Vilniaus universiteto ligoninė
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European Reference Networks: *Challenges and opportunities*

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“Optimal scenario” for RD

For patients/families:

- Timely diagnosis
- Effective treatments and long-term management
- Well organized care, addressing complex needs of patients and families

For clinicians:

- Well organized health system (clear care pathways, navigation of patients, their data and funds)
- Reimbursement of all related activities
- Administrative aid

For health authorities:

- Cost-effective, well integrated into existing service framework RD care services

Rare disease patients – a highly vulnerable group due to remarkably unique RD features

- **Rare, numerous, heterogeneous**

– limited ability to recognize/ provide care at a primary/ local medical contact point;

Care pathways and referral systems, vertical integration, workforce education, tertiary-tertiary care interface, reducing barriers in regionalized HC systems.

- **Heterogeneous multisystem involvement**

– heterogeneity of pathways, multiple contacts with healthcare system;

Horizontal integration, multidisciplinary approach, care coordination/ case management.

- **Complexity in diagnostics, treatment, long-term care**

– limited expertise and resources, expensive infrastructures;

Centralization of expertise, infrastructures and human resources.

- **Chronic, disabling, childhood-onset in 75%, life-long, complex needs**

– complex and multiple trajectories across systems

Longitudinal, holistic approach, care coordination/ case management, transition of care, patient empowerment, balanced provision of centralized/ decentralized services.

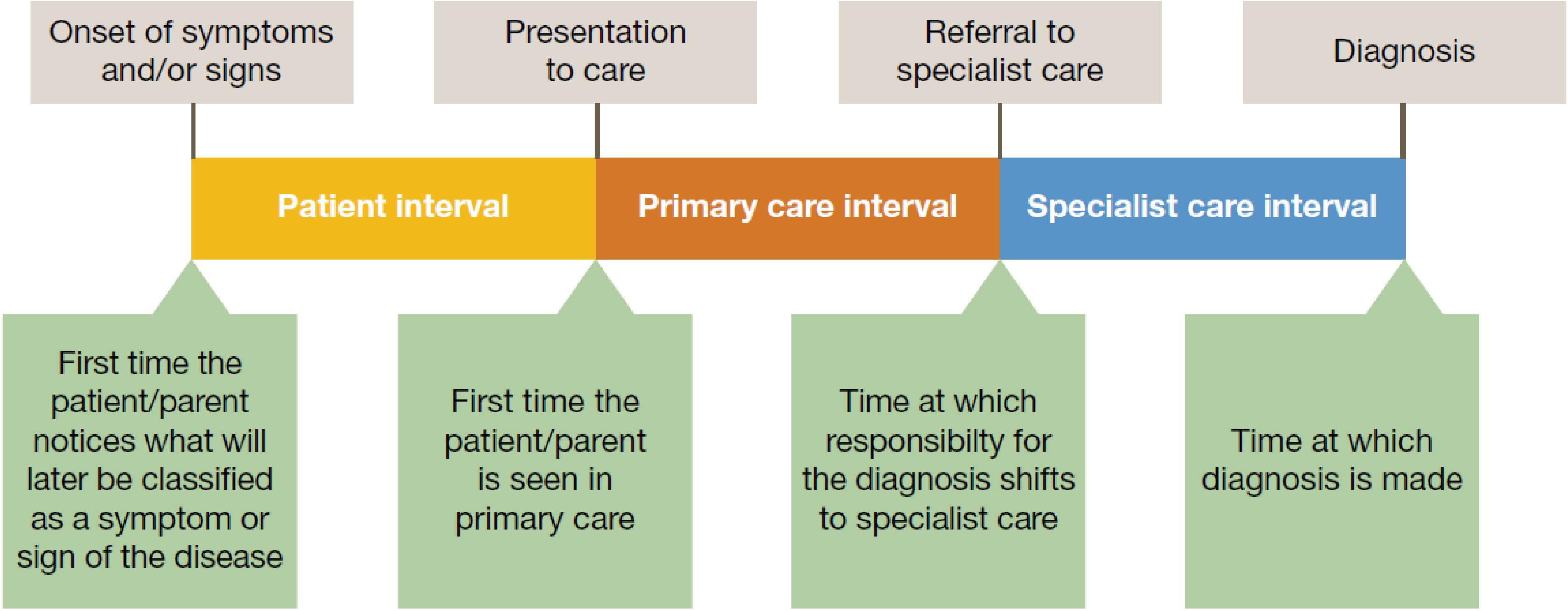
The mean **time to RD diagnosis**: **5 years**.

- **Not yet** diagnosed („stucked in healthcare systems“)

Organization of RD care in national systems, EU collaboration.

- **Undiagnosable** („syndrome without a name“, SWAN) - **50% RD**

Healthcare – research intersection, international collaboration.



Onset of symptoms and/or signs

Presentation to care

Referral to specialist care

Diagnosis

Patient interval

Primary care interval

Specialist care interval

First time the patient/parent notices what will later be classified as a symptom or sign of the disease

First time the patient/parent is seen in primary care

Time at which responsibilty for the diagnosis shifts to specialist care

Time at which diagnosis is made

From: Black N et al, Diagnostic odyssey for rare diseases: exploration of potential indicators. Policy Innovation Research Unit, 2015.

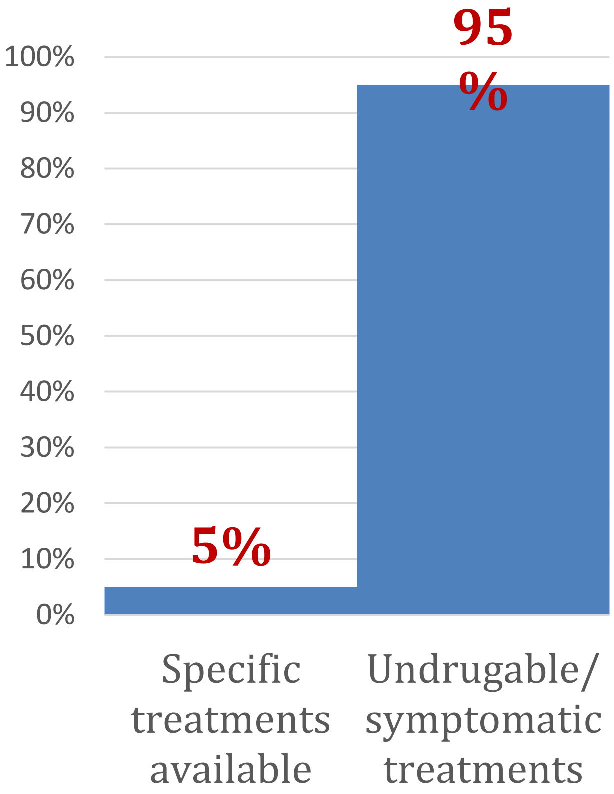
Equity/ affordability issues in Orpha drugs and 5/95 rule in RD

5% RD with specific treatments

- Explosive rise of Orpha drugs in R&D pipeline;
- Rising costs and ROI/ affordability issues for MS;
- Fragmentation of common diseases for orphan indications/ risk of neglect of broader, non-orphan indications

↓

Risk for “reversed” inequity in RD vs. common diseases



95% undrugable/ symptomatic treatments only

Lacking “basket” of basic services:

- Diagnosis;
- Evidence-based symptomatic treatments;
- Secondary/ tertiary prevention;
- Care pathways;
- Long-term follow-up;
- Care coordination…

First Europe-wide survey on social impact of rare diseases

Juggling care and daily life:

The balancing act of the rare disease community

- Carried out via Rare Barometer Voices
- Over 3000 patients and carers participated

(62% patients; 48% carers -> 110% as some are both)

- 802 diseases, 42 countries
- Performed in 23 languages

Rare Barometer

Juggling care and daily life

The balancing act of the rare disease community

A Rare Barometer survey

Summary of key results

Rare diseases have a serious impact on everyday life

Significant time and care burden for patients and carers

Strong impact on work-life balance: absence from work, hampered professional activity, economic burden

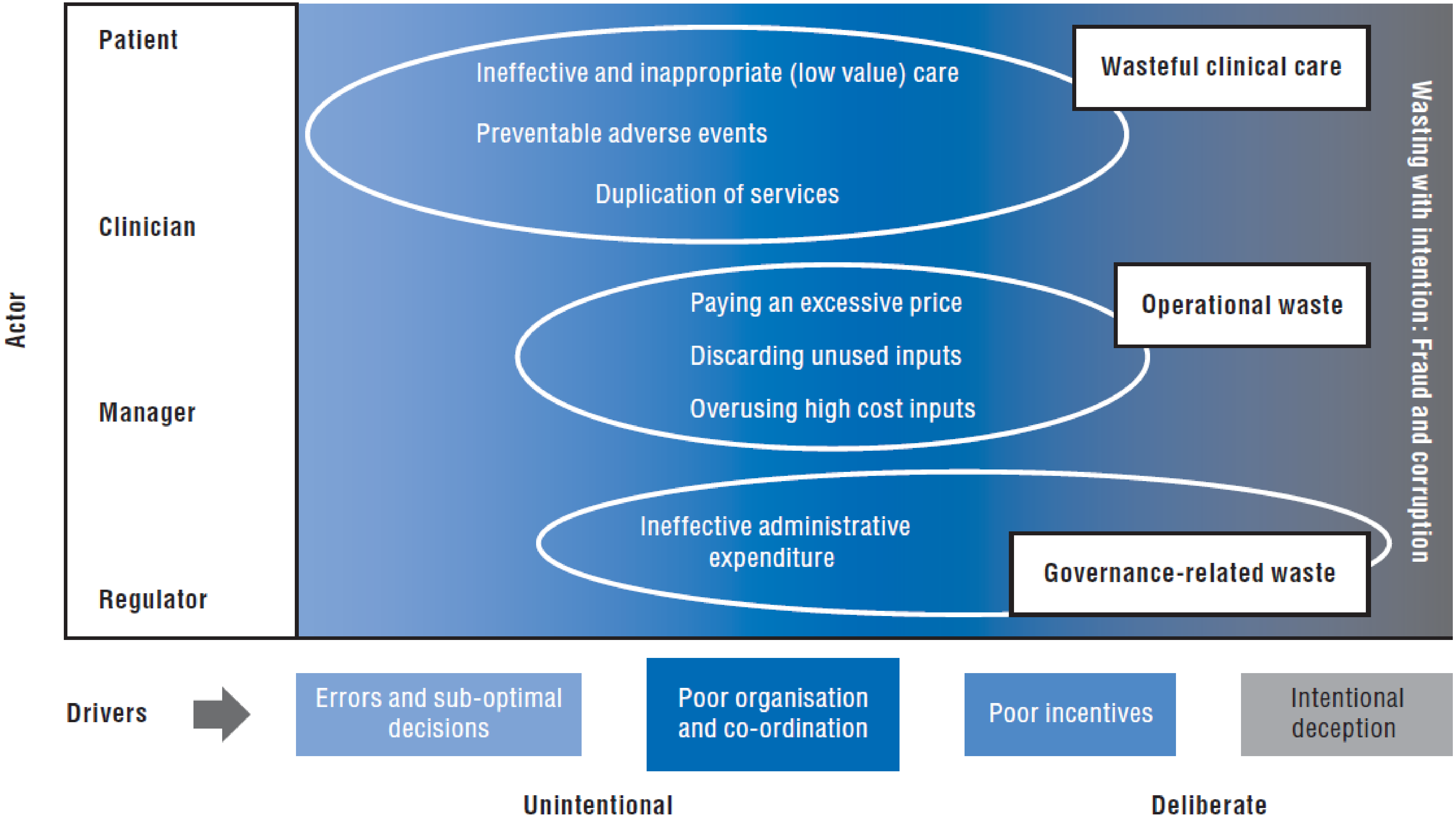
Care pathways are complex and hard to manage e.g. need to **visit different services in short time; lack of communication between providers**

Patients and carers feel **badly informed about their rights** and **feel that social services are badly prepared to support them**

Rare diseases impact the mental health of patients and carers

Wasteful spending in RD care

Figure 1.1. **Three categories of waste mapped to actors involved and drivers**



Actor

Patient

Clinician

Manager

Regulator

Ineffective and inappropriate (low value) care

Preventable adverse events

Duplication of services

Wasteful clinical care

Paying an excessive price

Discarding unused inputs

Overusing high cost inputs

Operational waste

Ineffective administrative expenditure

Governance-related waste

Wasting with intention: Fraud and corruption

Drivers

Errors and sub-optimal decisions

Poor organisation and co-ordination

Poor incentives

Intentional deception

Unintentional

Deliberate

From: TACKLING WASTEFUL SPENDING ON HEALTH © OECD 2017

Wasteful spending in RD care

There is extensive wasteful spending on RD care, including

(a) **wasteful clinical care** (e.g., preventable adverse events, ineffective or inappropriate care due to lack of specialized knowledge and skills, etc.) and

(b) **operational waste** (e.g., inefficient use of expensive infrastructures and human resources due to lack of centralization, duplicated or redundant healthcare services due to poorly developed RD care pathways, etc.).

It is in the best interests of every MS to **survey national situations**, to **share good practice examples** and to take decisions on **smart investments** and proper **reallocations** in their NHS.

Vilnius University Hospital Santaros Klinikos:
36 CoE for rare and complex diseases

Multidisciplinary TEAMS

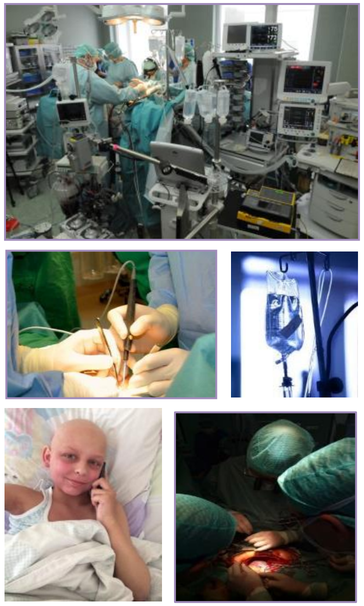
- Case manager
- Psychologist
- Social care specialist
- Geneticist
- Etc. (according to RD pathway)

DIAGNOSTICS >5000 RD

- Genetics
- Laboratory
- Pathology
- Radiology/nuclear

Complex TREATMENTS

- Surgery
- Transplantations
- Special diets
- Enzyme replacement
- Biological therapy
- Advanced medical therapies

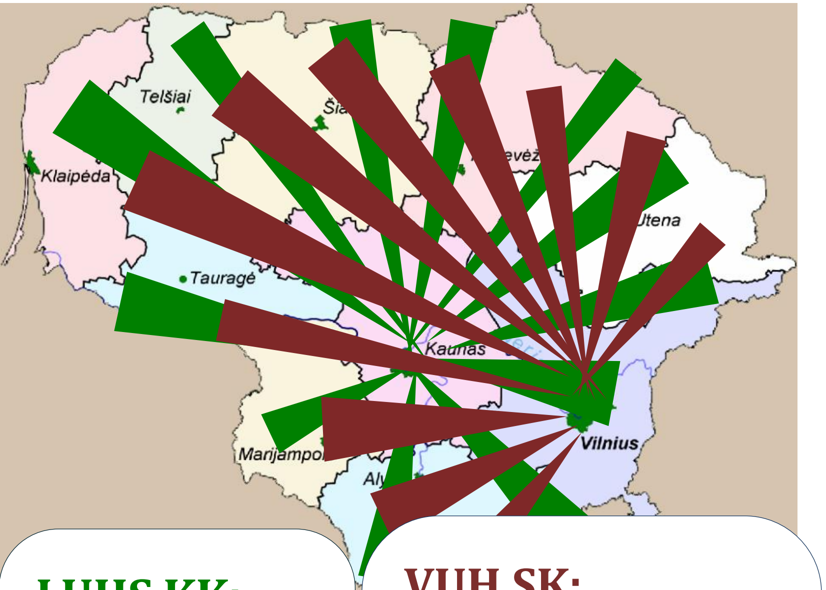


Integrated, coordinated CARE

- Referral systems (“green corridors”)
- Case management
- “One stop shop” services
- Hospital Information System (HIS)
- E-health

Patient EMPOWERMENT

Full members in European Reference Networks



LUHS KK:

1. EndoERN
2. ERN-EYE
3. ERN-Skin
4. EURACAN

VUH SK:

1. EuroBloodNet
2. ITHACA
3. MetabERN
4. ERN-RND
5. ERKNet
6. eUROGEN
7. Transchild
8. PaedCanERN

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

European
Reference
Networks

24 networks of excellence in RD

- Kick-off: 2017-03-09

24 networks, >950 Centers of Excellence, ***>700 000 patients/year***

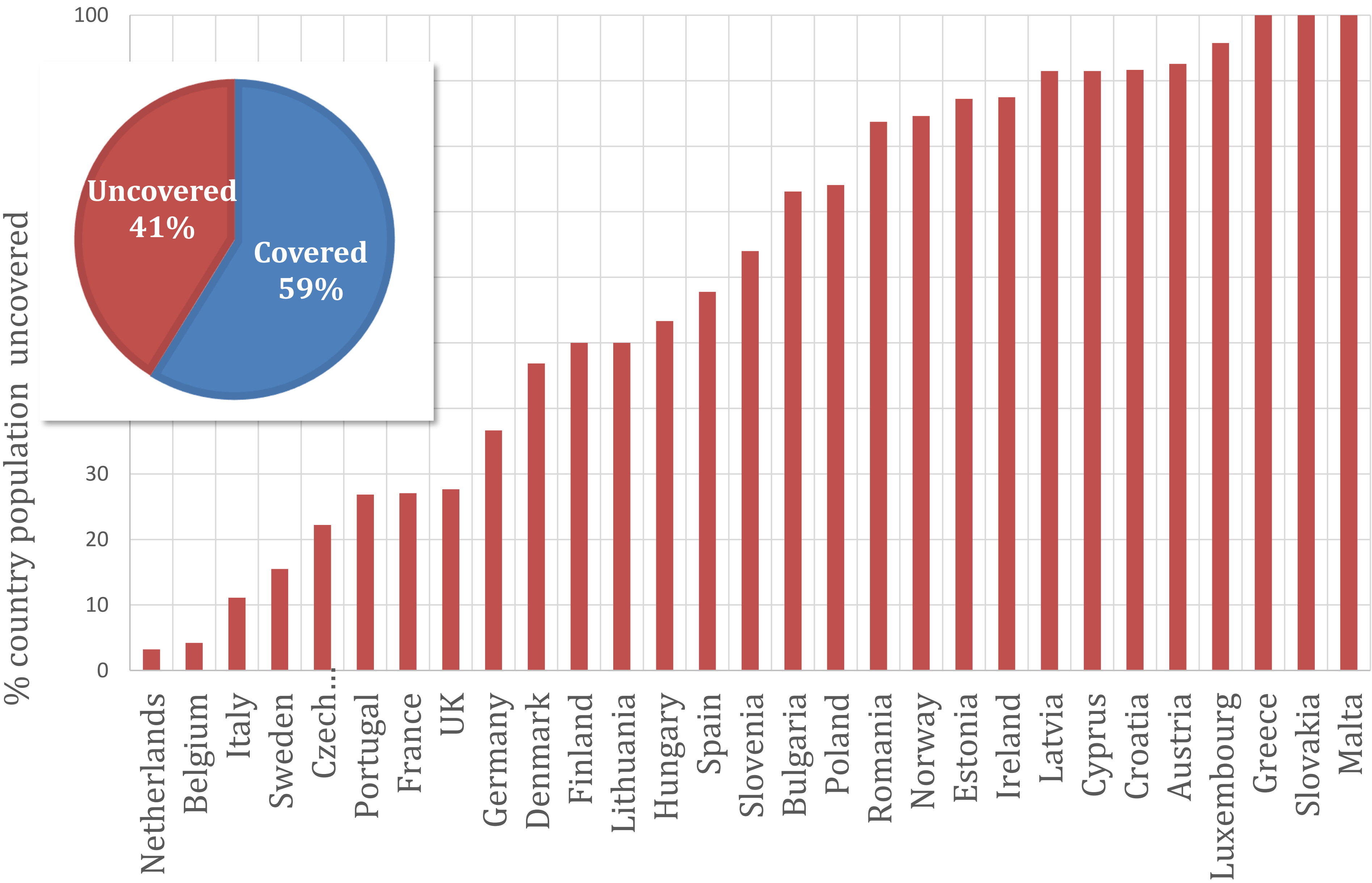
- **Triangle of highly-specialized healthcare, research and education**

- **The largest platform for clinical and translational research in rare and complex diseases**

- **Economies of speed, scale and scope for multiple tasks**

develop and implement RD clinical guidelines, collect cohorts and data of rare patients, create a curriculum for RD education, perform an ultra-rare disease clinical trial, make RD monitoring for policy decisions, etc.

Estimated % EU* Population without Current ERN Coverage



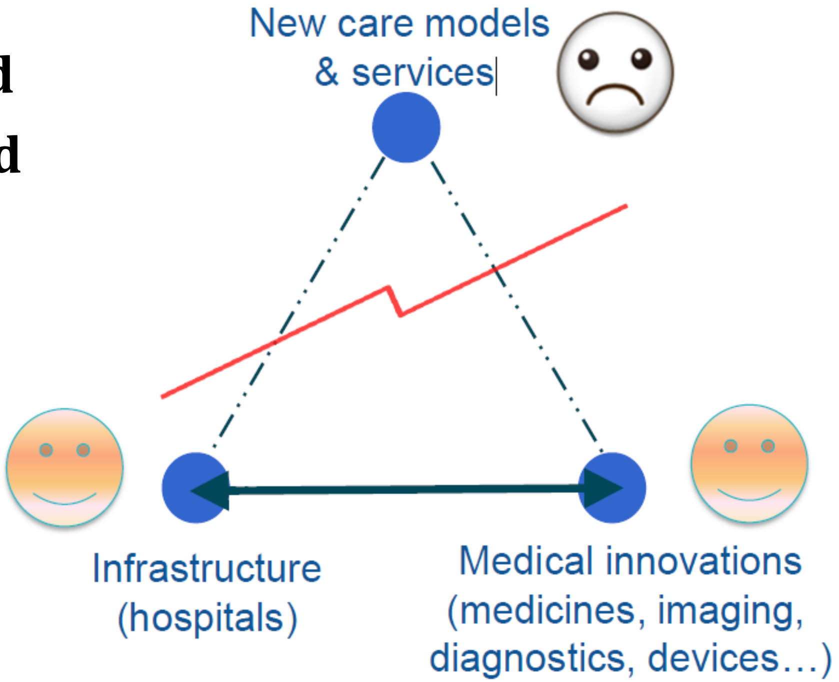
*EU28+Norway. From: Franz Schaefer, The 4th ERN Conference „ERNs in Action", Brussels, 2018.

MAJOR challenge:
ERN integration into the national systems

> *“What is the use of enormous amounts of expertise if they remain confined to the individual centres participating in the network? These centres must be able to reach all patients in their territories – and in other Member States, if no national reference centre has been established – in order to really make a difference to the care of these patients. Thus, ERNs are effective only in so far as they are inclusive, proactively reaching out to the populations they serve.“*
>
> – Expert Panel on Effective Ways of Investing in Health (EXPH): Opinion on Application of the ERN model in European cross-border healthcare cooperation outside the rare diseases area, 2018.

MS already invested into **infrastructures and innovations** that formed the **basis for CoE and ERN creation.**

Reasons for reluctance to make the final step???



New care models & services

Infrastructure (hospitals)

Medical innovations (medicines, imaging, diagnostics, devices…)

Patient care pathways: definition

Definition: a **complex intervention** meeting all four criteria:

(1) A structured **multidisciplinary** plan of care;

(2) Translation of **guidelines or evidence** into **local structures**;

(3) steps of care in a plan, pathway, algorithm…

(4) to standardize care for a **specific population.**

Care pathways or some models/ constituents of care pathways for selected RD/ RD groups or low prevalence complex diseases **are introduced in NHS** of many MS. However, in many cases they are **fragmented**, **limited** (include just some conditions covered by the 24 Networks) and/ or **lack some crucial constituents**.

Patient care pathways: development

Model pathway is the most aggregated level, based on the available international evidence;

ERNs are expected to play a crucial role and to develop model CPWs for the conditions they cover.

Operational pathway is the pathway that is developed by a MS taking into account

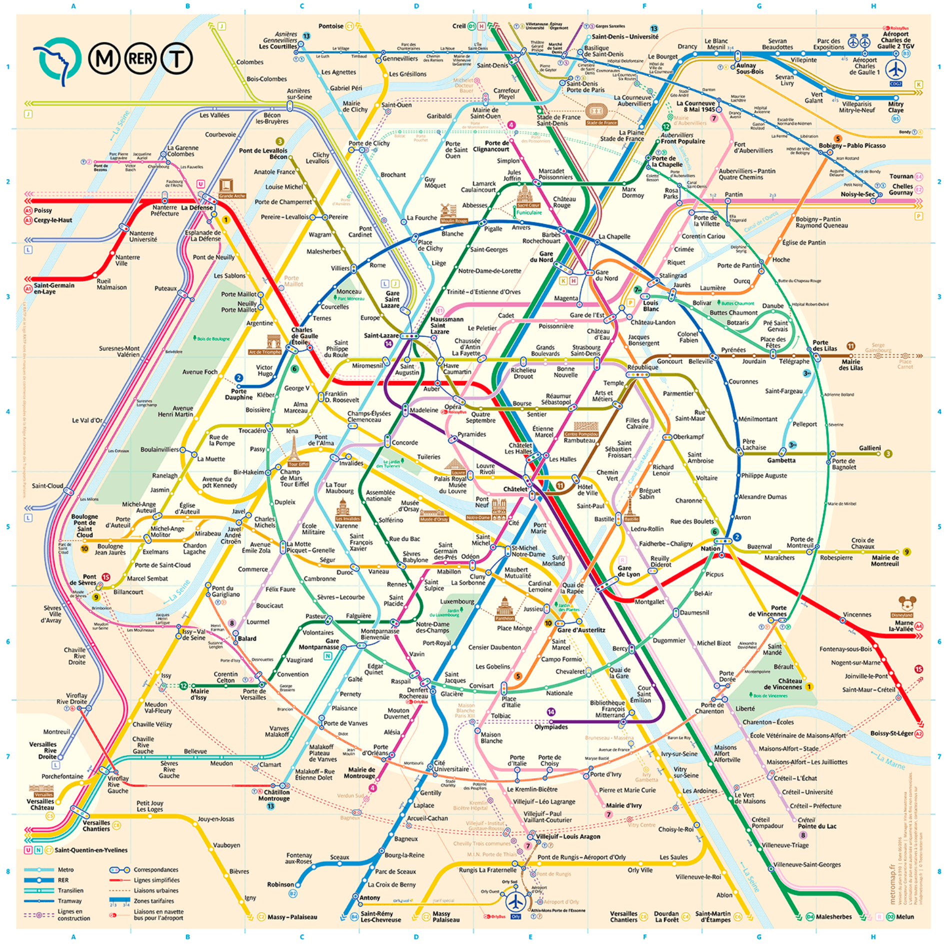
(a) the information from the model pathway and

(b) the characteristics from the specific organization of NHS (i.e., MS-specific economic, geographic and NHS factors, available competences and resources)

Patient care pathways: crucial points

Navigation of patients, data and funds:

legal, organizational, informational measures.



Optimal balance between

(a) highly-specialized, expensive services and

(b) those, that may be provided at a **less-specialized** healthcare level**, local**.

A huge diversity of RD pathways

Constituents of any given RD pathway depend on:

- Disease
- Patient
- National healthcare system

Diagnostics	Patient empowerment I, II level				
Diagnostics	Complex treatments	Patient empowerment I, II level			
Diagnostics	Complex treatments	Rehabilitation	Patient empowerment I, II level		
Diagnostics	Cross-border HC	Complex treatments	Surveillance	Patient empowerment I, II level	
Undiagnosed	Complex treatments	Cross-border HC	Rehabilitation	Surveillance	Patient empowerment I, II level

TUBEROUS SCLEROSIS: two patients

Signs/symptoms:

- Facial angiofibromas
- Several small renal angiomyolipomas
- Mild ASD – Asperger's

Centralized: diagnosis, patient empowerment

Decentralized: abilitation/ therapies for learning/behavioral difficulties

Signs/symptoms:

- Aggressively growing brain astrocytoma
- Resistant to multiple AED epilepsy with multiple cortical tubers
- Multiple cardiac rhabdomyomas
- Multiple increasing renal angiomyolipomas

Centralized: diagnosis, patient empowerment, complex treatments (surgical, everolimus), surveillance

Decentralized: some surveillance, rehabilitation, palliative

Cross-border:

- **EURACAN/PaedCanERN**
- **EpiCARE**
- **GUARD-HEART**
- **ERKNet**

Referral systems to the ERNs

- **ERNs are not directly accessible by individual patients.**

ERN members and Affiliated partners are

(a) “**doors**” to the ERN; and (b) “**gatekeepers”** for unnecessary cross-border healthcare.

- The **need** for ERN medical advice may arise **at any point along the care pathway**, hence, systems of referral to ERN members should be embedded into the whole network of national care pathways.
- The systems of referral are highly dependent on

(a) the organization of the NHS (available **competences and resources**), and

(b) the whole **network of Members and Affiliated Partners** in a given MS,

hence, they are subject to **implementation over time**; the final aim – optimal **accessibility** across Europe.

Remarks:

- ERNs do not have legal status;
- Referring physician in a given MS is always responsible for the services provided to a given patient.
- Reimbursement in case of patient mobility is out of the scope for this WG.

RD care: time for evolution and revolution

*"**Disruptive innovation**" in health care is a type of innovation that **creates new networks** and **new organisations** based on a new set of values, **involving new players**, which makes it possible to health improve outcomes and other valuable goals, such as equity and efficiency. This innovation **displaces older systems and ways of doing things**."*

– Expert Panel on Effective Ways of Investing in Health (EXPH): Disruptive Innovation - Considerations for health and health care in Europe, 2016.

EUROPEAN REFERENCE NETWORKS
FOR RARE, LOW-PREVALENCE AND COMPLEX DISEASES

Share. Care. Cure.

European
Reference
Networks

European Commission | Health

LET'S EMBRACE (DISRUPTIVE) INNOVATION!!!

Thanks for your attention