



Evaluation Report of the Sustainable Capacity Building Programme (European Health Information Training Programme - EHITP)

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Summary

The InfAct (Information for Action) project is a Joint Action of the European Commission's 3rd Health Programme, which includes 28 EU Member States and Associated Countries. The main goal of InfAct is to build an infrastructure of a health information system for a stronger European Union and to strengthen its core elements. Its vision is to improve the use of health data and information for a healthier Europe.

Portugal co-leads the Work Package 6 (WP6) of this project, through a team of professionals from the Directorate-General of Health (who coordinates), the Institute of Hygiene and Tropical Medicine - NOVA University of Lisbon and the National Institute of Health Doctor Ricardo Jorge. WP6 includes, among other tasks, the development of a Flagship Capacity Building Programme and its evaluation. The proposal of the programme was presented through the document “InfAct - Sustainable Capacity Building Programme (European Health Information Training Programme - EHITP), Task 6.2 – February 2020”.

An evaluation process based on the integration of the evaluation framework of the World Health Organization and of the Centers for Disease and Control framework for Programmes Evaluation in Public Health was used. The evaluation object was the proposal of the *European Health Information Training Programme*, including its pilot test – the *1st European School on Health Information*. As such, the evaluation presented in this report took 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*.

At phase 1, the evaluation team conducted an evaluability assessment (pre-evaluation) based on the principles and methods of the *theory of change*, with the agreement of the national team. The aims of the evaluability assessment were to describe the target programme of the evaluation through a logical model built with the participation of key stakeholders, and to define the focus of the evaluation. The logical model was built based on the results of a literature review performed by the evaluation team and the contributions of a workshop meeting, with several stakeholders.

Gather credible evidence and justify conclusions (phase 2 of the evaluation theoretical model) were performed integrating the components of the logical model of the *European Health*

Information Training Programme and the adjustments needed to answer the evaluation questions. In this integration process, the Kirkpatrick's Four-Level Training Evaluation Model (reaction, learning, behaviour and results) was also considered, given the formative nature of the evaluation object.

In this sense, the evaluation of the *European Health Information Training Programme* (EHITP) proposal focused on the following components: 1. Formative needs and capacities; 2. Participant selection process; 3. Pedagogical project; 4. Formation, following the first three levels of the Kirkpatrick's Four-Level Training Evaluation Model; and 5. Alignment between EU Member States.

The evaluation objectives of the proposal of the *European Health Information Training Programme* (EHITP) were:

1. To evaluate the adequacy of the EHITP to the health information needs in the European Member States;
2. To identify possible changes to the EHITP, regarding to the selection process of the trainees and the training activities and the pedagogical project;
3. To contribute to the identification of potential main EHITP outputs through the analysis of the trainees' attendance during the *1st European School on Health Information*;
4. To contribute to the understanding of the potential satisfaction of the EHITP participants through the satisfaction analysis expressed by the trainees and the lecturers at the *1st European School on Health Information*;
5. To contribute to the understanding of the potential of the EHITP to learning, capacity building and behavioural changes at work through the perceptions of the participants in the *1st European School on Health Information*;
6. To contribute to the understanding of the potential of the EHITP to the alignment of HI criteria and procedures between EU Member States through the perceptions of the EHITP authors and of the participants in the *1st European School on Health Information*;
7. To identify successful and unsuccessful areas or issues in the EHITP proposal and the *1st European School on Health Information* that can help EHITP future improvement or adequacy.

The design of the evaluation of the EHITP proposal was defined according to the evaluation questions, defined based on the evaluation objectives and the results of the evaluability assessment, and to the evaluation model, evaluation framework and evaluation object.

The evaluation was 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 was 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 and the other for the lecturers of the pilot course; and 3. Semi-structured interviews with the coordinators and authors of the EHITP.

The results of the evaluation showed that the proposal of the *European Health Information Training Programme* is a dynamic, flexible, sustainable formative programme in health information, and focused on reducing inequalities. It is adequate to the formative needs and capacities in line with the work done in WP6 Task 6.1 of the InfAct project, highlighting the importance of updating the needs assessment over time. In what concerns about its main thematic areas, it is also aligned with the areas identified in the formative needs and capacities mapping produced in WP6 Task 6.1 of the InfAct, such as: data analysis and interpretation; interoperability of data sources; transfer from data to policy; data collection, sources, metrics and indicators; and data privacy and ethical issues.

The global evaluation of the *1st European School on Health Information* (the pilot test of the EHITP) is positive concerning all the components of the logical model, including the documentation that presented the course (input); the pedagogical project and the trainees' evaluation of the course (activities); the trainees' attendance (output); learning, capacity building and potential to positive behavioural changes at work attributable to the course (outcomes); and alignment of criteria and procedures in health information between the EU MS (outcomes).

In general, trainees, lecturers and interviewed persons expressed a positive perception regarding the participant selection process of the *1st European School on Health Information*.

The most expressed needs, problems, or expectations of the candidates for the *1st European School on Health Information* that motivated the candidature were: acquisition or deepening of knowledge in health information, especially for reasons related to the professional activity; knowledge transfer and teaching in the scope of health information or health information systems; and health information research. Strengthening the networking was also an expectation frequently expressed.

In general, the EHITP proposal is aligned with the WP6 InfAct protocol, as well as with the results of the evaluability assessment and with the expectations of the trainees of the *1st European School on Health Information*.

The perception of the participants in the *1st European School on Health Information* about the potential of the formation was positive in the three evaluated components: reaction of the trainees, learning and capacity building, and behavioural changes at work.

The perception of the interviewed population and the participants in the *1st European School on Health Information* about the potential of the EHITP proposal to the alignment of health information criteria and procedures between EU Member States was positive, being admitted the homogenization of capacity building and the alignment of criteria and procedures with the replication of the courses, and a potential positive impact on global public health development.

In this evaluation it was not feasible to study the impact of the EHITP, nor the effects of the European and national contexts in the discussion of the evaluation results.

The main specific recommendations of the evaluation of the EHITP proposal can be summarized as follows: a) adequacy of the participant selection process used in the *1st European School on Health Information*, with a special focus on the time of the application period, proposed to be extended, and on the profile of the candidates; b) reinforcement of the importance of the regular update of the health information needs assessment and use of the results; c) the design of the courses should favour modular curricular programmes, flexible to adapt to the trainees needs, and diverse curricular contents; d) deepen in the curricular contents of thematic areas considered particularly relevant, such as “General Data Protection Regulation” and ethical issues; interoperability; and, methodological approaches based on epidemiology and public health; e) improvement of the communication tools between all the participants in the programme – coordinators, lecturers, and trainees; f) use of the *Distributed Research Infrastructure on Population Health* (DIPoH) when possible and adequate; and g) development of impact evaluation studies of the EHITP.

A preliminary evaluation report was performed and distributed to the main stakeholders of the EHITP proposal in preparation for the workshop meeting held on January 26th, 2021, with the aim of reporting and discussing the results and recommendations of the evaluation (phase 3 of the evaluation theoretical model).

According to the last phase of the theoretical model (phase 4), the final recommendation of the EHITP proposal evaluation is the incorporation of the specific recommendations in a new version

of the *European Health Information Training Programme*, and its use in the development of the *Roadmap for the Capacity Building Programme in Health Information* planned for Task 6.4 of the InfAct Joint Action, which importance was also highlighted by the participants at the workshop meeting.

Glossary of Acronyms and Abbreviations

Acronyms and Abbreviations	Description
CDC	Centers for Disease and Control
DEP	Epidemiology Department
DGS	Directorate-General of Health
ECHI	European Core Health Indicators
EHITP	<i>European Health Information Training Programme</i>
EU	European Union
Eurostat	Statistical Office of the European Union
GPDR	General Data Protection Regulation
HI	Health Information
IHMT	Institute of Hygiene and Tropical Medicine – New University of Lisbon
InfAct	Information for Action
INSA	National Health Institute Doctor Ricardo Jorge
JA	Joint Action
MS	Member States
WHO	World Health Organization
THL	National Institute for Health and Welfare, Finland
WP	Work Package

1. INTRODUCTION

1.1 InfAct Joint Action

InfAct (Information for Action) is a Joint Action (JA) on Health Information (HI). It is a 36 months project funded by the European Commission (1). The project was launched in March 2018 and it embraces 40 partners in 28 European Union and associated countries, including Portugal, through the Ministry of Health (2).

Through country collaboration, InfAct streamlines health information activities across Europe. It builds towards a sustainable and solid infrastructure on European Union (EU) health information and strengthens its core elements based on capacity building, health information tools and political support.

The main objective of InfAct is to strengthen the national and EU health information infrastructures through: i) the establishment of a sustainable research infrastructure for monitoring population health and health system performance; ii) strengthening the basis of health information and knowledge in Europe, and capacity building in health information research to reduce health information inequities, and iii) supporting interoperability in health information, health information tools and innovative data sources.

InfAct JA is organized in 10 *Work Packages* (WP), divided in three pillars: i) political support (WP4 and WP7); ii) capacity building (WP5 and WP6); and iii) health information tools (WP8, WP9 and WP10). On the other hand, the InfAct aims are: i) the establishment of a sustainable research infrastructure; ii) reducing health information (HI) inequalities, and iii) the development of new innovative tools and better interoperability (2).

Portugal co-leads the WP6 together with Finland (THL), through the Directorate-General of Health (DGS) (coordination), the Institute of Hygiene and Tropical Medicine – New University of Lisbon (IHMT), and the National Institute of Health Doctor Ricardo Jorge (INSA).

The objective of this WP is to develop a roadmap for a capacity building baseline training on health information to support critical areas on health information use and management with the main objective to reduce HI inequities in EU member states (MS) and through Europe. Its time span is 36 months.

WP6 main tasks are:

Task 6.1 – Mapping needs, capacities and education/training programmes in HI in MS.

Task 6.1 aimed the mapping and summarization of MS' HI needs (both tools and training) and ongoing programmes in the area of analysis and monitoring of population health and health system performance in the MS (including topics related to training, research and policy making).

This task is concluded.

Task 6.2– Design of a *Flagship Capacity Building Programme* to improve MS capacities in population health and health system performance and monitoring.

This *flagship programme*, later referred to as *Sustainable Capacity Building Programme*, was designed based on the results of task 6.1., and was expected to cover contents such as: longitudinal studies, surveys, population-based registries, health care performance, health system performance and policy translation.

This task is concluded and the proposal of the *Sustainable Capacity Building Programme* - named by its authors as *European Health Information Training Programme* (EHITP) - was formally sent to the evaluation team in July 2020.

Task 6.3– Piloting and evaluation of the *European Health Information Training Programme* (EHITP) proposal

In this task it was carried a pilot test of the *training programme* according to its proposal - named by its authors as *1st European School on Health Information* – as well as the programme's formal evaluation. The pilot test was conducted during October 2020 and the first week of November (on Thursdays of each week) and the preliminary results of the formal evaluation were presented at a online workshop meeting held on January 26th, 2021. This report presents the final results and recommendations after the discussion between the workshop participants and the evaluation team.

The evaluation object of the formal evaluation was the *European Health Information Training Programme* (EHITP) proposal, including its pilot test.

Task 6.4 – Roadmap for the Capacity Building Programme in Health Information

In this task, a roadmap will be developed aiming the operationalization and maintenance of the developed training programme. It will be based on guidelines for Member States, including recommendations not only for its establishment but also for its maintenance. Task 6.4 will be

completed after the evaluation of the *European Health Information Training Programme* (EHITP) proposal and its improvement and adequacy based on the results and recommendations.

1.2 Health information needs, capacities and training programmes

Health Information (HI) is a comprehensive area, including indicator development, data collection, data analysis and inference, information management and translational research for developing new policies (1).

According to the World Health Organization (WHO), strong country health information systems are required to provide good-quality data towards universal health coverage (3). Thus, it is important to gather empirical data and estimates related to health, namely, concerning morbidity, mortality, risk factors, health service coverage and health systems.

At European level, for almost a quarter of a century now, there have been discussions on the need for an improved EU HI system. Different HI programmes were organised in a vertical way and resulted in a fragmented and project-based EU HI system. The EU HI system lacks sustainability, coherence and comprehensiveness, which leaves us without an EU-wide public health monitoring or health system performance analysis that presents policy-oriented evidence and advices (1,2).

Large differences may be found in terms of quality and, therefore, comparability of HI between and within Member States (MS) becomes difficult. Health information is often trained in different courses or as modules of information systems or as part of epidemiology courses, but most of the courses are vertical with focus on one or only few topics (4). There is also evidence that availability of health information and possibilities to use it for evidence-informed policy making varies between EU member states. This makes difficult to learn from each other and challenges the equity in health as poor HI and poor health tend to coincide. If a country or a group of countries have developed a good practice, mechanisms are lacking to disseminate these into EU-wide actions (2). Therefore, the diversity of available HI in the EU member states, as well as knowledge and capacities, contrasts between EU member states. As an example, only half of EU countries conducted a national health examination survey.

The InfAct Task 6.1 report “Mapping needs, capacities and education/training programmes in HI in MS” presents the results from the study of existing health information capacity building activities in different EU Member States (MSs) and associated states and the identification of needs for further capacity building activities in the future at the European level (4).

Results were obtained through an internet search of university courses provided in different MS and by a questionnaire applied to health information experts from MS. Additionally, a scoping review was conducted concerning the training of human resources for health and information systems in public health (4).

Findings of this work pointed that the most common users of health information systems are public health specialists, public health researchers and epidemiologists (4). Together with statisticians, the later professional groups were also considered those that would need most additional capacity building in health information. In addition, in a 10 years' time, public health programme managers and health professionals seem to be those that will benefit from additional capacity building on health information systems.

This report concluded that there is already a significant amount of training programmes regarding health information in the EU MS, both at the academic level (undergraduate studies, masters' programmes and PhD programmes) and as vocational training provided for practising public health professionals by national public health institutes, among others (4).

Notwithstanding, results pointed that when establishing a sustainable *European Health Information Training Programme* (flagship programme), at least the following topic areas should be considered: data analysis and interpretation, namely, interoperability of data sources, derivation of European Core Health Indicators (ECHI) and foresight/scenario analysis; transfer from data to policy, especially, policy translation and data presentation; data collection, sources, metrics and indicators, like issues related to health examination surveys; and data privacy and ethical issues, which should include how to deal with requirements of the "General Data Protection Regulation" (GDPR) (4).

2. EVALUATION FOCUS

2.1 Evaluation theoretical model

The evaluation of the proposed *European Health Information Training Programme* (EHITP) in Task 6.3 should consider its feasibility, the coverage of the required components, the costs, target population, among others, according to the InfAct project protocol (2).

An evaluation process based on the integration of the evaluation framework of the World Health Organization (WHO) (5) and of the Centers for Disease and Control (CDC) framework for Programmes Evaluation in Public Health was used (6).

The WHO proposes a 4 phase evaluative approach (5):

1. Planning;
2. Conducting the evaluation;
3. Reporting;
4. Utilization and follow-up of evaluation results.

On the other hand, the CDC framework states that the evaluation process of an intervention in public health comprises 6 fundamental steps (5,6):

1. Engage stakeholders;
2. Describe the programme;
3. Focus the evaluation design;
4. Gather credible evidence;
5. Justify conclusions;
6. Ensure use and share lessons learned.

Following the integration of these two approaches, the evaluation of the *European Health Information Training Programme* took place in 6 operative steps, according to the CDC framework, distributed by the 4 phases recommended by WHO:

- A. Phase 1: steps 1, 2 and 3;
- B. Phase 2: steps 4 and 5;
- C. Phase 3: reporting of results and recommendations from step 6 of the CDC framework;
- D. Phase 4: incorporation of evaluation recommendations into a new version of the *European Health Information Training Programme*.

The steps of the evaluation process followed quality criteria based in the four standards for social policy assessments (7):

- Utility: the evaluation process should address the information needs that trigger the evaluation objectives of the InfAct team, particularly, programme managers and other potential users of the evaluation results;
- Feasibility: the design of the evaluative project should be realistic and cost-moderate;

- Propriety: ensure that the evaluation process is conducted ethically, with respect for the well-being of all concerned;
- Accuracy: Appropriate methodology should be used to produce valid and accurate results.

2.2 Evaluability assessment and logical model of the *European Health Information Training Programme*

Steps 1, 2 and 3 of the evaluative process (engage stakeholders¹, describe the programme, and focus the evaluation design) were performed through an evaluability assessment based on the principles and methods of the *theory of change* (8), with the agreement of the WP6 team. The *European Health Information Training Programme* proposal was still under development, so the evaluability assessment functioned as a pre-evaluative procedure, allowing an early and structured involvement of both the evaluation team and key stakeholders, in order to discuss and jointly decide the evaluation development (8). The early involvement of key stakeholders in the evaluation process enhanced the translation of evaluation results into practice, which is the ultimate purpose of the evaluation.

The aims of the evaluability assessment were to describe the target programme of the evaluation through a logical model built with the participation of key stakeholders, and to contribute to the definition of the evaluation focus.

The logical model was built based on the results of a literature review performed by the evaluation team, and the contributions of a workshop meeting, which took place on October 30th, 2019, and was attended by 14 stakeholders, including key stakeholders from the InfAct teams of DGS (three members, including the WP6 coordinator in Portugal), IHMT (two members in charge of the design of the proposal of the EHITP, including the team coordinator) and INSA (two members, including the corresponding coordinator) as well as other stakeholders representing potential users of a training programme focused on health information capacity building.

The logical model of the *European Health Information Training Programme* (Annex 1) includes several components organized according to the logical sequence between the available

¹ For the purposes of this evaluation, stakeholders are all persons interested in the training programme, including: those who have a direct interest, which are potential users, those who may be affected by training or are in any way involved with health information.

resources, the activities to be performed, the products resulting directly from the activities (outputs), the expected results (outcomes) and the expected impact (9).

The components of the logical model of the EHITP validated by the evaluability assessment are presented in table 1.

Table 1 – Logic Model components of the *European Health Information Training Programme* based on the results of the evaluability assessment

Components of the logical model of the <i>European Health Information Training Programme</i>	
Inputs	• training needs and installed capacity
	• documentation presenting the programme
	• results and recommendations of previous edition(s) evaluation (if reissued)
Activities	• selection of participants
	• training activities / pedagogical project
	• teaching assessment by participants
Outputs	• trainees who completed all stages of training
	• glossary of terms and concepts in the field of health information
	• reports and works suggested
	• action guidelines in diversified situations
Outcomes	• positive reaction of the trainees
	• learning and capacity building
	• alignment of criteria and procedures between Member States of the European Union
Impact	• harmonization of criteria for the collection and dissemination of health information in Europe
	• improvement of the quality of health information in Europe
	• greater equity in health information in Europe
	• definition / orientation of health promotion and disease prevention and control policies
	• improvement of health status
	• strategies that support programme sustainability

In short, according to the logical model of the *European Health Information Training Programme*, the formative experience will increase the technical knowledge and the capacity building of the participants, conducting to attitudes and behavioural changes with positive impact in the strategic planning and management of health information in Europe. The expected impact is the harmonization of criteria for the collection and dissemination of health information and the improvement of the respective quality, leading to greater equity in HI. The ultimate goal will be the definition and orientation of high-quality policies for health promotion and disease

prevention and control, with positive impact in the improvement of health status. The implementation of strategies that support the programme's sustainability is also expected.

In the final report of the evaluability assessment, the evaluation team recommended the use of its results in the elaboration of the proposal of the *European Health Information Training Programme* (10).

2.3 *European Health Information Training Programme objectives*

According to the InfAct Joint Action protocol (2), the main objective of the formative programme is to increase knowledge on availability and use of standardized Health Information methods, common practices within EU member states, promoting a common framework for sharing health information capacity building in Europe, leveraged by both the creation of new training and the existing courses available throughout European Universities and other health institutions. The *European Health Information Training Programme* (EHITP) should be: (i) a sustainable capacity building programme (flagship programme) within InfAct and beyond (to address inequalities); (ii) based on HI Fundamentals and European oriented; and (iii) a “flagship”, as an example of professional practice-oriented training and as an opportunity to include feedback from trainees (2).

According to its proposal, the EHITP aims to be an umbrella for all current and future training activities in Europe, targeting professionals working in public health and health information at national or European/international level. The EHITP also aims to meet the institutional needs of countries in order to have a competent workforce, effectively working and interacting with experts of all areas at European Level, other countries and other international organisations at the EU-level. The definition of the envisaged training must consist of a framework for Health Information Training in Europe aiming at a global, harmonized and sustainable Health Information capacity (11).

2.4 *Evaluation objectives*

The evaluation of the proposal of the EHITP considered the feasibility of the programme, the coverage of the required components, costs, and the target population, among other components, as recommended by the protocol of the InfAct Joint Action.

According to not only the results of the evaluability assessment, but also to the protocol of the InfAct Joint Action, the evaluation objectives of the proposal of the *European Health Information Training Programme* (EHITP) are:

1. To evaluate the adequacy of the EHITP to the HI needs in the European MS;
2. To identify possible changes to the EHITP, regarding to:
 - 2.1. The selection process of the trainees as professionals who can act as agents of change, including modifications in the preparation and availability of documentation presenting the programme prior to its implementation;
 - 2.2. The training activities and the pedagogical project;
3. To contribute to the identification of potential main EHITP outputs through the analysis of the trainees' attendance during the *1st European School on Health Information* (the pilot test of the EHITP);
4. To contribute to the understanding of the potential satisfaction of the EHITP participants through the satisfaction analysis expressed by the trainees and the lecturers at the *1st European School on Health Information*;
5. To contribute to the understanding of the potential of the EHITP to learning, capacity building and behavioural changes at work through the perceptions of the participants in the *1st European School on Health Information*;
6. To contribute to the understanding of the potential of the EHITP to the alignment of HI criteria and procedures between EU Member States through the perceptions of the EHITP authors and of the participants in the *1st European School on Health Information*;
7. To identify successful and unsuccessful areas or issues in the EHITP proposal and the *1st European School on Health Information* that can help EHITP future improvement or adequacy.

2.5 Evaluation questions

Based on the evaluation objectives and the results of the evaluability assessment, the general evaluation questions are:

1. Is the proposal of the *European Health Information Training Programme* adequate to the formative needs and capacities in line with the work done in WP6 Task 6.1?
2. What was the need for training or problem that motivated the applying for the *1st European School on Health Information*?
3. What changes must be made in the selection process to encourage the application of professionals who can act as agents of change?

4. Is the proposal of the *European Health Information Training Programme* in line with the training activities and pedagogical project according with the WP6 protocol, the results of the evaluability assessment and the expectations of the trainees of the *1st European School on Health Information*?
5. What changes must be made in the training activities or pedagogical project to encourage the alignment with the expectations of the trainees and recommendations of the lecturers of the *1st European School on Health Information*?
6. What was the reaction of the trainees at *the 1st European School on Health Information to the experience*?
7. What was the perception of the participants at the *1st European School on Health Information* about the potential of the programme learning and capacity building?
8. What was the perception of the participants at the *1st European School on Health Information* about the potential of the programme in positive behavioural changes at work?
9. What was the perception of the EHITP authors and of the participants at the *1st European School on Health Information* about the potential of the programme to the alignment of HI criteria and procedures between EU Member States?

2.6 Evaluation framework of *the European Health Information Training Programme* proposal

The gathering of credible evidence and the justification of the conclusions (steps 4 and 5 of the evaluation theoretical model) were performed integrating the components of the logical model of the *European Health Information Training Programme* (Annex 1) and the adjustments needed to answer the evaluation questions. In this integration process, the Kirkpatrick's Four-Level Training Evaluation Model (reaction, learning, behaviour and results) (12) was also considered, given the formative nature of the evaluation object (12).

In this sense, the evaluation of the *European Health Information Training Programme* (EHITP) proposal focused on the following components:

1. *Formative needs and capacities*: this component allowed the analysis of the alignment of the EHITP (theme, objectives, curriculum content) with the results of the formative needs and capacities mapping produced in WP6 Task 6.1 of the InfAct project.
2. *Participant selection process*: this component allowed the analysis of the participant selection process for the *1st European School on Health Information* (pilot test of the EHITP),

including the identification of the needs for training, or difficulties that motivated the applications, and of eventual changes to be made in the process to encourage the application of professionals who can act as agents of change. This was based on the alignment of the candidate's motivation and the theme and objectives of the pilot test, the clarity of the documentation that presents the programme and pilot test, and the reliability of the previous announcement sources of the pilot test.

3. *Pedagogical project*: this component allowed the 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, selected in the evaluability assessment, and expressed by the trainees at the *1st European School on Health Information*, both by their expectations and the evaluation of the pilot test.

4. *Formation*: this component refers to the formative experience in the *1st European School on Health Information*, 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 of the formation followed the first three levels of the Kirkpatrick's Four-Level Training Evaluation Model:

- i) Reaction of the trainees to the pilot test: at this level, the attendance of the trainees of the pilot test, the works and documents produced during the pilot, and the satisfaction expressed by the trainees at the end of the pilot test were assessed;
- ii) Learning: at this level, the perception about the knowledge learned and skills developed or strengthened with the participation in the pilot test and attitudes that changed after it was measured;
- iii) Behaviour: at this level, the perception about behaviours that are expected to be reflected in the trainee's job performance after training, including the acquisition or strengthening of critical sense, namely in the field of the assessment of health data quality, were assessed.

5. *Alignment between EU Member States*: this component contributed to the analysis of the alignment of HI criteria and procedures between EU Member States as an outcome of the EHITP.

3. METHODS

3.1 Evaluation study design and evaluation object

The design of the evaluation of the *European Health Information Training Programme* proposal was defined according to the evaluation questions, evaluation model, evaluation framework and evaluation object. The EHITP evaluation plan can be summarized as follows in the figure 1.

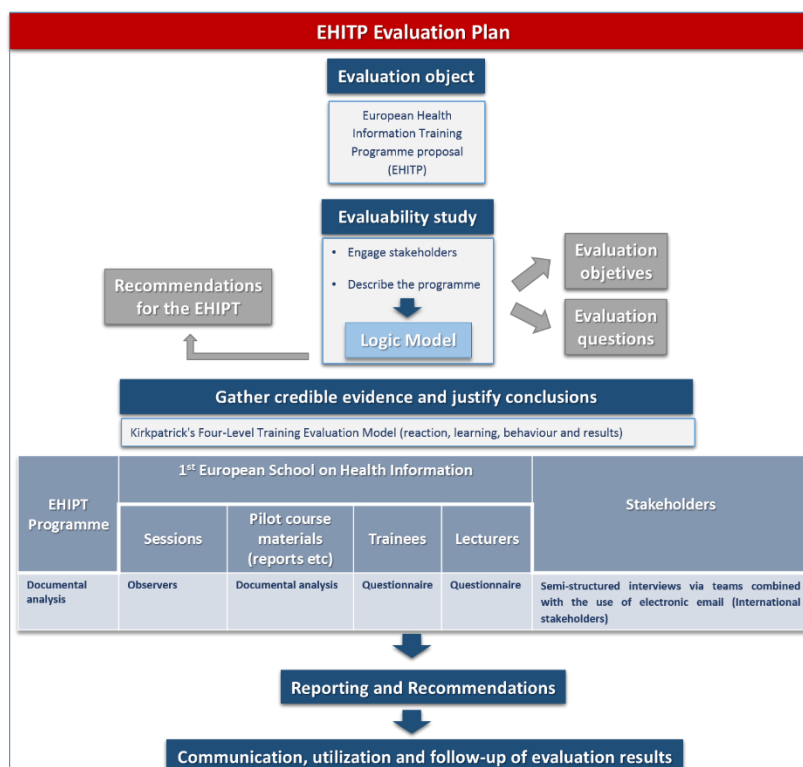


Figure 1 – Diagram of the European Health Information Training Programme evaluation plan

The evaluation object was the proposal of the *European Health Information Training Programme* (EHITP), including its pilot test, consisting of a 35 hours course, named “*Health Information Training Course on Health Examination Survey: From Data Collection to Policy Dialogue and Translation*”.

The proposal was presented through the document “InfAct - Sustainable Capacity Building Programme (European Health Information Training Programme - EHITP), Task 6.2 – February 2020”.

The evaluation study was an observational descriptive study using document analysis and primary data collected by questionnaires and interviews. A mixed methodological approach was chosen. Mixed quantitative and qualitative data collection methods and analysis were used.

3.2 Study population

Study population were the trainees (n=23), the lecturers of the pilot course (n=16), InfAct Coordinators (n=2), Coordinators and members of WP6 (n=6) and other co-authors of the EHITP (n=4).

3.3 Material, sources and data collection techniques

According to the objectives of the study, data was collected through three techniques:

a) Document analysis (secondary data) based on the material made available by the coordinators of the EHITP. This material included the following documents:

- “InfAct - Sustainable Capacity Building Programme (*European Health Information Training Programme* - EHITP), Task 6.2 – February 2020”;
- Documentation concerning the pilot course (*Health Information Training Course on Health Examination Survey: From Data Collection to Policy Dialogue and Translation*):
 - Participants’ application forms;
 - Pilot course announcements;
 - Booklet of the course;
 - Satisfaction surveys and other course evaluation forms;
 - Other written documents or communications between pilot course coordinators and candidates or pilot course participants.

Data was collected according to the components of a measurement matrix specifically designed for the evaluative study (table 2).

b) Two questionnaires specifically designed for the evaluation: one for the trainees of the pilot course (Annex 2) and the other for the lecturers of the pilot course (Annex 3). They were self-administered questionnaires, anonymized with regard to the identity of the participants. The questionnaires were distributed and collected by computer², preserving the anonymity of the participants' identity. Both questionnaires included closed and open questions, distributed by the following components of the measurement matrix: participant selection process, pedagogical project, formation and alignment between EU Member States (table 2). Variables for a brief socio-demographic characterization of the participants were also included.

² REDCap Software <https://projectredcap.org/>

Both questionnaires were pre-tested by health professionals and university professors from the Epidemiology Department of INSA and the suggested corrections and improvements were made prior the application. A reminder was sent to each of the groups questioned, near the end of the time for participation.

c) Semi-structured interview with the coordinators and authors of the EHITP.

The semi-structured interviews were conducted by a script (Annex 4) specifically built for the purpose, based on the evaluation study measurement matrix.

The script aimed to define the content and guide the conduct of the conversation. However, maximum flexibility was sought to identify the components that required further exploration and development.

Open questions were asked to identify the perceptions of the coordinators and authors of the programme regarding the component “alignment between EU Member States” of the measurement matrix. A brief socio-demographic characterization of the interviewees was included. All data were anonymized with regard to the identity of the participants.

The interviews were individual and carried out by online software (on a date agreed between the researcher and the interviewed), after the acceptance of the invitation sent by e-mail and having given consent for the use of the data. The collected data were transcribed manually.

3.4 Measurement and analysis plan

For each component of the evaluation framework and respective evaluation questions intended to answer, the measurement matrix presents (table 2) a series of indicators and criteria, with the aim of converting the expected concepts and effects into specific and measurable sections. Some of the criteria were selected from outputs of the InfAct already available “InfAct—Joint Action on Health Information: Report on mapping needs, capacities and training programmes in health information (WP6, Task 6.1, months 1-18)” and “Evaluability Assessment Report (WP6, Task 6.3 InfAct-JA).

Analysis was both quantitative and qualitative, so, both kinds of indicators were used.

Data collected from the answers to closed questions of the questionnaires were analysed using frequencies distribution. The answers to open questions of the questionnaires and interviews, and data collected from document analysis were subjected to thematic analysis.

A matrix of analysis categories (Annex 5) was built from the measurement matrix to help data analysis.

Table 2 – Measurement matrix of the evaluation of the *European Health Information Training Programme* proposal

Components / Questions	Criteria / Indicators
1. Formative needs and capacities	
· Is the training programme aligned with the results of the formative needs and capacities mapping produced in WP6 Task 6.1?	a) Alignment of the theme, objectives curriculum content of the course with the results of the needs mapping (cross check with the mapping from WP6 Task 6.1).
2. Participant selection process	
· What was the need for training or motivation for applying for the pilot test?	a) Needs/problems or expectations of the candidates expressed in the candidature
· What changes must be made in the process to encourage the application of professionals who can act as agents of change?	b) Alignment of the candidate's motivation and the theme and objectives of the course
· What components of the course where determinant for the application of the professionals?	c) Clarity of the documentation that presents the programme, concerning: <ul style="list-style-type: none"> • target audience, • admission criteria, • pedagogical training objectives, • curriculum content, • training organizational structure, • teaching methods and techniques, • evaluation methods.
3. Pedagogical project	
· Is the proposal of the programme in line with the training activities and pedagogical project according with the WP6 protocol, the results of the evaluability assessment and the expectations of the trainees?	a) Alignment of the pedagogical project with the training activities and pedagogical project defined in the WP6 protocol, selected in the evaluability assessment and expressed by the trainees (by their expectations and, or the evaluation of the pilot course)
· What changes must be made in the training activities or pedagogical project to encourage the alignment with the expectations of the trainees and recommendations of lecturers?	b) Recommendations expressed by the lecturers and trainees.
4. Formation	
4.1 Reaction	Reaction:
· What was the reaction of the trainees in the pilot test to the experience?	a) Attendance of the trainees of the pilot test (EA criteria) (% students that fulfilled all stages of the training)
	b) Works and documents produced during the pilot test (EA criteria) (% students that participated/completed group works, final essay)
	c) Achievement of the learning objectives expressed by the trainees
	d) Satisfaction expressed by the trainees (descriptive stats by session form from the organization & descriptive stats and content analysis from the trainees questionnaire): <ul style="list-style-type: none"> • Evaluation of the pilot course (evaluation course indicators); • Recommendation of the training programme; • Difficulties felt and expressed by the trainees.
4.2 Learning	Learning:
· What was the perception of the participants in the pilot test about the potential of the programme learning and capacity building?	a) HI knowledge learned and skills developed or strengthened expressed by the participants in the pilot test (trainees and lecturers) as results of the course (EA criteria)
	b) Examples of HI knowledge learned and skills developed or strengthened felt and expressed by the trainees as results of the course
	c) Suggestions made by the trainees for the improvement of the training programme leading to the reinforcement of the potential of technical updating and capacity building as results of the programme.
4.3 Behaviour	Behaviour:
· What was the perception of the participants in the pilot test about the potential of the programme in positive behavioural changes at work?	a) Behaviours that are expected to be reflected in the trainee's job performance after training expressed by the trainees in the pilot test (EA criteria)
	b) Suggestions for the improvement of the training programme leading to the reinforcement of the potential of positive behavioural changes as result of the programme.
5. Alignment between EU Member States	
· What was the perception of the authors of the training programme and the participants in the pilot test about the potential of the programme to the alignment of HI criteria and procedures between EU Member States?	a) Potential of the programme for the alignment of HI criteria and procedures between EU Member States expressed by the authors of the training programme and the participants in the pilot test (EA criteria)
	b) Suggestions for the improvement of the training programme leading to the alignment of HI criteria and procedures between EU Member States as outcome of the programme.

3.5 Ethical procedures

All ethical procedures suitable for evaluation studies were complied with. Anonymity of all participants in the process of data collection, analysis and dissemination of the results of the evaluation was guaranteed. All participants were asked for informed consent to use the collected data. The data collected were used exclusively for the purposes of this evaluation.

4. RESULTS AND DISCUSSION

After the participants' characterization, the results of the evaluation of the *European Health Information Training Programme* (EHITP) proposal are presented and discussed according to the evaluation framework introduced in chapter 2, section 2.6.

4.1 Participants

Of the 23 trainees invited to answer the questionnaire, 14 (60.9 %) participated. Regarding the lecturers, 16 were invited to answer the questionnaire and 9 participated (56.3 %). All the trainees and lecturers who accepted to participate have answered at least one question on all topics.

Trainees which answered the questionnaire were predominantly females (92.9 %), with a mean age of 37 (minimum=24; maximum=74), and were predominantly medical doctors (28.6 %).

Lecturers which answered the questionnaire were in equal number females and males (50 % males and 50 % females), with a mean age of 47 (minimum=28; maximum=75) and were predominantly medical doctors (28.6 %).

Of the total number of stakeholders invited to the interview (n = 12), 11 have participated.

4.2 Results by evaluation framework components

4.2.1 Formative needs and capacities

ALIGNMENT OF THE EHITP WITH THE RESULTS OF THE FORMATIVE NEEDS AND CAPACITIES MAPPING PRODUCED IN WP6 TASK 6.1

The document analysis results show the alignment of the *European Health Information Training Programme* proposal with the results of the formative needs and capacities mapping produced in WP6 Task 6.1 of the InfAct project (report "Mapping needs, capacities and education/training programmes in HI in MS") (4). The document "INFACIT - Sustainable Capacity Building Programme (European Health Information Training Programme - EHITP), Task 6.2 – February 2020" specifically highlights in its background the variety of "*knowledge and capacities on health information between EU members*" (11, p.3) showing "*the research carried out on the previous task of InfAct*" (11, p.3) as a starting point of the flagship proposal explicitly saying that "*From the survey already carried out under InfAct – the Joint Action on Health Information - WP6, different HI needs have been identified in the various MS, conclusions that should be a starting*

point for future work. The diversity of situations can be concluded by the need for flexible training models that allow the various member states and/or institutions to identify options depending on their national, local and even regional needs.” (11, p.11).

A 10 years’ perspective, a dynamic, flexible, and sustainable proposal, focusing on reducing inequalities, and the proposed target groups and main topics are also consistent with the results of the findings of the task 6.1 from WP6.

The *European Health Information Training Programme* proposal recognizes the significant amount of training programmes regarding health information in the EU MS, but also the need for a special attention to the health information inequalities, in the present and as well as in the future. In the main objectives of the Programme Proposal of the EHITP, sentences concerning these issues are found, such as: (i) *“Given that the European Health Information panorama is mainly a challenge of heterogeneous capacity rather than of lack or low capacity, as pointed out by the INFACHT project departing point, the definition of a strategic plan for Health Information must envisage reducing inequities across all member states and include all relevant stakeholders and resources.”* (11, p.4); (ii) *“The EHITP should support lifetime learning of people working in the field of public health and health information. It should be dynamic and able to respond to emerging needs in the ever-changing health information environment”* (11, p.14); and (iii) *“A flexible EU sustainable capacity building programme for health information should enable a greater adaptation to specific training needs, whether for professionals who are at the beginning of their professional career and seniors, learning by doing should be the key approach. We need to provide activities for people from all levels of expertise.”* (11, p.14).

The proposed target group of the EHITP highlights the *“Data Users”* (11, p.16), but also the need for a *“flexible, dynamic and inclusive”* (11, p.16), programme that includes the *“Data Owners”* (11, p.16): *“While Data Users are obvious target training group, less obvious are the Data Owners who also are an important group of great importance”* (11, p.16). The EHITP is consistent with WP6 – Task 6.1 results, which highlights in a 10 years’ time span, the public health programme managers and health professionals as those that will benefit from additional capacity building on health information systems. In one of the *“Example courses”* (11, p.17), chosen to illustrate a possible course of the EHITP - *“Design of a flagship course on Health Information based on currently identified need”* (11, p.17) -, the target audience was defined as *“Professionals working in health information-related context (for more than 2 years): Health Information Specialist, Statistician, Epidemiologist, Economists, social scientists, Health Professionals, Health Researchers, etc.; National and international members of Health information institutions; [and]*

Junior health professionals aiming at obtaining, due to professional reasons, a training specialization in health information” (11, p.19).

Concerning the main curricular themes, the EHITP proposal starts from *“the proposal/Grant agreement and what came out from evaluation of Task 6.1” (11, p.14).* Its main thematic categories are aligned with the topic areas found in the formative needs and capacities mapping produced in WP6 Task 6.1 of the InfAct, such as: data analysis and interpretation; interoperability of data sources; transfer from data to policy; data collection, sources, metrics and indicators; and data privacy and ethical issues (11). In the example course *“Design of a flagship course on Health Information based on currently identified need”* the following themes are chosen: *“Health information data collection, sources, metrics and indicators: Focusing on the practical example of health examination surveys contributions to health information in Europe; Health Data analysis and interpretation: Focusing on specific cases of interoperability of data sources [and] Health Systems Performance and the use of ECHI indicators; Transfer from health data to policy: Focusing on specific cases of policy translation tools, Health Systems Performance and data reporting; Health Data privacy and ethical issues: Focusing on how to deal with GDPR requirements” (11, p. 17-18).*

The content of the document *“Health Information Training Course on Health Examination Survey: From Data Collection to Policy Dialogue and Translation – BOOKLET (24 September,2020)” (13),* that presents and guides the *1st European School on Health Information* (the pilot course of the EHITP) is consistent with the objectives and themes expressed in the EHITP proposal. Other course documentation also steps up the recognition of the *“need to reinforce common practices and methods to improve the collection, management and use of health information” (14).*

The perception of the interviewed population is also consistent with the alignment between the formative proposal with the EU MS needs, as showed by some of the interview’s data: *“[the EHITP is] adequate with the results that INFACt wanted and wants to demonstrate to the EU”; “It may be that in the future other themes, etc., will be needed, in light of new European needs and objectives”; “The aims were achieved, yes. The course was based on the needs assessment in several countries – identification of needs”; “The needs assessment identified various approaches among MS.”*

4.2.2 Participant selection process

PARTICIPANT SELECTION PROCESS OF THE 1ST EUROPEAN SCHOOL ON HEALTH INFORMATION

The participant selection process of the *1st European School on Health Information* (pilot course of the EHITP) started with the advertising of the course and the announcement of applications through the *“Call for Participation - The 1st European School on Health Information – From data collection to policy dialogue and translation in the framework of health examination survey”* in September 2021. The *“Call for Participation”* was published in the websites of the partner institutions of the InfAct project and the applications were open for 6 days. The candidates had to make their *Curriculum Vitae* available and explain the reasons for the application. In the selection process, the geographical origin of the candidate was a *major* selection criterion. The other criteria were analysed based on the *Curriculum* and the justifying reasons.

There was a total number of applications of 51 from 21 countries. 28 candidates were selected (26 initially and 2 for replacement), from 20 European countries. From those, 23 have participated in the pilot course.

In general, trainees, lectures and interviewed persons expressed a positive perception regarding the participant selection process of the pilot course.

All the trainees that responded to the questionnaire (n=14) considered the application criteria of the course appropriate, but made some suggestions: *“In order to encourage the application of more professionals, the call of the course can be share with more people, including trainees of the first edition”*; and *“advertised through the social media”*.

Concerning the participant selection process, lectures made some suggestions and recommendations: *“advertising the course to national experts and students”*; *“more people wanted to participate than places were available (...) More places should be made available.”*; *“wider and earlier publicity for the programme”*.

In the interviews it was expressed that *“[were used] very open criteria which allowed them to choose exactly who they wanted to take part of the course”*; *“very good selection process; all participants were well chosen, regarding age and years of experience and educational experience.”*; *“It was a very important criterion for us to have as much geographical coverage as possible. To be able to do capacity building in as many European countries as possible.”*; *“the most priority criterion was geographical distribution”*; *“the geographical criteria allowed a more equitable participant selection and consequently contributed for the achievement of the reduce inequities goal.”*

However, some of the interviewees recommend changes in the participant selection process: *“[it may be] more profiles of participants”*; *“may be several editions: for residents or students, or*

for professionals, etc", "probably have well fractioned audience to tackle different issues: young professionals who need mentoring vs exchange programmes for seniors"; "the courses should be adapted to a cohort of specialists; courses must be conditions/circumstances dependent."; "in new editions it would be probably important to introduce new/more criteria to the selection of participants (individual training or work areas/fields)"; "I would not strict too much the selection process".

NEEDS/PROBLEMS OR EXPECTATIONS OF THE CANDIDATES EXPRESSED IN THE CANDIDATURE

The needs, problems or expectations of the candidates for the *1st European School on Health Information* (pilot course of the EHITP) that motivated the candidature, expressed by most of the trainees that responded to the questionnaire (n=14) were included in one of the following categories:

- a) Acquiring or deepening knowledge in health information, in general or for reasons related to the professional activity, namely, within the scope of health information systems;
- b) Knowledge transfer and teaching in the scope of health information or health information systems;
- c) Health information research.

Some of the motivations were expressed as: *"I wanted to know more about it [health information or health information systems] and it was a good opportunity"; "to understand the possibilities and opportunities for the data I collect and work with"; "I find it immensely important for public health workers to deal with a lot of health information in an organised way"; "I work in the community nutrition and public health area and felt that I need more information about surveys and indicators".* Others, expressed: *"I wanted to know more about it [health information] and it was a good opportunity"; "the health information issues covered in this course are relevant for the work tasks [specially WP 6 and 8] I am occupied with."*

The most common themes or topics pointed by the trainees to deep knowledge were: *"health data"; "health information systems"; "health examination surveys"; "data collection and data sources"; "security and privacy issues"; "the validity of the data and the interoperability"; and "transfer to policy making methods".*

The opportunity to meet other professionals that deal with health information in Europe and exchange experiences were also expected, as well as the opportunity to contact with *"high-quality lectures, good examples from different EU countries and discussions on the topics".*

The perceptions of the lecturers at the *1st European School on Health Information* concerning the candidature motivation of the trainees are consistent, reinforcing the acquiring or deepening knowledge in health information, especially in public health/epidemiology, health data, data collection in different countries, data analysis, secondary use of data, development of standardized data and “General Data Protection Regulation” (GDPR). Networking with other persons in the field, knowledge transfer, acquisition of greater visibility of health information for decision making across Europe and the heterogeneity of different European countries health information capacities, and its overcome, were also mentioned by lecturers when asked about candidate’s needs and motivations.

ALIGNMENT OF THE CANDIDATE’S MOTIVATION AND THE THEME AND OBJECTIVES OF THE COURSE

The theme and objectives of the *1st European School on Health Information* (pilot course of the EHITP) seem to be aligned with the candidates’ motivations most frequently expressed by trainees and lectures.

As mentioned in the document “Health Information Training Course on Health Examination Survey: From Data Collection to Policy Dialogue and Translation - BOOKLET (24 September,2020)”, the course objective was “*providing public health professionals with practical knowledge about European and National approaches to Health Information, focusing on the development of Health Examination Surveys, covering from Data Collection to Policy Dialogue and Translation aspects*” (13, p.3). Themes and topics of the *1st European School on Health Information* curricular programme were coherent with most of the expressed needs and motivations (13).

In the “Call for Participation” (14) of the *1st European School on Health Information*, the course description, objectives, and themes are also aligned with the candidates’ motivations expressed more frequently by trainees and lectures, reinforcing the contribution “*to increasing knowledge on availability and use of standardized Health Information methods to common practices in EU member states and associate countries*” (14).

All the trainees that responded to the questionnaire (n=14) considered that the target audience of the course was adequate bearing in mind the content/programme of the course.

In general, the interviews also showed a positive perception regarding alignment of the candidate’s motivation with the course.

CLARITY OF THE DOCUMENTATION THAT PRESENTS THE PROGRAMME

The “Call for Participation” of the *1st European School on Health Information* gave a summary presentation of the course, objectives and the admission requirements, instructions, and the access link to the application form in a clear and sufficient way. It also clearly informs about the course fee, the training school programme, the course organization and the course partners. An email contact was provided.

The target audience, objectives, curriculum content, training organizational structure, teaching methods and techniques, and the evaluation methods are also clearly presented in the “Health Information Training Course on Health Examination Survey: From Data Collection to Policy Dialogue and Translation - BOOKLET (24 September 2020)”.

All the trainees (n=14) that answered the questionnaire considered the materials made available in the booklet of the course sufficiently clear (educational training objectives, curriculum content, organizational structure of the training, and teaching methods and techniques).

4.2.3 Pedagogical process

PREVIOUS NOTE

For reasons related to the COVID-19 pandemic, the *1st European School on Health Information* was not a presential course, having been conducted through the web-based video conferencing tool Zoom.

The course was organized in 5 full-day online classes, between October 1 and November 5, 2020. Each class included theoretical and practical sessions, group work among trainees and discussion of practical cases and projects on health information. Each day was dedicated to a relevant topic: “Health information systems, data sources, metrics and indicators”, “Health data analysis and interpretation”, “Transfer from health data to policy and clinical practice”, “Interoperability and record linkage” and “Data protection (GDPR) and ethical questions for health information” (13, p.3).

In the day previous to each day of online classes, the trainees were invited to prepare the future sessions, through reading and research (the pre-course component of the programme). A specific website was used for the communication of materials and agenda.

ALIGNMENT OF THE PEDAGOGICAL PROJECT

The pedagogical project of the EHITP proposal, considering the *1st European School on Health Information*, seems aligned with the objectives, training activities, and pedagogical project defined in the InfAct WP6 protocol. Additionally, it seems aligned with the evaluability

assessment results, described previously in the present report, as well as with the expectations expressed by the trainees.

According to the InfAct Joint Action protocol, the *European Health Information Training Programme* (EHITP) should be: (i) a sustainable capacity building programme (flagship programme) within InfAct and beyond (to address inequalities); (ii) based on HI Fundamentals and European oriented; and (iii) a “flagship”, as an example of professional practice-oriented training and as an opportunity to include feedback from trainees (2). The inequalities were addressed with the focus on the health information fundamentals and European orientation. The intention of being a sustainable capacity building programme is also evident in the EHITP proposal, as previously mentioned. In addition, the flexible and modular framework of the example courses of the programme proposal is aligned with such aspects in InfAct protocol. The document “INFACIT - Sustainable Capacity Building Programme (European Health Information Training Programme - EHITP), Task 6.2 – February 2020” highlights that: *“The European Health Information Training Programme (EHITP) aims to be an umbrella for all current and future training activities in Europe, targeting professionals working in public health and health information at national or European/international level. In general, the target audience is professionals in the EU MS who can benefit from acquiring skills and competencies for addressing chronic threats to health. The EHITP aims to meet the institutional needs of countries in order to have a competent workforce, effectively working and interacting with experts of all areas at European Level, other countries and other international organisations at the EU-level”* (11, p.13-14); *“[the] European Health Information programme should be a flexible structure of courses and other capacity building activities, modules and training plans, covering all the areas related to Health Information easily tailored to tackle the different needs in EU Member-States; integrating all European institutions related to Health Information; and setting the way for an European core of Health Information specialists.”* (11, p.11); *“To improve the available health information in Europe, any European HI Training Programme must incorporate modules provided by different organizations according to their specificities (...) The main idea is to provide complementarity capacity building activities, avoiding duplication, particularly in very specialized topics. This way health information capacity building in general remains cost efficient at the European level.”* (11, p.11-12).

We did not find any reference in the EHITP proposal to the evaluability assessment performed under the coordination of the InfAct WP6 Task 6.2 evaluation team, at the preparation stage of that proposal (pre-evaluative evaluability assessment). The objectives of the evaluability

assessment were to describe the formative programme through a logical model built with the participation of key stakeholders (including the authors of the EHITP proposal) and to contribute to the definition of the evaluation focus (10). Based on the principles and methods of the theory of change (15), it allowed an early and structured involvement of both the evaluation team and key stakeholders and a potential increase of the translation capacity of the evaluation results into practice (10). Nevertheless, the pedagogical project presented in the EHITP proposal is consistent with the results of the evaluability assessment (10) especially when it comes to the design of a modular programme, with adequate flexibility to adapt to the trainees needs, and varied curricular contents covering the various stages of the processes of collection, analysis, use and communication of health data and information (10).

The conceptual approach of the EHITP proposal is based in the Zachman framework, which proposes *“an infrastructure to support an organization in the development, integration, management, and access of its information system (Pereira & Sousa, 2004; Zachman, 2006)”* (11, p.5). From an operational point of view, the EHITP proposes a *“flexible structure that integrates the components of courses, tools and specialist training programs, which allows adjustments according to the specific training needs.”* (11, p.15).

The EHITP proposal considers the evaluation of training *“an expected good practice”* (11, p.19) and recommends its performance and the availability of training evaluation instruments. For the example course “Design of a flagship course on Health Information based on currently identified need”, the chapter of evaluation highlights: *“In the EHIT Programme tools, sets of training evaluation instruments should be progressively available. However, any educational partner institution may freely define their own evaluation instruments aligned programme objectives. For this example course evaluation instruments could be: - Pre-evaluation, either by a test/survey or through a call; - Knowledge and competency test, at the end of the training; - Satisfaction test, at the end of the training; [and] - Impact tests, after a certain period, to evaluate the impact on job performance.”* (11, p.19).

The trainees of the *1st European School on Health Information* were expected to evaluate the satisfaction and adequacy of each session. Lectures were invited to evaluate the adequacy of the structure and themes of the course, and the course organization and logistics.

The interviews showed a positive perception of the pedagogical project, although one of the interviewers expressed that it may be necessary *“to review more themes and areas in addition to those visited in the pilot”*, and other that *“Eventually, it will be necessary to review more themes and areas in addition to those visited in the pilot”*. Concerning the course structure, it

was also suggested *“ad-hoc modules”* and pointed that *“The website should have been ready much ago, everything should be online, on a platform; only link’s, no PDF’s [via e-mail]”*.

RECOMMENDATIONS AND SUGGESTIONS ABOUT THE PEDAGOGICAL PROJECT MADE BY TRAINEES, LECTURERS AND INTERVIEWED

Both trainees and lecturers made recommendations and suggestions about the pedagogical project.

Some specific positive pedagogical examples were expressed by the trainees concerning the lectures and the themes of the sessions: *“Lecturers provided us with a lot of useful scientific material before and during the course. Also, we were provided with useful database online systems, that both facilitate scientific and technical activities”*.

We found other positive appreciations about the lecturers and sessions: *“the lectures were very professional and inspiring, and the lessons were well structured. Also, the organizers succeeded very well in organizing this virtual course. We had really nice conversations during the group work sessions”*.

The main recommendations and suggestions from the trainees at the course were related with the pedagogical project: *“I (...) think this course is very comprehensive and could last for another couple of days.”; “I think it would be useful if the course was 7 days long, so that some lectures at the end of the day could be given more attention. Also, I wish that there were less ‘our experience’ lectures and more ‘best practice’ lectures”; “I would reconsider the group assignments and their necessity”; “[I suggest] more tutorial”; “the exercises [should] be done at home and not during the course (...) [and] sent beforehand (...) to have enough time to prepare them”*.

To share timely the materials and better communication were the suggestions mostly pointed out by lecturers: *“It was a bit difficult to prepare a standard material because the knowledge and expertise of the participants was actually quite heterogeneous.”; “some of the material was not always shared timely.”; “better information on the schedule”; “would also be good to have a good look at the content of the full programme and see where lecturers could strengthen each other’s presentations”*.

Lecturers made other suggestions and recommendations: *“Include other topics in the course as artificial intelligence, big data and machine learning techniques”; “now the course was built on very academic format. For vocational training this may be too formal. Also, requirement to attend x% of the lectures may limit willingness to participate. Some people might be interested*

attend only some of the session of their interest.”; “Group works are (...) challenging. Also keeping groups fixed over 5 weeks didn’t allow real interaction with other than your own group. Group work assignments would also require better preparation beforehand by instructors.”

The interviews results about the quality of the pedagogical project were in general consistent, especially with regard to the quality of the lecturers and sessions: *“the chosen teachers were the most suitable”; “I was present in several sessions and liked them all; they were well aligned and not overlapping, either in terms of content and exhibitions that were clear and concise”; “I wasn’t present in all sessions, but for which I saw, all presentations were connected, also because they were state of the art lecturers (EUROSTAT, WHO, etc); very experienced lecturers.”* However, we also found some different opinions: *“Not all sessions were interconnected, what is natural, because we were looking for people on the ground (EUROSTAT, WHO, INSA, INE, EHES, etc.). But the balance between the theoretical and the practical sessions made sense.”*

Concerning the time span of the course, the interviewed expressed a different opinion from the trainee’s ones: *“Courses should be short. A full week is not easy”;* and also *“I think that at this time we should offer targeted training for professionals in the field instead of academia-like”.*

The interviewed made same suggestions, especially about the cooperation between health and academic institutions: *“The course should be collaborative; there should be reinforced the collaboration between other programs (even the name was quite similar with other European courses), not in competition but working together. It should be reinforced the partnership with ASPHER or even WHO”.*

“Ad-hoc modules in the future focusing in our ERIC on HI”, and *“a methodological development in the 3 essential pillars in health and public health information: GPDR; interoperability and methodological approaches based on epidemiology and public health”* were other suggestions.

The online format was seen as a challenge, with positive and negative aspects: *“I prefer an online format; is more cost effective and accessible”; “an advantage of COVID-19 was that an online course was well received. It would be nice in next sessions to allow the option for choosing for application for theory or working groups, instead of both being mandatory.”; “[the online format] had the advantage of bringing more participants than a presential course”; “in an online course we lost the social relationship and its positive effects”.* It was also perceived as useful in same aspects and a contribute to the sustainability of the formative programme: *“the online model brought a new perspective, it worked well and made communication reach a large number of students; it was cheap, because it was online and used teacher from the field; and it is easily*

replicable and a good opportunity to show that things can be done in a sustainable way at European level”, “the goal was for InfAct to create innovative proposals and this was achieved with this course.”

4.2.4 Formation

PREVIOUS NOTE

From the 28 candidates selected, 23 participated in the *1st European School on Health Information*, 21 throughout the course and one was replaced in the last sessions for another selected one. Five candidates selected could not participate: 2 due to schedule incompatibility and 3 did not respond to the acceptance email or attend any session.

REACTION

The evaluation of the reaction of the trainees in the *1st European School on Health Information* to the course was positive.

Regarding the attendance of the course, 19 of the 23 trainees participated in all or all except one (90 %) of the sessions held.

From the trainees that responded to the questionnaire (n=14), all considered that in general the learning objectives were achieved and 11 (78.6 %) that the course contributed to learning and/or improving the technical execution skills. Eleven out of 12 (91.7 %) considered that the course contributed to learning and/or improvement specifically in health information.

From the 13 trainees that answered the respective question, 11 (84.6 %) admitted advising to replicate the experience to other potential trainees. The 2 others justified their position recommending the revision of the course *“the course need to be revised a bit. (...) a school-typed of training should be replaced with more professional workshop/seminar-type of training. Maybe different subjects could be offered as modules, and days could be a bit shorter. Different modules could be offered on different days in order to make the participation and learning possible and more efficient”, “(...) changes are needed for the course. More structure on the days and group work should be reconsidered.”*

From the 14 trainees that answered the evaluation questionnaire, 5 (35.7 %) referred having experienced difficulties during the course, especially concerning the time available to assimilate an important amount of new information or issues considered more complex or difficult: *“I am professionally not very much acquainted with the information system in our country, so the first day of the course was a little intense for me, since I tried gathering a lot of new information in a*

very short period of time”; “Some of the issues were quite difficult for me to comprehend, since I was not an expert with them. One example was the calculation of morbidity/mortality rates. However, these issues were interesting. But in order to learn them, more time should be allocated on this (maybe from my part, I should work on these on my own.” One trainee expressed difficulties concerning the need to pay for some recommended documents: “The recommended articles/manuscript/books were published in important journals/publishers and it was mandatory to pay for download them”, and other doubts about the group work effectiveness: “The group work was not successful and was not supportive for professionals working in the field.”

The results of the satisfaction evaluation at the end of each session from the initiative e under the coordination of the course organizers were consistent with the evaluation results above analysed. Through a scale ranging from 1 (not suitable) to 5 (fundamental), from those that answered (more than 50 % in all sessions) more than a half and in several sessions all of them considered the sessions very suitable (value 4) or fundamental (value 5).

LEARNING

The perception of the participants (trainees and lecturers) in the *1st European School on Health Information* about the potential of the programme learning and capacity building to the course was positive.

Eleven (78.6 %) of the 14 trainees that answered the questionnaire expressed that the course contributed to learning and, or improving the respective technical execution skills. The specific contribution for learning and improvement in health information was considered positive by 11 of the 12 trainees that answered that question.

Asked about some examples for illustration of learning and improvements, the answers ranged from acquiring or deepening knowledge in specific topics in the health information domain (for instance, health surveys, health programmes, health information systems, data sources, data collection, comparison of different countries strategies, data linkage, GDPR and ethics understanding, interoperability, data translations, development of a public health report) to the exchange of “*knowledge and skills with others*”, improvement of “*knowledge of the European data landscape and how to navigate it*”, “*better critical thinking*” or “*better work in an European team*”.

Most of the trainees admitted having a positive evolution in their professional activity as an outcome of their participation in the course, namely, in the following areas:

- a)** Integration of scientific and technical knowledge: 9 positive answers in 11 (examples: *“conducting health examination surveys - from both technical considerations and practical challenges”, “execution of interoperability”, “health survey design”, “[integration of] theory, reading articles, and practice within the health information systems”*).
- b)** Technical execution capabilities: 7 positive answers in 10 (examples: *“access of health indicators”, “analysing data”, “use of new indicators”, “interoperability”*).
- c)** Use of technical language and terminology: 8 positive answers in 11 (examples: *“interoperability”* (pointed by 4 trainees), *“Dataset navigation”*). One of the trainees considered that after the course *“many terms regarding HI became more familiar”* and other expressed *“I feel I can speak about information sources knowing exactly what they mean and what I want to say”*.
- c)** Work capacity (towards greater productivity): 10 positive answers in 11;
- d)** Professional motivation: 9 positive answers in 11 (examples: *“I’ve started a new research project”, “I’m looking for a theme for my doctorate”, “I am participating in an European fellowship project”, “I am better motivated to use different sources of data, to compare data with those from EU countries, and to continue to learn about health information systems”, “I feel more confident in discussing matters of health information”, “I realise now just how big the health data challenge is in Europe and that I can be a big part of it in future”, “Motivation to collaborate with colleagues from different countries.”, Motivation to broaden my knowledge in health information Motivation to implement health examination survey in my country”*).

From the 10 trainees that answered the specific question, 6 admitted having acquired new professional skills during the course, giving as examples: *“applying new methods to adjust the non-responses”; “how to attract participants for a survey”; “working with different health information platforms”; “to prepare a Health Programme”; “work in groups online - I am not exactly a team player nor I fancy online calls, but our group works were enjoyable and effective”*.

The perception of the lecturers about the potential of the programme learning and capacity building to the course was similar. Concerning the learning objectives, 7 of the 8 lecturers that answered that question considered that in general the learning objectives were achieved by the trainees. Of those, all (n=7) admitted advising the frequency of the course to other potential candidates.

BEHAVIOUR

The perception of the trainees in the *1st European School on Health Information* about the potential of the programme in positive behavioural changes at work was positive.

From the 11 trainees that answered the respective question, 7 expressed the intention to make or suggest innovations or improvement in their professional institution, or in its operation, attributable to the course, giving as examples: *“comparing my project to another EU data”*; *“[using] the ECHI to compare data”* (pointed by 2 trainees); *“[revision of the development] of public health reports”*. One of the trainees expressed a different perception: *“many of the ideas I have had for my work would not be attributable directly to the course; however, I think the course has given me the correct context and tools to frame innovations or at least investigate their potential.”*

Asked about the potential contribution to the training of the respective professional colleagues in the returning to professional activity after completing the course, 8 in 11 answered positively.

GLOBAL APPRECIATION OF THE FORMATION

All the trainees that answered the questionnaire (n=14) considered the experience of the course globally positive.

Recognizing the importance of the formation in the professional life, several trainees expressed their appreciation for the opportunity: *“I believe that the participation in the 1st European School on Health Information could make a significant and valuable contribution to my career, using the knowledge and skills developed by the end of your course”*; *“thank you for organising this interesting and fruitful virtual course, the InfAct team!”*; *“thank you for the work and effort that went into it.”*; *“the results are very good. Just to better delimitate and approach data versus information.”*; *“everything was great!”*.

Additional positive results were also expressed. The opportunity to establish contacts with different colleagues from Europe and widening the network between them was pointed by several trainees: *“I hope it is the beginning of a network of professionals I can continue to learn from”*; *“[other results of the course were the] networking and expanding the number of professional contacts for future use”*; *“overall, I can say that this course really strengthened my knowledge in the area of health information and health information systems, which was also further supported by the practical sessions. The connections made with the participants and the*

lecturers during the course are of invaluable importance for the future collaboration”; “networking with colleagues from all around Europe was highly fascinating”; “to know all this fantastic people (teachers, colleagues, organizers...) whom I feel I can ask if I need something about these themes in the future”.

All the lecturers who evaluated globally the course (n=8) considered the initiative positive, based on the expressed opinion of the trainees: *“It had to be virtual and, in spite of that, the overall opinions of the participants about the contents and their learning process was satisfactory”,* and on the performance of the trainees during the sessions: *“Generically, it involved students from almost all EU countries that were interested and developed interesting work during the course sessions”; “On the day which I delivered a lecture and facilitated a discussion group, all the participants had a very positive attitude and engaged very well with each other and with the lecturers”; “The course was a success and it delivered valuable knowledge and experience to participants who were interested in health information”; “As a pilot course I wasn't sure about the response from the students to the contents, but it turned out really well”.*

Better communication at all levels was one of the suggestions mostly pointed out by lecturers: *“Sometimes it seemed there were some problems with smooth collaboration between the leads of the WP”; “communication to lecturers (...) could be improved. Responding to emails would be my number one. Providing clarity on dates, a good second.”*

From the 4 lectures that made a final comment to the course in the questionnaire, 3 thanked and congratulated all the involved: *“Congratulations and thanks for the course”; “It was a pleasure and a privilege to teach and facilitate during the programme. If asked, I would be delighted to continue to do so, in the future, either online or in person.”; “Well done and congratulations on the hard work. I hope we can launch a second cycle in InfAct and continue in PHIRI. I think the roadmap for WP6 should be included in the sustainability plan of InfAct.”*

4.2.5 Alignment between EU Member States

The perception of the interviewed population and the participants (trainees and lecturers) in the *1st European School on Health Information* about the potential of the EHITP proposal to the alignment of health information criteria and procedures between EU Member States was positive.

Based on the results obtained from the interviews, InfAct in general and the EHITP proposal in particular (also considering the pilot course) made a positive difference in the alignment of health information criteria and procedures between EU Member States: *“InfAct has made many*

*innovative and valuable proposals to the EU”; “all the proposal was thought with the alignment between EU Member States in mind”; “the general objective of WP6, to pioneer, normalize and reduce inequalities in HI in the countries, happened and a first step was taken. It served its purpose. A face-to-face course might not have had the same reach or the same aspect, feels that there was more access, more dissemination and dissemination due to the online format due to COVID. It served to “whet people's appetites.”; “the future of health information goes according to the results and proposals that have been demonstrated by INFACIT: 1) data linkage, 2) burden of disease 3) proposal for new health indicators”, with potential impact on global public health development: “I think it has a great impact on global public health development”. Several interviewed stressed the synergies between the EHITP proposal and the *Distributed Research Infrastructure on Population Health (DIPoH)* in the future to contribute to the alignment between EU Member States in health information domain.*

One of the interviewed shared the experience of bringing decision makers from each country face to face with InfAct researcher with *“tangible results”*, although not equal between countries.

From the perceptions of the interviewed, the added value of the formative programme depends on country to country. It was also admitted a negative effect of the COVID-19 pandemic in the results in terms of alignment: *“Perhaps if there had been no pandemic, the results could have been even better in terms of alignment”*.

It was also expressed that the *1st European School on Health Information* was *“in line with the criteria and procedures among HI in MS”; “a unique opportunity among EU to gather [HI] topics”; and a space “to talk about experiences between countries with realities in HI as different as Malta or Ireland, for example. The students learned about the European perspective of how information is collected, processed, reported and translated into the field.”*

Several interviewed admitted that the organization of several courses similar to the pilot course can contribute to the homogenization of capacity building and the alignment of health information criteria and procedures: *“As a pilot there is not much to change, but there could be a set of several similar courses that addressed other topics (statistics guidelines, methodologies). Keeping a set of courses of this type, we can move towards the homogenization of capacity building.”*

All the trainees and lecturer that answered the respective question (n=10 and n=8, respectively) considered that the *1st European School on Health Information* addressed aspects relevant to

the alignment of criteria and procedures in health information among European Union Member States. From the trainees commentaries, the overall conclusion is that the course helped to understand that *“health information should be made more unified and coherent across the European Union Member States and ongoing discussion is needed to address common problems, challenges and successes of health information in each of the countries”*, and to *“address how health information can be of use to the general population and especially to the vulnerable groups”*. To improve the potential of the course, lecturers suggested, *“[to] invite high level policy makers to attend future courses to broaden their understanding of the strengths and weaknesses of the data and information which is passed to them and to interact with participants and lecturers from a very wide range of professionals and disciplines within health and social care”*.

The results of the document analysis are consistent with the previous ones. The potential *“to guide future implementation of HI in the EU”* (11, p.9) was one of the starting points of the *European Health Information Training Programme* proposal. The *1st European School on Health Information* was planned *“to contribute to the European Health Information Training Programme and Strategy, with a clear example of a course that could be offered by InfAct and by a Distributed Research Infrastructure on Population Health (DIPoH) in the future, contributing to a sustainable improvement of capacity and equity in Europe”* (13, p.3), and *“will help designing the roadmap for health information equity and sustainability”* (13, p.3). Its topics were *“selected aiming to contribute for the convergence in using European standard methods”* (13, p.3).

5. CONCLUSIONS

The proposal of the *European Health Information Training Programme* consists of a formative programme in health information, dynamic, flexible, sustainable, and focused on reducing inequalities as stated in InfAct protocol. It is adequate to the formative needs and capacities in line with the work done in WP6 Task 6.1 of the InfAct project, highlighting the importance of updating the needs assessment over time. In what concerns about its main thematic areas, it is also aligned with the areas identified in the formative needs and capacities mapping produced in WP6 Task 6.1 of the InfAct, such as: data analysis and interpretation; interoperability of data sources; transfer from data to policy; data collection, sources, metrics and indicators; and data privacy and ethical issues.

The global evaluation of the *1st European School on Health Information* (the pilot test of the EHITP) is positive concerning all the components of the logical model, including the documentation that presented the course (*input*); the pedagogical project and the trainees’

evaluation of the course (*activities*); the trainees' attendance (output); learning, capacity building and potential to behavioral changes at work attributable to the course (*outcomes*); and alignment of criteria and procedures in health information between the EU MS (*outcomes*). The course proved the feasibility of the EHITP proposal. Trainees and lectures expressed their satisfaction at having participated and recognized the importance of training for the interns' professional lives.

In most of the evaluated specific issues, trainees, lecturers, and interviewed expressed a positive perception regarding the participant selection process of the *1st European School on Health Information*. The main suggestions and recommendations were a wider and earlier call for participation, involving eventually the social media, and the inclusion of more profiles of participants and different pedagogical projects accordingly.

The most expressed needs, problems, or expectations of the candidates for the *1st European School on Health Information* that motivated the candidature were: acquisition or deepening of knowledge in health information, especially for reasons related to the professional activity; knowledge transfer and teaching in the scope of health information or health information systems; and health information research. Strengthening the networking was also an expectation frequently expressed.

In most of the evaluated specific issues, the EHITP proposal is aligned with the WP6 InfAct protocol, as well as with the results of the evaluability assessment and with the expectations of the trainees at the *1st European School on Health Information*. To reinforce the alignment of the pedagogical project with the expectations of the trainees, it was suggested: to increase the time of the course, timely share the materials, a better communication between all the participants and coordinators, and to deepen the vocational character of the course and specific thematic areas, such as GDPR, interoperability and methodological approaches based on epidemiology and public health.

In the future, it was suggested to explore more advantages of the online format, totally or partial.

The perception of the participants at the *1st European School on Health Information* about the potential of the formation was positive in the three components evaluated: reaction of the trainees, learning and capacity building, and behavioral changes at work.

The perception of the interviewed population and the participants at the *1st European School on Health Information* about the potential of the EHITP proposal to the alignment of health

information criteria and procedures between EU Member States was positive, being admitted the homogenization of capacity building and the alignment of criteria and procedures with the replication of the courses, and a potential positive impact on global public health development.

RECOMMENDATIONS

The main specific recommendations of the evaluation of the EHITP proposal are especially aimed at strengthening some of the components of the proposal, in view of future courses/ training activities within the scope of the EHITP. They can be summarised as follows: **a)** a special note to the adequacy of the participant selection process regarding the time of the application period and the profile of the candidates; **b)** reinforcement of the importance of the regular update of the health information needs assessment and use of the results; **c)** sustaining the preference for courses with modular curricular programmes and a diverse curricular contents; **d)** insistence on an in-depth approach to curriculum content related to thematic areas considered at the time of particular relevance, such as the “General Data Protection Regulation” (GDPR) and ethical issues, interoperability, and methodological approaches based on epidemiology and public health; **e)** improvement of the communication tools between all the participants in the programme – coordinators, lecturers, and trainees; **f)** use of the *Distributed Research Infrastructure on Population Health* (DIPoH) when possible and adequate; **g)** development of impact evaluation studies of the EHITP.

The final recommendation is the incorporation of the specific recommendations in a new version of the *European Health Information Training Programme*, and its use in the development of the *Roadmap for the Capacity Building Programme in Health Information* planned for Task 6.4 of the InfAct Joint Action.

LIMITATIONS OF THE EVALUATION

In this evaluation it was not feasible to study the impact of the EHITP, not even in an exploratory way, mainly due to the short time between the only formative experience performed by now (the *1st European School on Health Information*, as the pilot test of the EHITP) and the evaluation data collection. Therefore, despite the evaluation design being based on a logical model, the attribution of results and impact cannot be addressed.

Although the European and national contexts are integrated in the logical model of the EHITP, it was not possible to consider its effects in the discussion of the evaluation results.

Due to the pandemic, all phases of the evaluation were remote, which may have to some extent hindered part of the qualitative approach, as it was not possible to do the interviews in person (although it was on video call).

Another limitation of this evaluative study is related to the data collection technique applied to the trainees and lecturers - online questionnaire - often associated with a low proportion of responses, despite the reminders. This may call into question the representativeness of the study population. However, the high consistency with the results obtained from the data collected by the other techniques, leads us to admit a minimal effect of that fact.

REPORTING OF RESULTS AND RECOMMENDATIONS

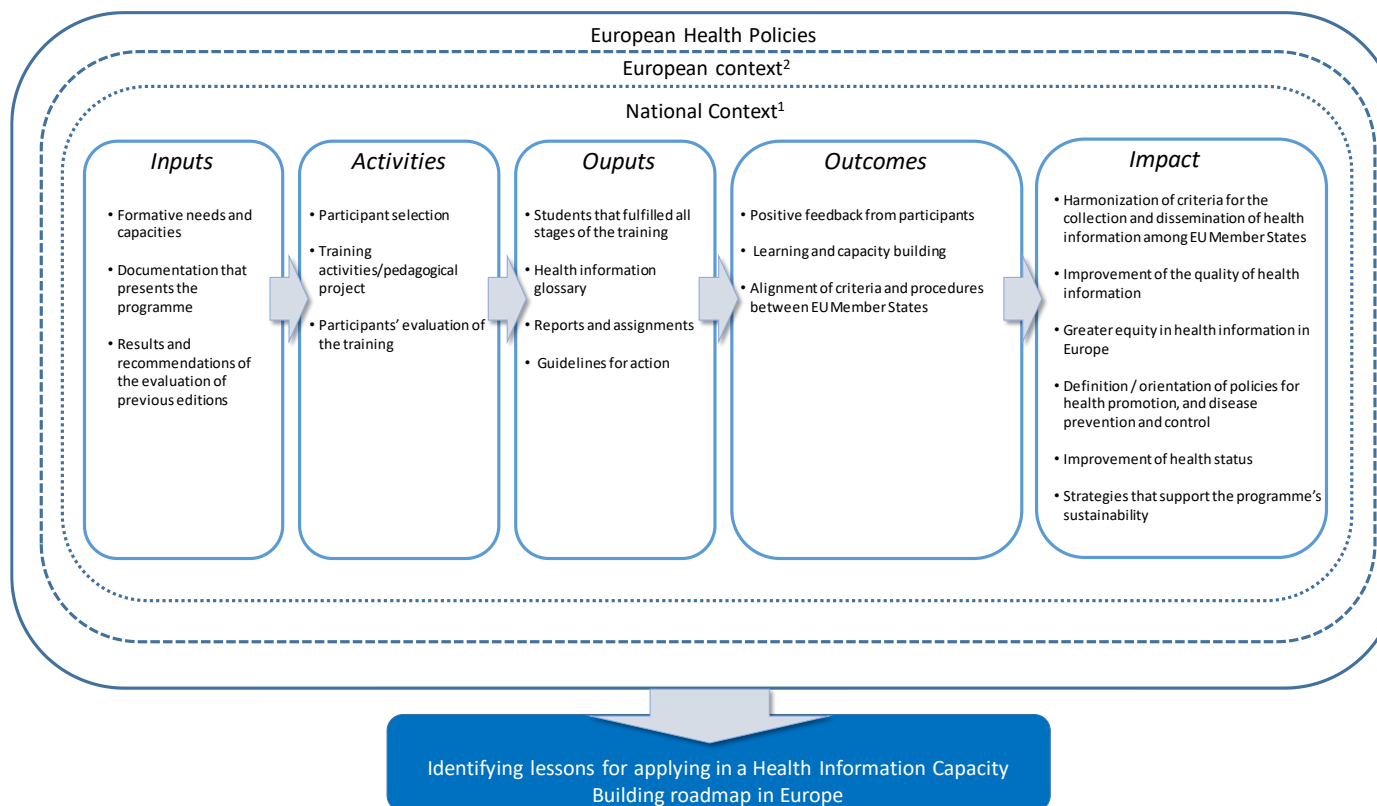
The preliminary results and recommendations were presented and discussed with the main stakeholders of the EHITP proposal in an online workshop meeting held on January 26th, 2021. The discussion included the clarification of certain results of the evaluation, mainly about the participant selection process, being highlighted by one of the authors of the proposal the negative effects of the uncertainty due to the COVID-19 pandemic. It was also pointed the loss of the benefits of the personal contact in the online format and the not-inclusion of the groups' works in the evaluation material. Finally, it was highlighted the importance of the incorporation of the evaluation results and recommendations in the development of the *Roadmap for the Capacity Building Programme in Health Information* planned for Task 6.4 of the InfAct Joint Action.

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Annex I - Logical model of the *European Health Information Training Programme*

Logical model of the Flagship Capacity Building Programme, according to the results of the evaluability study



¹ Namely within the context of health information policies in Europe and European data protection regulations

² In particular, in the context of national health policies, national health information policies and national data protection policies

Annex II – Trainees Questionnaire

12/11/2020

<https://survey-insa.min-saude.pt/redcap/surveys/?s=HXPF4JFC7P>











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

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Evaluation of the 1st European School on Health Information from InfAct project WP6

(Pilot Course of the *European Health Information Training Programme (EHITP)* conducted during Oct2020-Nov2020)

Dear trainee of the **1st European School on Health Information course**, we would very much appreciate your input on this **anonymized and brief survey (about 10 minutes)**. We kindly remind you that the Evaluation of the *Pilot Course of the European Health Information Training Programme* is a **deliverable from the WP6 of the InfAct Join Action**.

The survey is completely anonymous and the results will be used exclusively for the purposes of this evaluation. As a trainee of the **1st European School on Health Information course**, your insight is very valuable. Therefore, we kindly ask you to collaborate in filling it out and for that we thank you in advance for your attention.

Please find below the informed consent for completing the questionnaire.

This is a **free and informed consent participation**. Please read the following information carefully. If you need clarification do not hesitate to contact us.

This online questionnaire is intended to obtain data to evaluate the **1st European School on Health Information course**. The maximum time to complete the questionnaire is estimated at 10 minutes. The data collected will be anonymous and confidential, and will not be associated with your name, computer or email. The data collected will be used exclusively within the scope of this evaluation.

I declare to have read and understood this document. Completing the questionnaire confirms acceptance of my free and informed participation. I was guaranteed the possibility, at any time, to refuse to continue participating in this evaluation without any consequences.

Contacts: Verónica Gómez. Epidemiology Department - National Institute of Health Doutor Ricardo Jorge, IP
Email: veronica.gomez@insa.min-saude.pt

CHARACTERIZATION OF THE TRAINEES AT THE DATE OF FILLING THE QUESTIONNAIRE

1. Respondent code(randomly assigned)	<input type="text" value="4"/>
2. Year of birth	<input type="text" value="yyyy"/>
3. Sex	<input type="radio"/> Male <input type="radio"/> Female reset
4. Academic degree	<input type="radio"/> Bachelor's/Licentiate <input type="radio"/> Master's <input type="radio"/> Doctorate reset
5. Profession	<input type="text"/>
6. Country in which you are currently working	<input type="text"/>
PARTICIPANT SELECTION PROCESS	
7. What was your need for training or reason that motivated you for applying for the course?	<div style="border: 1px solid #ccc; height: 60px;"></div> Expand
8. What were your expectations for the course?	<div style="border: 1px solid #ccc; height: 60px;"></div> Expand
9. In future editions of the course, are there any changes you consider that can be made to encourage the application of more professionals?	<div style="border: 1px solid #ccc; height: 60px;"></div> Expand

10. Do you consider that the target audience was adequate bearing in mind the content/programme of the course?	<input type="radio"/> Yes <input type="radio"/> No	reset
11. Do you consider that the application criteria in the course was appropriate?	<input type="radio"/> Yes <input type="radio"/> No	reset
12. Regarding the materials made available in the booklet (educational training objectives, curriculum content, organizational structure of the training, and teaching methods and techniques) do you consider them sufficiently clear?	<input type="radio"/> Yes <input type="radio"/> No	reset
FORMATION		
13. Do you think that in general your learning objectives were achieved?	<input type="radio"/> Yes <input type="radio"/> No	reset
14. Did you experienced any difficulties during the course?	<input type="radio"/> Yes <input type="radio"/> No	reset
15. Would you advise to replicate the experience to other potential trainees?	<input type="radio"/> Yes <input type="radio"/> No	reset
16. How do you globally evaluate the experience of the course?	<input type="radio"/> Positive <input type="radio"/> Negative	reset
17. Did the course contribute to learning and / or improving your technical execution skills?	<input type="radio"/> Yes <input type="radio"/> No	reset
18. Did the course contribute to your learning and / or improvement in health information?	<input type="radio"/> Yes <input type="radio"/> No	reset

19. Do you admit having a positive evolution in your professional activity as an outcome of your participation in the course:		
19.1. In the integration of scientific and technical knowledge?	<input type="radio"/> Yes <input type="radio"/> No	reset
19.2. In your technical execution capabilities?	<input type="radio"/> Yes <input type="radio"/> No	reset
19.3. In the use of technical language and terminology?	<input type="radio"/> Yes <input type="radio"/> No	reset
19.4. In your work capacity (towards greater productivity)?	<input type="radio"/> Yes <input type="radio"/> No	reset
19.5. In professional motivation?	<input type="radio"/> Yes <input type="radio"/> No	reset
20. Do you admit having acquired new professional skills during the course?	<input type="radio"/> Yes <input type="radio"/> No	reset
21. Do you intend to make or suggest any innovation or improvement in your professional institution, or in its operation, which you attribute to this course?	<input type="radio"/> Yes <input type="radio"/> No	reset
22. Do you admit to contribute to the training of your professional colleagues in your returning to professional activity after completing the course?	<input type="radio"/> Yes <input type="radio"/> No	reset

23. What other important results do you attribute to the course you took?

Expand

24. Do you want to make any recommendations or final comments related to the course you took and its results?

Expand

ALIGNMENT BETWEEN EU MEMBER STATES

25. Do you consider that the course addressed aspects relevant to the alignment of criteria and procedures in health information among European Union Member States?

- ☐ Yes
☐ No

reset

26. Do you want to make any suggestions for improving the course programme in order to better meet the alignment between European Union Member States?

Expand

Submit

Annex III – Lecturers Questionnaire

12/11/2020

<https://survey-insa.min-saude.pt/redcap/surveys/?s=3TYYFRCRDD>



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INSTITUTO RICARDO JORGE



DGS
Direção-Geral da Saúde



NATIONAL INSTITUTE
FOR HEALTH AND WELFARE



INSTITUTO DE HIGIENE E
MEDICINA TROPICAL
UNIVERSIDADE NOVA DE LISBOA



INFACT
Joint Action on Health Information



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

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Evaluation of the 1st European School on Health Information from InfAct project WP6

(Pilot Course of the *European Health Information Training Programme (EHITP)* conducted during Oct2020-Nov2020)

Dear lecturer of the **1st European School on Health Information course**, we would very much appreciate your input on this **anonymized and brief survey (about 10 minutes)**. We kindly remind you that the Evaluation of the *Pilot Course of the European Health Information Training Programme* is a **deliverable from the WP6 of the InfAct Join Action**.

The survey is completely anonymous and the results will be used exclusively for the purposes of this evaluation. As a lecturer of the **1st European School on Health Information course**, your insight is very valuable. Therefore, we kindly ask you to collaborate in filling it out and for that we thank you in advance for your attention.

Please find below the informed consent for completing the questionnaire.

This is a **free and informed consent participation**. Please read the following information carefully. If you need clarification do not hesitate to contact us.

This online questionnaire is intended to obtain data to evaluate the **1st European School on Health Information course**. The maximum time to complete the questionnaire is estimated at 10 minutes. The data collected will be anonymous and confidential, and will not be associated with your name, computer or email. The data collected will be used exclusively within the scope of this evaluation.

I declare to have read and understood this document. Completing the questionnaire confirms acceptance of my free and informed participation. I was guaranteed the possibility, at any time, to refuse to continue participating in this evaluation without any consequences.

Contacts: Verónica Gómez. Epidemiology Department - National Institute of Health Doutor Ricardo Jorge, IP
Email: veronica.gomez@insa.min-saude.pt

CHARACTERIZATION OF THE LECTURERS AT THE DATE OF FILLING THE QUESTIONNAIRE

1. Respondent code (randomly assigned)	<input type="text" value="5"/>
2. Year of birth	<input type="text" value="yyyy"/>
3. Sex	<input type="radio"/> Male <input type="radio"/> Female reset
4. Academic degree	<input type="radio"/> Bachelor's/Licentiate <input type="radio"/> Master's <input type="radio"/> Doctorate reset
5. Profession	<input type="text"/>
6. Position held	<input type="text"/>
7. Country in which you are currently working	<input type="text"/>
8. Type of participation in the course (tick more than one option, if applicable)	<input type="checkbox"/> Lecturer in the 1st European School on Health Information <input type="checkbox"/> Tutor in group work
PARTICIPANT SELECTION PROCESS	
9. What are, in your opinion, the training needs or problems that motivated the development of the course?	<div style="border: 1px solid #ccc; height: 60px; width: 100%;"></div> Expand
10. What were your expectations for the course?	<div style="border: 1px solid #ccc; height: 60px; width: 100%;"></div> Expand

11. Are there any changes you consider that can be made to encourage the application of professionals, in future editions of the course?	<div></div>	Expand
12. Do you identify any changes to be made regarding the target audience of the course?	<input type="radio"/> Yes <input type="radio"/> No	reset
13. Are there any changes you consider that can be made in the inclusion criteria in the course?	<input type="radio"/> Yes <input type="radio"/> No	reset
FORMATION		
14. Do you identify any innovations or improvements that can be made in the course programme?	<input type="radio"/> Yes <input type="radio"/> No	reset
15. In your opinion, were the learning objectives generally achieved?	<input type="radio"/> Yes <input type="radio"/> No	reset
16. Would you advise the frequency of this course to other potential candidates?	<input type="radio"/> Yes <input type="radio"/> No	reset
17. How do you evaluate this initiative globally?	<input type="radio"/> Positive <input type="radio"/> Negative	reset
17.1. Why?	<div></div>	Expand
ALIGNMENT BETWEEN EU MEMBER STATES		

18. Do you consider that the course addressed relevant aspects of the alignment of criteria and procedures in health information among European Union Member States?

- ☐ Yes
☐ No

reset

19. Do you want to make any suggestions for improving the course programme in order to better meet the alignment between European Union Member States?

- ☐ Yes
☐ No

reset

20. Please, add a final comment if desired

Expand

Submit

Annex IV – Semi-structured interview script for Stakeholders

Evaluation of the proposal of the European Health Information Training Programme (EHITP)

Interview's script

A. CHARACTERIZATION OF THE INTERVIEWED AT THE DATE OF FILLING THE QUESTIONNAIRE

Name: _____

Profession: _____

Position held: _____

Type of relation with the InfAct Joint Action:

- InfAct's coordinator/coordination team
- WP6's coordinator or team member
- Other authors of EHITP's proposal

Date of interview: _____

Interviewer's name: _____

Type of contact interviewer/stakeholder (personal, by telephone, by
videoconference): _____

Data collection

Data will be obtained by interview made in person, by phone or by videoconference.

Questions were structured to obtain details about:

- Alignment of the pedagogical project with the expectations expressed by the trainees or its evaluation of the pilot course;
- Alignment between EU Member States;
- Suggestions to improve the proposal of the European Health Information Health Information Training Programme (EHITP).

In the interview will be used this script to guide the questions formulation. Each interview will last around 30 minutes. Permission to record the interview will be asked.

The invitation will be made by email. In that message, informed consent will be requested to use the data in the evaluation.

The data will be used anonymously, as described in the evaluation plan.

B. PARTICIPANT SELECTION PROCESS

Do you think that participant selection process of Pilot course was well conducted? Do you identify any changes to be made in future in the participation selection, namely regarding the target audience and the inclusion criteria?

If yes, please give concrete examples.

If no, please identify which you consider that are the most important criteria in the defined inclusion participants method.

C. GLOBAL ASSESSMENT OF PILOT COURSE (1ST EUROPEAN SCHOOL ON HEALTH INFORMATION)

What is your opinion of the pilot course? Namely the:

- Pedagogical project (booklet)
- Distributed documentation
- Slides clarity and readability
- Sessions dynamics

Do you want to express an opinion about the articulation of the lecturers work? For example, do you think that sessions were well linked, without matters overlap? Do you want to suggest any improvement?

In your opinion, the pilot course was in line with the needs that motivated its development? Do you think the aims were achieved?

D. ALIGNMENT BETWEEN EU MEMBER STATES

We would like to hear your opinion on the contribution that the *European Health Information Training Programme* (EHITP) can make to the alignment of knowledge and procedures in health information among European Union Member States.

For example:

- Do you consider that the proposal of the EHITP addressed the main aspects relevant to the alignment of criteria and procedures in health information among European Union Member States?
- Do you want to make any suggestions for improving the EHITP in order to better meet the alignment between European Union Member States?

E. GLOBAL COURSE EVALUATION

After the Pilot course, what is your global opinion about the proposal of the *European Health Information Training Programme* (EHITP)?

Do you think the thematic are in line with the training needs or problems that motivated the development of the proposal?

Which improvements would you make so that the proposed programme better answer the needs in health information training? (Specially having in mind that this WP aims to develop a roadmap for a capacity building baseline training on health information.

Please add a final comment if desired.

Annex V - Matrix of analysis categories

Categories	Subcategories 1	Documental analysis	Questionnaire - trainees	Questionnaire - lecturers	Interviews
1. Formative needs and capacities	Alignment of the EHITP with the results of the formative needs and capacities mapping produced in WP6 task 6.1	X	...	...	X
2. Participant selection process	Participant selection process of the <i>1st European School on Health Information</i>	X	X	X	X
	Needs/problems or expectations of the candidates expressed in the candidature	...	X	X	...
	Alignment of the candidate's motivation and the theme and objectives of the course	X	X	...	X
	Clarity of the documentation that presents the programme	X	X	...	...
3. Pedagogical project	Alignment of the pedagogical project	X	...	...	X
	Recommendations and suggestions about the pedagogical project made by trainees and lecturers	...	X	X	X
4. Formation	Reaction	X	...	...	...
	Learning	...	X	X	...
	Behaviour	...	X	...	...
	Global appreciation of the formation	...	X	X	...
5. Alignment between EU Member States	Potential of the programme for the alignment of HI criteria and procedures between EU Member States	X	X	X	X