



European Health Information Training Programme  
1<sup>ST</sup> EUROPEAN SCHOOL ON HEALTH INFORMATION

Final Report

W.P6. Task 6.3

Work Package 6 - Strengthen EU countries Health Information Capacity

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# 1<sup>st</sup> European School on Health Information

## FINAL REPORT

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



Online course sessions: 1, 8, 22, 29 October and 5 November 2020 (Thursdays)

Website for information:

<https://health-information.primarycareinnovation.org/>

[www.inf-act.eu/](http://www.inf-act.eu/)

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## I- Introduction

The InfAct (Information for Action) is a Joint Action on Health Information that aims to create and develop a sustainable solid infrastructure on EU health information through improving the availability of comparable, robust and policy-relevant health status data and health system performance information.

To further tackle the current inequalities within Europe, the InfAct Work Package 6 (WP6) aims to contribute to increasing health information capacities. As part of its activities (task 6.3), the 1<sup>st</sup> European School on Health Information took place online between October 1<sup>st</sup> and November 5<sup>th</sup>, engaging lecturers from several universities, public health institutes and authorities and 22 participants from 17 different countries in Europe.

This report gathers and analyses data related to its preparation, the activities carried out and the evaluation of the initiative and contributes to a business case and roadmap for a sustainable capacity building programme in Europe, that will be developed during the 4<sup>th</sup> and final task of WP6.

## II- 1<sup>st</sup> European School on Health Information

The 1<sup>st</sup> European School on Health Information proposed modifications to the fundamental health information tools and methods used by public health professionals and, thus, contributed to the European Health Information Training Programme and Strategy. The experience was a clear example of a course that could be offered by InfAct and by a Distributed Infrastructure for Population Health Research (DIPoH), which could contribute to a sustainable improvement of capacity and equity in Europe in the future.

The course topics were selected with the aim of contributing to the convergence of European standard methods and HI fundamentals, including innovative contributions from the InfAct Work Packages (WP) and experts.

### A. The Course objective and core structure

This course aimed at providing public health professionals with practical knowledge about European and National approaches to Health Information, focusing on the development of Health Examination Surveys, covering a range of aspects from Data Collection to Policy Dialogue and Translation.

Initially designed to last a full week and take place in face-to-face sessions in Lisbon (Universidade Nova de Lisboa) at the end of May, the programme and schedule of the course were postponed and had to be adapted, due to the contingencies imposed by the health crisis caused by the pandemic of COVID-19.

The course was organized in five full-day online sessions, between October 1<sup>st</sup> and November 5<sup>th</sup>, 2020. Each day was dedicated to a relevant topic related to health information, and included theoretical and practical sessions, group work among trainees and lecturers discussing practical cases on health information:

- Day 1: Health information systems, data sources, metrics and 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) and ethical questions for health information

In the week before the course, the trainees were asked to invest a few hours for reading and research on the learning materials previously provided, and in the following week, they were required to write an essay for consolidation of contents and final evaluation. Figure 1 represents the course comprehensive framework.

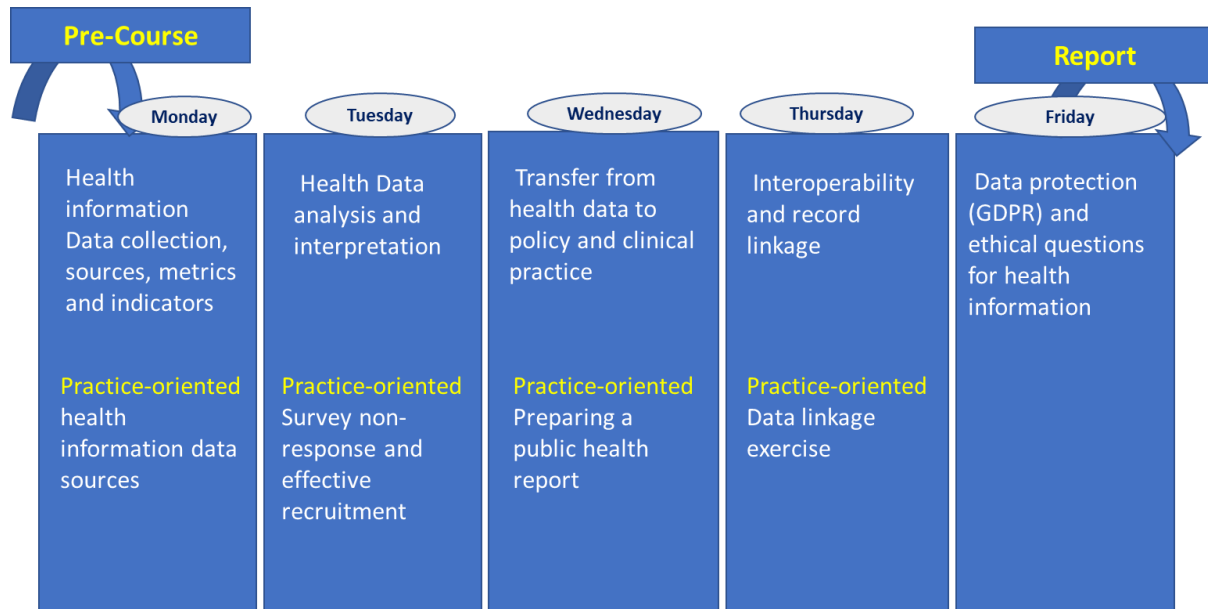


Figure 1 - Course Comprehensive Framework

A booklet<sup>1</sup> containing the presentation of the course and the lecturers, the objectives of each lecture and pedagogic methods, as well as a set of references and sources for framing the contents of the programme, was provided for the trainees. They were given access to the reserved area of the course website<sup>2</sup>, which serves as a repository for their activities and for access to learning materials.

<sup>1</sup> Annex 1

<sup>2</sup> <https://health-information.primarycareinnovation.org>

## B. Programme

The programme followed the plan initially foreseen, with all planned sessions having been structured with specific adjustments to the schedules (Table 1, next page).

## C. Trainees assessment

To award the “certificate of completion of the course”, the organizing team carried out a continuous evaluation of the trainees, which considered:

- Presence and participation in the sessions;
- Commitment to the discussions, the group work and the final essay.

Trainees who did not attain 80% attendance of the sessions, did not actively participate in the work or did not deliver the final essay were only entitled to a certificate of attendance.

## D. Course evaluation

An internal evaluation was carried out, consisting of daily surveys and a final survey to assess trainees' opinions. A final satisfaction survey was also conducted to assess the speakers' views.

In addition, an external evaluation was carried out by a team from the Portuguese Public Health Institute (INSA).

Table 1 - Course Programme

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



### III- Trainees selection and engagement

#### A. Trainees Selection

The call for the selection process was published on the infAct websites and several platforms of project partners at the end of July. WP6 partners were invited to announce the invitation on their dissemination list.

Applications were made by email and, for the selection of participants, the following requirements were defined:

- Member of one of the InfAct partners or actively working in health information related context, and;
- To have about 2-3 years of experience in the field of health information or related topics on public health;
- For pedagogic reasons, the maximum number of attendees was set at 30. Wide coverage of the Member States (MS) was prioritized, i.e. maximum 2 persons/MS.

Up to the 12<sup>th</sup> of September 2020, 52 applications were received, from 21 countries (20 from European countries and one from Brazil). 27 participants, working in 20 different countries, were selected. Among those 27:

- 3 did not respond to the request for confirmation of participation
- 2 reported not being able to participate for last-minute professional reasons (One suggested to be replaced by a colleague, which was accepted)

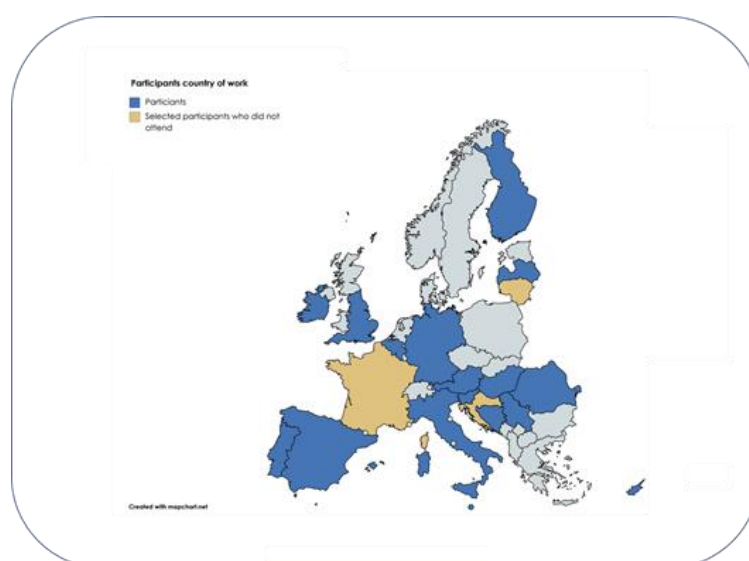


Figure 2 - Participants country of work

The possibility of exceptional integration of trainees suggested by partners or by entities of the European Union was foreseen. However, it did not happen.

## B. The course participants

The group of trainees who undertook the course was composed of 22 people, working from 17 different European countries. It was a very balanced class. Most were women (73%) and with less than 5 years of experience in the field of health information but there were also some senior professionals with more than 10 years of experience.

Table 2 -Participants country of work

Trainees by country of work	
Participants	Austria, Belgium, Bosnia & Herzegovina, Cyprus, Finland (2 participants), Germany, Hungary, Ireland, Italy (2), Latvia, Malta, Portugal (2, one from the Island of Madeira), Romania (2), Serbia (2), Slovenia, Spain, United Kingdom
Selected participants who did not attend	Croatia, France, Lithuania, Spain (2 <sup>nd</sup> participant, from the Canary Islands)

15 of the participants were under 40 years of age.

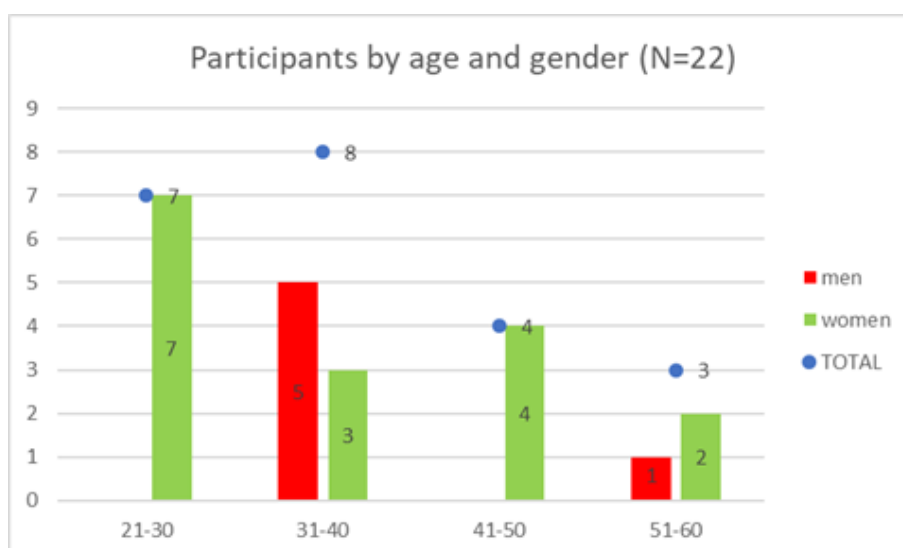


Figure 3 - Participants by age and gender (N=22)

Most of the participants had less than 5 years of experience working with health information - mean 9 years and mode 2 (n = 6 years).

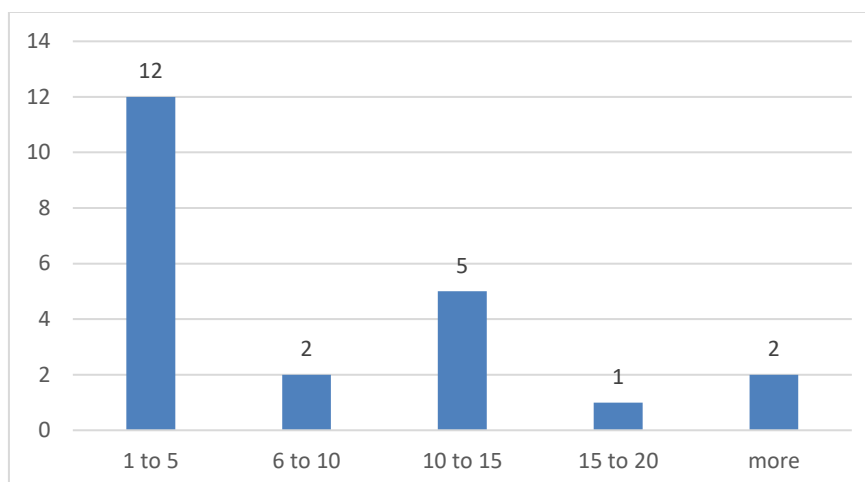


Figure 4 - participants by years of experience (N= 22)

### C. Trainees engagement

A strategy of permanent contact and proximity with the trainees was planned to guarantee their involvement and the strengthening of a network that it is intended to create. Among the actions developed, we highlight

- All candidates were emailed upon receipt of their application, stating that they would be part of the selection process. On September the 18<sup>th</sup>, they received a personalized email with the result of the selection process.
- On September the 24<sup>th</sup>, selected participants received an email with final details of the programme and the booklet for the course, with the invitation to attend a presentation and test session of the online platform where the work took place.
- The presentation and test session took place on 29<sup>th</sup> of September, with the presence of 18 of the 21 trainees and 6 lecturers.
- The e-mail address of the person in charge of the team was provided to answer questions and solve logistical problems. Requests were answered or forwarded when they arose.
- Four days before each session, information about the programme was sent and documentation provided by the speakers was shared.
- At the end of each day, trainees were asked to complete a satisfaction survey, with the opportunity to give their opinion on topics to be addressed in the next session.

- News and tweets about the course were shared with trainees as they were produced.
- Access to the reserved area of the course website was guaranteed for everyone to be able to access more information.

## IV- Lecturers selection and engagement

### A. Lecturers Selection

This course had the privilege to count as lecturers a set of experts and academics from the InfAct team, where they shared both their expertise and the results from InfAct work.

From InfAct the lecturers were the following:

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

Besides these lecturers, another set of experts from National and International organizations working on health information were invited to contribute:

- Ana Dulce Pinto (INE - Statistics Portugal)
- Eduarda Góis (INE - Statistics Portugal)
- Marta Barreto (Department of Epidemiology, INSA, IP)
- David Ortiz (WHO Europe)
- Ilze Burkevica (Eurostat)
- Ena Lynn (HRB, Ireland)

## B. Lecturers engagement

The participation of lecturers in the course activities was encouraged from the outset. All lecturers were allowed to attend other sessions of the course and access the private area of the website.

The course booklet contained a brief description of each session, with each lecturer's Curriculum Vitae and details of the session's theme, objectives, methodology and references for reading and consultation.

Prior to the course, lecturers received a brief description of the profile of each trainee. They also received a layout for preparing presentation slides and were asked to prepare a session on the topic considering the need to:

- review theoretical concepts;
- share experiences and practical examples;
- use innovative strategies to involve the trainees;
- make materials available for prior reading and further learning after the sessions.

A week before the scheduled date, every lecturer received an email from the organization reminding them of their commitment, requesting the sending of material for sharing on the website and clarifying how he/she could enter the session online.

At the end of the course they were asked to complete an evaluation survey, which will also serve to prepare future editions.

## V- The course day by day

### A. The sessions

Over the five days of the course, 21 sessions were held, involving 18 different lecturers from European universities, national Public Health Institutes or Statistical Authorities from different countries, as well as from international institutions such as Eurostat and WHO Europe.

All sessions were recorded and made available on the private part of the website, as well as the learning and support materials provided by the speakers.

## B. Daily Attendance

Overall, the attendance rate was high over the course; 41% of the trainees attended all sessions. The absences were all justified for work issues.

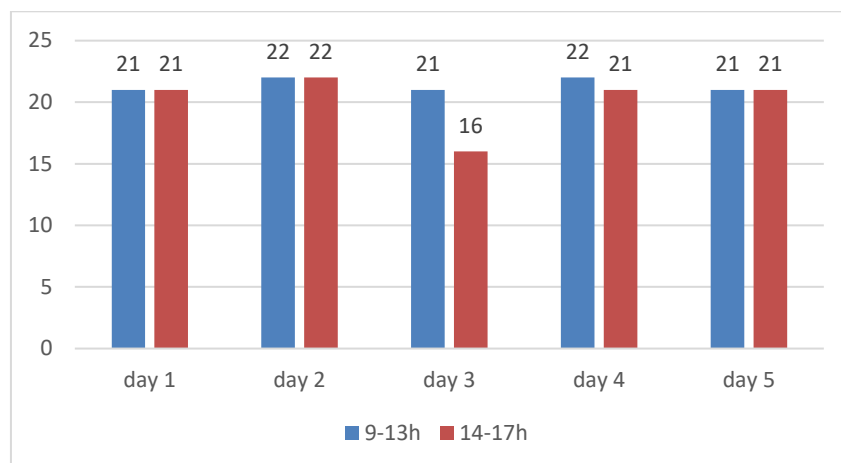


Figure 5 - Presence of trainees throughout the course (N=22)

Only one trainee of those who started the course, did not attend at least 80% of the sessions, having asked to be replaced by a colleague. This replacement was accepted, but neither was entitled to the certificate of completion of the course.

In addition to the presence of the trainees and speakers, the daily sessions were accompanied by the course organizing team, by partners involved in WP6 and by the external evaluation team.

## VI- External Communication

External communication, designed to give visibility to the initiative, was guaranteed through three channels: the creation of a course website<sup>3</sup>, provision of news on InfAct partners' websites and production of content for Twitter.

<sup>3</sup> <https://health-information.primarycareinnovation.org>

## A. Course Website

Online, since the end of September, the Course website served as a presentation of the initiative and, in its private area, as a repository of the learning materials and videos of the sessions.



Figure 6 - Course website layout

## B. Communication and News about the initiative

News about the beginning and end of the course were published on the InfAct websites and institutional websites of other involved partners.



Figure 7 - The course featured on different websites

## C. The course on Twitter

Throughout the sessions, tweets about the topics under discussion were shared through the InfAct project account. Partners, participants and other institutions related to public health replicated this information or referred to the course in their accounts, which allowed to increase the visibility of the initiative.

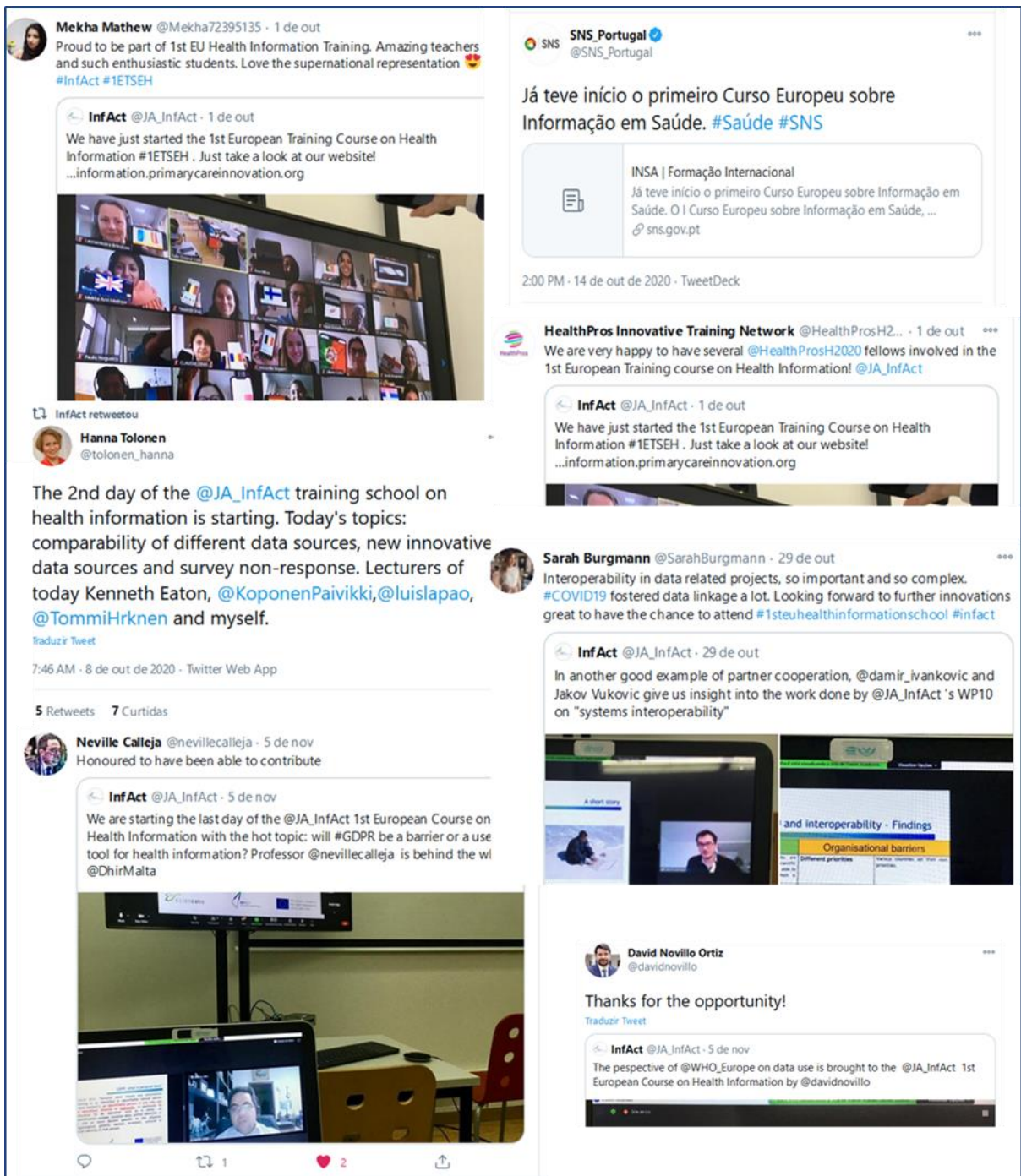


Figure 8 - The course on twitter- several examples



## VII- Course Evaluation

### A. Trainees evaluation

In the framework of the 1<sup>st</sup> European Health Information Training Programme, an assessment of trainee satisfaction was conducted, consisting of a daily survey and a final survey to find out their opinions and collect suggestions for improving future editions of the course.

The google forms platform was used to host the questionnaires, data collection was completely anonymous, and no personal data was collected.

#### - Daily satisfaction surveys

At the end of each course day, participants were asked to evaluate that day, pointing out their satisfaction in relation to four aspects: Materials distributed before the sessions, Materials presented in the sessions, Topics covered and Organization of the session. The scale ranges from '1' to '5'.

According to Figure 9, over the five days of the course, the number of responses to the daily survey had smaller variations with the first day (1/10/2020) having a higher response rate (81%) with a total of 17 registered responses. The third day (22/10/2020) had a lower response rate (52%) since only 11 participants submitted their responses. In any case, the response rate was always higher than 50%.

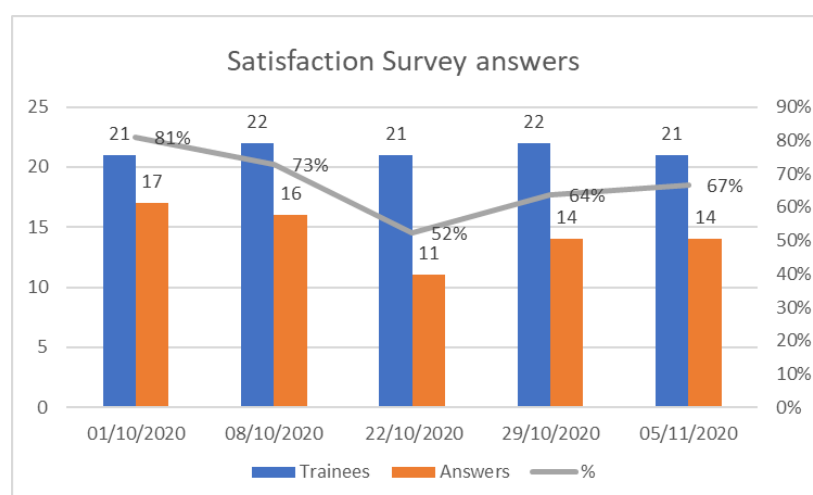


Figure 9 - Daily satisfaction survey responses (n=22)

At the end of each daily survey, except on the last day, participants could share questions that they would like to be discussed on the following day/week. According to Figures 9 and 10 the number of suggestions is significantly lower than the number of responses obtained; i.e., not all participants provided suggestions for the next day of the course.

It should be noted that the last day of the course had no suggestion recorded since a survey of its own was given to the participants to collect opinions and suggestions regarding the whole course, and not for a specific day.

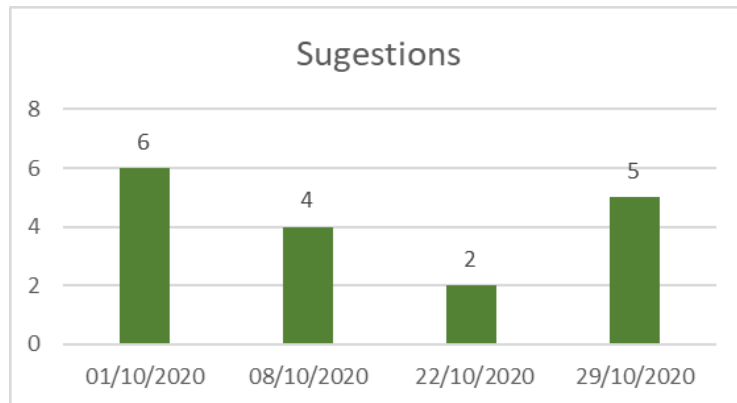


Figure 10 - Suggested questions that participants would like to see addressed the next day of the course

From the second day, the participants were asked to give their suggestions and criticisms about the sessions. According to Figure 11, a total of 112 feedbacks were recorded with the first two days obtaining 29 suggestions each. The third day had the highest number of comments from participants, while the last day of the course was the weakest in this subject.

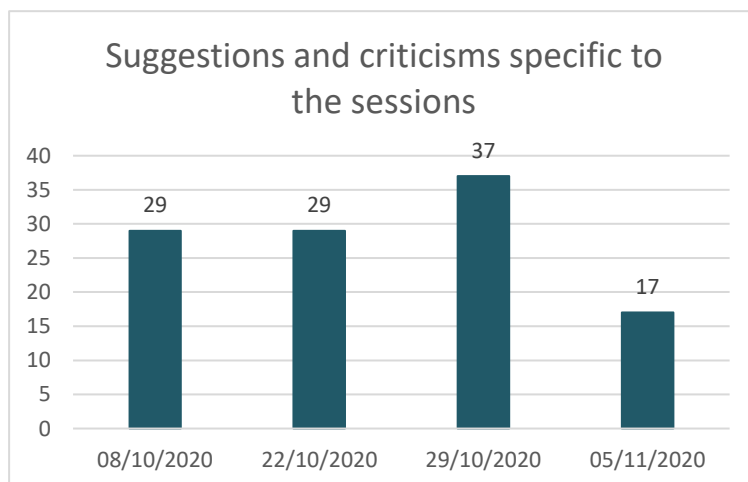


Figure 11 - Sugestions and criticisms specific to the sessions for each day of the course

## Thursday 1: Health Information Data Collection, Sources, Metrics and Indicators

In general, the satisfaction of the trainees was very high. According to them, the themes matched the objectives of the course and the theme of this first day. Despite the positive results, which include participants with intermediate satisfaction, there were few dissatisfied participants.

To obtain an overview of each day, we made a matrix with the responses for each session, which allowed the analysis of the cumulative data. In general, the satisfaction of the trainees was very high. As regards the harmonisation of the sessions with the course, almost half of the trainees considered the sessions 'Very suitable', with a significant proportion of the participants giving maximum scores.

*Table 3 - Harmonization of day 1 sessions with course objectives and the daily theme*

	Answers	Percentage
<b>Not suitable</b>	0	0,00%
<b>Not very suitable</b>	1	1,47%
<b>Useful</b>	12	17,65%
<b>Very suitable</b>	33	48,53%
<b>Fundamental</b>	22	32,35%
<b>Total</b>	68	100%

*Table 4 - Harmonization of day 1 sessions with course objectives and the daily theme*

Session	Not suitable		Not very suitable		Useful		Very Suitable		Fundamental	
<b>1.1: Health Information System</b>	0	0%	0	0%	0	0%	9	27,27%	8	36,36%
<b>1.2: Role of Health Examination Survey as a Health Information data source</b>	0	0%	0	0%	3	25,00%	10	30,30%	4	18,18%
<b>1.3: The experience of European Health Examination survey (EHES) in Portugal</b>	0	0%	0	0%	4	33,33%	7	21,21%	6	27.27%
<b>Group Work 1: What information can be obtained through different data sources, is there variations between countries</b>	0	0%	1	100%	5	41,67%	7	21,21%	4	18,18%
<b>TOTAL</b>	0	0%	1	100%	12	100%	33	100%	22	%100

There was also a high level of satisfaction with the organization and the course of the sessions, namely with regard to the materials distributed in advance, materials presented and the topics covered by lectures (Table 5 and Figure 12).

Table 5 - Satisfaction of trainees with day 1 sessions (1 not at all satisfied, 5 very satisfied)

	Materials distributed before the session		Materials presented in the sessions		Topics covered		Session organization	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
1	1	1,96%	0	0%	0	0%	0	0%
2	4	7,84%	1	1,96%	1	1,96%	0	0%
3	10	19,61%	4	7,84%	4	7,84%	2	3,92%
4	17	33,33%	16	31,37%	15	29,41%	15	29,41%
5	19	37,25%	30	58,82%	31	60,78%	34	66,67%
<b>TOTAL</b>	<b>51</b>	<b>100%</b>	<b>51</b>	<b>100%</b>	<b>51</b>	<b>100%</b>	<b>51</b>	<b>100%</b>

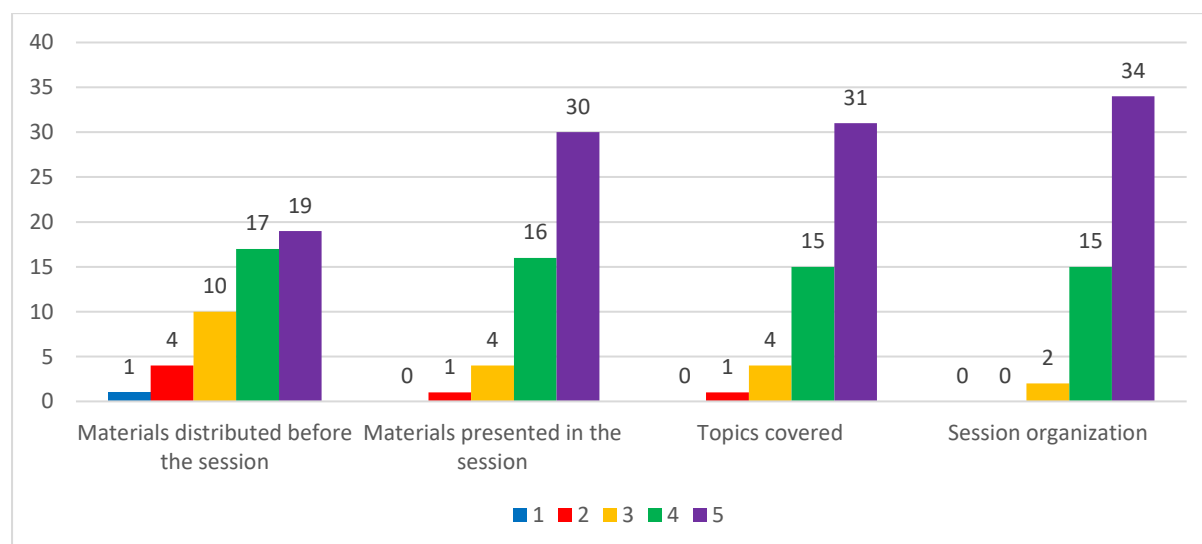


Figure 12 -Satisfaction of trainees with day 1 (1 not at all satisfied, 5 very satisfied)

On the proposed group work for this session, a high proportion of trainees (41%) considered it 'Very suitable' and 29% as 'Useful'. Only 24% considered it as 'Fundamental' and 6% considered the activity as 'Not very suitable'.

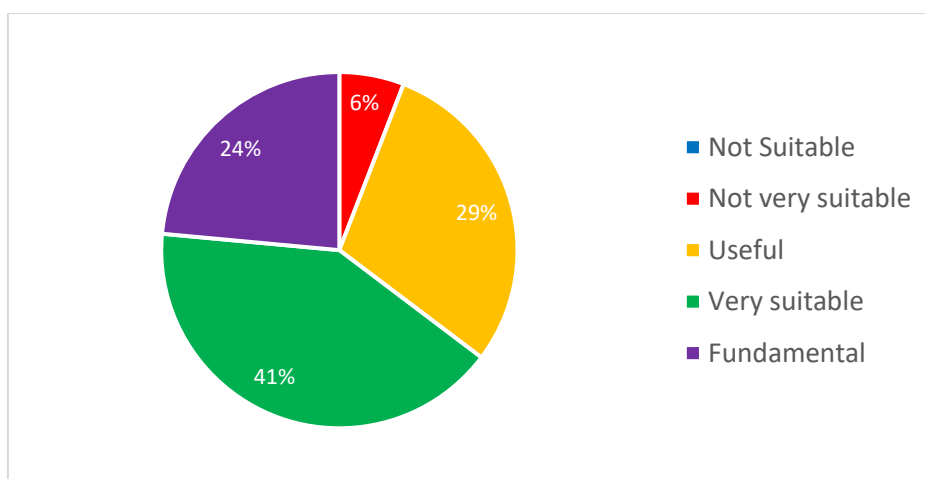


Figure 13 - Harmonization of Group Work 1 with the course objectives and the theme of the day

With the opportunity to suggest a subject or question to be discussed on the second day of the course, only six trainees gave their suggestions<sup>4</sup>. Overall, there were three questions and three comments. The questions were somehow related to methods and their data analysis. However, the comments addressed some suggestions for the second day while one of the participants thanked and gave a positive note on the first day of the course:

- *Which method do you use to analyse the data?*
- *While I have no particular question, I would like to hear more on your own experiences with dealing with the missing data and interpretation of selection bias in population studies.*

#### Thursday 2: Health Data Analysis and Interpretation

The participants' perspective on the sessions was very positive. In general, the trainees considered that the sessions of this second day were very important and for some of them fundamental. These results also show that only two sessions - including one guest seminar - were not so well received by the participants, although the evaluation was positive. It is important to highlight the absence of negative or partially negative responses. On the other hand, the number of participants who gave an intermediate assessment was considerable (Tables 6 and 7).

<sup>4</sup> The contributions made by the participants are incorporated into a more detailed analysis at the end of the document.

Table 6 - Harmonization of day 2 sessions with course objectives and the daily theme

	Answers	Percentage
Not suitable	0	0,00%
Not very suitable	0	0,00%
Useful	14	17,50%
Very suitable	39	48,75%
Fundamental	27	33,75%
Total	80	100%

Table 7 - Harmonization of day 2 sessions with course objectives and the daily theme

Session	Not suitable		Not very suitable		Useful		Very Suitable		Fundamental	
2.1: Comparability of different data sources (availability and comparability of information)	0	0	0	0	2	14,29%	9	23,08%	5	18,52%
2.2: New innovative data sources (myData, loyalty cards of the shops, etc.) for health information	0	0	0	0	4	28,57%	6	15,38%	6	22,22%
2.3: Non-response in health surveys; Profiles of the survey non-respondents	0	0	0	0	1	7,14%	10	25,64%	5	18,52%
Group Work 2: Survey non-response - plan an effective recruitment protocol for your imaginary/real survey	0	0	0	0	2	14,29%	9	23,08%	5	18,52%
Guest Seminar	0	0	0	0	5	35,71%	5	12,82%	6	22,22%
<b>TOTAL</b>	0	0%	0	0%	14	100%	39	100%	27	%100

In general, satisfaction levels were very high in all variables, with only one exception: one of the trainees reported dissatisfaction with the materials distributed (Table 8).

Table 8 - Satisfaction of trainees with day 2 sessions (1 not at all satisfied, 5 very satisfied)

	Materials distributed before the session		Materials presented in the sessions		Topics covered		Session organization	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
1	0	0%	0	0%	0	0%	0	0%
2	1	2,08%	0	0%	0	0%	0	0%
3	12	25,00%	10	15,63%	12	28,75%	10	15,63%
4	16	33,33%	20	31,25%	23	35,94%	23	35,94%
5	19	39,58%	34	53,13%	31	48,44%	31	48,44%
<b>TOTAL</b>	<b>48</b>	<b>100%</b>	<b>64</b>	<b>100</b>	<b>64</b>	<b>100</b>	<b>64</b>	<b>100</b>

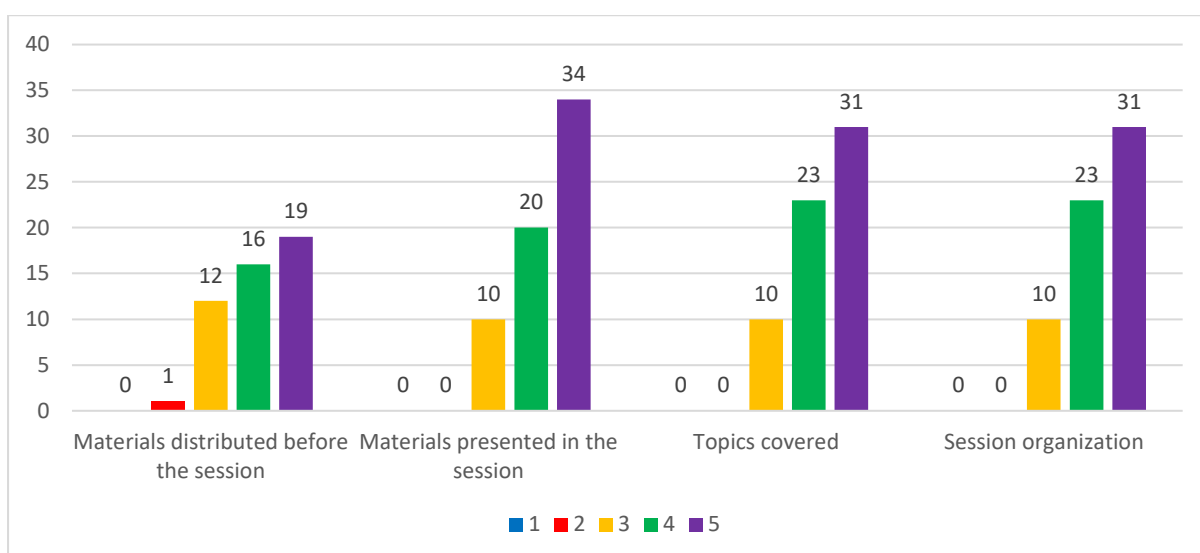


Figure 14 - Satisfaction of trainees with day 2 (1 not at all satisfied, 5 very satisfied)

Group Work 2 was the second session in which participants had to work as a group. Evaluating only the harmonization of this session with the objectives of the course and the theme of the day, almost 90% of participants found the session more than useful.

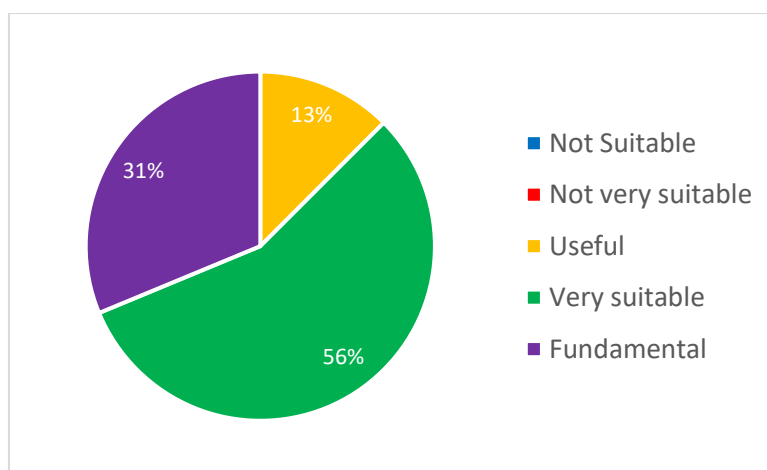


Figure 15 - Harmonization of Group Work 2 with the course objectives and the theme of the day

Only four participants provided questions for the third day. The results were four questions and one comment, namely:

- *This topic is fundamental. There lies a big challenge in there: how is the data utilized in policy making and clinical practice? Any insights and knowledge on this subject is highly welcome - and I hope we tackle real life and concrete examples. Thank you for the interesting day 2., looking forward to day 3.!*

### Thursday 3: Transfer from Health Data to Policy and Clinical Practice

The third day of the course also showed positive results with more than half of the trainees considering the sessions quite appropriate for the course. In this sense, according to Table 9, more than 80% of the participants believe that this day was quite harmonious with the characteristics of the course. Despite this very encouraging balance, one trainee was somehow dissatisfied with the content of the sessions.

Besides, the satisfaction among the participants was very positive. The small amount of dissatisfaction was limited to the materials provided for the sessions and, in this case, the scores were not reduced.



Table 9 - - Harmonization of day 3 sessions with course objectives and the daily theme

	Answers	Percentage
Not suitable	0	0,00%
Not very suitable	1	1,52%
Useful	9	13,64%
Very suitable	38	57,58%
Fundamental	18	27,27%
Total	66	100%

Table 10 - Harmonization of day 3 sessions with course objectives and the daily theme

Session	Not suitable		Not very suitable		Useful		Very Suitable		Fundamental	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
3.1: Interoperability - what it is?	0	0%	0	0%	2	22,22%	6	15,79%	3	16,67%
3.2: New innovative health indicators	0	0%	0	0%	0	0%	7	18,42%	4	22,22%
3.3: Estimation of trends and projections/forecasts of health and health determinants	0	0%	0	0%	2	22,22%	6	15,79%	3	16,67%
3.4: Examples of HES data use	0	0%	0	0%	0	0%	10	26,32%	1	5,56%
3.5: Portuguese strategy for ECHI	0	0%	0	0%	4	44,44%	4	10,53%	3	16,67%
Group Work 3: Preparing a public health report based on information from different data sources. What data can be found from different international/national databases/portal?	0	0%	1	100%	1	11,11%	5	13,16%	4	22,22%
<b>Total</b>	<b>0</b>	<b>0%</b>	<b>1</b>	<b>100%</b>	<b>9</b>	<b>100%</b>	<b>38</b>	<b>100%</b>	<b>18</b>	<b>100%</b>

As in the previous days, most trainees were satisfied or very satisfied. Regarding the topics covered and the session of the organization, no one was disgruntled or partially disgruntled.

Table 11 - Satisfaction of trainees with day 3 sessions (1 not at all satisfied, 5 very satisfied)

	Materials distributed before the session		Materials presented in the sessions		Topics covered		Session organization	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
1	0	0%	0	0%	0	0%	0	0%
2	2	3,64%	2	3,64%	0	0%	0	0%
3	9	16,36%	11	20%	10	18,18%	7	12,73%
4	26	47,27%	21	38,18%	22	40%	21	38,18%
5	18	32,73%	21	38,18%	23	41,82%	27	49,09%
<b>TOTAL</b>	<b>55</b>	<b>100%</b>	<b>55</b>	<b>100%</b>	<b>55</b>	<b>100%</b>	<b>55</b>	<b>100%</b>

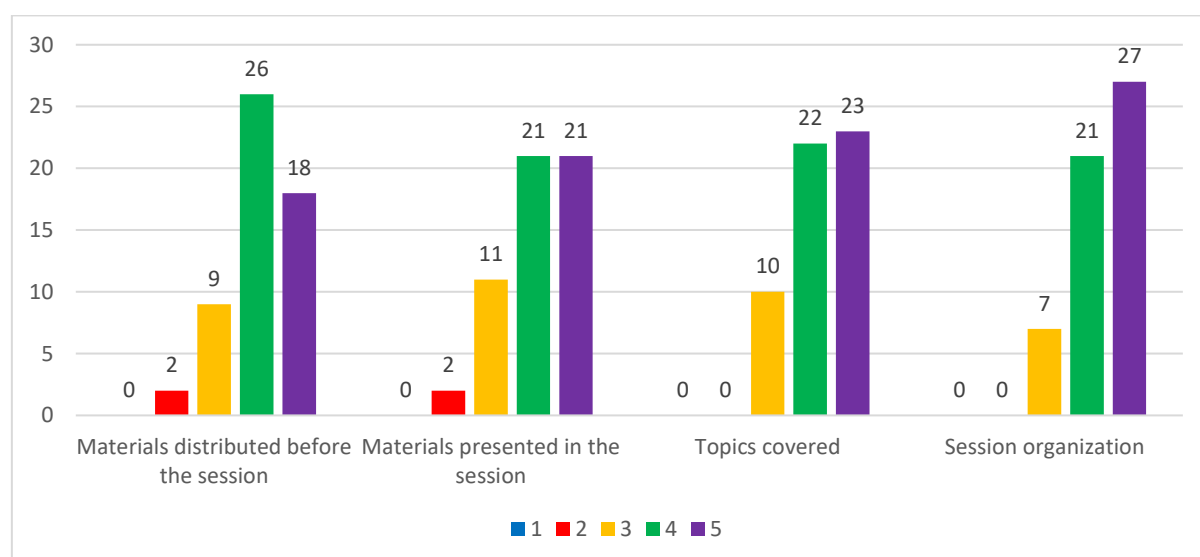


Figure 16 - Satisfaction of trainees with day 3 (1 not at all satisfied, 5 very satisfied)

Group Work 3<sup>5</sup> was considered in line with the characteristics of the course. According to the trainees, the session was 'Very suitable' (46%) and 'Fundamental' (36%). The remaining 18% - distributed equally - considered the session 'Useful' and 'Not very suitable'.

<sup>5</sup> G. W.3: Preparing a public health report based on information from different data sources. What data can be found from different international/national databases/portal?

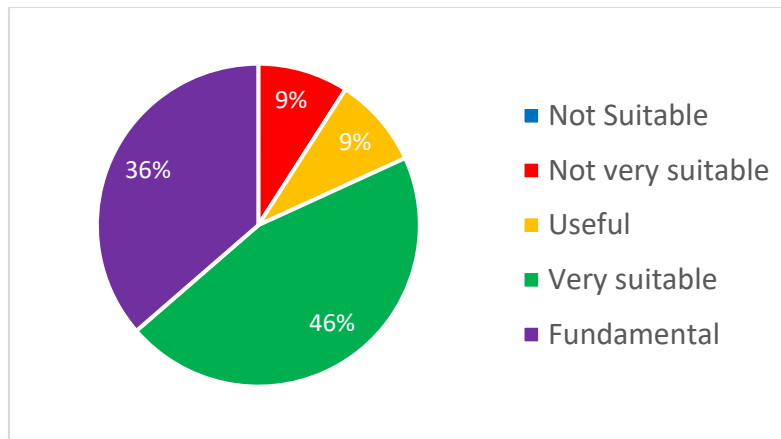


Figure 17 - Harmonization of Group Work 3 with the course objectives and the theme of the day

Since this third day was the one that had the lowest answers from the participants, the suggestions, and questions for the lecturers of the fourth day were also reduced. Thus, only one question and one comment were submitted:

- *Any aspects and general principles and knowledge on these issues are welcome! Thank you. Obrigado.*
- *As for all the lectures before, I would like more in-depth and technical lectures with implementation details*

#### Thursday 4: Interoperability and Record Linkage

In an overview, participants were again satisfied with the fourth day of the course. The levels of satisfaction were high and the participants' view of the harmonization of the sessions was also very positive. Dissatisfaction was once again present in terms of harmonization and satisfaction. Nevertheless, the result was more than positive, as demonstrated by the results regarding the overall satisfaction of the participants.

Table 12 - Harmonization of day 4 sessions with course objectives and the daily theme

	Answers	Percentage
Not suitable	1	1,43%
Not very suitable	1	1,43%
Useful	12	17,14%
Very suitable	33	47,14%
Fundamental	23	32,86%
Total	70	100%

Table 13 - Harmonization of day 4 sessions with course objectives and the daily theme

Session	Not suitable		Not very suitable		Useful		Very Suitable		Fundamental	
4.1: European Core Health Indicators (ECHI): looking backward, moving forward	0	0%	0	0%	2	16,67%	6	18,18%	6	26,09%
4.2: Examples of interoperability from InfAct	0	0%	0	0%	4	33,33%	6	18,18%	4	17,39%
4.3: Linking survey data to registers	0	0%	0	0%	1	8,33%	9	27,27%	4	17,39%
4.4: Ireland Coronial Data	1	100%	0	0%	2	16,67%	8	24,24%	3	13,04%
Group Work 4: Data Linkage exercise	0	0%	1	100%	3	25%	4	12,12%	6	26,09%
Total	1	100%	1	100%	12	100%	33	100%	23	100%

The trainees were very satisfied in all aspects of the sessions which took place during the fourth day. Thus, most participants showed a high degree of satisfaction, although there were some isolated cases of dissatisfaction.

Table 14 - Satisfaction of trainees with day 4 sessions (1 not at all satisfied, 5 very satisfied)

	Materials distributed before the session		Materials presented in the sessions		Topics covered		Session organization	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
1	3	5,36%	1	1,79%	1	1,79%	0	0%
2	1	1,79%	1	1,79%	1	1,79%	0	0%
3	6	10,71%	3	5,36%	0	0%	1	1,79%
4	15	26,79%	11	19,64%	12	21,43%	10	17,86%
5	31	55,36%	40	71,43%	42	75,00%	45	80,36%
<b>TOTAL</b>	<b>56</b>	<b>100%</b>	<b>56</b>	<b>100%</b>	<b>56</b>	<b>100%</b>	<b>56</b>	<b>100%</b>

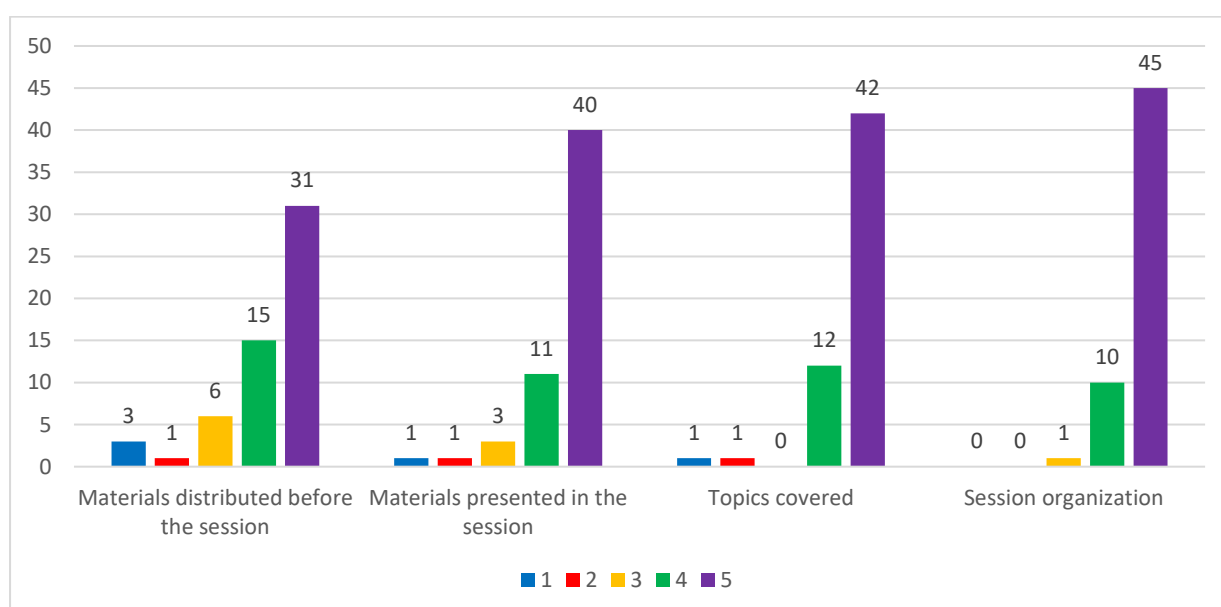


Figure 18 - Satisfaction of trainees with day 4 (1 not at all satisfied, 5 very satisfied)

The group work<sup>6</sup> was considered 'Fundamental' by 43% of the participants, while 29% classified it as 'Very suitable' and 21% characterized it as 'Useful'. Only 7% named it 'Not very suitable'.

<sup>6</sup> Group Work 4 - Data Linkage exercise

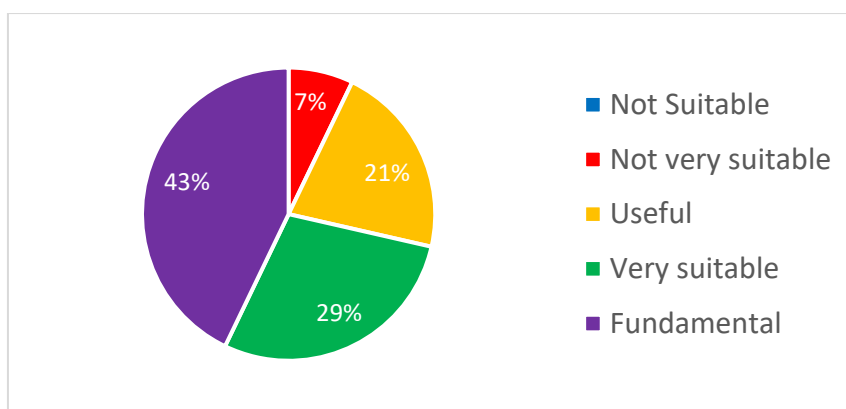


Figure 19 - Harmonization of Group Work 4 with the course objectives and the theme of the day

Unlike the third day, in this fourth daily survey, participants shared more questions to be discussed on the last day of the course. In general, four questions and a comment were submitted, where the respective trainee was happy and eager for the last day of the course, namely:

- *What are the barriers that GDPR raise against data use for public health purposes?*
- *No specific questions at the moment. Looking forward to the next day of the course! Thank you. Obrigado.*

#### Thursday 5: Data Protection (GDPR) and Ethical Questions for Health Information

The fifth and final day of the course presented results that followed the previous days. Although the result is positive, there was some dispersion among the participants regarding the harmonization of the sessions towards the objectives of the course. On the other hand, trainee satisfaction was quite high.

Table 15 - Harmonization of day 5 sessions with course objectives and the daily theme

	Answers	Percentage
Not suitable	0	0,00%
Not very suitable	1	1,79%
Useful	16	28,57%
Very suitable	22	39,29%
Fundamental	17	30,36%
Total	56	100%

Table 16 - Harmonization of day 5 sessions with course objectives and the daily theme

Session	Not suitable		Not very suitable		Useful		Very Suitable		Fundamental	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
<b>5.1: Health Information &amp; GDPR</b>	0	0%	0	0%	3	18,75%	5	22,73%	6	35,29%
<b>5.2: Legal and ethical requirements in a HES</b>	0	0%	0	0%	4	25,00%	6	27,27%	4	23,53%
<b>5.3: Discussion: What kind of possibilities and challenges different countries have faced due to GDPR? What we could learn from each other?</b>	0	0%	1	100%	4	25,00%	6	27,27%	3	17,65%
<b>5.4: Looking for excellence and trust: second use of data</b>	0	0%	0	0%	5	31,25%	5	22,73%	4	23,53%
<b>Total</b>	0	0%	1	100%	16	100%	22	100%	17	100%

Most participants were quite satisfied with several aspects of the sessions. It should be noted that the scores for one of the topics (Health Information & GDPR) was slightly more balanced at the highest levels of satisfaction, while for other aspects the participants were extremely satisfied. In all variables, there were some dissatisfied trainees. However, this detail was of little importance compared to the overall results.

Table 17 - Satisfaction of trainees with day 4 sessions (1 not at all satisfied, 5 very satisfied)

	Materials distributed before the session		Materials presented in the sessions		Topics covered		Session organization	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
1	3	7,14%	0	0%	0	0%	0	0%
2	0	0%	1	1,79%	1	1,79%	1	1,79%
3	4	9,52%	4	7,14%	5	8,93%	3	5,36%
4	17	40,48%	15	26,79%	13	23,21%	13	23,21%
5	18	42,86%	36	64,29%	37	66,07%	39	69,64%
<b>TOTAL</b>	<b>42</b>	<b>100%</b>	<b>56</b>	<b>100%</b>	<b>56</b>	<b>100%</b>	<b>56</b>	<b>100%</b>

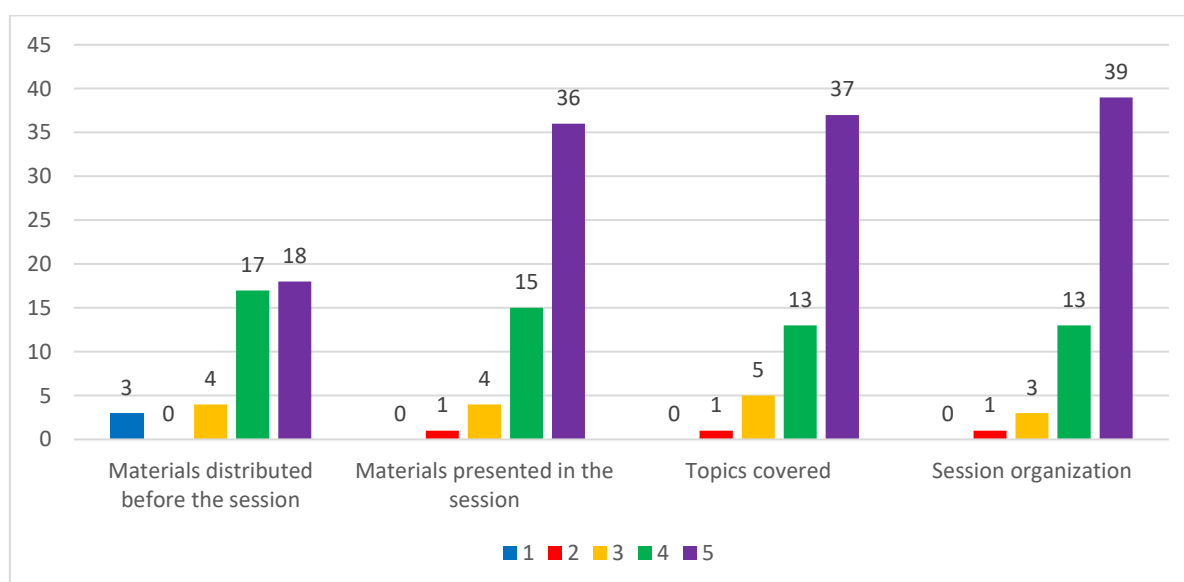


Figure 20 - Satisfaction of trainees with day 5 (1 not at all satisfied, 5 very satisfied)

### - Final survey

To continue the evaluation work that was being done with the trainees, after the end of the course a final survey was sent to all, in order to get their general opinion and satisfaction with the course and collect their suggestions for improving future editions. 15 responses were obtained, corresponding to 68,2% of the participants.



First of all, we tried to understand how the trainees were informed about the course. The results (table 18) show that the majority of the participants were informed through their personal/professional network, a result that is directly linked to the fact that the call was disseminated mainly among the project partners. Still, some of the participants report having found information on twitter or on websites.

*Table 18 - how trainees were informed of the course (n=15)*

<b>How did you know that the "1st European School on Health Information" was going to take place?</b>	<b>n</b>	<b>%</b>
I saw it on a website	2	13,3%
Information placed on my institution's mailing list	1	6,7%
Searching on the internet	0	0,0%
I was informed by a colleague	10	66,7%
Other	2	13,3%

When asked if they would recommend the course to a colleague who works in the area of health information, the vast majority (13 of the 15) answered yes. In addition to indicating satisfaction, this result opens the possibility of, in the future, constituting a network for the dissemination of initiatives among peers.

The second group of questions focused on the adequacy of the course in terms of duration and work required. In general, the trainees considered the "course duration", "the number of theoretical practical hours" and "Number of group work hours" as "very suitable". Although the evaluations were mostly positive, there was less consensus regarding the "individual work" they were asked to do (Table 19).

Table 19 - adequacy of course in terms of duration and work required (n=15)

	Not suitable		Not very suitable		Useful		Very suitable		Fundamental	
	n	%	n	%	n	%	n	%	n	%
Course duration	0	0%	0	0%	2	13,3%	11	73,3%	2	13,3%
Number of theoretical practical hours	0	0%	0	0%	5	33,3%	8	53,3%	2	13,3%
Number of group work hours	1	6,7%	1	6,7%	2	13,3%	9	60%	2	13,3%
Individual work (before, during and after the course)	0	0%	3	20%	5	33,3%	5	33,3%	2	13,3%

The third block of questions concerned satisfaction with a set of themes related to the programme, the future usefulness of the course for their professional life and the logistical support and technological solutions chosen by the organization. Participants were asked to rate their satisfaction from 1 (not at all satisfied) to 5 (very satisfied).

In general, satisfaction was high, with the average ratings of the different topics ranging from 4.14 to 4.87 (table 20)

Table 20 -Global satisfaction with the course (average rating values)

Topics	average rating value
Chosen themes	4,5
General organization	4,79
Chosen speakers	4,57
Possibility to know the work of other people or institutions	4,29
Possibility to deepen useful knowledge for your work	4,14
Possibility of establishing useful contacts for your work	4,21
Logistical support before the sessions	4,64
Logistical support during the sessions	4,79
Quality of the online platform where the course was installed	4,87
Course website	4,67

In the questions related to the programme, the vast majority of the trainees considered themselves very satisfied with the chosen themes, the organization of the agenda and the invited speakers.

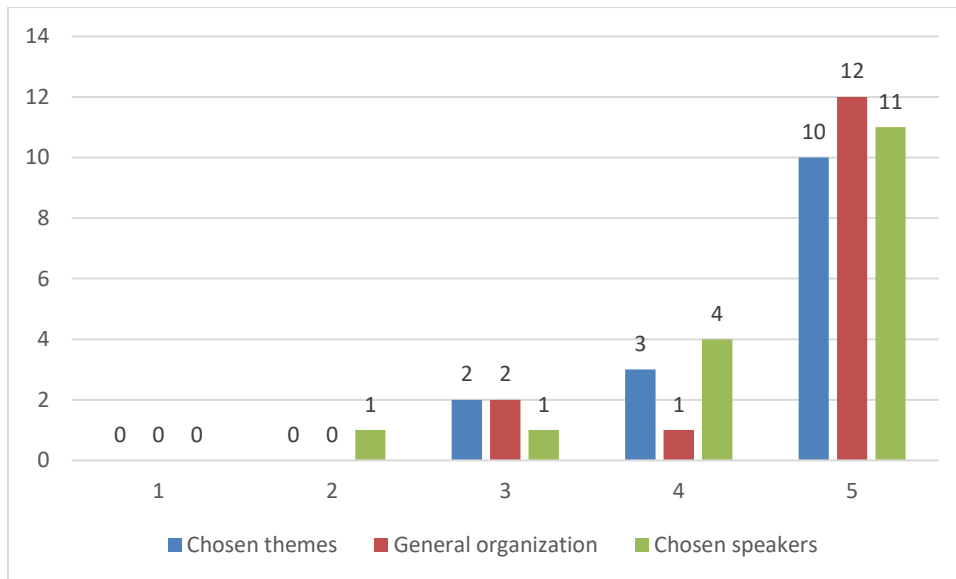


Figure 21 - Trainees satisfaction (1 - not at all satisfied to 5 - very satisfied) with the course programme (n = 15)

The categories related to the **perception of the course's usefulness for the participants' professional future** were those that had the most dispersion in responses, an indicator of a lower level of satisfaction (which was still high)

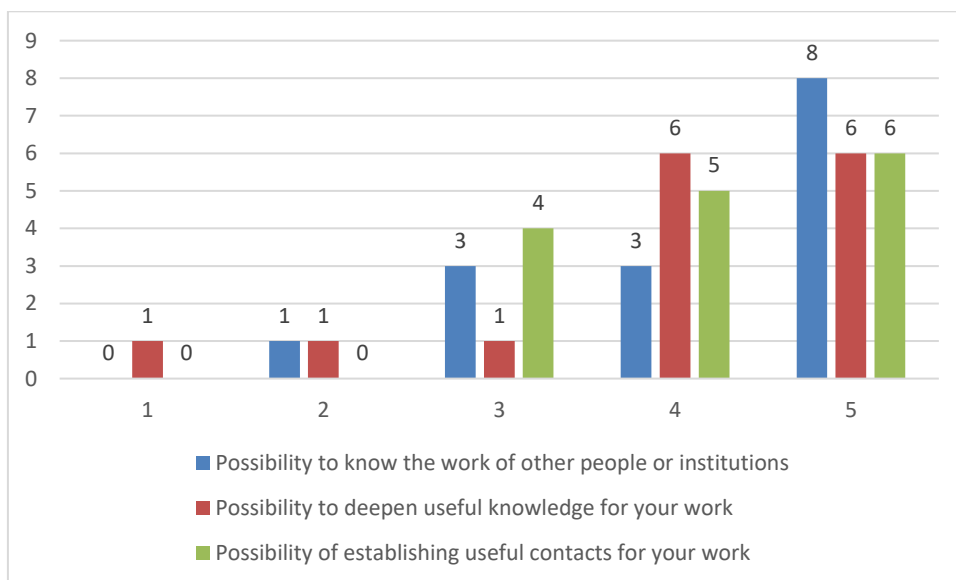


Figure 22 - Trainees satisfaction (1 - not at all satisfied to 5 - very satisfied) with the usefulness of the course for professional life (n = 15)

Finally, most participants declared to be "satisfied" or "very satisfied" with the **support given by the organization**, with the online platform chosen to run the course and with the website.

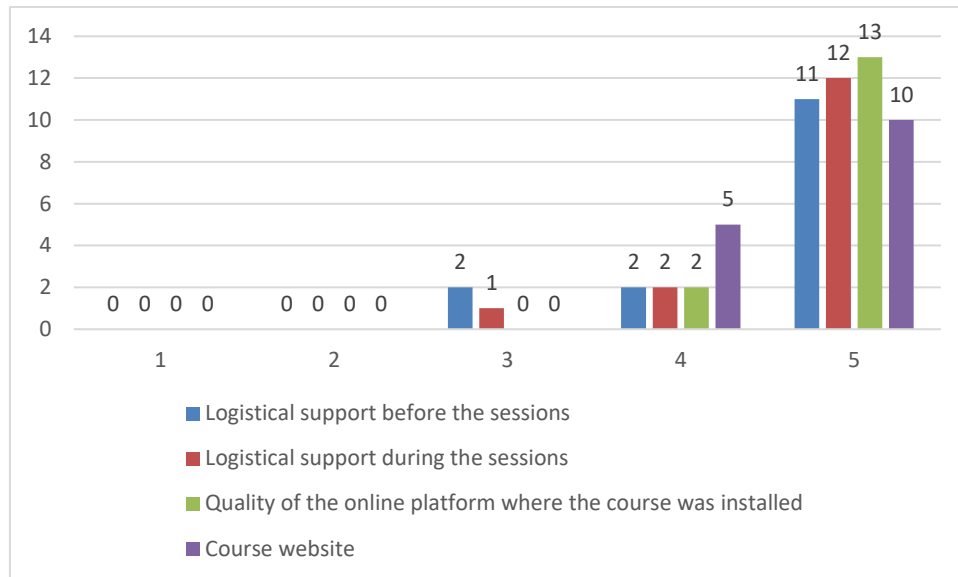


Figure 23 - Trainees satisfaction (1 - not at all satisfied to 5 - very satisfied) with the course logistics and technology (n = 15)

Trainees were also asked to suggest topics to be addressed and aspects to be improved in the organization of future editions of the European School on Health Information.

From the analysis of suggestions for future work, 20 proposals stand out, which are divided into 4 major areas: communication, data collection, management and analysis, comparison between countries/systems and other topics. (Table 21). These suggestions are aligned with the themes for further development that were identified in the need's assessment carried out in Task 6.1 of this Work Package.

Table 21 - Themes suggested for future work

<b>Communication</b>	<ul style="list-style-type: none"> <li>- New ways of Communicating health information</li> <li>- how to create different tables and charts.</li> </ul>
<b>Data collections, management and analysis</b>	<ul style="list-style-type: none"> <li>- Health interview surveys (deeper),</li> <li>- Analysis, evidence-based examples,</li> <li>- Possible datasets to re-use</li> <li>- Geographical data</li> <li>- Missing data/data imputation</li> <li>- Common data interpretation mistakes</li> <li>- Novel methods</li> <li>- Informatic programmes that can be used to manage the information</li> <li>- Specific training on data linkage</li> <li>- dealing with the missing data and non-responders profile</li> </ul>
<b>Countries/systems comparison</b>	<ul style="list-style-type: none"> <li>- Extra-european health information systems</li> <li>- Comparison of data management in different countries,</li> <li>- More practical examples in countries of General data protection.</li> </ul>
<b>Other themes</b>	<ul style="list-style-type: none"> <li>- Food consumption surveys</li> <li>- More about e-health</li> <li>- How to calculated years of lost because of disease</li> <li>- Cybersecurity</li> <li>- More explanation of how Echi works</li> </ul>

The number of suggestions on organizational issues to be considered in the next editions of the course was lower, being related to the group and individual work proposed to the trainees, the improvement of logistical support and the network promotion (Table 22)

Table 22 - organizational issues to be considered in the next editions of the course

<b>group and individual work</b>	<ul style="list-style-type: none"> <li>- Information for Work groups more clear</li> <li>- More practical work</li> <li>- One thing that can be considered is shifting of working group members. I understand that keeping the same group helps continuity in the activity, but then, in a virtual environment, the networking with the other participants become non-existing. Alternatively, a side minor activity with group-shifting can be add to the main group work.</li> <li>- Just give a little more time between the course and the workgroups delivery</li> <li>- In the beginning there wasn't enough time to prepare the group work, consider sending the tasks earlier</li> </ul>
<b>Organization and logistical support</b>	<ul style="list-style-type: none"> <li>- Information regarding certificate, logistical support, time to respond to emails</li> <li>- Sometimes the lectures were just about the experience - and that could be a bit boring, maybe shortening the whole methods and materials part and being quicker to get to the best practices and</li> </ul>

	conclusions they had from the experience could make those ""experience - lectures"" more efficient. "
<b>Network promotion</b>	<ul style="list-style-type: none"> <li>- I think it would be great to keep the class informed of new challenges and opportunities available. Add an ongoing mentorship element</li> <li>- time for informal exchange, less reading material before the sessions, detailed feedback on group work, get pptx before the sessions to add notes during the session</li> </ul>

## B. Lecturers evaluation

As the feedback from the trainees was collected, we also sought to know more about the opinions and considerations of the lecturers. In general, not being very different from the results related to the satisfaction of trainees, lecturers were also very pleased.

Concerning several aspects inherent to the course itself, lecturers have always indicated a positive rating without a single person with a negative opinion. However, the less positive point to be highlighted was the poor support of lecturers in answering the questionnaire. In all, data from six lecturers were anonymously collected.

*Table 23 - Lecturers' assessment about various aspects of the course*

	<b>Answers</b>	<b>Percentage</b>
<b>Not suitable</b>	0	0,00%
<b>Not very suitable</b>	0	0,00%
<b>Useful</b>	5	16,67%
<b>Very suitable</b>	15	50.00%
<b>Fundamental</b>	10	33.33%
<b>Total</b>	30	100%

Table 24 - Lecturers' assessment about various aspects of the course

1. Considering the objectives of the course and its Comprehensive Framework	Not suitable		Not very suitable		Useful		Very Suitable		Fundamental	
The selection of themes to be addressed in the initiative was:	0	0%	0	0%	1	20%	2	13,33%	3	30,00%
The inclusion in the programme of the theme(s) of the session(s) that you presented was:	0	0%	0	0%	1	20%	3	20,00%	2	20,00%
The time allotted for these topic(s) was:	0	0%	0	0%	1	20%	4	26,67%	1	10,00%
The booklet that was produced with information about the course was:	0	0%	0	0%	1	20%	3	20,00%	2	20,00%
The information about the trainees shared with you before the session was:	0	0%	0	0%	1	20%	3	20,00%	2	20,00%
<b>TOTAL</b>	<b>0</b>	<b>0%</b>	<b>0</b>	<b>0%</b>	<b>5</b>	<b>100%</b>	<b>15</b>	<b>100%</b>	<b>10</b>	<b>%100</b>

In order to learn more about the satisfaction of lecturers, they expressed their feedback on four variables. In general, the satisfaction was very good regarding the logistical support, the quality of the online platform and the course website. On a scale of 1 to 5, all lecturers were in the two points with the best evaluation.

Table 25 - Lecturers' satisfaction (1 not at all satisfied, 5 very satisfied)

	The logistical support that the course organization provided before the session		The logistical support that the course organization provided during the session		The quality of the online platforms where the course was installed		The course website	
1	0	0%	0	0%	0	0%	0	0%
2	0	0%	0	0%	0	0%	0	0%
3	0	0%	0	0%	0	0%	0	0%
4	3	50,00%	2	33,33%	3	50,00%	4	66,67%
5	3	50,00%	4	66,67%	3	50,00%	2	33,33%
<b>TOTAL</b>	<b>6</b>	<b>100%</b>	<b>6</b>	<b>100%</b>	<b>6</b>	<b>100%</b>	<b>6</b>	<b>100%</b>



Figure 24 - Lecturers' satisfaction related to

In addition to the evaluation of the lecturers and their satisfaction, we sought to know their opinions related to new and future editions. Answering the question 'Do you consider the proposal to create new editions of the course, as part of a broader Health information training programme, more than two-thirds of lecturers believe that future editions of the course will be a great asset to all.

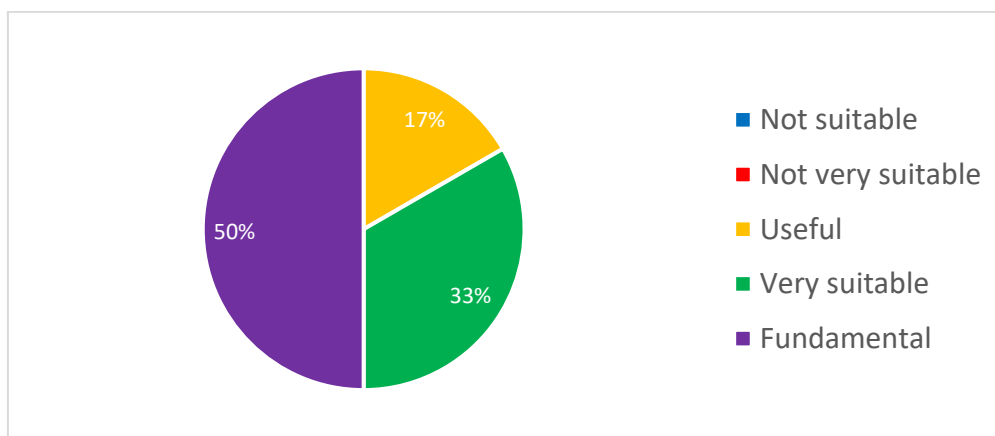


Figure 25 - Opinion of the lecturers about the new editions of the course



In the end, lecturers had the opportunity to share suggestions on topics to be addressed in the future and aspects that should be improved by the course organisation. For example, the COVID-19 themes, best practices for data collection and its analysis tools were some of the topics requested to be addressed. About improvements, lecturers considered that it would be beneficial to have more trainees and that the next course is in a face-to-face format. It should be noted that there were four valid suggestions in both fill fields.

### VIII- External evaluation

As provided in the InfAct project protocol, the evaluation of the proposal of the EHITP will consider the feasibility of continuing to run the programme in the future, the coverage of the required components, and the target population, among other components.

An evaluation process based on the integration of the evaluation framework of the World Health Organization (WHO) and of the Centers for Disease and Control (CDC) framework for Programmes Evaluation in Public Health will be used. As such, the evaluation of the *European Health Information Training Programme* will take place in 4 phases: phase 1 - engage stakeholders, describe the programme, focus the evaluation design; phase 2 - gather credible evidence, justify conclusions; phase 3 - reporting of results and recommendations; and phase 4 - incorporation of evaluation recommendations into a new version of the *European Health Information Training Programme*.

In this sense, the external evaluation team followed the work of WP6.3, seeking to collect elements for the evaluation, with particular attention to the following components: 1. Formative needs and capacities (alignment of the contents with the EHITP framework), 2. Participant selection process, 3. Pedagogical project (observation and analysis of the alignment of the pedagogical project of the programme proposal with the training activities, and pedagogical project suggested in the WP6 protocol); 4. Formation - analysis of the formative experience, including the immediate results of the execution of the scheduled activities and the forthcoming results perceived by the trainees of the pilot test.

The evaluation will be performed through an observational descriptive study using a mixed methodological approach with both document analysis and primary data collected by questionnaires and interviews analysis.

According to the objectives of the study, data will be collected by three techniques: 1. Document analysis (secondary data) based on the material made available by the

coordinators of the EHITP; 2. Two questionnaires specifically built for the evaluation: one for the trainees of the pilot course and the other for the lecturers of the pilot course; and 3. Semi-structured interview with the coordinators and authors of the EHITP.

The results of this evaluation and its reporting and recommendations will follow the discussion of the results of the evaluation study. Then, the results will be synthesized and interpreted in such a way as to lead to the preliminary value judgments of the programme and its components, and consequent provisional recommendations. The preliminary evaluation report will then be prepared and shared with the main stakeholders. Interim judgments and recommendations will be discussed at a workshop. The final evaluation report will be prepared including the comments and results of the discussion. The final report will be released to all stakeholders.

Finally, the incorporation of the evaluation recommendations in a new version of the *European Health Information Training Programme* (EHITP) (Phase 4 of the evaluation theoretical model) will be conducted by the programme's authors.

## IX- Conclusion

This first European School on Health Information took place as planned, after the adaptation to an online course, with very positive results and feedback. The objective of this WP to develop a capacity-building that mitigates the European inequalities on health information was largely accomplished.

The lecturers engaged in the course came from the most significant Public Health Institutes in Europe and 22 participants from 17 countries were involved as trainees. The trainees have also shared their opinions for future improvements, as well as lecturers who also left interesting topics to be discussed in future editions.

The experience and learning obtained during the organization and implementation of this pilot course, the comments and suggestions of the trainers and lecturers, as well as their assessment of what went well and what did not work, are fundamental inputs for the next and final task of this WP6, the consolidation of the proposal for a European capacity building training programme on Health Information.

We expect to have created the conditions to organize a European School on Health Information every year, from now on. Other products like expert webinars and specific topics workshops were also included in the agenda.

The five topics that were addressed at the programme covering from data collection to analysis and ethics, are in line with the demand, moreover in time of pandemics.