Advancing Biobanking in Europe

–

from community engagement

to cross-country collaborations with Nordic biobanks

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Director General BBMRI-ERIC

History & Mission

Biobanking and Biomolecular Resources Research Infrastructure - European Research Infrastructure Consortium

European Commission Decision 2013

2006: ESFRI Roadmap

2008-2011: BBMRI-Preparatory Phase (FP7 Project)

2011-2013: Interim Phase (establishing legal entity & MS commitment)

2013-ongoing: Implementation & Operation Phase

Mission

Establish, operate, and develop a pan-European distributed research infrastructure of biobanks and biomolecular resources

to facilitate the ACCESS to RESOURCES as well as FACILITIES and to support high-quality biomolecular and medical research.

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Health & Life Science Research Infrastructure:

18 Member States

- Austria
- Belgium
- Bulgaria
- Czech Republic
- Estonia
- Finland
- Germany
- Greece
- Hungary (joined 2021)
- Italy
- Latvia
- Malta
- Netherlands
- Norway
- Poland
- Slovenia (joined 2022)
- Sweden
- United Kingdom

… and growing interest

6 Observers

- Cyprus
- IARC/WHO
- Lithuania
- Spain (joined 2021)
- Switzerland
- Turkey

Comprising

- > 700 biobanks
- & affiliated partners
- 24 National Nodes
- 3 Expert Centres
- 1 Headquarter

Distinct Biobank Types

Healthcare integrated

Population based

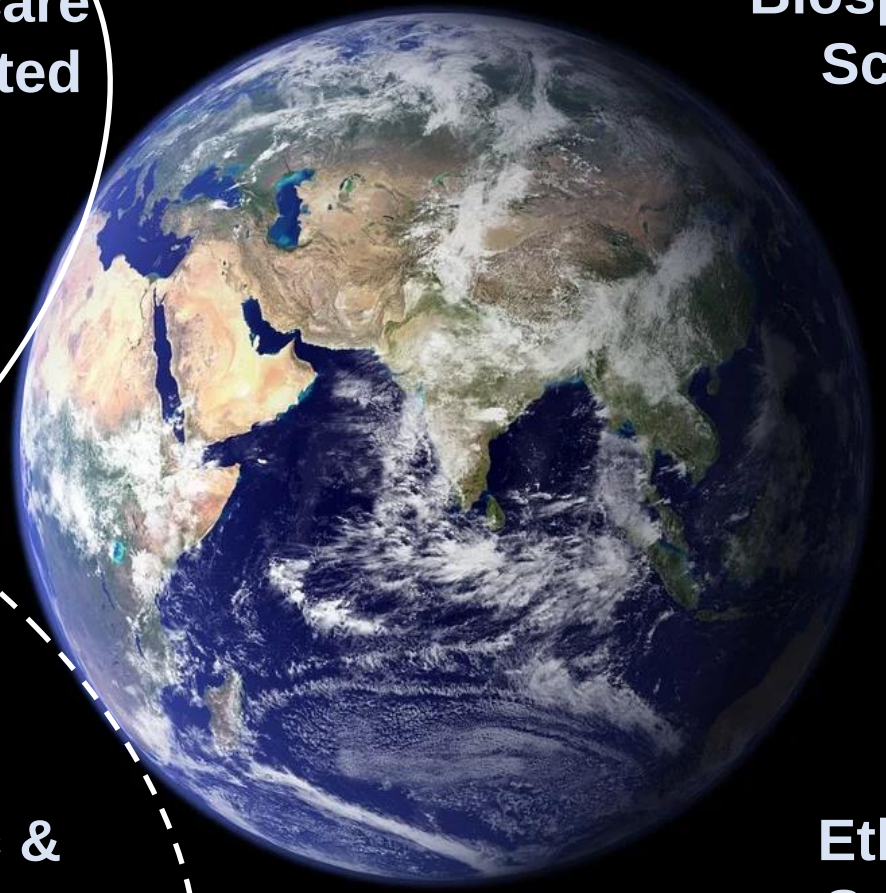
Human Biomonitoring

Environment

Plant Biodiversity

Domestic & Wildlife

Museum



Various Requirements

Biospecimen Science

Quality Management

Cryobiology & -technology

IT Infrastructure

Ethical, Legal & Societal Issues

Equipment

QM-Certified!

Healthcare integrated central Biobanks ≈ „Data Integration Centers“

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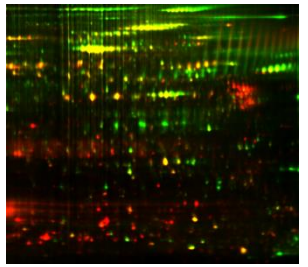
Clinical Care

Translational Research



Patient Recruitment
Selection according to colorectal malignancies /Informed Consent

Sample Collection
Blood/fresh frozen Tissue/ formalin-fixed Tissue/Imprints

Sample Processing
Serum/DNA-, RNA-, miRNA-, Protein-extraction/ Paraffin-embedding

Sample Storage
Freezer & N_2-Tank location
Storage location

Biobank Information System (BIMS)

Biomaterial Request
internal/external
Sample/Data Search

Clinical Trials

Molecular Tumor Board

Patient Empowerment & Citizen Engagement

Systems-Medicine
- Sample data
- Clinical data
- Follow-up data
- Research data

BBMRI enabling personalized medicine through:

BBMRI-ERIC®

Biobanking Development

- Biobanks & Universities
- National Nodes
- Expert Centres
- Sustainability

ELSI Services & Research

- Knowledge Base
- Helpdesk Network
- Ethics Check
- Training
- Code of Conduct for Health Research

IT Services & Research

- Discovery of biobanking resources
- Access to samples and data
- Data deposition, pooling, analyses
- Interoperability
- Data protection and access control
- Quality controlling & reusability
- Training & Support

Outreach, Education & Communication

Public Affairs & Stakeholder Engagement

- Member States & Strategic Partners
- EU & Global Affairs
- Patients & Public
- Scientific Societies
- Industry Collaborations

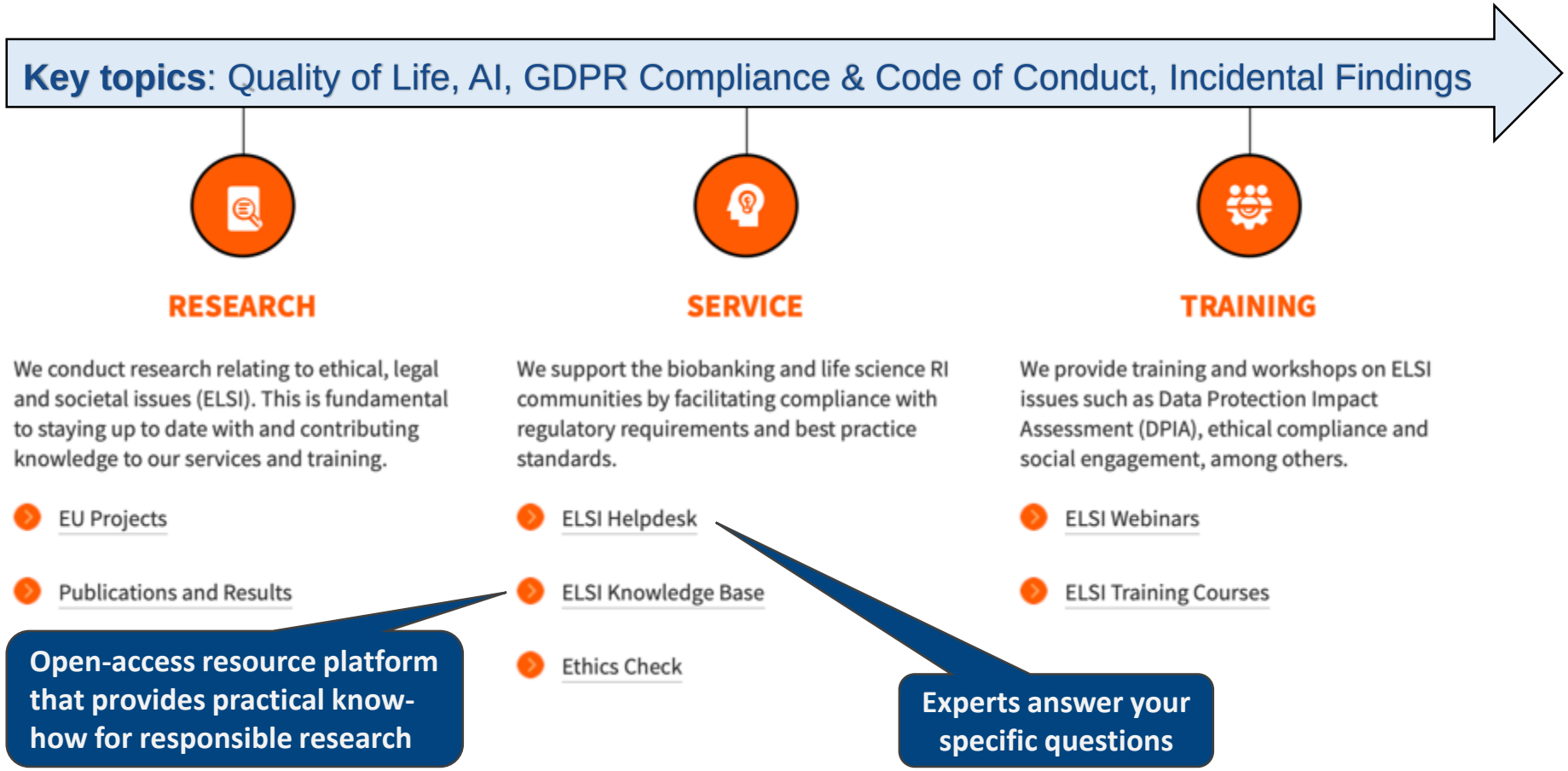
Quality Management Services & Research

- Knowledge Hub
- Training & Support
- Auditing
- Quality Assurance

bbmri-eric.eu

ELSI SERVICES & RESEARCH

We support the research community by facilitating knowledge exchange, compliance with regulatory requirements, promoting best practices and ensuring guidance on ethical, legal and societal (ELSI) issues. www.bbmri-eric.eu/elsi



Advancing & Implementing *Personalized Medicine*

BBMRI-ERIC®

Cancer

Rare & Pediatric Diseases

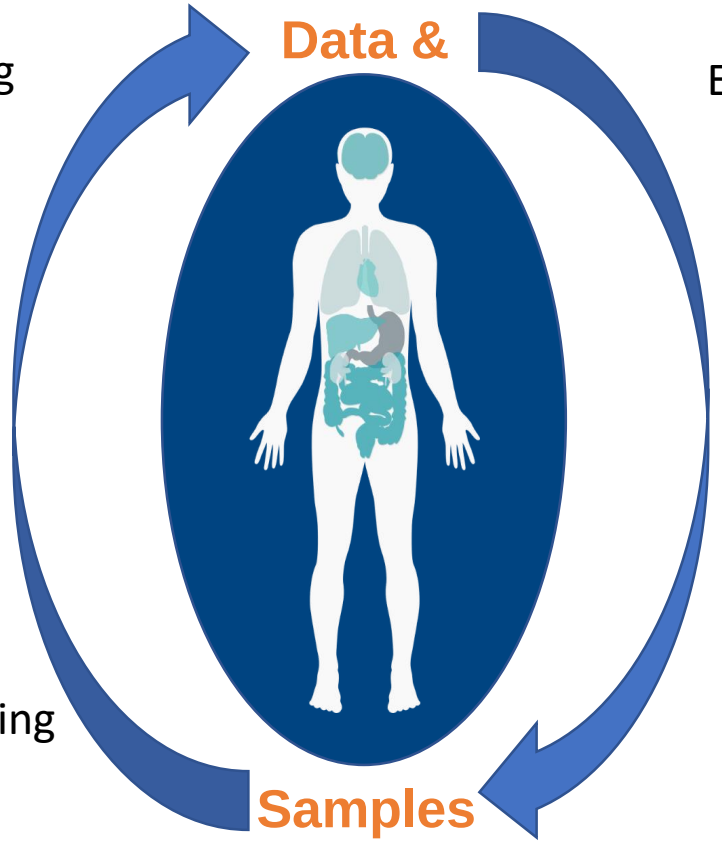
Screening

Prevention

Education

Surveillance

Therapy Monitoring



Early detection

(Molecular) Diagnostics

(Minimal invasive) Treatment

Systems Medicine & AI

Therapy Prediction

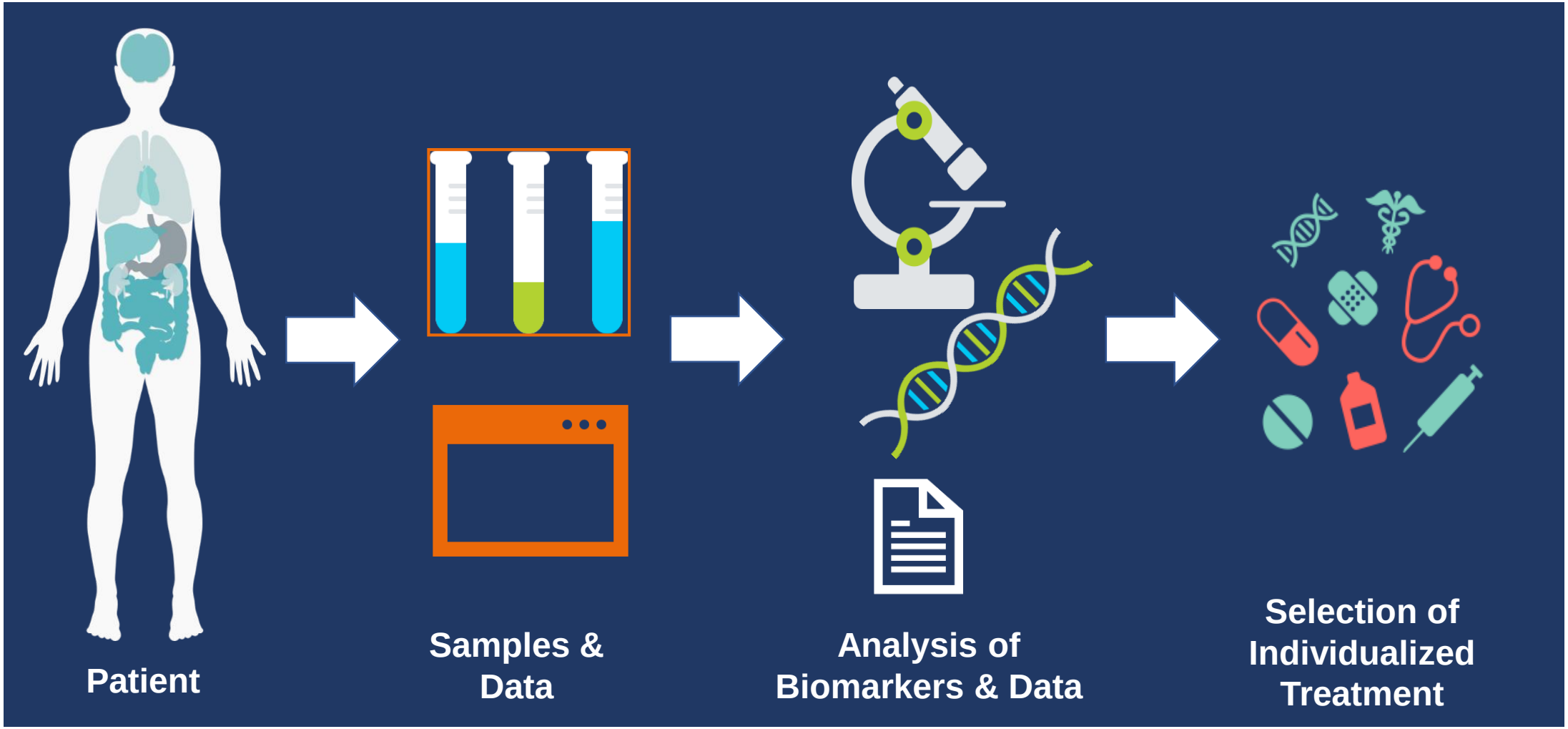
Prognosis

any other Diseases

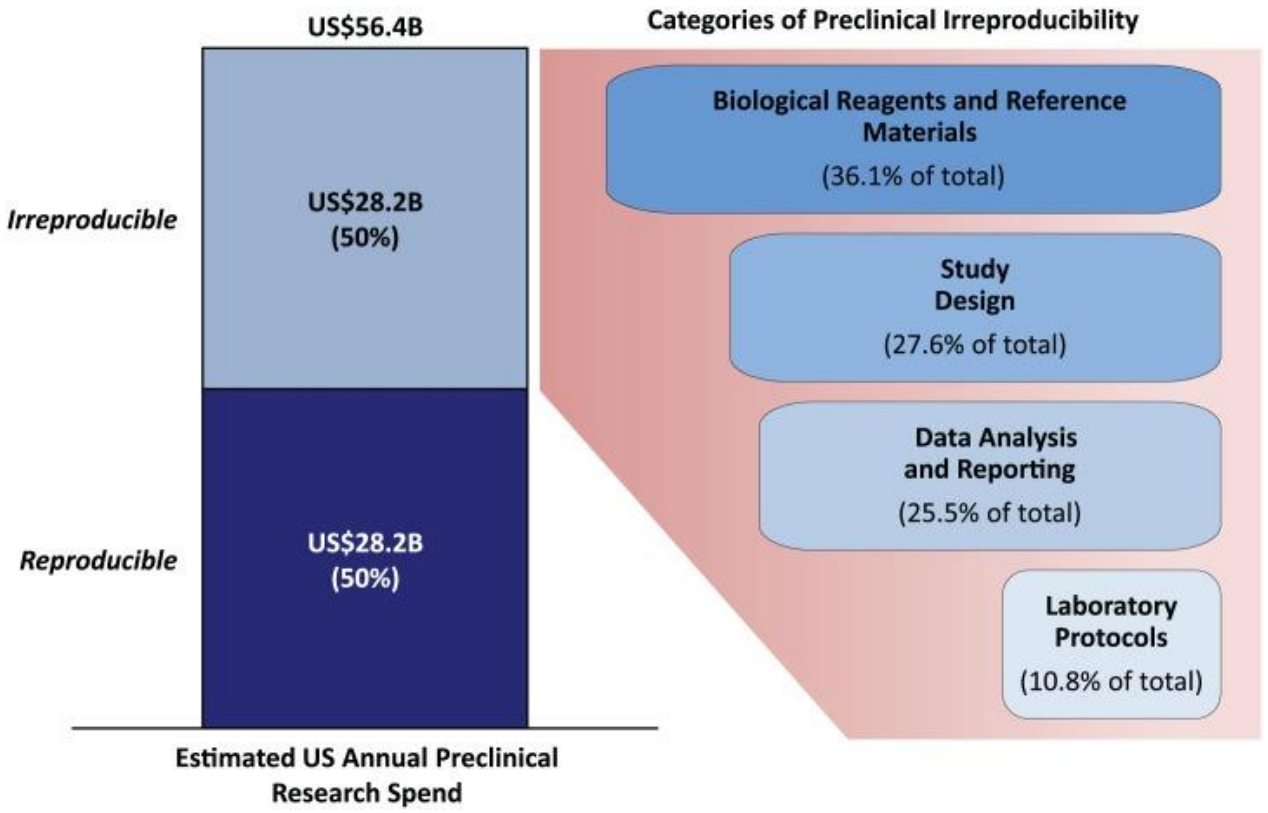
COVID-19 & Infectious Diseases

Advancing & Implementing *Personalized Medicine*

BBMRI-ERIC®



Pre-analytic impact on research & healthcare



Pre-analytical phase accounts for 46 – 68% of clinical laboratory errors

Medical Laboratory Observer, May 2014

Irreproducible preclinical research exceeds 50%, US 28B / year spent on preclinical research that is not reproducible – in the US

Freedman LP, Cockburn IM, Simcoe TS (2015) PLoS Biol 13(6)

bbmri-eric.eu/services/quality-management

#BBMRI_QM
@BBMRIERIC

BBMRI-ERIC QUALITY MANAGEMENT SERVICES FOR BASIC AND APPLIED RESEARCH

CME accredited BBMRI Academy courses

CONTRIBUTE international standard developments

PROJECT partner providing QM Services

OUTREACH
900 participants
56 countries

KNOWLEDGE HUB

Find everything you need to know about quality management in biobanking and biomedical research in one place: The BBMRI.QM Knowledge Hub consists of a pool of experts that can help you with any of the following:

- BBMRI-ERIC liaisons with international standardization organizations
- International standards relevant for biobanking and biomedical research
- Quality management tasks in EU projects
- Biobanking in times of COVID-19 **Recordings available!**

TRAINING & SUPPORT

Whether you are looking for training opportunities or practical support with your quality management – quality experts can provide you with a solution tailored to your needs.

Within the BBMRI.QM network, we offer in-house and online training, university courses, summer schools, short courses, workshops, and consulting services covering different quality management systems:

BBMRI.QM Training & Education Programmes:

- Training series about molecular in vitro diagnostic examinations – specifications for pre-examination processes **NEW**
- Training series about the biobanking standard ISO 20387:2018 **Recordings available!**

AUDITING

If you run a non-certified biobank and/or you want to know if the samples stored fulfill certain quality requirements, get the support of BBMRI.QM. We offer peer-review-style audits on request. Take the next QM improvement step together with us!

Step 1: Assess your processes with the BBMRI-ERIC Self-Assessment Survey (BBMRI-ERIC SAS).

- What is the BBMRI-ERIC SAS?
- Short explanation about access principles to the BBMRI-ERIC SAS
- Request the BBMRI-ERIC SAS

Step 2: Request a BBMRI-ERIC audit

- BBMRI-ERIC Audit

Step 3: A positive audit will lead to a quality mark in the Directory

- Q-mark in the BBMRI-ERIC Directory

QUALITY ASSURANCE

Task Force to define and provide biomarkers (intrinsic/extrinsic) that allow for standardized assessment of sample quality with a focus on liquid biopsies) through biospecimen research.

RESEARCH
Biospecimen
Biomarker
Sample quality

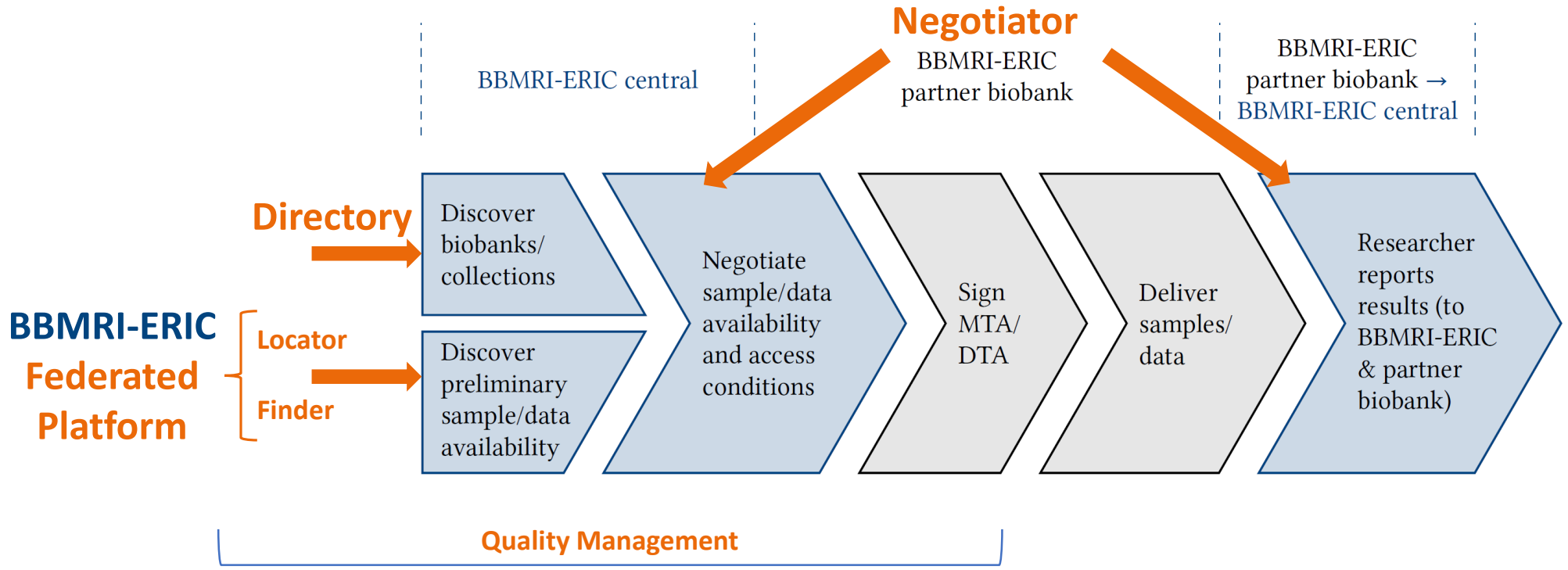
QUALITY ASSESSMENT
Q-mark for biobanks and collections

BBMRI-ERIC ACCESS PIPELINE

BBMRI-ERIC Directory

- **> 700** biobanks
- *Estimated* >100,000,000 samples and associated data

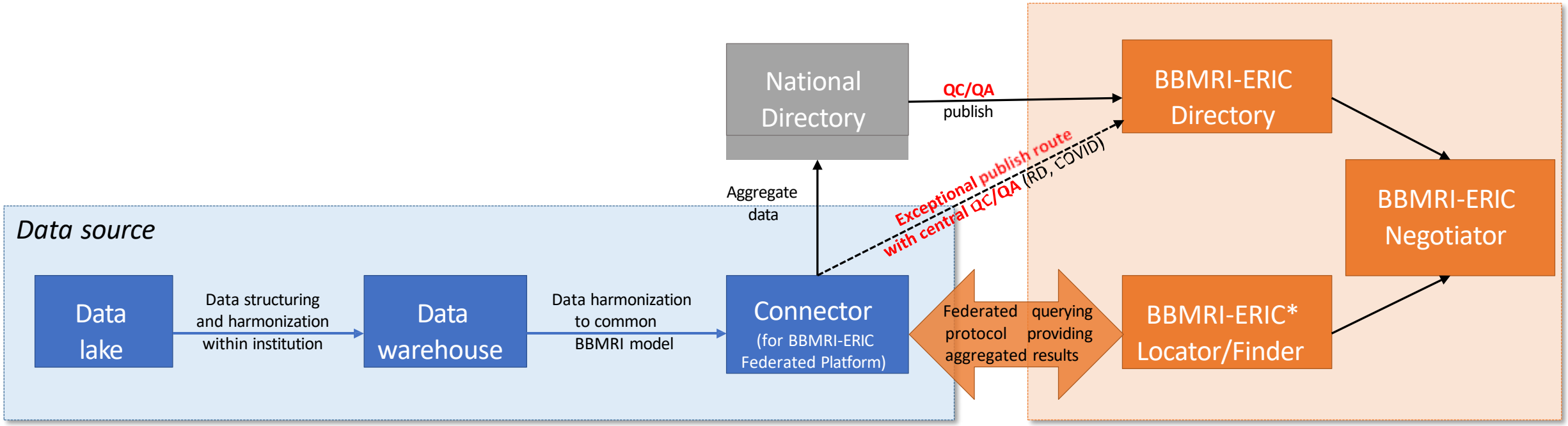
Directory is open for any biobank to visualize COVID or Rare Disease samples & data for use!



BBMRI-ERIC ACCESS PIPELINE

BBMRI-ERIC IT Ecosystem

- Allows privacy-preserving querying (and analysing) of individual [pseudonymized] data to build virtual cohorts of patients/donors in a federated fashion

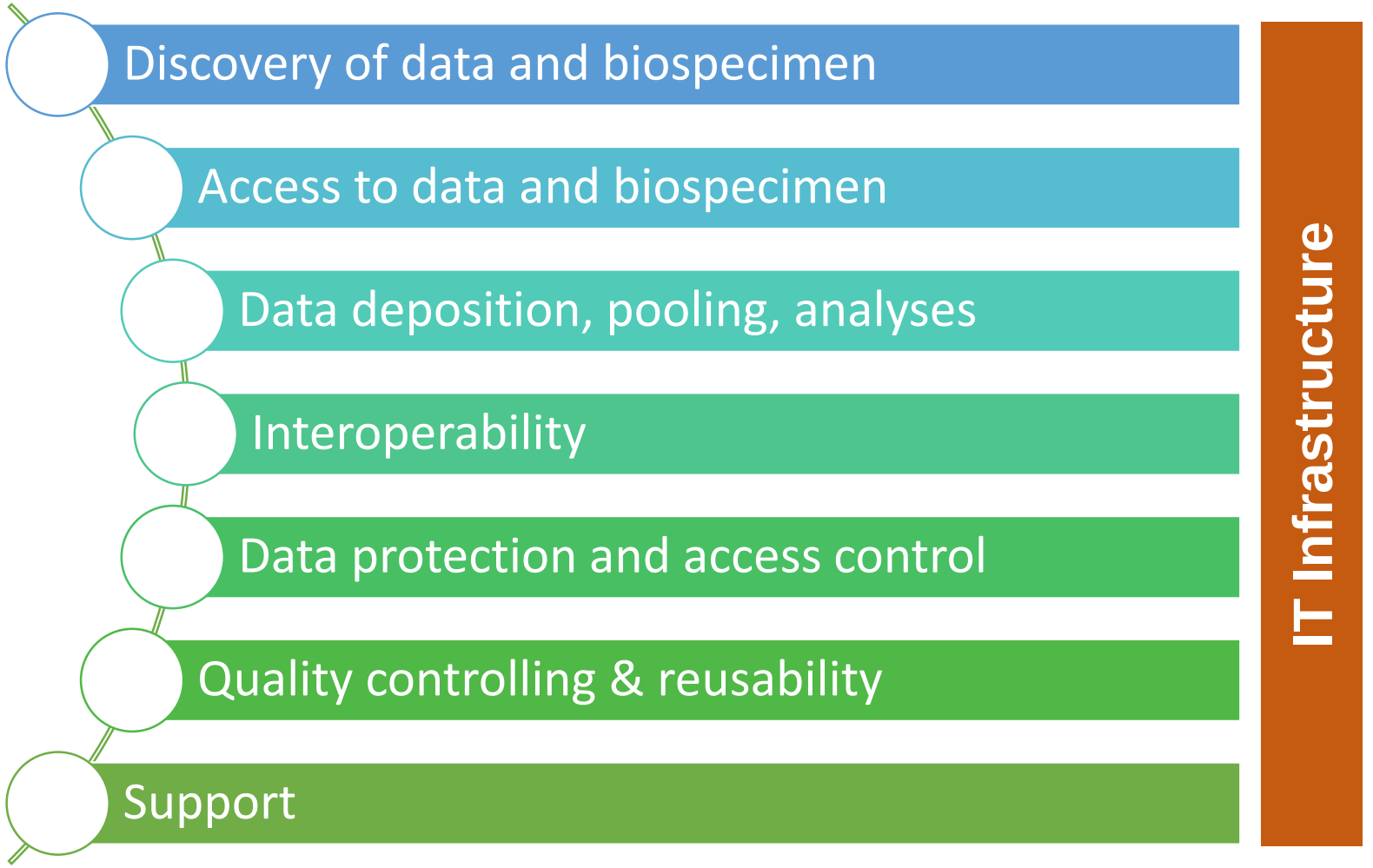


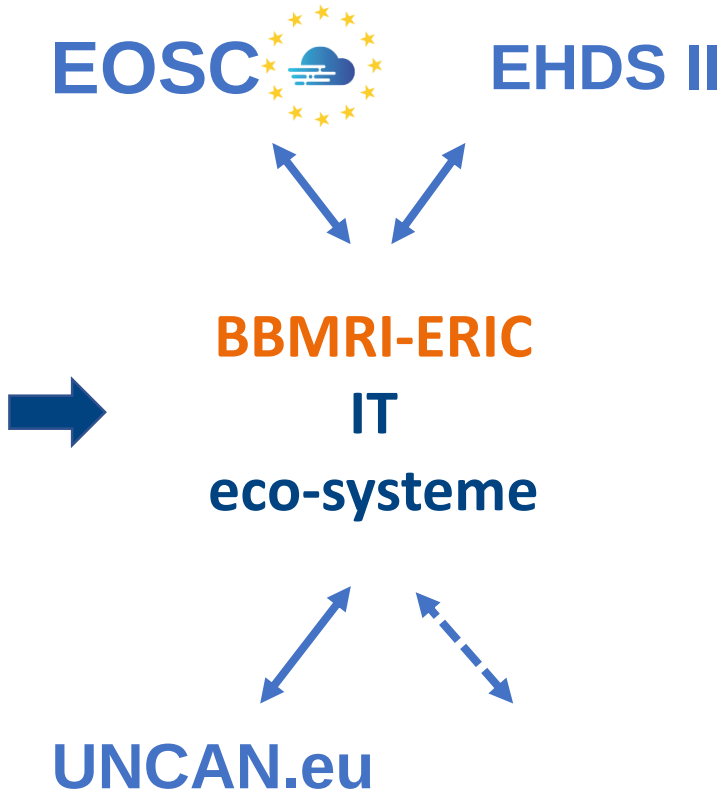
* Locator/Finder can have also national Instance relaying to central BBMRI-ERIC

ACCESS PROCEDURE

- BBMRI-ERIC **Directory**: https://directory.bbmri-eric.eu/
  - **COVID-19** cohorts
  - **Cancer** cohorts
  - **Rare Disease** cohorts
  - **Pediatrics** cohorts
  - other disease cohorts
- BBMRI-ERIC/GBA **Locator**: https://samplelocator.bbmri.de/
- BBMRI-ERIC **Negotiator**: https://negotiator.bbmri-eric.eu/
  - or directly via Directory and Locator services
- BBMRI-ERIC **Helpdesk**: negotiator@helpdesk.bbmri-eric.eu

IT SERVICES & RESEARCH





EU RESEARCH INFRASTRUCTURE LANDSCAPE

LIFE SCIENCE RI
European Life Science Research Infrastructures

- providing access to world-class facilities, samples, instruments, services and data
- Currently comprising 13 European LS RIs including BBMRI-ERIC

ERIC FORUM

- The Forum currently comprises all 24 ERICs
- BBMRI-ERIC is project coordinator & runs the ERIC Forum secretariat
- Creation of a strong RI ecosystem

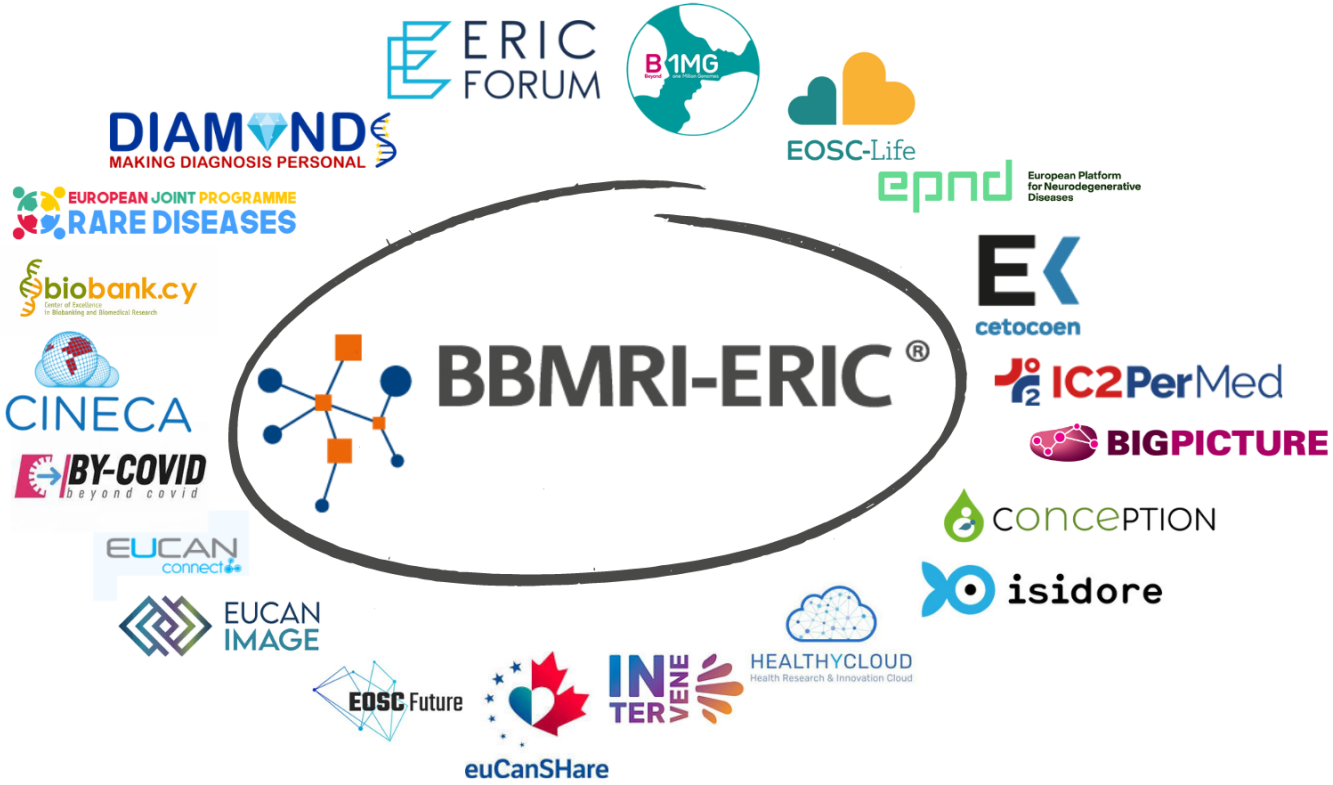
EU-AMRI

BBMRI-ERIC
eatris
ecrin

47 EU-FUNDED PROJECTS with our PARTNERS

Project management & engagement

- 20 completed projects
- 23 active projects
- 2 project coordination
  - ERIC Forum
  - CanSERV
- 4 projects in preparation



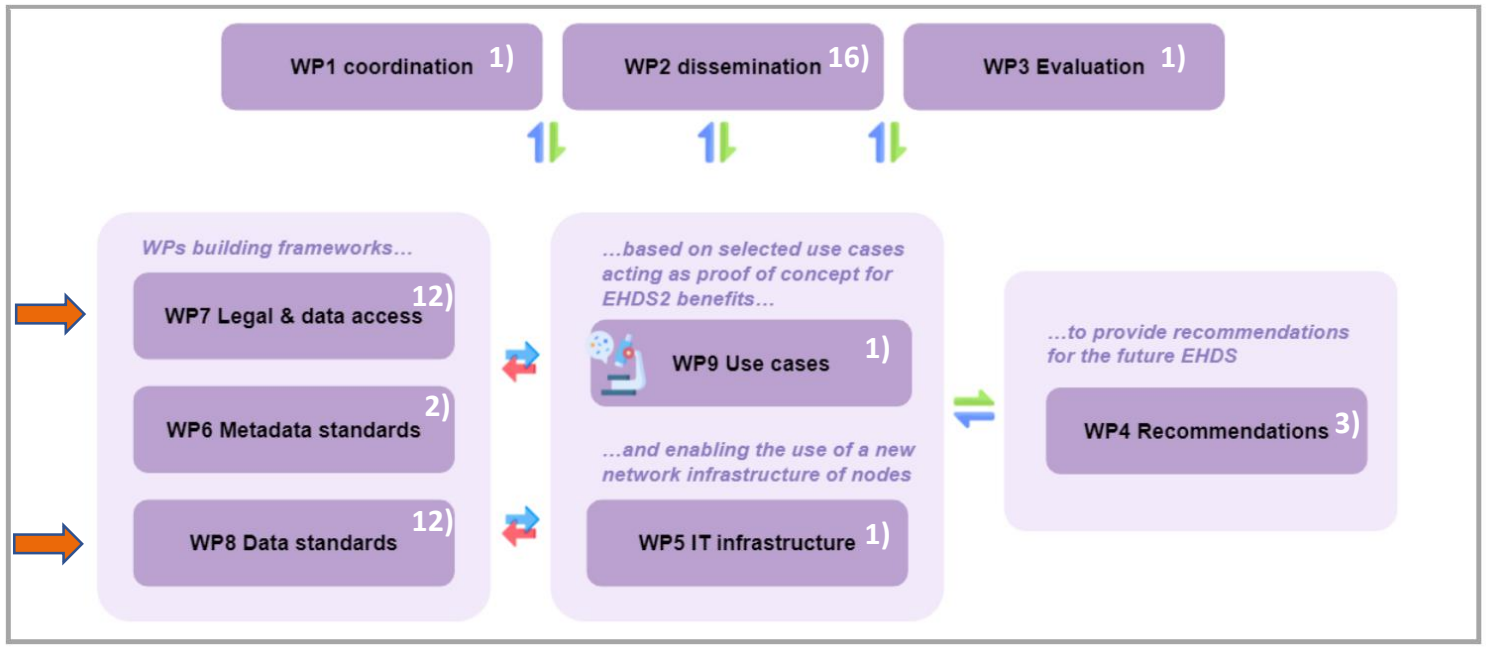
EU PROPOSAL

Grant Agreement stage

EHDS2: Pilot for a European Health Data Space on secondary use of health data (Lead: French Health Data Hub)

Consortium

1) Health Data Hub France (HDH)*
2) Sciensano Belgium*
3) Danish Health Data Authority (DHDA)*
4) Findata / THL / VTT
5) Health Data Lab, BfArM, Germany
6) Norwegian Directorate of eHealth
7) Nationale Directorate General for Hospitals Hungary (OKFÖ)
8) Croatian Institute of Public Health (CIPH)
9) Aragon Health Sciences Institute (IACS)
10) European Centre for Disease Prevention and Control (ECDC)
11) European Medicines Agency (EMA)
12) BBMRI-ERIC*
13) eBRAINS
14) ELIXIR
15) Orphanet-INSERM US-14
16) European Public Health Association (EUPHA)*



* Work Package Leads

canSERV

Providing cutting edge cancer research services across Europe

- BBMRI coordinated consortium with 13x RIs, 2x SMEs plus IARC, ECPC, EORTC & CCE
- BBMRI community & BBMRI Expert Centres involved in all 12 Work Packages

- **BBMRI Community:**

  - TNA (*Trans National Access*) service providing sites as new funding opportunity

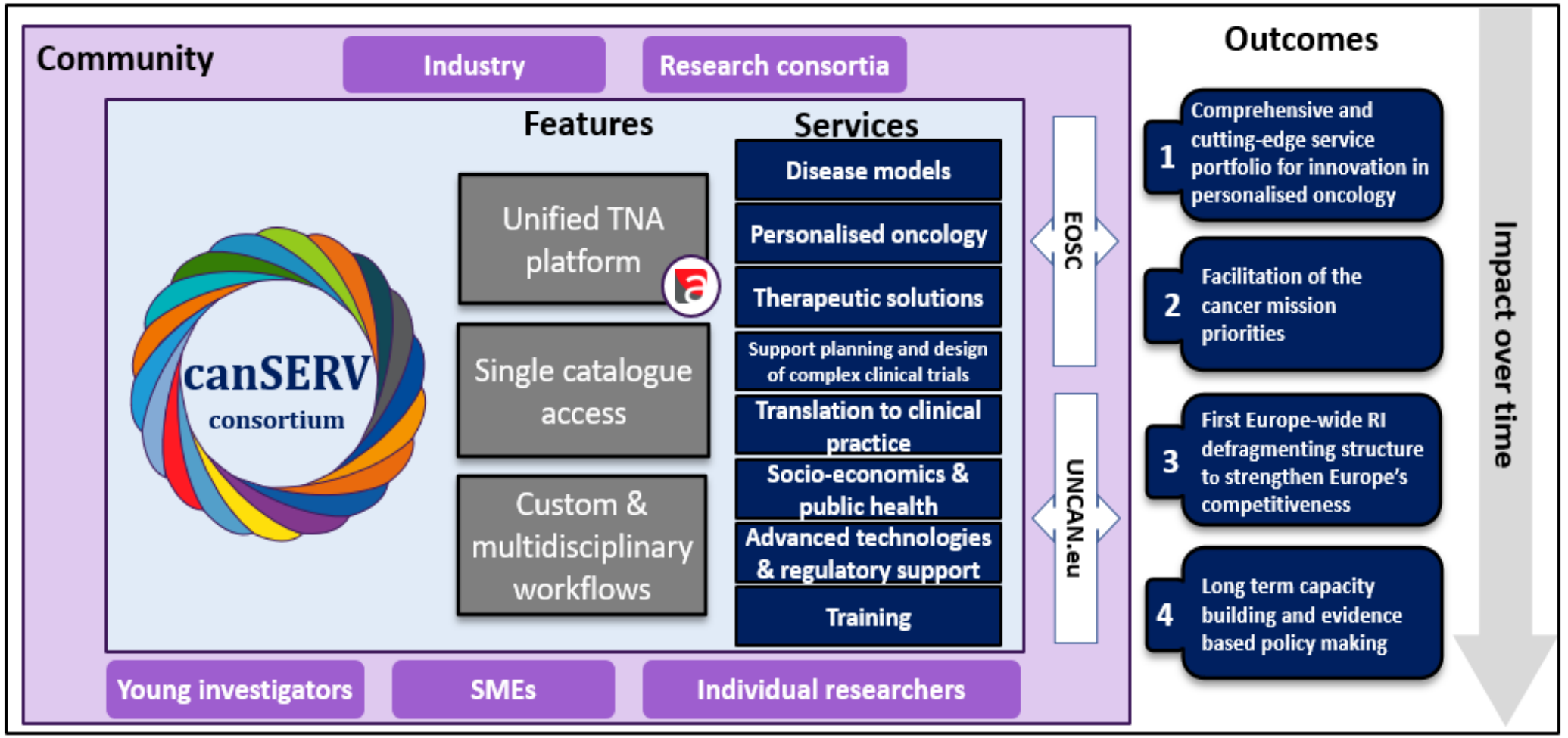
  > challanges & opportunities

  > Community Engagement!

  - new TNA services likely to be onboarded

  - Consortium to continue beyond project duration!

canSERV



- ~ 15 Mio. € grant; 60% for TransNational Access (TNA) service provision
- Kick-off in Brussels September 15th/16th

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Community Engagement

BBMRI Task Forces, Expert & Working Groups

Nominations by NN / Experts only

- ELSI Expert Groups on
  - Helpdesk Network
  - Research Ethics Committees
  - Code of Conduct
  - Ethics of AI
- WG Quality Management

Open for community registration

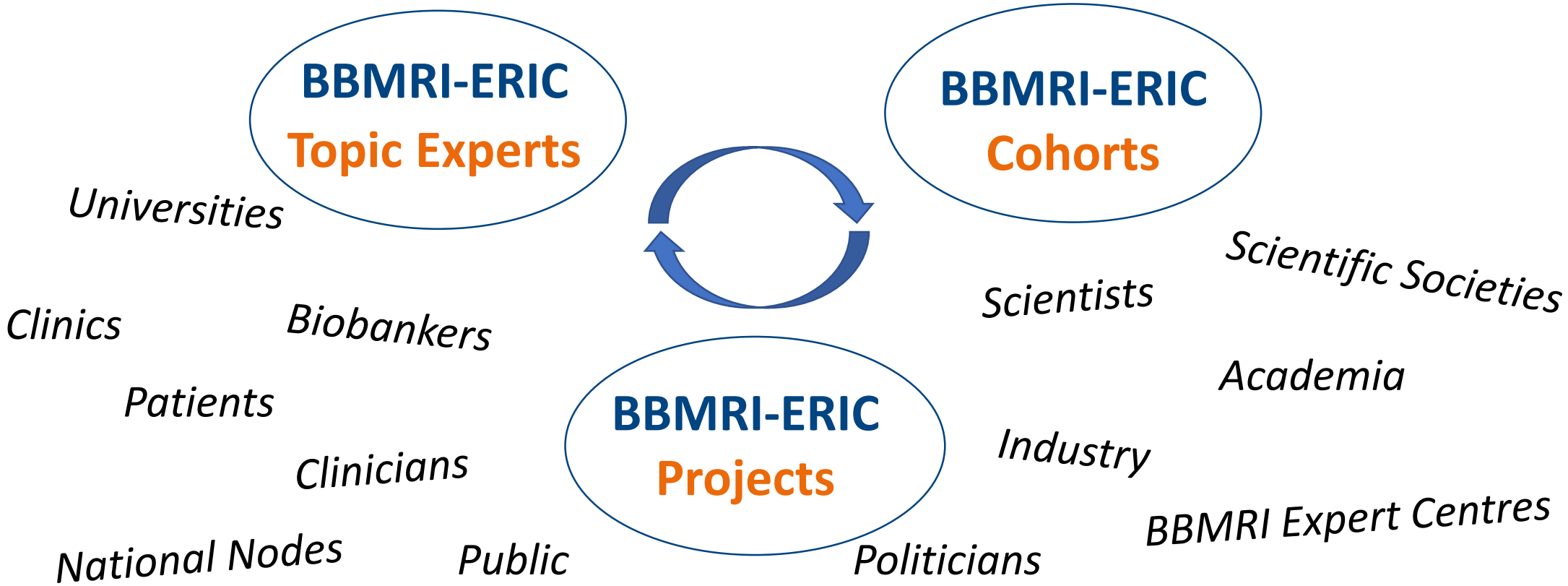
- IT TF: Federated Search & Analysis Platform
- IT TF: Biobank Data Quality & Certification
- IT TF: Expedited Access Procedure for Samples & Data
- IT TF: Data Pooling
- IT TF: Big Data Analysis
- TF: NNs/Biobanks Operations & Sustainability
- TF: Success Stories
- TF: Communications & Outreach
- TF: Quality Assurance

https://forms.office.com/r/n3UDFQAGaB

BBMRI-ERIC

Community Engagement

Prospects



EBW22 ROADSHOW

REGISTER AT WWW.ESBB.ORG/PAGE/EVENT_LISTING

Regensburg, 19-20 September 2022

Quality Stage of #EBW22

Rome, 13-14 October 2022

Paediatric Stage of #EBW22

EUROPE BIOBANK WEEK 2023

SAVE THE DATE

#EBW23 - 25-28 APRIL 2023

Bologna, Italy

in partnership with ESBB

BBMRI-ERIC®

THANK YOU!

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