
HORIZON EUROPE

Investing to shape our future

The Rare Disease Research landscape - The place of European Reference Networks

22 October 2021, meeting of ERN Hospital Managers

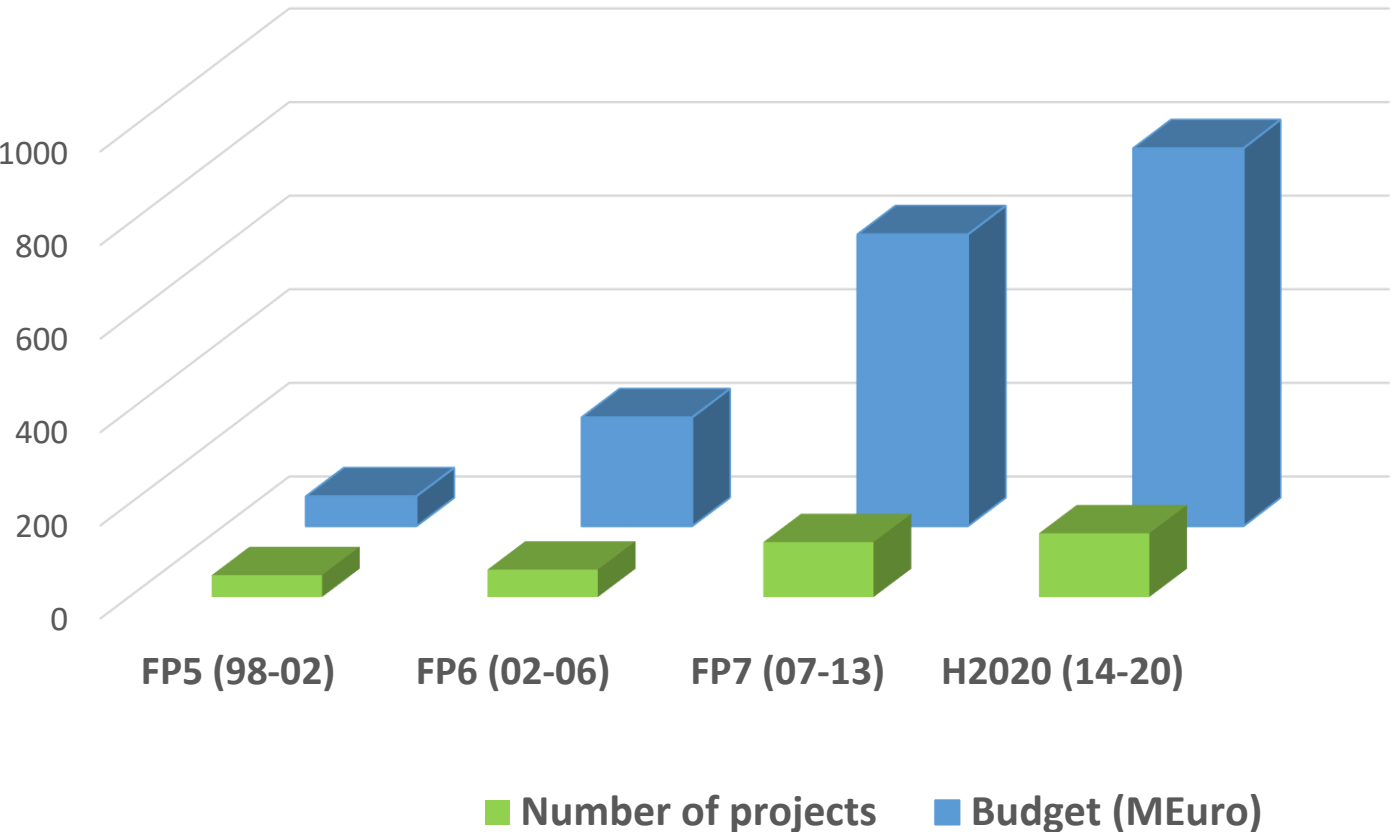


Hélène Le Borgne, Policy officer, Rare Disease Research Team,
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Research and European Reference Networks

- [Directive 2011/24/EU on patients' rights in cross-border healthcare](#)
- CHAPTER IV: COOPERATION IN HEALTHCARE
- Article 12: European reference networks
- 2. European reference networks shall have at least three of the following **objectives**:
 - a) to help realise the potential of European cooperation regarding highly specialised healthcare for patients and for healthcare systems **by exploiting innovations in medical science and health technologies**;
 - b) to contribute to the **pooling of knowledge regarding sickness prevention**;
 - c) to facilitate **improvements in diagnosis** and the delivery of high-quality, accessible and cost-effective healthcare for all patients with a medical condition requiring a particular concentration of expertise in medical domains where expertise is rare;
 - d) to maximise the cost-effective use of resources by concentrating them where appropriate;
 - e) to reinforce research, epidemiological surveillance like registries and provide training for health professionals**;
 - f) to **facilitate mobility of expertise**, virtually or physically, and to **develop, share and spread information, knowledge and best practice** and to **foster developments of the diagnosis and treatment of rare diseases**, within and outside the networks;
 - g) to encourage the **development of quality and safety benchmarks** and to help develop and **spread best practice** within and outside the network;
 - h) to help Member States with an insufficient number of patients with a particular medical condition or lacking technology or expertise to provide highly specialised services of high quality.

EU support* for collaborative R&I on rare diseases



* From EU Research & Innovation funding programmes



IRDiRC

INTERNATIONAL
RARE DISEASES RESEARCH
CONSORTIUM



**"To stimulate, coordinate &
maximise output
of rare disease research
efforts around the world"**

~60 international partners from 5
continents: public funders, private
companies, foundations and patient
organisations

2011 - 2021

History of support to the alignment/coordination of research funding on rare disease (FP6, FP7, H2020)

Build on lessons learnt from: ERA-NET on rare diseases + EJP RD

An important number of EU-funded ‘standalone’ collaborative projects: Calls on new therapies for rare diseases, diagnostics, innovative therapies etc. see factsheet recently published:

<https://op.europa.eu/en/publication-detail/-/publication/2ab5235e-7fbe-11eb-9ac9-01aa75ed71a1/language-en/format-PDF/source-193764078>

ERA_NET	Timeframe	EU funding	Partners	Countries	Joint calls	Funded projects
E-Rare-1 (FP6)	5/2006 – 5/2010	2,19 M€ (2,19)	10	8	2	29
E-Rare-2 (FP7)	10/2010 – 11/2014	2 M€ (/2,9)	17	13	4	49
E-Rare-3 (H2020)	12/2015 – 11/2020	5,9 M€ (/23)	27	17	4	41
EJP RD (H2020)	1/2019 – 12/2023	55 M€ (/101) but not only JTCs)	87 (+ 42 LTPs)	35	4/5 foreseen	

EUROPEAN JOINT PROGRAMME ON RARE DISEASES (EJP RD, 2019-2023)

- EJP RD launched 1st January 2019, 5 years duration, budget > €100 million, €55 million of EU contribution
- Research and innovation pipeline for rapid translation of research results into clinical applications and uptake in healthcare for the benefit of patients
- Research funders, universities, research institutes, research infrastructures, hospitals from ERNs and patient organisations from 35 countries (including 27 EU Member States, 7 Associated Countries and Canada)
- Joint Transnational Calls for rare diseases research projects: JTC 2019, JTC 2020, JTC 2021 launched
- Virtual platform for rare diseases research data, information and tools
- Capacity building, training, facilitation of partnerships, validation of new methods for clinical trials



**EU contribution
55M EUR for
2019-2023**



www.ejprarediseases.org



European
Commission

European Reference Networks (ERNs) in EJP RD

- A large consortium (140 entities)
 - National (research) funding agencies (joint transnational calls)
 - Beneficiaries of “in-house” activities: (data infrastructures, training, patients’ empowerment, clinical trial support etc.) → ERN members, EURORDIS, Research infrastructures etc.

ERNs are represented in EJP RD often by their coordinator and/or research lead

For example (non exhaustive list!):

MS	Legal entity in EJP RD
AT	ST ANNA KINDERKREBSFORSCHUNG VEREIN PARACELSUS MEDIZINISCHE PRIVATUNIVERSITAT SALZBURG - PRIVATSTIFTUNG
BE	KATHOLIEKE UNIVERSITEIT LEUVEN
<u>DE</u>	UNIVERSITAETSKLINIKUM AACHEN CHARITE - UNIVERSITAETSMEDIZIN BERLIN UNIVERSITAETSKLINIKUM FREIBURG UNIVERSITATSKLINIKUM HEIDELBERG EBERHARD KARLS UNIVERSITAET TUEBINGEN J. W. GOETHE-UNIVERSITAET FRANKFURT AM MAIN HELIOS DR. HORST SCHMIDT KLINIKEN WIESBADEN GMBH UNIVERSITAETSKLINIKUM HAMBURG-EPPENDORF RUHR-UNIVERSITAET BOCHUM

MS	Legal entity in EJP RD
EL	GENIKI GRAMMATIA EREVNAS KAI KAINOTOMIAS
<u>FR</u>	ASSISTANCE PUBLIQUE HOPITAUX DE PARIS HOPITAUX UNIVERSITAIRES DE STRASBOURG CENTRE DE LUTTE CONTRE LE CANCER L. BERARD HOSPICES CIVILS DE LYON
LT	VIESOJI ISTAIGA VILNIAUS UNIVERSITETO LIGONINE SANTAROS KLINIKOS
<u>NL</u>	ACADEMISCH ZIEKENHUIS GRONINGEN UNIVERSITEIT MAASTRICHT ACADEMISCH ZIEKENHUIS LEIDEN STICHTING RADBOUD UNIVERSITEIT ACADEMISCH MEDISCH CENTRUM BIJ UNIV. VAN AMSTERDAM ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM UNIVERSITAIR MEDISCH CENTRUM UTRECHT

ERN members in EJP RD

- ERN representatives mainly from the main University-Hospitals coordinating the ERNs,
- not necessarily from EU13 countries (which joined the EU in 2004: Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia)
- BUT still a few entities from LT, PL, SK.

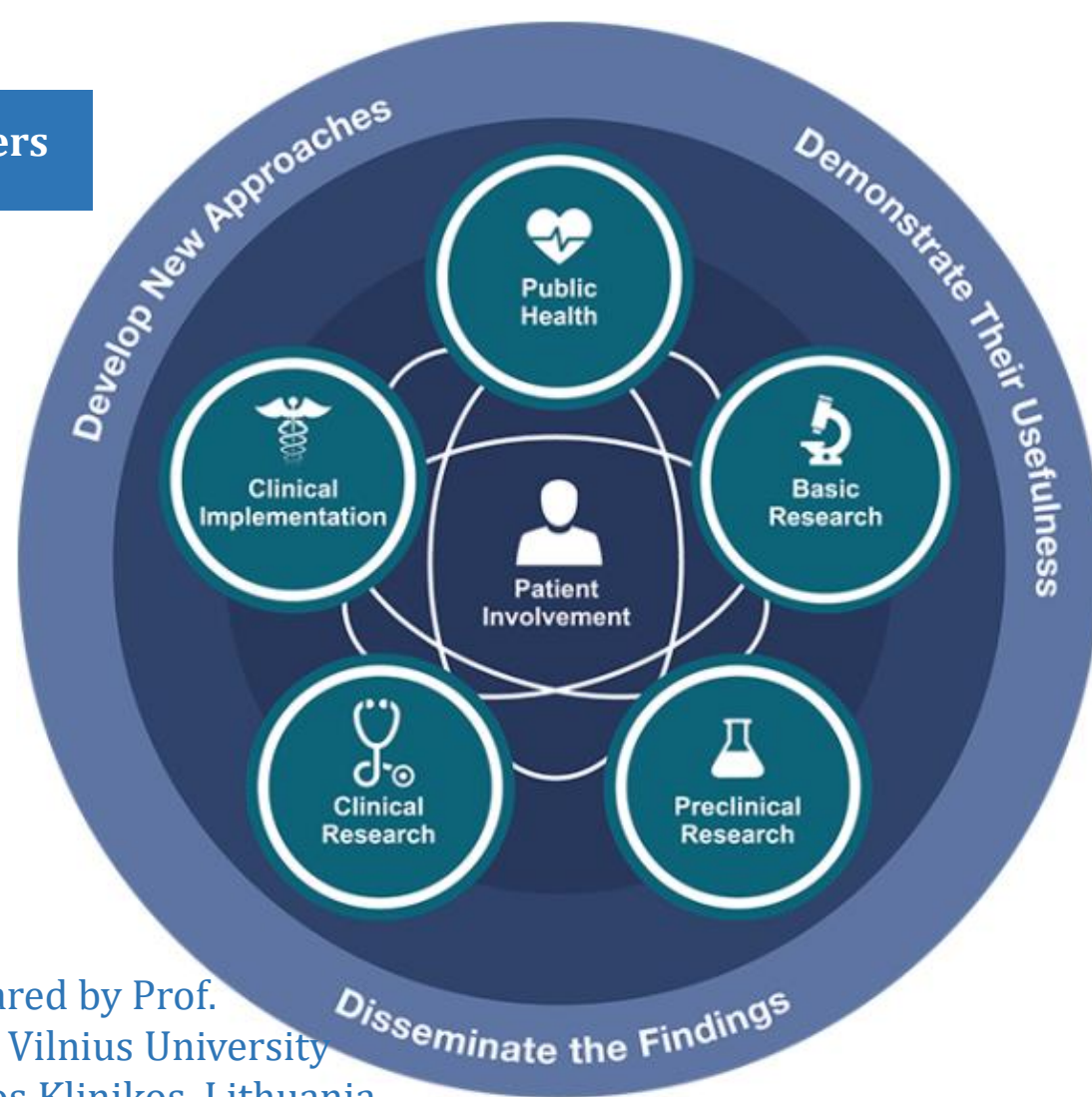
MS	Legal entity in EJP RD
PL	WARSZAWSKI UNIWERSYTET MEDYCZNY GDANSKI UNIWERSYTET MEDYCZNY INSTYTUT POMNIK CENTRUM ZDROWIA DZIECKA
SK	SLOVENSKA AKADEMIA VIED
ES	UNIVERSIDAD POLITECNICA DE MADRID SERVICIO MADRILENO DE SALUD
<u>UK</u>	UNIVERSITY OF LEICESTER THE UNIVERSITY OF LIVERPOOL UNIVERSITY OF NEWCASTLE UPON TYNE + THE NEWCASTLE UPON TYNE HOSPITALS NHS FOUNDATION TRUST
<u>IT</u>	ISTITUTO ORTOPEDICO RIZZOLI AZIENDA OSPEDALIERO UNIVERSITARIA PISANA AZIENDA OSPEDALIERA UNIVERSITARIA SENESE AZIENDA SANITARIA UNIVERSITARIA FRIULI CENTRALE

- This is not surprising if you look in parallel at the “profile/origin” of ERN members....

ERNs: place in the research cycle and education

27 healthcare providers hosting the highest numbers of ERN Full Members

University Hospital Leuven	19	BE
AO di Padova	18	IT
Karolinska University Hospital	18	SE
Erasmus MC: University Medical Center Rotterdam	18	NL
Assistance Publique-Hôpitaux de Paris, Hôpital Necker-Enfants Malades	15	FR
Pediatric hospital Bambino Gesù, Rome	15	IT
Radboud University Medical Center Nijmegen	14	NL
Great Ormond Street Hospital for Children NHS Foundation Trust	13	UK
University Hospital Ghent	12	BE
Motol University Hospital	12	CZ
Academic Medical Center Amsterdam	12	NL
University Medical Center Utrecht	12	NL
Charité Universitätsmedizin Berlin	11	DE
Universitätsklinikum Freiburg	10	DE
Centro Hospitalar e Universitário de Coimbra, EPE	10	PT
Hospital Universitari Vall d'Hebron	10	ES
University Medical Center Groningen	10	NL
University Hospitals Saint-Luc	9	BE
Copenhagen University Hospital Rigshospitalet	9	DK
Hospices Civils de Lyon	9	FR
AOU Siena	9	IT
Central Manchester University Hospitals NHS Foundation Trust	9	UK
Assistance Publique-Hôpitaux de Paris, Hôpital Bicêtre	8	FR
Klinikum der Universität München	8	DE
Foundation IRCCS CA'Granda Ospedale Maggiore polyclinic - Milan	8	IT
Vilnius University Hospital Santaros Klinikos	8	LT
Leiden University Medical Center	8	NL
Birmingham Children's Hospital NHS Foundation Trust	8	UK

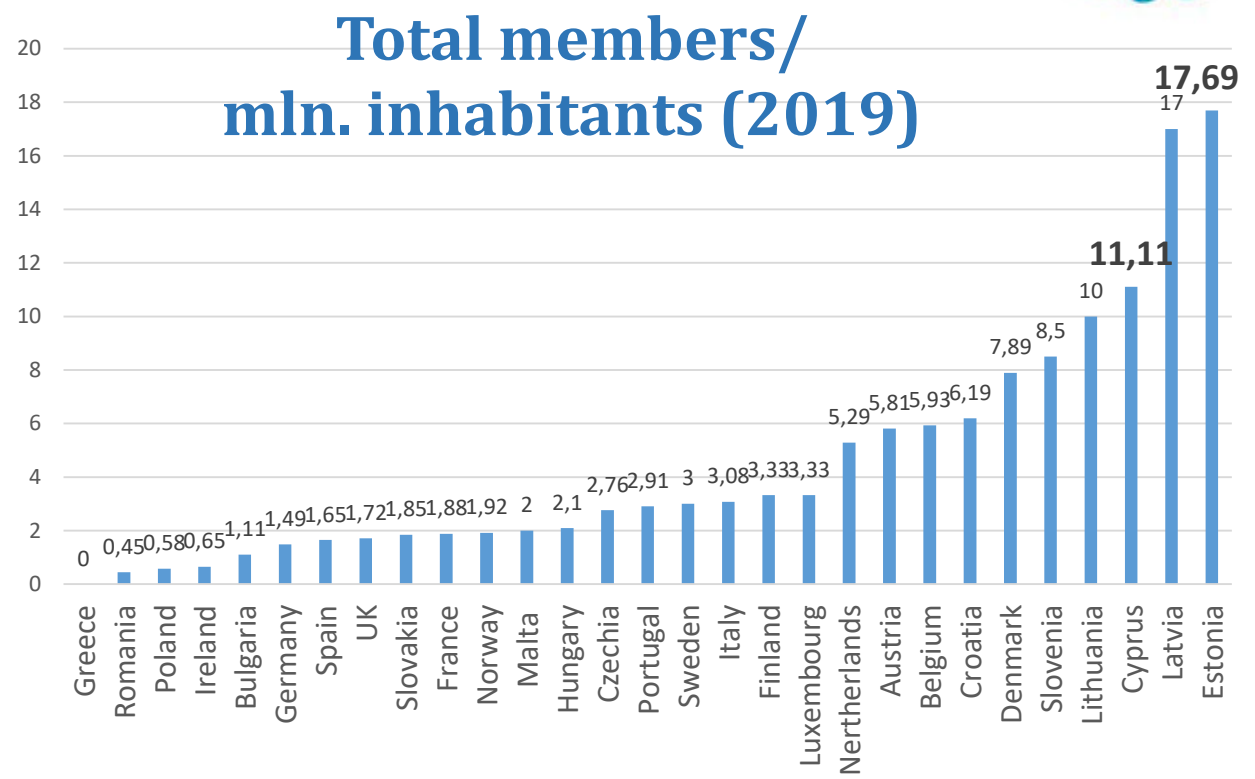
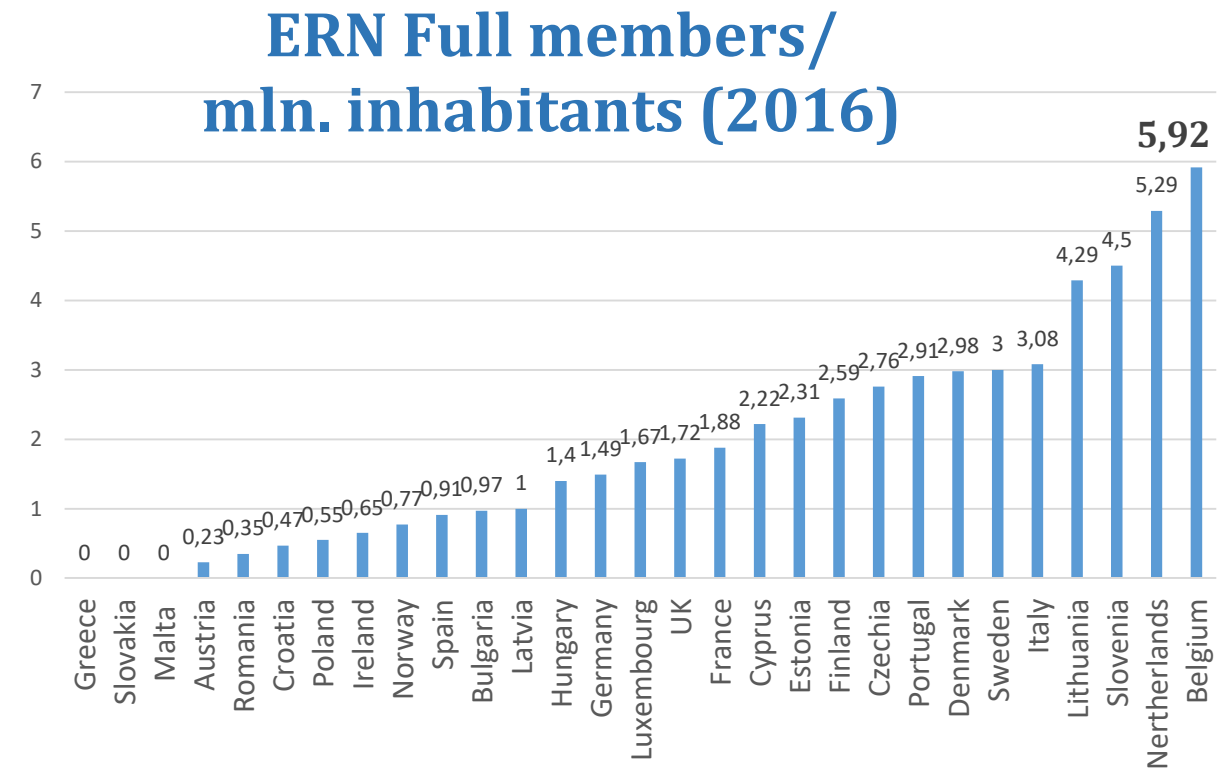


*slide kindly shared by Prof. Birute Tumiene, Vilnius University Hospital Santaros Klinikos, Lithuania

- **Linked to many of the best European universities;**
- **Teaching hospitals.**

INCLUSIVITY of ERNs: geographical

*slide kindly shared by Prof. Birute Tumiene, Vilnius University Hospital Santaros Klinikos, Lithuania

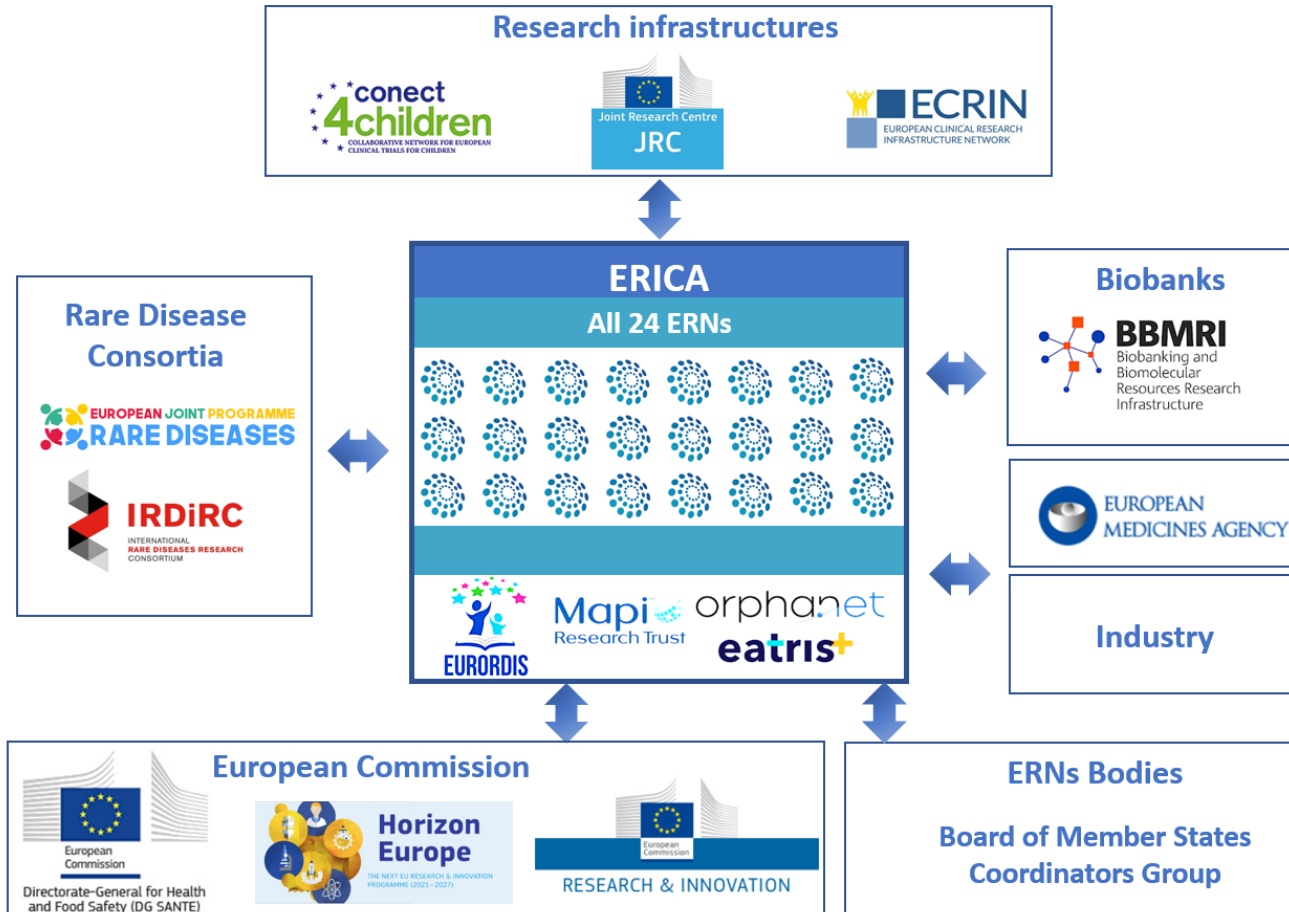


- ERN Full Members: rigorous quality control and full responsibilities;
 - ERN Affiliated Partners and Coordinating Hubs: national designation according to the needs of MS.
 - ❑ EU-13 countries comprise **20%** of the EU inhabitants;
 - ❑ 2016 Call for ERN Full Members (FM): number of ERN FM in EU-13 MS - **11.3%**;
 - ❑ 2019 Call for ERN Affiliated Partners (AP): number of ERN FM + ERN AP in EU-13 MS - **20%**.
- Unfortunately and despite of that, some inequities remain among MS and inside MS (regionally).

A « Coordination & Support Action » to support clinical research activities of the 24 ERNs: ERICA (the European Rare disease research Coordination and support Action)

Positioning of ERICA within the RD research ecosystem

*slide adapted - kindly shared by Prof. Alberto Pereira, Coordinator of Endo-ERN and of the ERICA project



1) Central engagement of all ERN Members in all project activities

(participation in different WP specific **Expert Working Groups (EWGs)**)

- Ensures identification of the research active ERN community
- Provides first-hand expertise of active clinical RD researchers
- Allows continuous 'reality check' of feasibility of research activities

2) Seeking strategic partnerships

(all major European and intern RD research stakeholders).

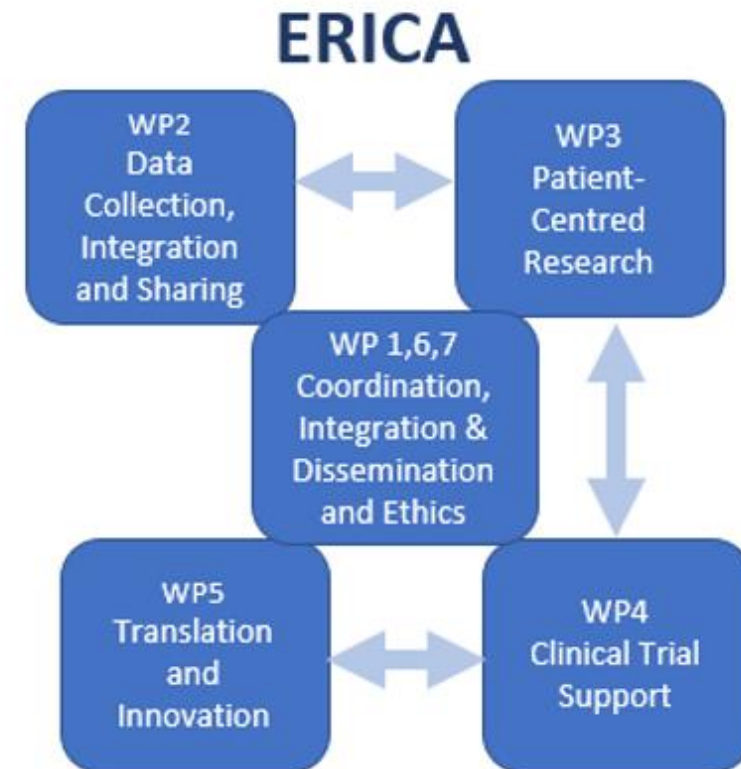
- Information exchange, consensus building, and coordination of joint activities
- Steering (multi-stakeholder advisory board)
- Operational: inclusion of external stakeholders in WP specific EWGs

*slide adapted - kindly shared by Prof. Alberto Pereira, Coordinator of Endo-ERN and of the ERICA project

ERICA Consortium

Partner	Represented by
All 24 ERNs	Coordinators institutes WP1-6 co-chairs
EJP RD	WP2, WP4, and WP5 co-chairs
Orphanet	INSERM, WP3 co-chair
Mapi Trust Research	Sonia Bothorel
Eurordis	Ines Hernando
EATRIS	WP5 co-chair

Work Packages



Welcome at the ERICA website

The aim of the **European Rare Disease Research Coordination and Support Action** consortium (ERICA), in which all 24 **European Reference Networks (ERNs)** take part, is to build on the strength of the individual ERNs and create a platform that integrates all ERNs research and innovation capacity.

Through knowledge sharing, engagement with stakeholders in the rare disease domain and assembly of transdisciplinary research groups working across the global health spectrum, ERICA strives to reach the following goals:

- new intra- and inter-ERN rare disease competitive networks;
- effective data collection strategies;
- better patient involvement;
- enhanced quality and impact of clinical trials;
- increased awareness of ERNs innovation potential.

ERICA will strengthen research and innovation capacity by the integration of ERN research activities, outreach to European research infrastructures to synergistically increase impact and innovation. This will result in efficient access and safe therapies for the benefit of patients suffering from rare diseases and complex conditions.

Other News

ERKReg Reaches 10,000 Patients

The ERKReg, a Web-based registry for all patients with rare kidney diseases, recently established by the European Rare Kidney Disease Reference [...]

READ

Presentations ERICA General Assembly 27th -28th May 2021

The European Rare Disease Coordination and Support Action (ERICA) kick-off meeting / 1st General Assembly (GA) was held 27th and 28th [...]

READ

ERICA Kick-off meeting and first General Assembly

On Thursday 27th May 2021 (from 10.00 – 16.45 h) & Friday 28th May 2021 (from 10.00 – 15.45 h) the [...]

READ

Website ERICA live



Announcement of the launch of “Open Research Europe”

Open Research Europe (OCE) is an open access publishing platform for the publication of research stemming from Horizon 2020 funding across all subject areas. The platform makes it easy for Horizon 2020 beneficiaries to comply with the open access terms of



ERKReg Reaches 10,000 Patients

The ERKReg, a Web-based registry for all patients with rare kidney diseases, recently established by the European Rare Kidney Disease Reference Network (ERKNet), has just crossed the 10,000th important milestone was reached after the 10,000th

*slide adapted - kindly shared by Prof. Alberto Pereira, Coordinator of Endo-ERN and of the ERICA project

<https://erica-rd.eu/>

<https://cordis.europa.eu/project/id/964908>

Also funded under the Horizon 2020 R&I programme:
'Solve-RD – solving the unsolved rare diseases'



"Solve-RD - solving the unsolved rare diseases" is a research project funded by the European Commission for five years (2018-2022). It echoes the ambitious goals set out by the International Rare Diseases Research Consortium (IRDiRC) to deliver diagnostic tests for most rare diseases by 2020. The current diagnostic and subsequent therapeutic management of rare diseases is still highly unsatisfactory for a large proportion of rare disease patients – the unsolved RD cases. For these unsolved rare diseases, we are unable to explain the etiology responsible for the disease phenotype, predict the individual disease risk and/or rate of disease progression, and/or quantitate the risk of relatives to develop the same disorder.

Our main ambitions are thus

- to solve large numbers of rare disease, for which a molecular cause is not known yet by sophisticated combined omics approaches, and
- to improve diagnostics of rare disease patients through contribution to, participation in and implementation of a “genetic knowledge web” which is based on shared knowledge about genes, genomic variants and phenotypes.

Solve-RD fully integrates with the newly formed European Reference Networks (ERNs) for rare diseases which have begun to operate in 2017. Four ERNs (ERN-RND, -EURO-NMD, -ITHACA, and -GENTURIS) build the core of Solve-RD but we will reach out to patient cohorts across all 24 ERNs as well as the undiagnosed disease programmes from Spain and Italy in order to achieve our aims. To tackle diseases which are still unsolved we have formed a consortium that comprises

- 1) Leading clinicians, geneticists and translational researchers of the core ERNs,
- 2) RD research and diagnostic infrastructures such as RD-Connect, Orphanet/ORDO, the Human Phenotype Ontology (HPO) and EuroGentest,
- 3) Patient organisations such as EURORDIS and Genetic Alliance UK, as well as
- 4) Leading experts in the field of -omics technologies, bioinformatics and knowledge management.

<https://solve-rd.eu/>

<https://cordis.europa.eu/project/id/779257>

Horizon Europe: the new EU funding programme for Research & Innovation

Partnership on Rare Diseases under Horizon Europe: Objectives*

- **Contribute** towards **the objectives** of the International Rare Diseases Research Consortium (**IRDiRC**)
 - Further develop an **efficient ecosystem for the faster translation of research results to health care systems**
 - Further support **efficient access/sharing of rare diseases data** at the EU and at the international level by utilizing the wealth of clinical data at European Reference Networks (ERNs)
 - Strengthen the **collaboration in the EU, the Associated and Third Countries** by unprecedented **pooling of resources and expertise**
 - **Provide evidence for fit-for purpose regulatory framework**
 - Reinforce the **EU as an effective "hub" for rare disease research and innovation**
-
- To be funded under Horizon Europe (2023, to start in 2024)
 - https://ec.europa.eu/info/horizon-europe/european-partnerships-horizon-europe/candidates-european-partnerships-health_en

Horizon Europe: the new EU funding programme for Research & Innovation (many) calls are relevant for ERN members

For example: HORIZON-HLTH-2022-DISEASE-06-04-two-stage: Development of new effective therapies for rare diseases

- HORIZON-HLTH-2022-DISEASE-06-04-two-stage: **Development of new effective therapies for rare diseases**
- Two-stage
- Opening of the call: 06 Oct 2021
- **Deadlines: 01 Feb 2022** (First Stage),
06 Sep 2022 (Second Stage)
- Instrument: RIA
- Tot: 60M€
- Project size: 8M€

Expected outcome (contributing to **some of the following** elements)

- **Researchers** and **developers** make the best use of the **state-of-the-art knowledge** and **resources** for a fast and **effective development of new therapies for rare diseases**.
- **Researchers** and **developers** increase the development **success rate of therapies** for rare diseases by employing **robust preclinical models, methods, technologies, validated biomarkers, reliable patient reported outcomes and/or innovative clinical trials designs**.
- **Developers** and **regulators** move **faster** towards **market approval** of new therapies for rare diseases (with currently no **approved treatment option**) due to an **increased number of interventions** successfully **tested in late stages of clinical development**.
- **Healthcare professionals** and **people living with a rare disease** get **access to new therapeutic interventions** and/or **orphan medicinal products**.

How to facilitate the involvement of ERN members in research projects (discussion)

Some practical examples

EJP RD: consent forms (support to ERN registries),
FAIRification of data, clinical trial support etc.

Helpdesk where Rare Disease Research teams can ask any time questions
related to Rare disease research,
Webinars, mobility fellowships etc.

ERICA: get involved via your respective ERN (= express your research needs)



Research Training Workshops

- **Aim:** identify the most suitable proposals for the **organisation of research training workshops of 2 days targeted to the ERNs needs**. Selected research training workshops will have to train ERN researchers and clinicians in ERN relevant innovative training themes.
- Topics can be proposed by the ERNs or by investigators belonging to EJP RD beneficiary institutions.
- **25k€ max/event**

Mobility Fellowships

- **Aim:** financially support **PhD students, medical doctors & post-docs** working in **ERN-member institutions or going to ERN-member institutions** to undertake **short scientific visits** (secondments) up to **6 months** fostering specialist research training outside their countries of residence. Through this training measure the fellows should acquire or share new competences and knowledge related to their research on rare diseases and with benefit to the (home or host) ERN.
 - **PhD student** with at least one year of research experience, **PhD degree holder** within five years after doctorate (PhD) or **physician in specialist training** having completed their first year of training and not longer than within five years of completion of specialization
 - Residency in one of the countries beneficiaries of EJP RD
 - Both host and home institution of fellow exchange must be located in one of the countries beneficiaries of EJP RD
 - Either the **home or the host** (secondment) institutions must be **Full or Affiliated Members of an ERN** at the time when the application is submitted, as well as during the proposed period of the training stay
 - Added value to ERN of the mobility stay



Training & empowerment

- **7 face-to-face courses** in 5 countries (220 participants, 18 fellowships)
- **9 online courses** (270 participants)
- **500 stakeholders trained** so far increasing research potential of the multi-stakeholder EU RD research community
- **1st Online education MOOC** created

Free e-learning academic course on RD

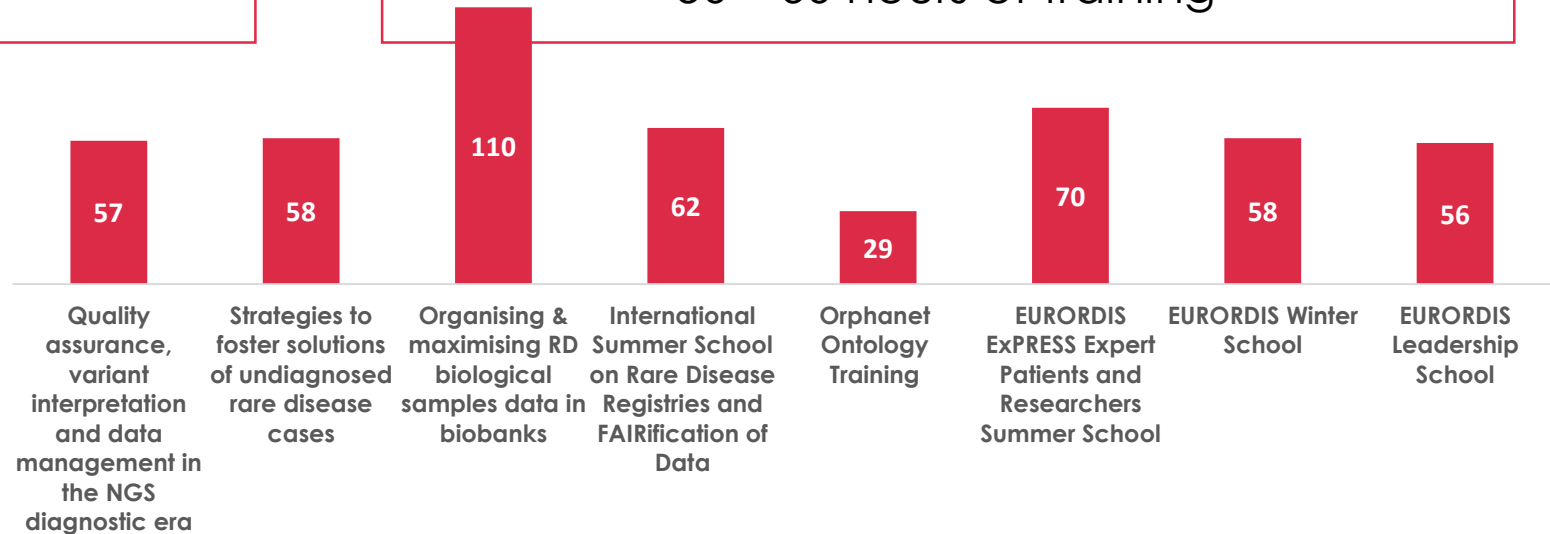
Module 1: RD Diagnosis

Module 2: RD Innovative personalized therapies

Module 3: RD translational research

Module 4 & 5: to be defined in year 3

50 – 60 hours of training



Diversity & transversality

Large target span

No 1-shots but regular revision

Leverage national capacity (from EU13 countries & "cascade trainings")



Thank you!

#HorizonEU

<http://ec.europa.eu/horizon-europe>



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