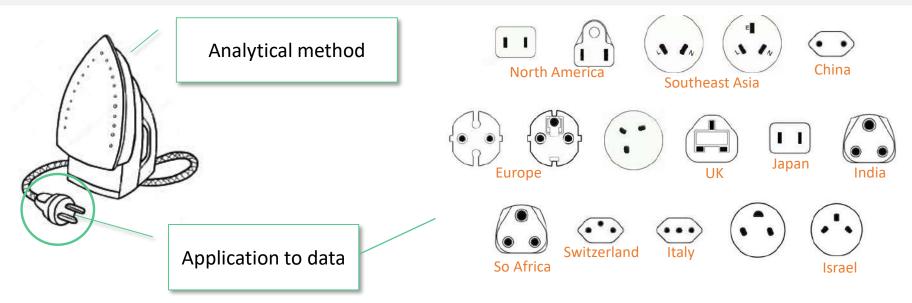
• Full analysis code that executes end-to-end (from source to results) without manual intervention



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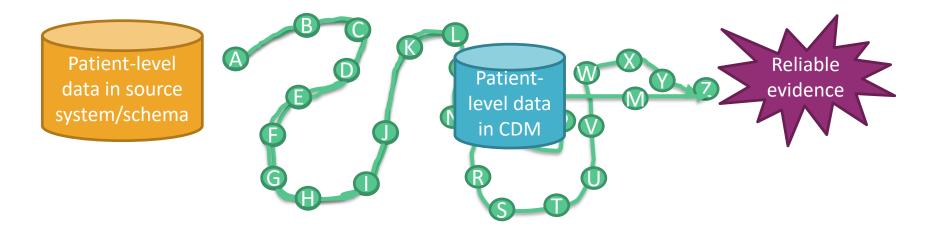
GOAL: to implement a **large sustainable** data **network** (+100m records) in Europe to generate **reliable evidence** for patient care that is **transparent** and fully **reproducible**

WHY IS THIS NOT CURRENT PRACTICE?



- Interoperability of data: different structures, different terminologies
- Standardized analytical pipelines are needed
- **Services** are needed to build a active data network to answer clinically important questions in a timely manner
- A strong **community** is needed covering all of Europe that collaboratively will improve patient care

A COMMON DATA MODEL AND STANDARDIZED VOCABULARIES



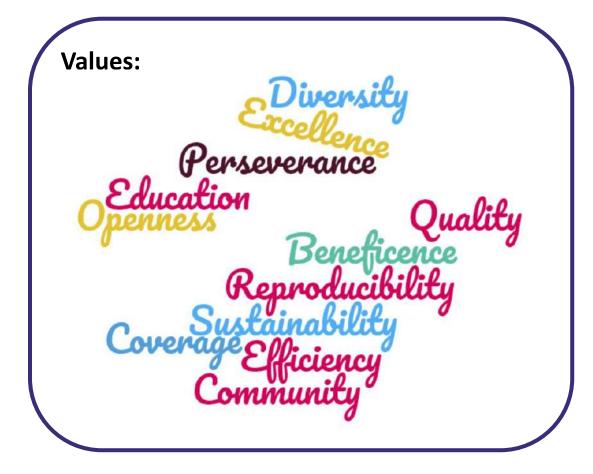
- Use of a common data model splits the journey into two segments: 1) data standardization, 2) analysis execution
- **CDM** creates opportunity for <u>re-use of data curation and analysis step</u>



EHDEN: VISION, MISSION & VALUES

<u>Vision</u>: The European Health Data & Evidence Network (EHDEN) aspires to be the *trusted* observational research *ecosystem* to enable better *health decisions, outcomes and care*

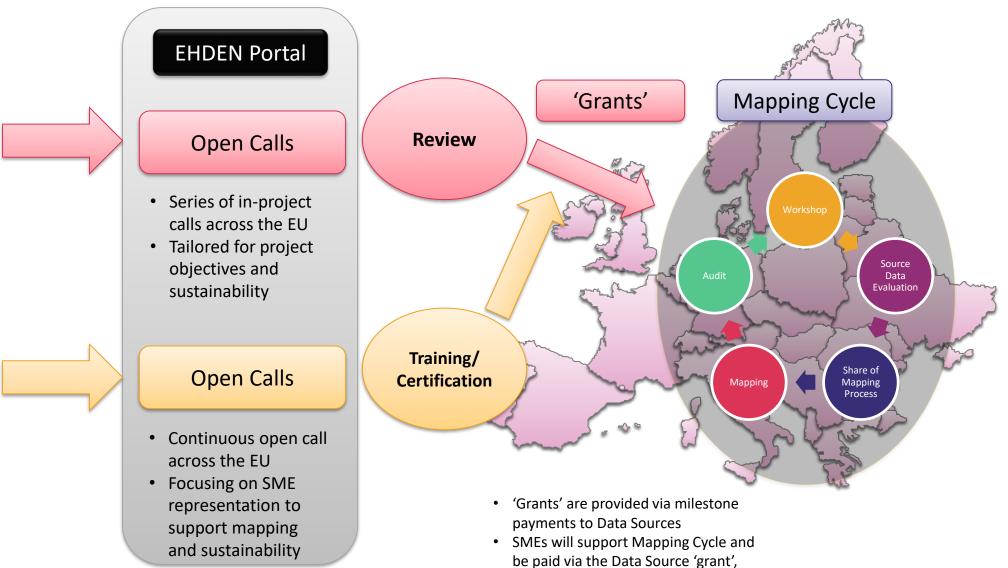
<u>Mission</u>: Our mission is to provide a new paradigm for the *discovery* and *analysis* of health data in Europe, by building a *large-scale, federated network of data sources standardised to a common data model*



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HOW? - THE EHDEN OPEN CALL PROCESS

Data Sources



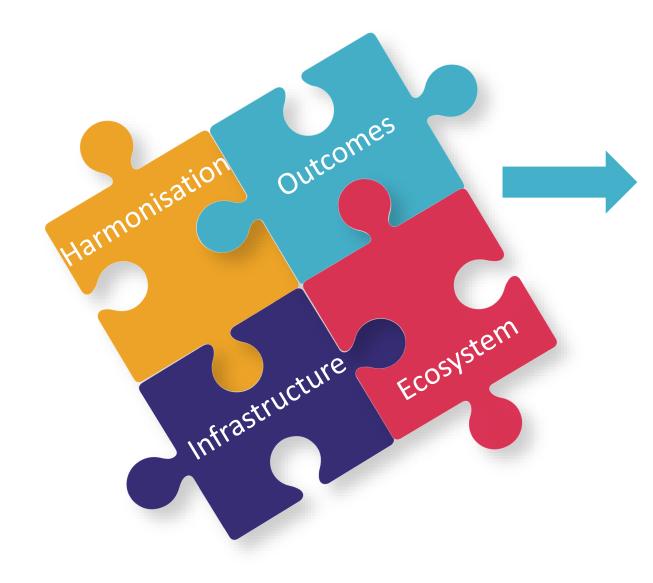
following certification by EHDEN

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



BUILDING THE ECO-SYSTEM: OUTCOMES

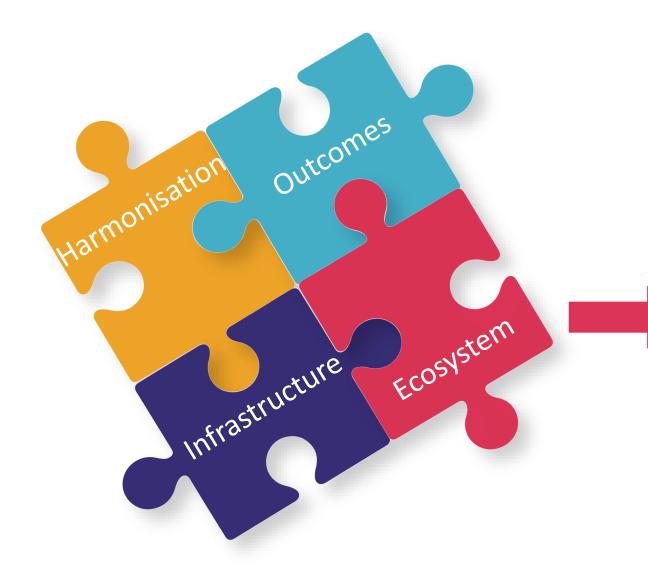


- Incorporation of outcome standards (ICHOM)
- Supporting outcomes-based research and medicine
- Demonstrate the additive value of EHDEN through use cases

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BUILDING THE ECO-SYSTEM: ECOSYSTEM



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- A trusted **federated data network** expanding beyond EHDEN's 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



Project Structure





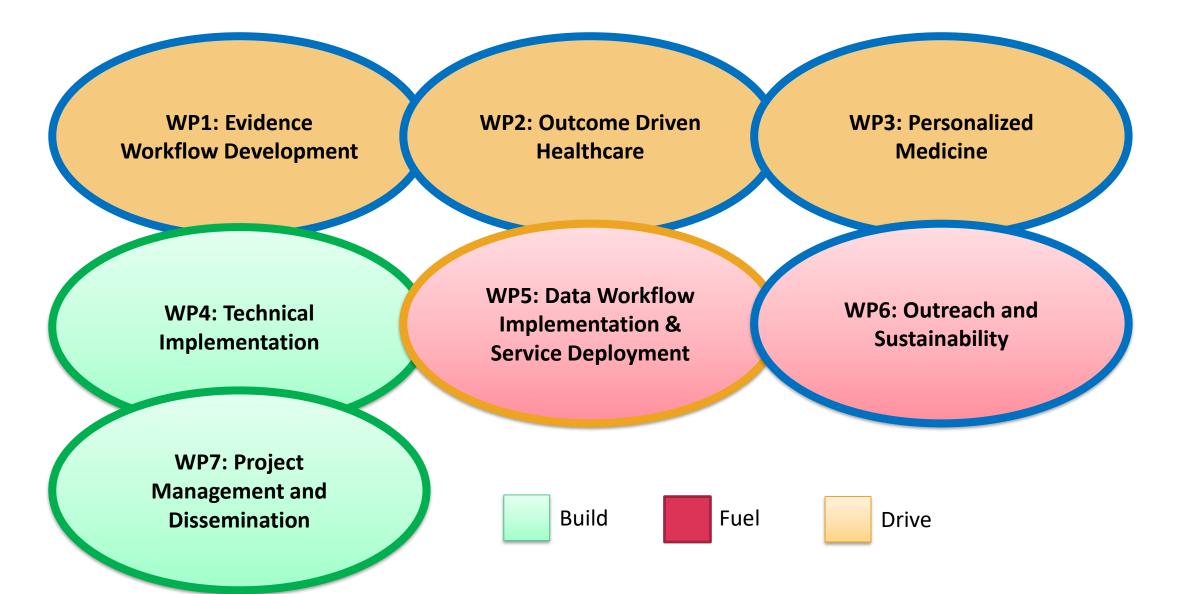




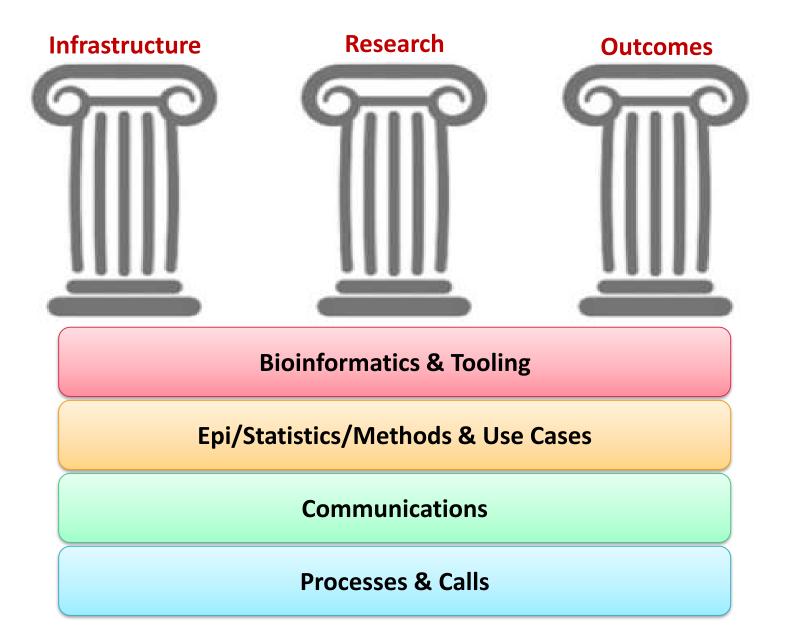


OUTCOMES





EHDEN'S THREE PILLARS & FOUNDATIONS









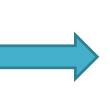
EHDEN IS NOT A BLANK CANVAS PROJECT....

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- EHDEN will utilise the best from prior and current (IMI) projects and platforms to develop its own infrastructure
- It will be developing its federated framework, but also analytical tooling and processes to support observational research in the EU, closely associated with the OHDSI EU/Global Open Science/Open Source collaboration

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We have the main developers of most tools in the consortium and are closely collaborating with the development teams

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EHDEN CAN FACILITATE UNPRECEDENTED RESEARCH IN EUROPE

- There is a very active global research community around the OMOP-CDM (OHDSI) -> Example is the Oxford Study-A-Thon
- Our task is to facilitate this at scale in Europe and add additional tools and methods to the current stack
- In EHDEN research will drive the development of the eco-system with respect to tool and processes, but also to build the necessary trust

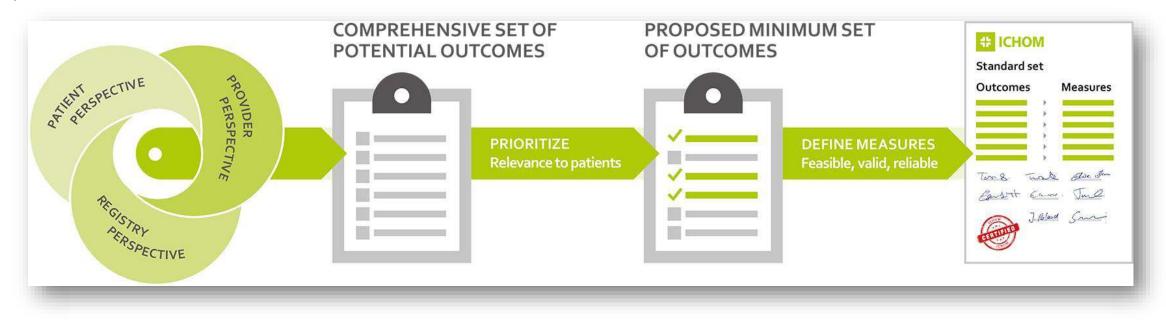


Quality Control on all steps in the pipeline is needed, starting at source data, ensuring the transformation to the CDM is valid, ensure the analytical pipeline has build in quality measures, etc.

Result dissemination that enables others to add new insight on their data after study publication







- Use data derived from standard, internationally-accepted metrics to enable a learning healthcare system
- Our data standardization effort could facility this at scale





