INFACT
Joint Action on Health Information

Break Out session II
Tools, Guidelines & Capacity Building

Jan. 21, 2020

This project is funded by the Health Programme of the European Union

Outline

1. Guidance for Health Reporting
2. Machine learning techniques and public health surveillance (methodological guidelines)
3. Recommendations to perform a BoD study
4. School on HI experience in increasing HI skills for researchers and future roadmap

1. Guidance for Health Reporting

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Aims

Tools and methods for health information support

To prepare a comprehensive overview of the different formats of national health reporting and their target groups in EU MS and associated countries.

To develop general recommendations for good practice in national health reporting in EU MS, including potential formats and target groups.

To outline desirable and feasible criteria and standards for preparing high-quality public health reports.

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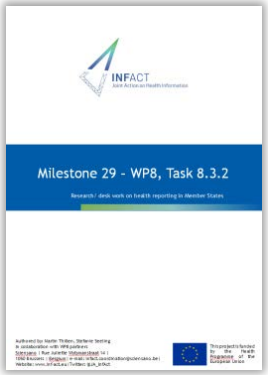
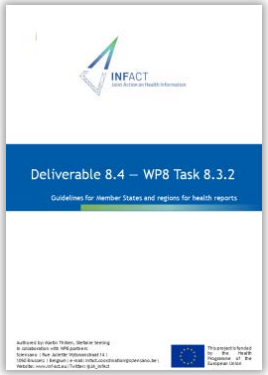
Results

- A web-based desk research was conducted among EU MS and associated countries
  - ➡ Generate a comprehensive overview of different national health reporting formats and their respective target groups



- Recommendations for Member States and regions for health reports were drafted
  - ➡ Facilitate making health information adequately available while reducing inequalities in health reporting across the EU



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Results: Web-based desk research

Key messages:

- *Health reporting practices and quality in EU Member States are heterogeneous.*
- *'Health reporting' is not a commonly used terminology in all analysed countries.*
- *Public health reports are the most frequently used health reporting format.*
- *The general public and scientists or researchers are the most frequently stated target groups of health reporting formats.*

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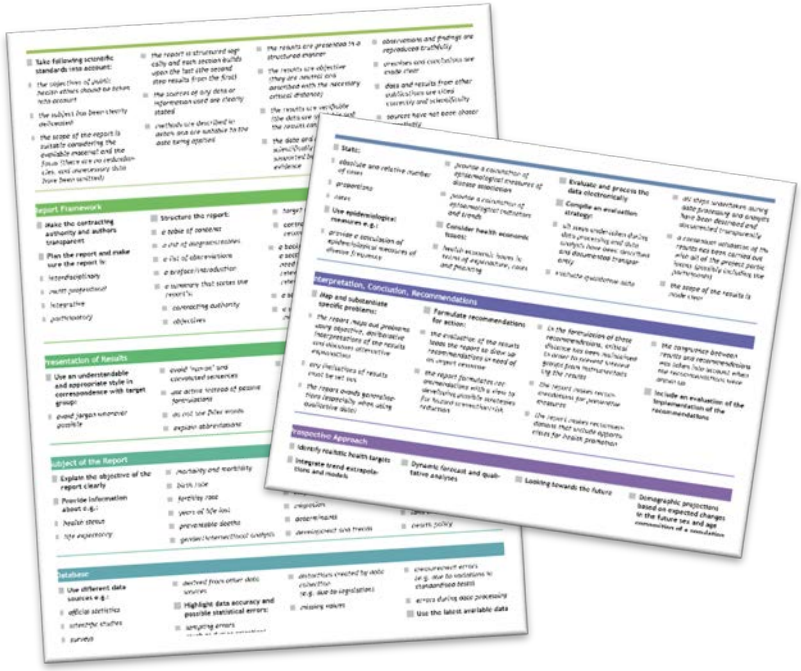
Results: Recommendations for Health Reports

A total of eight categories with a variety of quality criteria for **public health reports** were identified:

1. **Scientific Standards**
2. **Report Framework**
3. **Presentation of Results**
4. **Subject of the Report**
5. **Database**
6. **Data Evaluation**
7. **Interpretation, Conclusion, Recommendations**
8. **Prospective Approach**



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Sustainability

The guidance document:

- Will be presented at relevant conferences and a scientific paper will be published to spread the findings
- Should be circulated at national level and disseminated to the national nodes to reach relevant stakeholders
- Can be included in training programmes and contribute to capacity building
- Is applicable at national as well as international level and could be integrated into an EU HIS to enhance sustainability

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2. Machine Learning Techniques and Public Health Surveillance (methodological guidelines)

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Why methodological guidelines?

- The **capacity to use data linkage** and **artificial intelligence to estimate health indicators** varies across European countries. [1]

- The **estimation of health indicators from linked administrative data is challenging** due to several reasons such as :

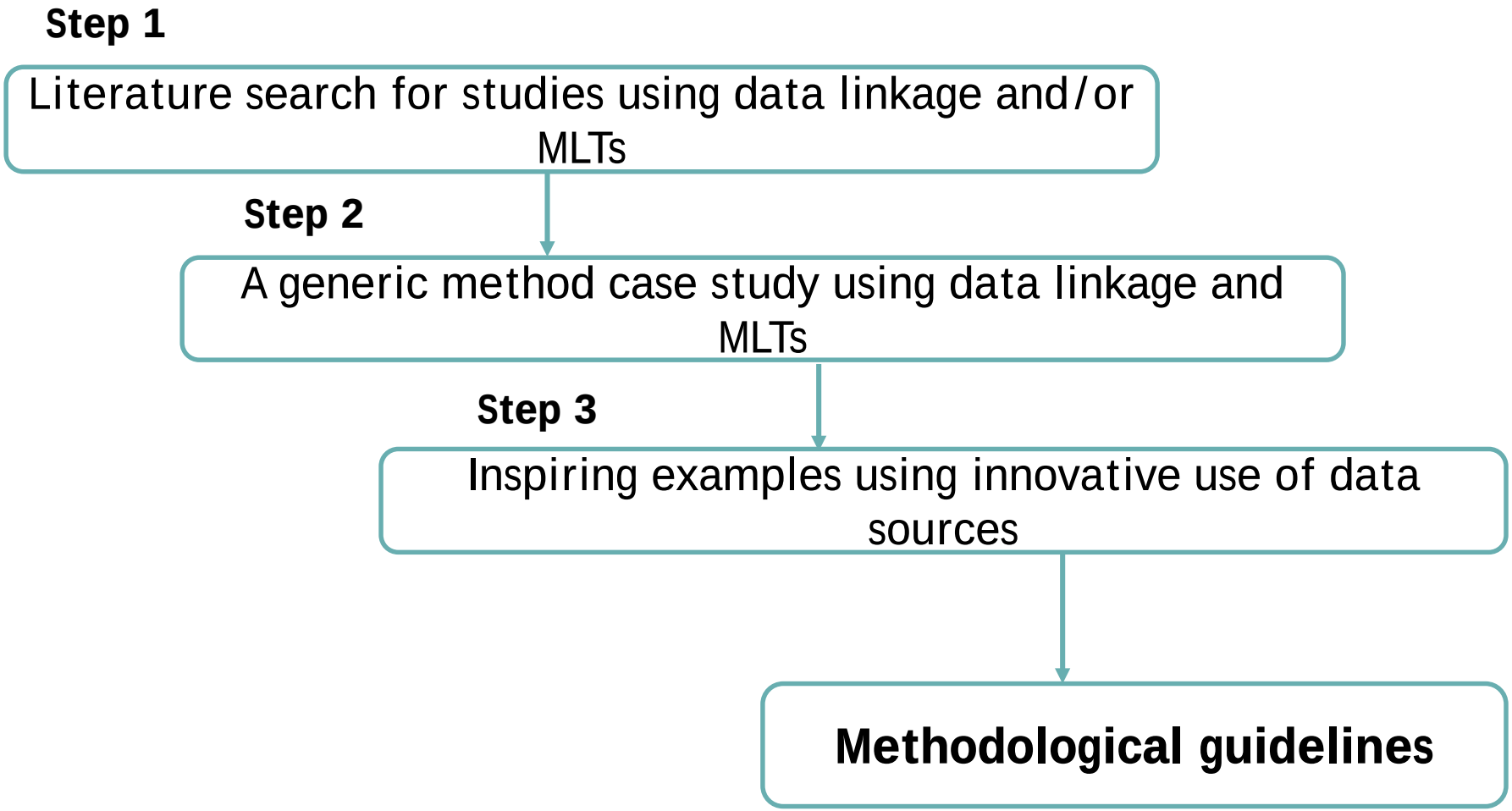
  - Variability in data sources, data collection methods resulting in reduced interoperability and timeliness, availability of a large number of variables, lack of skills and capacity to link and analyze big data

1. *R Haneef, M Delnord, M Vernay et al, Archives of Public Health 2020*

Objective of methodological guidelines

For studies to estimate population-based health indicators using linked data and/or Machine Learning techniques (MLTs) with new approaches

Development of methodological guidelines



Check-list of methodological Guidelines (1)

1. Define the **research question**
2. Select the appropriate **study design**
3. Select the required **linked data sources**
4. Choice of a **study population**
5. Define **study outcomes** and **level of estimation**

Check-list of methodological Guidelines (2)

6. **Data preparation** including extraction, coding of variables, defining the targets, split of data into test and training data set

7. **Data analysis** include variables selection, choice of statistical techniques and sensitivity/uncertainity analysis

8. Addressing **potential issues** such as missing data, imbalanced target groups or bias/variance tradeoff

Implications

- Support to **develop and adopt new methods/techniques using linked data and MLTs** for studies estimating population-based indicators
- Add to **high-quality evidence-based research** to guide health policy decisions

3. Recommendations to perform a Burden of Disease (BoD) study

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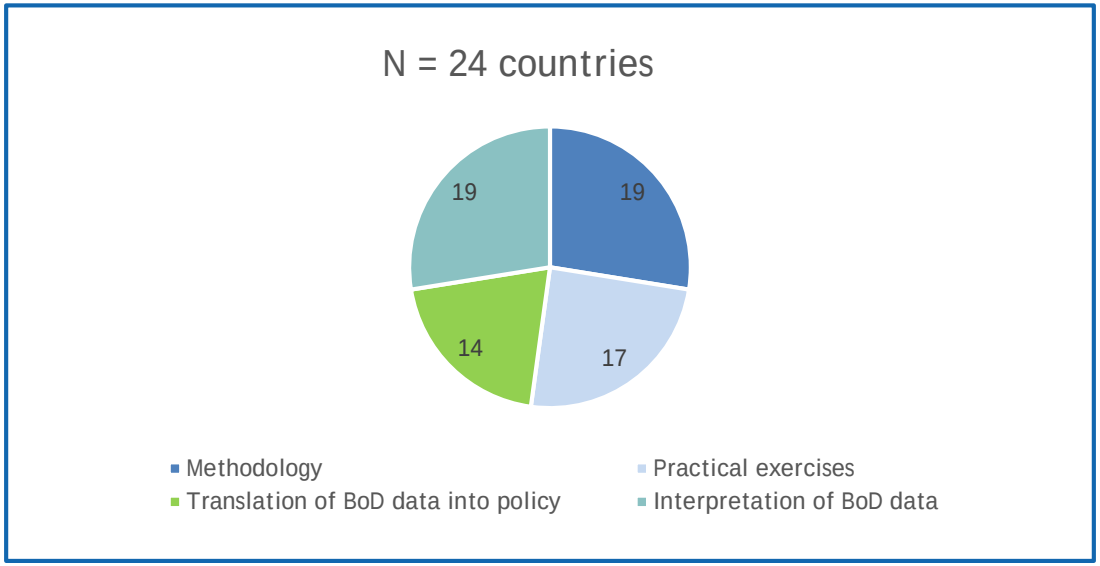
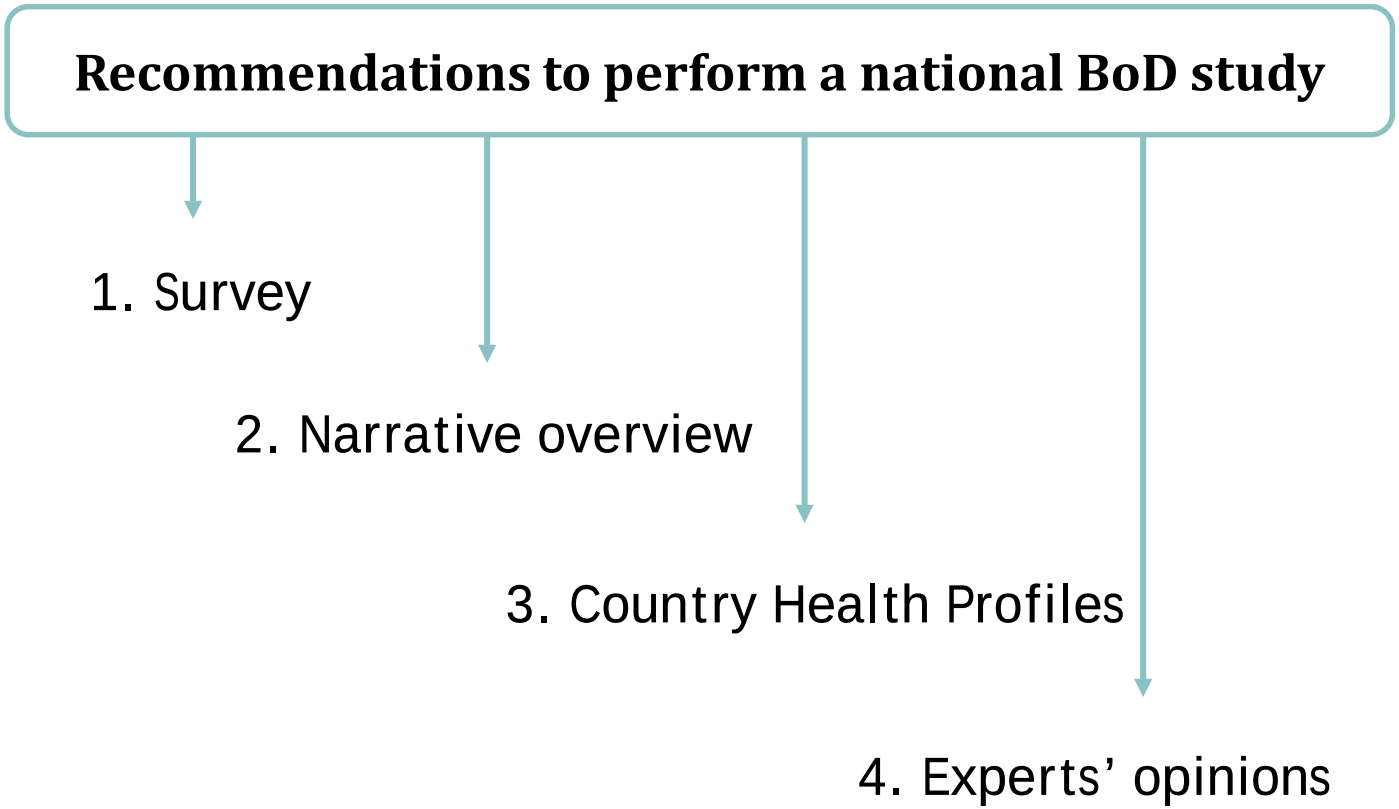
Use of Burden of Disease approaches in Europe

- **Objective:**
  - To identify the current needs to perform the national BoD studies

- **Results:**
  - Response rate = 93% (i.e., 25/27 European countries)
  - 72% (i.e., 18/25) have not carried out any BoD study
  - BoD support required for:



4-step approach to develop the recommendations



Recommendations to perform a national BoD study

1. Define the objectives of the BoD study
2. Secure access to the minimum required data sources
3. Ensure the minimum required workforce
4. Choice of a standard population
5. Choose an appropriate methodological approach
6. Establish a clear governance structure for the BoD study
7. Identify and communicate the benefits of performing national BoD studies
8. Stakeholder engagemement/involvement

Implications

- **InfAct project** has emphasized the potential role of BoD approaches

- The technical platform of COST Action **(European BoD Network)** would support to integrate BoD approaches in routing public health activities through:
  - developing and improving specific expertise to perform a BoD study
  - establishing and strengthening the scientific collaborations

4. School on HI experience in increasing HI skills for researchers and future roadmap

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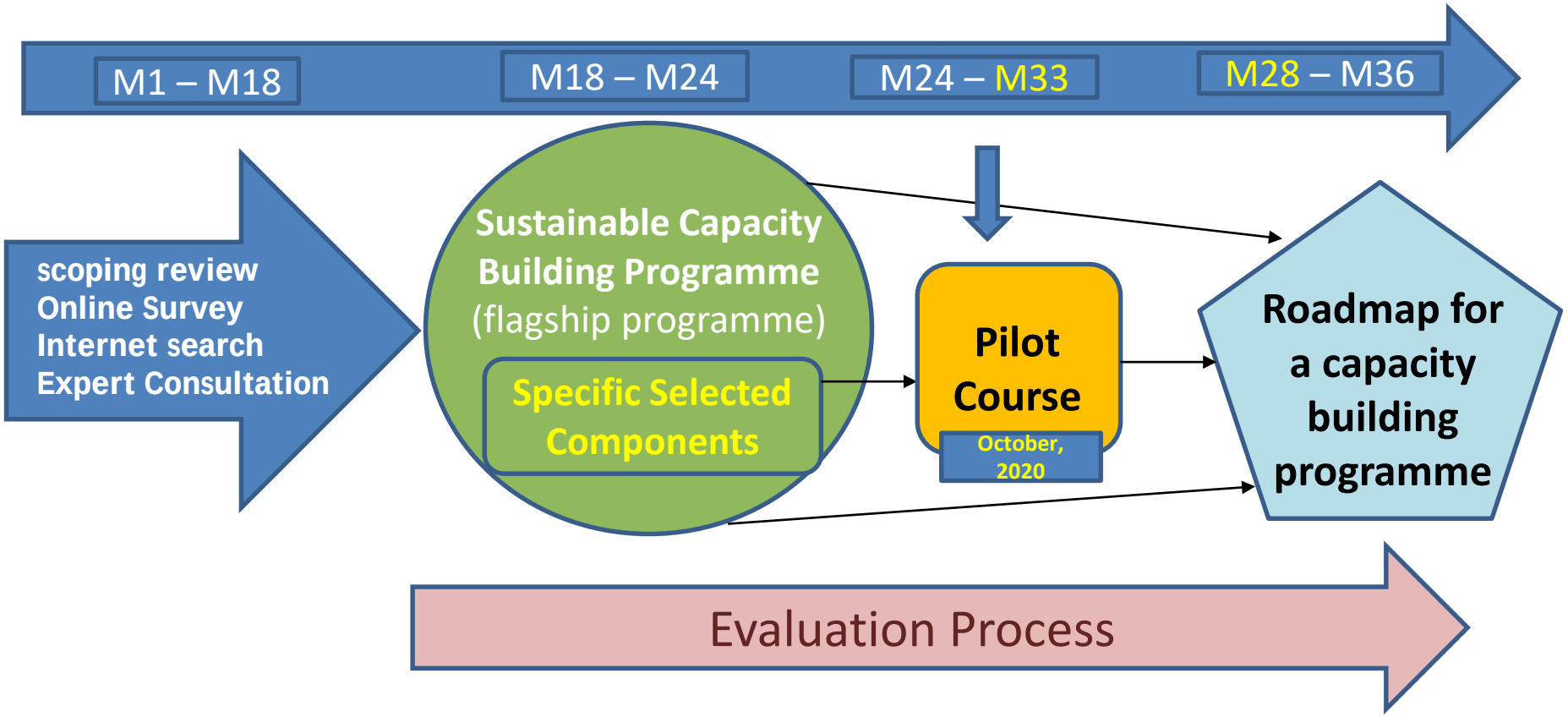
Leveraging Capacity Building for Reducing HI inequities in Europe



1st European School of Health Information 2020

“Health Information Training on Health Examination Survey: From Data Collection to Policy Dialogue and Translation”

- Day 1: Health information systems, data sources, metrics & indicators
- Day 2: Health data analysis and interpretation
- Day 3: Transfer from health data to policy and clinical practice
- Day 4: Interoperability and record linkage
- Day 5: Data protection (GDPR) & ethical questions for health information & and glimpse future (DIPoH)

Health Information Training Course on Health Examination Survey: From Data Collection to Policy Dialogue and Translation

Working groups

Time (CET)	1/10/2020 Thursday 1	8/10/2020 Thursday 2	22/10/20203 Thursday 3	29/10/2020 Thursday 4	5/11/2020 Thursday 5
9:00	Welcome	**Session 2.1** Comparability of different data sources	**Session 3.1** Interoperability – what it is	**Session 4.1** European Core Health Indicators (ECHI): looking back-ward, moving forward	**Session 5.1** Health information and GDP
9:30	Tour de table and course introduction				
10:00	**Session 1.1** Health information systems	**Session 2.2** New innovative data sources (myData, loyalty cards) for HI	**Session 3.2** New innovative health indicators	**Session 4.2** Examples of interoperability from INFACT	**Session 5.2** Legal and ethical requirements in a HES
10:45	Coffee Break			Coffee Break	Coffee Break
11:00	**Session 1.2** Role of health examination surveys as a HI data source	Coffee Break	Coffee Break	**Session 4.3** Linking survey data to registers	**Session 5.3** Discussions on GDPR
11:15		**Session 2.3** Non-response in health surveys: Profiles of the survey non-respondents	**Session 3.3** Estimation of trends and projections/forecast of health and health determinants		
12:00	**Group work 1** What information can be obtained through different data sources, and variations				
12:30				**Group work 4** Data linkage exercise	**Session 5.4** WHO Europe
13:00	Lunch	Lunch	Lunch	Lunch	Lunch
14:00	**Group work 1** continues	**Group work 2** Survey non-response and effective recruitment protocol for your test survey Project presentations	**Session 3.4** Examples of HES data use	**Group work 4** continues Project presentations	**Session 5.5** The Future of Health Information
15:00	Project presentations		**Group work 3** Preparing a public health report based on information from different data sources		
15:45	Coffee Break	Coffee Break	Coffee Break	Coffee Break	
16:00 - 17:00	**Session 1.3** The experience of European Health Examination Survey (EHES) in Portugal	**Session 2.4** Eurostat	**Session 3.5** The Portuguese Strategy for ECHI	**Session 4.4** Ireland Data Case	Final Words

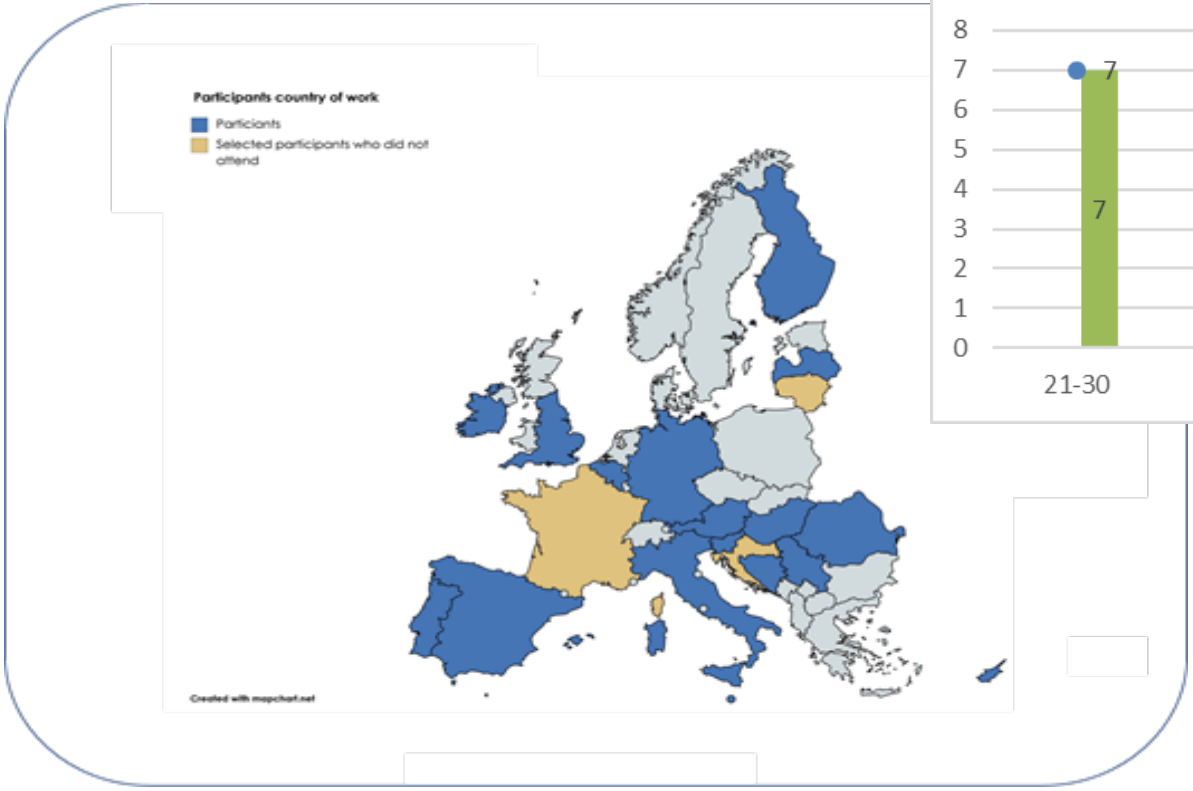
The Lecturers were Experts from European Public Health Institutes and Universities

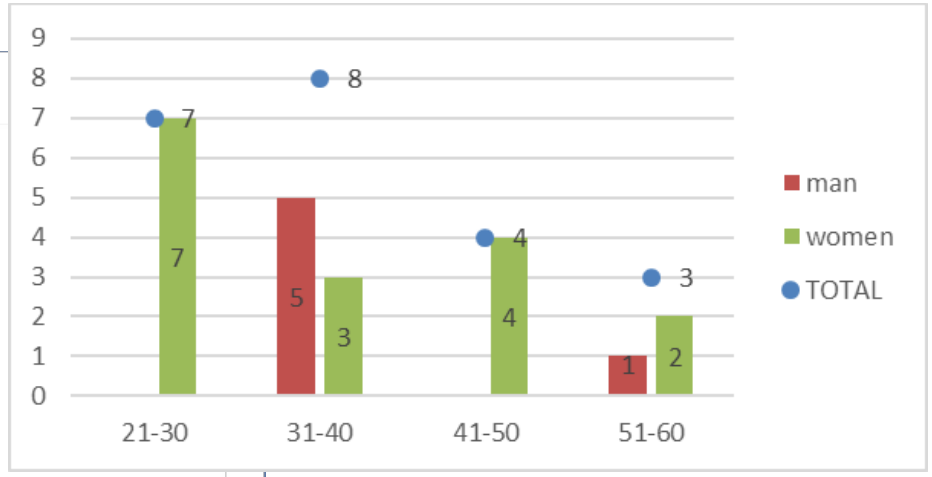
- Damir Ivankovic (HZJZ)
- Hanna Tolonen (THL)
- Henk Hilderink (RIVM)
- Kenneth Eaton (University College London)
- Jakov Vukovic (HZJZ)
- Luigi Palmieri (ISS)
- Luís Velez Lapão (IHMT/UNL)
- Mariken J. Tijhuis (RIVM)
- Päivikki Koponen (THL)
- Paulo Jorge Nogueira (FMUL)
- Petronille Bogaert (Sciensano)
- Rodrigo Sarmiento-Suárez (Inst de Salud Carlos III)
- Sarah Craig (HRB Ireland)
- Tommi Härkänen (THL)

SPECIAL GUESTS

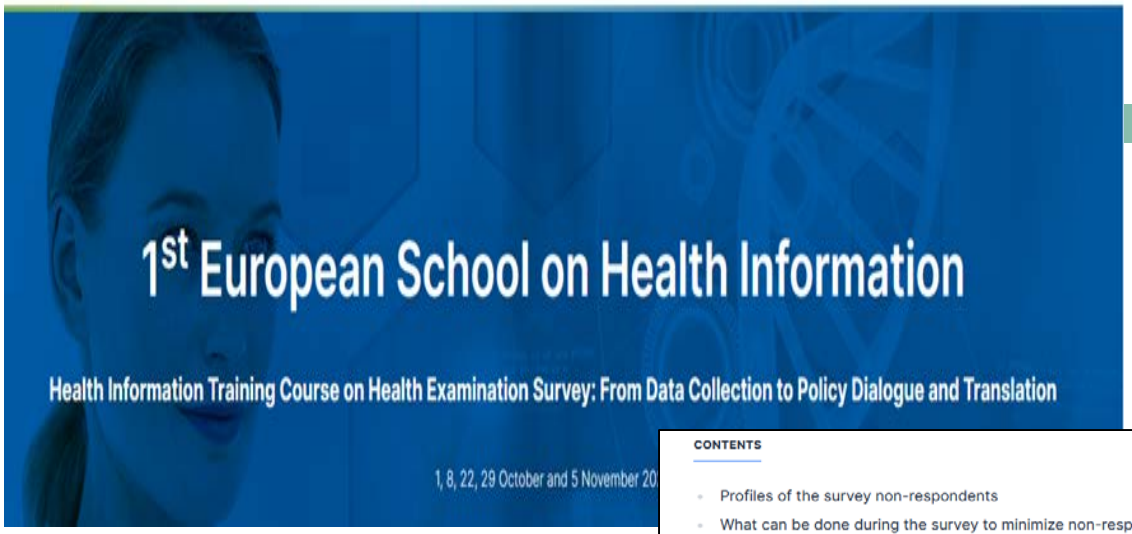
- Ana Dulce Pinto (INE - Statistics Portugal)
- David Novillo-Ortiz (WHO Europe)
- Eduarda Góis (INE - Statistics Portugal)
- Ena Lynn (Health Research Board – Ireland)
- Herman van Oyen (INFACT/Sciensano)
- Ilze Burkevica (EUROSTAT)
- Neville Calleja (MoH, Malta)
- Marta Barreto (INSA, Portugal)

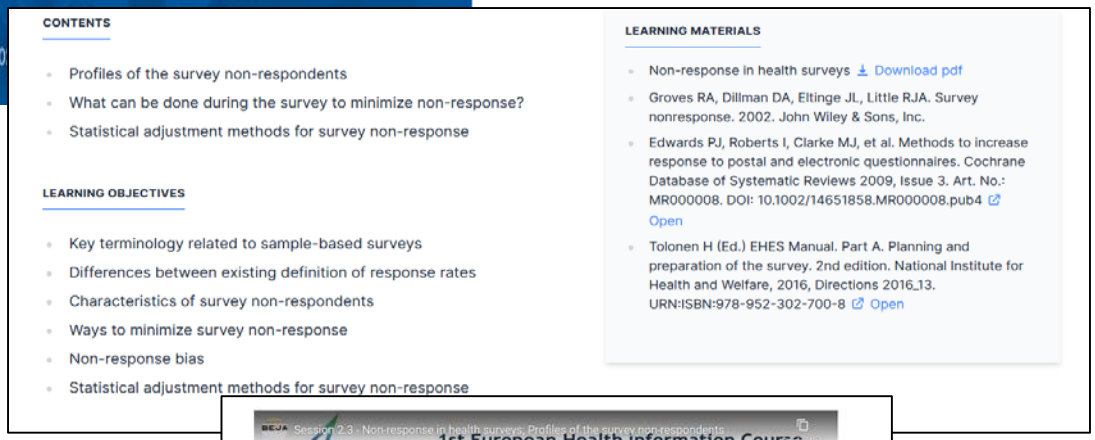
22 Participants from 17 countries (and Madeira)





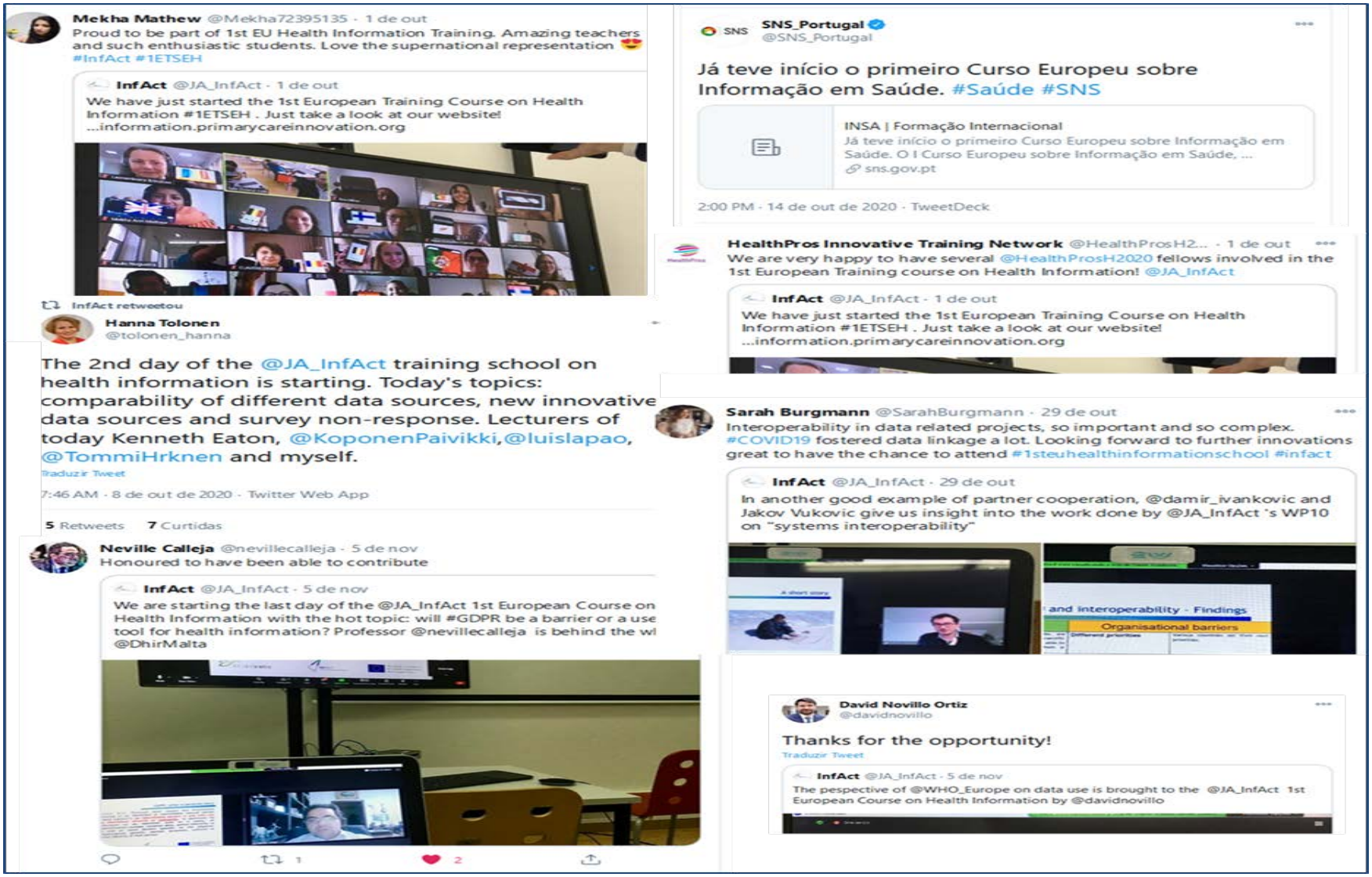
Course Website



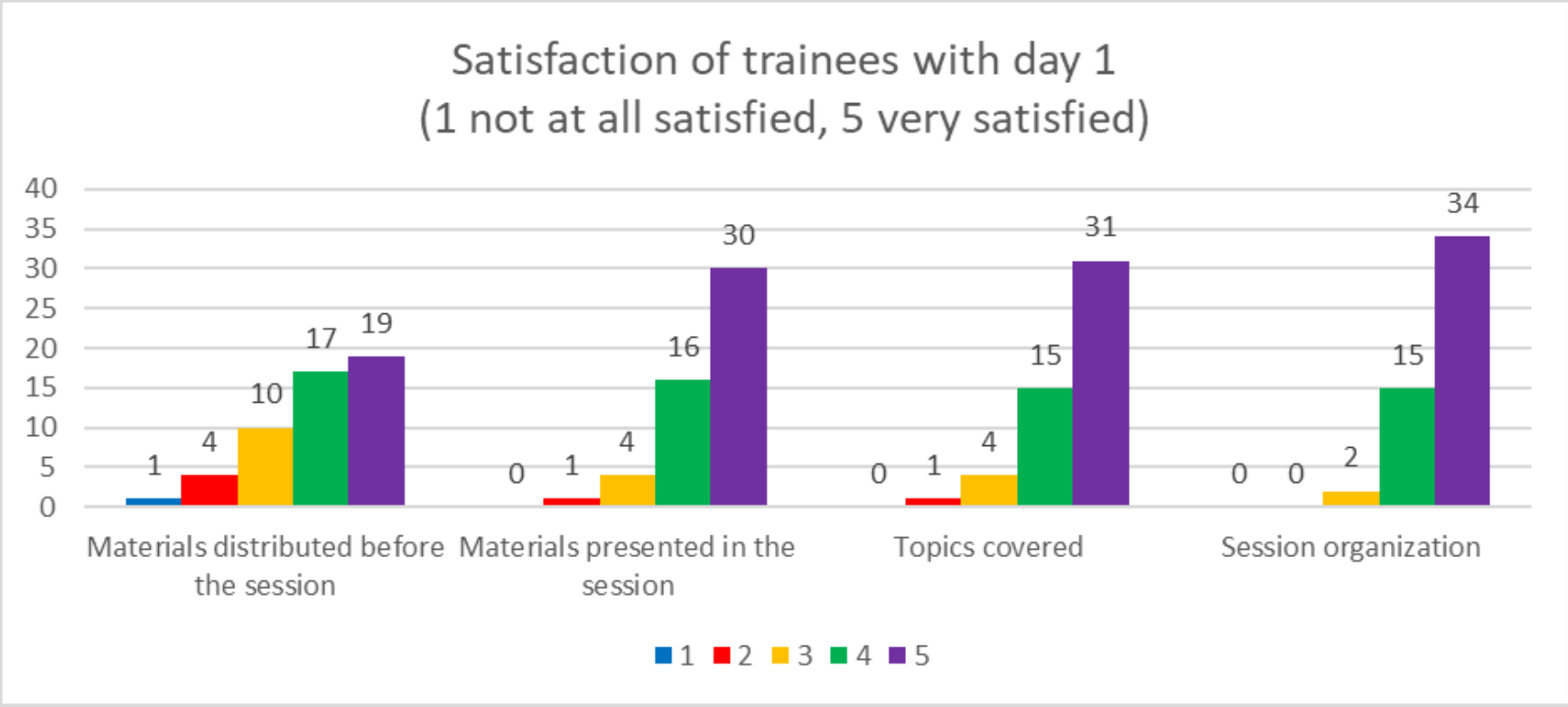


Communication and News about the initiative

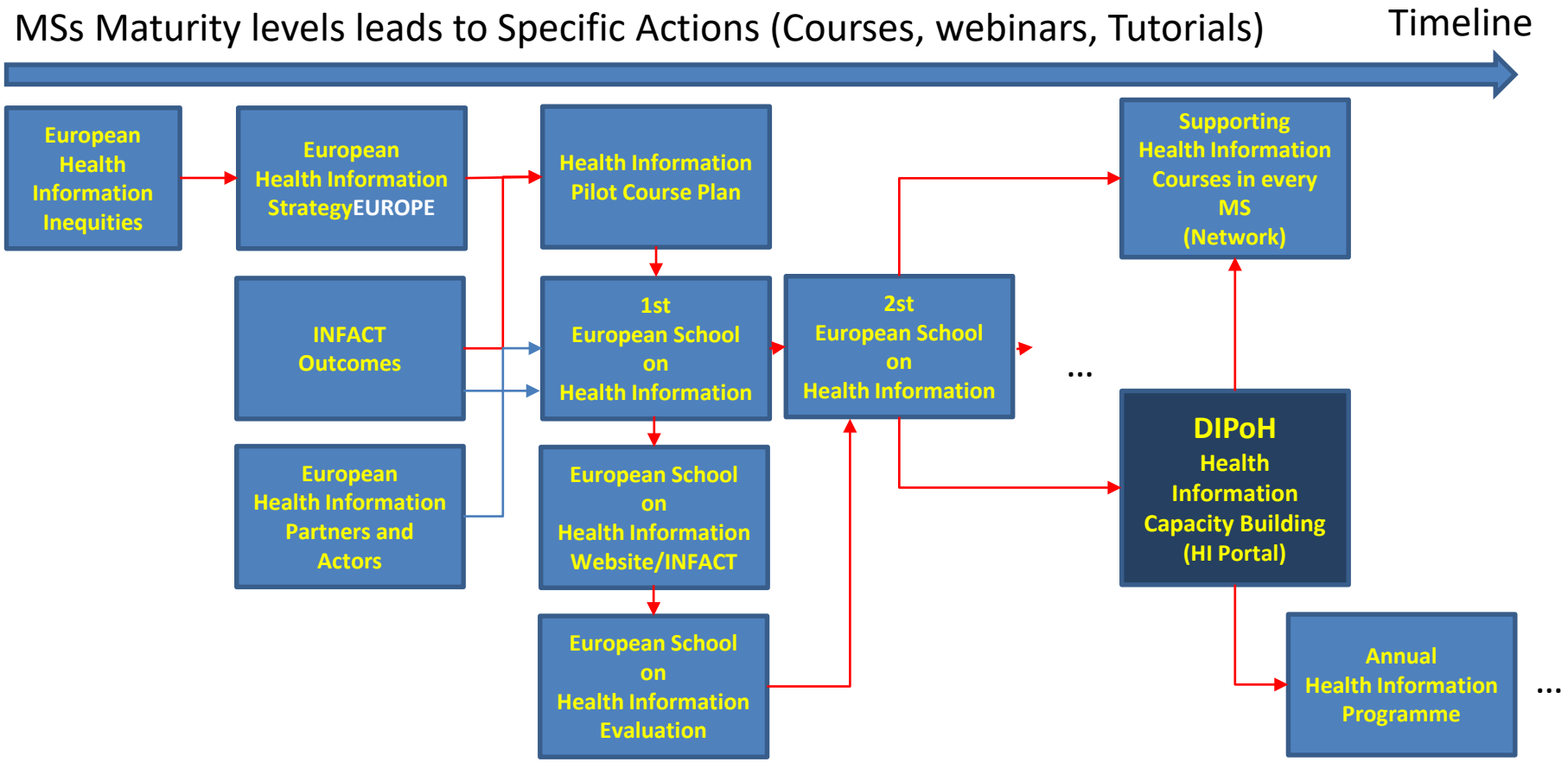
The course was very active on Twitter



Results
Trainees very positive evaluation



Sustainability
A Roadmap for Health Information in Europe



Acknowledgements