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Introduction to MAST

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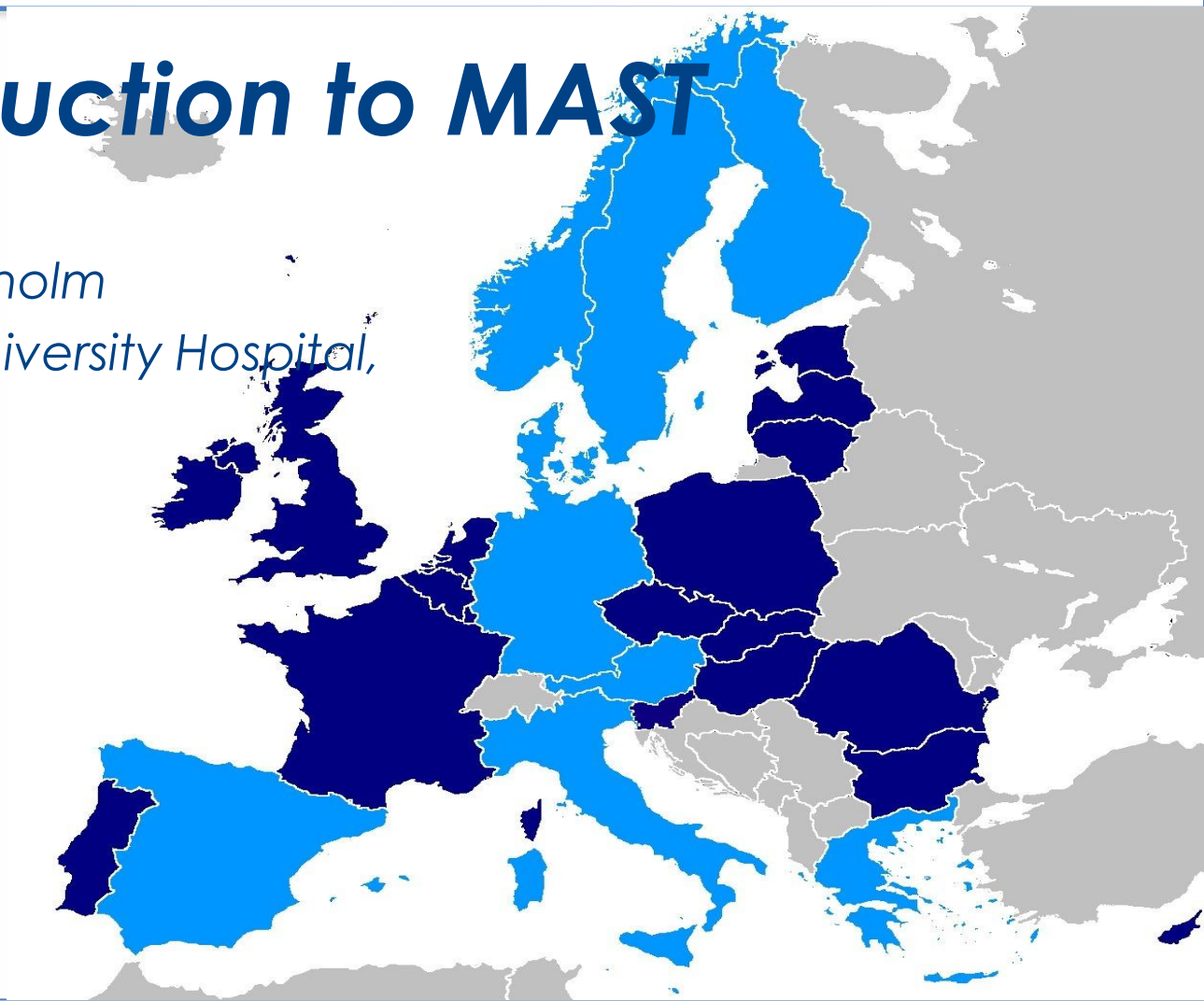

ICTPSP
ICT POLICY SUPPORT PROGRAMME

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Content

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2. MAST – definition of assessment
3. Elements in MAST
4. Choosing outcome measures
5. Methods for data collection
6. Implications of MAST for design of new studies?
7. Questions?

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Background

EU commission:

- Lack of high quality evidence on the effectiveness of telemedicine:
- A main barrier for wider use

Aim of MethoTelemed project (2009-2010)

- To provide a structured framework for assessing the effectiveness and contribution to quality of care of telemedicine applications
- Based on users need for information as a basis for decision making

The basis for the development of the model:

- Literature reviews (Anne G. Ekeland NST, Alison Bowes, University of Stirling)
- Workshop 1: Assessing users' needs (stakeholders in telemedicine)
- Workshop 2: Validation of framework
- Review process

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Results from workshops

- **Aim:** What is needed to guide **decisions** on use or non-use of telemedicine?
- **Results:** Health Technology Assessment (HTA) as **used by EUnetHTA** is a starting point, but it needs adjustment:

1. **Start with strategic considerations**:
   - At what **level** should the assessment be made?
   - What are the alternatives to telemedicine?

2. **Description of outcomes needs more focus on**:
   - Business case approach: Sustainability for the institution?
   - What is the patients' perception of the telemedicine application?
   - Examples of outcome measures

3. **Can results of the assessment be transferred?**

MAST
Model for ASsessment of Telemedicine

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MAST – definition of assessment

If the purposes of an assessment of telemedicine applications are:

- To describe effectiveness and contribution to quality of care
  AND
- To produce a basis for decision making

The relevant assessment is:

> A multidisciplinary process that summarizes and evaluates information about the medical, social, economic and ethical issues related to the use of telemedicine in a systematic, unbiased, robust manner.

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Based on scientific methods and studies

Elements in MAST

Multidisciplinary assessment (domains):

1. Health problem and characteristics of the application
2. Safety
3. Clinical effectiveness
4. Patient perspectives
5. Economic aspects
6. Organisational aspects
7. Socio-cultural, ethical and legal aspects

Elements in MAST

Preceding assessment:

- International/national/regional/local level?
- Relevant alternatives?

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Transferability assessment:

- Cross-border
- Scalability
- Generalizability

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Step 1: Preceding assessment

Is it relevant for you to use MAST in assessment of this telemedicine application?

1. Determine the aim of the telemedicine application → Expect outcomes

2. Relevant alternatives?

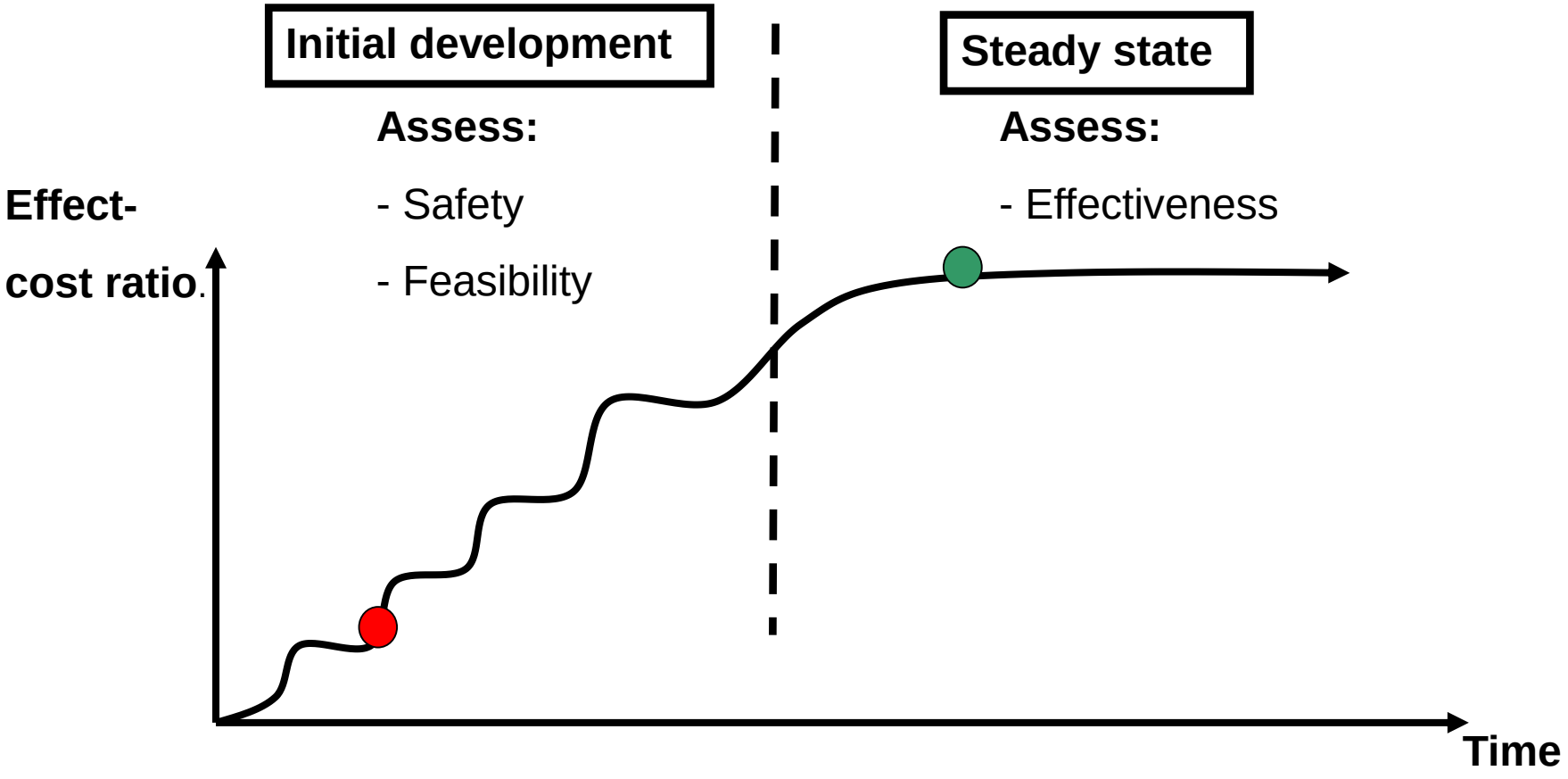
Status quo
Improved/upgraded system
Other technologies

3. On what level should the assessment be made: National, regional or local?

- Legal issues: Is legislation in place?
- Reimbursement: Is reimbursement (DRG) in place?
- Maturity: Is the application fully developed (steady state)?
- Number of patients: Do you have enough patients (clinical – economic view)?

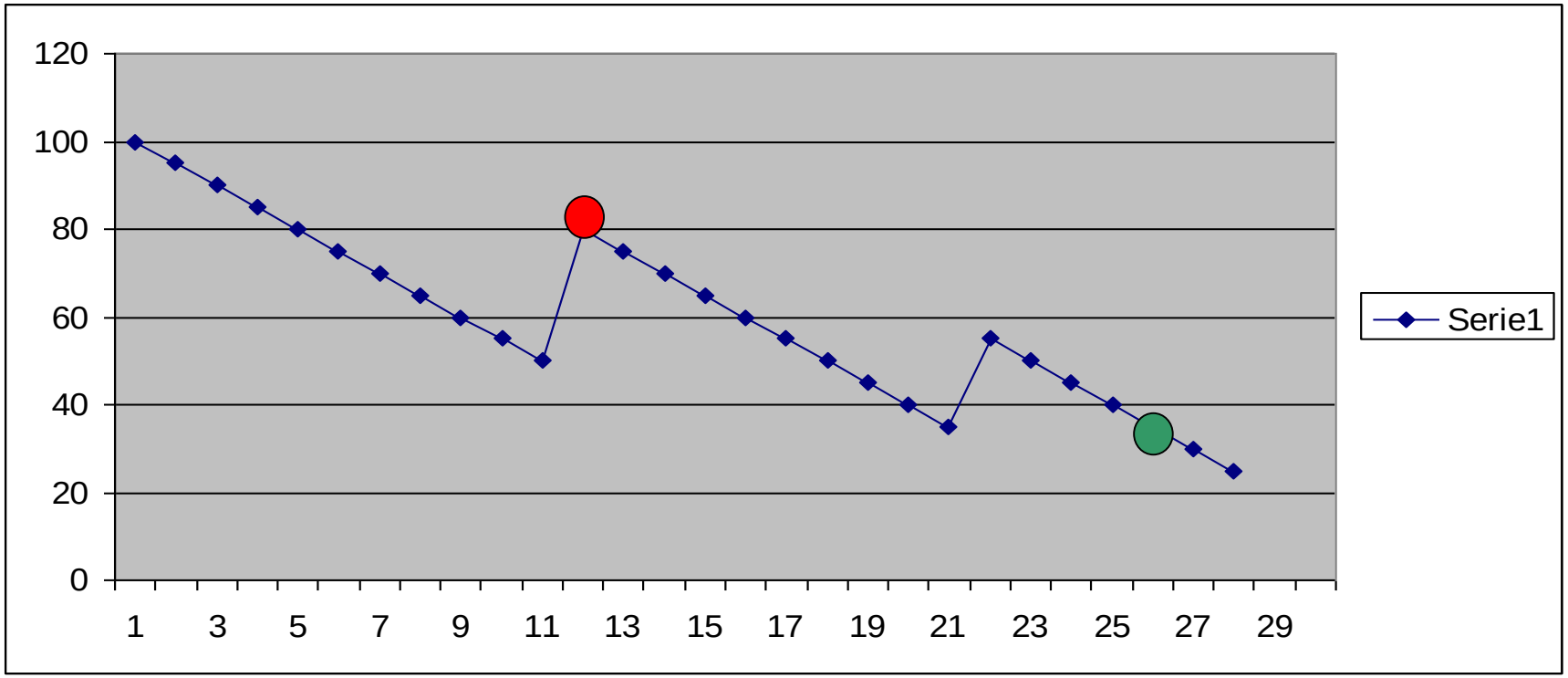
Step 1: Preceding assessment

Maturity – is the application fully developed?



Number of patients

Cost per patient



Number of patients

(* 100)

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Step 2: Multidisciplinary assessment

Domains:

1. Health problem and characteristics of the application } **Background**

2. Safety (adverse effects)
3. Clinical effectiveness
4. Patient perspectives
5. Economic aspects
6. Organisational aspects

} **Assessment of outcomes**

7. Socio-cultural, ethical and legal aspects } **Broader societal issues**

Step 2: Multidisciplinary assessment

Description of the domains and outcomes are based on:

- EUnetHTA, 2008, HTA Core Model for Medical and Surgical Interventions.

Terminology

- Scott et al. Telehealth outcomes: a synthesis of the literature and recommendations for outcome indicators. (Canada) J Telemed Telecare. 2007

Access is important

- Craig et al. 2008. Developing and evaluating complex interventions. (Medical Research Council) BMJ

Include range of outcomes, large samples, RCT/cluster RCT, describe intervention

- Tran et al. Home telehealth for chronic disease management. CADTH, 2008

Examples of outcome measures

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Step 3: Transferability assessment

If new studies are done:

- Can results be generalized to other settings?

Health problem:	Based on international standards for data communication?
Safety:	Can results be transferred to other patient groups?
Clinical:	Internal and external validity of results?
Patient:	Differences between subgroups?
Economy:	How does cost vary with number of patients?
Organization:	Barriers and facilitators?
Socio, legal:	Legal conditions?

If the assessment is based on data from literature review

- Internal validity of results?
- External validity of results (patients, reimbursement, organisation…)?

Choosing outcome measures

Which domains and outcomes should be assessed?

• Only domains and outcomes that are expect to be affected and considered relevant for a comprehensive description of the telemedicine application should be included.

General principle:

• Outcome measures must reflect the aim of the telemedicine application

• Outcome measures vary with patient group, aim of application, organization,…

• Outcome measures must reflect recommendations in the **scientific literature**

Examples of outcome measures within each domain:

• See Appendix in the MAST Manual and MAST Toolkit

Methods for data collection

General principle:

- For each domain: Use designs and methods producing valid and reliable estimates of outcomes

- Produce information at the highest possible level of evidence

Methods for data collection:

- **Systematic literature review**
- **Design of new studies:** RCT, Cluster RCT, controlled studies, …
- **Interview, surveys, focus group interview:**
  - Patients
  - Clinical staff
  - Clinical experts

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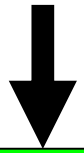

Complex interventions:
- Blinding is not always possible in practice
- Can organizational effect be included in a RCT?

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Implications of MAST for new studies?

Start with preceding considerations:

- Is your application mature and are legal issues addressed?

Multidisciplinary assessment:

- Assess outcomes within all seven domains **IF RELEVANT**

Choice of outcome measures:

- Based on your experiences, pilot studies, scientific literature

Design

- RCT or cluster RCT if possible
- Similar prospective collection of data for both groups

Reporting

- Describe the application and the aim (D1)
- Describe effects on outcomes - use guidelines for reporting eg. CONSORT
- Describe transferability of results

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Strengths and weakness

Weaknesses of MAST:

- Time consuming
- Does not show **why** telemedicine works
- Focused on outcomes
- Only relevant in assessment of matured telemedicine applications.
- Quality can vary

Strengths of MAST:

- Based on the requests and comments from stakeholders
- Multidisciplinary and comprehensive
- Based on scientific studies and criteria for quality
- Transferability of estimated outcomes is described
- Based on HTA (EUnetHTA): Familiar to stakeholders in EU, hospitals..

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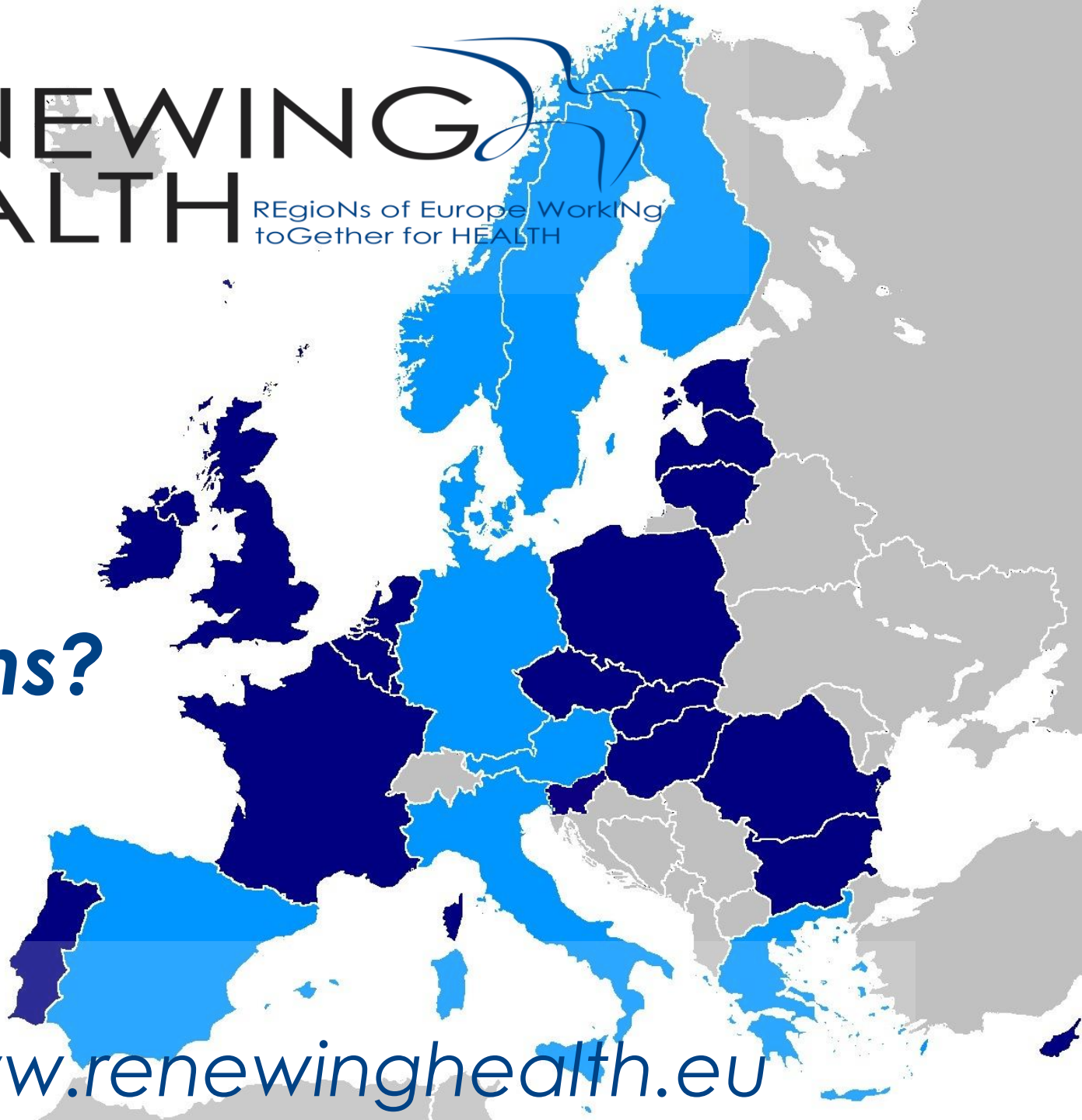

Questions?

www.renewinghealth.eu