BIA MHRA Conference 2018

Real world evidence – sources for data collection and role in regulatory decision-making

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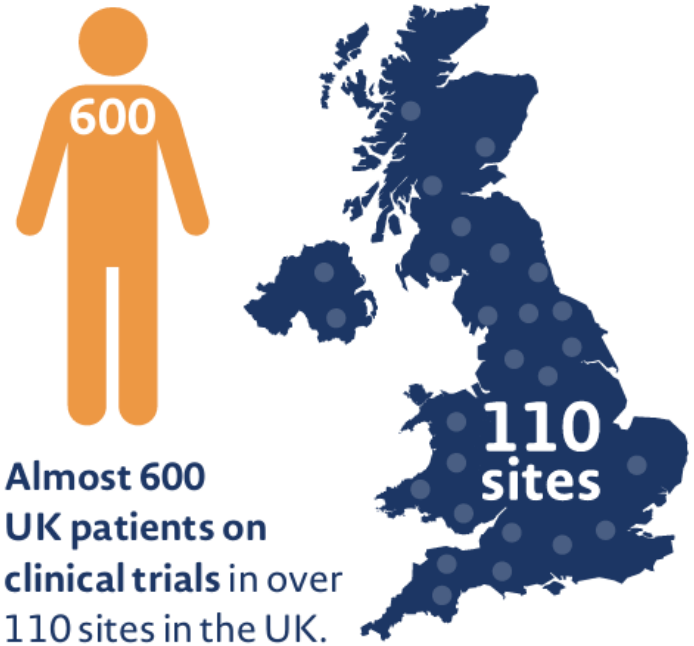
AbbVie R&D

- AbbVie is a global biopharmaceutical business with a focus on developing innovative medicines to improve human health and patient outcomes.
- Our core areas of research are immunology, neurology and oncology

AbbVie R&D in the UK

We are proud of our track record of scientific partnership and investment in the UK that delivers benefits to patients

investment to drive sequencing of genetic data from the UK BioBank to support public research and further scientific understanding of disease.

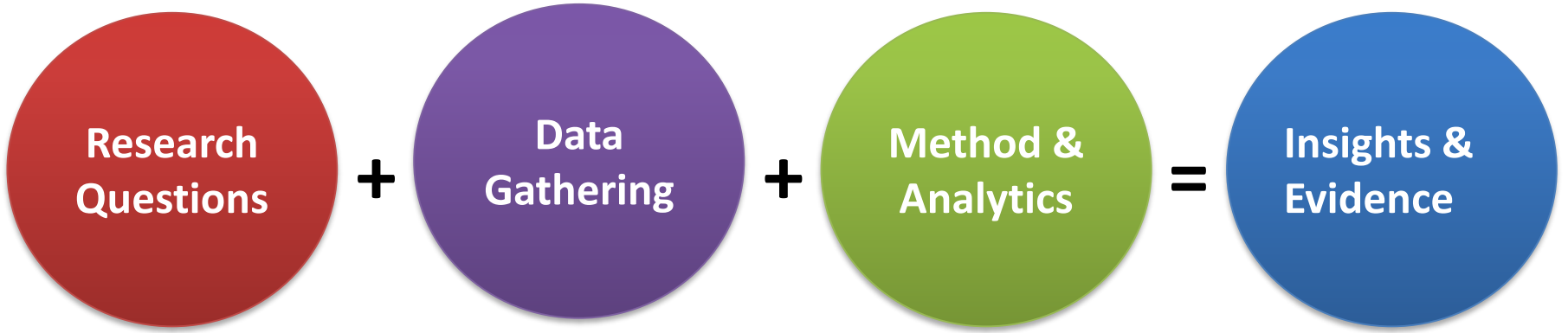


Almost 600 UK patients on clinical trials in over 110 sites in the UK.

Sustainable Healthcare & Healthcare Data Utility

- Real World Data insights can support decision-making driving sustainable healthcare across the value-chain:
  - Guiding research & development
  - Supporting regulatory decision-making
  - Supporting heath technology appraisals
  - Supporting clinician treatment decisions
  - Guiding patient choice
  - Outcomes-based reimbursement
- There are opportunities to deliver value for all stakeholders from the same healthcare data sets.

Fundamentals



Clearly define the stakeholder need, research question or hypothesis to be addressed

Identify the right data sources, right quality and rigor (prospective or retrospective, experimental or observational)

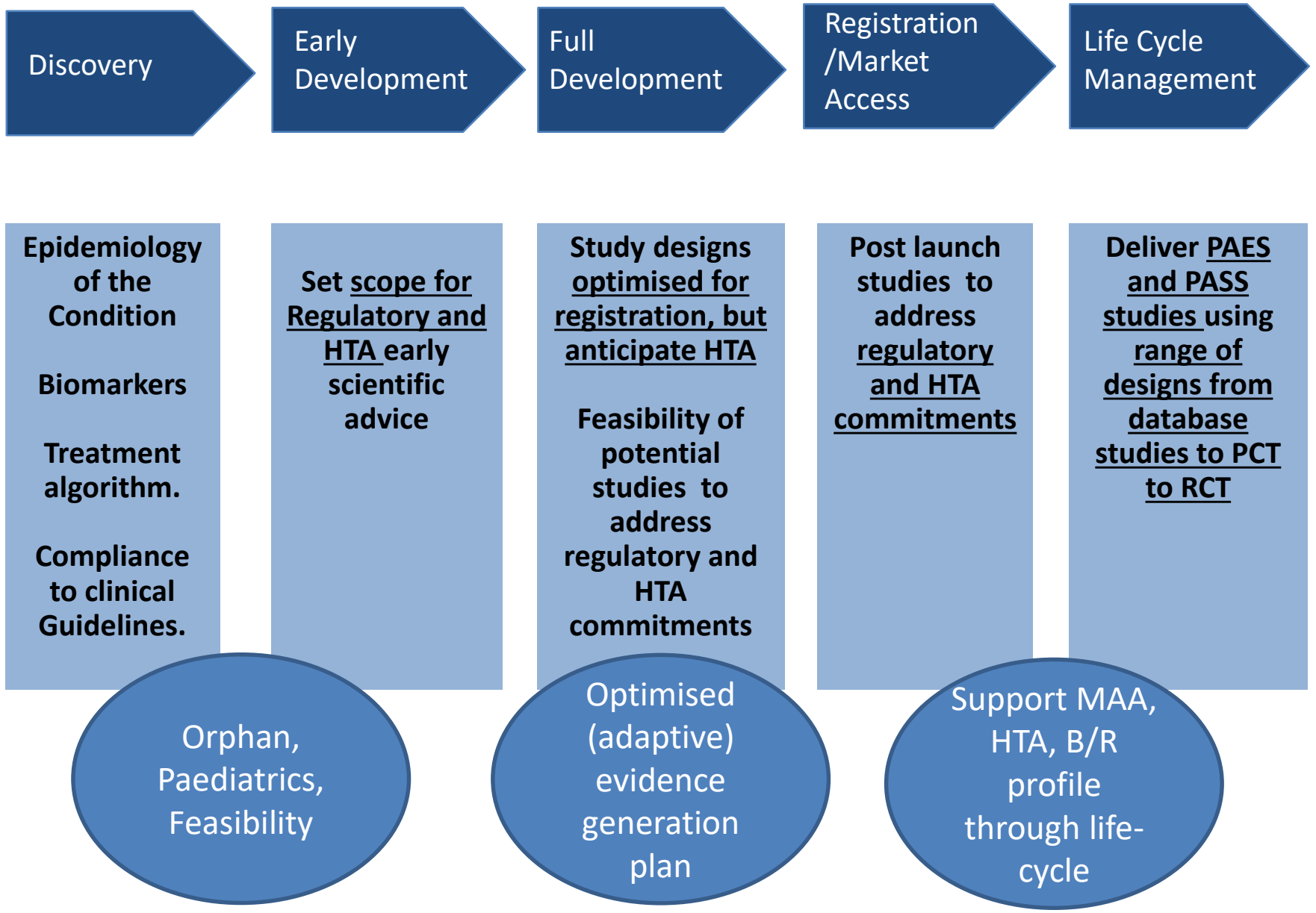
Employ rigorous study designs, right analytical tools and methods

Deliver useful, patient-centric evidence and insights to drive decisions (internal or external)

Framing

- **RWD and RWE are already being used in development programs** to frame the unmet need, support initial approval and to identify and address questions which may need to be answered through post authorisation evidence generation.
- **Initial focus was on safety, but more recently a shift to also explore** utilisation of RWE in **demonstration of efficacy and effectiveness**, raising some methodological questions. RWE can support **patient centricity**
- **Data sources may have different utility** depending on the question being addressed.
- Much of the discussion to date about how to use RWE in development programs has been **high level and somewhat theoretical**. Regulators and Industry **need experience from detailed proposals** to identify where RWE might be utilised in a more predictable way.
- Although there are **many different types of real world data sources** (e.g. registries, electronic healthcare records, pragmatic clinical trials) they are **all part of the same RWE conversation**.

RWD & RWE is relevant throughout the drug development lifecycle



Challenges

Both in terms of tapping into the potential of existing RWD sources and establishing new ones:

Sustainability

Quality Standards

Access

Governance

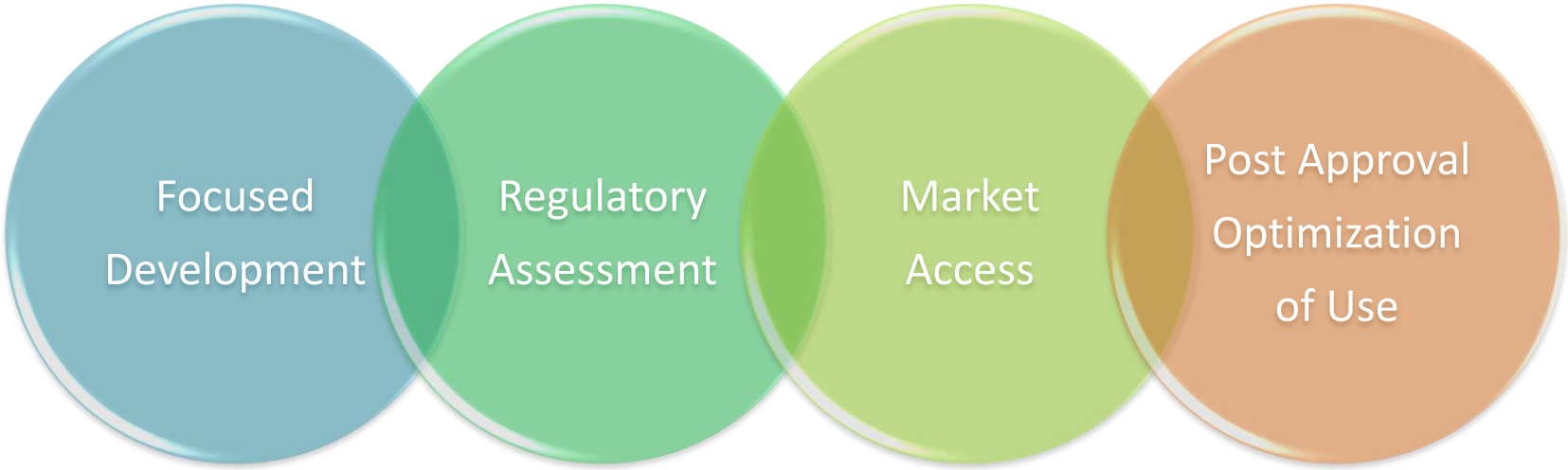
Linkage & Interoperability

Partnership across all stakeholders needed to realise value

Principles

- **Use of RWE must remain optional and proportionate** to the question being addressed and population being studied.
- Science must drive the RWE strategy and **different evidence generation models may be appropriate** for different stakeholder's questions.
- **Quality and analytic standards/recommendations** are needed for generation of valid RWD & RWE.
- However **flexibility, openness and predictability are key** along with **maintaining alignment** with other regulators to leverage experience gained before developing formal guidelines e.g. at ICH.

Where RWE Might be Applicable



- Enables evidence development in settings where Randomized Controlled Trials (RCTs) are impractical to conduct
- Fill important evidentiary gaps that are not addressed in RCTs (real world use, long-term outcomes, multiple co-morbidities, etc.)
- May generate evidence in support of use in specific populations (useful to health technology appraisal bodies and payers)
- May significantly reduce time and cost of evidence generation for some regulatory decisions

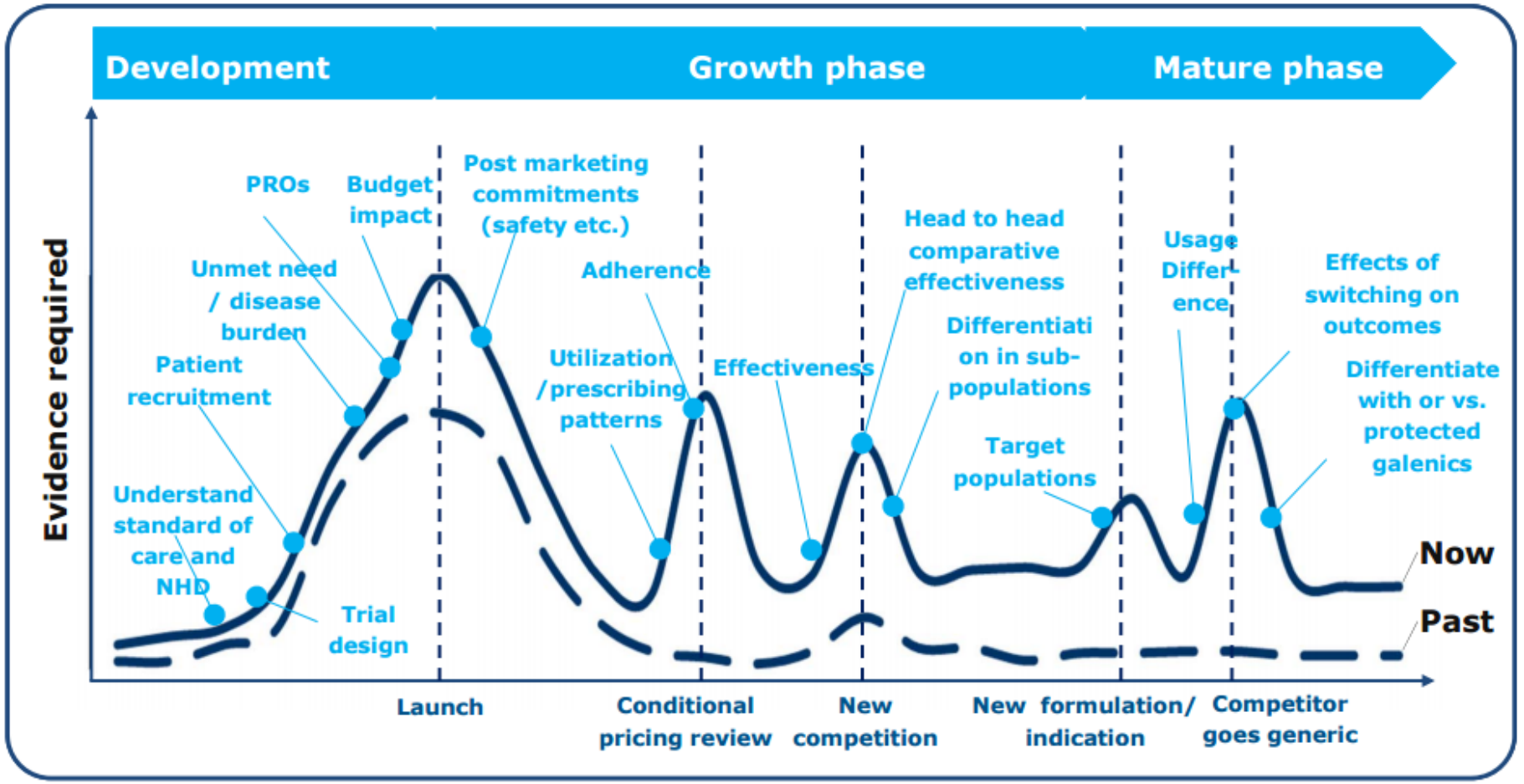
Examples of using RWE (1/2)

- Claims Databases & Electronic Medical Records
  - To establish background occurrence rate of disease; potential to support orphan designation and paediatric development plans.
  - Characterize patient populations, define co-morbidities, establish background rates of events; potential use post-launch for active surveillance.
  - To study pregnancy outcomes.
  - To identify patient hotspot/clusters to help identify RCT site selection.
  - To improve clinical trial protocol design e.g. endpoint planning, Inclusion/exclusion criteria, comparators, rescue meds, potential for DDIs.
  - To examine drug utilization, adherence to approved indications and dosing schedules , sequencing of therapies, dosing selection.
  - To evaluate response rates, duration of response, and survival across different lines of existing therapies to support regulatory filings.

Examples of using RWE(2/2)

- Social Media
  - To understand patient experience to support PRO development.
- Population Health Survey Data
  - To define target patient size based on symptom and diagnosis.
  - To establish symptom burden to inform endpoint & PRO selection.
  - To compare RCT outcomes in control group to real world experience.
  - Use of “Natural Language Processing” to evaluate text response to identify “concepts’ most important to patients (also used with electronic medical records).
- Prescribing Databases
  - To characterize treatment patterns.
  - Link with other data sources (e.g. claims, EMRs) to evaluate outcomes of treatment

Evidence Required Across the Product Lifecycle

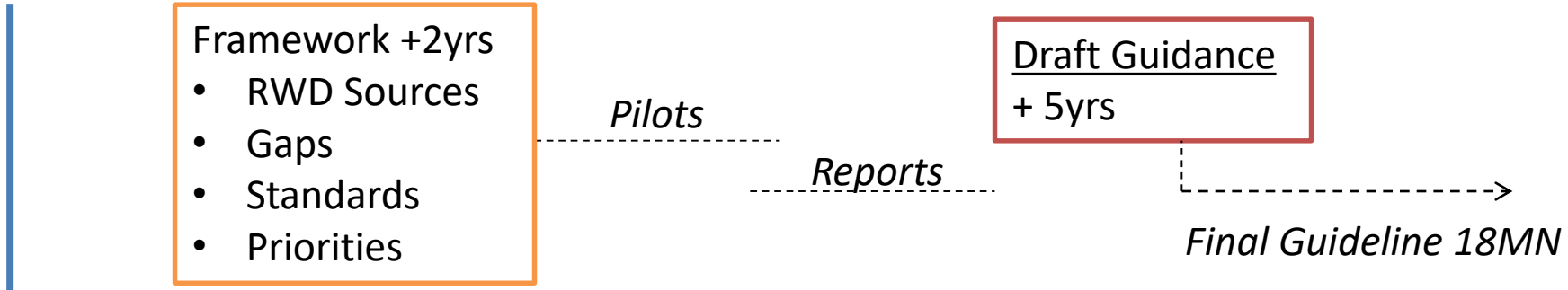


EMA Final report on the adaptive pathways pilot *(28 July 2016)*

"A coherent, prospective plan for real world evidence is designed to collect high-quality data to further refine the benefit/risk profile, the therapeutic value and the price of a medicine"

Legislation and PDUFA VI – developments in the US

Cures Sec. 3022; December 2016



PDUFA VI

PDUFA VI* - *Increased staff capacity (13 FTEs) + $6,000,000*

Definitions

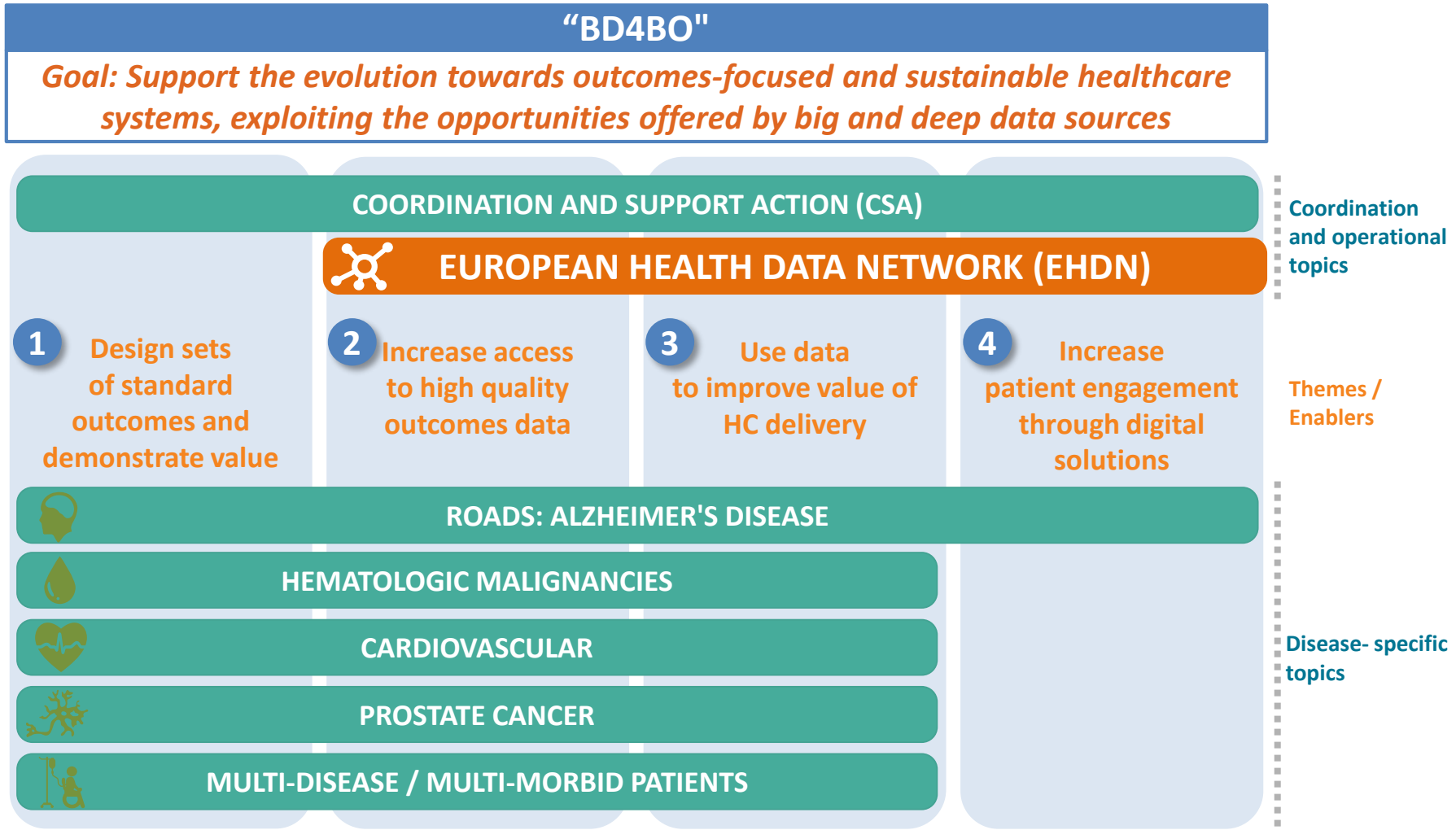
- **Real-World Data (RWD)** are data relating to patient health status and/or the delivery of health care routinely collected from a variety of sources.
- **Real-World Evidence (RWE)** is the clinical evidence regarding the usage and potential benefits or risks of a medical product derived from analysis of RWD.

RWD include data derived from electronic health records (EHRs), claims and billing data, data from product and disease registries, patient-generated data including in home-use settings, and data gathered from other sources that can inform on health status, such as mobile devices.

IMI European Health Data Electronic Network (EHDEN) - AbbVie participating in this project

- **The European Health Data Network is a Distributed Data Network of relevant and high quality health care data sources;**
- **Data sources will be representative for the different disease areas of interest and different healthcare systems (EHR data, hospital data, registries);**
- **The project will build on pre-existing initiatives, tools and processes; including the OMOP model and the ICHOM standard sets**
- **The data network will enable access to health data for a range of purposes, including research, development, evidence-generation across the pharma value-chain, including outcomes-based payment models;**
- **The project will start as an IMI initiative, but could later be transferred to a more sustainable framework**
- **For the long-term success of the European Health Data Network, there needs to be sufficient buy-in from political stakeholders/health authorities, both in Brussels and Member States.**

The data network is part of the IMI2 Big Data for Better Outcomes (BD4BO) programme



Leveraging RWE – Considerations

- We are in a moment of shaping RWE standards, definitions and methodologies
- Issues related to privacy, consent and data quality are key
- Regulatory evidentiary standards must be clear and predictable
- Focus must remain on the most important questions to ensure those who receive treatments are those most likely to respond and to exclude those at high risk of serious adverse events.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