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AARC

NTT DATA

# D1: Report on good practices on DC frameworks for the health and care sector

## Improving digital competences of the health workforce in Spain and Estonia



**June 2023**

REFORM/SC2022/108

AARC - Consortium

*The project is financed by the European Union through the Technical Support Instrument and executed by NTT Data, in collaboration with the Directorate General for Support for Structural Reforms of the European Commission (DG REFORM)*



## Abbreviations

Acronym	Description
<b>AD@15</b>	<i>Agenda Digital de Euskadi 2015</i>
<b>BDRW</b>	“Building a Digitally Ready Workforce” programme
<b>D</b>	Deliverable
<b>DC</b>	Digital Competence
<b>DG</b>	Directorate-General
<b>DG REFORM</b>	Directorate-General for Structural Reform Support
<b>DHT</b>	Digital Health Transformation
<b>DSAT</b>	NHS Digital Skills Assessment Tool
<b>ECTS</b>	European Credit Transfer System
<b>EIT</b>	European Institute of Innovation and Tech
<b>EU</b>	European Union
<b>HEE</b>	Health Education England
<b>HIE</b>	Electronic Health Information Exchange
<b>HiMSS</b>	Health Information and Management Systems Society Foundation
<b>HWF</b>	Healthcare Workforce
<b>ICT</b>	Information and Communication Technology
<b>IS</b>	Information Systems
<b>IT</b>	Information Technologies
<b>KIC</b>	Knowledge and Innovation Community
<b>MD</b>	Medical Doctor
<b>M&amp;E</b>	Monitoring and Evaluation
<b>NHS</b>	United Kingdom National Health Service
<b>OWG</b>	Operational Working Group
<b>PDP</b>	Professional Digital Competence Profiles
<b>PHR</b>	Professional Human Resources
<b>RIS</b>	Regional Innovation Scheme
<b>SKAD</b>	Skills Knowledge Assessment Development Framework
<b>TICSS</b>	<i>TIC Salut i Social</i>
<b>TRIE</b>	Tools, Resources, Education and Information
<b>US</b>	United States



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# 1. Introduction and objectives

## 1.1 General Context

This document is framed within Deliverable 1 of the **project “Improving digital competences of the Health Workforce in Spain and Estonia”**, financed by the European Union (EU) through the Technical Support Instrument and executed by NTT DATA, in collaboration with the Directorate General for Support for Structural Reforms of the European Commission (DG REFORM).

The main objective of the project is **to improve Digital Competencies (DCs) among the Catalan and Estonian Healthcare Workforce (HWF)**. For the purpose of this project, **digital competences are defined** as the “*combination of knowledge, skills and attitudes in the confident and critical use of Information Communication Technology (ICT), for work, leisure and communication*”. The main outcome expected is the **implementation** by health authorities of a strategy to **standardise, assess and improve DCs of the HWF**, to bolster the access and quality of services for patients.

The project consists of 19 phases, and this document constitutes the Final Report of **Deliverable 1 (D1): “Report on good practices on DC frameworks for the health and care sector”**.

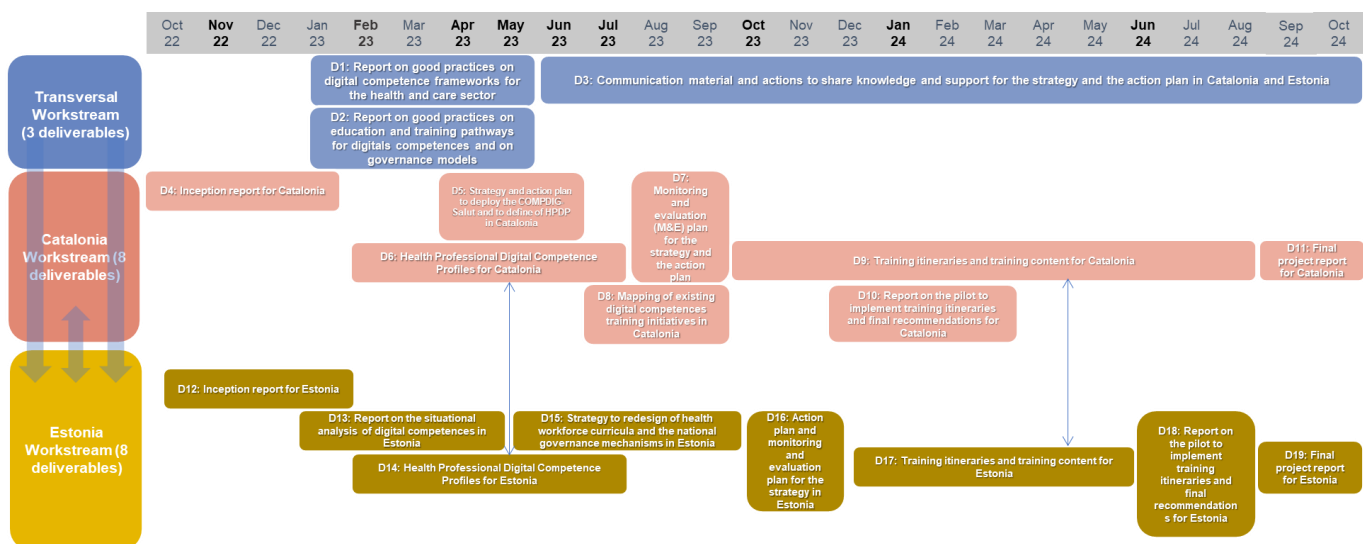


Figure 1: Project workstreams and activities overview

## 1.2 Objectives of Deliverable 1

In the context of D1, the specific objectives are the following:

- To **identify and analyse competence frameworks and Professional Digital Competence Profiles (PDPs)** used in the health and other sectors
- To collect information on the **methodological approach** used to define digital health profiles
- Conduct a desk research about the most **relevant initiatives** considering the specific needs of Catalonia and Estonia

For this deliverable, this report presenting the good practices on DC frameworks constitutes the final task.

## 2. Methodology

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### 2.1 Methodology followed

#### 1 Identification of initiatives through desk research

This first phase of the deliverable involved **identifying initiatives related to DC frameworks, PDPs, and their monitoring and evaluation (M&E) mechanisms** through and exhaustive **desk research**, with the goal of later selecting up to 15 of them in a Selection workshop.

Before carrying out this desk research, an **investigation protocol** was agreed upon with the Operational Working Groups (OWGs), setting the guidelines to follow in this activity. In this protocol, a pre-proposal of the thematic fiche's index was also validated.

For this initial desk research, information was gathered from databases of **official sources of the health administrations and organizations** that established the frameworks (primary sources) and **existing publications** in other databases such as Pubmed, JSTOR, or Google Scholar (secondary sources).

The previous and ongoing experience of *TIC Salut I Social (TICSS)* and the European Commission was also considered as a source of information.

#### 2 Elaboration of preliminary fiches

Information gathered in the desk research on the different initiatives was organised through **preliminary fiches**. For each of them, basic information (year, driving institution, scope) was provided, as well as a brief description on the content of the initiative. These fiches were to be later presented in a **selection workshop**, in which the initiatives to further develop for the final report would be defined.

In total, a document with preliminary fiches for 27 initiatives was elaborated, including 17 DC frameworks, 9 certification processes, 4 PDPs in the health sector, 2 PDPs in non-health sectors, and 2 M&E mechanisms. Some initiatives included more than one area of focus.

This document also included a **preliminary selection criteria** for the initiatives, to be validated by the beneficiaries in the selection workshop.

#### 3 Selection workshop

The 27 initiatives were presented to both OWGs in this selection workshop. Firstly, the criteria to be used to select initiatives was agreed upon. Having done this, **initiatives were then presented individually**, with a brief debate ensuing regarding their fit with the selection criteria. Following the debate, each beneficiary cast a telematic vote, **evaluating each initiative** on a scale of 1 to 5.

After all initiatives had been voted on, average scores for all of them were shown. With this information, a second debate was then carried out, with the intention of defining the initiatives that would be focused on for the final report. From it, a **selection of 8 initiatives** was finally agreed upon.

#### 4 Elaboration of the final report

Having selected the 8 initiatives, further information on the context of their production, driving institution, and complimentary tools was compiled and reproduced in the **resulting final report**.

## 2. Methodology

### 2.2 Structure of the thematic fiches

To present the information collected on the selected initiatives, a **thematic fiche has been elaborated**. Fiches are organised through the following **index** (with variations considering the content of the initiative):

I. General data

II. Context of the initiative & driving institution

III. Description of the DC framework/training and certification initiative

IV. Other tools of the initiative (PDPs/certifications/trainings...)

In the following illustrative, the different elements and information provided in the fiches is explained:

Title of the initiative  
↓

Icons showing the areas of focus of the initiative –  
**Blue:** considered in this initiative  
**Grey:** not considered in this initiative

1
HITCOMP (1/5)

**I. General data**

Driving institution	EU-US eHealth Work Project	Year:	2016
Link to the source	<a href="#">HITCOMP Website</a>	Scope:	European Union (EU) & United States

**II. Context of the framework & driving institution**

The EU-US eHealth Work Project is a European Commission-funded project under the Horizon 2020 program formed in September 2016, after a joint effort between the United States and the EU (under DG Connect, specifically) back in August 2013. This workgroup was composed of the following public and private sector industry stakeholders<sup>1</sup>:

- Omni Micro Systems – Omni Med Solutions GmbH (OMS-GmbH):** Coordinators of the project. German enterprise providing consulting services in clinical healthcare and Information Technologies (IT).
- European Health Telematics Association (EHTEL):** leading forum for decision makers and doers in Europe, engaged in the transformation of healthcare in Europe through eHealth.
- Stiftung Fachhochschule Osnabrück (University of Applied Sciences Osnabrück):** practice-oriented university considered one of the leading universities of applied sciences in Germany.
- Technology University of Tampere:** high-standard tech research, with close links to the needs of industry and business life.
- Steinbeis 2i GmbH:** worldwide acting network of research and innovation management. Partner and advisor for European innovation topics.
- Health Information and Management Systems Society Foundation (HIMSS):** global enterprise producing health IT thought leadership and education around the world.

The joint project between the US and the EU of this workgroup was divided into two phases<sup>2</sup>. In **Phase I (Aug 2013 to May 2015)**, the community identified approaches to ensure a **robust supply of eHealth IT professionals and bridge the competency gap** among healthcare staff for optimal use of available technology.

In **Phase II (September 2016 to May 2018)** the EU-US eHealth Work Project was established officially. Under the Horizon 2020 program, this workgroup had the mission of **measuring, informing, educating and advancing eHealth skills, education and knowledge** throughout the EU, the US and globally. It was in this phase in which a **Gap Analysis** was performed<sup>3</sup>, and the **HITCOMP** was subsequently developed, as a repository of the education, skills and DCs of all members of the HWF.

**The program came to an end with the conclusion of Phase II.** However, the project currently continues its dissemination and exploitation activities currently, and the HITCOMP repository is still maintained by OMS-GmbH.

**Icon meanings:**

DC frameworks









PDPs

Certification initiatives

## 3. Analysis of good practices

### 3.1 Selected initiatives

The 8 initiatives chosen in the selection workshop, and further developed in this final report are the following:

Initiative	Brief description
<b>1</b> <b>HITCOMP</b> 	EU and United States (US) collaboration to develop a framework with 1,025 competencies
<b>2</b> <i>Numérique en santé Référentiel socle et transversal de compétences</i> 	French initiative to include digital skills in the curriculum of health students
<b>3</b> <b>A Health and Care Digital Capabilities Framework</b> 	DC framework developed by the NHS applicable to all HWF
<b>4</b> <b>COMPDIG - Salut</b> 	Framework developed by TICSS directed to the Catalan HWF
<b>5</b> <b>IKANOS</b> 	Overarching initiative by the Basque Government with basis on the DIGCOMP
<b>6</b> <b>Psychological Practitioners Digital Competence Framework</b> 	DC framework developed by the NHS with special focus on psychologists
<b>7</b> <b>Fraunhofer Academy</b> 	Digital health training initiative with international scope
<b>8</b> <b>eitHealth Digital Health Transformation Academy</b> 	European initiative to provide Digital Health Transformation training modules

### 3. Analysis of good practices

**1****HITCOMP (1/5)****I. General data***Driving institution:***EU-US eHealth Work Project***Year:*

2016

*Source:*[HITCOMP Website](#)*Scope:*

EU &amp; US

**II. Context of the initiative & driving institution**

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### 3. Analysis of good practices

# 1

## HITCOMP (2/5)



### III. Description of the DC framework (I)

This DC framework contains **1,025 digital competences**, sorted into **5 specific domains**<sup>4</sup>:

**Administration:** health administrations, finance, law, management and revenues

**Direct Patient Care:** nursing, medicine, allied health, etc.

**Engineering/Information Systems (IS)/Information and communication Technologies (ICT):** engineering, ICT, information systems and information technology

**Informatics:** health informatics, clinical informatics, nursing informatics, etc.

**Research/biomedicine:** research, development biomedicine, etc.

Each **specific domain** will have a **number of competences associated to it** (e.g. Direct Patient Care has 317 of the 1,025 competences associated to it).

Each of these 1,025 competences are **differenced by level**, depending on the **grade of experience and skill** required to achieve them. There are 5 levels, which are color-coded in the repository for ease of understanding<sup>3</sup>:

**1**

#### Baseline

A **foundation level** upon which all other skills and competences are based

**2**

#### Basic

An **entry-level** or beginning skill or competency level. Equating to **“understanding”** and **“knowing”** according to Bloom’s Taxonomy<sup>5</sup>. Could potentially align with **associate-level degree academic programs**

**3**

#### Intermediate

A **mid-level** incumbent skill or competency level, equating to **“applying”** and **“analysing”**<sup>5</sup>. Could potentially align with **baccalaureate-degree level academic programs**

**4**

#### Advanced

A **high-level** incumbent skill or competency level, equating to **“evaluating”** and **“synthesizing”**<sup>5</sup>. Could potentially align with **baccalaureate- to master-degree level academic programs**

**5**

#### Expert

A **high-level** incumbent skill or competency level, equating to **“evaluating”** and **“synthesizing”**<sup>5</sup>. Could potentially align with **baccalaureate- to master-degree level academic programs**

Each **individual competency** is associated to a **specific competency quadrant**, depending on its **area of focus**, or general area of interaction between eHealth actors. The **6 competency quadrants** are the following<sup>4</sup>:

**Administrative****Clinical****Communication****Health Data****Operational****Patient**

### 3. Analysis of good practices

1

HITCOMP (3/5)



#### III. Description of the DC framework (II)

The framework breaks down this 6 competency quadrants further, into the following **33 areas of competency**. All 1,025 DCs have **only one competency quadrant associated**, but **can have more than one area of competency** assigned <sup>6</sup>:

1 Access to Information, Protected Health Information, and Health Information Management	2 Administration/General Mgmt./Governance	3 Business Process Design/Workflows
4 Care Coordination	5 Clinical Decision Support and Pathways	6 Clinical Practice and Workflows
7 Coding and Terminologies	8 Collection of Data/Knowledge Mgmt. (Library)	9 Communication and Change Management
10 Confidentiality/Protected Health Information/Records Mgmt.	11 Data Compiling, Analysis, Modelling and Reporting	12 Documentation Process
13 Financial and Account Management	14 General HIT Knowledge/System Use	15 HIE/Interoperability/Interfaces/Integration
16 Informatics Process	17 Information & Communications Technology/Information Systems/IT	18 Issue Management and Resolution
19 Legal	20 Medications and Allergies	21 Order Entry
22 Patient Access and Engagement/PHRs	23 Patient Centred Interactions/Patient Identification	24 Policies and Procedures
25 Population Management/Public Health	26 Privacy and Security	27 Project/Program Management
28 Quality and Safety	29 Research/Biomed	30 Risk and Compliance
31 Standards and Protocols	32 Systems Development and Implementation	33 eHealth/mHealth/Telehealth

**In summary**, each individually **coded** competency is **relevant for one specific domain** (professional area); is **assigned a level** depending on the difficulty to achieve it; and is **classified**, first into **competency quadrants**, and then into **areas of competency**.

## 3. Analysis of good practices

### 1 HITCOMP (4/5)



#### IV. DC framework database

The 1,025 HITCOMP DCs have been **organised into a database available for everyone**. Through a set of **filters**, the user can produce a **list of competences according to their needs**, and can gather information to determine their **overall digital competency level**. Searches can be performed **by competency or by role**<sup>4</sup>.

- **By competences:** users can **filter by** (i) Domain; (ii) Level; (iii) Competency quadrant; and (iv) Area of competency. Once introduced, a **Data Results table is produced**, with a list of competences **matching such characteristics**.
- **By role:** users can also obtain the set of DCs that are **related to their role**. To do this, they first have to **determine their corresponding role, filtering by** (i) Domain; (ii) Role Type and; (iii) Service Category. Once the user has determined a role that is **as similar as possible to their own**, users can **select different competency levels** (baseline, basic...etc) to produce a Professional Digital Competence Profile (PDP) with the competencies considered relevant for their role. To allow for an easier use, the database provides **translations for the different roles** included in several languages (including Spanish).

Domain	Level	Competency Quadrant	Area of Competency	Competency	
Direct Patient Care, Administration, Informatics, Engineering/Information Systems/ICT, Research/Biomedicine	Advanced	Patient Interactions	Care Coordination	Contribute to the integration of health information exchanges and telehealth to improve care coordination between acute care and other providers, improve care transitions, increase access to specialist treatment and support regional models of service delivery	BA01
Direct Patient Care, Administration	Advanced	Patient Interactions	Care Coordination	Integrate continuity of care and care coordination as key strategies in management of electronic health records	BA02
Administration	Basic	Patient Interactions	Care Coordination	Be aware of and sensitive to the patient's health IT literacy and culture	BB01
Administration	Basic	Patient Interactions	Care Coordination	Be aware of shared decision making as a key component of patient centered care	BB02
Direct Patient Care, Administration	Basic	Patient Interactions	Care Coordination	Be aware of the dimensions of care coordination	BB03
Direct Patient Care	Basic			Be familiar with the processes of admission, discharge and transfer as	

Illustrative

#### V. Training & Certification tools (I)

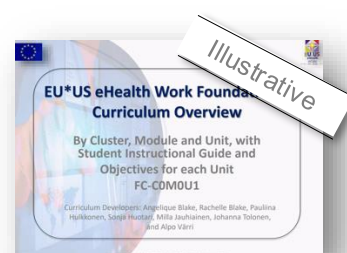
Building on the HITCOMP framework, the EU-US eHealth Work has developed **several tools and resources** focused on **digital skills training**, which are presented below.

##### 1. EU-US eHealth Work Foundational Curriculum<sup>7</sup>

The EU-US eHealth Foundational Curriculum is a **global introductory online course in eHealth**. It is tied to HITCOMP competences, providing **baseline and basic eHealth skills** upon completion.

The content loosely translates to the equivalent of a **60 unit/60 hour online course**. It includes **10 clusters in 21 modules**, broken down into 40 different areas of competences.

**Competency** in eHealth is considered to be achieved when **all units are taken** and the final examination is completed with a **score of 80% or higher**. This competency signification is designed to **align with certification programs**.



Illustrative

##### 2. Skills Knowledge and Assessment Development Framework (SKAD)<sup>8</sup>

The SKAD is a self-assessment questionnaire that helps actors in or considering going into healthcare to **better understand their digital literacy skills**. It is composed of **25 questions** related to technology use.



Illustrative

## 3. Analysis of good practices

# 1

## HITCOMP (5/5)

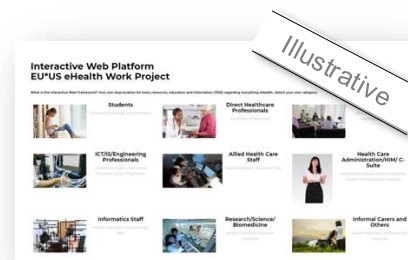


### V. Training & Certification tools (II)

#### 3. Interactive Web Platform<sup>9</sup>

The Interactive Web Platform of the EU-US eHealth Work Project is the one-stop location for tools, resources, education and information (TRIE) regarding everything eHealth. It is separated by categories, including students, administration, allied healthcare staff, research, informal carers, etc.

Once the category is selected, the platform offers a set of links regarding TRIE, such as specific training platforms or links to professional associations/forums for the job category.



#### 4. Interactive Education Demonstrator Modules<sup>10</sup>

This platform provides video instructions, presentations, information and materials related to the real-life application of education, skills and competency development related to the eHealth workforce.

It Includes video tutorials on the different tools of the website, as well as additional informative content on topics such as cybersecurity.



### 3. Analysis of good practices

## 2 Numérique en santé Référentiel socle et transversal de compétences (1/2)



#### I. General data

Driving institution: **Délégation Ministérielle au Numérique en Santé**



Year: 2022

Source: [Numerique en Santé Référentiel socle et transversal de compétences \(PDF\)](#)

Scope: France

#### II. Context of the initiative & driving institution

The **development of a common framework for French health professionals** is one of numerous initiatives launched as a consequence of the adoption of the **“eHealth Acceleration Strategy”** launched by the French Government in January 2021<sup>1</sup>. This five-year strategy is encapsulated inside the overarching strategy to digitalise France, **“France 2030”**<sup>2</sup>, a strategy to prepare for the future and make France a leader in eHealth, which aims to mobilise all stakeholders in the eHealth sector to create an **ecosystem in which technologies are at the forefront**, and health data is used in a secure and ethical manner. **Other examples of initiatives** arising from the “eHealth Acceleration Strategy” include the following:



#### Assessment of skills<sup>3</sup>

Action that aims to develop the PIX pro Santé platform for the evaluation and certification of the digital health skills of previously trained students



#### eHealth training modules<sup>4</sup>

Action that aims to define the construction and implementation of modules to upgrade generic or specific skills to address the increased role of digital technology skills of health professionals



#### Users' competences<sup>5</sup>

Action developed with the objective of allowing citizens to increase their digital health skills and be able to adequately use the technologies set up for them

The **initiative of the creation of a common framework** arises from the necessity to **create a shared reference point** that can serve as benchmark for the **standardization process of training courses content**, with a specific focus on **students of higher education health courses**. It was initiated in 2022 and has the **following timeline**:

Q1 2022

Drafting of the most cross-cutting standard adapted to all health training courses

Q2 2022

Gradual amendment of the texts governing initial training

2023/2024

Mandatory eHealth education in initial training for most health professionals

The project involves the **creation of this reference standard**, and the publication of **two decrees and a cross-functional decree** that enforces the **insertion of this eHealth training curricula** for most health professionals. The end objective of the initiative is for the **framework to be incorporated** in the **education** of health professionals by the start of the **2023/2024 academic years**.

Even though the framework considers students as their target, **other training modules** aimed at acting health professionals (such as the previously mentioned “eHealth training modules”) **take this framework as reference** when developing their content.

## 3. Analysis of good practices

### 2 Numérique en santé Référentiel socle et transversal de compétences (2/2)



#### III. Description of the DC framework (I)

This DC framework contains **15 competences** in total, **classified into 5 general domains** (each with a specific **allocation of teaching hours**). Each competence is **broken down into several capacities**, which conform its specific content. The overall framework has **2 ECTS** (European Credit Transfer System) and **28 total hours** allocated to it. The overall **outline of the framework<sup>6</sup>** is as follows:

##### 1. Health data (6 hours)

- 1.1. Identify a user or healthcare professional
- 1.2. Characterize and process personal health data by applying the regulations
- 1.3. Access health data while respecting professional and legal requirements
- 1.4. Harnessing health data for evaluation, research and innovation

##### 2. Healthcare cybersecurity (5 hours)

- 2.1. Design and maintain a secure digital work environment
- 2.2. Prepare for and react to incidents

##### 3. Health communication (5 hours)

- 3.1. Use tools to interact with users for efficient transmission of information
- 3.2. Interact appropriately between professionals, with the user, with carers and companions and with institutions and administration
- 3.3. Interact on the internet by mastering your digital identity

##### 4. Digital health tools (6 hours)

- 4.1. Master business software and digital services
- 4.2. Use a connected object or a mobile application and analyse their reliability
- 4.3. Use the appropriate basic tools and services and identify their articulation with other shared files
- 4.4. Seek health evidence

##### 5. Telehealth (6 hours)

- 5.1. Master the regulations and best practices in telehealth
- 5.2. Practice telehealth in conjunction with the care team and the use

These skills are expected to be **developed in a practical setting**, such as an **internship**. The framework is **not meant to be static**, but to be **updated regularly** with the arising of new technologies.

### 3. Analysis of good practices

**3**

#### A Health and Care Digital Capabilities Framework (1/4)



##### I. General data

<i>Driving institution:</i>	<b>National Health Service (NHS) England</b>		<i>Year:</i>	2017
<i>Source:</i>	<a href="#">A Health and Care Digital Capabilities Framework (PDF)</a>		<i>Scope:</i>	United Kingdom

##### II. Context of the initiative & driving institution

The “**Health and Care Digital Capabilities framework**” has its origin in the collaboration between the **Building a Digital Ready Workforce (BDRW)** programme (now **NHS Digital Academy**<sup>1</sup>) and **Health Education England (HEE)**’s **Technology Enhanced Learning** programme<sup>2</sup>. Its elaboration was one of the **first steps** in the development of the ongoing “**Digital Readiness Education Programme**”<sup>3</sup>, promoted by the Department of Health in England with the vision of creating an **uplift of digital skills, knowledge, understanding and awareness** across the whole multi-disciplinary HWF to support new ways of working.

The **NHS Digital Academy** has continued developing additional initiatives related to all aspects of eHealth, using this framework as constant reference in the creation of other **PDPs and profession-specific frameworks** in the sector. This framework also had a key role in the development of the **Topol Review** in 2019<sup>4</sup>, a sweeping evaluation of the eHealth readiness of the NHS, carried out by Dr. Eric Topol, Notorious Medical Doctor (MD) with extended expertise in eHealth. In this review, **numerous recommendations to improve the digital readiness of the healthcare sector were made**, setting the **basis for many of the initiatives** that the NHS Digital Academy initiated ex-post. The more specific details of this strategy and related initiatives are further developed in the **country analysis of the United Kingdom** (Deliverable 2).

In regards to the framework in itself<sup>5</sup>, it is a **dynamic, iterative document**, that has been developed through the **engagement with different stakeholders** in the healthcare sector. This initiative was key not only to establish a common reference of digital skills that health professionals should be required to have, but to also **identify the need of creating an easy and accessible interface** in which staff can **engage and self-asses their own digital literacy** against the framework.

All in all, the framework identifies the **different uses** that it could have:

1. For **self-assessment**
2. To help **identify learning and developmental needs**
3. To inform **personal and professional developmental plans**
4. To guide **formal, informal, directed and self-directed learning**
5. For **reflection and goal-setting**
6. For evaluation of **progress and performance**

In addition, the framework is also considered **referential in the development of digital literacy training initiatives, interventions and resources** that can support improvement in DCs.

## 3. Analysis of good practices

### 3

### A Health and Care Digital Capabilities Framework (2/4)



#### III. Description of the DC framework (I)

This DC framework is divided into **5 domains of capability**, each **describing specific capabilities, skills, behaviours and attitudes**. There is **1 additional domain underpinning** the rest (“digital identity, wellbeing, safety and security”), as the framework considers that any online activity regarding the other domains must be done within a **safe and secure context**.

All domains are also broken down into **4 competency levels**. Each shows a **set of DCs that are needed to be attained** for it to be considered that the **level is achieved** (with Level 1 requiring the most basic competences and Level 4 the most advanced).

The domains identified in the framework, and their description are the following:



#### 1. Information, Data and Content

- The ability to **find, manage, organise, store and share** digital information, data and content.
- The ability to **understand and act upon** appropriate guidelines, protocols, regulations and safeguards in the use of differing media, information, data and content **to meet** legal, ethical, cultural and security rules, requirements and **expectations when working with personal, public, professional and/or confidential information, data and content**.
- The ability to **critically analyse, evaluate and/or interpret** information, data, content and their sources.
- The ability to **understand and adhere to** digital copyright, intellectual property and privacy rules and regulations.
- The ability to **work with and champion** the effective, secure, appropriate and innovative use of information, data and content in order to **solve problems, make decisions and to achieve successful outcomes** for specific goals and objectives.



#### 2. Teaching, Learning and Self-Development

- The ability to **use digital technologies and tools** for personal learning and professional development.
- The ability to **use a wide range of digital technologies and tools** in teaching, coaching, mentoring others.
- The ability to **demonstrate and champion a positive attitude in seeking out** appropriate and innovative digital technologies to enhance learning for self and others.
- The ability to **design digital tools/resources/activities to support** the teaching and learning of self and others.
- The ability to **manage/monitor the learning and development of self and/or others** through digital technologies and tools.



## 3. Analysis of good practices

### 3

#### A Health and Care Digital Capabilities Framework (3/4)



#### III. Description of the DC framework (II)

##### 3. Communication, collaboration & participation



- a) The ability to **use a wide range of digital technologies to communicate** with people and to **understand the different nature, purpose and function** of different methods of digital communication, acting accordingly and appropriately.
- b) The ability to **use digital technologies to communicate** respectfully and appropriately with all people and to **recognise one's responsibility to not engage in** or allow others to engage in inappropriate, irresponsible, offensive or harmful communication activities.
- c) The ability to **work collaboratively with others using digital technologies and tools** to produce shared outcomes to meet shared goals.
- d) The ability to **participate actively** in and across digital networks.
- e) The ability to **demonstrate and champion ethical, positive, sensitive and appropriate attitudes** and behaviours in communicating, collaborating and participating with anybody and everybody.

##### 4. Technical proficiency



- a) The ability to **use a wide range of technical devices** in a personal and professional context both individually and with others
- b) The ability to **use a wide range of software and applications** for personal and professional use both individually and with others
- c) The ability to **resolve technical challenges and problems** both individually and with others
- d) The ability to **use technical knowledge to problem solve** and achieve expected outputs
- e) The ability to **support others with resolving technical challenges** and problems and/or acting on technical opportunities.

##### 5. Creation, Innovation and Research



- a) The ability to **create new digital resources** and/or curate existing ones working individually or in collaboration with others.
- b) The ability to **use devices, technologies, techniques and applications** in research, quality improvement, audit and scholarly activities
- c) The ability to **use digital technologies** to support or create new ideas, solutions and decisions
- d) The ability to **act as a digital champion or change agent**
- e) The ability to **lead on and champion the effective, appropriate, creative and innovative** use of digital technologies in research, scholarship and other activities.

## 3. Analysis of good practices

### 3

#### A Health and Care Digital Capabilities Framework (4/4)



#### III. Description of the DC framework (II)

##### 6. Digital Identity, Wellbeing, Safety and Security

- The ability to **develop, promote and safeguard appropriate digital identity(-ies)** that support a positive personal and organisational reputation
- The ability to **use digital technologies in ways that support personal wellbeing and safety** and the wellbeing and safety of others
- The ability to **recognise and act upon digital situations** and events that might compromise personal, professional or organisational security
- The ability to **demonstrate and champion ethical, positive, healthy and appropriate attitudes** and behaviours in relation to digital identity, wellbeing and safety of self and others
- The ability to **understand and manage the impact of own and others' activities** on the environment



All of these DCs are meant to serve as **reference** for any healthcare staff to **understand their digital literacy level** and set a **path towards improvement**. These DCs not only value technical skills, but also the **attainment of a positive attitude towards technology and innovation**.

#### IV. Training & Certification tools

The NHS Digital Academy has **not yet developed any certification tool** that can allow healthcare staff to credit their digital literacy level. There is, however, a **Digital Skills Assessment Tool (DSAT)**<sup>6</sup> that has been tested in one of the NHS's hospitals<sup>7</sup>, and is expected to rollout in early **spring 2023**.

The DSAT is an **interactive online assessment tool** that will allow healthcare staff to **answer a set of questions to determine their current digital literacy levels**. Once this questionnaire is completed, the user will be **directed to relevant learning resources** according to **their specific skill needs**. There are several identified **benefits**<sup>8</sup> of the tool's implementation such as the assurance **of curated digital skills learning resources** for HWF, or the **provision of anonymised data for managers** to understand and evaluate digital literacy skills and training needs of their staff.

In terms of **training resources**, the NHS Digital Academy has developed **two platforms**. The first one is the **"Learning Hub"**<sup>9</sup>, a common **repository** in which healthcare workers can **contribute and share external learning resources** that could be of use **for their colleagues**. The second one is the **"NHS Digital Academy learning programmes"**<sup>10</sup> which **compiles** the different **learning offerings that the institution provides**, bearing in mind competency levels and specific professions.

It should be noted that the NHS Digital Academy is an **ongoing project from which many other tools are expected to be developed in the following years**.

### 3. Analysis of good practices

## 4 COMPDIG – Salut (1/5)



#### I. General data

Driving institution:

**Fundació TIC Salut Social, Departament de Salut**



Year: 2021

Source:

[COMPDIG – Salut \(PDF\)](#)

Scope: Catalonia (Spain)

#### II. Context of the initiative & driving institution

The starting point for this initiative was the **“Fòrum del Diàleg Professional” (Professional Dialogue Forum)**<sup>1</sup>, promoted by the **Catalan Health Department** with the aim of **aligning planning and professional organization policies** with the existing **healthcare models** and give response to the **new health necessities** of the population. One of the challenges uncovered was the **“necessity to improve the digital competences of healthcare professionals”**<sup>2</sup> in the Catalan health sector.

**“Digital Skills for Healthcare Professionals (COMPDIG-Salut)”** project arose with the aim of meeting this challenge by addressing three objectives: (1) defining a specific digital competence framework for HPs; (2) creating a specific evaluation and accreditation model for HPs; and (3) drawing up actions to train and qualify HPs in digital competences<sup>3</sup>. With respect to objective 1, the *Fundació TIC Salut Social* relied on the **ACTIC certificate**<sup>4</sup>, an existing **certification model of DCs for Catalan citizens**, which features **3 competency levels: ACTIC Basic Level (ACTIC-1); ACTIC Medium Level (ACTIC-2); and ACTIC Advanced Level (ACTIC-3)**. This model is **based on the European Commission’s DigComp framework and was the first certification developed in Europe for citizen’s DCs**. Other relevant frameworks such as the NHS’ **“A Health and Care Digital Capabilities Framework”** were also **taken in account**. The result was the **production of a DC framework for Healthcare Professionals**<sup>5 6</sup>. In this process, *Fundació TIC Salut Social* counted with the **collaboration of sector experts**, as well as the **validation of the members of Challenge n.4 of the Fòrum de Diàleg Professional**.



Illustrative

In **parallel**, and in order to design an **evaluation, certification and training** model that **adequately adapted** to the **real situation** of **healthcare professionals** in terms of their **digital skills**, *Fundació TIC Salut Social* also established the necessity to **determine the current digital competence level of workers in the sector**. To do this, a complete study that included the participation of **803 healthcare professionals** was carried out, with its results determining that **two thirds (66,7%)** of the participating healthcare workers showed a **digital competency level below ACTIC-2 (Medium Level)**<sup>7</sup>.

### 3. Analysis of good practices

4

COMPDIG – Salut (2/5)



#### III. Description of the DC framework (I)

This DC framework has **4 thematic areas** which are in themselves composed of **10 DCs**. The 4 thematic areas are the following:

- 

**1. Access, management and Data Analysis**
- 

**3. Digital Consciousness**
- 

**2. Communication and Collaboration**
- 

**4. Professional development**

Each competence includes **the key words and indicators** that allow the **evaluation of these DCs** and serve as **benchmark to determine if they are achieved** at an advanced level. This framework aims to situate and orientate professionals on the **digital competences to develop in the exercise of their profession in a secure, civic and critical manner** in the context of **digital transformation in the healthcare sector**.

The competence framework<sup>5</sup> is **broken down as follows**:

#### 1. Access, management and Data Analysis

Competence	Indicators (Advanced Level)
<p><b>1. Data Management</b></p> <p><i>Manages social and sanitary data and information in any of its phases (access, gathering, monitoring, saving, recovery, filtering, elimination, etc.) originating from different sources of information, and with different formats.</i></p>	<p><b>1.1.</b> Uses the <b>most appropriate sources</b> of health and social information depending on the <b>objective</b> in hand.</p> <hr/> <p><b>1.2.</b> Ensures that the <b>information</b> linked to health and social records reflects its <b>suitability, quality, integrity and authenticity</b>.</p> <hr/> <p><b>1.3.</b> Applies and promotes <b>organizational and regulatory policies</b> and measures that ensure <b>access, gathering, monitoring, saving, recovery, filtering and elimination</b> of social and sanitary <b>data</b> with regards to its professional role.</p>
<p><b>2. Data Analysis</b></p> <p><i>Analyses and interprets data and data sets with the help of algorithms, artificial intelligence, Big Data and digital tools.</i></p>	<p><b>2.1.</b> Obtains <b>data</b> from <b>websites, services and/or apps</b> and <b>treats</b> them to facilitate the <b>taking of decisions</b> in the healthcare environment (<b>command frames, business intelligence tools, web analytics, etc.</b>).</p> <hr/> <p><b>2.2.</b> <b>Organizes and synthetizes data</b> to <b>create, execute and analyse reports</b> with regards to its professional role.</p> <hr/> <p><b>2.3.</b> <b>Selects and designs</b> optimal <b>indicators</b> to <b>measure, compare, group and relate data</b> depending on its purpose.</p>

### 3. Analysis of good practices

4

COMPDIG – Salut (3/5)



#### III. Description of the DC framework (II)

#### 2. Communication and Collaboration

Competence	Indicators (Advanced Level)
<p><b>3. Communication</b> <i>Encourages the communication, interaction and information and social and sanitary data exchange through digital tools (synchronous/asynchronous) and adapted to the different implicated actors.</i></p>	<p><b>3.1.</b> Promotes the use of <b>digital health communication tools</b> to facilitate the <b>assistance</b>, which can be online.</p> <p><b>3.2.</b> Chooses and uses the <b>communication digital tool</b> that is <b>more adequate</b> depending on the <b>context</b> and the <b>actors</b> implicated in the different available services.</p> <p><b>3.3.</b> Gives <b>support</b> to the different actors in the <b>utilization</b> of <b>tools</b> to <b>exchange</b> sanitary and social <b>data</b>.</p>
<p><b>4. Collaboration</b> <i>Empowers and promotes the networking collaboration between different actors with shared objectives and purposes.</i></p>	<p><b>4.1.</b> Promotes the <b>incorporation of digital tools to innovate or improve the collaboration</b> and <b>group work</b> methodologies in the sanitary environment.</p> <p><b>4.2.</b> <b>Detects</b> and <b>actively participates</b> in the different <b>networks</b> linked to the sanitary and social ambit, at a national and international scale.</p> <p><b>4.3.</b> Promotes the <b>connection</b> between different <b>people and organizations in networks</b> inked to the sanitary and social ambit, with the purpose of <b>exchanging learning, knowledge, resources and best practices</b>.</p>
<p><b>5. Digital Content</b> <i>Creates, publishes and shares health-related digital content, evaluating the context and the most appropriate channel with regards to the objective and the recipients (citizens, healthcare service users, healthcare professionals or externals).</i></p>	<p><b>5.1.</b> Uses <b>design and editing tools</b> to produce <b>scientific-sanitary content adapted to recipients</b> and the <b>communication channel</b> in question.</p> <p><b>5.2.</b> Defines a <b>strategy of publication</b> and <b>digital diffusion</b> to <b>accomplish objectives</b> defined depending on its professional role.</p>

## 3. Analysis of good practices

4

COMPDIG – Salut (4/5)



### III. Description of the DC framework (I)

#### 3. Digital Consciousness

Competence	Indicators (Advanced Level)
<b>6. Data Protection</b> <i>Ensure the accomplishment of protocols, and regulatory frameworks on privacy, confidentiality and protection of information and sanitary and social data.</i>	<b>6.1. Applies</b> the current requirements on <b>privacy, confidentiality and protection</b> of the sanitary and social <b>data</b> .
	<b>6.2. Evaluates</b> in a <b>critical manner</b> the requirements of <b>privacy and security</b> related with <b>the registries and divulgation of protected sanitary and social information</b> , according to the professional role.
	<b>6.3. Informs and denounces</b> any improper <b>breach, retainment or destruction</b> of sanitary and social <b>information</b> , and ensures that the <b>optimal corrective measures</b> are taken when <b>the privacy or security</b> of any confidential information has been <b>compromised</b> .
<b>7. Ethics and civility</b> <i>Applies the ethical principles, security and civility criteria in the responsible use of digital technologies – channels, tools and languages – in health.</i>	<b>7.1. Uses mechanisms</b> to <b>maintain</b> the <b>security of systems and devices</b> in the <b>exchange</b> of sanitary and social <b>information</b> .
	<b>7.2. Respects author's rights</b> and <b>uses licenses of intellectual property</b> when it <b>designs, implements, investigates and/or spreads</b> sanitary or social <b>content</b> .
	<b>7.3. Promotes and guarantees good practices</b> of <b>respect, coexistence, and ethics</b> in the digital and sanitary environment.

#### 4. Professional development

Competence	Indicators (Advanced Level)
<b>8. Digital Capacitation</b> <i>Trains and updates itself in digital health constantly.</i>	<b>8.1. Shows a critic and proactive attitude</b> for the <b>learning in digital competences</b> throughout its professional life.
	<b>8.2. Identifies more advanced technologies</b> and <b>evaluates the possibilities</b> that they have in the <b>health ambit</b> .
<b>9. Digital Identity</b> <i>Manages its professional digital identity and ensures an optimal digital reputation.</i>	<b>9.1. Protects its professional digital identity</b> and is able to <b>difference</b> it from its <b>personal digital identity</b> .
	<b>9.2. Monitors and applies strategies</b> to <b>optimize</b> its <b>professional digital reputation</b> .
<b>10. Digital Transformation</b> <i>Participates and promotes digital transformation in the health ambit.</i>	<b>10.1. Participates</b> in the <b>(re)definition of digital transformation processes</b> depending on its role in the institution.
	<b>10.2. Searches and prioritizes</b> the creation of <b>solutions</b> and/or <b>digital products</b> in the sanitary ambit, with regards to its professional role.
	<b>10.3. Actively and constructively participates</b> in the debate on <b>digital transformation</b> in the social and sanitary ambit.





### 3. Analysis of good practices

## 4 COMPDIG – Salut (5/5)



#### IV. Description of the Professional Digital Profiles

In the process of developing an evaluation and accreditation model for the previously stated competencies, it was felt that, given the **heterogeneity of roles and tasks** in the health sector, it would not be possible to properly evaluate all healthcare workers with one common test. Taking this into account, four **professional profiles were defined**:

Profile	Description	Role examples
 <b>Assistance with direct patient contact</b>	Professionals who spend more than 70% of their workday <b>giving assistance or service to patients directly</b>	<ul style="list-style-type: none"> <li>• Doctors</li> <li>• Nurses</li> <li>• Occupational therapists</li> <li>• Logopaedist</li> <li>• Optometrists</li> <li>• Dental hygienist</li> </ul>
 <b>Assistance without direct patient contact</b>	Professionals who spend more than 70% of their workday giving <b>support to assistance services</b>	<ul style="list-style-type: none"> <li>• Biology/physics/chemistry specialist</li> <li>• Pharmaceutical</li> <li>• Dental prosthetic</li> </ul>
 <b>Innovation, research and teaching</b>	Professionals who spend more than 70% of their workday offering <b>services in the ambits of innovation, research or teaching</b>	<ul style="list-style-type: none"> <li>• Investigators</li> <li>• Innovation technicians</li> </ul>
 <b>Management</b>	Professionals who spend more than 70% of their workday <b>managing centres, entities, departments, services or work teams</b>	<ul style="list-style-type: none"> <li>• Directors</li> <li>• Middle managers</li> </ul>

A common evaluation model was **designed but contextualized in the defined profiles**. It was **piloted in an assimilable environment** in the telematic test of ACTIC, with the **objective of identifying improvements from the point of view of the professional training model** (time, number and type of questions, professional profiles, etc...). **122 professionals** participated in the study<sup>8</sup>. The conclusions of this study determined that It is **necessary to review the evaluation and accreditation strategy** of the project.

Currently, a **review of the framework** is being carried out to make the **necessary adjustments** from the results obtained in the different studies carried out.

### 3. Analysis of good practices

5

IKANOS (1/4)



#### I. General data

Driving institution:

Basque Country Government



Year:

2012

Source:

[IKANOS Website](#)



Scope:

Basque Country (Spain)

#### II. Context of the initiative & driving institution

The IKANOS project<sup>1</sup> was launched by the **Basque Country Government in 2012** as a part of its overarching strategy “**Agenda Digital de Euskadi 2015 (AD@15)**”<sup>2</sup> to create a **learning support infrastructure** for the **digital competence needs** of citizens, enterprises, civil servants, and others. The **DigComp framework**, developed by the European Commission, was taken as a **reference framework** in the development of all its initiatives and profession-specific frameworks.

From the beginning, the AD@15 strategy held the objective of **incorporating and further developing the many ICT training initiatives** that were already underway at the time into a **comprehensive and clear system**. To ensure this, IKANOS established a user pathway that was easy to follow, which it birthed as the **IKANOS model**, and serves as a great **reference** of the process to follow in similar **digitalization strategies**.

#### IKANOS Model:<sup>3</sup>

The IKANOS model shows the **course of action** that a citizen must follow in the process of **improving its digital skills**. Even if not specifically developed for them, this model can also be applied for **healthcare workers**. The model separates activities in two categories: **Strategy** (defining the skills needed to be improved); and **Action** (improving these identified skills).

Overall, it is a **6-step process**, where tools have been developed by IKANOS for each phase:

STRATEGY

1. **Discover:** IKANOS Site
2. **Audit:** Self-assessment Test & Personal Digital Profile
3. **Analyze:** Professional Digital Profile

ACTION

4. **Guide:** Orientation Guide & Resource Cataloguing
5. **Learn:** PLE e-portfolio
6. **Evidence:** BAIT Digital Skills Certification



The **overall objective** of IKANOS is to clearly provide a **complete process of learning and enhancement of digital skills**. Given the many tools developed, any citizen can follow an **all-encompassing learning route by making use exclusively of the platform’s tools**. In addition, the design it follows makes it easily replicable for different professional categories.

## 3. Analysis of good practices

**5**

IKANOS (2/4)



### III. Description of the DC framework (I)<sup>4</sup>

The **development of each profession-specific profile** elaborated by IKANOS (including the one for primary care health professionals) is done by **adapting the DigComp framework**. The original **5 areas and 21 competences of DigComp** are maintained, and additional **sub-competences** are developed for **each specific profession** which is being profiled, depending on the **specific digital needs that the occupation requires**.

From this starting point, for each specific profession, these DigComp competences and its sub-competences are **classified** in terms of relevance as:

- **Core:** DCs that are **mandatory for the activities associated** with the given job.
- **Transversal:** DCs which are **common to all ICT-based work** in the sector.
- **Complementary:** DCs that are **helpful and enhance work performance but are not strictly necessary** to carry out the job in question .

DigComp competences may **not be included if they have no relevance** in the **profession's activity**.

Each competence and sub-competence in a PDP has a **level of expertise** that is **expected to be achieved**. There are **4 possible levels**:

1. **Basic:** A1, A2
2. **Intermediate:** B1, B2
3. **Advanced:** C1, C2
4. **Expert:** D1, D2

The development of these PDPs involves a **two step-process**. **First**, the **main activities performed** in the profession in question are **described**, reflecting the different levels of experience and proficiency required for the different tasks identified. **Secondly**, tasks which can be performed using **digital tools are identified**, and these tasks are then **associated** with the different **DigComp competences and proficiency levels**.

**Interviews with experts in the field** are carried out throughout this process to identify **further details** in the aspects of these job tasks, and to **specify the description** of the different **competences**.

Once the specific framework is designed, users can then **evaluate their proficiency** in each competency and observe their **current gap against the expected level for their profession**, through the **IKANOS self-assessment test**. By this way, users can get a very clear idea of the **competences they have to put more focus on** (those in which their level is far from the expected level) and can thus **tailor their learning needs**. This system can aid not only users themselves, but also **employers**, who can get a clear idea of what **level of digital skills** they should be aiming to obtain **from their candidates**.

In e-Health, **3 PDPs** have been elaborated thus far:

- a) **Primary Care Doctor**
- b) **Primary Care Leader**
- c) **Health Centre Administrative**

### 3. Analysis of good practices

5

IKANOS (3/4)



#### III. Description of the DC framework (I)

The following table shows the **DC framework** elaborated for **primary health professionals**. As explained previously, the framework starts with **DigComp's 5 areas and 21 competences**. Some competences have **profession-specific sub-competences** (e.g. 1.1.1. "Use of internal clinical information services") arising from it. There is an expected level for all competences and sub-competences.

**Competences are color-coded**, depending on whether they are **core**, **transversal** or **complementary**. Competences in **grey** are those included in DigComp, but considered not relevant for the profession analysed.

Area	Competence	Expected level
Information	<b>1.1. Browsing, searching and filtering data, information and digital content</b>	<b>C1</b>
	1.1.1. Use internal clinical information services	<b>C1</b>
	1.1.2. Use external clinical information services	<b>C1</b>
	<b>1.2. Evaluating data, information and digital content</b>	<b>C1</b>
	1.2.1. Value the quality of clinical information (PILAR)	<b>C1</b>
	1.2.2. Value patient apps	<b>B2</b>
	<b>1.3. Managing data, information and digital content</b>	<b>C1</b>
	1.3.1. Know and maintain an Integrated Management system	<b>C1</b>
	1.3.2. Order and delete versions of documents	<b>B1</b>
	1.3.3. Content adaptation	<b>B2</b>
Communication	<b>2.1. Interacting through digital technologies</b>	<b>B2</b>
	2.1.1. Make videocalls with <i>Lync</i>	<b>B2</b>
	<b>2.2. Sharing through digital technologies</b>	<b>B2</b>
	2.2.1. Share documents through <i>Osabox</i>	<b>C1</b>
	2.2.2. Use <i>Osabegi</i> to share information	<b>B1</b>
	2.3. Engaging in citizenship through digital technologies	-
	<b>2.4 Collaborating through digital technologies</b>	<b>B2</b>
	2.4.1. Manage knowledge through <i>Jakinsarea</i>	<b>B1</b>
	2.4.2 Collaborate in projects through <i>Osagune</i>	<b>B2</b>
	2.4.3. Increase online relation with clients	<b>B1</b>
<b>2.5 Netiquette</b>	<b>B1</b>	
<b>2.6 Managing digital identity</b>	<b>A1</b>	

### 3. Analysis of good practices

5

IKANOS (4/4)



#### III. Description of the DC framework (III)

Area	Competence	Expected level
Digital Content Creation	3.1. Developing digital content	C1
	3.2. Integrating and re-elaborating digital content	C1
	3.3. Copyright and licences	A2
	3.4. Programming	A2
Safety	4.1. Protecting devices	A2
	4.2. Protecting personal data and privacy	A2
	4.3. Protecting health and well-being	A2
	4.4. Protecting the environment	A2
Problem Solving	5.1. Solving technical problems	A2
	5.2. Identifying needs and technological responses	A2
	5.3. Creatively using digital technologies	-
	5.4. Identifying digital competence gaps	A2

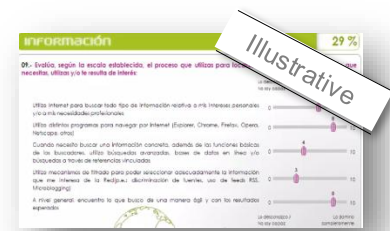
Table X. Required competences and expected levels for primary health professionals

#### IV. Training & Certification tools

Amongst the most relevant IKANOS tools, we highlight the following:

##### 1. Self-assessment tool<sup>5</sup>:

**Evaluation test** where citizens and professionals can **test their digital skills** and observe **what areas they should focus on**. There is a **general test** that is applicable to the **whole population** and others which are **specific** for certain **professions** (with reference to the respective PDP).



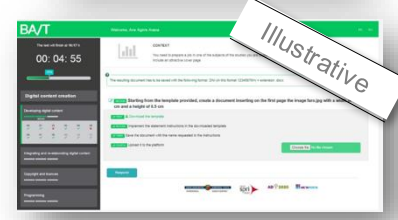
##### 2. Guide for professional digital profiling<sup>6</sup>:

Aid for the **conduction of the interview with experts** for a **specific occupation**. Includes **descriptors of DigComp framework**, so that the interviewer can ask whether the examples mentioned apply to each profession.



##### 3. BAIT Digital Skills Certification<sup>7</sup>:

**External DC certification system** developed by the Basque Government to **evaluate and certify user's digital skills**. The platform provides several **tasks**, where the user has to **complete using different DigComp competences**. If the user is **successful**, he/she can receive a **certification crediting his/her skills**. This certification system is equivalent to TIC's ACTIC.




### 3. Analysis of good practices

6

#### Psychological Practitioners Digital Competence Framework (1/6)



##### I. General data

Driving institution:	National Health Service (NHS) 	Year:	2019
Source:	<a href="#">Psychological Practitioners Digital Competence Framework Website</a>	Scope:	United Kingdom

##### II. Context of the initiative & driving institution

The “**Psychological Practitioners Digital Competence Framework**” is one of four **profession-specific frameworks**<sup>1</sup> developed by the **NHS Digital Academy** in the context of the “**Digital Readiness Education Programme**”<sup>2</sup> promoted by United Kingdom’s Department of Health (see fiche on “[A Health and Care Digital Capabilities Framework](#)”).

In the context of this strategy, the NHS Digital Academy considered that **psychologists required a tailored framework** that supported the development of **DCs for all professionals** in the **sector**. The framework obtained can be **used by practitioners and trainers** as a reference to **monitor DCs, design curriculums and define the learning outcomes** that digital practice should have. It is considered to have a **broad application**, so it’s expected for each clinical institution to adapt it to their particular setting<sup>3</sup>.








The framework was prepared by an **expert reference group** of the **British Psychological Society** drawing together academics, professionals and practitioners with **experience in digital mental health**. It is a framework that has been **validated with psychological practitioners and trainers** in two consultations in 2019 and 2020.

##### III. Description of the DC framework (I)<sup>4</sup>

The framework is structured into **8 domains**, with the first (“meta-competences”) including overarching factors that inform and overlap with the other seven. Each domain is then **described** with “**Knowledge**” and “**Abilities**” that **psychological practitioners would be expected to achieve**.

For **some competences**, further detail about the specific **knowledge and skills** is given. In their description, these are **differentiated** in terms of “**Core**”: expected to be achieved by all practitioners; and “**Advanced**”: might only be achieved by psychologists with further experience in digital mental health.

The **8 domains** are the following:

- |  |   |
|--|---|
|  1. <b>Meta – Competencies</b>             |  5. <b>Psychological Intervention</b>                    |
|  2. <b>Clinical Information Governance</b> |  6. <b>Communication and Teaching</b>                    |
|  3. <b>Assessment &amp; Formulation</b>    |  7. <b>Leadership, Supervision and Consultation</b>      |
|  4. <b>Evaluation and Research</b>         |  8. <b>Personal &amp; Professional Skills and Values</b> |

### 3. Analysis of good practices

## 6

### Psychological Practitioners Digital Competence Framework (2/6)



#### III. Description of the DC framework (II)



#### 1. Meta – Competencies

Knowledge	Ability
Knowledge of <b>ethical practice, opportunities and limitations of digital practice</b> related to <b>access and efficacy</b>	Ability to <b>practice digitally</b> , including <b>establishing and maintaining a positive therapeutic alliance</b> in online work
Knowledge of <b>the legal and security requirements</b> for conducting <b>digital psychological assessments, interventions and supervision</b>	Ability to <b>appraise the advantages and drawbacks of digital tools</b> with reference to the evidence base and <b>recommend</b> these to clients and services <b>in line with one’s clinical judgement</b>
Knowledge of <b>professional and clinical boundary issues</b> specific to <b>online practice</b>	Ability to <b>reflect</b> on one’s <b>own digital psychological practice</b>
Knowledge of <b>psychological frameworks specific to the online therapeutic relationship</b> such as the online disinhibition effect and screen presence	An ability to <b>recognise one’s own competences, training and supervision needs</b> in relation to the particular context of <b>digital practice</b>
Knowledge of the <b>evidence base for digital practice</b> (process and outcome) and how these <b>compare to in-person approaches</b>	Ability to recognise <b>culture-specific requirements of clients</b> and provide <b>culturally appropriate psychological materials and interventions</b>
Knowledge of <b>profession specific guidance regarding digital practice</b> from one’s <b>professional/accrediting body</b> and how these interface with <b>broader clinical competences</b>	Ability to <b>work ethically, safely and effectively</b> – attending to professional and clinical <b>boundary issues</b> specific to online practice
Knowledge of how <b>diversity and cultural differences</b> may interact with the online environment	



#### 2. Clinical Information Governance

Knowledge	Ability
Knowledge of <b>clinical governance and professional context</b> in relation to digital practice, including the <b>legal frameworks</b> for practice, <b>clinical risk management</b> and <b>clinical safety</b> online	Ability to <b>obtain the client’s informed consent</b> to digital work throughout the course of their contact
Knowledge of <b>information governance and legal context of information storage and sharing</b> - including the Data Protection Act	Ability to <b>follow organisational policies and procedures</b> regarding <b>information governance</b> , including <b>mandatory digital training</b> (as required by NHS or other organisational/professional body)
Knowledge of specific patient information and <b>digital record systems</b> used within one’s organisation and <b>professional guidance</b> regarding this	

## 3. Analysis of good practices

6

### Psychological Practitioners Digital Competence Framework (3/6)



#### III. Description of the DC framework (III)



#### 3. Assessment & Formulation

Knowledge	Ability
Knowledge of <b>clinical safety issues</b> (risk) associated with <b>digital/remote therapeutic work</b>	Ability to <b>select online psychological assessments</b> that are <b>suitable</b> for <b>remote administration</b>
Knowledge of <b>opportunities and limitations</b> of these <b>technologies</b> related to <b>client factors</b>	Ability to <b>administer online psychological assessment tools</b> via <b>remote</b> means
Knowledge of <b>opportunities and limitations</b> of these <b>technologies</b> related to <b>clinical engagement/therapeutic relationship</b>	Ability to <b>conduct accurate risk and clinical safety assessments</b> given <b>limitations</b> of <b>digital technologies</b>
Knowledge of <b>clinical engagement issues</b> when conducting <b>online screening and psychological testing</b>	Ability to <b>assess and match client needs/interests/abilities</b> to suitable <b>digital modalities</b>
Knowledge of <b>psychological assessment tools</b> available for online administration in one's own <b>scope of practice</b>	Ability to <b>assess a client's suitability for online interventions</b> , revising this as <b>necessary</b> on an <b>ongoing</b> basis
Knowledge of <b>inclusion and exclusion criteria</b> for online <b>psychological assessment</b> and <b>outcome monitoring</b>	Ability to <b>create and share a collaborative formulation</b> with a <b>client remotely</b> e.g. using screen sharing of documents or white board function to draw out a formulation
Knowledge of the <b>factors</b> involved in <b>choosing online platforms</b> , ensuring their <b>clinical safety</b>	



#### 4. Evaluation and Research

Knowledge	Ability
Knowledge of the <b>evidence base for digital practice</b> (process and outcome) and how these <b>compare to in-person approaches</b>	Ability to <b>critically appraise digital tools and interventions</b> and use the <b>evidence base</b> to <b>inform selection</b> of these for <b>clinical and research purposes</b>
Knowledge of <b>digital tools for recording therapy process, evaluating client experiences and client outcomes</b> (e.g. COREnet, etc.)	Ability to <b>monitor patient experience and patient-reported outcomes</b> using <b>digital methods</b>
	Ability to <b>manage outcome data collected digitally</b> and <b>integrate</b> this into <b>treatment planning</b>

### 3. Analysis of good practices

6

#### Psychological Practitioners Digital Competence Framework (4/6)



#### III. Description of the DC framework (IV)



#### 5. Psychological Intervention

Knowledge	Ability
Knowledge of <b>contemporary digital technologies</b> used in the direct and indirect delivery of <b>psychological interventions</b>	Ability to <b>conduct therapy in individual and group format</b> using <b>digital technologies</b>
Knowledge of <b>levels of intervention</b> and how <b>digital technologies</b> may be <b>integrated</b> at different <b>points in a stepped care model</b>	Ability to <b>adapt digitally informed interventions</b> to the <b>needs of clients</b> from a range of <b>ages and abilities</b>
Knowledge of <b>group versus individual interventions</b> delivered via <b>digital technologies</b>	Ability to <b>recognise how employing digital technologies</b> may <b>influence how agreements are made with clients and/or supervisees</b> about <b>confidentiality and its limits</b> e.g. safe recording and transfer of client sessions using secure cloud technology
Knowledge of the <b>role of apps in psychological assessments and interventions</b> and <b>awareness of app quality assessment processes</b>	Ability to <b>manage outcome data collected digitally</b> and <b>integrate</b> this into <b>treatment planning</b>
Knowledge of <b>electronic self-help materials</b> and <b>platforms available</b> to support the <b>delivery of psychological interventions</b>	Ability to <b>evaluate the effectiveness and security</b> of an <b>app</b>
Knowledge of <b>different digital tools for managing between-session therapeutic contact</b> e.g. communicating via an online psychoeducational platform or by email about home-based tasks	Ability to <b>reflect in supervision</b> on the <b>client's response to different digital modalities</b> and the <b>impact</b> on the <b>therapeutic relationship</b>
	Ability to <b>introduce and support</b> the use of <b>self-help and/or blended complementary online materials</b> to clients
	Ability to <b>integrate and use creative non-verbal visual digital tools</b> to <b>complement online psychological interventions</b> e.g. using drawings with the whiteboard, shared written documents, assisting the client to select images from the internet to illustrate their feelings
	Ability to <b>adapt evidence-based protocols</b> to <b>online delivery</b> e.g. assisting memory processing work in PTSD by facilitating a remote site visit using Google Street View

### 3. Analysis of good practices

## 6

### Psychological Practitioners Digital Competence Framework (5/6)



#### III. Description of the DC framework (V)



#### 6. Communication and Teaching

Knowledge	Ability
Knowledge of the <b>pros and cons of online teaching methods</b> and <b>awareness of online teaching programmes</b>	Ability to <b>discuss the pros and cons</b> of the <b>digital</b> modality with the <b>client</b>
Knowledge of <b>communication processes</b> which may <b>affect digital practice</b> across <b>individual, system and group work</b> (e.g. turn taking and use of non-verbal information)	Ability to <b>adapt communication style and employ different functionalities of the technology</b> concerned to <b>promote</b> the <b>formation</b> of a <b>therapeutic relationship</b> (e.g. adapting communication style for older people or those with learning difficulties)
Knowledge of <b>professional and communication factors</b> which require <b>consideration</b> when working with <b>interpreters remotely</b>	Ability to <b>work with interpreters remotely</b> e.g. on a video call having a British Sign Language signer or foreign language interpreter joining a call to translate for a client
	Ability to <b>manage boundaries if working remotely</b> e.g. conducting a therapy session via video chat from home
	Ability to <b>deliver e-learning</b> related to <b>clinical practice and psycho-education</b> through <b>synchronous and asynchronous</b> methods (e.g. eBooks, vlogs, live webinars) to clients and professionals

### 3. Analysis of good practices

6

#### Psychological Practitioners Digital Competence Framework (6/6)



#### III. Description of the DC framework (VI)



#### 7. Leadership, Supervision and Consultation

Knowledge	Ability
Knowledge of <b>digital supervision models</b> and ways to <b>adapt in-person supervision to online delivery</b>	Ability to <b>engage in remote supervision</b>
Knowledge of <b>leadership and consultation</b> as it <b>relates to digital interventions</b>	Ability to <b>integrate digital communications</b> into <b>supervision discussions</b> (e.g. text/chat bot information, video or skype chats)
	Ability to <b>follow organisational policies and procedures</b> in the <b>making, storing and sharing of recordings of sensitive clinical material</b> for <b>supervision or clinical purposes</b>
	Ability to <b>engage in leadership and consultation</b> to <b>promote an open and curious approach</b> amongst others to <b>digital practice</b>
	Ability to <b>work in remote digital teams</b> and <b>participate in remote digital meetings</b>



#### 8. Personal & Professional Skills and Values

Knowledge	Ability
Knowledge of one's <b>own attitudes, skills and values</b> regarding <b>digital practice</b>	An ability to <b>reflect</b> on <b>one's own attitudes, skills and values</b> regarding <b>digital practice</b>
	An ability to <b>recognise and reflect</b> on the <b>limits of one's own competence</b> when <b>translating original in-person professional training to online work</b>

### 3. Analysis of good practices

## 7 Fraunhofer Academy (1/2)



#### I. General data

Driving institutions:	Fraunhofer Academy, NHS, Universitat de Barcelona, eitHealth		Year:	2016
Source:	<a href="#">Fraunhofer Academy Website</a>		Scope:	International

#### II. Context of the initiative & driving institution

The **Fraunhofer Academy** is the **Fraunhofer-Gesellschaft's** provider for **continuous education**. The Fraunhofer-Gesellschaft in itself is a **world-leading applied research organization**, founded in 1949 in German. Currently, it operates 76 institutes with 30,000 employees throughout the country, playing a major role in the **innovation process** of business and industry. Its has the structure of a **consortium** with **13 Fraunhofer Institutes** (each specializing in an aera of technology) and the **Fraunhofer Academy**<sup>1</sup>.

In this process of transversal digitalisation, the **role of the Fraunhofer Academy** is clear: to create the **conditions for a new culture of innovation** in companies, for an economically successful future through **continuing education**. It is a mission that arises from the realisation that the great investments currently being made in research could be rendered worthless if the education of professionals is not up to par with them<sup>2</sup>.

Out of the different programmes that the Fraunhofer Academy currently offers, the most context-relevant one is the **"Transformative Digital Skills for Healthcare"**<sup>3</sup>. This online program is designed to **help healthcare professionals gain digital skills and engage with new technologies** to enable digital innovation improvements to be implemented in the sector. In its development, and to allow the program to gain **relevance in an international context**, it has relied on the following **notorious international partners**:



#### Fraunhofer-Gesellschaft

Brings together expertise and technologies in the fields of medicine, pharmacy and medical technology. Engagement with several institutes.



#### TheHill - Oxford University Hospitals, NHS Foundation

Digital innovation catalyst, bringing deep understanding of the digital challenges in the health sector. Developer of the comprehensive use cases for each module.



#### Universitat de Barcelona

University with well-renowned healthcare education excellence. Contributor of its large experience in Data science, Machine learning, AI and User-Interface Design.

This program is aimed at **all levels of healthcare professionals**: clinicians, nurses, hospital management, IT; as well as **other health sector stakeholders** such as providers, medical device professionals or pharmaceuticals. To allow for the adaptability to all professional profiles, the program is **separated in different modules**, each with specific and differentiated learning objectives and content.

## 3. Analysis of good practices

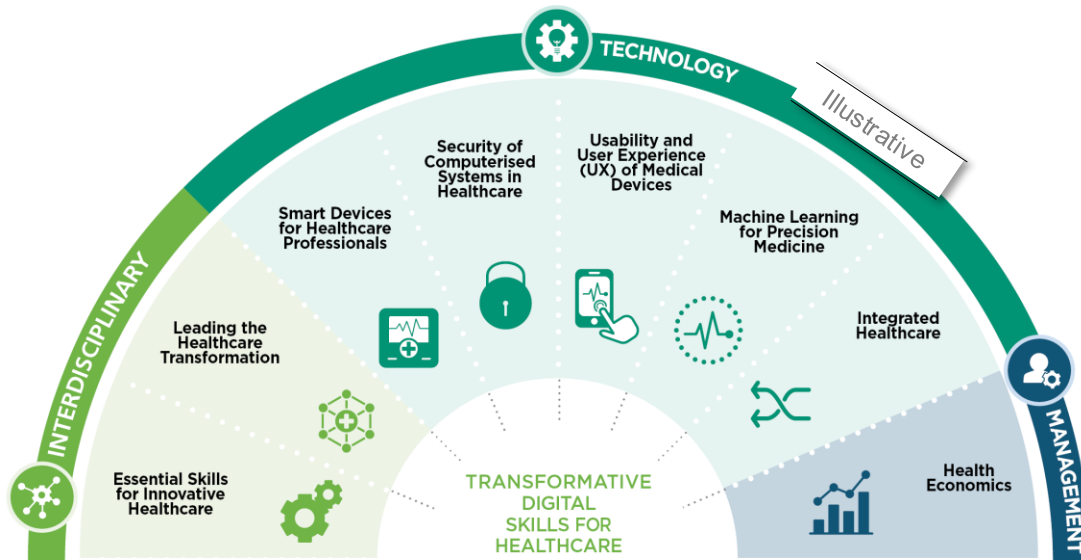
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### Fraunhofer Academy (2/2)



#### III. Description of the training and certification initiative (I)<sup>3</sup>

The **8 possible online modules** to be completed are the following:



As it can be observed, modules are separated into **three categories**:

- 1. Interdisciplinary:** aimed at those healthcare workers that can use **digital technologies as a complimentary tool** to facilitate their daily tasks.
- 2. Technology:** aimed at those healthcare workers in which the use of **digital technologies is a key activity** or is an **essential tool for the carrying out of certain tasks** (e.g. precision medicine).
- 3. Management:** aimed at those healthcare workers that have **management roles** and want to enhance the use they can give to **digital technologies in their tasks**.

The **differentiation** of these categories highlights the **varying level of skill** that is required to complete the **each of the modules included in them**. This way **healthcare workers can elaborate their own individual learning pathways**, taking into account their existing digital skills as well as the skills that they want to accomplish.

Each module identifies **specific learning objectives and outlines the content** of the topics that will be covered.

All modules have the **following characteristics**:

- **Online**, with **self-paced** learning contents, **virtual live sessions** and individual/peer **project work**
- Average learning time of **15 hours**, spread in a **4 to 5 week period** (carried out during dates that have yet to be announced)
- **Certificate of completion** received after the successful completion of the module
- Live sessions instructed by **professors and experts from the 3 partner institutions**

### 3. Analysis of good practices

8

#### eitHealth Digital Health Transformation Academy (1/3)



#### I. General data

Driving institutions: **European Institute of Innovation and Technology (EIT)**

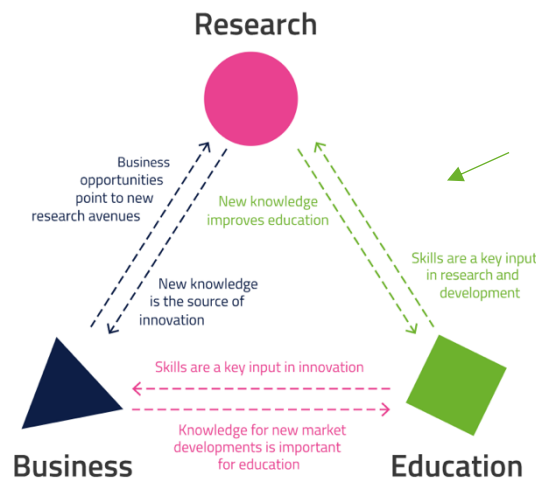
Year: 2015

Source: [eitHealth Digital Health Transformation Academy Website](#)

Scope: EU

#### II. Context of the initiative & driving institution

EIT Health is a “**knowledge and innovation community**” (KIC) established in **2015** by the **European Institute of Innovation and Technology (EIT)**. It is one of **various KICs** constituted, each **focusing** on a **different sector** of innovation<sup>1</sup>. The idea behind these KICs are to allow for a **better sharing of expertise between the right people**, which can permit innovation to flourish. To accomplish this optimal environment for innovation, eitHealth follows the structure of a “**knowledge triangle**”:



The Digital Health Transformation Academy would fall under this scope

As this method requires a **collaborative approach**, eitHealth works with approximately **130 Health Partner organizations and thousands of start-ups and entrepreneurs**<sup>2</sup>. Through the creation of this ‘**cluster**’, numerous programs such as the Digital Health Transformation Academy are developed with the objective of **finding common solutions to the most relevant challenges that the European health sector** currently faces, such as the proliferation of pandemics and an aging population.

In this Digital Health Transformation Academy, the **collaborating partner institutions** were the following (3 of them from beneficiaries' territories):



## 3. Analysis of good practices

8

eitHealth Digital Health Transformation Academy (2/3)



### III. Description of the training and certification initiative<sup>3</sup> (I)

The Digital Health Transformation Academy **offers 4 courses**. There is also a **free, introductory, e-course** in which users can learn an overview of the different aspects influencing digital transformation implementation and its relationship with innovation. The details of the 4 courses offered are the following:



#### Digital Health Transformation in Health Institutions

Users can learn **how to integrate digital transformation in healthcare** and understand the **different roles arising** for the population of this century.

Aimed at **all healthcare workers**.



#### Technologies for Digital Healthcare Transformation

Users can get equipped with **knowledge and competencies on how to engage in Digital Healthcare Transformation** activities within the **clinical workplace**; identifying **catalyst factors, barriers, challenges, and opportunities** related to medical technologies.

Aimed at **all healthcare workers**.



#### Service Design for Digital Healthcare Transformation

Through this course led by **TU Delft**, users can get introduced to **design thinking** and the application it has to **digital health innovation**.

Aimed at **healthcare workers familiar with digital health innovation**.



#### Implementing Digital Healthcare Transformation (IDHT)

Users can acquire **practical knowledge on how to deploy digital transformation**. This course led by **TicBiomed** provides **guidance, resources and cases of use to successfully transform the mindset** of an organization in the support of digital technologies.

Aimed at **healthcare workers in management roles**.

To be able to enrol in any of the **4 main modules**, it is **required for users to have completed the introductory e-course**.

All modules follow the **same format**, featuring a **combination of online live lectures; online live workshops and self-study and assignments** (the result of which allows users to obtain their certification).

The **cost** for the four modules previously presented varies **depending on the income level of the user's country** (according to Eurostat). All modules have the same cost, except for the more advanced IDHT module, which has a higher price. The costs established are presented below:

- **Regional Innovation Scheme (RIS)**, (including Estonia and Spain countries): 200€ (IDHT – 300€)
- **Medium income countries**: 300€ (IDHT – 450€)
- **High Income countries**: 400€ (IDHT – 600€)

## 3. Analysis of good practices

**8****eitHealth Digital Health Transformation Academy (3/3)**

### III. Description of the training and certification initiative (II)

Amongst the benefits of getting involved in this academy, the following are indicated:

- **Achieving new skills:** being able to become an active transformer through on-hands learning.
- **Expert knowledge:** benefiting from content developed by hospitals with the highest level of expertise in Europe.
- **Tailored content:** possibility of customising the learning content and create a plan that suits your background and needs.
- **Networking:** possibility of joining a European community of healthcare professionals and access the EIT Health Alumni Network.

All courses are **open for all healthcare workers** from **different backgrounds**. However, users should bear in mind that **some courses target specific audiences**, who might find the content of more interest.

Users that complete the courses can receive a **European Certification by eitHealth** which can credit their **proficiency** in the module in question.

The complete **learning path** followed in the use of the digital Academy is the following:

#### Intro e-course

Intro to challenges and opportunities of Digital Transformation in healthcare (3 hours)

#### DHT courses

Enrolment in one of four courses, focused in expertise area (20-30 hours)

#### Certification

Get a European Certification from eitHealth

#### Join community

Get continuous learning and create networks to exchange BPs and experiences

## 4. Conclusions

Having analysed in depth the context and details of each of the **8 initiatives selected**, these are some of the **best practices identified** in them, as well as **some limitations** that should be considered in terms of **their transferability** to Catalonia and Estonia:

### 1

#### HITCOMP



##### Best practices:

- The framework is the **most complete**, showing **1,025 competencies** which are organised and coded in a very comprehensive manner.
- Competencies are shown in their **database**, where they can be **looked up in an easy manner**, with a set of them being assigned to each professional role.
- PDPs are classified in **4 domains**, which are very similar to the ones developed for COMPDIG – Salut.
- The framework is tightly related with **a training program with 60 modules**. The **coding** of the competencies allows for an easy link between each module and the competencies that can be developed through it.

##### Limitations:

- The **framework** used for the present project **will not be as extensive**.
- The specific **PDP roles** developed for the present project **will not be as numerous**.

### 2

#### *Numérique en santé Référentiel socle et transversal de compétences*



##### Best practices:

- The framework is developed in the context of a very complete **overarching strategy**. Several **best practices** can be extracted from **other initiatives** in this strategy.
- The strategy and framework are **ongoing initiatives**, expected to be further developed in the future.
- The framework developed is very **similar to COMPDIG – Salut**, meaning that **initiatives arising** from it will be **very relevant** for the context of the present project.
- The framework provides a useful reference of the **hours** that should be dedicated to **each competence**.

##### Limitations:

- The framework is **aimed at health students**, which are not considered as an objective for the present project.

## 4. Conclusions

### 3

#### A Health and Care Digital Capabilities Framework



##### Best practices:

- The framework is also developed in the context of a very complete **overarching strategy**. Several **best practices** can be extracted from **other initiatives** in this strategy.
- The framework **covers all relevant competences** to be considered (in a more compact manner than HitComp), including some that are **not contemplated** in **COMPDIG – Salut**.
- Other **profession-specific frameworks** developed from it show how more concrete frameworks can be obtained from a baseline, general one.

##### Limitations:

- The additional competences included might mean that **initiatives arising** from this framework **might not be as relevant** in the context of the present project.

### 4

#### COMPDIG – Salut



##### Best practices:

- Developed in **beneficiaries' territory**, ensuring relevance for the project.
- The framework is also developed in the context of a very complete **overarching strategy**. Several **best practices** can be extracted from **other initiatives** in this strategy.
- The framework doesn't simply state competences but identifies the abilities that the HWF should have to consider that this **competence is met**.

##### Limitations:

- PDPs are identified, but **no information** is given on the **competences that are relevant** for each of them.

### 5

#### IKANOS



##### Best practices:

- **Most complete project** in terms of the **number of initiatives developed**. IKANOS has produced frameworks, PDPs, and training and certification initiatives.
- Provides a very **complete “user journey”** to be followed in the attainment of DCs.
- Great **influence of the DIGCOMP framework**. A **detailed methodology** is provided on how to take a foreign framework and adapt it to an own project.

##### Limitations:

- **Earliest-developed framework**, may not be as updated as others.
- **Information** on some of its initiatives is **missing on the website**.

## 4. Conclusions

### 6

#### Psychological Practitioners Digital Competence Framework



##### Best practices:

- Framework **developed by the NHS**, a **notorious organisation** in the subject of eHealth.
- The framework shows a clear example of how a **general framework** can be **utilised** to produce a more **profession-specific framework**.
- The framework has been developed through the **collaborative effort of numerous experts** in the field. It gives an **example of the consortium composition** that can be followed to develop a framework of this kind.

##### Limitations:

- Framework is **only relevant** if **psychologists** are a focus of the project.

### 7

#### Fraunhofer Academy



##### Best practices:

- Development by a **prestigious corporation**, alongside other notorious institutions in the field of eHealth.
- The framework develops **training on specific tools** that might be used in healthcare, something that is **not considered in the COMPDIG – Salut**.
- The framework makes a **comprehensive categorisation of modules**, depending on the importance that DCs might have for the role of each healthcare worker.

##### Limitations:

- Some **modules might be too technical**, considering the scope of our project.
- **Not much information** can be obtained on the **dynamic** followed in the **module's courses**, how they are **evaluated or certified**, or their **price**.
- **No information** is given on **when** these modules will be **carried out**.

### 8

#### eitHealth Digital Health Transformation Academy



##### Best practices:

- Example of how a **cluster of eHealth-related institutions and enterprises** can be used in the development of a **common strategy**.
- Very concrete **focus on European health challenges**, relevant to the scope of the present project.

##### Limitations:

- **No information** is given on **when** these modules will be **carried out**.
- **No clear information** on the **requirements** needed to obtain a **certification**.

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## 5. Bibliography

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