EMA
EUROPEAN MEDICINES AGENCY

European Health Data Space

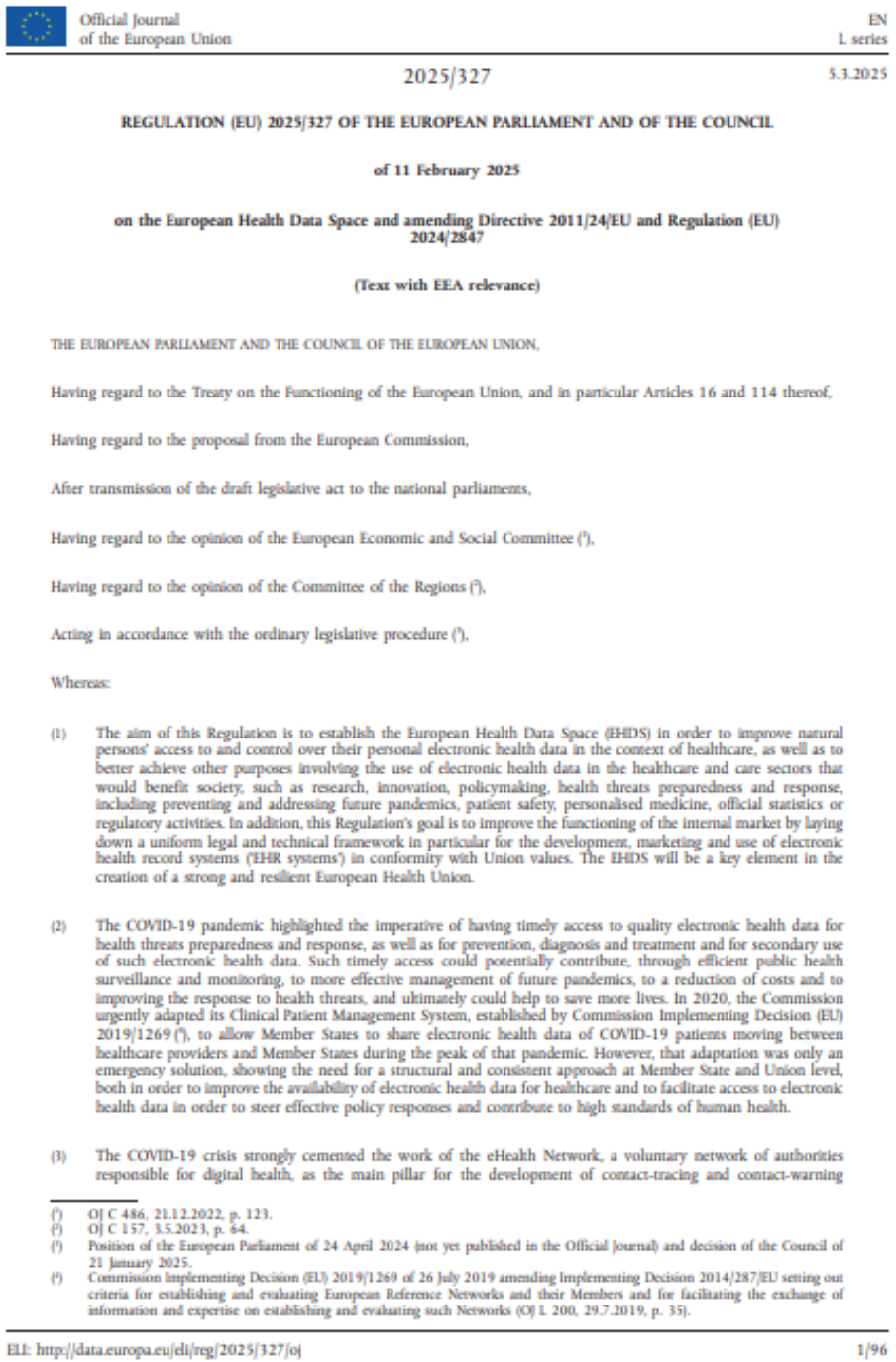
2025 Enpr-EMA annual meeting

Presented by Dr Daniel Morales

Data Analytics and Methods Taskforce

What is EHDS?

- European Health Data Space (EHDS) is an **EU regulation** setting out common rules, standards, infrastructures and a governance framework with a view to facilitating access to electronic health data for healthcare, research, innovation and policy making.
- EHDS was adopted and published in the Official Journal in March 2025. Most of its provisions will start applying in 2029.
- As a Regulation, EHDS is directly applicable to all EU Member States.



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2025/327 — 5.3.2025

REGULATION (EU) 2025/327 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 11 February 2025

on the European Health Data Space and amending Directive 2011/24/EU and Regulation (EU) 2024/2847

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Articles 16 and 114 thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

Having regard to the opinion of the European Economic and Social Committee (1),

Having regard to the opinion of the Committee of the Regions (2),

Acting in accordance with the ordinary legislative procedure (3),

Whereas:

(1) The aim of this Regulation is to establish the European Health Data Space (EHDS) in order to improve natural persons' access to and control over their personal electronic health data in the context of healthcare, as well as to better achieve other purposes involving the use of electronic health data in the healthcare and care sectors that would benefit society, such as research, innovation, policymaking, health threats preparedness and response, including preventing and addressing future pandemics, patient safety, personalised medicine, official statistics or regulatory activities. In addition, this Regulation's goal is to improve the functioning of the internal market by laying down a uniform legal and technical framework in particular for the development, marketing and use of electronic health record systems ('EHR systems') in conformity with Union values. The EHDS will be a key element in the creation of a strong and resilient European Health Union.

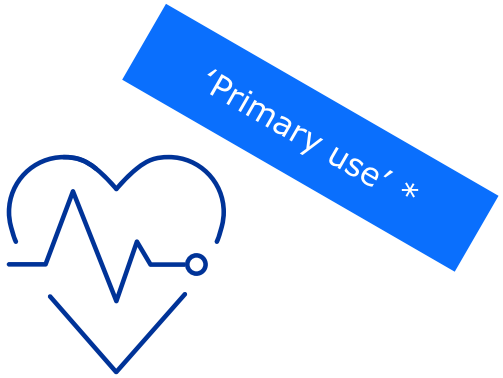
(2) The COVID-19 pandemic highlighted the imperative of having timely access to quality electronic health data for health threats preparedness and response, as well as for prevention, diagnosis and treatment and for secondary use of such electronic health data. Such timely access could potentially contribute, through efficient public health surveillance and monitoring, to more effective management of future pandemics, to a reduction of costs and to improving the response to health threats, and ultimately could help to save more lives. In 2020, the Commission urgently adapted its Clinical Patient Management System, established by Commission Implementing Decision (EU) 2019/1269 (4), to allow Member States to share electronic health data of COVID-19 patients moving between healthcare providers and Member States during the peak of that pandemic. However, that adaptation was only an emergency solution, showing the need for a structural and consistent approach at Member State and Union level, both in order to improve the availability of electronic health data for healthcare and to facilitate access to electronic health data in order to steer effective policy responses and contribute to high standards of human health.

(3) The COVID-19 crisis strongly cemented the work of the eHealth Network, a voluntary network of authorities responsible for digital health, as the main pillar for the development of contact-tracing and contact-warning

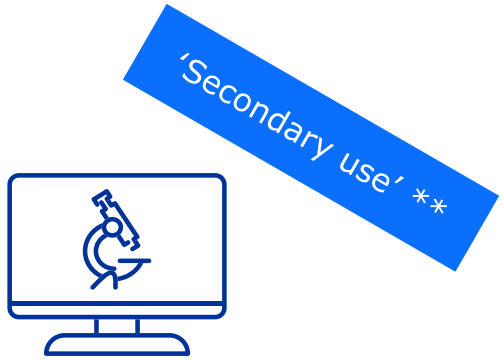
(1) OJ C 486, 21.12.2022, p. 123.
(2) OJ C 157, 3.5.2023, p. 64.
(3) Position of the European Parliament of 24 April 2024 (not yet published in the Official Journal) and decision of the Council of 21 January 2025.
(4) Commission Implementing Decision (EU) 2019/1269 of 26 July 2019 amending Implementing Decision 2014/287/EU setting out criteria for establishing and evaluating European Reference Networks and their Members and for facilitating the exchange of information and expertise on establishing and evaluating such Networks (OJ L 200, 29.7.2019, p. 35).

ELI: http://data.europa.eu/eli/reg/2025/327/oj — 1/96

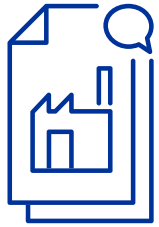
EHDS aims to:



Empower patients to freely access and manage their electronic health data, while also enabling secure sharing of such data with HCPs across the EU



Enable access and reuse of electronic health data for research, innovation and regulatory activities in safe and secure way



Create a single market for electronic health records systems, supporting both primary and secondary use

* Use of data for the delivery of healthcare
** Use of data for research and public interest purposes

Key EHDS concepts / actors

Data user

Any natural or legal person allowed to request access to electronic health data through EHDS for certain purposes

Data holder

Any natural or legal person holding non-anonymized electronic health data, which it has a right or obligation to process in its capacity as a controller, or anonymized electronic health data

Health Data Access Body

Public bodies established by MSs and EC to oversee and facilitate data access through EHDS

Data permit

Administrative decision issued by a health data access body to a data user to access and process specified electronic health data

Secure processing environment

Specialised infrastructure, offered by health data access body, to enable safe access and use of electronic health data

Implementation timeline of EHDS legislation

March 2025

- Adoption and publication of the EHDS regulation in the Official Journal
- Start of the transition period

March 2027

- Start of application of selected EHDS provisions (e.g. governance)
- Deadline for the EC to adopt relevant delegated and implementing acts as well as guidelines

March 2029

Start of partial EHDS application:

- **Primary use**: patients to start exercising their rights; data exchanges to start for initial batch of data categories (e.g. patient summaries)
- **EHR systems**: obligations for certain EHRs placed on the market to start being enforced
- **Secondary use**: access and re-use of electronic health data framework to start operating for most data categories

March 2031

Full EHDS application:

- **Primary use**: data exchanges for remaining data categories (e.g. medical imaging and lab results)
- **EHR systems**: all remaining EHRs to start complying with the common specifications
- **Secondary use**: access and re-use for remaining data categories (e.g. genetic data)

Secondary use provisions

- EHDS defines a list of electronic health data categories that **data holders in all EU Member States are obliged to make available for the secondary use**
- Any EU legal or natural person will be able to request access to the electronic health data made available by one or multiple data holders in any Member State.
- Dedicated single application form will have to be filled with the request and submitted to a **Health Data Access Body** (HDABs) for assessment.
- HDAB will evaluate, among others, whether the purpose for which access is requested is permitted under EHDS. If confirmed, a **data permit** will be issued enabling access to the requested data through HDAB-provided **secure processing environment**. Data holders will be able to charge fees for making their data available for secondary uses.
- Natural persons will have a right to **'opt-out'** from their data being used for secondary use under EHDS.
- Process for notifying natural persons of significant findings through secondary use

Allowed and prohibited purposes

- **Public interest in the area of public and occupational health**, such as activities for protection against serious cross-border threats to health and public health surveillance or activities ensuring high levels of quality and safety of healthcare, including patient safety, and of medicinal products or medical devices;
- **Policy making and regulatory activities** to support public sector bodies or Union institutions, agencies and bodies, including regulatory authorities, in the health or care sector to carry out their tasks defined in their mandates;
- **Statistics**, such as national, multi-national and Union level official statistics defined in Regulation (EU) No 223/2009 related to health or care sectors;

Reserved for public sector bodies *and Union institutions, offices, and agencies carrying out tasks under Union or national law, including third-party data processing on their behalf.*

- vocational or higher **education or teaching activities** in health or care sectors;
- **scientific research** related to health or care sectors, **contributing to public health** or health technology assessment, or ensuring high levels of quality and safety of health care, of medicinal products or of medical devices, **with the aim of benefitting the end-users** including : development and innovation activities for products or services; training, testing and evaluating of algorithms, including in medical devices, in-vitro diagnostic medical devices, AI systems and digital health applications ;
- **improving delivery of care, treatment optimization and providing healthcare**, based on the electronic health data of other natural persons.

- Taking decisions detrimental to individuals or groups based on electronic health data, qualifying as decisions if they have legal, social, or economic impacts.
- Making employment-related decisions or offering less favorable terms in goods or services based on health data, including discriminatory decisions affecting insurance, credit, or loans.
- Conducting advertising or marketing activities.
- Developing products or services that could harm individuals, public health, or society, including illegal drugs, alcohol, tobacco, weaponry, or addictive products.
- Engaging in activities that conflict with ethical standards set by national law.

Data categories

Article 51

electronic health data from **EHRs**;

healthcare-related **administrative data**, including dispensation, claims and **reimbursement** data

human **genetic, epigenomic and genomic** data;

other **human molecular** data such as proteomic transcriptomic, metabolomic, lipidomic and other -omic data;

automatically generated personal electronic health data, through **medical devices**;

data from **wellness applications**;

other health data from medical devices.

Data on factors impacting health, including **socio-economic, environmental and behavioural determinants** of health;

Aggregated data on **healthcare needs**, **resources** allocated to healthcare, the provision of and access to healthcare, healthcare expenditure and financing;

Pathogen data, impacting on human health

population-based health data **registries** (public health registries);

data from medical registries and **mortality registries**;

data from registries for medicinal products and medical devices;

health data from **biobanks** and associated databases.

data from **clinical trials**, **clinical studies** and **clinical investigations** subject to Regulation (EU) 536/2014, Regulation [SOHO], Regulation (EU) 2017/745 and Regulation (EU) 2017/746, respectively;

data from **research cohorts, questionnaires** and surveys related to health, after the first publication of results

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European Commission

Articles 52, 66, 71, 73

Safeguards

Secure Processing Environment (SPE)

SPE setup to restrict data access to **authorised users.**

State-of-the-art measures to prevent unauthorised data modification, access, or removal.

Logging and monitoring of activities within the SPE for compliance and audit purposes.

Download of personal data strictly prohibited.

Additional Safeguards

Legal and organisational measures to **protect intellectual property and trade secrets**.

Public transparency on data processing activities and outcomes.

Natural persons shall have the right to opt-out from the secondary use of their health data

at **any time** + **without stating reasons**

this right is reversible

through an easily accessible and understandable mechanism

*with the possibility for MS to have rules to ensure that for **selected purposes of public interest**, on **a case-by-case basis** and under **strict conditions**, also data of opted-out people may be made available*

Data Minimisation and Purpose Limitation

Access limited to data adequate, relevant, and necessary for specific, approved purposes.

Pseudonymised data provided unless anonymised data suffices, with strict controls on de-identification.

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European Commission

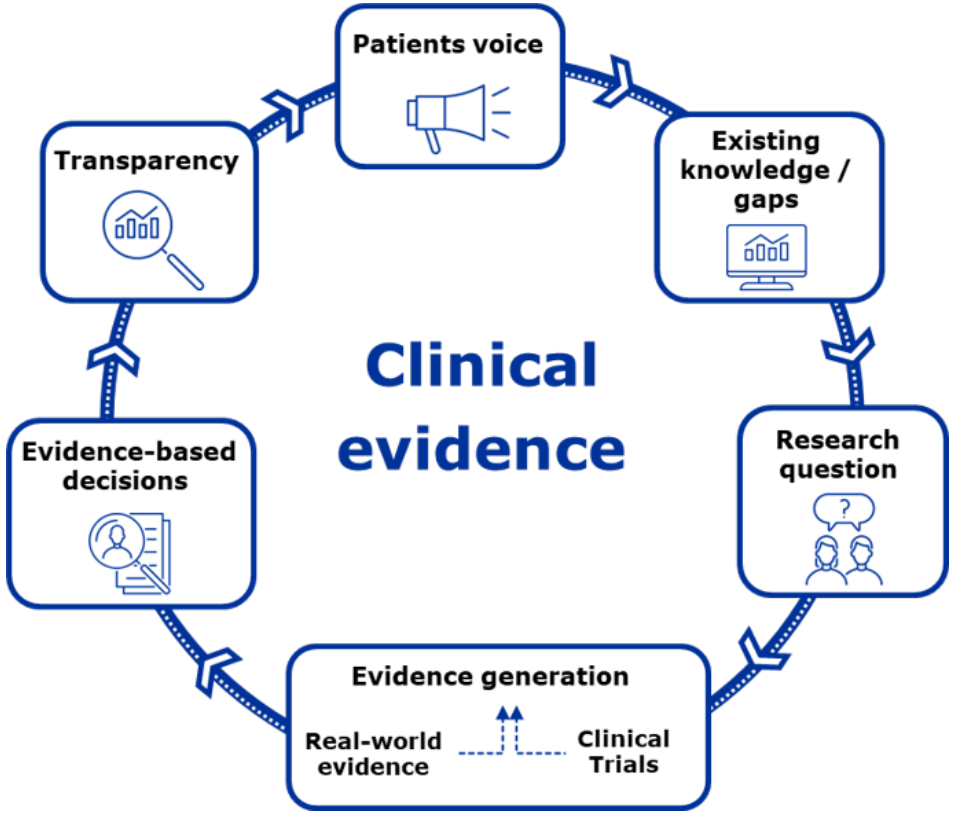
RWD and RWE play a crucial role in bridging the gap between clinical research and practice

&

In the EU, generation of RWE for regulatory purpose already occurs

EMA

Generating clinical evidence
Shared vision towards 2030



- **Patient** voice guides every step of the way
- Evidence generation is **planned** and guided by purpose, data, knowledge and expertise
- Research question **drives** evidence choice and embraces spectrum of data and methods
- Clinical trials remain core but should be **better, faster** and **optimised**
- Real world evidence is **enabled**, and its value is **established**
- High **transparency** level underpins societal trust

Clinical Evidence 2030. Arlett P, Umuhire D, Verpillat P, Foggi P, Wändel Liminga U, Sepodes B, Lunzer M, Aylward B, Vamvakas S, Roes K, Pétavy F, Thirstrup S, Lamas M, Cooke E, Broich K. *Clin Pharmacol Ther*. 2025 Feb 14. doi: 10.1002/cpt.3596.

Clinical evidence 2025
Real world evidence

Enable the Use & Establish the Value of RWE

- Enable data access (including via EHDS)
- Build processes
- Set standards
- Validate methods
- Train/share knowledge & Manage change
- Establish value across various use cases
- Internationalise (build on ISPE-ISPOR, ICMRA, ICH)

PERSPECTIVES

PERSPECTIVE

Real-World Evidence in EU Medicines Regulation: Enabling Use and Establishing Value

Peter Arlett[1]*, Jesper Kjær[2], Karl Broich[3] and Emer Cooke[1]

We outline our vision that by 2025 the use of real-world evidence will have been enabled and the value will have been established across the spectrum of regulatory use cases. We are working to deliver this vision through collaboration where we leverage the best that different stakeholders can bring. This vision will support the development and use of better medicines for patients.

Real-world data (RWD) and real-world evidence (RWE) are already used in the regulation of the development, authorization, and supervision of medicines in the European Union. Their place in safety monitoring and disease epidemiology are well-established while their evidentiary value for additional use cases, notably for demonstrating efficacy, requires further evaluation.[1] During the coronavirus disease 2019 (COVID-19) pandemic, RWE rapidly provided impactful evidence on drug safety, vaccine safety, and effectiveness and we were reminded of the importance of robust study methods and transparency.[2] Our vision, anchored in the European Medicines Regulatory Network (EMRN) strategy to 2025, is that by 2025 the use of RWE will have been enabled and the value will have been established across the spectrum of regulatory use cases.[3] Delivering this vision will support the development and use of better medicines for patients.

In December 2018, the US Food and Drug Administration (FDA) published its framework for RWE underpinned by three pillars: whether RWD are fit for use, whether the study design can provide adequate evidence, and whether the study conduct meets regulatory requirements.[4] In 2019 in the European Union, we published the OPTIMAL framework for RWE also consisting of three pillars: operational, technical, and methodological.[5] More recently, the EU approach places RWE in the wider context of big data and is guided by the priority recommendations of the Big Data Task Force. These recommendations are being implemented through the Big Data Steering Group and the second multi-annual work plan was published in August 2021.[6] Figure 1 represents the workplan with its 11 workstreams which will deliver our vision for RWE by 2025. The workplan places emphasis on collaboration across stakeholders and with international regulatory partners. This work also needs to be seen in the wider EU policy context, most notably the European Commission's plans for a European Health Data Space.[7]

Acknowledging different frameworks to conceptualize the challenges and opportunities of RWE, we believe the two main priorities for the European Union are to enable its use and establish its value for regulatory decision making. The EMRN is working to deliver on both priorities through a collaborative approach where we leverage the best that different stakeholders can bring, and where those stakeholders can complement the central role of industry in generating evidence.

ENABLING USE

To enable use, we are working on multiple fronts with our stakeholders, including patients, healthcare professionals, industry, regulatory and public health agencies, health technology assessment bodies, payers, and academia. We are initiating work to establish a data quality framework, not just for RWD but for all data used in regulatory decision making. We are striving to improve the discoverability (findability) of RWD through agreement of metadata for RWD and through a public catalogue of RWD sources[8] that builds on the early work of the European Network of Centres for Pharmacoepidemiology and Pharmacovigilance (ENCePP). The ENCePP Guide on Methodological Standards in Pharmacoepidemiology,[9] extensively updated in 2021, is the core of our efforts to drive up the standards of study methods for RWE, and this is complemented by recently published guidance on conducting studies based on patient registries.[10]

The European Medicines Agency (EMA) and some national medicines agencies

[1]European Medicines Agency, Amsterdam, Netherlands; [2]Danish Medicines Agency, Copenhagen, Denmark; [3]BfArM, Bonn, Germany. *Correspondence: Peter Arlett (Peter.Arlett@ema.europa.eu)

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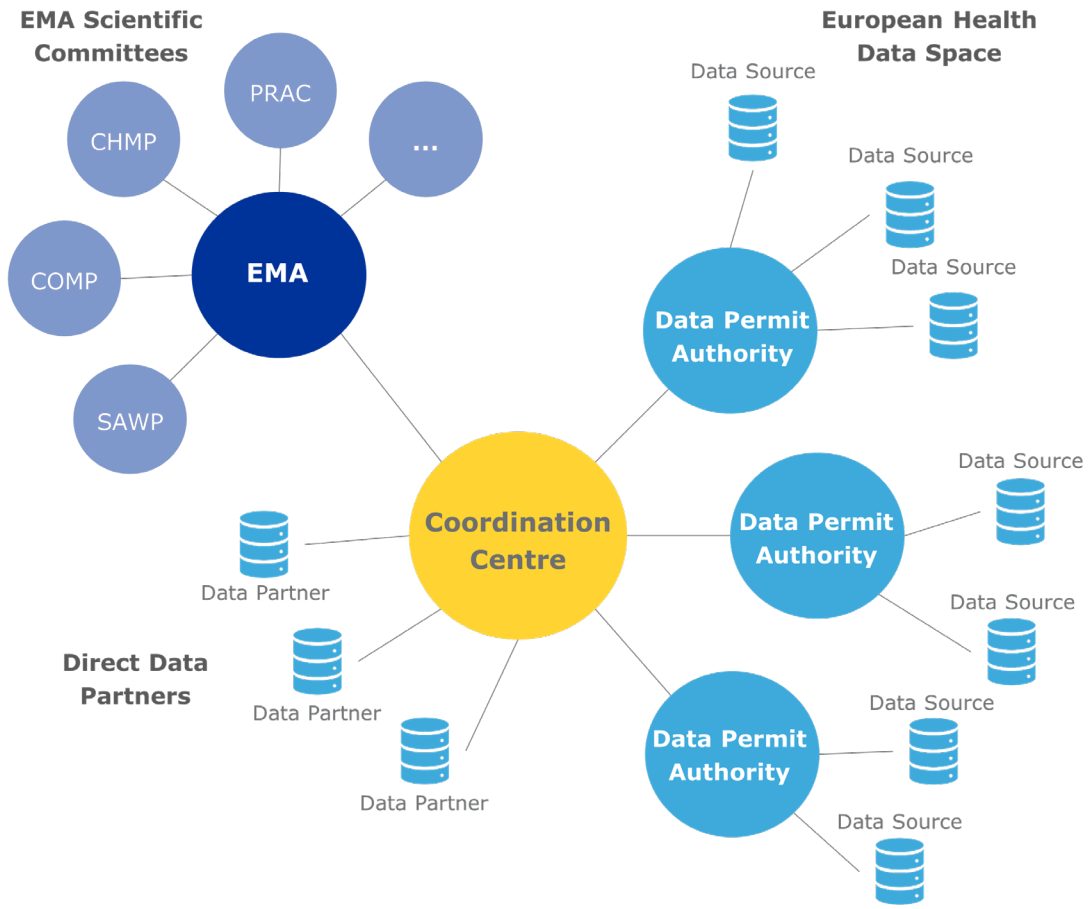
Real-World Evidence in EU Medicines Regulation: Enabling Use and Establishing Value. Arlett P., Kjær J., Broich K., Cooke E.
Clin Pharmacol Ther. 2021 Nov 19;111(1):21–23. doi: 10.1002/cpt.2479

DARWIN EU®
Data Analysis and Real-World Interrogation Network

Federated **network** of **data**, **expertise** and **services** set up in *February 2022* to better support decision-making throughout the product lifecycle by generating **valid and reliable evidence from real-world healthcare data**

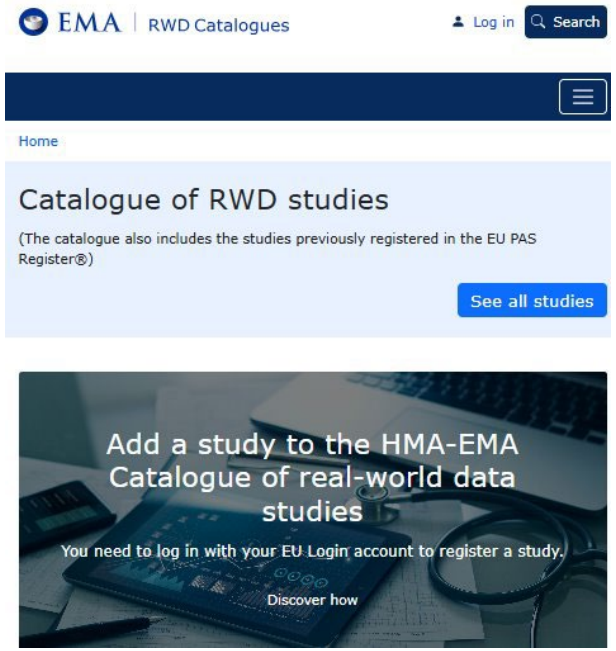
FEDERATED NETWORK PRINCIPLES

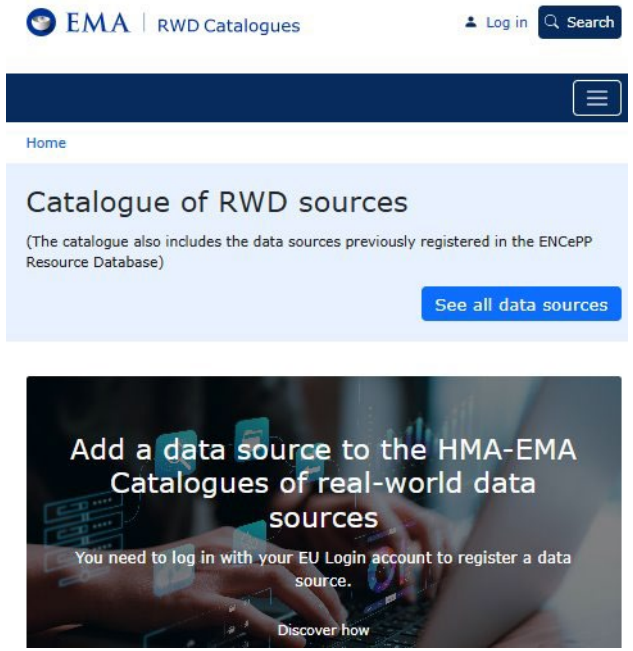
- Data stays **local**
- **Use of Common Data Model** (OMOP) to perform studies in a timely manner and increase consistency of results



HMA-EMA Catalogues of real-world data (RWD) sources and studies

A publicly accessible, centralised resource of metadata on RWD sources and all types of RWD studies from across the globe to enhance transparency, reproducibility, findability and collaboration in RWD research





269
Data sources

3233
Studies

808
Institutions

187
Networks

Standardised metadata structure

Enhanced search and export functionalities

Study documents accessible

Metadata about population age covered

Linkage between data sources and study records

Steady increase of number of records

Scan to access and explore the RWD Catalogues

HealthData@EUpilot: A European consortium to build and operate a first version of the EHDS

Aim of HealthData@EU: *"Create and test a beta version of the European Health Data Space by building a network of data platforms on a European scale tested by cross-border use cases"*

TDA led an EMA Use Case on coagulopathy risks with COVID-19 focused on secondary use to:

- Inform elements needed to build the EHDS whilst ensuring EMA has access to data that is Rapid, Wide, Deep
- Test the current capabilities of potential data permit authorities acting as HDAB for running studies
- Demonstrate the impact of an interoperable re-usable network for RWE generation (DARWIN EU)

Learnings informing EHDS around

- Data identification and accessibility
- Data quality
- Resource and infrastructure constraints

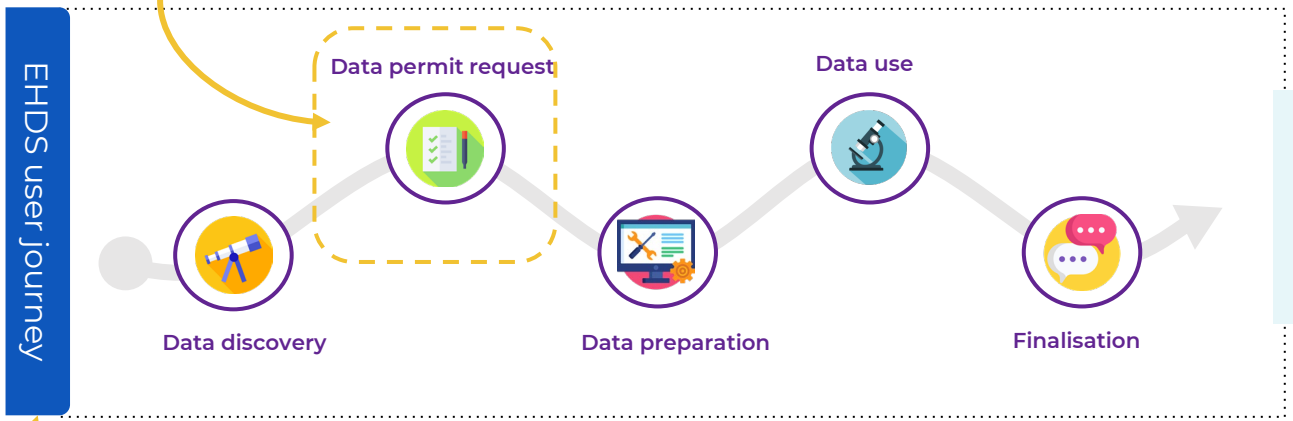
Shaping EHDS implementation

Common forms and procedures

- Develop a unique data permit request form
- Develop a common contractual framework (data use agreement or permit)

- Establish meta-data catalogue using Health DCAT AP
- Infrastructure requirements

Data discovery and processing



Wide minimum set of data categories for secondary use

- Mandated data provision
- More safeguards for genomic data
- Facilitate linkage

- Pseudanonymised data via a secure processing environment
- Health data requests for in-house/federated analytics

Different data access pathways

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Thank you

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