Interim evaluation of the eHealth Action Plan 2012-2020

FINAL REPORT
A study prepared for the European Commission
DG Communications Networks, Content & Technology
This study was carried out for the European Commission by Deloitte.

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Abstract

This interim evaluation aims to provide a basis upon which to assess the accomplishment of the eHealth Action Plan 2012-2020 after two years of operation and to identify the remaining challenges for the full implementation of the Action Plan by 2020. For this purpose, data is collected through several tools including desk research, interviews with involved stakeholders, surveys among the eHealth community as well as expert input/ review.

This evaluation of the eHAP highlights the limited awareness of the Plan as a whole among stakeholders. All the actions included in the eHealth Action Plan are however considered as relevant by stakeholders, as they correspond to the priorities of the stakeholders, and to the national and European priorities. The added-value of the eHAP is perceived in its ability to generate better coordination and cooperation through a structured approach and cohesiveness in action at EU level. Stakeholder involvement is also perceived as essential for the successful achievement of objectives of the eHealth Action Plan, and as something that should improve under the eHAP.

A monitoring and reporting tool would help convey the governance structure of the eHAP and its actions, and the progress over time. In addition, a systematic updating of rolling plans (for instance, every two years) would support the inclusion of relevant measures.
Executive Summary

The report provides a first measurement of the progress made towards the objectives of the eHealth Action Plan 2012-2020 after two years of implementation. The eHealth Action Plan 2012-2020 defines the Commission’s vision on eHealth for the 2012-2020 period. The overall aim of the EU eHealth Action Plan is to address the barriers for the full deployment of a cross-border eHealth system and to promote the deployment of health & care systems which are ICT-enabled, personalised, preventive, patient-centric, integrated, interoperable and sustainable and to empower citizens by enabling them self-manage their health, diseases and well-being. This broad aim is split into 17 actions in total, which are grouped around four specific objectives, namely:

- achieving wider interoperability in eHealth services;
- supporting research, development, innovation and competitiveness in eHealth;
- facilitating uptake and ensuring wider deployment of eHealth;
- promoting policy dialogue and international cooperation on eHealth at global level.

This study is a first measurement of the progress made towards these objectives. It provides a basis upon which to judge the accomplishments of the eHealth Action Plan 2012-2020 after 2 years of operation and identifies the weaknesses occurred during the first years.

The study carries out four subsequent activities:

- A stocktaking exercise to establish the overview of the status of the implementation of the actions included in the eHealth Action Plan 2012-2020;
- based on the stocktaking exercise, the assessment of the efficiency, effectiveness, coherence and relevance of the actions composing the eHealth Action Plan;
- the assessment of the impact and the added value of the eHealth Action Plan as a whole; and finally
- the provision of recommendations on future action, within the timeline of the eHealth Action Plan and beyond.

The study suggests a possible refreshment exercise of the eHealth Action Plan, e.g. in determining whether it still fits the digital health landscape in Europe, whether it duly takes into account the most recent evolutions in the field and/or it includes some topics/issues not relevant anymore. Furthermore, this interim evaluation can also support the design and set-up of coordination and monitoring mechanisms for the implementation of the eHealth Action Plan in the next years.

Scope of the study

The scope of the evaluation is the Action Plan as a whole, including all four objectives and the actions under these. The actions of the eHAP however differ in terms of their duration (short term/long term) and their type (do/support), with direct methodological implications regarding the scope of our evaluation (evaluation criteria and evaluation questions) as well as the scope of data collection.

- Short-term actions have a clearly defined timeframe, with a time-horizon of up to 3/4 years (i.e. deadline by 2015 or 2016). For those actions, a stock-taking exercise was done - the action is either completed or not. In addition, we applied a forward-looking approach, looking at the deliverables and outcomes of the short-term actions (evaluating them based on these –
final – deliverables and outcomes) and at the potential future impacts, based on what the deliverables and outcomes have been used for.

- **Long-term actions** have longer (often less defined) time-horizon (i.e. up to 2020). We evaluated these actions based on interim deliverables (if any) and based on the planned approach for these.

- **‘Do’ actions** are actions that are under the direct control or responsibility of the eHealth Action Plan (e.g. ‘do’ a study, etc.). These tend to be concrete actions with output directly attributable to the action. The evaluation focuses thus on the outputs and outcomes directly attributable to the action. The evaluation include both quantitative and qualitative indicators.

- **‘Support’ actions** are actions that provide support to several other policy actions and initiatives, which are under the direct control/responsibility of other programmes/initiatives. These actions have a supporting role and generally do not generate the output themselves. Outputs of are therefore indirectly related to the action. For support actions, the evaluation focused on the support given, not on the outcomes of the actions (e.g. evaluate the support to interoperability, not the impacts of interoperability on patients and healthcare professionals).

The table below provides an overview of the different action per objectives categorized as short and long-term actions and providing an indication of their status.

### Table 1 – Overview of eHealth Action Plan operational objectives and actions

<table>
<thead>
<tr>
<th>eHealth Action Plan Action</th>
<th>Short/Long Term</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OBJECTIVE 1 – Wider interoperability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposal for an Interoperability Framework by 2015</td>
<td>Short Term</td>
<td>Completed</td>
</tr>
<tr>
<td>Commission’s support for the eHealth Network in producing guidelines and standards.</td>
<td>Long Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Establishing the semantic and technical cross-border interoperability specifications and assets; proposing an EU interoperability testing, quality labelling and certification framework.</td>
<td>Short Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Concrete steps on towards greater integration of processes for cross border eHealth and proposals relating to dealing with organisational issues with the aim of facilitating cooperation in the EU.</td>
<td>Short Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Launching a study on EU Member State laws on electronic health records.</td>
<td>Short Term</td>
<td>Completed</td>
</tr>
<tr>
<td>Adoption of a green paper on mHealth and well-being apps.</td>
<td>Short Term (by 2014)</td>
<td>Completed</td>
</tr>
<tr>
<td>Guidance on the application of the Data Protection Regulation to eHealth data.</td>
<td>Long Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>OBJECTIVE 2 – Supporting research, development, innovation and competitiveness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support for eHealth projects under H2020 framework</td>
<td>Long Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Support for the National eHealth strategies</td>
<td>Long Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Support for business and improving market conditions.</td>
<td>Long Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>OBJECTIVE 3 – Facilitating uptake and deployment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Launching a governance plan for interoperability rules under CEF.</td>
<td>Short Term</td>
<td>Completed</td>
</tr>
<tr>
<td>Leveraging CEF and ERDF for financing large-scale projects.</td>
<td>Long Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Increasing citizens’ digital literacy under CIP and H2020</td>
<td>Long Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Launching common indicators for measuring the benefits of eHealth</td>
<td>Long Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Assessing costs and benefits, productivity gains and business models through HTA</td>
<td>Short Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>OBJECTIVE 4 – Policy dialogue and international cooperation</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Methodology

Data collection tools for the evaluation included desk research, interviews, surveys (a stakeholder survey and a satisfaction survey) as well as expert input/review. These sources served different purposes and provided different types of information for the above-mentioned categories of actions. Desk research covered a number of different sources, including relevant studies, journals, articles and other written material (such as websites and blogs – if deemed trustworthy and agreed with the Commission), covering material from the private sector, public sector and academia as well as civil society (e.g. user organisations). In terms of primary data collection (e.g. interviews and surveys), this included a wide range of stakeholders from the public sector, private sector, civil society and academia, both from the supply and demand side of eHealth services.

The approach adopted to carry out the evaluation consisted of **six main steps**.

The **first step** provided an overview of the Action Plan implementation in the first two years. The **second step** consisted in assessing the efficiency of the actions vis-à-vis the objectives. The **third step** consisted in assessing effectiveness of the actions vis-à-vis the objectives.

These first steps are focused on the **action level** and aimed at collecting the relevant data related to individual actions vis-à-vis the objectives of the Action Plan. The following two steps built on this basis by focusing on the objectives. The **fourth step** assessed the coherence of the objectives both internally and externally. This would give insights into the extent to which the objectives clearly linked to the underlying actions, whether there was an overlap between objectives as well as with other policy initiatives. The **fifth step** consisted in assessing the relevance of the objectives vis-à-vis the identified needs/issues they aim to address. This would give insights into the extent to which the actions were still relevant and corresponding to the needs and priorities.

Based on these previous steps, the **sixth step** was carried out, i.e. the added-value of the eHealth Action Plan as a whole could be assessed. The added value focussed on the justification of EU action as defined in the Action Plan by analysing the added value of EU action vis-à-vis not taking EU action and the extent to which achieving the same results can be expected by initiatives at Member State level of the market.

**Evaluation findings**

The intermediate evaluation of the eHAP 2012-2020 focused on the following elements:
- Awareness of the eHAP as a whole and of its actions;
- Relevance
- Efficiency
- Effectiveness
- Coherence and
- Impacts and added value of the eHAP.

The evaluation found a limited **awareness** of the Plan as a whole among stakeholders, including those directly involved in some of the actions. All the actions included in the eHealth Action Plan are considered as **relevant** by stakeholders, as they correspond to their priorities, and to the national and
European priorities. This applies to actions in the area of interoperability of eHealth solutions across the EU (actions under Objective 1 of the eHAP), to research, development and innovation in eHealth and wellbeing (actions under Objective 2), to uptake and wider deployment of eHealth solutions (actions under Objective 3) and to measure and assess the added value of innovative eHealth products and services (actions under Objective 4).

The evaluation of the efficiency of the actions under the eHAP is less unanimous. While many of the actions are considered as efficient (i.e. the resources – financial and/or organisational – available are sufficient and produce results in an efficient way), some others would require additional (financial) resources. This is the stakeholders’ opinions for action 2 (Guidelines on patients’ summaries and interoperable electronic identification and authentication), for actions 8 and 10 (on support to research and entrepreneurs) and for actions 11, 12 and 13 (on uptake and wider deployment of eHealth solutions). Similarly, opinions about the effectiveness of the actions under the eHAP are mixed. Some actions are perceived as effective, such as Actions 3 and 5. However, for others stakeholders expressed some concerns on the effectiveness of the implementation. This is the case for action 3 (more should be done to establish semantic and technical cross-border interoperability), action 4 (more support to harmonisation of national legislation and better and more efficient cooperation among Member States are called for), action 8 (the most recent trends and innovations in eHealth are not always timely addressed by the H2020 Work programme), actions 11 and 13 (where practical implementation should involve more in-depth stakeholders in the policy-making process).

In general, opinions on coherence are quite positive. Overall, the objectives of the eHAP are considered as coherent with the rest of the elements of the eHAP (internal coherence) and with other EU actions in the field (external coherence), with a few exceptions. For instance, in the case of action 5, doubts remain on whether the study on national electronic records has actually contributed to coherence between Member States’ legislations. In addition, actions 16 and 17 (on collecting indicators for measuring added-value and costs and benefits of eHealth and the international policy dialogue) are not very clear to stakeholders, who perceive their importance but fail to see the links and coherence with national, EU and international actions in the field.

Finally, concerning the overall (expected) impacts of the eHAP, better coordination, increased transparency and improved awareness are among the most important ones according to stakeholders. This opinion is shared by ‘institutional’ stakeholders (i.e. stakeholders directly involved in the implementation of the eHAP and/or of its actions) and other stakeholders (such as IT providers and eHealth entrepreneurs and developers, researchers, etc.).

The added-value of the eHAP is perceived in its ability to generate better coordination and cooperation through a structured approach and cohesiveness in action at EU level. Stakeholder involvement is also perceived as essential for the successful achievement of objectives of the eHealth Action Plan, and as something that should improve under the eHAP.

Interoperability remains the main challenge reported by stakeholders, with effects on other barriers such as legal clarity and important variations between Member States’ eHealth strategies.

**Recommendations**

A first recommendation concerns the duration of the eHAP, and possible mechanisms to ensure its relevance throughout its entire life-span. To be effective, an action plan must be embedded in a continuous policy cycle. This includes thoroughgoing collaborative design of the Action Plan by the Commission and the Member States, starting from a common vision, containing concrete measurable
agreed objectives, an effective implementation and monitoring mechanism, and holistic approach with all the relevant Commission services working on related issues involved and an excellent permanent evaluation system.

The eHealth Action Plan 2012-2020 has nine year time span, which could prove too long given the fast evolution of technology and users’ needs. It has five years left of its life-cycle, In a rapidly changing world with very fast evolving technology, a static nine years period seems too long for an Action Plan. A system of a ‘rolling’ plan with a bi-yearly review and adapt cycle, would be more appropriated to keep track of change and ensure that the Plan includes the most relevant issues and actions and reflect changes and developments in eHealth technology, standards and practices. Such mechanism should also include how to re-use and disseminate the successful outcomes of H2020 projects (linking thus to the communication efforts mentioned above).

Thus it needs to be envisaged to design a more flexible Action Plans, with a longer time horizon, but with a rolling plan to be refreshed and update more often (e.g. a 10-years Action Plan, promoting a long-term vision, with 2 years updated rolling plans, to ensure the inclusion of relevant measures).

The update/refreshment exercise could also provide the opportunity to streamline the current structure of the eHealth Action Plan 2012-2020, and to restructure/merge those actions with clear overlaps. For instance, Action 14 (Indicators for added-value and benefit of eHealth) and Action 15 (Assessing costs, benefits, productivity and business models via the Health Technology Assessment (HTA) could be streamlined and merged into one, with clear objectives and well defined timeline and KPI(s).

**Recommendation 1**

A systematic refreshing/updating mechanism should be foreseen, to ensure that the Plan includes the most relevant issues and actions. Such mechanism should also include how to re-use and disseminate the successful outcomes of H2020 projects.

The action plan can have a longer time horizon, but with a rolling plan to be refreshed and update more often (e.g. a 10-years Action Plan, promoting a long-term vision, with 2 years rolling plans, to ensure the inclusion of relevant measures).

The analysis of the actions of the eHAP pointed out heterogeneity of the actions composing the eHAP (many of them being long-term, ‘support’ actions). It is thus crucial to have a clear view of the governance structure of each of the action, and well-established monitoring and coordination mechanisms.

As part of our work, we have designed a dashboard, as a tool for the Commission to monitor the implementation of the activities under the eHealth Action Plan, to keep track of the achievements in relation to the set deadlines, and of existing coordination mechanisms. Such dashboard is intended as an internal monitoring and reporting tool, reporting only the key information and easy to maintain and update.

The current version includes the following key elements (per each action):

- Classification of the actions: Do/support action;
- Inputs: Budget and Links with other Commission’s activities
Results: Expected results and Intermediate results (especially relevant if it is a long-term action);
Follow-up;
Roles and responsibilities: Lead, Others, Coordination (the distinction is especially relevant in case of ‘do’ actions);
Time/deadline: End of action (2020), Intermediate deadlines (if any), any change needed/implemented.

We consider that having a simple and easy to maintain reporting and monitoring tool could represent a key element supporting the timely and effective implementation of eHAP. It clarifies timing, roles and responsibilities, and can point out to possible delays and/or issues, and support a quicker identification of problems.

**Recommendation 2**

It is crucial to have a clear view of the governance structure of each of the action, and well-established monitoring and coordination mechanisms. An internal monitoring and reporting tool (such as the dashboard proposed) clarifies timing, roles and responsibilities, and can point out to possible delays and/or issues, and support a quicker identification of problems.

A point that emerges from the intermediate evaluation of the eHealth Action Plan is that awareness of the Plan as a whole and of many of its actions among stakeholders is limited. A lack of awareness of consolidated approach to eHealth at the EU level amongst the stakeholders is obvious. A better awareness of the eHAP and its actions would also help conveying the work ongoing in the field of eHealth at EU level and within Member States, and achieving the final objectives of eHealth, i.e. improving access to care and quality of care and by making the health sector more efficient. Better awareness could also lead to larger use of eHealth practices, and to a larger exchange of better practices and mutual learning across Member States.

Stakeholders, including Member States, could play a more active role in improving awareness. A communication package made available by the Commission would support such efforts.

Ideally, a communication campaign targeted at references to the Action Plan when its specific actions are addressed.

**Recommendation 3**

Improving awareness about the eHealth Action Plan and in general of the activities carried out in the field at European level, in order to improve participation of stakeholders to the policy debate, the exchange of best practices and mutual learning, and the achievement of the final objectives of eHealth, i.e. improving access to care and quality of care and by making the health sector more efficient

Ideally, a targeted communication campaign could be designed and implemented.
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1 Introduction


1.1 Framework of the study

The European Commission is involved in contributing to the adoption of eHealth practices in the Member States and promoting collaboration in this area since the 1990s.

From 2004, the European Commission has been encouraging the adoption of eHealth technologies across the EU through several policy initiatives embodied in successive Action Plans. The first eHealth Action Plan 2004-20121 defined the Commission’s vision on health services and information delivered and exchanged through the internet and related technologies. The “eHealth Action Plan 2012-2020 - Innovative healthcare for the 21st century”2 builds upon the first Action Plan and consolidates the Commission’s long-term vision on eHealth. It defines eHealth as ‘information and communication technologies (ICT) tools and services for health’ that ‘can improve prevention, diagnosis, treatment, monitoring and management’ and ‘can benefit the entire community by improving access to care and quality of care and by making the health sector more efficient’.

The overall aim of the EU eHealth Action Plan is to address the barriers for the full deployment of a cross-border eHealth system and to promote the deployment of health & care systems which are ICT-enabled, personalised, preventive, patient-centric, integrated, interoperable and sustainable and to empower citizens by enabling them self-manage their health, diseases and well-being. This broad aim is split into 17 actions in total, which are grouped around four specific objectives, namely:

- achieving wider interoperability in eHealth services;
- supporting research, development, innovation and competitiveness in eHealth;
- facilitating uptake and ensuring wider deployment of eHealth;
- promoting policy dialogue and international cooperation on eHealth at global level.

The Europe 2010 Strategy, the Digital Agenda for Europe, the Innovation Union initiative and the Digital Single Market (DSM) Strategy all complement the policy framework of the eHealth Action Plan 2012-2020. The Directive on Data Protection (Directive 95/46/EC), the e-Commerce Directive (Directive 2001/31/EC), the Medical Devices Directives (most recently Directive 2007/47/EC) and the Directive on the application of patients’ rights in cross-border healthcare (Directive 2011/24/EU) are the key element of the legal framework. Both the legal and the policy framework are intended to contribute to the mission of spreading eHealth practices and exploiting their full potential.

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1.2 Purpose of the study

The study aims at providing a first measurement of the progress made towards the objectives of the eHealth Action Plan 2012-2020 after two years of implementation. In details, it provides a basis upon which to judge the accomplishments of the eHealth Action Plan 2012-2020 after 2 years of operation and to identify the weaknesses occurred during the first years that may prevent implementing the Action Plan fully in 2020.

The study carries out four subsequent activities:

- **Stocktaking** exercise to establish the overview of the status of the implementation of the actions included in the eHealth Action Plan 2012-2020;
- based on the stocktaking exercise, the assessment of **the efficiency, effectiveness, coherence and relevance** of the actions composing the eHealth Action Plan;
- the **assessment of the impact** and the **added-value** of the eHealth Action Plan as a whole; and finally
- the provision of **recommendations** on future action, within the timeline of the eHealth Action Plan and beyond.

In addition, the study provides valuable inputs to a possible refreshment exercise of the eHealth Action Plan, e.g. in determining whether it still fits the digital health landscape in Europe, whether it duly takes into account the most recent evolutions in the field and/or it includes some topics/issues not relevant anymore. Furthermore, this intermediate evaluation can also support the design and set-up of coordination and monitoring mechanisms for the implementation of the eHealth Action Plan in the next years.

1.3 Structure of the report

This report constitutes the final report of the study on the intermediate evaluation of the eHealth Action Plan 2012-2020. It summarises the main findings of the study, draws conclusions and proposes some recommendations for future action.

The Final Study Report has four sections, namely:

- **Section one**: introduction, presenting framework and the purpose of the study as well as the structure of the report;
- **Section two**: summarising the context of the study, i.e. the key objectives and structure of the eHealth Action Plan 2012-2020 and its policy and legal context;
- **Section three**: presenting the approach and methodology adopted for the study;
- **Section four**: presenting the main findings on the status of implementation of the eHealth Action Plan 2012-2020, and the evaluation of the efficiency, effectiveness, coherence and relevance of the actions.
- **Section five**: presenting the main findings on the evaluation of the impacts and added-value of the eHealth Action Plan 2012-2020 as a whole;
- **Section six**: reporting the main conclusions of the study and presenting a set of recommendations for future action.

In addition to these sections, there are a number of annexes:

- **Annex A**: containing the Action fiches, synthetic description of each of the actions of the eHealth Action Plan 2012-2020, as developed and updated during the study;
- **Annex B**: presenting the eHealth Action Plan 2012-2020 dashboard, a reporting tool designed for supporting monitoring and reporting on the implementation of the Action Plan within the institutions involved;
- **Annex C**: presenting the extended Analytical Framework developed for the evaluation;
- **Annex D**: providing the full text of the stakeholders’ survey used for the evaluation;
- **Annex E**: providing the full list of references used during the study.
2 Context of the eHealth Action Plan 2012-2020

2.1 eHealth policy in a European perspective

As the European Commission states, “eHealth means information and communication technologies (ICTs tools and services for health)” that “can improve prevention, diagnosis, treatment, monitoring and management” and “can benefit the entire community by improving access to care and quality of care and by making the health sector more efficient”. The domain of eHealth covers “the interaction between patients and health-service providers, institution-to-institution transmission of data, or peer-to-peer communication between patients and/or health professionals” including examples such as “health information networks; electronic health records; telemedicine services; portable patient-monitoring devices, operating room scheduling software, robotized surgery and blue-sky research on the virtual physiological human”. Applying new technologies and ICT innovation to the healthcare policy area means increasing patients’ welfare and reducing public sector’s costs as well as fostering the efficiency of the healthcare system as a whole. eHealth is thus a combination of ICT improvements and organisational changes, and rests on the synergies between the two. Recent studies show that the organisational change is even more resources consuming than the issues related to ICT up taking.

For this reason, since the beginning of 2000, the European Commission is involved in spreading the adoption of eHealth practices and promoting collaboration in this area. The Commission’s prominent role in health policy was reaffirmed by the Lisbon Treaty, which proposes to reinforce the political importance of health and provide the European level with a solid mandate.

From 2004, the European Commission, given this strong political commitment, has been adopting multiannual plans and specific projects and initiatives related to eHealth, starting with the 2004-2012 Action Plan. This document foresaw three areas of activities, involving shared responsibilities of the European Commission and the Member States:

- Addressing common challenges
- Pilot actions: accelerating beneficial implementation
- Working together and monitoring practices

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3 See: COMMISSION STAFF WORKING DOCUMENT eHealth Action Plan 2012-2020 – innovative healthcare for the 21st century
4 Accompanying the document eHealth Action Plan 2012-2020 – innovative healthcare for the 21st century
5 Accompanying the document eHealth Action Plan 2012-2020 – innovative healthcare for the 21st century
7 See: Study report on The socio-economic impact of interoperable electronic health record (EHR) and ePrescribing systems in Europe and beyond.2009
8 See: WHITE PAPER Together for Health: A Strategic Approach for the EU 2008-2013
As a result of the efforts of the Commission and Member States, “Europe’s countries have made substantial progress towards modern eHealth infrastructures and implementations, thereby leading the rest of the world”.

Below we present the overview of the legal context of the eHealth Action Plan 2012-2020, the policy perspective and the funding instruments provided at European level for eHealth.

2.1.1 The legal context

While healthcare services are excluded from the application of the Directive on Services in the Internal Market (Directive 2006/123/EC), the Commission has enacted many rules, regulations and guidelines related to healthcare which have an important impact on healthcare systems, including on the creation of a legal framework for eHealth.

During the past decades, several directives have indirectly influenced eHealth development in Europe. To mention a few of them:

- The first Directive on Data Protection, (Directive 95/46/EC) contains several important principles that require compliance from eHealth actors that process personal data concerning health.
- The e-Commerce Directive (Directive 2001/31/EC) applies to certain health care actors that utilize eHealth tools; for instance a telemedicine provider is considered to be providing information society services and therefore has to comply with the provisions of the directive.
- The Medical Devices Directives (Directives 93/42/EEC regarding medical devices, 90/385/EEC regarding active implantable medical devices and 98/79/EC regarding in vitro diagnostic medical devices) harmonize the rules pertaining to the free circulation of medical devices in the EU.
- The Directive on the application of patients’ rights in cross-border healthcare (Directive 2011/24/EU) clarifies the rules the rights of patients in accessing healthcare across EU Member States, particularly when seeking reimbursement for healthcare received in another EU Member State. More particularly related to the health field, in 2011 the Directive on the Application of Patients’ Rights in Cross Border Healthcare (2011/24/EU) and its Article 14 establishing the eHealth Network, composed of 28 governments representatives, marked a further step towards formal cooperation on eHealth. This Directive provides rules for facilitating the access to safe and high-quality cross-border healthcare and promotes cooperation on healthcare between Member States, in full respect of national competencies in organising and delivering healthcare. The document thus paves the way for more healthcare cooperation and offers some common rules on health data exchange. Furthermore, following the discussions undergoing about the new General Data Protection Regulation (COM(2012) 11 final), the European Commission is also expected to provide guidelines on the application of EU data protection law for health purposes.

This demonstrates that a legal background for eHealth policy has been successfully set up over the last years and will be strengthened by forthcoming documents.

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2.1.2 The policy perspective

From 2012, the “eHealth Action Plan 2012-2020 - Innovative healthcare for the 21st century” frames the Commission’s vision on eHealth. The Europe 2020 Strategy and Digital Agenda for Europe (DAE) are the backbones of the eHealth 2012-2020 Action Plan. Both the Europe 2020 Strategy and the DAE, as one of the Europe 2020 flagship initiatives, aim at improving the benefits coming from ICT in different policy areas, so as to transform the EU in the most advanced knowledge-based economy in the world. This vision necessarily involves the health sector, which is one of the biggest and fast growing markets in Europe. In fact, the health market enabled by digital technologies (mobile applications, devices) is rapidly growing (e.g. the global telemedicine market was 11.6 billion USD in 2011 and is expected to grow to 27.3 billion USD in 2016).

More specifically, the DAE included three actions referring to eHealth practices:

- Action 75: giving Europeans secure online access to their medical health data and achieve widespread telemedicine deployment;
- Action 76: proposing a recommendation to define a minimum common set of patient data;
- Action 77: fostering EU-wide standards, interoperability testing and certification of eHealth.

These actions provide a policy basis for the activities foreseen by the European Commission’s eHealth Action Plan, which focuses on key barriers that, despite the tremendous progress made, continue to exist and “need to be addressed in order to reap all the benefits from a fully mature and interoperable eHealth system in Europe.”

In addition, the Innovation Union flagship initiative, also linked to the EU 2020 strategy, provides further support to the eHealth Action Plan through the deployment of some specific actions including the European Innovation Partnership on Active and Healthy Ageing, which aims at increasing the average healthy lifespan in the EU by two years by 2020.

The DSM Strategy for Europe is the most recent contribution to the policy framework for eHealth. The DSM aims at supporting the realisation of the European Digital Single Market, defined as “one in which the free movement of goods, persons, services and capital is ensured and where individuals and businesses can seamlessly access and exercise online activities under conditions of fair competition, and a high level of consumer and personal data protection, irrespective of their nationality or place of residence”. Its third pillar (‘maximising the growth potential of the digital economy), aims at supporting a range of measures that put European industries at the forefront of the digital economy and that help European citizens to obtain the maximum benefits from digital services in a number of fields, including eHealth. As part of the DSM-related measure, the Commission will launch a Priority ICT Standards Plan in several domains, including eHealth (for application in areas such as telemedicine and mHealth), and extend the European Interoperability Framework for digital public services available across borders.

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10 Health IT / eHealth In Europe
12 See also: European Commission Communication - Taking forward the Strategic Implementation Plan of the European Innovation Partnership on Active and Healthy Ageing
The Europe 2020 Strategy, the DAE and the Innovation Union initiative, with the recent addition of the Digital Single Market Strategy, are thus the blood of the Commission’s vision on eHealth while the recently built legal framework constitute its bones. Both the legal and the policy framework are intended to contribute to the mission of spreading eHealth practices and exploiting their full potential.

2.1.3 EU funds for eHealth

The eHealth Action Plan 2012-2020 does not have an ad-hoc funding instrument. As its predecessor, it refers to the many financing programmes covering the topic of eHealth.

For the 2007-2013 programming period, multiple financing programmes have covered this cross-cutting policy area, addressing the challenges outlined from different perspectives. For the 2007-2013 programming period, eHealth initiatives have benefited from the support of the 7th Framework Programme (henceforth FP7), of the Competitiveness for Innovation Programme (CIP) and of the European Regional Development Fund (henceforth ERDF). The FP7 focused on financing actions linked to objective 2 “Supporting research, development, innovation and competitiveness”, thus promoting the R&D aspects related to eHealth, fostering cooperation between academia, research organisation and industry, promoting the knowledge gained and the progress of technology. On the top of the Framework Programme, the CIP contributed to supporting innovative actions within the private sector and to help the development of new business in the area of eHealth, covering thus mainly the action of objective 3 “Facilitating uptake and ensuring wider deployment”. Finally, the ERDF, together with the Cohesion Funds, has helped to build both the e-infrastructures needed to widen the geographical implementation of eHealth strategies as well as to train human resources and improve digital skills literacy. This also concerned mainly objective 3 of the Action Plan.

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14 Research on eHealth applications was supported since the Fifth Framework Programme (1998-2002). For simplicity reasons, here we limit our description to the tools available more recently.
Similarly to the previous programming period, for the 2014-2020 programming period three main financing resources are available to cover the eHealth sector: Horizon 2020, Connecting Europe Facility and the ERDF.

eHealth under Horizon 2020

Horizon 2020 will ensure continuation of the work started with the FP in the field of eHealth.. This Work Programme H2020 extends from 2014 to 2010, and supports research and innovation in the field of eHealth under the Challenge 1 ("Health, demographic change and wellbeing") in the areas of:

- ICT and computational science and engineering framework for digital, personalised, and predictive medicine, including advanced modelling and simulation;
- innovative instruments, tools and methods for unlocking the value of data and for advanced analytics, diagnostics and decision making;
- new digital media, web and mobile technologies and applications, as well as digital instruments that integrate healthcare and social care systems and support health promotion and prevention;
- eHealth systems and services with strong user involvement, focusing on interoperability and the integration of emerging patient-centric technologies for cost-effective healthcare.\(^{15}\)

Funding opportunities under Horizon 2020 are set out in multiannual work programmes, which cover the large majority of support available. The work programmes are prepared by the European Commission within the framework provided by the Horizon 2020 legislation and through a strategic programming process integrating EU policy objectives in the priority setting. The first multi-annual workshop programme covers the period 2014-2015. The work programme for the period 2016-2017 is under preparation.

The 2014-2015 H2020 Work Programme for the Societal Challenge 1 "Health, demographic and wellbeing" includes 32 topics in the ‘personalising health and care’ focus area call and 16 topics in the ‘coordination activities’ \(^{16}\). The total budget available for this challenge during the programming period is of approximately EUR 1.21 billion. The Work Programme aims to create opportunities for real breakthrough research and radical innovation in response to the challenges European healthcare systems are facing (e.g. ageing population, increasing burden from communicable and non-communicable diseases and the fall-out from the economic crisis), which are hampering the sustainability of European healthcare systems. The calls topics included in the Work Programme aim at supporting innovation and at translating its findings into clinic and healthcare settings to improve health outcomes, reduce health inequalities and promote active and healthy ageing.

eHealth under the Connecting Europe Facility

The infrastructural aspects of eHealth, are covered under the Connecting Europe Facility (CEF). In fact, among other objectives, the CEF is intended to facilitate the deployment of cross-border interoperable ICT services of general interest such as eHealth by overcoming the barriers of the high initial investment costs and risks associated with its deployment\(^{17}\). The CEF is thus available as a fund to support the interoperability-related aspects of the Action Plan.

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\(^{15}\) See: eHealth Action Plan 2012-2020 - Innovative healthcare for the 21st century

\(^{16}\) European Commission Decision C (2015) 2453 of 17 April 2015, see:

\(^{17}\) See: eHealth Action Plan 2012-2020 - Innovative healthcare for the 21st century
The 2015 CEF Work Programme mentioned that “The objective established by the eHealth Network in line with the Directive on patients’ rights in cross-border healthcare (2011/24) is to facilitate the cooperation and the exchange of information among Member States, to work towards delivering sustainable European eHealth systems and services and interoperable applications.”

A second objective mentioned to support Member States in developing common identification and authentication measures to facilitate transferability of data in cross-border healthcare.

The eHealth Network supported the inclusion of four eHealth services to be part of the CEF, two of which having been piloted in the large-scale pilots epSOS/EXPAND and e-SENS:

- Cross-border patient summary service;
- Cross-border ePrescription and eDispensation service.

These two services have been identified as meeting the eligibility criteria for funding under the CEF in 2015. The other two were not considered sufficiently mature to be included in the annual work programme for 2015.

**eHealth under the European Regional Development Fund**

Finally, as in the last programming period, the new ERDF is available to finance several key actions, which contribute to the wider use of eHealth services. For instance, deploying innovative ICT applications that contribute to meeting societal challenges and opportunities, or fostering structural transformation and sustainability of health systems, thus leading to measurable improvements in health outcomes, including eHealth measures. These tasks concern mainly objective 3 of the Action Plan.

**Overview of EU funds for eHealth**

The three financing instruments for the 2014-2020 programming period act in a complementary way in order to facilitate the uptake and ensure a wider deployment of eHealth practices as proposed by the European Commission. Due to the establishment of the CEF, the transition from the previous programming period has resulted in some slight changes, in particular with respect to objective 1. However, the financing framework did not undergo dramatic modifications. For this reason, a smooth transition in the various programming mechanisms is likely to take place.

**Table 1 – eHealth financing instruments per programming period**

<table>
<thead>
<tr>
<th>Period</th>
<th>Instrument</th>
<th>Objective 1</th>
<th>Objective 2</th>
<th>Objective 3</th>
<th>Objective 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007-2013</td>
<td>FP7</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>CIP</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ERDF</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>2014-2020</td>
<td>H2020</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>CEF</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

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An example of the transition of eHealth projects from one funding instrument to another could be the Large Scale Pilot epSOS, which was run and funded under CIP – ICT Policy Support Programme and is now transitioning into the eHealth Digital Service Infrastructure (DSI). The box below provides some insights into epSOS and the eHealth DSI.

**epSOS and the eHealth DSI**

epSOS was a Large Scale Pilot launched in July 2008 and ended in June 2014. The aim of epSOS was to lay the foundations for providing Smart and Open Services for European Patients, offering seamless healthcare to European citizens. This is in line with the first of objective of the Action Plan as the work carried out is focused on ensuring interoperability in Health systems. In June 2014 when epSOS ended, the work was taken over in the eHealth DSI.

The objective established by the eHealth Network in line with the Directive on patients' rights in cross-border healthcare (Directive 2011/24/EC) is to facilitate the cooperation and exchange of information among Member States, to work towards delivering sustainable economic and social benefits of European eHealth systems and services and interoperable applications, and to support Member States in developing common identification and authentication measures to facilitate transferability of data in cross-border healthcare.

There are four components endorsed by the eHealth Network to be a part of the eHealth DSI, namely:

1. Cross-border patient summary service;
2. Cross-border ePrescription and eDispensation service;
3. European Reference Network; and
4. Interoperable Patient registries.

In addition, Telemedicine services are envisaged for a later stage (as from 2017).

These targeted DSI components build on results (analysis and pilots) achieved by the epSOS especially in the field of Cross-border patient summary service and Cross-border ePrescription and eDispensation service.

Political willingness is an important factor to promote the development and adoption of interoperable eHealth solutions. In the case of the eHealth Network and the related DSI, the political willingness seems to be strong, as it does for the Action Plan.

In general it is stated that cross-border healthcare represents about 1% of healthcare costs in the European Union, which is currently around €10 billion. This illustrates the importance of cross-border eHealth in the EU and why it is such an important objective of the eHealth Action Plan.

The stakeholders brought together around the eHealth Action Plan and the actions in the plan that relate to interoperability as well as the focus on eHealth in the CIP and the transition of the work into the CEF work programmes clearly demonstrates the importance, but also complexity of eHealth in the EU (and the wider world).
Despite this complexity, given its importance, eHealth in Europe has come a long way, but still has some way to go. epSOS and the eHealth DSI are a good example of this. Whilst what has been developed under epSOS and is being developed under the eHealth DSI is not ready for deployment and operations yet, the solution is relatively mature. A lot of work has been put into developing visions, tackling diverse interoperability issues, handling legal considerations (such as data protection), etc. There is clear support for eHealth development in Europe, both demonstrated through the funding made available but also the stakeholder involvement in the area, which is key to successful eHealth development and deployment in the EU. Stakeholders are key.

2.2 The EU eHealth Action Plan 2012-2020: mission and objectives

2.2.1 Challenges

As previously observed, notwithstanding the intense effort of the European Commission on eHealth and the good performance of the EU overall in this area, some concerns remain to be solved. In particular, recent studies, as well as the evaluation of the 2004-2010 eHealth Action Plan, identify several barriers that need to be addressed in the near future. eHealth is facing both general challenges related to the adoption of ICT and challenges specific to the domain of eHealth, such as:

- **Complexity**, e.g. managing dependencies between infrastructure, applications, information and integration.
- **Governance**, e.g. ensuring alignment between initiatives and overall organization governance.
- **Local conditions**, e.g. balancing central and local motivation, priorities and funding.
- **Stakeholder engagement**, e.g. ensuring involvement and acceptance from managers, clinicians and IT staff.\(^{19}\)

Additional general challenges may be the difficult balance between costs and benefits of eHealth projects, the long time scale for their deployment, the need to find risk mitigation strategy as well as the impact of new techniques like big data or clouds.

In addition to these broad ICT related challenges, linked to the implementation of ICT in new policy areas, some particular issues that cover specifically the Health sector need to be considered. Including for example the **high sensitivity of medical and personal data** and the mechanisms to ensure its safe handling, storage and disposal\(^{20}\) as well as the **level of acceptance of eHealth practices** between professionals and patients seem to be the most relevant.

\(^{19}\) See: eHealth for a Healthier Europe!— opportunities for a better use of healthcare resources, [http://www.government.se/content/1/c6/12/98/15/5b63bacb.pdf](http://www.government.se/content/1/c6/12/98/15/5b63bacb.pdf)

\(^{20}\) See: eHealth for a Healthier Europe!— opportunities for a better use of healthcare resources, [http://www.government.se/content/1/c6/12/98/15/5b63bacb.pdf](http://www.government.se/content/1/c6/12/98/15/5b63bacb.pdf)
In fact, a 2011 report by the European Commission concluded that “in all countries, trust in eHealth systems by both citizens and professionals has been identified as one, if not the key challenge”\(^\text{21}\).

Another important phenomenon that has been observed worldwide is that, while there has been an abundance of successful eHealth and mHealth pilots, these have been very slow to reach a wider scale of adoption.\(^\text{22}\). This phenomenon explains alone the need of further intervention in the eHealth area.

In addition to these challenges identified by the literature, the 2004-2010 eHealth Action Plan evaluation further reveals important issues, both related to ICT and organisational aspects, and most notably:

- Lack of leadership from healthcare authorities and providers\(^\text{23}\),
- Market fragmentation, lack of interoperability, ineffective standardisation.
- Legal uncertainty in deploying eHealth (cross border) services, ineffective funding, reimbursement, procurement and sustainable business models.
- Limited awareness of benefits and the requirements of benefits realisation among authorities and health professionals.
- Specific concerns on privacy and protection of personal data, leading to lack of confidence and wide acceptance.
- Insufficient infrastructure (for example the lack of broadband in remote areas essential for telemedicine services).\(^\text{24}\)

The recent evaluations of strategic eHealth national programmes show that the organisational changes are the hardest to achieve when it comes to eHealth\(^\text{25}\). For this reason, they have to be particularly considered.

### 2.2.2 Mission and objectives

The European Commission recognises a threefold mission for the eHealth sector in Europe.

First, integrating ICT technologies in the health care system is intended to provide the society with more efficient, less expensive and more interoperable health systems. The efficiency gains will result from the burden reduction, the implementation of interoperable solutions allowing data exchange and instant monitoring patient flows as well as telemedicine arrangements. For instance, it has been estimated that mobile health (mHealth) “could save 99 billion euro in healthcare costs in the EU and add 93 billion euro to the EU’s GDP by 2017 if its adoption is encouraged”\(^\text{26}\). Furthermore, facilitation of eHealth is one of the concrete actions to promote free movement of EU citizens within the EU.\(^\text{27}\)


\(^{22}\)See: http://skollworldforum.org/2013/02/20/taking-mhealth-applications-to-scale/

\(^{23}\)The lack of organisation among providers is considered one of the major issues by the eHealth experts


\(^{25}\)See: Study report on The socio-economic impact of interoperable electronic health record (EHR) and ePrescribing systems in Europe and beyond 2009


\(^{27}\)See: eHealth Action Plan 2012-2020 - Innovative healthcare for the 21st century
The second eHealth specific mission concerns improving the quality of citizens’ lives. This is likely to happen for different reasons. In primis, eHealth – when applied effectively - delivers more personalised ‘citizen-centric’ healthcare, which is more targeted, effective and efficient and helps reducing errors, as well as the length of hospitalisation\(^\text{28}\). The citizen is thus at the heart of treatment and technology enables not only to reduce the administrative burden for the patient but also to ease the administration of the therapy through customized app and follow up. In addition, citizens will more easily have access to their health data, allowing them to choose more freely the institution they prefer for their treatment and to compare the options available. This also involves a strong cross-border dimension as emphasized by the Commission.\(^\text{29}\) Finally, eHealth can significantly improve the access to healthcare for everyone and can constitute an affordable means of dealing with chronic diseases as well as fostering prevention.

A third important element of eHealth for the future of healthcare system in Europe is its impact on innovation. ICT technologies applied to the health sector contribute to innovation on two fronts. On the one hand, the convergence between wireless communication technologies and healthcare devices and between health and social care is creating new businesses. Redesigning the delivery of care and the ‘silver economy’ are highly promising markets\(^\text{30}\). On the other hand, innovation is fostered through the need for new jobs and new ICT skills in this sector. The EU health sector is a major provider of employment and training: the health and social care sector has been a key driver of the expansion of the services sector since 2000 (up to 2.3 million jobs)\(^\text{31}\). Most of these jobs are highly innovative and they are paving the way for a knowledge-based society.

These three overlapping missions are covered by the EU 2012-2020 eHealth Action Plan. They represent the underpinning rationale for the specific objectives identified by the strategy. The overall aim for the EU eHealth Action Plan is hence to address the remaining barriers for the full deployment of a cross-border eHealth system and to promote the deployment of health & care systems which are ICT enabled personalised, preventive, patient-centric, integrated, interoperable and sustainable and to empower citizens by enabling them self-manage their health, diseases and well-being. This broad aim is split into four specific objectives and each objective is divided into several actions (17 in total). These actions are further divided in two categories according to their long-term or short-term dimension.

**Objective 1: achieving wider interoperability in eHealth services.**

The actions foreseen under this objective all aim at building and consolidating an interoperability framework for eHealth data. This will be achieved through different means: proposing an interoperability framework as well as studies and guidelines for adoption, producing a green paper on mHealth and fostering cross border collaboration etc.

**Objective 2: supporting research, development, innovation and competitiveness in eHealth.**

Under this objective, the Commission will support R&D investments in the area of eHealth and wellbeing as well as the drafting of national or regional strategies for this sector. In this way, the European Commission will promote innovation and economic growth linked to eHealth at the European level.

\(^{28}\) See: eHealth Action Plan 2012-2020 - Innovative healthcare for the 21st century

\(^{29}\) See: eHealth Action Plan 2012-2020 – Innovative healthcare for the 21st century

\(^{30}\) See: eHealth Action Plan 2012-2020 - Innovative healthcare for the 21st century

\(^{31}\) See: White Paper Together for Health: A Strategic Approach for the EU 2008-2013
**Objective 3: facilitating uptake and ensuring wider deployment of eHealth.**

Under objective three, the Commission will undertake actions aiming at spreading best practices, building infrastructures as well as training the human resources (personnel) to the benefits of eHealth. By doing so the Commission will foster the adoption of eHealth practices across all the European countries.

**Objective 4: promoting policy dialogue and international cooperation on eHealth at global level.**

Under objective four, the European Commission is involved in sharing eHealth practices at the global level in the International Organisation concerned as well as promoting policy dialogue on these issues in the same arenas.

The 4 objectives and the 17 underpinning actions, aim at answering the challenges identified in the area of eHealth for the forthcoming years. The table below presents the actions of the Action Plan, whether they are short term or long term and where they are completed or ongoing.

*Table 2 – Overview of eHealth Action Plan operational objectives and actions*

<table>
<thead>
<tr>
<th>eHealth Action Plan Action</th>
<th>Short/Long Term</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OBJECTIVE 1 – Wider interoperability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposal for an Interoperability Framework by 2015</td>
<td>Short term</td>
<td>Completed</td>
</tr>
<tr>
<td>Commission's support for the eHealth Network in producing guidelines and standards.</td>
<td>Long term</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Establishing the semantic and technical cross-border interoperability specifications and assets; proposing an EU interoperability testing, quality labelling and certification framework.</td>
<td>Short term</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Concrete steps on towards greater integration of processes for cross border eHealth and proposals relating to dealing with organisational issues with the aim of facilitating cooperation in the EU.</td>
<td>Short Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Launching a study on EU Member State laws on electronic health records.</td>
<td>Short Term</td>
<td>Completed</td>
</tr>
<tr>
<td>Adoption of a green paper on mHealth and well-being apps.</td>
<td>Short Term (by 2014)</td>
<td>Completed</td>
</tr>
<tr>
<td>Guidance on the application of the Data Protection Regulation to eHealth data.</td>
<td>Long term</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>OBJECTIVE 2 - Supporting research, development, innovation and competitiveness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support for eHealth projects under H2020 framework</td>
<td>Long Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Support for the National eHealth strategies</td>
<td>Long Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Support for business and improving market conditions.</td>
<td>Long Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>OBJECTIVE 3 – Facilitating uptake and deployment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Launching a governance plan for interoperability rules under CEF.</td>
<td>Short Term</td>
<td>Completed</td>
</tr>
<tr>
<td>Leveraging CEF and ERDF for financing large-scale projects.</td>
<td>Long Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Increasing citizens' digital literacy under CIP and H2020</td>
<td>Long Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Launching common indicators for measuring the benefits of eHealth</td>
<td>Long Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Assessing costs and benefits, productivity gains and business models through HTA</td>
<td>Short Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>OBJECTIVE 4 – Policy dialogue and international cooperation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhancing the work on data collection and benchmarking with the national and international bodies</td>
<td>Long Term</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Fostering policy dialogue in the relevant international bodies</td>
<td>Long Term</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>
3 Approach and Methodology

This section describes the approach and methodology we adopted for the intermediate evaluation of the eHealth Action Plan 2012-2020. It includes the presentation of the objectives of the evaluation, of its scope (including the geographical scope and the extent of data collection), of the intervention logic and finally of the approach to the evaluation (by presenting the evaluation criteria and the corresponding analytical framework).

3.1 Objectives of the Assignment

The objective of this study is to provide a basis upon which to judge the accomplishment of the eHealth Action Plan 2012-2020 after two years of operation and to identify the weaknesses occurring during this period that may prevent implementing the Action Plan fully in 2020.

The study has four specific objectives:

- Analysing the added value of having an Action Plan
- Providing an overview of the Action Plan implementation in the first two years including a quantitative and qualitative description of the priorities set, the financial mechanisms used, the beneficiaries reached, the actions funded and the intended results.
- Assessing the effectiveness, efficiency, coherence, relevance and EU added value of the funded actions, taking into consideration the fact that the majority of the actions funded will not have provided all the deliverables and final reports when the evaluation takes place, so the assessment of the impact should be forward looking.
- Assessing the impact and adoption of the policy targets

The success is judged against the Action Plan’s four operations objectives, which are:

- **Objective 1**: achieving wider interoperability in eHealth services;
- **Objective 2**: supporting research, development, innovation and competitiveness in eHealth;
- **Objective 3**: facilitating uptake and ensuring wider deployment of eHealth;
- **Objective 4**: promoting policy dialogue and international cooperation on eHealth at global level.

3.2 Scope of the Assignment

This section presents the boundaries defined for the evaluation, as descending from the Terms of Reference of the study, and as discussed and agreed upon with the Commission.

3.2.1 Overall Scope of the Evaluation

The scope of the evaluation is the Action Plan as a whole, including all four objectives and the actions under these.
The actions of the eHAP however differ in terms of their duration (short term/long term) and their type (do/support), with direct methodological implications regarding the scope of our evaluation (evaluation criteria and evaluation questions) as well as the scope of data collection.

**Short term vs. long term actions**

The eHAP includes both short term and long term actions:

- **Short term actions** have a clearly defined timeframe, with a time-horizon of up to 3/4 years (i.e. deadline by 2015 or 2016). For those actions, a stock-taking exercise was done - the action is either completed or not. In addition, although short term actions can be evaluated based on their deliverables, an impact may not yet have materialised. For this reason, a forward-looking approach had to be adopted, looking at the deliverables and outcomes of the short-term actions (evaluating them based on these – final – deliverables and outcomes) and project potential future impacts based on what the deliverables and outcomes have been used for. For these short term actions, the evaluation was be conducted for all criteria (efficiency, effectiveness, relevance, coherence (both internal and external coherent)) through all data collection tools.

- **Long term actions** have longer (often less defined) time-horizon (i.e. up to 2020). These actions were evaluated based on interim deliverables (if any) and based on the planned approach for these. Longer term actions were evaluated in terms of relevance and coherence (external) and less in terms of effectiveness due to the lack of KPIs. Data collection was carried out through desk research, interviews, expert input/review, the stakeholder survey, and, possibly, satisfaction survey.

The evaluation focused on the short-term actions.

**‘Do’ vs. ‘Support’ actions**

For the purpose of this evaluation, we made a distinction between do actions and support actions. We defined:

- **‘Do’ actions** as actions that are under the direct control or responsibility of the eHealth Action Plan (e.g. ‘do’ a study, etc.). These tend to be concrete actions with output directly attributable to the action. The evaluation focused thus on the outputs and outcomes directly attributable to the action. The evaluation included both quantitative and qualitative indicators. Examples of evaluation questions for Do actions are included in Table 3.

- **‘Support’ actions** as actions that provide support to several other policy actions and initiatives which are under the direct control/responsibility of other programmes/initiatives. These actions have a supporting role and generally do not generate the output themselves. Outputs of are therefore indirectly related to the action. For support actions, the evaluation focused on the support given, not on the outcomes of the actions (e.g. evaluate the support to interoperability, not the impacts of interoperability on patients and healthcare professionals). The evaluation therefore included only qualitative indicators. Examples of evaluation questions for Support actions are included in Table 4.
Table 3 – Examples of evaluation question per evaluation criteria: ‘Do’ actions

<table>
<thead>
<tr>
<th>Evaluation criteria</th>
<th>Exemplificative evaluation questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency</td>
<td>Have the objectives been achieved at the lowest cost? Could better effects be obtained at the same cost?</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>To what extent have the objectives been achieved? Have the interventions and instruments used produced the expected effects?</td>
</tr>
<tr>
<td>Relevance</td>
<td>To what extent are the objectives justified in relation to the needs? Can their raison d’être still be proved? Do they correspond to local, national and European priorities?</td>
</tr>
<tr>
<td>Coherence (internal/external):</td>
<td>To what extent the objectives within the eHealth Action Plan link to each other? To what extent do the objectives of the eHealth Action Plan correspond to other public interventions which interact with it?</td>
</tr>
</tbody>
</table>

Table 4 – Examples of evaluation question per evaluation criteria: ‘Support’ actions

<table>
<thead>
<tr>
<th>Evaluation criteria</th>
<th>Exemplificative evaluation questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency</td>
<td>Have the outputs been achieved at the lowest cost? Could better outputs be obtained at the same cost?</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>To what extent have the activities carried out supported/sustained the main policy initiatives? Have the interventions and instruments used produced the expected effects?</td>
</tr>
<tr>
<td>Relevance</td>
<td>To what extent are the outputs justified in relation to the needs? Can their raison d’être still be proved? Do they correspond to the priorities and objectives of the policy initiatives they interact with?</td>
</tr>
<tr>
<td>Coherence (external)</td>
<td>To what extent do the objectives of the action correspond to the policy initiatives which interact with it?</td>
</tr>
</tbody>
</table>

In some cases, actions did not have deliverables or planning available to form the basis of the evaluation, so evaluation had to be based on stakeholders’ views and inputs. In addition, the study had to use existing assessment and proxies to evaluate some of the actions.

3.2.2 Scope of Data Collection

Data collection tools for the evaluation included desk research, interviews, surveys (a stakeholder survey and a satisfaction survey) as well as expert input/review. These sources served different purposes and provided different types of information for the above mentioned categories of actions, as detailed in Table 5 below.

Desk research covered a number of different sources, including relevant studies, journals, articles and other written material (such as websites and blogs – if deemed trustworthy and agreed with the Commission), covering material from the private sector, public sector and academia as well as civil society (e.g. user organisations).32

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32 The full list of references used can be found in Annex E.
In terms of primary data collection (e.g. interviews and surveys), this included a wide range of stakeholders from the public sector, private sector, civil society and academia, both from the supply and demand side of eHealth services.

Table 5 – Overview of data collection tools

<table>
<thead>
<tr>
<th>Data collection tool</th>
<th>Purpose</th>
<th>Information obtained</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desk research</td>
<td>Gathering qualitative and quantitative information on the action and its links with other policy initiatives</td>
<td>Basis for monitoring, preliminary information for evaluation</td>
<td>All actions (short/long term actions, ‘do’/’support’ actions) All criteria for evaluation</td>
</tr>
<tr>
<td>Interviews</td>
<td>gathering qualitative and quantitative information on the action and its links with other policy initiatives</td>
<td>Further material for monitoring, basis for monitoring, information for evaluation</td>
<td>All actions (short/long term actions, ‘do’/’support’ actions) All criteria for evaluation</td>
</tr>
<tr>
<td>Stakeholders’ survey</td>
<td>complementing information from interviews and desk research, broadening the spectrum of stakeholders involved</td>
<td>Validation of monitoring, inputs for evaluation</td>
<td>All actions (short/long term actions, ‘do’/’support’ actions) All criteria for evaluation</td>
</tr>
<tr>
<td>Satisfaction survey</td>
<td>testing achievements and support of the actions as perceived by stakeholders</td>
<td>Inputs for evaluation</td>
<td>All actions (short/long term actions, ‘do’/’support’ actions) Relevance and coherence</td>
</tr>
<tr>
<td>Expert input/review</td>
<td>Evaluating/validating results of evaluation based on experts’ knowledge</td>
<td>Inputs for evaluation</td>
<td>All actions (short/long term actions, ‘do’/’support’ actions) Efficiency and effectiveness</td>
</tr>
</tbody>
</table>

3.2.3 Geographical Scope

The geographical focus of the evaluation naturally remains within the EU. However, it was chosen to adopt a wider perspective for specific actions and tasks of a global nature (e.g. objective 4 related to promoting policy dialogue and international cooperation on eHealth at global level, makes it necessary to widen the scope of data collection to outside the EU). With the exception of those parts of tasks where international aspects were relevant, the geographical scope of the evaluation was limited to the EU and its 28 Member States.

3.3 Intervention logic and evaluation criteria

The interim evaluation of the eHealth Action Plan focused on evaluating the eHealth Action Plan as a whole, but included analysis and evaluation at both the levels of overall operational objectives of the Action Plan and the actions. The approach is based on the Commission guidelines for evaluation and will be carried out across the five evaluation criteria (added-value, relevance, coherence, effectiveness and efficiency). Figure 2 presents the intervention logic and related evaluation criteria.
The Commission guidelines for evaluation defined the following criteria to be evaluated:

- **Efficiency**: Have the objectives been achieved at the lowest cost? Could better effects be obtained at the same cost?
- **Effectiveness**: To what extent have the objectives been achieved? Have the interventions and instruments used produced the expected effects? Could more effects be obtained by using different instruments?
- **Coherence**: the extent to which the objectives are specific, linked to interventions and not contradictory, this criterion is defined both internally (within the Action Plan) and externally (vis-à-vis other public interventions):
  - **Internal coherence**: Correspondence between the different objectives of the same intervention. Internal coherence implies that there is a hierarchy of objectives, with those at the bottom logically contributing towards those above.
  - **External coherence**: Correspondence between the objectives of an intervention and those of other public interventions which interact with it. For instance, if a national policy and an EU socio-economic programme are implemented in a complementary manner in the same territory for the purpose of developing SMEs, it can be said that there is external coherence.
- **Relevance**: To what extent are the objectives justified in relation to needs? Can their raison d’être still be proved? Do they correspond to local, national and European priorities?  

The figure below presents an overview of the evaluation criteria as they apply in the context of the intermediate evaluation of the eHealth Action Plan 2012-2020.

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33 EVALSED: The resource for the evaluation of Socio-Economic Development (2012)
In addition to the evaluation of these criteria the aim was to provide an overview of the current implementation of the Action Plan and analyse the overall added value of the Action Plan as a whole. The former was in essence a starting point of the evaluation, while the latter built on the result of the assessment to analyse added value of the eHealth Action Plan.

The approach adopted to carry out the evaluation consisted of six main steps.

The first step provided an overview of the Action Plan implementation in the first two years. This represented an important starting point for the assessment by providing a quantitative and qualitative description of the priorities set, the financial mechanisms used, the beneficiaries reached, the actions funded and the intended results. This overview set the baseline to be taken into account for the evaluation of the different criteria.

An important result from this overview of the implementation of the Action Plan was to distinguish between actions that have already been completed and actions that are still ongoing and for which no or only intermediate outputs have been achieved. The latter, particularly, may not be expected to already have resulted in the desired effects or impacts which should be taken into account when assessing the evaluation criteria.

The second step consisted in assessing the efficiency of the actions vis-à-vis the objectives. This would give insights into the extent to which the actions have been efficient in terms of contributing to the objectives.

The third step consisted in assessing effectiveness of the actions vis-à-vis the objectives. This would give insights into the extent to which the actions have been effective in terms of achieving to the objectives and expected results/impacts.

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34 Own elaboration, based on EVALSED: The resource for the evaluation of Socio-Economic Development (2012)
These first steps are focussed on the action level and aimed at collecting the relevant data related to individual actions vis-à-vis the objectives of the Action Plan. The following two steps built on this basis by focussing on the objectives.

The fourth step assessed the coherence of the objectives both internally and externally. This would give insights into the extent to which the objectives clearly linked to the underlying actions, whether there was an overlap between objectives as well as with other policy initiatives.

The fifth step consisted in assessing the relevance of the objectives vis-à-vis the identified needs/issues they aim to address. This would give insights into the extent to which the actions were still relevant and corresponding to the needs and priorities.

Based on these previous steps, the sixth step was carried out, i.e. the added value of the Action Plan as a whole could be assessed. The added value focussed on the justification of EU action as defined in the Action Plan by analysing the added value of EU action vis-à-vis not taking EU action and the extent to which achieving the same results can be expected by initiatives at Member State level of by the market.

Figure 3 – Approach to the evaluation

Throughout the evaluation the contribution of the Action Plan towards achieving the impact on the relevant policy targets were analysed. To the extent possible any impacts that could be attributed to the actions in the Action Plan towards achieving the policy targets were gathered and assessed. This also allowed analysing the quality (not as such an evaluation criteria defined in the evaluation guidelines) of results from the Action Plan (which may also demonstrate some added value of the Action Plan), or (some of the) impacts from a forward-looking perspective.
3.4 Approach to the evaluation

3.4.1 Establishing the overview of implementation

The aim of this task was to gather precise/reliable/accurate/trustworthy evidence on the state of the implementation from different points of view: i.e., in terms of policy objectives, with respect to the interim results. This task provided information subsequent steps and was intended to provide the European Commission with a reliable overview of the actions taken and their status.

In order to create the overview we derived as much as possible a clear link between the actions, the policy priorities (quantitative and qualitative), the inputs / financial mechanisms used, the beneficiaries reached, and the intended results (expected impacts/benefits).

The stocktaking exercise provided the basis to assess the EU added-value, relevance, coherence, effectiveness and efficiency of the Actions included in the Action Plan. Identifying the evaluation questions, corresponding indicators and sources for each of the criteria for the actions included in the eHealth Action Plan in an early stage was therefore crucial. The design of the data collection tools was then shaped on the evaluation questions and data needed to answer these. To support this exercise, we have prepared draft Action Fiches per each of these actions35.

This approach enabled us to provide not only a solid overview of the state of implementation of the eHealth Action Plan but also to interpret this data and conduct a performance assessment of its governance. This was coherent with the overall spirit of the assignment which was also to identify the weaknesses of the Action Plan that may prevent its full implementation in 2020. This was done based on available documents that provided to the evaluation team and, complemented by interviews with key informants and the web-based survey.

In order to collect the needed data the following data collection methods were used for this task:

- Desk research;
- Interviews with key stakeholders;
- Survey to wide range of stakeholders.

3.4.2 Assessing the evaluation criteria

For the assessment of the evaluation criteria of efficiency, effectiveness, coherence and relevance of the actions composing the Action Plan we developed an analytical framework, in line with the intervention logic, containing the main evaluation questions, sub-questions, judgement criteria and related indicators and sources. This built on the overview of the implementations that resulted from the previous step. Within the analytical framework we included also specific questions concerning the added value of the actions.

The main evaluation questions for the assignment are provided in Table 636.

The analytical framework both served as a framework for the evaluation as such and the data collection tools that to gather the relevant information.

35 The Action Fiches are provided in Annex A.
36 In Annex C we have further elaborated this analytical framework for the evaluation by providing the main evaluation questions, sub-questions, judgement criteria and related indicators and sources at high level for each of the four objectives of the action plan.
### Table 6 - Analytical Framework – Main evaluation questions

<table>
<thead>
<tr>
<th>Main evaluation question</th>
<th>Sub-question</th>
<th>Judgement criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Efficiency of eHAP actions (inputs vs. outputs)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have the objectives been achieved at the lowest cost? Could better effects be obtained at the same cost?</td>
<td>Were the actions carried out efficiently and were they cost effective? <em>(Do and support actions)</em></td>
<td>The resources (inputs) for the action have been appropriate and proportional to the expected achievement (outputs)</td>
</tr>
<tr>
<td></td>
<td>Have all relevant stakeholders been adequately involved and contributed to the actions? <em>(Do and support actions)</em></td>
<td>Potential alternative solutions to the actions that would have generated the same result at a lower cost</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The actions have adequately involved and received contribution from the relevant stakeholders</td>
</tr>
<tr>
<td><strong>Effectiveness of eHAP actions (outputs/results/impacts vs. objectives)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent have the objectives been achieved? Have the interventions and instruments used produced the expected effects? Could more effects be obtained by using different instruments?</td>
<td>To what extent have the actions resulted in the expected outputs/results/impacts and contributed to achieving the objectives? <em>(Do actions)</em></td>
<td>The outputs/results/impacts resulting from the actions have contributed to achieving the objectives</td>
</tr>
<tr>
<td></td>
<td>To what extent have the activities carried out under the action supported/sustained the main policy initiatives? Have the interventions and instruments used produced the expected effects? <em>(Support actions)</em></td>
<td>The outputs/results/impacts resulting from the actions have contributed to achieving the objectives of the main policy initiatives and instruments</td>
</tr>
<tr>
<td></td>
<td>To what extent were the actions the most appropriate means for achieving the objectives or could other interventions/instruments have been more impactful? <em>(Do and support actions)</em></td>
<td>The most impactful interventions and instruments have been used to achieve the objectives</td>
</tr>
<tr>
<td>Main evaluation question</td>
<td>Sub-question</td>
<td>Judgement criterion</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------</td>
<td>---------------------</td>
</tr>
<tr>
<td><strong>Coherence of eHAP actions (internal /external coherence)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do the objectives of the eHealth Action Plan correspond to each other and to other public interventions that interact with it?</td>
<td>To what extent do actions under the objectives within the eHealth Action Plan link to each other? (Do actions)</td>
<td>The objectives are complementary and/or non-contradictory with each other</td>
</tr>
<tr>
<td></td>
<td>To what extent do the actions under the objectives of the eHealth Action Plan correspond to other public interventions which interact with it? (Do and support actions)</td>
<td>The objectives of the eHealth Action Plan are complementary and/or non-contradictory with other public interventions that interact with it</td>
</tr>
<tr>
<td><strong>Relevance of the actions (objectives vs. needs/problems/issues)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent are the actions under the objectives objectives justified in relation to needs? Can their raison d'être still be proved? Do they correspond to local, national and European priorities?</td>
<td>To what extent do the actions under the objectives of the Action Plan address the needs / issues? (Do and support actions)</td>
<td>The objectives of the eHealth Action Plan correspond to the needs/issues of targeted stakeholders</td>
</tr>
<tr>
<td></td>
<td>To what extent are the actions under the objectives of the Action Plan aligned with respect to current needs and issues in the eHealth area (e.g. eHealth market and healthcare systems) in the Member States (local and national levels), the EU and globally? (Do actions)</td>
<td>The objectives of the eHealth Action Plan are aligned with the current or evolving needs / issues at local, national, EU and international level.</td>
</tr>
<tr>
<td></td>
<td>Do the actions under objectives of the eHealth Action Plan correspond to the priorities and objectives of the policy initiatives they interact with? (Support actions)</td>
<td>The objectives of the eHealth Action Plan are aligned with those of other EU policy initiatives they interact with</td>
</tr>
<tr>
<td>Main evaluation question</td>
<td>Sub-question</td>
<td>Judgement criterion</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------</td>
<td>---------------------</td>
</tr>
<tr>
<td><strong>Added value of the eHealth Action Plan</strong></td>
<td>Would the objectives be achieved without EU intervention through the actions in the eHealth Action Plan?</td>
<td>The EU intervention is necessary to achieve the objectives</td>
</tr>
<tr>
<td></td>
<td>To what extent do the actions contribute to addressing the needs/issuses beyond what could be achieved at national level or by the market?</td>
<td>The EU intervention beyond interventions at national level or by the market is needed to address the needs/issuses</td>
</tr>
</tbody>
</table>
The evaluation questions related to the operational objectives of the Action Plan, while the indicators dig into the specific actions. In this way, building on micro level data (the actions) we were able to provide the general picture of the objectives.

The goal of evaluating the actions of the eHealth Action Plan was achieved through several complementary instruments:

- Desk research
- Interviews with key stakeholders
- Web based survey

Concerning the contents of the analytical framework, the web based survey played a prominent role in reaching the widest amount of stakeholders possible and customising the questionnaire accordingly. To carry out this task we tried to ensure the widest representativeness possible in terms of stakeholders as well as in terms of geographical area. In this way we aimed at providing the Commission with a methodologically sound assessment of the actions according to the evaluation criteria.

Below we provide an overview of the survey's respondents.

Survey respondents include stakeholders representing 14 Member States: i.e. Austria, Belgium, Denmark, Finland, France, Germany, Hungary, Malta, the Netherlands, Poland, Slovenia, Spain, Sweden and the United Kingdom.

Table 7 – Overview of survey’s respondents per Member State

<table>
<thead>
<tr>
<th>Member State</th>
<th>Ratio of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>27%</td>
</tr>
<tr>
<td>Belgium</td>
<td>19%</td>
</tr>
<tr>
<td>Germany</td>
<td>11%</td>
</tr>
<tr>
<td>Spain</td>
<td>8%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>8%</td>
</tr>
<tr>
<td>France</td>
<td>5%</td>
</tr>
<tr>
<td>Denmark</td>
<td>5%</td>
</tr>
<tr>
<td>Hungary</td>
<td>3%</td>
</tr>
<tr>
<td>Slovenia</td>
<td>3%</td>
</tr>
<tr>
<td>Sweden</td>
<td>3%</td>
</tr>
<tr>
<td>Austria</td>
<td>2%</td>
</tr>
<tr>
<td>Finland</td>
<td>2%</td>
</tr>
<tr>
<td>Malta</td>
<td>2%</td>
</tr>
<tr>
<td>Poland</td>
<td>2%</td>
</tr>
</tbody>
</table>

The figure below shows the composition of the respondents per sector of economic activity.
Below we provide more detailed information on the composition of the survey respondents per each of the sectors of economic activity covered.

Table 8 – Break-out of survey respondents per sector of economic activity

<table>
<thead>
<tr>
<th>If public, please specify</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>International organisations</td>
<td>21%</td>
</tr>
<tr>
<td>Policy administration at MS level</td>
<td>21%</td>
</tr>
<tr>
<td>Policy administration at regional level</td>
<td>5%</td>
</tr>
<tr>
<td>Public healthcare organisations (e.g. hospitals)</td>
<td>5%</td>
</tr>
<tr>
<td>eHealth agencies</td>
<td>5%</td>
</tr>
<tr>
<td>If other, please specify</td>
<td>43%</td>
</tr>
<tr>
<td>Other includes academic, R&amp;D, health consultancies, ICT</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If private, please specify</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharma and medical groups</td>
<td>5%</td>
</tr>
<tr>
<td>ICT (SMEs, eHealth entrepreneurs, start-ups)</td>
<td>41%</td>
</tr>
<tr>
<td>ICT (large providers of, electro-medical supplies, infrastructure, et.)</td>
<td>11%</td>
</tr>
<tr>
<td>Standard Development Organisations (SDO)</td>
<td>2%</td>
</tr>
<tr>
<td>Insurers</td>
<td>2%</td>
</tr>
<tr>
<td>Investors</td>
<td>7%</td>
</tr>
<tr>
<td>Trade Associations</td>
<td>2%</td>
</tr>
<tr>
<td>Other</td>
<td>30%</td>
</tr>
<tr>
<td>Other includes academic, R&amp;D, health consultancies, ICT</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>If civil society, please specify</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare professionals’ organisations</td>
<td>22%</td>
</tr>
<tr>
<td>EU-wide eHealth organisations</td>
<td>11%</td>
</tr>
</tbody>
</table>
The table above shows that:

- Among public sector stakeholders, 60% are involved in EU-wide eHealth activities, 30% at national level and 10% at regional level.
- Among private sector stakeholders, over 80% are involved in cross-border eHealth activities, across the EU as well as globally.
- Civil society stakeholders are involved in cross-border eHealth activities at EU level.

Finally, respondents are mostly involved in cross-border eHealth at EU level37, as the table below shows.

<table>
<thead>
<tr>
<th>Level of involvement in eHealth</th>
<th>Ratio of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU-wide</td>
<td>75%</td>
</tr>
<tr>
<td>National</td>
<td>23%</td>
</tr>
<tr>
<td>Regional/Local</td>
<td>2%</td>
</tr>
</tbody>
</table>

While we made efforts to promote the survey and to reach the highest possible number of relevant stakeholders, this data gathering tool has some limitations. The sample of respondents has been limited, and not designed to be statistically representative of the large and varied composition of the environment of eHealth stakeholders. In fact, the response rate has been higher in the private sector, which is overrepresented in the sample, and in particular among the industry (both among SMEs and start-ups and among large suppliers of ICT, electro-medical supplies and infrastructure). Furthermore, not all Member States are represented in the sample.

Whenever possible (and relevant), we complemented the surveys' replies with inputs from interviews with stakeholders carried out throughout the study, and with further information from desk research and other relevant works we have been carrying out in related fields (such as in supporting the CEF implementation), in order to have an analysis as comprehensive as possible.

### 3.4.3 Assessing the impact and added value

The impacts and added-value was evaluated to the eHAP as a whole, rather than action by action. The added-value of the Action Plan as a whole built on the findings of the overview of the implementation and the assessment of the evaluation criteria.

The main expected impacts of the eHAP include:

- Raising awareness;
- Both better coordination and cooperation on eHealth at EU level;
- Increased transparency.

In terms of added-value, the eHAP is perceived as generating:

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37 Several of the respondent involved in eHealth at European level are also involved in eHealth more broadly within the Europe, the Middle East and Africa region (EMEA) or on a global scale.
Increased awareness, both internally within the European institutions as well as externally among stakeholders;
- Better coordination and cooperation within the European Commission, with the adoption of a structured approach to cohesiveness in action;
- Better coordination and cooperation with external stakeholders, especially with Member States through a framework for their activities.

Additionally, the Action Plan is perceived to provide solid grounds to justify public investment/activities in eHealth.

Coherence of eHealth actions at local, national and EU levels, which are brought together through the eHealth Action Plan.

Furthermore, an indirect impact and added-value of the eHealth Action Plan results from the underlying idea and overall objectives of bringing fundamental changes in health, focusing on citizens and patient empowerment.

In the context of this evaluation, only two years after the launch of the eight-years eHealth Action Plan, it was not possible to adopt the traditional approach and follow the causality links between the inputs provided by the eHAP and the impacts (the big arrows in Figure 5), as the impacts were unlikely to have materialised yet. Furthermore, the outcomes/results of some of the outputs were not apparent and measurable yet. Finally, some actions are still ongoing so there would be only limited outputs.

*Figure 5 - Assessment logic for Task 4*
4 Findings

This section presents the findings of the interim evaluation of the eHealth Action Plan 2012-2020 in relation to its awareness among stakeholders and the relevance, efficiency, effectiveness and coherence of the eHealth Action Plan and its actions.

4.1 Introduction

In this section, we present the findings resulting from the analysis of the data gathered throughout the period through all data collection activities. These findings are presented for:

- the awareness of eHealth Action Plan; and
- all actions of the eHAP, per objective and for all relevant evaluation criteria (i.e. relevance, efficiency, effectiveness and coherence), together with a short description of each action and a status update.

The findings of this interim evaluation with regard to the impacts and added-value of the eHealth Action plan are presented separately in the following section.

4.2 Awareness of the eHealth Action Plan 2012-2020

Awareness was already identified as a challenge in the final evaluation of the 2004-2010 eHealth Action Plan, in particular awareness of both benefits offered by eHealth solutions and the requirements of benefits realisation among authorities and health professionals.

For this reason, raising awareness about the eHealth Action Plan is among the most important expected impacts and perceived added-value of the 2012–2020 Action Plan. This increased awareness of the eHAP is expected both in-house within the European Commission and the different DGs involved as well as externally, especially among stakeholders newly involved in eHealth projects, initiatives and opportunities, such as mHealth stakeholders.

To this day, however, awareness of the eHealth Action Plan appears to remain limited, including among stakeholders directly involved in some of the actions.

As shown in the figures below, stakeholders report to have little knowledge of the eHealth Action Plan. Indeed, 42% of respondents among eHAP stakeholders consider their knowledge to be poor to very poor (18% and 24% respectively), 28% assess their knowledge of the eHAP as fair while only 26% believe they have a good to excellent knowledge of the eHAP (10% and 16% respectively).

This self-assessment appears to be indicative of the degree of knowledge among the larger community of the eHealth stakeholders. Indeed, the stakeholders interviewed agreed that awareness and knowledge of the eHAP is generally not widespread among eHealth stakeholders.

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38 eHealth for a Healthier Europe!– opportunities for a better use of healthcare resources, http://www.government.se/content/1/c6/12/98/15/5b63bacb.pdf
When assessing awareness of actions of the eHAP, it is however apparent that stakeholders are aware of specific elements of the Action Plan, most notably the funding of research and development through H2020 for eHealth solutions and the Green Paper on mHealth for example (which have been promoted and disseminated via ad hoc campaigns, largely using social media in combination with more traditional tools such as info days and print-outs). For instance, to promote the work on the Green Paper, a webinar was organised by DG CONNECT on mHealth in June 2014 prior to its publication. An infographic\textsuperscript{39} and press releases were also published by DG CONNECT on mHealth and the Green Paper.

The eHealth Action Plan is thus not currently known as a fully integrated plan.

In addition, several actions of the eHAP are not understood by stakeholders in the wider context of eHealth at national and global level, as demonstrated by the limited awareness of stakeholders on the coherence of eHealth actions at EU level, in particular under objective 4.

\textsuperscript{39} The Infographic is available online at: http://ec.europa.eu/digital-agenda/en/news/mhealth-what-it-infographic
It is clear then that there is a need to increase awareness of the overall Action Plan bringing together number of eHealth activities and initiatives, its objective and scope as well as the benefits it brings to stakeholders and consumers through targeted communication efforts. In the absence of a dissemination strategy for the eHAP as a whole, awareness remains low and sketchy. In fact, the most well-known actions are those providing funding opportunities (which often benefit from dissemination and promotion campaigns of their own, as in the case of H2020-related opportunities) and those that were promoted and disseminated via different media (such as the Green Paper on mHealth). In particular, promoting the eHealth Action Plan as a whole would help conveying the existence of a strategic, long-term vision of eHealth in the EU, and that the existing initiatives are part of this strategic vision.

Some of the stakeholders interviewed, including among Member States, stated that they could and should have a stronger role to play in the promotion of the eHealth Action Plan and in general of the work done in the field of eHealth at EU level. A simple and easily accessible communication package prepared by the Commission and made available for use would be very useful, stakeholders affirmed.

Awareness of the eHealth Action Plan as a whole appears to remain limited, including among stakeholders directly involved in some of the actions. Similarly, knowledge of the Actions composing the eHealth Action Plan appears to be limited, and scattered among stakeholders, with some actions better known than others (e.g. R&D support through H2020 and the Green Paper on mHealth).

There is thus a need to improve awareness of the eHealth Action Plan together with the several eHealth initiatives and activities ongoing, as well as the benefits they bring to stakeholders and consumers, in order to increase stakeholder awareness of the overall Action Plan and of eHealth practices more in general. Stakeholders, including Member States, could play a more active role in improving awareness. A communication package made available by the Commission would support such efforts.

4.3 Objective 1 – Achieving wider interoperability in eHealth services

The actions foreseen under objective 1 aim to build and consolidate an interoperability framework for eHealth data. The interoperability framework for eHealth data will be achieved through different means, such as proposing an interoperability framework as well as studies and guidelines for adoption, producing a green paper on mHealth and fostering cross border collaboration.

4.3.1 Action 1 – Proposal for an eHealth Interoperability Framework

Action 1 concerns the proposal for an eHealth European Interoperability Framework (eEIF), building upon eHealth roadmaps and the general European Interoperability Framework with its four levels of interoperability: legal, organisational, semantic and technical. The eHealth Interoperability Framework will also be based on the results of studies, pilots and research projects.

The eHealth Network produces guidelines on eHealth and on an interoperability framework for cross border eHealth services, as foreseen in the Directive establishing the Network. The European Commission will propose the eHealth Interoperability Framework, for endorsement by the eHealth Network in November 2015.
**Status update**

This is a short-term action, with a clearly defined timeline. It is also a ‘support’ action. An eHealth Interoperability Framework building upon eHealth roadmaps was proposed to the eHealth Network, i.e. the main strategic and governance body at EU level to work towards cross-border interoperability. It is the eHealth Network’s task to produce guidelines for framework.

The eHealth Interoperability Framework will be proposed for approval on the occasion of the second biannual meeting of the eHealth Network in November 2015.

**Findings**

The figure below provides the overview of the answers in the survey to questions related to action 1.

*Figure 8 – Overview of Action 1 by survey respondents*

<table>
<thead>
<tr>
<th>Action 1</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Somewhat agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>I do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is a clear need for eHIF</td>
<td>59%</td>
<td>37%</td>
<td>0%</td>
<td>15%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>An eHIF will meet the interoperability challenges in eHealth</td>
<td>26%</td>
<td>0%</td>
<td>11%</td>
<td>44%</td>
<td>19%</td>
<td></td>
</tr>
<tr>
<td>Support for the development of an eHIF is sufficient.</td>
<td>41%</td>
<td>19%</td>
<td>11%</td>
<td>15%</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Large-scale pilots, including epSOS and Expand, contribute(d) to the objective of achieving wider...</td>
<td>35%</td>
<td>0%</td>
<td>19%</td>
<td>27%</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>The planned eHIF is aligned with interoperability actions at EU level</td>
<td>19%</td>
<td>7%</td>
<td>41%</td>
<td>37%</td>
<td>19%</td>
<td></td>
</tr>
<tr>
<td>Action undertaken within the EC for the development of the eHIF is coherent.</td>
<td>15%</td>
<td>26%</td>
<td>19%</td>
<td>4%</td>
<td>4%</td>
<td></td>
</tr>
</tbody>
</table>

**Relevance**

There is a unanimous agreement that eEIF is needed, both among institutional players interviewed within the European Commission and among stakeholders surveyed. The eEIF is indeed perceived as a mean to increase coordination among different players in the eHealth sector across the EU and the development of an cross-border eHealth system. It would indeed be an essential milestone for other actions of the eHAP to build on.

The relevance of such action was clearly affirmed through pilot projects, such as EpSOS and EXPAND, which provide a strong basis upon which the eEIF can be constructed to create interoperability in eHealth services, according to the stakeholders.

**Effectiveness**

Uncertainty remains to some extent among surveyed stakeholders about whether an eHealth Interoperability Framework will meet the interoperability challenges in eHealth: EU-wide interoperability is perceived as an ideal, long-term scenario but the need for simple approaches to exchange cases around countries is noted as very helpful at short term. In addition, an eEIF must be aligned, in stakeholders’ views, with the European Interoperability Framework, in order to ensure adequate alignment with social issues for example.
**Efficiency**

EU support in terms of financial and organisational resources in the development of an eHealth Interoperability Framework is generally considered sufficient by the survey respondents.

**Coherence**

Although over 60% of surveyed stakeholders agree to some extent that the planned eHealth Interoperability Framework is aligned with other interoperability actions at EU level, about 20% express doubts about this. It is in particular noted that the eEIF should be aligned with the European Interoperability Framework to ensure coherence in the areas where they overlap, such as in social policy.

Similar perceptions are noted about the coherence of actions within the EC for the development of the eEIF, with 60% of surveyed stakeholders agreeing to some extent that EU action on the development of the eEIF is coherent among all involved institutional partners in the European Commission.

Action 1 is considered necessary, as a follow up of successful pilot projects for interoperability in eHealth and is perceived as coherent with other EU actions on interoperability. Doubts remain however on whether the eEIF will be sufficient to ensure interoperability of eHealth services and solutions across the EU as well as about the timeframe of this action.

**4.3.2 Action 2 – Guidelines on patients’ summaries and interoperable electronic identification and authentication**

Interoperability of ICT-enabled solutions and of data exchange is the precondition for better coordination and integration across the entire chain of healthcare delivery and health data exchange, while unlocking the EU eHealth single market.

Under Action 2, the eHealth Network has the specific objective to draw up **guidelines on a non-exhaustive list of data for patients’ summaries for health professionals** as well as **common measures for interoperable electronic identification and authentication**. This would enable continuity of care and patient safety across borders and enhance security of health information and eHealth services and interoperability of databases for medicinal products.

**Status update**

Action 2 is a ‘support’ action, managed mainly in the eHealth Network (DG SANTE), with results of projects supporting the preparation of the guidelines, including through CEF Building Blocks. Guidelines for ePrescription and patient summaries have been proposed since 2013. Additionally, the work under action 2 links with the work on electronic identification and authentication, which has been included in the work programme on Digital Service Infrastructures (DSIs)40 funded under the CEF41.

**Findings**

The figure below provides the overview of the answers in the survey to questions related to action 2.

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**Relevance**

It is widely agreed among stakeholders that Action 2 and the development of EU-wide standards in eHealth at technical and semantic levels is clearly needed, with close to 80% of surveyed stakeholders strongly agreeing with the need for this action.

**Effectiveness**

It is widely agreed that standards developed through the eHealth Network on eRecords and eID, for example, contribute to developing EU-wide standards in other dimensions of eHealth, with close to 90% of surveyed stakeholders believing such standards effectively contribute to the development of EU-wide datasets in eHealth.

**Efficiency**

Funding of DSI in eHealth to develop EU-wide standards in eHealth through the eHealth Network is however generally considered as insufficient, with 42% of surveyed stakeholders disagreeing and 10% uncertain about the efficiency of this action.

**Coherence**

Surveyed stakeholders consider actions undertaken through the eHealth Network for the development of standards to be aligned with other actions at EU level as well as within Member States for the adoptions of standards, with close to 70% agreeing to some extent. In fact, the fact that the Commission both chairs the eHealth Network and is in charge of it secretariat (which includes setting up the agenda of the meeting, providing preparatory documents, etc.) strengthens the alignment and coordination of activities between the two.

It is also noted that engaging stakeholders on different levels (globally, EU, nationally, regional, local) and relevant public-private sectors on this issue would be highly beneficial.
The need for Action 2 is apparent and steps currently taken at EU level for this purpose seem to be both effective and coherent. Doubts remain however on whether sufficient funding is dedicated to this Action and the development of standards at EU level more in general.

### 4.3.3 Action 3 – Semantic and technical interoperability

Action 3 calls for the endorsement of the eHealth Network to:

- establish the **semantic and technical cross-border interoperability specifications and assets necessary for the eIF**;
- propose an **EU interoperability testing, quality labelling and certification framework** for eHealth systems.

Several EU-funded projects are successfully testing and implementing standards, open and secure architecture, clinical workflows and subsets of terminologies as well as making policy recommendations, to prepare the deployment of eHealth services on a large scale.

Under Action 3, the European Commission proposes to boost interoperability by further developing and validating specifications and components. With the advice of the eHealth Network, more detailed specifications, for example for public procurement, will be identified in the framework of the new EU standardisation regulation, contributing to the technical and semantic levels of the eHealth Interoperability Framework.

#### Status update

Action 3 is an ongoing short-term action. It is also a ‘support’ action. Three projects are understood to be part of Action 3:

- For semantic interoperability, SemanticHealthNet under CIP and Antilope
- For technical interoperability,
  - Antilope for testing and qualification
  - EXPAND on reporting assets, to link between epSOS and CEF until December 2015.


#### Findings

The figure below provides the overview of the answers in the survey to questions related to action 3.

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Figure 10 – Overview of Action 3 by survey respondents

**Relevance**

Surveyed stakeholders agree to some extent that past and ongoing projects meet the needs of interoperability testing, quality labelling and certification framework, with 12% strongly agreeing, 25% agreeing and close to 40% agreeing to some extent.

**Effectiveness**

According to survey respondents, funded projects, under CIP/FP7, ISA and H2020 contribute to the development of semantic and technical cross-border interoperability specifications: 50% agree or strongly agree, 21% agree to some extent while less than 30% disagree.
Similarly, 40% agree and 33% agree to some extent that projects funded under CIP/FP7, ISA and H2020 contribute to the development of EU interoperability testing and quality labelling for eHealth systems.

Stakeholder perceptions on funding of projects under CIP/FP7, ISA and H2020 and its contribution to the development of an EU certification framework for eHealth systems are comparable, with 30% agreeing and 40% agreeing to some extent.

Several stakeholders however point out a tendency to treat technical and semantic standards together. Technical and semantics standards are considered to be equally important and linked to some extent but must be dealt with by different types of stakeholders. Technical standards are, in stakeholders’ views, easier to agree on, while the semantic standards require involvement of clinicians rather than technicians only.

**Efficiency**

According to surveyed stakeholders, funding under CIP/FP7, ISA and H2020 appears to be insufficient to establish semantic and technical cross-border interoperability specifications and assets for the eHealth Interoperability Framework, with only 14% of stakeholders agreeing that it is sufficient.

Similar perceptions are communicated regarding the funding for EU interoperability testing, quality labelling for eHealth systems as well as EU certification framework for eHealth systems.

**Coherence**

Past and ongoing project aiming to develop semantic and technical cross-border interoperability specifications seem to be aligned with other actions undertaken for the establishment of the eEIF, with 7% of survey respondents strongly agreeing, 27% agreeing and another 27% agreeing to some extent.

Past and ongoing projects meet needs of interoperability testing, quality labelling and certification framework. In addition, the 27 IHE profiles and technical specifications established through the IHE Decision have the potential to increase technical interoperability of eHealth services and applications to the benefit of patients and medical community. Action 3 thus contributes to cross-border interoperability.

4.3.4 **Action 4 – Organisational interoperability**

The European Commission will support concrete steps towards greater integration of processes for cross-border eHealth. It will make proposals on organisational issues with the aim of facilitating cooperation in the EU.

Action 4 addresses the organizational layer of interoperability and concerns how organizations, such as public administrations in different Member States, cooperate to achieve their mutually agreed goals on eHealth. In practice, organizational interoperability implies integrating business processes and related data exchange and finding instruments to formalize mutual assistance, joint action and interconnected business processes in connection with cross-border service provision.
**Status update**

Action 4 is a short-term, support action.

Such cooperation and integration processes between Member States have been defined through the large-scale pilots such as the epSOS project, with the objective of ensuring the deployment eHealth services across Europe. The eHealth Network and the CEF foresee to implement these results and thereby address the next phase of cross-border eHealth processes, with interoperability being a work package within the work programme of the eHealth Network until 2018.

**Findings**

The figure below provides the overview of the answers in the survey to questions related to action 4.

*Figure 11 – Overview of Action 4 by survey respondents*

<table>
<thead>
<tr>
<th>Action 4</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Somewhat agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>I do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is a need for cooperation on business processes and data exchange</td>
<td>65%</td>
<td>31%</td>
<td>4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>at EU level through formal governance structures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The governance and cooperation processes established through projects -</td>
<td>7%</td>
<td>22%</td>
<td>37%</td>
<td>15%</td>
<td>4%</td>
<td>15%</td>
</tr>
<tr>
<td>such as epSOS - are efficient mechanisms to achieve cooperation between MS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The governance and cooperation processes contribute to establishing</td>
<td>11%</td>
<td>41%</td>
<td>30%</td>
<td>11%</td>
<td>4%</td>
<td>14%</td>
</tr>
<tr>
<td>replicable processes for cooperation at EU level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Governance processes at EU-level are aligned with other related</td>
<td>3%</td>
<td>26%</td>
<td>44%</td>
<td>0%</td>
<td>97%</td>
<td>19%</td>
</tr>
<tr>
<td>initiatives (in MS) and increasingly involve MS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Relevance**

It is clear, based on stakeholders’ perceptions, that there is a strong need for cooperation on business processes and data exchange at EU level through formal governance structures, with 65% strongly agreeing and 31% agreeing.

Although it is widely agreed that the process is needed, stakeholders express doubts about the timeliness and communication efforts around these governance and cooperation processes.

Stakeholders from the private sector and civil society non-institutional or directly involved in policy- and decision-making – feel they are not sufficiently involved in the processes according to the survey.

**Effectiveness**

The effectiveness of these governance layers is also clear to stakeholders. Over 50% of the respondents agree or strongly agree that the governance and cooperation processes contribute to establishing replicable processes for cooperation at EU level.
It is however noted that large-scale projects, such as epSOS, only allowed tackling the technical barriers in order to align business processes temporarily through the Framework Agreement. This Action thus appears to require increased harmonisation in legislations under the impulse of the European Commission. In particular, a strong governance and legal framework for full-scale deployment is still outstanding.

**Efficiency**

It is however less clear, in stakeholders’ opinion, whether these governance and cooperation processes established through projects - such as epSOS - are efficient mechanisms to achieve cooperation between EU Member States, with about a third of respondents agreeing, another third somewhat agreeing, 20% disagreeing and 15% unsure.

**Coherence**

Stakeholders generally agree that these governance processes at EU-level are aligned with other related initiatives within Member States and increasingly involve Member States, with 30% of stakeholders agreeing and 44% agreeing to some extent.

The need for governance structures and strengthening the organisational layer of eHealth is clear and efforts already undertaken, notably with large-scale projects, are considered to be relevant and coherent to achieve this objective. However, it is generally noted that more should be done to implement the organisational layer of eHealth interoperability, for instance supporting the harmonisation of national legislation, more efficient cooperation and coordination mechanism among Member States, and identifying and involving policy-making stakeholders.

**4.3.5 Action 5 – Study in electronic health records**

Action 5 related to the study launched by the European Commission in 2013 under the Health Programme 2014-2020 aimed at examining Member States’ laws on electronic health records in order to make recommendations to the eHealth Network on legal aspects of interoperability.

**Status update**

Action 5 is a short-term, ‘do’ action.

The study has been made public since July 2014 and is accompanied by country reports for EU Member States.\(^43\)

**Findings**

The figure below provides the overview of the answers in the survey to questions related to action 5.

\(^{43}\) The study and the country reports are available online at the address: [http://ec.europa.eu/health/ehealth/projects/nationallaws_electronichealthrecords_en.htm](http://ec.europa.eu/health/ehealth/projects/nationallaws_electronichealthrecords_en.htm)
Figure 12 – Overview of Action 5 by survey respondents

Relevance
Stakeholders widely agree that there was a clear need for the study on health records in Member States (close to 80% strongly agree or agree). Awareness of the study is however more limited, with a third of respondents stating they are unaware of the study.

Effectiveness
It is generally agreed that the study is leveraged on questions of legal aspects of interoperability (close to 40% of surveyed stakeholders agree).

In addition, close to 30% of surveyed stakeholders agree or strongly agree that the study helps to streamline eHealth legislation.

Although streamlining of eHealth legislation is not perceived as a goal pursued through the study, close to 60% of stakeholders agree to some extent that the study contributes to the eHAP objective of interoperability. The study is indeed perceived as a means of publishing inspiration and raising knowledge of different solution pathways.

Coherence
It is less clear, based on stakeholder perceptions, that the study contributes to coherence between Member States laws on electronic health records.

The need for the study is apparent and its contribution to the objective of interoperability for eHealth is widely noted. It is however less clear whether the study contributed to coherence between Member States’ legislations.
4.3.6 Action 6 – Green Paper on mHealth

An eHealth Task Force report and responses to the public consultation for the eHealth Action Plan both point to a strong interest in discussing:

- the concept of ‘ownership’ and control of data while providing more clarity on the conditions for accessing and re-using health data for research and public health purposes
- the flow of such data across health and care systems, if suitably protected. In addition, eHealth and wellbeing ICT initiatives should integrate the principle of privacy by design and by default as well as make use of Privacy Enhancing Technologies (PET’s) for the deployment of trustworthy tools, as foreseen in the proposed Data Protection Regulation.

Status update


As a follow-up activity, the Commission is facilitating an industry-led data protection Code of Conduct for mobile health apps. This initiative was presented during various stakeholder meetings on mHealth organised by the Commission, including during the eHealth Week 2015.

Furthermore, the Commission has started work on actions ensuring quality and safety of mHealth applications.

In addition, the guiding document on medical devices of 2012 is under revision in order to include the relevant developments and thus to provide guidance on the application of the EU legislation on medical devices to software, including to mHealth applications.

Action 6 thus constitutes a short-term and a ‘do’ action.

Findings

The figure below provides the overview of the answers in the survey to questions related to action 6.

---

Figure 13 – Overview of Action 6 by survey respondents

Relevance
There was a clear need for the Green Paper on mHealth according to 70% of surveyed stakeholders. Some of the stakeholders interviewed identified it as one of the good practices in the field of eHealth at European level. Nonetheless, awareness among stakeholders of the Green Paper on mHealth is mixed based on survey results, even if it represents one of the most well-known actions of the eHAP. While more than 50% of stakeholders agree or strongly agree that stakeholder community is aware of the Green Paper, 25% disagree or strongly disagree with the claim, arguing that in their experience a large number of stakeholders involved in the development of mHealth applications or using these are completely unaware of the paper.

Effectiveness
The perceived limited awareness of the Green Paper has impacts on its use by stakeholders. Indeed, only 16% of respondents believe that the Green Paper is widely used in the development of mHealth and health and wellbeing applications. Close to 25% of respondents disagree that the Paper is widely used while 19% are uncertain. Legislation and certification issues regarding mHealth seem to lead to considerable confusion still.

Stakeholders are however generally positive about the contribution of the Green Paper to the eHAP objective of interoperability.

Coherence
The Green Paper somewhat brings coherence to mHealth actions in the EU according to 60% of stakeholders.

As a general consideration, stakeholders seem to have a better knowledge of the Green Paper on mHealth, its content and impacts than they have for many other actions of the eHAP. The promotion
and dissemination of the Green Paper and of the follow-up and related actions can help explaining the higher awareness among stakeholders, at least partially.

The Green Paper on mHealth is considered as necessary and confirms the needs for interoperability of eHealth solutions and applications, in addition to issues of safety, quality and reliability. Efforts to increase awareness of the Paper however appear to be necessary for it to contribute more extensively to achieve interoperability and reliability of eHealth solutions and applications throughout Europe. Further progress in safety and quality of applications is needed.

### 4.3.7 Action 7 – Data protection and health services

According to Action 7, the European Commission will make use of the mechanisms foreseen in the EU data protection Regulation, to provide guidance on the application of the EU data protection law in respect of health services.

#### Status update

The EU data protection reform is ongoing, with discussions on the updated Regulation on Data Protection still ongoing in the European Council under the ordinary legislative procedure of co-decision. To become law the proposed Regulation must be adopted by the Council of Ministers.

Justice and Home Affairs ministers reached a general approach on this regulation in June 2015. On the basis of this agreement, the Council can now begin negotiations with the European Parliament through trilogues – the first of which was planned for the end of June 2015.

Action 7 thus constitutes a long-term, ‘do’ action.

#### Findings

The figure below provides the overview of the answers in the survey to questions related to action 7.

*Figure 14 – Overview of Action 6 by survey respondents*

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**Relevance**

There is a clear need for the Data Protection Regulation for eHealth data according to surveyed stakeholders, with close to 60% strongly agreeing on this need and none of the respondents disagreeing. This need is linked to the cross-border exchange of data for eHealth services resulting in privacy issues and concerns.

The view that the data protection framework should apply horizontally across sectors and no specific obligations related to eHealth or mHealth are needed, apart from those applying to health data more broadly was expressed.

**Effectiveness**

Half of surveyed stakeholders agree or strongly agree that the Regulation will contribute to data protection in eHealth. It is however noted that focus should be on the implementation of data protection rules in eHealth, and patient involvement would contribute to this.

The need for data protection guidelines for the cross-border exchange of eHealth data is widely recognized and Action 7 is perceived to contribute to this. Of course, the practical implementation of this Action will be possible when the new Regulation on Data Protection will be issued. It is noticed that the data protection framework should apply horizontally across sectors, and that patient involvement should be encouraged.

**4.3.8 Key findings for Objective 1**

The lack of interoperability is in the view of most stakeholders a key barrier to the deployment and implementation of eHealth solutions across the EU.

Achieving wider interoperability in eHealth services, as foreseen under objective 1 of the Action Plan, is thus a core element of the eHAP in stakeholders’ views and linked to all other actions of the eHAP.

- **Action 1** is considered necessary, as a follow up of successful pilot projects for interoperability in eHealth and is perceived as coherent with other EU actions on interoperability. Doubts remain however on whether the eEIF will be sufficient to ensure interoperability of eHealth services and solutions across the EU as well as about the timeframe of this action.

- The need for **Action 2** is apparent and steps currently taken at EU level for this purpose seem to be both effective and coherent. Doubts remain however on whether sufficient funding has currently been dedicated to this Action and the development of standards at EU level.

- Past and ongoing projects meet needs of interoperability testing, quality labelling and certification framework. On the other hand, more should be done to establish semantic and technical cross-border interoperability. **Action 3** thus contributes to cross-border interoperability, but further action is needed.

- The need for governance structures and strengthening the organisational layer of eHealth is clear and efforts already undertaken, notably with large-scale projects, are considered to be
effective and coherent to achieve this objective – although it is generally noted that more should be done through Action 4.

- The study was considered necessary and its contribution to the objective of interoperability for eHealth is widely noted under Action 5. It is however less clear whether the study contributed to coherence between Member States’ legislation
- Action 6 and the Green Paper on mHealth was considered as necessary and contributing to a great extent to interoperability of eHealth solutions and applications. Efforts to increase awareness of the Paper however appear to be necessary for it to contribute more extensively to interoperability in addition to its broader objectives for safety, quality and reliability.
- The need for data protection guidelines for the cross-border exchange of eHealth data is widely recognized and Action 7 is perceived to contribute to this.

4.4 Objective 2 – Supporting research, development, innovation and competitiveness in eHealth

Under this objective, the Commission will support R&D investments in the area of eHealth and wellbeing as well as the drafting of national or regional strategies for this sector. In this way, the European Commission will promote innovation and economic growth linked to eHealth at the European level.

4.4.1 Action 8 – Support R&D in eHealth

Under Action 8, the European Commission will support research and innovation in eHealth under Societal Challenge 1 "Health, demographic change and wellbeing" of Horizon 2020, during the period 2014-2020:

- Short-term and mid-term research priorities include health and wellbeing solutions for citizens and health professionals, better quality of care, including of chronic diseases, while increasing citizens’ autonomy, mobility and safety. Particular attention is paid to the design and user-centricity of mobile technologies and applications. There will be an additional focus on ways of analysing and mining large amounts of data for the benefit of individual citizens, researchers, practitioners, businesses and decision makers;
- Longer-term research objectives address topics that can promote synergies between related science and technologies, and accelerate discoveries in the area of health and wellbeing. They include in silico medicine for improving disease management as well as prediction, prevention, diagnosis, and treatment of diseases. The eHealth Task Force recommended earmarking EU funds for user-driven innovation, support for fast prototyping and low thresholds for access to funding. To maximize the impact of the EU level measures, the full spectrum of research and innovation activities will be supported.

Status update

Action 8 is a long-term, ‘support’ Action.

H2020 is one of the financing mechanisms contributing to the funding of eHealth actions and research projects46. The 2014-2015 Work Programme of H2020 for the Societal Challenges ‘Health, demographic

46 Please refer to section 2.1.3 for more details on the EU funds for eHealth and of the specific role of the H2020.
and wellbeing’ (SC1) includes 32 topics in the ‘personalising health and care’ focus area call and 16 topics in the ‘coordination activities’. The total budget available for this challenge during the programming period is of approximately EUR 1.21 billion. The Work Programme aims to create opportunities for real breakthrough research and radical innovation in response to the challenges European healthcare systems are facing (e.g. ageing population, increasing burden from communicable and non-communicable diseases and the fall-out from the economic crisis), which are hampering the sustainability of European healthcare systems. The calls topics included in the Work Programme aim at supporting innovation and at translating its findings into clinic and healthcare settings to improve health outcomes, reduce health inequalities and promote active and healthy ageing.

Two rounds of calls were launched for eHealth projects under H2020 Work Programme 2014-2015:

- A first round of calls was launched in December 2013, with deadline to apply mid-April 2014:
  - PHC-26-2014: Self-management of health and disease: citizen engagement and health (this call includes the mHealth topic);
  - PHC-34-2014: eHealth interoperability.

- A second round of calls was opened in July 2014, with deadline to apply by mid-April 2015:
  - PHC-25-2015: Advanced ICT systems and services for integrated care;
  - PHC-27-2015: Self-management of health and disease and patient empowerment supported by ICT;
  - PHC-28-2015: Self-management of health and disease and decision support systems based on predictive computer modelling used by the patient him or herself;
  - PHC-29-2015: Public procurement of innovative eHealth services;

An overview of the research project selected under H2020 programme in the field of eHealth and wellbeing was published in June 2015. It included research projects focusing on different diseases and medical conditions (from diabetes to cardio-vascular diseases to rehabilitation), innovation projects on personalised health services, telemedicine and chronic disease management on mobile health, on patient empowerment and of eHealth literacy of carers), and well as on procurement and interoperability.

Additional relevant projects selected include: UNCAP (Ubiquitous iNteroperable Care for Ageing People), ehcoBUTLER (an open ICT platform that enables elderly to simply integrate their leisure and care apps) and IN LIFE (INdependent Living support Functions for the Elderly). In addition, four additional projects have been selected under the topic PHC-25 Advanced ICT systems and services for integrated care and are expected to start at the beginning of 2016.

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48 Ibid.
52 See: http://www.uncap.eu/
53 See: http://www.ehcobutler.eu/
54 See: http://www.inlife-project.eu/
**Findings**

The figure below provides the overview of the answers in the survey to questions related to action 8.

*Figure 15 – Overview of Action 8 by survey respondents*

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**Relevance**

Over 75% of surveyed stakeholders strongly believe there is a clear need for funding of eHealth projects through H2020. Action 8 is indeed the second most relevant actions of the eHAP based on stakeholders’ input and is also one of the actions in which the highest number of respondents was directly involved, with 71% of surveyed stakeholders engaged in activities falling under Action 8.

**Effectiveness**

The majority of stakeholders surveyed agree that projects funded under H2020 contribute to the development of eHealth solutions, with 14% strongly agreeing, 23% agreeing and 37% somewhat agreeing.

**Efficiency**

Support for eHealth projects under H2020 is adequate to drive research and develop innovative eHealth solutions, in terms of funding and bringing stakeholders together. It is however considered insufficient
to cover most recent trends and innovations and, according to 26% of stakeholders, such funding does not sufficiently prioritize eHealth. It is indeed noted that the gaps between science, application and market uptake remain large and intractable and that funding does not sufficiently address enough business aspects, with much of the technology developed not reaching the market and therefore having little to no impact.

Coherence

It is unclear whether funding through H2020 is aligned with other funding programmes for stakeholders, with a third of stakeholders unaware of this, over 40% of surveyed stakeholders agreeing to some extent that funding is coherent with other funding programmes and 23% disagreeing. This apparent lack of consensus on the coherence of this action with other funding programmes could be linked to the perceived complexity of the procedures, in stakeholders’ views.

There is a clear need for funding of eHealth projects under the H2020 programme as such projects are positively perceived for the development of eHealth solutions. Funding is however considered to have limited impacts in terms of promoting most recent trends and innovations in eHealth due to a perceived insufficient focus on eHealth and business aspects in H2020 projects. In addition, coherence of these H2020 projects with other funding programmes is unclear to stakeholders at this stage.

4.4.2 Action 9 – Support to national eHealth strategies

Action 9 concerns the support provided by the European Commission to the National eHealth strategies. Indeed, from 2012, the European Commission encourages Member States involvement in the EIP AHA to help them develop and share their national (including regional) eHealth strategies, taking into account international recommendations, and deploying promising solutions for active and healthy ageing at a larger scale.

Status update

Action 9 is a long-term, ‘support’ Action.

The first European Summit on Innovation for Active and Healthy Ageing was organised in Brussels in March 2015, with over 1400 participants from government, civil society, investment and finance, industry and academia. The Summit built on ongoing EU initiatives on health and demographics, including in the area of eHealth.

Findings

The figure below provides the overview of the answers in the survey to questions related to action 9.

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Figure 16 – Overview of Action 9 by survey respondents

Relevance

Stakeholders unanimously agree that there is a need for the EC to provide support to national eHealth strategies, with 38% of respondents strongly agreeing and 48% agreeing. Some degree of harmonization of national eHealth strategies is perceived as highly desirable by the majority of stakeholders and EU action in this area is perceived as having an added-value, as show in stakeholders’ opinions on the added-value and expected impacts of the eHealth Action Plan.

Member States perceive the action of the Commission in this area as relevant in providing guidance to national activities, and especially in supporting exchange of best practices and mutual learning, also outside the formal structure of cooperation. At a minimum, Member States identify specific focus areas for national strategies based on ongoing activities and initiatives undertaken at EU level.

Effectiveness

It is also widely agreed that support provided by the European Commission helps to focus on eHealth as part of national health strategies with only 9% of surveyed stakeholders disagreeing.

Whether this support contributes to objectives of RDI and competitiveness of eHealth in EU is less clear with 40% of surveyed stakeholders somewhat agreeing, 35% disagreeing and only 20% agreeing.

Efficiency

Stakeholders are also generally positive on whether this support is adequate for the development of national eHealth strategies with close to 75% of stakeholders agreeing to some extent

Coherence

The support of the European Commission however is seen to contribute to some extent to the coherence of eHealth strategies across Member States, with 30% of respondents agreeing and 55% of respondents somewhat agreeing.
Support from the European Commission for national eHealth strategies is perceived as necessary and effective in increasing levels of coherence to eHealth strategies across Member States, supporting exchange of best practices and mutual learning.

### 4.4.3 Action 10 – Support of a competitive eHealth market

Under Action 10, the European Commission fosters the development of a competitive eHealth market, through business support and improved market conditions by ensuring the right legal and market conditions for entrepreneurs to develop products and services in the fields of eHealth and wellbeing is important to support market growth in this area. The European Commission therefore support, starting within FP7, mechanisms such as

- SME networking, including high technology incubators;
- an annual eHealth week;
- legal and other advice and training to eHealth start-ups (iLINC\(^{56}\), the European Network of Law Incubators which has the objective to facilitate the provision of free legal support to start-ups);
- business modelling studies to facilitate closer cooperation among stakeholders, research bodies, industry and those responsible for implementing ICT tools and services, to enable faster and wider take-up of research results in the market.

**Status update**

Action 10 is a long-term, ‘support’ Action.

The eHealth week 2015 was organised in May in Riga\(^{57}\), gathering over 2000 participants from public and private healthcare sectors, clinicians, hospital and IT managers. The eHealth Week 2015 was comprised of two main events:

- the High Level eHealth Conference organised by the Latvian Ministry of Health and the Latvian Presidency of the Council of the European Union;
- the World of Health IT (WoHIT) Conference & Exhibition organised by HIMSS Europe\(^{58}\).

The eHealth Network meeting, a mHealth Summit Europe, EU SME eHealth Competition and an onsite Matchmaking Event were organised on the margins of these two main events, targeting EU SMEs involved in eHealth and mHealth.

**Findings**

The figure below provides the overview of the answers in the survey to questions related to action 10.

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\(^{56}\) iLINC, [https://www.ilincnetwork.eu/](https://www.ilincnetwork.eu/).
\(^{58}\) HIMSS is a global, cause-based, not-for-profit organization focused on better health through information technology (IT). HIMSS leads efforts to optimize health engagements and care outcomes using information technology. See: [http://www.himss.eu/about](http://www.himss.eu/about).
Relevance

According to stakeholders, there is a need for substantial guidance for EU start-ups in eHealth, in particular financial support (61% of surveyed stakeholders strongly agree on the need for financial support) and legal advice (52% of respondents strongly agree on the need for legal advice). Technical guidance seems less needed.

Support to eHealth SMEs through law incubators is needed according to stakeholders with over 50% agreeing and 21% somewhat agreeing.

Effectiveness

These support activities, particularly legal support, contribute to objectives of RDI and competitiveness to some extent according to stakeholders, with over 70% perceiving this support as positively contributing to RDI and competitiveness.

Efficiency

The European Commission’s support for SMEs in eHealth is considered inadequate to achieve objectives of RDI and competitiveness, with 16% of stakeholders strongly disagreeing and 28% disagreeing. 31% of respondents agreed to some extent.

In particular, more actions should be foreseen to improve market conditions for SMEs according to comments provided by stakeholders. Indeed, because each Member State has different health and social care structures, the uptake and interoperability of solutions are very often a problem for SMEs.
Coherence

EU action is aligned to some extent with other actions aiming to improve market conditions for eHealth SMEs, such as support actions at the initiative of EU Member States or the private sector, with 42% of surveyed stakeholders somewhat agreeing, 15% agreeing and another 15% disagreeing.

Support and guidance from the European Commission for SMEs involved in eHealth services and solutions are perceived as an important element of the Action Plan, legal and financial support in particular, and as key elements to achieve the objectives of RDI and competitiveness. More financial support (and, to a lesser extent, more legal support) are required by stakeholders, especially for actions improving market conditions for SMEs.

4.4.4 Key findings for Objective 2

Research, development and innovation in eHealth and wellbeing are essential to address the lack of availability of user-friendly tools and services. The eHAP has the potential, in the stakeholders’ views, to significantly contribute to the development of eHealth solutions through H2020 funding.

- There is a clear need for funding of eHealth projects under the H2020 programme, as foreseen under Action 8, as such projects are positively perceived for the development of eHealth solutions. Funding is however considered to have limited impacts in terms of promoting most recent trends and innovations in eHealth due to a perceived insufficient focus on eHealth and business aspects in H2020 projects. In addition, coherence of these H2020 projects with other funding programmes is unclear to stakeholders at this stage.
- Support from the European Commission for national eHealth strategies, as mentioned in Action 9, is perceived as necessary and effective to bring coherence to eHealth strategies across Member States.
- Support and guidance from the European Commission for SMEs involved in eHealth services and solutions under Action 10 are perceived as important elements of the Action Plan, financial and legal support in particular, currently considered as insufficient.

4.5 Objective 3 – Facilitating uptake and ensuring wider deployment of eHealth

4.5.1 Action 11 – Governance for large-scale deployment under CEF

Among other objectives, the Connecting Europe Facility (CEF) sets out to facilitate the deployment of cross-border interoperable ICT services of general interest such as eHealth by overcoming the barriers of the high initial investment costs and risks associated with this deployment. Under Action 11, the European Commission prepares the governance for the large scale deployment of interoperable eHealth services under the CEF 2014 – 2020 and launch a governance plan for interoperability rules under CEF. The results of the large-scale pilot epSOS and other projects and studies will be adapted and taken forward in the CEF.
**Status update**

Action 11 is a short-term, ‘support’ action.

The EXPAND project has the objective to bridge large-scale projects and assets, most notable epSOS, SemanticHealthNet, Antilope, e-SENS, funded under CIP and FP7, and the Connecting Europe Facility (CEF) until the end of 2015. EXPAND aims thereby to develop an environment of sustainable cross-border eHealth services, established at EU level under the CEF and at national level, through the deployment of suitable national infrastructures and services. From 2016 on, CEF Building Block Digital Service Infrastructures (DSIs) will serve as a basis from the deployment of interoperable eHealth solutions.

**Findings**

The figure below provides the overview of the answers in the survey to questions related to action 11.

*Figure 18 – Overview of Action 11 by survey respondents*

**Relevance**

Stakeholders unanimously agree on the significant need for CEF to support large scale deployment of interoperable eHealth services. The CEF is indeed perceived as a good mechanism for this purpose and the funding is important, but the most important thing is the framework for collaborative work that is created when implementing via CEF funding.

**Effectiveness**

Large-scale pilots, including epSOS and Expand, and projects funded under CEF are perceived to have contributed to the deployment of cross-border eHealth solutions by 80% of respondents. It is however noted that, due to the complexity of the existing programs and procedures (especially at national level) the participation of industry stakeholders and researchers from smaller structures (in particular SMEs
and start-ups) remains restricted, according to the stakeholders confronted. In fact Member States (i.e. central, national administrations) are actively involved via the eHealth Network. However, while the participation of other stakeholders (including regional health authorities and organisations, industry and especially SMEs, academia and researchers) should be ensured by national and regional organisations, stakeholders working at decentralised levels still express issues in taking part in such projects and related activities. Therefore, the dissemination of information and the provision of support at local and regional level need to be improved.

**Efficiency**

Funding under CEF is perceived as insufficient to achieve objectives of interoperability for cross-border eHealth by half of the respondents while the other half of surveyed stakeholders note satisfaction to some extent with levels of funding through CEF.

Similar proportions are to be noted regarding CEF funding to achieve deployment of cross-border eHealth solutions.

**Coherence**

Actions undertaken within the CEF for the development of the interoperable eHealth solutions are aligned with one another according to stakeholders’ opinions.

Stakeholders unanimously agree on the significant need for CEF to support large scale deployment of interoperable eHealth services but current efforts through large-scale projects seem to have limited stakeholder involvement. In addition, stakeholders remain divided on the adequacy of funding under CEF to achieve cross-border interoperability objectives.

**4.5.2 Action 12 – Support of eHealth through CEF and ERDF**

The European Regional Development Fund (ERDF) provided in the previous programming period (2007-2013) approximately EUR 15 billion to ICT priorities (or 4.4% of total cohesion policy funds) to ensure access to basic broadband (EUR 2.3 billion) and supporting ICT applications and services for citizens and SMEs (EUR 12.7 billion), for all EU Member States. The Cohesion Policy 2014-2020 will further support EU ICT goals by investing in both ICT infrastructure and tools. Under Action 12, the Commission will leverage both the CEF and the ERDF, during the period 2013-2020, for the large scale deployment of innovative tools, the replicability of good practices and services for health, ageing and wellbeing, with a particular attention to improving equal access to services.

**Status update**

Action 12 is a long-term, ‘support’ action.

From 2014 on, the CEF annual work programmes identify priorities and actions to be launched during any given year:
The CEF Work Programme 2014\textsuperscript{59} was adopted in December 2014 and has been implemented since. The analysis and assessment of the technical maturity for each of the DSIs listed in the CEF Telecom guidelines, including those which have not met the eligibility criteria for 2014, e.g. eHealth services, eProcurement, interconnection of European business registers or Online Dispute Resolution, were identified as key programme support actions for this period.

The CEF Work Programme for 2015 has been adopted in November 2014\textsuperscript{60}. eHealth was identified as a ‘new mature DSI’ in this period. For this DSI, an indicative budget of 7.5 million will be made available under Work Programme 15 for the core platform through procurement actions and a similar amount of 7.5 million will be made available for generic services through calls for proposals.

**Findings**

The figure below provides the overview of the answers in the survey to questions related to action 12.

*Figure 19 – Overview of Action 12 by survey respondents*

**Relevance**

Over 90% of stakeholders agree on the need for funding of large-scale projects on eHealth through CEF and ERDF. Action 12 is indeed the fourth most relevant actions of the eHAP based on stakeholders’ input. Action undertaken at EU level for the support of research, in particular large-scale projects such as epSOS and EXPAND, is considered highly valuable for the development of interoperable eHealth solutions.


\textsuperscript{60} CEF Work Programme 2015: http://ec.europa.eu/digital-agenda/sites/digital-agenda/files/1_en_annexe_acte_autonome_part1_v2.pdf
Effectiveness

Large-scale projects funded through CEF and ERDF contribute to development of replicable good practice and deployment of eHealth solutions according to 60% of surveyed stakeholders’ views.

Efficiency

Stakeholders’ perceptions on the adequacy of support through CEF and ERDF, including funding, for the large-scale deployment of eHealth solutions and dissemination of good practice with about 50% agreeing to some extent and 35% disagreeing while about 15% of stakeholders did not have an option on this. This finding is in line with the considerations on efficiency of other actions of the eHAP (such as Action 8, 10 and 11). These actions are perceived as relevant and effective, but additional funding would increase the opportunities for entrepreneurs and ICT companies to develop new solutions.

Coherence

These large-scale projects are generally aligned with projects funded through other programmes within Member States and initiated by the private sector according to about 70% of stakeholders.

There is a general consensus on the need for funding of large-scale projects on eHealth through CEF and ERDF, which are generally considered effective and coherent with projects funded through other programmes. Stakeholders’ views on the adequacy of existing levels of funding are split however.

4.5.3 Action 13 – Support to digital health literacy

Lack of awareness of eHealth opportunities and challenges for users (citizens, patients, health and social care professionals) appears to remain a significant barrier in the deployment of eHealth solutions and prompted the launch of an Eurobarometer dedicated to EU citizens’ digital health literacy. Under Action 13, the European Commission will support activities aiming at increasing citizens’ digital health literacy.

Status update

Action 13 is a long-term, ‘support’ action.

An EU barometer on digital health literacy was carried out in September 2014 to support the eHAP objective of raising awareness on eHealth among citizens. The barometer assessed the extent to which Europeans use the Internet and online resources to support and manage their own health, by assessing the type and sources of health-related information citizens search for using online and mobile technologies. It also assessed citizens’ satisfaction with the information found and their future expectations for online health-related information.

For awareness, digital health literacy and workforce have been investigated among health professionals by eHSG through several projects: TeleSCoPE (code of practice), Momentum (telemedicine), Chain

62 Idem.
63 TeleSCoPE project: http://www.telehealthcode.eu/
64 Momentum project: http://telemedicine-momentum.eu/project/
of Trust\textsuperscript{65} (digital health literacy) and Renewing Health\textsuperscript{66} (validation of telemedicine), United4Health (deployment telemedicine services), SUSTAINS and PALANTE (impact of eHealth tools on patient empowerment)\textsuperscript{67}.

**Findings**

The figure below provides the overview of the answers in the survey to questions related to action 13.

*Figure 20 – Overview of Action 13 by survey respondents*

![Action 13](image)

**Relevance**

It is widely agreed among stakeholders that it is necessary to increase funding for citizens eHealth digital literacy, with over 90% agreeing to some extent. The lack of user-friendliness of eHealth tools and applications was indeed reported as an important barrier in the previous Action Plan. Increasing literacy is perceived as a means to address this barrier and facilitate the deployment of eHealth solutions.

In addition, over 80% of surveyed stakeholders agree on the need to develop guidelines for telemedicine services for health professionals.

**Effectiveness**

Funded projects are generally perceived to contribute to eHealth digital literacy, with 40% of stakeholders agreeing or strongly agreeing on this and 20% disagreeing. It is indeed noted by


\textsuperscript{66} Renewing Health project: [http://www.renewinghealth.eu/](http://www.renewinghealth.eu/)

\textsuperscript{67} United4Health project: [http://united4health.eu/](http://united4health.eu/)
stakeholders that if guidelines are to be developed for telemedicine services for health professionals, they should be developed by their professional bodies, embedded in general treatment guidelines and not legally binding.

A quarter of respondents did not comment on this matter.

**Efficiency**

Stakeholders’ views on the support, including funding, for projects under CIP and H2020 to achieve digital health literacy of EU citizens and patients are mixed: About a quarter of stakeholders (27%) agree or strongly agree on the adequacy of support while 32% disagree and another 32% somewhat agree.

Similar perceptions are reported for the support to develop guidelines for telemedicine services for health professionals.

**Coherence**

Current support is perceived to be aligned to some extent with actions at the level of Member States or by the private sector by over 60% of respondents.

It is widely agreed among stakeholders that it is necessary to increase funding for citizens digital health literacy, with over 90% agreeing to some extent. Views on the effectiveness and efficiency of these actions are divided. EU support for digital health literacy is however perceived to be coherent with support resources provided at the national level or by the private sector.

### 4.5.4 Action 14 – Indicators for added-value and benefit of eHealth

It is essential to measure and assess the added value of innovative eHealth products and services to achieve wider evidence-based eHealth deployment and create a competitive environment for eHealth solutions. The close cooperation between Member States and stakeholders in Health Technology Assessment (HTA) under the Directive on Patients’ Rights in Cross Border Healthcare and the EIP AHA will contribute to improving assessment methodologies and sharing clinical evidence on eHealth technologies and services. For this reason, the European Commission will make available under Action 14, from 2014, sets of common indicators to measure the added value and benefit of eHealth solutions, based on work funded by the European Commission in partnership with stakeholders.

**Status update**

Action 14 is a long-term, ‘support’ action. The Health Technology Assessment Network was set up as a Network of national authorities or bodies responsible for health technology assessment by the Commission Implementing Decision (2013/329/EU) of June 2013. The HTA Network adopted its work programme for the 2014 – 2015 period, with the overall aim to develop a vision on the long-term provisions for HTA cooperation in the EU. A strategy for EU cooperation on Health Technology

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Assessment was adopted by the Network in October 2014\textsuperscript{70} and a paper on the reuse of joint work in national HTA activities was published in April 2015\textsuperscript{71}. In addition, work has been conducted on a Model for Assessment of Telemedicine (MAST) to serve as a framework for the rigorous evaluation of telemedicine applications in healthcare. It was developed as part of the MethoTelemed project\textsuperscript{72} and piloted through the Renewing Health Pilot Type A project\textsuperscript{73}.

The European network for Health Technology Assessment Joint Action (EUnetHTA JA) project was established with the objective to develop effective and sustainable collaboration on HTA in Europe that brings added value at the regional, national and European level\textsuperscript{74}.

**Findings**

The figure below provides the overview of the answers in the survey to questions related to action 15.

*Figure 21 – Overview of Action 15 by survey respondents*

<table>
<thead>
<tr>
<th>Action 14 - There is a clear need for measurement of added value and benefits of eHealth solutions</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Somewhat agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>I do not know</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>46%</td>
<td>36%</td>
<td>10%</td>
<td>4%</td>
<td>4%</td>
<td>0%</td>
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</tbody>
</table>

**Relevance**

There is a clear need for measurement of the added value and benefits of eHealth solutions through a common set of indicators, according to stakeholders with 46\% of respondents strongly agreeing and 36\% agreeing.

Indeed, some Member States are starting to work autonomously on the assessment of eHealth solutions (e.g. the NICE in UK and the HAS in France), which supports the relevance of acting in the field.

There is a clear need for measurement of the added value and benefits of eHealth solutions through a common set of indicators

\textsuperscript{71} http://ec.europa.eu/health/technology_assessment/docs/reuse_jointwork_national_hta_activities_en.pdf.
\textsuperscript{72} www.telemed.no/methotelemed
\textsuperscript{73} http://www.renewinghealth.eu/
\textsuperscript{74} http://www.eunethta.eu/about-us
4.5.5 **Action 15 – Assessing costs, benefits, productivity and business models via the Health Technology Assessment (HTA)**

In addition, under Action 15, the European Commission will **assess cost benefits, productivity gains and business models, notably through Health Technology Assessment (HTA)**, during the period 2013-2016.

**Status update**

Action 15 is a short-term, ‘support’ action. The HTA Network adopted its work programme for the 2014 – 2015 period, with the overall aim to develop a vision on the long-term provisions for HTA cooperation in the EU. A strategy for EU cooperation on Health Technology Assessment was adopted by the Network in October 2014 and a paper on the reuse of joint work in national HTA activities was published in April 2015.

Initiatives and pilots for the assessment of telemedicine and eHealth technologies mentioned under Action 14 also contribute to Action 15.

**Findings**

The figure below provides the overview of the answers in the survey to questions related to action 15.

*Figure 22 – Overview of Action 15 by survey respondents*  

**Action 15 - There is a clear need for assessment of costs, benefits, productivity gains and business models**

- Strongly agree: 72%
- Agree: 16%
- Somewhat agree: 8%
- Disagree: 3%
- Strongly disagree: 0%
- I do not know: 3%

**Relevance**

There is a clear need for assessment of costs, benefits, productivity gains and business models of eHealth solutions, according to surveyed stakeholders, with 72% of respondents strongly agreeing for the relevance of Action 15.
There is a clear need for assessment of costs, benefits, productivity gains and business models of eHealth solutions

4.5.6 Key findings for Objective 3

The uptake and wider deployment of eHealth solutions can be facilitated by EU actions in several ways, including through clear and effective governance, support for research and development of mature solutions and encouraging their uptake by demonstrating clearly benefits for stakeholders, including users, as foreseen under objective 3 of the Action Plan.

- Stakeholders unanimously agree on the significant need for CEF to support large scale deployment of interoperable eHealth services under Action 11, but current efforts through large-scale projects seem to have limited stakeholder involvement besides national central administrations in Member States. In addition, stakeholders remain divided on the adequacy of funding under CEF to achieve cross-border interoperability objectives.

- There is a general consensus on the need for funding of large-scale projects on eHealth through CEF and ERDF under Action 12, which are generally considered effective and coherent with projects funded through other programmes. Stakeholders’ views on the adequacy of these funding are split however.

- It is widely agreed among stakeholders that it is necessary to increase funding for citizens eHealth digital literacy, with over 90% agreeing to some extent with the relevance of Action 13. Views on the effectiveness and efficiency of these actions are divided, but support is perceived to be coherent with other resources such as Member States or the private sector.

- There is a clear need for Action 14 seeking to measure the added value and benefits of eHealth solutions through a common set of indicators;

- There is a clear need for assessment of costs, benefits, productivity gains and business models of eHealth solutions as foreseen under Action 15.

4.6 Objective 4 – Promoting policy dialogue and international cooperation on eHealth at global level

4.6.1 Action 16 – Benchmarking eHealth at international level

Under Action 16, the European Commission shall enhance, from 2013, its work on data collection and benchmarking activities in health care with relevant national and international bodies to include more specific eHealth indicators and assess the impact and economic value of eHealth implementation.

Status update

Action 16 is a long-term, ‘support’ action. At EU level, the HTA Network works on the development of eHealth indicators and the assessment of costs and benefits of eHealth solutions and their implementation. Little information is available to date on progress of this action.
**Findings**

The figure below provides the overview of the answers in the survey to questions related to action 16.

*Figure 23 – Overview of Action 16 by survey respondents*

<table>
<thead>
<tr>
<th>Action 16</th>
<th>0%</th>
<th>10%</th>
<th>20%</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
<th>60%</th>
<th>70%</th>
<th>80%</th>
<th>90%</th>
<th>100%</th>
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<tbody>
<tr>
<td>There is a clear need for the EU to contribute to data collection and</td>
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<tr>
<td>benchmarking</td>
<td>35%</td>
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<tr>
<td>Resources of the EC are adequate to contribute to international</td>
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<tr>
<td>benchmarking work/development of indicators on eHealth</td>
<td>12%</td>
<td>19%</td>
<td>42%</td>
<td>8%</td>
<td>4%</td>
<td></td>
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<tr>
<td>EU actions contributed to data collection and benchmarking at EU level</td>
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<td></td>
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<tr>
<td>% 20%</td>
<td>32%</td>
<td>16%</td>
<td>8%</td>
<td>24%</td>
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<tr>
<td>Work undertaken at EU level is aligned with work of international</td>
<td></td>
<td></td>
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<tr>
<td>bodies (OECD, WHO)</td>
<td>5%</td>
<td>12%</td>
<td>44%</td>
<td>8%</td>
<td>8%</td>
<td>28%</td>
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<tr>
<td>EU action is aligned with MS contribution to work in international</td>
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<tr>
<td>bodies</td>
<td>8%</td>
<td>44%</td>
<td>8%</td>
<td>36%</td>
<td></td>
<td></td>
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</tbody>
</table>

**Relevance**

There is a clear need for the EU to contribute to data collection and benchmarking according to surveyed stakeholders, with 35% strongly agreeing and 46% agreeing. The EU could contribute to benchmarking at international level based on results of Action 14 and 15 of the eHAP.

**Effectiveness**

It is however not clear among the stakeholder community whether EU actions contributed to data collection and benchmarking at EU level: while 20% of surveyed stakeholders agree that EU action has contributed to data collection and benchmarking at EU level, close to 25% disagree and another 25% are uncertain.

**Efficiency**

Similarly, it is unclear whether resources of the EC are adequate to contribute to international benchmarking work/development of indicators on eHealth: while over 30% of stakeholders agree and 42% somewhat agree, 15% of stakeholders are uncertain about this and 12% would disagree.

**Coherence**

Coherence between EU action in this area and action undertaken in international bodies through Member States and the European Commission is unclear as well. Close to 40% of stakeholders do not know whether EU action is aligned with MS contribution to work in international bodies and 30% of
respondents do not know whether work undertaken at EU level is aligned with work of international bodies (OECD, WHO).

While there is a clear need for the EU to contribute to data collection and benchmarking according to stakeholders, the effectiveness of current actions and their coherence with actions undertaken in other international bodies is unclear to stakeholders.

4.6.2 Action 17 – Promote global discussion on eHealth

Under Action 17, the European Commission seeks to promote policy discussions on eHealth at global level, from 2013, in order to foster interoperability, the use of international standards, develop ICT skills, compare evidence of the effectiveness of eHealth, and promote ecosystems of innovation in eHealth.

Status update

Action 17 is a long term, ‘support’ action.

To date, international cooperation on eHealth has been progressing bilaterally with the United States and China. The Memorandum of Understanding with the United States is the most advanced in this area.

The Memorandum of Understanding between the EU and the US was signed in 2010 under the auspices of the Transatlantic Economic Council. A Roadmap was drafted to identify the key areas for action under the MoU. The 2013 Roadmap covering a time span of 18 months was drafted in 2013, and identified two high priority areas:

- Standards Development: DG CONNECT and HHS (US Department of Health and Human Services) – through the Office of the National Coordinator for Health IT (ONC) – developing an action plan to create standards to advance the development and use of internationally recognized standards which support transnational interoperability of electronic health information and communication technology;
- Workforce Development: DG CONNECT and ONC developing and expanding a skilled health IT workforce in Europe and the US.

A specific event on the Roadmap was organised as part of the last eHealth week in Riga.

Work is currently undergoing to draft an updated Roadmap. The new Roadmap will have a longer life span (about 3 years) and include the description of the main work streams for action. The new Roadmap will have annexes including more detailed action plans for each work streams, each covering about 12-18 months (and thus subject to frequent refreshing/updating).

A draft roadmap shall be published soon, for public consultation. A parallel consultation process shall be organised in the US as well.

Work under the new Roadmap will focus on interoperability and workforce skills, which together shall promote ecosystems for innovation. In more detail, the work on interoperability will build on a well-

75 See: https://www.healthit.gov/sites/default/files/HHS_EC_MOU_CooperationHealthInfo_and_ComTechSigned.pdf
76 See: https://www.healthit.gov/policy-researchers-implementers/eu-and-us-step-cooperation-ehealth-and-health-it
developed agreement on international patents, which shall be extended to the field of eHealth. The activity on workforce will link to the eCompetence framework developed under DG GROW.

**Findings**

The figure below provides the overview of the answers in the survey to questions related to action 17.

*Figure 24 – Overview of Action 17 by survey respondents*

<table>
<thead>
<tr>
<th>Action 17</th>
<th>% Strongly agree</th>
<th>% Agree</th>
<th>% Somewhat agree</th>
<th>% Disagree</th>
<th>% Strongly disagree</th>
<th>% I do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is a clear need for the EU to contribute to international policy dialogue on eHealth</td>
<td>62%</td>
<td></td>
<td>27%</td>
<td>27%</td>
<td>19%</td>
<td>0%</td>
</tr>
<tr>
<td>Resources of the EC are adequate to contribute to policy dialogue</td>
<td>27%</td>
<td>27%</td>
<td>19%</td>
<td>0%</td>
<td>23%</td>
<td></td>
</tr>
<tr>
<td>EU actions contributed to promote policy dialogue on eHealth at the global level</td>
<td>27%</td>
<td>44%</td>
<td>12%</td>
<td>4%</td>
<td>32%</td>
<td></td>
</tr>
<tr>
<td>EU actions contributed to enhance international cooperation on eHealth</td>
<td>16%</td>
<td>36%</td>
<td>12%</td>
<td>4%</td>
<td>32%</td>
<td></td>
</tr>
<tr>
<td>Work undertaken at EU level is aligned with work of international bodies (OECD, WHO)</td>
<td>27%</td>
<td>19%</td>
<td>15%</td>
<td>0%</td>
<td>38%</td>
<td></td>
</tr>
<tr>
<td>EU action is aligned with MS contribution to policy dialogue</td>
<td>20%</td>
<td>32%</td>
<td>12%</td>
<td>0%</td>
<td>36%</td>
<td></td>
</tr>
</tbody>
</table>

**Relevance**

*Over 95% of stakeholders agree that there is a clear need for the EU to contribute to international policy dialogue on eHealth, with 62% strongly agreeing.*  

Effectiveness

It is apparent however that, to date, EU actions is not perceived to have effectively contributed to promote policy dialogue on eHealth at the global level, with 32% of surveyed stakeholders unaware of EU action on eHealth at global level and over 15% disagreeing that this action was effective.

Moreover, it is unclear among stakeholders whether EU actions contributed to enhance international cooperation on eHealth, with a similar proportion of stakeholders unaware or disagreeing on the effectiveness of these actions.

The very limited amount of public information available on activities under Action 17, including the MoU with the US and the related initiatives, contributes to explain this negative evaluation among stakeholders.

**Efficiency**

Stakeholders however seem to consider the resources of the European Commission to be adequate to contribute to policy dialogue, with over 60% agreeing to some extent.

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77 See: [http://www.ecompetences.eu/](http://www.ecompetences.eu/)
Coherence

Close to 40% of stakeholders are unaware of the work undertaken at EU level and its coherence with work of international bodies (OECD, WHO). Among those that are aware, over 45% agree that EU action is coherent with work undertaking within international bodies while only 15% disagree.

Similar proportions are noted regarding the alignment of EU action and the contribution to global policy dialogue on eHealth by EU Member States.

Although there is a clear need for the EU to contribute to international policy dialogue on eHealth, awareness among stakeholders of the work undertaken by the EU in this respect is limited.

A new Roadmap is under development as part of the EU-US MoU on eHealth, complemented by detailed action plans for each work stream identified by the Roadmap. The work under the new Roadmap will focus on interoperability and workforce skills, which together shall promote ecosystems for innovation.

However, stakeholders do not seem to have a clear view of the activities carried out so far, and of the plans for future activities.

4.6.3 Key findings for Objective 4

Concerns about the EU lagging behind other parts of the world in eHealth and the competition EU businesses, including SMEs, involved in eHealth are facing result in perceptions among stakeholders that Objective 4 is essential.

- While there is a clear need for the EU to contribute to data collection and benchmarking according to stakeholders, as foreseen under Action 16, the effectiveness of these actions and their coherence with actions undertaken in other international bodies is unclear to stakeholders.
- Although there is a clear need for the EU to contribute to international policy dialogue on eHealth through Action 17, awareness among stakeholders of the work undertaken by the EU in this respect is limited, including of the EU-US MoU on eHealth.
5 Impacts and Added value

5.1 Introduction

In the context of this evaluation, carried out after two years into the eHealth Action Plan, it is not realistic to expect to be able to follow a causality flow from inputs (action) to impacts as the impacts are unlikely to have materialised yet and outcomes can thus not be measured. In addition, most actions are ongoing and have produced limited outputs to date. For this reason, impacts are addressed through a qualitative assessment of expected impacts and added-value of the 2012 – 2020 eHealth Action Plan are evaluated to the eHAP as a whole, rather than action by action, for the purpose of this evaluation.

The main expected impacts of the eHAP include:

- Raising awareness;
- Better coordination and cooperation on eHealth at EU level;
- Increased transparency.

In terms of added-value, the eHAP is perceived as generating:

- Increased awareness, both internally within the European institutions and externally among stakeholders;
- Better coordination and cooperation within the European Commission, with the adoption of a structured approach to cohesiveness in action between involved DGs;
- Better coordination and cooperation with external stakeholders, especially with Member States through a framework for their activities;
- Coherence of eHealth actions at local, national and EU levels, which are brought together through the eHealth Action Plan.

Additionally, the Action Plan is perceived to provide solid grounds to support and validate public investment and funding of activities in eHealth.

Furthermore, an indirect impact and added-value of the eHealth Action Plan results from the underlying idea and overall objectives of bringing fundamental changes in health, focusing on citizens and patient empowerment.

5.2 Impacts and added value of the eHealth Action Plan

Better coordination and cooperation on eHealth at EU level is the most commonly reported expected impact of the 2012 – 2020 eHealth Action Plan by eHealth stakeholders, followed by raised awareness and increased transparency, as shown in the figure below. Among other expected impacts mentioned, attracting investments and funds from the private sector and research bodies is a common reported expected impact. Overall, close to 70% of respondents agree to some extent that the eHAP contributes to the achievement of eHealth objectives at EU level.
These expected impacts are in line with perceived added value of the Action Plan among stakeholders who see the added-value of the plan in its ability to generate better coordination and cooperation through a structured approach and cohesiveness in action at EU level. All actions on eHealth are indeed thought to be brought together through the eHAP, as the figure below shows. Better coordination and cooperation is also expect with external stakeholders, especially with Member States through a framework for their activities, in particular thanks for raised awareness.

However, the limited availability of public information about the status of several of the Actions included in the eHealth Action Plan reduce the overall impact on the eHAP on the transparency and awareness among the larger stakeholders’ group.
More generally, close to 70% of surveyed stakeholders believe that the eHAP contributes to an EU unified vision and development plan on eHealth and a similar proportion of respondents agree that all objectives of the eHAP are still relevant.

On the other less, there is less wide consensus on the eHAP contribution to a paradigm shift in the health sector, leading to empowerment of citizens and patients, a stronger cross-border dimension of eHealth, among others.

Figure 26 – Perceived added-value of the eHealth Action Plan 2012–2020

Figure 27 – Vision of the 2012 – 2020 eHealth Action Plan
In particular, the five most relevant actions in stakeholders’ views related to technical and semantic interoperability, cross-border governance processes, funding of research, deployment of eHealth solutions and the assessment of cost, benefits and business models of eHealth solutions, as listed in the figures below. On the other hand, actions on the technical and legal support for SMEs and a common set of indicators for the assessment of eHealth solutions seem to be the least relevant according feedback from stakeholders, with 18% and 8%, respectively, of stakeholders disagreeing or strongly disagreeing on the need for such action from the European Commission. This result relates with the stakeholders’ assessment of Action 10 (Support for a competitive eHealth market), which was considered relevant but not particularly effective in supporting SMEs eHealth to achieve objectives of RDI and competitiveness. Furthermore, the lack of publicly available information on some of the eHAP actions (such as those on common set of indicators) is an important factors in explaining the stakeholders’ assessment: all those who are not directly involved in the actions, do not have a good overview of the activities and progress in the area, and thus often fail to see the relevance and effectiveness of action at EU level.

78 See section 4.4.3
5.3 Open issues and missing elements

Despite the acknowledgement of the added-value of the eHealth Action Plan, stakeholders have reported several remaining challenges.

The main challenge noted is interoperability at all levels and standardisation which remain incomplete although essential to the achievement of other objectives. In addition, technical interoperability should not hinder the maintenance of the highest possible standards of usability and, most crucially, data
protection and confidentiality. Interoperability is indeed widely perceived as the main issue that ultimately prevents scalability of existing solutions and mass-market uptake. In this sense, although interoperability and standards are correctly identified as key topics in the eHAP and the work done in the eHealth EIF is close to achieving some of its goals, these actions should be tackled urgently in the view of stakeholders. In particular, in the context of the new Digital Single Market Strategy, more action will be needed to assess the need for a more “top-down” approach that can involve European standardisation bodies (notably CEN and ETSI) and achieve a more direct impact on Member State procurement. Stakeholders interviewed agree that interoperability (especially technical and semantic, as well as minimum patient data sets) represent the key pre-condition for quality cross-border healthcare within the European Union and a topic on which a decision should be taken soon, in order to progress. The Commission should take a leading role in the decision-making process, stakeholders affirm.

An additional challenge to the development and deployment of eHealth services and solutions is linked to stakeholder involvement. Indeed, according to stakeholders themselves, stakeholder involvement is still limited in several areas, due to limited awareness but also procedures and costs related to participation in pilots and projects.

The figure below shows the actions of the eHAP with the most stakeholders involved (i.e. those actions with over 60% of respondents out of the total answers to the online survey).

*Figure 29 – Top 5 Actions with the highest number of respondents*

<table>
<thead>
<tr>
<th>Action</th>
<th>% of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action 10 on support to entrepreneurs</td>
<td>74%</td>
</tr>
<tr>
<td>Action 6 on mHealth</td>
<td>73%</td>
</tr>
<tr>
<td>Action 8 on support through H2020</td>
<td>71%</td>
</tr>
<tr>
<td>Action 15 on the assessment of costs, benefits, productivity gains and business models of eHealth solutions.</td>
<td>66%</td>
</tr>
<tr>
<td>Action 5 on the study on electronic health records.</td>
<td>63%</td>
</tr>
</tbody>
</table>

On the other hand of the spectrum, the figure below shows the actions of the eHAP in which stakeholders seem least involved (i.e. those actions with less than 1/3 of respondents out of the total answers to the online survey).
Not surprisingly, the actions with the highest number of respondents (proxy for higher level of awareness, if not involvement) relate to funding of eHealth solutions (actions 10 and 8), and to studies and public consultations on mHealth and on electronic health records that have been disseminated (actions 6 and 5). Also, the assessment of costs and benefits from eHealth is quite popular among stakeholders, which is consistent with the findings presented earlier about the relevance of assessing eHealth, and with the activity in the field started by some Member States. The actions with the lowest number of respondents (used as a proxy for awareness, if not involvement) relate to the deployment of large-scale pilots and projects (actions 11 and 12), which in fact involve only a limited number of organisations in the few Member States participating, and to technical and semantic interoperability (action 3), which relies on H2020 and CEF projects such as SemanticHealthNet, Antilope, and EXPAND.

Such findings seem consistent with the general consideration of the low levels of awareness and knowledge of the Action Plan as a whole, and on how different actions and activities at European level are in fact inter-linked and leading to a common vision for eHealth.

Additional open issues emerged from stakeholders consultation include a lack of legal clarity for the deployment of eHealth solutions, for example regarding professional liability, reimbursement schemes for the use of eHealth services and solutions as well as the necessity to increasingly and adequately educate and train end-users.

5.4 Key findings on impacts and added-value of the eHAP

- **Better coordination, increased transparency and improved awareness** are among the most important impacts of the eHealth Action Plan 2012-2020, as shown in the figure below.
- The added-value of the eHAP is perceived in its ability to generate better coordination and cooperation through a **structured approach and cohesiveness in action at EU level**.
- **Interoperability remains the main challenge** reported by stakeholders, with effects on other barriers such as legal clarity and important variations between Member States’ eHealth strategies. Important work has been done, but a decision on interoperability (especially technic and semantic, as well as minimum patients data sets) needs to be taken soon.
- **Stakeholder involvement is also perceived** as essential for the successful achievement of objectives of the eHealth Action Plan.
6 Conclusions and Recommendations

This section presents the main conclusions of the study, deriving from the evidence and the examples presented in the previous section. It also presents a set of recommendations for the mid-term revision of the eHealth Action Plan 2012-2020.

6.1 Conclusions

The eHealth Action Plan 2012-2020 represents a long-term, wide plan for the Commission’s actions on eHealth, to be complemented and supported by further activities in Member States.

The distinction we introduced between short-term and long-term actions, and between ‘do’ and ‘support’ actions aims at representing the heterogeneity of its actions, as it includes both actions that are under the direct control or responsibility of the eHealth Action Plan (e.g. ‘do’ a study, etc.) and actions that provide support to several other policy actions and initiatives which are under the direct control/responsibility of other programmes/initiatives. In addition, it includes some actions to be concluded in a short period of time, while the majority is constituted by long-term actions (i.e. actions that extend over the entire life of the eHAP).

In fact, the majority of the actions of the eHAP is represented by long-term, ‘support’ actions that require continuous support and coordination with the responsible organisations, as well as with the large ecosystem of stakeholders that is active in the field of eHealth, including:

- Other EU institutions;
- Member States;
- Research bodies;
- Academia:
- Private sector;
- IT organisations and developers of applications;
- International organisations, and
- Standard Development Organisations.

The intermediate evaluation of the eHAP 2012-2020 focused on the following elements:

- Awareness of the eHAP as a whole and of its actions;
- Relevance
- Efficiency
- Effectiveness
- Coherence and
- Impacts and added value of the eHAP.
The results of the intermediate evaluation of the eHAP highlighted the limited awareness of the Plan as a whole among stakeholders, including those directly involved in some of the actions. Similarly, knowledge of the actions composing the eHAP appears to be limited, and scattered among stakeholders, with some exceptions. For instance, actions supporting research via the H2020 programme and the Green Paper on mHealth are actions better known among stakeholders, as they have been widely promoted. The limited amount of publicly available information on the eHAP as a whole, and on many of its actions (including on the results achieve so far) contribute to the limited awareness, as well as to the (perceived) low efficiency and/or effectiveness of some of the Actions.

All the actions included in the eHealth Action Plan are considered as relevant by stakeholders, as they correspond to the priorities of the stakeholders, and to the national and European priorities. This applies to actions in the area of interoperability of eHealth solutions across the EU (actions under Objective 1 of the eHAP), to research, development and innovation in eHealth and wellbeing (actions under Objective 2), to uptake and wider deployment of eHealth solutions (actions under Objective 3) and to measure and assess the added value of innovative eHealth products and services (actions under Objective 4).

The evaluation of the efficiency of the actions under the eHAP is less unanimous. While many of the actions are considered as efficient (i.e. the resources – financial and/or organisational – available are sufficient and produce results in an efficient way), some others require additional (financial) resources. This is the stakeholders’ opinions for action 2 (Guidelines on patients’ summaries and interoperable electronic identification and authentication), for actions 8 and 10 (on support to research and entrepreneurs) and for actions 11, 12 and 13 (on uptake and wider deployment of eHealth solutions). Such a result should not surprise, as stakeholders are in general more attentive (and more aware) of funding opportunities, and also more involved in deployment.

Similarly, opinions about the effectiveness of the actions under the eHAP are mixed. Some actions are perceived as effective, such as Actions 3 and 5, but others In particular, stakeholders expressed some concerns on the effectiveness of the implementation of some of the actions, such as action 3 (more should be done to establish semantic and technical cross-border interoperability), action 4 (more support to harmonisation of national legislation and better and more efficient cooperation among Member States are called for), action 8 (the most recent trends and innovations in eHealth are not always timely addressed by the H2020 Work programme), actions 11 and 13 (where practical implementation should involve more in-depth stakeholders in the policy-making process).

In general, opinions on coherence are quite positive. Overall, the objectives of the eHAP are considered as coherent with the rest of the elements of the eHAP (internal coherence) and with other EU actions in the field (external coherence), with a few exceptions. For instance, in the case of action 5, doubts remain on whether the study on national electronic records has actually contributed to coherence between Member States’ legislations. In addition, actions 16 and 17 (on collecting indicators for measuring added-value and costs and benefits of eHealth and the international policy dialogue) are not very clear to stakeholders, who perceive their importance but fail to see the links and coherence with national, EU and international actions in the field.

Finally, concerning the overall (expected) impacts of the eHAP, better coordination, increased transparency and improved awareness are among the most important ones according to stakeholders. This opinion is shared by ‘institutional’ stakeholders (i.e. stakeholders directly involved in the implementation of the eHAP and/or of its actions) and other stakeholders (such as IT providers and eHealth entrepreneurs and developers, researchers, etc.).
The added-value of the eHAP is perceived in its ability to generate better coordination and cooperation through a structured approach and cohesiveness in action at EU level. Stakeholder involvement is also perceived as essential for the successful achievement of objectives of the eHealth Action Plan, and as something that should improve under the eHAP.

Interoperability remains the main challenge reported by stakeholders, with effects on other barriers such as legal clarity and important variations between Member States’ eHealth strategies. Stakeholders agree that a lot has been done in the field, but there are still key issues to be solved. Stakeholders interviewed agree that interoperability (especially technical and semantic, as well as minimum patient data sets) represent the key pre-condition for quality cross-border healthcare within the European Union and a topic on which a decision should be taken soon, in order to progress. The Commission should take a leading role in the decision-making process, stakeholders affirm.

6.2 Recommendations

The first recommendation point concerns the duration of the eHAP, and possible mechanisms to ensure its relevance throughout its entire life-span. To be effective, an action plan must be embedded in a continuous policy cycle. This includes thoroughgoing collaborative design of the Action Plan by the Commission and the Member States, starting from a common vision, containing concrete measurable agreed objectives, an effective implementation and monitoring mechanism, and holistic approach with all the relevant Commission services working on related issues involved and an excellent permanent evaluation system.

The eHealth Action Plan 2012-2020 has nine year time span, which could prove too long given the fast evolution of technology and users’ needs. It has five years left of its life-cycle, In a rapidly changing world with very fast evolving technology, a static nine years period seems too long for an Action Plan. A system of a ‘rolling’ plan with a bi-yearly review and adapt cycle, would be more appropriated to keep track of change and ensure that the Plan includes the most relevant issues and actions and reflect changes and developments in eHealth technology, standards and practices. Such mechanism should also include how to re-use and disseminate the successful outcomes of H2020 projects (linking thus to the communication efforts mentioned above).

In addition, the follow-up of successful actions is sometimes uncertain in the current eHealth framework. A specific function of the eHAP is to ensure that all relevant topics are included, and that the that outcomes of successful projects are fully leveraged for deployment and further work via the eHAP (e.g. SemanticHealthNet).

Thus it needs to be envisaged to design a more flexible Action Plans, with a longer time horizon, but with a rolling plan to be refreshed and update more often (e.g. a 10-years Action Plan, promoting a long-term vision, with 2 years updated rolling plans, to ensure the inclusion of relevant measures).

The update/refreshment exercise of the rolling plan could also include the large community of stakeholders, for instance via public consultations. Public consultations could in turn support the dissemination of the eHAP and in general of the activities in the field of eHealth at EU, and thus awareness. Of course, for these consultations to be effective, a larger awareness about the eHealth Action Plan and its Actions is necessary.

Linked to the rolling plan(s), and to the monitoring and reporting mechanisms envisaged under the previous recommendation, a set of Key Performance Indicators (KPIs) should be formulated. Such set
of indicators will support the management and governance of the different initiatives, as well as any assessment of the efficiency and effectiveness of the actions.

The update/refreshment exercise could also provide the opportunity to streamline the current structure of the eHealth Action Plan 2012-2020, and to restructure/merge those actions with clear overlaps, to avoid duplications and increase efficiency and effectiveness. For instance, Action 14 (Indicators for added-value and benefit of eHealth) and Action 15 (Assessing costs, benefits, productivity and business models via the Health Technology Assessment (HTA) have clear similarities in their objective and scope, and both are conducted with Health Technology Assessment (HTA) network. These actions could be streamlined and merged into one, with clear objectives and well defined timeline and KPI(s).

**Recommendation 1**

A systematic refreshing/updating mechanism should be foreseen, to ensure that the Plan includes the most relevant issues and actions. Such mechanism should also include how to re-use and disseminate the successful outcomes of H2020 projects.

The action plan can have a longer time horizon, but with a rolling plan to be refreshed and update more often (e.g. a 10-years Action Plan, promoting a long-term vision, with 2 years rolling plans, to ensure the inclusion of relevant measures).

The analysis of the actions of the eHAP pointed out heterogeneity of the actions composing the eHAP (many of them being long-term, ‘support’ actions). It is thus crucial to have a clear view of the governance structure of each of the action, and well-established monitoring and coordination mechanisms.

As part of our work, we have designed a dashboard, as a tool for the Commission to monitor the implementation of the activities under the eHealth Action Plan, to keep track of the achievements in relation to the set deadlines, and of existing coordination mechanisms (see annex B). Such dashboard is intended as an internal monitoring and reporting tool, reporting only the key information and easy to maintain and update.

The current version includes the following key elements (per each action):

- Classification of the actions: Do/support action;
- Inputs: Budget and Links with other Commission’s activities
- Results: Expected results and Intermediate results (especially relevant if it is a long-term action);
- Follow-up;
- Roles and responsibilities: Lead, Others, Coordination (the distinction is especially relevant in case of ‘do’ actions);
- Time/deadline: End of action (2020), Intermediate deadlines (if any), any change needed/implemented.

The current structure of the dashboard can of course be better tailored to the needs of the Commission while implementing the eHAP. However, we consider that having a simple and easy to maintain reporting and monitoring tool could represent a key element supporting the timely and effective implementation of eHAP. It clarifies timing, roles and responsibilities, and can point out to possible delays and/or issues, and support a quicker identification of problems.
Recommendation 2

It is crucial to have a clear view of the governance structure of each of the action, and well-established monitoring and coordination mechanisms. An internal monitoring and reporting tool (such as the dashboard proposed) clarifies timing, roles and responsibilities, and can point out to possible delays and/or issues, and support a quicker identification of problems.

A key point that emerges from the intermediate evaluation of the eHealth Action Plan is that **awareness of the Plan as a whole and of many of its actions among stakeholders is quite limited**. While the general public might not be necessarily interested to the entire Plan, but more to some specific action, the eHealth stakeholders’ community has a clear need of being informed about the variety of actions the Commission is coordinating and implementing in the field. In addition, stakeholders often fail to perceive the Commission’s actions in the field of eHealth as part of a broader and consistent vision for the sector to be achieved in the upcoming years, which is in fact one of the key added-value elements of the eHAP.

For instance, activities linked to Actions with a broad target, such as those on improving digital health literacy (action 13) could be disseminated towards the general public, while more technical activities (such as those on interoperability) could be communicated to the more restricted community of practitioners.

Overall, the stakeholders’ community has a very scattered vision of the eHealth Action Plan and in general of the work performed on eHealth at European level. For instance, many stakeholders from the private sectors (especially from SMEs and start-ups) find it difficult to follow the latest developments at EU policy level; and practitioners active at regional and local level encounter difficulties in participating to the policy debate (also linked to Recommendation 1).

A better awareness of the eHAP and its actions would also help conveying the work ongoing in the field of eHealth at EU level and within Member States, and achieving the final objectives of eHealth, i.e. improving access to care and quality of care and by making the health sector more efficient.

Better awareness could also lead to larger use of eHealth practices, and to a larger exchange of better practices and mutual learning across Member States.

Some of the stakeholders interviewed, including among Member States, stated that they could and should have a stronger role to play in the promotion of the eHealth Action Plan and in general of the work done in the field of eHealth at EU level. A simple and easily accessible communication package prepared by the Commission and made available for use would be very useful, stakeholders affirmed.

Ideally, a **targeted communication campaign could be designed and implemented**, using a set of communication and dissemination tools, such as the creation of a web-page for the eHAP, collecting all the key information about its structure and objectives, its actions and the results achieved, and the key documents/next steps. Since many of the actions under the eHAP already have their web-pages, the eHAP webpage should simply concentrate the relevant links to other Commission’s and external websites in one place, which should be the key entry point for any stakeholders looking for information on the eHAP. The communication campaign could include the use of social media channels (such as a Twitter account), in coordination with existing communication campaigns ongoing for specific actions.
Recommendation 3

Improving awareness about the eHealth Action Plan and in general of the activities carried out in the field at European level, in order to improve participation of stakeholders to the policy debate, the exchange of best practices and mutual learning, and the achievement of the final objectives of eHealth, i.e. improving access to care and quality of care and by making the health sector more efficient

Ideally, a targeted communication campaign could be designed and implemented.
# Annex A. Action fiches

## Action 1

<table>
<thead>
<tr>
<th>eHAP Objective</th>
<th>Objective 1: Achieving wider interoperability in eHealth services</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>eHAP Action</strong></td>
<td>Action 1: The European Commission, with the endorsement of the eHealth Network, will propose an eHealth Interoperability Framework based on the results of studies, pilots and research projects.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of action</th>
<th>Description of the eHAP action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term action</td>
<td>X Do action</td>
</tr>
<tr>
<td>Long-term action</td>
<td>Support action</td>
</tr>
</tbody>
</table>

**Description of the eHAP action**

Action 1 concerns the proposal for an eHealth Interoperability Framework for cross-border eHealth services, building upon eHealth roadmaps and the general European Interoperability Framework with its four levels of interoperability: legal, organizational, semantic and technical. The eHealth Interoperability Framework will also be based on the results of studies, pilots and research projects.

**Status and progress to date**

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<th>Status</th>
<th>Done</th>
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**Progress to date**

This is a short-term action, with a clearly defined timeline. An eHealth Interoperability Framework building upon eHealth roadmaps was proposed to the eHealth Network is main strategic and governance body at EU level to work towards cross-border interoperability – eHealth Network to produce guidelines for framework.

- eHGI discussion paper on semantic and technical interoperability

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Study carried out for DG CONNECT in 2012 on eHealth IOP Framework study report\(^\text{80}\)


epSOS pilot completed in 2014\(^\text{81}\), eSENS\(^\text{82}\) and STORK 2.0\(^\text{83}\) further developing eHealth pilots;

H2020 research: PHC-34-2014\(^\text{84}\)

CEF: work for the eHealth DSI will be launched in 2015 under CEF Work Programme 2015\(^\text{85}\)

<table>
<thead>
<tr>
<th>Stakeholders involved</th>
<th>EC (DG SANTE) for the proposal and eHealth Network for endorsement.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Links with other action</td>
<td>Provides the basis for actions related to EU-wide interoperability of eHealth solutions.</td>
</tr>
<tr>
<td>Next steps (if any)</td>
<td>The eHealth Interoperability Framework will be proposed for approval on the occasion of the second bi-annual meeting of the eHealth Network in November 2015.</td>
</tr>
</tbody>
</table>


\(^{81}\) [http://www.epsos.eu/](http://www.epsos.eu/)


## Action 2

<table>
<thead>
<tr>
<th>eHAP Objective</th>
<th>Objective 1: Achieving wider interoperability in eHealth services</th>
</tr>
</thead>
<tbody>
<tr>
<td>eHAP Action</td>
<td>Action 2: The European Commission will support the eHealth Network in producing guidelines on a dataset for patient summary records to be exchanged across borders, common measures for interoperable electronic identification and authentication in eHealth and will enhance security of health information and eHealth services and interoperability of databases for medicinal products.</td>
</tr>
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</table>

### Type of action

<table>
<thead>
<tr>
<th>Short-term action</th>
<th>Do action</th>
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<tbody>
<tr>
<td>Long-term action</td>
<td>Support action</td>
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</table>

### Description of the eHAP action

Interoperability of ICT-enabled solutions and of data exchange is the precondition for better coordination and integration across the entire chain of healthcare delivery and health data exchange, while unlocking the EU eHealth single market.

Under Action 2, the eHealth Network has the specific objective to draw up guidelines on a non-exhaustive list of data for patients’ summaries for health professionals and common measures for interoperable electronic identification and authentication to enable continuity of care and patient safety across borders and enhance security of health information and eHealth services and interoperability of databases for medicinal products.

Action 2 is a ‘support’ action, managed mainly in the eHealth Network (DG SANTE), with results of projects supporting the preparation of the guidelines, including through CEF Building Blocks. Guidelines for ePrescription and patient summaries have been proposed since 2013. Additionally, work has been conducted on identification and authentication funded under the CEF.

### Status and progress to date

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<th>Status</th>
<th>Ongoing</th>
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**Action 3**

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<tr>
<th>eHAP Objective</th>
<th>Objective 1: Achieving wider interoperability in eHealth services</th>
</tr>
</thead>
<tbody>
<tr>
<td>eHAP Action</td>
<td>Action 3: The European Commission will seek endorsement of the eHealth Network to: 1) establish the semantic and technical cross-border interoperability specifications and assets necessary for the eEIF; 2) propose an EU interoperability testing, quality labelling and certification framework for eHealth systems.</td>
</tr>
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**Type of action**

<table>
<thead>
<tr>
<th>Short-term action</th>
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<th>Do action</th>
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<tbody>
<tr>
<td>Long-term action</td>
<td></td>
<td>Support action</td>
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</table>

**Description of the eHAP action**

Several EU-funded projects are successfully testing and implementing standards, open and secure architecture, clinical workflows and subsets of terminologies as well as making policy recommendations, to prepare the deployment of eHealth services on a large scale.

Under Action 3, the European Commission proposes to boost interoperability by further developing and validating specifications and components: with the advice of the eHealth Network, more detailed specifications, for example for public

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procurement, will be identified in the framework of the new EU standardization regulation, contributing to the technical and semantic levels of the eHealth Interoperability Framework.

**Status and progress to date**

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<th>Ongoing</th>
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**Progress to date**

- epSOS delivered specifications, assets for interoperability
- EPXAND continued the work to bridge with CEF: [http://www.expandproject.eu/](http://www.expandproject.eu/)
- ISA JoinUp Community


<table>
<thead>
<tr>
<th>Stakeholders involved</th>
<th>European Commission (DG CONNECT, DG SANTE) and eHealth Network.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Links with other action</td>
<td>[…]</td>
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<tr>
<td>Next steps (if any)</td>
<td>[…]</td>
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</tbody>
</table>

**Action 4**

**eHAP Objective**

Objective 1: Achieving wider interoperability in eHealth services

**eHAP Action**

Action 4: The European Commission will support concrete steps towards greater integration of processes for cross-border eHealth. It will make proposals on organisational issues with the aim of facilitating cooperation in the EU.

**Type of action**

| Short-term action | X Do action |

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<th>Long-term action</th>
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**Description of the eHAP action**

Action 4 addresses the organizational layer of interoperability and concerns how organizations, such as public administrations in different Member States, cooperate to achieve their mutually agreed goals on eHealth. In practice, organizational interoperability implies integrating business processes and related data exchange and finding instruments to formalize mutual assistance, joint action and interconnected business processes in connection with cross-border service provision.

**Status and progress to date**

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<th>Status</th>
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**Progress to date**

Cooperation and integration processes between Member States have been defined through the large scale pilots such as the epSOS project, with the objective of ensuring the deployment eHealth services across Europe. The eHealth Network and the CEF foresee to implement these results and thereby address the next phase of cross-border eHealth processes, with interoperability being a work package in the work programme of the eH Network until 2018.

**Stakeholders involved**

European Commission (DG CONNECT, DG SANTE)

**Links with other action**

[...]

**Next steps (if any)**

[...]

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**Action 5**

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<tr>
<th>eHAP Objective</th>
<th>Objective 1: Achieving wider interoperability in eHealth services</th>
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</table>

| eHAP Action | Action 5: The European Commission will launch a study under the upcoming Health Programme 2014-2020 aimed at examining Member States’ laws on electronic health records in order to make recommendations to the eHealth Network on legal aspects of interoperability. |
# Action 5

## Description of the eHAP action

Action 5 related to the study launched by the European Commission in 2013 under the Health Programme 2014-2020 aimed at examining Member States’ laws on electronic health records in order to make recommendations to the eHealth Network on legal aspects of interoperability.

## Status and progress to date

<table>
<thead>
<tr>
<th>Status</th>
<th>Done</th>
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</thead>
<tbody>
<tr>
<td>Progress to date</td>
<td>The study is available via the following link: <a href="http://ec.europa.eu/health/ehealth/projects/nationallaws_electronichealthrecords_en.htm">http://ec.europa.eu/health/ehealth/projects/nationallaws_electronichealthrecords_en.htm</a>, and is accompanied by country reports for EU Member States.</td>
</tr>
<tr>
<td>Stakeholders involved</td>
<td>European Commission (DG SANTE - Health Programme).</td>
</tr>
<tr>
<td>Links with other action</td>
<td>[…]</td>
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<tr>
<td>Next steps (if any)</td>
<td>[…]</td>
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</table>

## Action 6

**Objective:** Objective 1: Achieving wider interoperability in eHealth services

**eHAP Action**

Action 6 - In response to the recommendations of the eHealth Task Force, the European Commission will adopt a Green Paper on mHealth and health and wellbeing applications.

## Type of action

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<tr>
<th>Type of action</th>
<th>Do action</th>
<th>Support action</th>
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<tbody>
<tr>
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<td>Long-term action</td>
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</table>

## Description of the eHAP action

An eHealth Task Force report and responses to the public consultation for the eHealth Action Plan both point to a strong interest in discussing:
the concept of ‘ownership’ and control of data while providing more clarity on the conditions for accessing and re-using health data for research and public health purposes

the flow of such data across health and care systems, if suitably protected.

In addition, eHealth and wellbeing ICT initiatives should integrate the principle of privacy by design and by default as well as make use of Privacy Enhancing Technologies (PET’s) for the deployment of trustworthy tools, as foreseen in the proposed Data Protection Regulation.

Status and progress to date

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Progress to date


Stakeholders involved

European Commission (DG CONNECT, H1)

Links with other action

[…]

Next steps (if any)

[…]

**Action 7**

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<tr>
<th>eHAP Objective</th>
<th>Objective 1: Achieving wider interoperability in eHealth services</th>
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<tbody>
<tr>
<td>eHAP Action</td>
<td>Action 7 - Guidance on the application of the Data Protection directive to eHealth data.</td>
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<tr>
<th>Type of action</th>
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According to Action 7, the European Commission will make use of the mechanisms foreseen in the EU data protection Regulation, to provide guidance on the application of the EU data protection law in respect of health services.

Status and progress to date

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<tr>
<th>Status</th>
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| Progress to date | The EU data protection reform is ongoing, with discussions on the updated Regulation on Data Protection still ongoing in the European Council under the ordinary legislative procedure of co-decision. To become law the proposed Regulation must be adopted by the Council of Ministers.

Justice and Home Affairs ministers reached a general approach on this regulation in June 2015. On the basis of this agreement, the Council can now begin negotiations with the European Parliament through trilogies – the first of which was planned for the end of June 2015. |
| Stakeholders involved | European Commission (DG CONNECT, DG JUST) and Member States through the Council as well as the European Parliament. |
| Links with other action | [...] |
| Next steps (if any) | Adoption of the regulation following institutional trilogues. |

Action 8

<table>
<thead>
<tr>
<th>eHAP Objective</th>
<th>Objective 2: Supporting R&amp;D, innovation and competitiveness in eHealth</th>
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<tbody>
<tr>
<td>eHAP Action</td>
<td>Action 8 - During the period 2014-2020, research and innovation will be supported under &quot;Health, demographic change and wellbeing&quot; of Horizon 2020, in the areas of: 1) an ICT and computational science and engineering framework for digital, personalised, and predictive medicine, including advanced modelling and simulation; 2) innovative instruments, tools and methods for unlocking the value of data and for advanced analytics, diagnostics and decision making; 3) new digital media, web and mobile technologies and applications, as well as digital instruments that integrate healthcare and social care systems and support health promotion and prevention; 4) eHealth systems and services with strong user involvement.</td>
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focusing on interoperability and the integration of emerging patient-centric technologies for cost-effective healthcare.

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<td>Long-term action</td>
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**Description of the eHAP action**

Under Action 8, the European Commission will support research and innovation in eHealth under "Health, demographic change and wellbeing" of Horizon 2020, during the period 2014-2020:

- Short-term and mid-term research priorities include health and wellbeing solutions for citizens and health professionals, better quality of care, including of chronic diseases, while increasing citizens’ autonomy, mobility and safety. Particular attention is paid to the design and user-centricity of mobile technologies and applications. There will be an additional focus on ways of analysing and mining large amounts of data for the benefit of individual citizens, researchers, practitioners, businesses and decision makers.

- Longer-term research objectives address topics that can promote synergies between related science and technologies, and accelerate discoveries in the area of health and wellbeing. They include in silico medicine for improving disease management as well as prediction, prevention, diagnosis, and treatment of diseases. The eHealth Task Force recommended earmarking EU funds for user-driven innovation, support for fast prototyping and low thresholds for access to funding. To maximize the impact of the EU level measures, the full spectrum of research and innovation activities will be supported.

**Status and progress to date**

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**Progress to date**

H2020 is one of the financing mechanisms contributing to the funding of eHealth actions and research projects. The 2014-2015 Work Programme of H2020 for the Societal Challenges ‘Health, demographic and wellbeing’ (SC1) includes 32 topics in the ‘personalising health and care’ focus area call and 16 topics in the ‘coordination activities’. The total budget available for this challenge during the programming period is of approximately EUR
1.21 billion. The Work Programme aims to create opportunities for real breakthrough research and radical innovation in response to the challenges European healthcare systems are facing (e.g. ageing population, increasing burden from communicable and non-communicable diseases and the fall-out from the economic crisis), which are hampering the sustainability of European healthcare systems. The calls topics included in the Work Programme aim at supporting innovation and at translating its findings into clinic and healthcare settings to improve health outcomes, reduce health inequalities and promote active and healthy ageing.

Two rounds of calls were launched for eHealth projects under H2020:

A first round of calls was launched in December 2013, with deadline to apply mid-April 2014:
- PHC-26-2014: Self-management of health and disease: citizen engagement and health (this call includes the mHealth topic);
- PHC-34-2014: eHealth interoperability.

A second round of calls was opened in July 2014, with deadline to apply by mid-April 2015:
- PHC-25-2015: Advanced ICT systems and services for integrated care;
- PHC-27-2015: Self-management of health and disease and patient empowerment supported by ICT;
- PHC-28-2015: Self-management of health and disease and decision support systems based on predictive computer modelling used by the patient him or herself;
- PHC-29-2015: Public procurement of innovative eHealth services;

| Stakeholders involved | European Commission (DG CONNECT, DG RTD) |
**Action 9**

<table>
<thead>
<tr>
<th>eHAP Objective</th>
<th>Objective 2: Supporting R&amp;D, innovation and competitiveness in eHealth</th>
</tr>
</thead>
<tbody>
<tr>
<td>eHAP Action</td>
<td>Action 9 - The European Commission encourages Member States involvement in the EIP AHA to help them develop and share their national (including regional) eHealth strategies, taking into account international recommendations, and deploying promising solutions for active and healthy ageing at a larger scale.</td>
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**Type of action**

<table>
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<tr>
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<th>Do action</th>
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<tr>
<td>Long-term action</td>
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<tr>
<td>Support action</td>
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</table>

**Description of the eHAP action**

Action 9 concerns the support provided by the European Commission to the National eHealth strategies. Indeed, from 2012, the European Commission encourages Member States involvement in the EIP AHA to help them develop and share their national (including regional) eHealth strategies, taking into account international recommendations, and deploying promising solutions for active and healthy ageing at a larger scale.

**Status and progress to date**

<table>
<thead>
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<th>Status</th>
<th>Ongoing</th>
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<tbody>
<tr>
<td>Progress to date</td>
<td>The first European Summit on Innovation for Active and Healthy Ageing was organised in Brussels in March 2015, with over 1400 participants from government, civil society, investment and finance, industry and academia. The Summit built on ongoing EU initiatives on health and demographics, including in the area of eHealth.</td>
</tr>
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</table>

**Stakeholders involved**

European Commission (DG SANTE)

**Links with other action**

[...]

**Next steps (if any)**

[...]
### Action 10

<table>
<thead>
<tr>
<th>eHAP Objective</th>
<th>Objective 2: Supporting R&amp;D, innovation and competitiveness in eHealth</th>
</tr>
</thead>
<tbody>
<tr>
<td>eHAP Action</td>
<td>Action 10 - Between 2013-2020, the Commission will support actions to improve the market conditions for entrepreneurs developing products and services in the fields of eHealth and ICT for wellbeing.</td>
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<tr>
<th>Type of action</th>
<th>Short-term action</th>
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<td>Long-term action</td>
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<td>Support action</td>
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<tr>
<th>Description of the eHAP action</th>
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<tbody>
<tr>
<td>Under Action 10, the European Commission fosters the development of a competitive eHealth market, through business support and improved market conditions by ensuring the right legal and market conditions for entrepreneurs to develop products and services in the fields of eHealth and wellbeing is important to support market growth in this area. The European Commission therefore support, starting within FP7, mechanisms such as:</td>
</tr>
<tr>
<td>- SME networking, including of high technology incubators;</td>
</tr>
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<td>- an annual eHealth week;</td>
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<tr>
<td>- legal and other advice and training to eHealth start-ups (cf. iLinc <a href="http://www.ilinc.com/">http://www.ilinc.com/</a>)</td>
</tr>
<tr>
<td>- business modelling studies to facilitate closer cooperation among stakeholders, research bodies, industry and those responsible for implementing ICT tools and services, to enable faster and wider take-up of research results in the market.</td>
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The eHealth Network meeting, a mHealth Summit Europe, EU SME eHealth Competition and an onsite Matchmaking Event were organised on the margins of these two main events, targeting EU SMEs involved in eHealth and mHealth.

Stakeholders involved
European Commission (DG CONNECT, H1)

Links with other action
[...]

Next steps (if any)
[...]

Action 11

<table>
<thead>
<tr>
<th>eHAP Objective</th>
<th>Objective 3: Facilitating uptake and ensuring wider deployment of eHealth</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>eHAP Action</strong></td>
<td>Action 11 - the European Commission will prepare the governance for the large scale deployment of interoperable eHealth services under the CEF 2014 – 2020, taking into account the recommendations of the eHealth Network.</td>
</tr>
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</table>

**Type of action**

<table>
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<tr>
<th>Short-term action</th>
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<th>Do action</th>
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<tr>
<td>Long-term action</td>
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</table>

**Description of the eHAP action**

Among other objectives, the Connecting Europe Facility (CEF) (cf. http://ec.europa.eu/digital-agenda/en/connecting-europe-facility) sets out to facilitate the deployment of cross-border interoperable ICT services of general interest such as eHealth by overcoming the barriers of the high initial investment costs and risks associated with this deployment.

Under Action 11, the European Commission prepares the governance for the large scale deployment of interoperable eHealth services under the CEF 2014 – 2020 and launch a governance plan for interoperability rules under CEF.

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94 HIMSS is a global, cause-based, not-for-profit organization focused on better health through information technology (IT). HIMSS leads efforts to optimize health engagements and care outcomes using information technology. See: [http://www.himss.eu/about](http://www.himss.eu/about).
The results of the large scale pilot epSOS (which ended in 2013, cf. http://www.epsos.eu) and other projects and studies will be adapted and taken forward in the CEF.

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<td><strong>Status</strong></td>
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<td><strong>Progress to date</strong></td>
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</table>

| Stakeholders involved       | European Commission (DG SANTE) and eHealth Network (sub-group eHSG) |
| Links with other action     | [...] |
| Next steps (if any)         | [...] |

**Action 12**

**eHAP Objective**

Objective 3: Facilitating uptake and ensuring wider deployment of eHealth

**eHAP Action**

Action 12 - The European Commission will leverage the CEF and the ERDF for the large scale deployment of innovative tools, the replicability of good practices and services for health, ageing and wellbeing, with a particular attention to improving equal access to services.

**Type of action**

| Short-term action | Do action |
| Long-term action  | X Support action | X |

**Description of the eHAP action**
The European Regional Development Fund (ERDF) provided in the previous programming period (2007-2013) approximately EUR 15 billion to ICT priorities (or 4.4% of total cohesion policy funds) to ensure access to basic broadband (EUR 2.3 billion) and supporting ICT applications and services for citizens and SMEs (EUR 12.7 billion), for the 27 Member States.

The Cohesion Policy 2014-2020 will further support EU ICT goals by investing in both ICT infrastructure and tools.

Under Action 12, the Commission will leverage both the CEF and the ERDF, during the period 2013-2020, for the large scale deployment of innovative tools, the replicability of good practices and services for health, ageing and wellbeing, with a particular attention to improving equal access to services.

### Status and progress to date

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<tbody>
<tr>
<td>Progress to date</td>
<td>From 2014 on, the CEF annual work programmes identify priorities and actions to be launched during any given year:</td>
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<tr>
<td></td>
<td>☑️ The CEF Work Programme 2014 was adopted in December 2014 and has been implemented since. The analysis and assessment of the technical maturity for each of the DSIs listed in the CEF Telecom guidelines, including those which have not met the eligibility criteria for 2014, e.g. eHealth services, eProcurement, interconnection of European business registers or Online Dispute Resolution, were identified as key programme support actions for this period.</td>
</tr>
<tr>
<td></td>
<td>☑️ The CEF Work Programme for 2015 has been adopted in November 2014. eHealth was identified as a ‘new mature DSI’ in this period. For this DSI, an indicative budget of 7.5 million will be made available under WP 15 for the core platform through procurement actions and a similar amount of 7.5 million will be made available for generic services through calls for proposals.</td>
</tr>
<tr>
<td>Stakeholders involved</td>
<td>European Commission (DG CONNECT, DG REGIO)</td>
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</tbody>
</table>
**Action 13**

<table>
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<tr>
<th>eHAP Objective</th>
<th>Objective 3: Facilitating uptake and ensuring wider deployment of eHealth</th>
</tr>
</thead>
<tbody>
<tr>
<td>eHAP Action</td>
<td>Action 13 - Starting with the Competitiveness and Innovation Programme and continuing under Horizon 2020, the Commission will support activities aiming at increasing citizens’ digital health literacy. For professionals (health and scientific communities) the focus will be on developing evidence-based clinical practice guidelines for telemedicine services with particular emphasis on nursing and social care workers.</td>
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<tr>
<th>Type of action</th>
<th>Short-term action</th>
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<th>Long-term action</th>
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<th>Support action</th>
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</table>

**Description of the eHAP action**

Lack of awareness of eHealth opportunities and challenges for users (citizens, patients, health and social care professionals), as demonstrated by the European Barometer on citizens digital health literacy, appears to remains a significant barrier in the deployment of eHealth solutions and prompted the launch of an Eurobarometer dedicated to EU citizens’ digital health literacy. Under Action 13, the European Commission will support activities aiming at increasing citizens’ digital health literacy.

**Status and progress to date**

<table>
<thead>
<tr>
<th>Status</th>
<th>Ongoing</th>
</tr>
</thead>
</table>

**Progress to date**

An EU barometer on digital health literacy was carried out in September 2014 to support the eHAP objective of raising awareness on eHealth among citizens. The barometer assessed the extent to which Europeans use the Internet and online resources to support and manage their own health, by assessing the type and sources of health-related information citizens search for using online and mobile technologies. It also assessed citizens’ satisfaction with the
information found and their future expectations for online health-related information.

For awareness, digital health literacy and workforce have been investigated among health professionals by eHSG through several projects: TeleSCoPE (code of practice), Momentum (telemedicine), Chain of Trust (digital health literacy) and Renewing Health (validation of telemedicine), and United4Health (deployment telemedicine services), SUSTAINS and PALANTE (impact of eHealth tools on patient empowerment).

<table>
<thead>
<tr>
<th>Stakeholders involved</th>
<th>European Commission (DG CONNECT, DG RTD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Links with other action</td>
<td>[…]</td>
</tr>
<tr>
<td>Next steps (if any)</td>
<td>[…]</td>
</tr>
</tbody>
</table>

### Action 14

<table>
<thead>
<tr>
<th>eHAP Objective</th>
<th>Objective 3: Facilitating uptake and ensuring wider deployment of eHealth</th>
</tr>
</thead>
<tbody>
<tr>
<td>eHAP Action</td>
<td>Action 14 - Sets of common indicators will be made available to measure the added value and benefit of eHealth solutions, based on work funded by the Commission in partnership with stakeholders.</td>
</tr>
</tbody>
</table>

| Type of action | Short-term action | Do action | Long-term action | X Support action | X |

<table>
<thead>
<tr>
<th>Description of the eHAP action</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is essential to measure and assess the added value of innovative eHealth products and services to achieve wider evidence-based eHealth deployment and create a competitive environment for eHealth solutions. The close cooperation between Member States and stakeholders in Health Technology Assessment (HTA) under the Directive on Patients' Rights in Cross Border Healthcare and the EIP AHA will contribute to improving assessment methodologies and sharing clinical evidence on eHealth technologies and services.</td>
</tr>
</tbody>
</table>
For this reason, the European Commission will make available under Action 14, from 2014, sets of common indicators to measure the added value and benefit of eHealth solutions, based on work funded by the European Commission in partnership with stakeholders.

### Status and progress to date

<table>
<thead>
<tr>
<th>Status</th>
<th>Ongoing</th>
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</thead>
</table>
| **Progress to date** | Action 14 is a long-term, ‘support’ action. The Health Technology Assessment Network was set up as a Network of national authorities or bodies responsible for health technology assessment by the Commission Implementing Decision (2013/329/EU) of June 2013\(^95\). The HTA Network adopted its work programme for the 2014 – 2015 period, with the overall aim to develop a vision on the long-term provisions for HTA cooperation in the EU\(^96\). A strategy for EU cooperation on Health Technology Assessment was adopted by the Network in October 2014\(^97\) and a paper on the reuse of joint work in national HTA activities was published in April 2015\(^98\).

In addition, work has been conducted on a Model for Assessment of Telemedicine (MAST) to serve as a framework for the rigorous evaluation of telemedicine applications in healthcare. It was developed as part of the MethoTelemed project\(^99\) and piloted through the Renewing Health Pilot Type A project\(^100\).

The European network for Health Technology Assessment Joint Action (EUnetHTA JA) project was established with the objective to develop effective and sustainable collaboration on HTA in Europe that brings added value at the regional, national and European level\(^101\). |


\(^99\) [www.telemed.no/methotelemed](http://www.telemed.no/methotelemed).

\(^100\) [http://www.renewinghealth.eu/](http://www.renewinghealth.eu/).

<table>
<thead>
<tr>
<th>Stakeholders involved</th>
<th>European Commission (DG SANTE) and HTA Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Links with other action</td>
<td>Link with actions 15 and 16.</td>
</tr>
<tr>
<td>Next steps (if any)</td>
<td>[…]</td>
</tr>
</tbody>
</table>

**Action 15**

<table>
<thead>
<tr>
<th>eHAP Objective</th>
<th>Objective 3: Facilitating uptake and ensuring wider deployment of eHealth</th>
</tr>
</thead>
<tbody>
<tr>
<td>eHAP Action</td>
<td>Action 15 - During the period 2013-2016, the Commission will assess cost benefits, productivity gains and business models, notably through Health Technology Assessment (HTA).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of action</th>
<th>Description of the eHAP action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term action</td>
<td>X Do action</td>
</tr>
<tr>
<td>Long-term action</td>
<td>Support action</td>
</tr>
</tbody>
</table>

**Status and progress to date**

<table>
<thead>
<tr>
<th>Status</th>
<th>Ongoing</th>
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</table>

**Progress to date**

Action 15 is a short-term, ‘support’ action. The HTA Network adopted its work programme for the 2014 – 2015 period, with the overall aim to develop a vision on the long-term provisions for HTA cooperation in the EU. A strategy for EU cooperation on Health Technology Assessment was adopted by the Network in October 2014 and a paper on the reuse of joint work in national HTA activities was published in April 2015.

Initiatives and pilots for the assessment of telemedicine and eHealth technologies mentioned under Action 14 also contribute to Action 15.
### Action 16

<table>
<thead>
<tr>
<th>Stakeholders involved</th>
<th>European Commission (DG SANTE) and HTA Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Links with other action</td>
<td>Links with actions 14 and 16.</td>
</tr>
<tr>
<td>Next steps (if any)</td>
<td>[…]</td>
</tr>
</tbody>
</table>

#### eHAP Objective

Objective 4: Promoting policy dialogue and international cooperation on eHealth at global level

#### eHAP Action

Action 16 - The European Commission shall enhance its work on data collection and benchmarking activities in health care with relevant national and international bodies to include more specific eHealth indicators and assess the impact and economic value of eHealth implementation.

<table>
<thead>
<tr>
<th>Type of action</th>
<th>Description of the eHAP action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term action</td>
<td>Do action</td>
</tr>
<tr>
<td>Long-term action</td>
<td>X Support action</td>
</tr>
</tbody>
</table>

#### Status and progress to date

<table>
<thead>
<tr>
<th>Status</th>
<th>Ongoing</th>
</tr>
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</table>

| Progress to date | At EU level, the HTA Network works on the development of eHealth indicators and the assessment of costs and benefits of eHealth solutions and their implementation. Little information is available to date on progress of this action. |

<table>
<thead>
<tr>
<th>Stakeholders involved</th>
<th>European Commission (DG CONNECT, DG SANTE) and HTA Network.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Links with other action</td>
<td>Links with actions 14 and 15. Also links with Action 17.</td>
</tr>
</tbody>
</table>
### Action 17

<table>
<thead>
<tr>
<th>eHAP Objective</th>
<th>Objective 4: Promoting policy dialogue and international cooperation on eHealth at global level</th>
</tr>
</thead>
<tbody>
<tr>
<td>eHAP Action</td>
<td>Action 17 - The European Commission shall promote policy discussion on eHealth at global level to foster interoperability, the use of international standards, develop ICT skills, compare evidence of the effectiveness of eHealth, and promote ecosystems of innovation in eHealth</td>
</tr>
</tbody>
</table>

#### Type of action

<table>
<thead>
<tr>
<th>Type of action</th>
<th>Short-term action</th>
<th>Long-term action</th>
<th>Support action</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Do action</td>
<td><strong>X</strong></td>
<td><strong>X</strong></td>
</tr>
</tbody>
</table>

#### Description of the eHAP action

Under Action 17, the European Commission shall promote policy discussions on eHealth at global level, from 2013, in order to foster interoperability, the use of international standards, develop ICT skills, compare evidence of the effectiveness of eHealth, and promote ecosystems of innovation in eHealth.

#### Status and progress to date

<table>
<thead>
<tr>
<th>Status</th>
<th>Ongoing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progress to date</td>
<td>To date, international cooperation on eHealth has been progressing bilaterally with the United States and China. The Memorandum of Understanding negotiated with the United States is the most advanced in this area. The Memorandum of Understanding between the EU and the US was signed in 2010 under the auspices of the Transatlantic Economic Council. A Roadmap[^102] was drafted to identify the key areas for action under the MoU in 2013, covering a time span of 18 months and identifying two high priority areas: Standards Development: and Workforce Development.</td>
</tr>
</tbody>
</table>

Work is currently undergoing to draft an updated Roadmap. The new Roadmap will have a longer life span (about 3 years) and include the description of the main work streams for action. The new Roadmap will have annexes including more detailed action plans for each work streams, each covering about 12-18 months (and thus subject to frequent refreshing/updating).

<table>
<thead>
<tr>
<th>Stakeholders involved</th>
<th>European Commission (DG CONNECT)</th>
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<tbody>
<tr>
<td>Links with other action</td>
<td>Links with Action 16.</td>
</tr>
<tr>
<td>Next steps (if any)</td>
<td>[…]</td>
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</tbody>
</table>
## Annex B. Dashboard

<table>
<thead>
<tr>
<th>Action</th>
<th>Do/ support</th>
<th>Input</th>
<th>Results</th>
<th>Follow-up</th>
<th>Roles and responsibilities</th>
<th>Time/deadlines</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2020* 2015</td>
</tr>
<tr>
<td><strong>Action 1</strong></td>
<td>Support</td>
<td>/</td>
<td>CEF design and implementation, ANTILOPE project</td>
<td>Endorsement of eHealth Interoperability Framework by eHealth Network</td>
<td>Proposal of eHealth Interoperability Framework by the EC</td>
<td>CONNECT eHealth Network</td>
</tr>
<tr>
<td><strong>Action 2</strong></td>
<td>Support</td>
<td>/</td>
<td>Links with CEF and mature DSIs including ePrescription and eID.</td>
<td>Guidelines on a dataset for patient summary records to be exchanged across borders, common measures for interoperable electronic identification and authentication in eHealth</td>
<td>Guidelines for ePrescription and patient summaries have been proposed since 2013. Additionally, work has been done on eID as part of CEF.</td>
<td>CONNECT SANTE eHealth Network</td>
</tr>
<tr>
<td>Action 3</td>
<td>Support</td>
<td>/</td>
<td>semantic and technical cross-border interoperability specifications and assets necessary for the eEIP EU interoperability testing, quality labelling and certification framework for eHealth systems.</td>
<td>CONNECT SANTE eHealth Network</td>
<td>2015</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Action 4</td>
<td>Support</td>
<td>/</td>
<td>Greater integration of processes for cross-border eHealth for better cooperation at EU level.</td>
<td>SANTE CONNE CT</td>
<td>2015</td>
<td></td>
</tr>
<tr>
<td>Action 5</td>
<td>Do</td>
<td>/</td>
<td>Study on electronic health records.</td>
<td>The study is published and available online.</td>
<td>SANTE (health programme) CONNE CT</td>
<td>2013</td>
</tr>
<tr>
<td>Action 6</td>
<td>Do</td>
<td>/</td>
<td>Links with directives and Publication of paper</td>
<td>N/A Public consultation</td>
<td>CONNECT N/A Internal?</td>
<td>2014</td>
</tr>
</tbody>
</table>

Budget Links Expected results Intermediate results Follow-up Roles and responsibilities Time/deadlines

<table>
<thead>
<tr>
<th>Lead</th>
<th>Others</th>
<th>Coordination</th>
<th>End of action (2020)</th>
<th>Intermediate deadlines (if any)</th>
</tr>
</thead>
</table>

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<table>
<thead>
<tr>
<th>Action 7</th>
<th>Do/ support</th>
<th>Do</th>
<th>Input</th>
<th>Results</th>
<th>Follow-up</th>
<th>Roles and responsibilities</th>
<th>Time/deadlines</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>H2020-funded projects (PHC-26-2014, PHC-27-2015 and PHC-28-2015)</td>
<td>EU data protection reform through the update of the Regulation on Data Protection.</td>
<td>The first of institutional triologue took place at the end of June 2015.</td>
<td>To become law the proposed Regulation must be adopted by the European Parliament the Council of Ministers through the codecision procedure.</td>
<td>JUST CONNECT</td>
</tr>
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<td></td>
<td>Lead</td>
<td>Others</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>JUST</td>
<td>CONNECT</td>
</tr>
<tr>
<td>Action 8</td>
<td>Do</td>
<td>Approx. EUR 1.21 billion</td>
<td>Support for research and innovation will be supported under &quot;Health, demographic change and wellbeing&quot; of Horizon 2020</td>
<td>Two rounds of calls launched for 2014 and 2015.</td>
<td></td>
<td>CONNECT</td>
<td>RTD</td>
</tr>
<tr>
<td>Action 9</td>
<td>Support</td>
<td>/</td>
<td>EIP AHA</td>
<td>Support for Member States</td>
<td>The first European</td>
<td></td>
<td>CONNECT</td>
</tr>
<tr>
<td>Action</td>
<td>Do/ support</td>
<td>Input</td>
<td>Results</td>
<td>Follow-up</td>
<td>Roles and responsibilities</td>
<td>Time/deadlines</td>
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<tr>
<td>Action 10</td>
<td>Support</td>
<td>/</td>
<td>iLINC, eHealth week and events on the support for EU SMEs involved in eHealth.</td>
<td>and their national eHealth strategies through involvement in EIP AHA.</td>
<td>Summit on Innovation for Active and Healthy Ageing was organised in Brussels in March 2015.</td>
<td>SANTE, RTD</td>
<td>2020</td>
</tr>
<tr>
<td>Action 11</td>
<td>Support</td>
<td>/</td>
<td>Links to CEF, EXPAND and other large-scale projects under CIP and FP7 (i.e. epSOS, SemanticHealth Net, e-SENS).</td>
<td>Competitive eHealth market, through business support and improved market conditions</td>
<td>Annual eHealth weeks, work by iLINC and other incubators.</td>
<td>CONNECT</td>
<td>2013</td>
</tr>
<tr>
<td>Action 12</td>
<td>Support</td>
<td>/</td>
<td>CEF and ERDF</td>
<td>Large scale deployment of eHealth solutions.</td>
<td>From 2014 on, the CEF annual work programmes identify priorities and actions to be</td>
<td>CONNECT, DIGIT, REGIO EIP AHA</td>
<td>2020</td>
</tr>
<tr>
<td>Action</td>
<td>Do/ support</td>
<td>Input</td>
<td>Results</td>
<td>Follow-up</td>
<td>Roles and responsibilities</td>
<td>Time/deadlines</td>
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<td></td>
<td>Budget</td>
<td>Links</td>
<td>Expected results</td>
</tr>
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<td></td>
<td></td>
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</tr>
<tr>
<td>13</td>
<td>Support</td>
<td>/</td>
<td>Increased awareness on eHealth solutions and widespread use of these solutions.</td>
<td>Increased digital health literacy among citizens and professionals.</td>
<td>Action based on results of EU barometer.</td>
<td>CONNECT</td>
<td>RTD</td>
</tr>
<tr>
<td>14</td>
<td>Support</td>
<td>/ HTA Network</td>
<td>Common indicators to measure the added-value and benefit of eHealth solutions.</td>
<td></td>
<td></td>
<td>SANTE</td>
<td>SANTE and HTA Network</td>
</tr>
<tr>
<td>16</td>
<td>Support</td>
<td>/ eHealth governance bodies at national and</td>
<td>Data collection and benchmarking activities in health care in</td>
<td></td>
<td></td>
<td>CONNECT</td>
<td>HTA Network</td>
</tr>
<tr>
<td>Action 17</td>
<td>Do/ support</td>
<td>Input</td>
<td>Results</td>
<td>Follow-up</td>
<td>Roles and responsibilities</td>
<td>Time/deadlines</td>
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<tr>
<td></td>
<td></td>
<td>global level (WHO, ICU)</td>
<td>cooperation with relevant national and international bodies</td>
<td>Intermediate results</td>
<td></td>
<td>End of action (2020)</td>
<td>Intermediate deadlines (if any)</td>
</tr>
<tr>
<td></td>
<td>Support</td>
<td>/</td>
<td>Policy dialogue for widespread interoperability of eHealth solutions and the use of international standards</td>
<td>Promotion of policy dialogue.</td>
<td>CONNECT, SANTE</td>
<td>2020</td>
<td></td>
</tr>
</tbody>
</table>
### Annex C. Analytical Framework

<table>
<thead>
<tr>
<th>Main evaluation question</th>
<th>Sub-question</th>
<th>Judgement criterion</th>
<th>Indicators</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency of eHAP actions (inputs vs. outputs)</td>
<td>Have the objectives been achieved at the lowest cost? Could better effects be obtained at the same cost?</td>
<td>Were the actions carried out efficiently and were they cost effective? (Do and support actions)</td>
<td>The resources (inputs) for the action have been appropriate and proportional to the expected achievement (outputs)</td>
<td>Actual budget allocated to interoperability issues&lt;br&gt;Perception of the external experts/stakeholders on the adequacy of the total budget in relation to objectives and results&lt;br&gt;Budget distribution amongst the various fields of interoperability&lt;br&gt;Perception of the external experts/stakeholders on the adequacy of the budget distribution amongst the various fields of interoperability</td>
</tr>
<tr>
<td>Main evaluation question</td>
<td>Sub-question</td>
<td>Judgement criterion</td>
<td>Indicators</td>
<td>Sources</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Potential alternative solutions to the actions that would have generated the same result at a lower cost</td>
<td>Perception of the key stakeholders on whether alternative solutions would have resulted in the same or better results at a more reasonable cost</td>
<td>Desk research, semi structured interviews, stakeholder survey, expert input/review.</td>
</tr>
<tr>
<td></td>
<td>Have all relevant stakeholders been adequately involved and contributed to the actions? (Do and support actions)</td>
<td>The actions have adequately involved and received contribution from the relevant stakeholders</td>
<td>Perception of the key stakeholders on whether their involvement and contribution was adequate</td>
<td>Desk research, semi structured interviews, stakeholder survey, expert input/review.</td>
</tr>
</tbody>
</table>

**Effectiveness of eHAP actions (outputs/results/impacts vs. objectives)**

<p>| To what extent have the objectives been achieved? Have the interventions and instruments used produced the expected effects? Could more effects be obtained by using different instruments? | To what extent have the actions resulted in the expected outputs/results/impacts and contributed to achieving the objectives? (Do actions) | The outputs/results/impacts resulting from the actions have contributed to achieving the objectives | Correspondence between outputs, results, and impacts of the actions and their objectives (qualitative and quantitative) Perception of the key stakeholders on the correspondence between outputs, results, and impacts of the actions and their objectives (outcome) | Desk research, semi structured interviews, stakeholder survey, expert input/review. |
| To what extent have the activities carried out under the action supported/sustained the main policy initiatives? Have the interventions and instruments used produced | The outputs/results/impacts resulting from the actions have contributed to achieving the objectives of the main policy initiatives and instruments | Correspondence between outputs, results, and impacts of the actions and the objectives of the main policy initiatives and instruments (qualitative and quantitative) | Desk research, semi structured interviews, stakeholder survey, expert input/review. |</p>
<table>
<thead>
<tr>
<th>Main evaluation question</th>
<th>Sub-question</th>
<th>Judgement criterion</th>
<th>Indicators</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>the expected effects?</td>
<td>(Support actions)</td>
<td>Perception of the key stakeholders on the correspondence between outputs, results, and impacts of the actions and the objectives of the main policy initiatives and instruments (outcome)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what extent do actions the most appropriate means for achieving the objectives or could other interventions/instruments have been more impactful?</td>
<td>(Do and support actions)</td>
<td>The most impactful interventions and instruments have been used to achieve the objectives</td>
<td>Perception of the key stakeholders</td>
<td>Desk research, semi structured interviews, stakeholder survey, expert input/review.</td>
</tr>
</tbody>
</table>

### Coherence of eHAP actions (internal /external coherence)

<table>
<thead>
<tr>
<th>Coherence of eHAP actions (internal /external coherence)</th>
<th>To what extent do actions under the objectives within the eHealth Action Plan link to each other?</th>
<th>The objectives are complementary and/or non-contradictory with each other</th>
<th>Interactions between the actions</th>
<th>Desk research, semi structured interviews, stakeholder survey, satisfaction survey.</th>
</tr>
</thead>
<tbody>
<tr>
<td>To what extent do the objectives of the eHealth Action Plan correspond to each other and to other public interventions that interact with it?</td>
<td>(Do actions)</td>
<td>The objectives of the eHealth Action Plan are complementary and/or non-contradictory with other public interventions that interact with it</td>
<td>Level of alignment of the eHAP and its actions with other public interventions that interact with it</td>
<td>Desk research, semi structured interviews, stakeholder survey, satisfaction survey.</td>
</tr>
<tr>
<td>To what extent do the actions under the objectives of the eHealth Action Plan correspond to other public interventions which interact with it?</td>
<td>(Do and support actions)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main evaluation question</td>
<td>Sub-question</td>
<td>Judgement criterion</td>
<td>Indicators</td>
<td>Sources</td>
</tr>
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<td>--------------------------</td>
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<tr>
<td>Relevance of the actions (objectives vs. needs/problems/issues)</td>
<td>To what extent do the actions under the objectives of the Action Plan address the needs / issues? (Do and support actions)</td>
<td>The objectives of the eHealth Action Plan correspond to the needs/issues of targeted stakeholders</td>
<td>Description of the policy and market situation needs, issues and problems</td>
<td>Desk research, semi-structured interviews, stakeholder survey, satisfaction survey.</td>
</tr>
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<td></td>
<td>To what extent are the actions under the objectives of the Action Plan aligned with respect to current needs and issues in the eHealth area (e.g. eHealth market and healthcare systems) in the Member States (local and national levels), the EU and globally? (Do actions)</td>
<td>The objectives of the eHealth Action Plan are aligned with the current or evolving needs / issues at local, national, EU and international level.</td>
<td>Description of the policy and market situation needs, issues and problems issues in the eHealth area (e.g. eHealth market and healthcare systems) in the Member States (local and national levels), the EU and globally</td>
<td>Desk research, semi-structured interviews, stakeholder survey, satisfaction survey.</td>
</tr>
<tr>
<td></td>
<td>Do the actions under objectives of the eHealth Action Plan correspond to the priorities and objectives of the policy initiatives they interact with? (Support actions)</td>
<td>The objectives of the eHealth Action Plan are aligned with those of other EU policy initiatives they interact with</td>
<td>Description of the intervention logic and programme objectives</td>
<td>Desk research, semi-structured interviews, stakeholder survey, satisfaction survey.</td>
</tr>
<tr>
<td>Main evaluation question</td>
<td>Sub-question</td>
<td>Judgement criterion</td>
<td>Indicators</td>
<td>Sources</td>
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<tr>
<td><strong>Added value of the eHealth Action Plan</strong></td>
<td>Would the objectives be achieved without EU intervention through the actions in the eHealth Action Plan?</td>
<td>The EU intervention is necessary to achieve the objectives</td>
<td>Perceived added value of the EU action to achieve eHealth objectives</td>
<td>Desk research, semi-structured interviews, stakeholder survey.</td>
</tr>
<tr>
<td>To what extent have the EU actions contributed to achieving the objectives and addressing the needs / issues beyond what could be achieved at national level or by the market?</td>
<td>To what extent do the actions contribute to addressing the needs/issue beyond what could be achieved at national level or by the market?</td>
<td>The EU intervention beyond interventions at national level or by the market is needed to address the needs/issues</td>
<td>Perceived added value of the EU action to address issues and needs</td>
<td>Desk research, semi-structured interviews, stakeholder survey.</td>
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Annex D. Questionnaire

DG CONNECT


Introduction

The European Commission has been acting to spread the adoption of eHealth practices and in promoting collaboration in this field since the early 2000s. From 2004, the European Commission, given this strong political commitment, has been adopting multiannual plans and specific projects and initiatives related to eHealth, starting with the 2004-2012 eHealth Action Plan.

The Europe 2020 strategy and the Digital Agenda for Europe set the frame for the Commission’s vision on eHealth for the 21st century, which converge into the “eHealth Action Plan 2012-2020 - Innovative healthcare for the 21st century”. The eHealth Action Plan 2012-2020 sets the vision and strategy for eHealth of the European Commission. It aims to remove the barriers to the full deployment of cross-border healthcare systems and to promote the deployment of health & care systems which are ICT-enabled personalised, preventive, patient-centric, integrated, interoperable and sustainable and to empower citizens by enabling them self-manage their health, diseases and well-being.

Three years after its launch, the eHealth Action Plan 2012-2020 is undergoing an intermediate evaluation. The intermediate evaluation provides the opportunity to monitor the status of the actions included in the Action Plan. More importantly, it provides the opportunity to take into account the rapidly changing context of eHealth, and to assess whether the objectives and actions of the Action Plan are all still relevant, or whether they need to be updated, replaced and/or complemented by new ones.

The present survey is part of the evaluation exercise. It is addressed to a large number of stakeholders from both the public and private sectors, including NGOs, policy-makers and healthcare organisations, ICT providers and developers, patients’ and healthcare professionals’ organisations and academia.

Participating to the survey provides the possibility to contribute to the evaluation and to provide relevant inputs to the policy-making process.

The survey addresses questions on:

- awareness of the eHAP, aiming at assessing from the start the level of knowledge of stakeholders on the eHAP as a whole;
- individual actions of the eHAP, through which stakeholders can easily navigate based on their involvement in the different activities related to the actions;
- expected impacts and perceived added-value of the eHAP.

Participation in the survey should not take more than 20 minutes.
### eHealth Stakeholder Survey

**Profile of the respondents**

1. Please identify the Member State you are based in:
   
   Drop down list of Member States

2. I am involved in eHealth at:
   
   - EU-wide level
   - National level
   - Regional/local level
   - Free text: Please specify

3. I am a stakeholder of the:
   
   - Public sector
   - Private sector
   - Research and academia
   - Civil society

   If public, please specify

   - International organisations
   - Policy administration at EU level (e.g. DGs, Parliament, Agencies)
   - Policy administration at MS level
   - Policy administration at regional level
   - Public healthcare organisations (e.g. hospitals)
   - Health regulatory bodies
### Awareness on the eHAP

1. How would you describe your knowledge of the eHAP?

   1. Excellent knowledge
   2. Good knowledge
   3. Fair knowledge
4. Poor knowledge
5. Very poor knowledge
0. I do not know

2. Awareness and knowledge of the eHealth Action Plan 2012 - 2020 is prevalent among eHealth stakeholders. (Scale 1 - 5; strongly agree - strongly disagree; 0 - I do not know)
   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   0. I do not know

*Achieving wider interoperability in eHealth services*

**Action 1 - The European Commission, with the endorsement of the eHealth Network, will propose an eHealth Interoperability Framework based on the results of studies, pilots and research projects.**

Action 1 concerns the proposal for an eHealth Interoperability Framework for cross-border eHealth services, building upon eHealth roadmaps and the general European Interoperability Framework with its four levels of interoperability: legal, organizational, semantic and technical. The eHealth Interoperability Framework will also be based on the results of studies, pilots and research projects.

1. I am involved in activities related to studies, pilots and research projects on interoperability in eHealth services. (Yes/No; if no, skip to next question)
   
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<tr>
<td>Yes</td>
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<td>No</td>
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</table>

2. There is a clear need for eIF.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

3. An eHealth Interoperability Framework will meet the interoperability challenges in eHealth.

   1. Strongly agree
2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
6. I do not know

4. Support for the development of an eHealth Interoperability Framework is sufficient.

1. Strongly agree
2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
6. I do not know

5. Large-scale pilots, including epSOS and Expand, contribute(d) to the objective of achieving wider interoperability in eHealth services within MS.

1. Strongly agree
2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
6. I do not know

6. The planned eHealth Interoperability Framework is aligned with interoperability actions at EU level.

1. Strongly agree
2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
6. I do not know

7. Action undertaken within the EC for the development of the eEIF is coherent.

1. Strongly agree
2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
Action 2 - The European Commission will support the eHealth Network in producing guidelines on a dataset for patient summary records to be exchanged across borders, common measures for interoperable electronic identification and authentication in eHealth and will enhance security of health information and eHealth services and interoperability of databases for medicinal products.

Interoperability of ICT-enabled solutions and of data exchange is the precondition for better coordination and integration across the entire chain of healthcare delivery and health data exchange, while unlocking the EU eHealth single market.

Under Action 2, the eHealth Network has the specific objective to draw up guidelines on a non-exhaustive list of data for patients’ summaries for health professionals and common measures for interoperable electronic identification and authentication to enable continuity of care and patient safety across borders and enhance security of health information and eHealth services and interoperability of databases for medicinal products.

1. I am involved in activities replying to EU-wide standards for interoperability in eHealth services. (Yes/No; if no, skip to next question)

   Yes

   No

2. There is a clear need for EU-wide standards in eHealth at technical and semantic levels.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know
3. Funding of DSI in eHealth is sufficient to develop EU-wide standards in eHealth through the eHealth Network.

<table>
<thead>
<tr>
<th>1. Strongly agree</th>
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<td>2. Agree</td>
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<td>3. Somewhat agree</td>
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<td>4. Disagree</td>
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<tr>
<td>5. Strongly disagree</td>
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<td>6. I do not know</td>
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4. Standards developed through the eHealth Network on eRecords and eID, for example, contribute to developing EU-wide standards in other dimensions of eHealth.

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<th>1. Strongly agree</th>
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<td>2. Agree</td>
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<td>3. Somewhat agree</td>
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<td>4. Disagree</td>
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<tr>
<td>5. Strongly disagree</td>
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<td>6. I do not know</td>
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5. Actions undertaken through the eHealth Network in this respect are aligned with other actions at EU level/MS level.

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<td>5. Strongly disagree</td>
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<td>6. I do not know</td>
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Action 3 - The European Commission will seek endorsement of the eHealth Network to: 1) establish the semantic and technical cross-border interoperability specifications and assets necessary for the eEIF; 2) propose an EU interoperability testing, quality labelling and certification framework for eHealth systems.

Several EU-funded projects are successfully testing and implementing standards, open and secure architecture, clinical workflows and subsets of terminologies as well as making policy recommendations, to prepare the deployment of eHealth services on a large scale.

Under Action 3, the European Commission proposes to boost interoperability by further developing and validating specifications and components: with the advice of the eHealth Network, more detailed specifications, for example for public procurement, will be identified in the framework of the new EU
standardization regulation, contributing to the technical and semantic levels of the eHealth Interoperability Framework.

1. I am involved in activities related to cross-border EU interoperability specification and/or testing, quality labelling and certification framework for eHealth systems. (Yes/No; if no, skip to next question)

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2. Past and ongoing projects meet needs of interoperability testing, quality labelling and certification framework.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

3. Funding under CIP/FP7, ISA and H2020 is sufficient to establish semantic and technical cross-border interoperability specifications and assets for the eHealth Interoperability Framework.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

4. Funding under CIP/FP7, ISA and H2020 is sufficient to propose EU interoperability testing, quality labelling for eHealth systems.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

5. Funding under CIP/FP7, ISA and H2020 is sufficient to propose an EU certification framework for eHealth systems.
6. Funded projects, under CIP/FP7, ISA and H2020 contribute to the development of semantic and technical cross-border interoperability specifications.

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<td>4. Disagree</td>
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<td>5. Strongly disagree</td>
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<td>6. I do not know</td>
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7. Funded projects, under CIP/FP7, ISA and H2020 contribute to the development of EU interoperability testing and quality labelling for eHealth systems.

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<td>5. Strongly disagree</td>
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<td>6. I do not know</td>
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8. Funded projects, under CIP/FP7, ISA and H2020 contribute to the development of an EU certification framework for eHealth systems.

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<td>4. Disagree</td>
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<td>5. Strongly disagree</td>
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<td>6. I do not know</td>
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9. Past and ongoing project aiming to develop of semantic and technical cross-border interoperability specifications are aligned with other actions undertaken for the establishment of the eEIF.

<table>
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<th>1. Strongly agree</th>
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<td>2. Agree</td>
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<td>3. Somewhat agree</td>
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<td>4. Disagree</td>
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Action 4 – The European Commission will support concrete steps towards greater integration of processes for cross-border eHealth. It will make proposals on organisational issues with the aim of facilitating cooperation in the EU.

Action 4 addresses the organizational layer of interoperability and concerns how organizations, such as public administrations in different Member States, cooperate to achieve their mutually agreed goals on eHealth. In practice, organizational interoperability implies integrating business processes and related data exchange and finding instruments to formalize mutual assistance, joint action and interconnected business processes in connection with cross-border service provision. Such cooperation and integration processes between Member States have been defined through the large scale pilots such as the epSOS project, with the objective of ensuring the deployment eHealth services across Europe. The eHealth Network and the CEF foresee to implement these results and thereby address the next phase of cross-border eHealth processes.

1. I am involved in eHealth activities requiring cross-border cooperation. (Yes/No; if no, skip to next question)

   Yes
   No

2. There is a need for cooperation on business processes and data exchange at EU level through formal governance structures.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

3. The governance and cooperation processes established through projects - such as epSOS - are efficient mechanisms to achieve cooperation between MS.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
4. The governance and cooperation processes contribute to establishing replicable processes for cooperation at EU level.

1. Strongly agree
2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
6. I do not know

5. Governance processes at EU-level are aligned with other related initiatives (in MS) and increasingly involve MS.

1. Strongly agree
2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
6. I do not know

**Action 5** - The European Commission will launch a study under the upcoming Health Programme 2014-2020 aimed at examining Member States' laws on electronic health records in order to make recommendations to the eHealth Network on legal aspects of interoperability.

Action 5 related to the study launched by the European Commission in 2013 under the Health Programme 2014-2020 aimed at examining Member States' laws on electronic health records in order to make recommendations to the eHealth Network on legal aspects of interoperability.

The study is available via the following link: [http://ec.europa.eu/health/ehealth/projects/nationallaws_electronichealthrecords_en.htm](http://ec.europa.eu/health/ehealth/projects/nationallaws_electronichealthrecords_en.htm), and is accompanied by country reports for EU Member States.

1. I am involved in activities related to electronic health records. (Yes/No; if no, skip to next question)

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2. I am aware of the study on electronic health records.

   1. Strongly agree  
   2. Agree  
   3. Somewhat agree  
   4. Disagree  
   5. Strongly disagree  
   6. I do not know

3. There was a clear need for the study.

   1. Strongly agree  
   2. Agree  
   3. Somewhat agree  
   4. Disagree  
   5. Strongly disagree  
   6. I do not know

4. The study is leveraged on questions of legal aspects of interoperability.

   1. Strongly agree  
   2. Agree  
   3. Somewhat agree  
   4. Disagree  
   5. Strongly disagree  
   6. I do not know

5. The study helps to streamline eHealth legislation.

   1. Strongly agree  
   2. Agree  
   3. Somewhat agree  
   4. Disagree  
   5. Strongly disagree  
   6. I do not know

6. The study contributes to the eHAP objective of interoperability?

   1. Strongly agree  
   2. Agree  
   3. Somewhat agree  
   4. Disagree  
   5. Strongly disagree  
   6. I do not know
7. The study contributes to coherence between MS laws on eRecords.

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<td>5.</td>
<td>Strongly disagree</td>
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<td>6.</td>
<td>I do not know</td>
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**Action 6 - In response to the recommendations of the eHealth Task Force, the European Commission will adopt a Green Paper on mHealth and health and wellbeing applications.**

An eHealth Task Force report and responses to the public consultation for the eHealth Action Plan both point to a strong interest in discussing:

- the concept of 'ownership' and control of data while providing more clarity on the conditions for accessing and re-using health data for research and public health purposes
- the flow of such data across health and care systems, if suitably protected.

In addition, eHealth and wellbeing ICT initiatives should integrate the principle of privacy by design and by default as well as make use of Privacy Enhancing Technologies (PET’s) for the deployment of trustworthy tools, as foreseen in the proposed Data Protection Regulation.


1. I am involved in activities related to mHealth. (Yes/No; if no, skip to next question)

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2. I am aware of the Green Paper on mHealth.

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<tr>
<td>1.</td>
<td>Strongly agree</td>
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<td>4.</td>
<td>Disagree</td>
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<tr>
<td>5.</td>
<td>Strongly disagree</td>
</tr>
<tr>
<td>6.</td>
<td>I do not know</td>
</tr>
</tbody>
</table>
3. There was a clear need for the Green Paper.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

4. The study is widely used in the development of mHealth and health and wellbeing applications.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

5. The study contributes to the eHAP objective of interoperability.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

6. The Green Paper brings coherence to mHealth actions in the EU.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

**Action 7 - Guidance on the application of the Data Protection directive to eHealth data.**

According to Action 7, the European Commission will make use of the mechanisms foreseen in the EU data protection Regulation, to provide guidance on the application of the EU data protection law in respect of health services.
1. I am involved in eHealth activities linked to issues of data protection. (Yes/No; if no, skip to next question)

   Yes

   No

2. There is a clear need for the directive Data Protection for eHealth data.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

3. The directive will contribute to data protection in eHealth.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

**Supporting R&D, innovation and competitiveness in eHealth**

Action 8 - During the period 2014-2020, research and innovation will be supported under "Health, demographic change and wellbeing" of Horizon 2020, in the areas of: 1) an ICT and computational science and engineering framework for digital, personalised, and predictive medicine, including advanced modelling and simulation; 2) innovative instruments, tools and methods for unlocking the value of data and for advanced analytics, diagnostics and decision making; 3) new digital media, web and mobile technologies and applications, as well as digital instruments that integrate healthcare and social care systems and support health promotion and prevention; 4) eHealth systems and services with strong user involvement, focusing on interoperability and the integration of emerging patient-centric technologies for cost-effective healthcare.
Under Action 8, the European Commission will support research and innovation in eHealth under "Health, demographic change and wellbeing" of Horizon 2020, during the period 2014-2020:

- Short-term and mid-term research priorities include health and wellbeing solutions for citizens and health professionals, better quality of care, including of chronic diseases, while increasing citizens’ autonomy, mobility and safety. Particular attention is paid to the design and user-centricity of mobile technologies and applications. There will be an additional focus on ways of analysing and mining large amounts of data for the benefit of individual citizens, researchers, practitioners, businesses and decision makers.
- Longer-term research objectives address topics that can promote synergies between related science and technologies, and accelerate discoveries in the area of health and wellbeing. They include *in silico* medicine for improving disease management as well as prediction, prevention, diagnosis, and treatment of diseases. The eHealth Task Force recommended earmarking EU funds for user-driven innovation, support for fast prototyping and low thresholds for access to funding. To maximize the impact of the EU level measures, the full spectrum of research and innovation activities will be supported.

1. I am involved in research and innovation activities in eHealth. (Yes/No; if no, skip to next question)

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2. There is a need for funding of eHealth projects through H2020.

   |------------------|---------|------------------|------------|---------------------|----------------|

3. Support for eHealth projects under H2020 is adequate/sufficient to drive research and develop innovative eHealth solutions, in terms of:

<table>
<thead>
<tr>
<th>Funding</th>
<th>Connecting stakeholders</th>
<th>Covering most recent</th>
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<tbody>
<tr>
<td>Strongly agree</td>
<td>Agree</td>
<td>Somewhat agree</td>
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</table>
4. Projects funded under H2020 contribute to the development of eHealth solutions.

1. Strongly agree
2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
6. I do not know

5. Funding through H2020 is aligned with other funding programmes.

1. Strongly agree
2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
6. I do not know

Action 9 - The European Commission encourages Member States involvement in the EIP AHA to help them develop and share their national (including regional) eHealth strategies, taking into account international recommendations, and deploying promising solutions for active and healthy ageing at a larger scale.

Action 9 concerns the support provided by the European Commission to the National eHealth strategies. Indeed, from 2012, the European Commission encourages Member States involvement in the EIP AHA to help them develop and share their national (including regional) eHealth strategies, taking into account international recommendations, and deploying promising solutions for active and healthy ageing at a larger scale.

1. I am involved in activities related to national eHealth strategies of EU Member States. (Yes/No; if no, skip to next question)

Yes
2. There is a need for the EC to provide support to national eHealth strategies.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

3. Support provided by the EC helps to focus on eHealth as part of national health strategies.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

4. The EC provides adequate support for the development national eHealth strategies.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

5. EC support to national eHealth strategies contributes to objectives of RDI and competitiveness of eHealth in EU.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

6. EC support contributes to the coherence of eHealth strategies across MS.

   1. Strongly agree
   2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
6. I do not know

Action 10 - Between 2013-2020, the Commission will support actions to improve the market conditions for entrepreneurs developing products and services in the fields of eHealth and ICT for wellbeing.

Under Action 10, the European Commission fosters the development of a competitive eHealth market, through business support and improved market conditions by ensuring the right legal and market conditions for entrepreneurs to develop products and services in the fields of eHealth and wellbeing is important to support market growth in this area.

The European Commission therefore support, starting within FP7, mechanisms such as:

- SME networking, including of high technology incubators;
- an annual eHealth week;
- legal and other advice and training to eHealth start-ups (cf. iLinc http://www.ilinc.com/)
- business modelling studies to facilitate closer cooperation among stakeholders, research bodies, industry and those responsible for implementing ICT tools and services, to enable faster and wider take-up of research results in the market.

1. I am involved in the development of products and services in the fields of eHealth and ICT wellbeing. (Yes/No; if no, skip to next question)

   | Yes | No |
---|-----|----|
1. |     |    |

2. There is a need for substantial guidance for EU start-ups in eHealth.

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Somewhat agree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>I do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal advice</td>
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<tr>
<td>Financial support</td>
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</tbody>
</table>
### Technical guidance

3. There is a need for support to eHealth SMEs through law incubators.

|-------------------|----------|------------------|-------------|---------------------|----------------|

4. The European Commission’s support for SMEs in eHealth is adequate to achieve objectives of RDI and competitiveness.

|-------------------|----------|------------------|-------------|---------------------|----------------|

5. These support activities - legal support - contribute to objectives of RDI and competitiveness.

|-------------------|----------|------------------|-------------|---------------------|----------------|

6. EU action is aligned with other actions aiming to improve market conditions for eHealth SMEs (i.e. existence of support actions by MS/private sector).

|-------------------|----------|------------------|-------------|---------------------|----------------|

*Facilitating uptake and ensuring wider deployment of eHealth*
**Action 11** - The European Commission will prepare the governance for the large scale deployment of interoperable eHealth services under the CEF 2014 – 2020, taking into account the recommendations of the eHealth Network.

Among other objectives, the Connecting Europe Facility (CEF) (cf. [http://ec.europa.eu/digital-agenda/en/connecting-europe-facility](http://ec.europa.eu/digital-agenda/en/connecting-europe-facility)) sets out to facilitate the deployment of cross-border interoperable ICT services of general interest such as eHealth by overcoming the barriers of the high initial investment costs and risks associated with this deployment.

Under Action 11, the European Commission prepares the governance for the large scale deployment of interoperable eHealth services under the CEF 2014 – 2020 and launch a governance plan for interoperability rules under CEF.

The results of the large scale pilot epSOS (which ended in 2013, cf. [http://www.epsos.eu](http://www.epsos.eu)) and other projects and studies will be adapted and taken forward in the CEF.

1. I am involved in activities related to large scale eHealth projects and/or related to the CEF. (Yes/No; if no, skip to next question)

   Yes

   No

2. There is a clear need for CEF to support large scale deployment of interoperable eHealth services.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

3. Funding under CEF is sufficient to achieve objectives of interoperability for cross-border eHealth.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know
4. Funding under CEF is sufficient to achieve deployment of cross-border eHealth solutions.

<table>
<thead>
<tr>
<th>1. Strongly agree</th>
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<tr>
<td>2. Agree</td>
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<tr>
<td>3. Somewhat agree</td>
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<td>4. Disagree</td>
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<tr>
<td>5. Strongly disagree</td>
</tr>
<tr>
<td>6. I do not know</td>
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</table>

5. Large-scale pilots, including epSOS and Expand, and projects funded under CEF contribute(d) to the deployment of cross-border eHealth solutions.

<table>
<thead>
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<th>1. Strongly agree</th>
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<tr>
<td>2. Agree</td>
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<tr>
<td>3. Somewhat agree</td>
</tr>
<tr>
<td>4. Disagree</td>
</tr>
<tr>
<td>5. Strongly disagree</td>
</tr>
<tr>
<td>6. I do not know</td>
</tr>
</tbody>
</table>

6. Actions undertaken within the CEF for the development of the interoperable eHealth solutions are aligned.

<table>
<thead>
<tr>
<th>1. Strongly agree</th>
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<tbody>
<tr>
<td>2. Agree</td>
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<tr>
<td>3. Somewhat agree</td>
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<tr>
<td>4. Disagree</td>
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<tr>
<td>5. Strongly disagree</td>
</tr>
<tr>
<td>6. I do not know</td>
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</table>

**Action 12 - The European Commission will leverage the CEF and the ERDF for the large scale deployment of innovative tools, the replicability of good practices and services for health, ageing and wellbeing, with a particular attention to improving equal access to services.**

The European Regional Development Fund (ERDF) provided in the previous programming period (2007-2013) approximately EUR 15 billion to ICT priorities (or 4.4% of total cohesion policy funds) to ensure access to basic broadband (EUR 2.3 billion) and supporting ICT applications and services for citizens and SMEs (EUR 12.7 billion), for the 27 Member States.

The Cohesion Policy 2014-2020 will further support EU ICT goals by investing in both ICT infrastructure and tools.
Under Action 12, the Commission will leverage both the CEF and the ERDF, during the period 2013-2020, for the large scale deployment of innovative tools, the replicability of good practices and services for health, ageing and wellbeing, with a particular attention to improving equal access to services.

1. I am involved in eHealth activities related to eHealth projects under the CEF and/or ERDF. (Yes/No; if no, skip to next question)

   Yes

   No

2. There is a clear need for funding of large-scale projects on eHealth through CEF and ERDF.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

3. Support (incl. funding) through CEF and ERDF is adequate for the large-scale deployment of eHealth solutions and dissemination of good practice.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

4. Large-scale projects funded through CEF and ERDF contribute to development of replicable good practice and deployment of eHealth solutions.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know
5. These large-scale projects are aligned with projects funded through other programmes/MS/private.

<table>
<thead>
<tr>
<th>1. Strongly agree</th>
<th></th>
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<tbody>
<tr>
<td>2. Agree</td>
<td></td>
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<tr>
<td>3. Somewhat agree</td>
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<td>4. Disagree</td>
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<tr>
<td>5. Strongly disagree</td>
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<tr>
<td>6. I do not know</td>
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</tbody>
</table>

Action 13 - Starting with the Competitiveness and Innovation Programme and continuing under Horizon 2020, the Commission will support activities aiming at increasing citizens’ digital health literacy. For professionals (health and scientific communities) the focus will be on developing evidence-based clinical practice guidelines for telemedicine services with particular emphasis on nursing and social care workers.

Lack of awareness of eHealth opportunities and challenges for users (citizens, patients, health and social care professionals), as demonstrated by the European Barometer on citizens digital health literacy (cf. http://ec.europa.eu/public_opinion/flash/fl_404_en.pdf), remains a significant barrier in the deployment of eHealth solutions.

Under Action 13, the European Commission will support activities aiming at increasing citizens’ digital health literacy.

1. I am involved in activities related to digital health literacy. (Yes/No; if no, skip to next question)

   | Yes |
   | No  |

2. There is a need to increase funding for citizens eHealth digital literacy.

   | 1. Strongly agree |
   | 2. Agree         |
   | 3. Somewhat agree |
   | 4. Disagree      |
   | 5. Strongly disagree |
   | 6. I do not know |


3. There is a need to develop guidelines for telemedicine services for health professionals.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

4. Support (incl. funding) for projects under CIP and H2020 is sufficient to achieve digital health literacy of EU citizens and patients.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

5. Support (incl. funding) for projects under CIP and H2020 is sufficient to develop guidelines for telemedicine services for health professionals.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

6. Funded projects contribute to eHealth digital literacy.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

7. This action is aligned with actions at MS level/private sector.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
Action 14 - Sets of common indicators will be made available to measure the added value and benefit of eHealth solutions, based on work funded by the Commission in partnership with stakeholders.

It is essential to measure and assess the added value of innovative eHealth products and services to achieve wider evidence-based eHealth deployment and create a competitive environment for eHealth solutions. The close cooperation between Member States and stakeholders in Health Technology Assessment (HTA) under the Directive on Patients' Rights in Cross Border Healthcare and the EIP AHA will contribute to improving assessment methodologies and sharing clinical evidence on eHealth technologies and services.

For this reason, the European Commission will make available under Action 14, from 2014, sets of common indicators to measure the added value and benefit of eHealth solutions, based on work funded by the European Commission in partnership with stakeholders.

1. I am involved in the deployment of eHealth solutions for which the added value is/will be measured. (Yes/No; if no, skip to next question)

   Yes

   No

2. There is a clear need for measurement of added value and benefits of eHealth solutions through a common set of indicators.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

Action 15 - During the period 2013-2016, the Commission will assess cost benefits, productivity gains and business models, notably through Health Technology Assessment (HTA).
In addition, under Action 15, the European Commission will assess cost benefits, productivity gains and business models, notably through Health Technology Assessment (HTA), during the period 2013-2016.

1. I am involved in the deployment of eHealth solutions for which cost benefits, productivity gains and business models are/will be assessed. (Yes/No; if no, skip to next question)

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

2. There is a clear need for assessment of costs, benefits, productivity gains and business models of eHealth solutions.

|-------------------|----------|-------------------|------------|---------------------|----------------|

Promoting policy dialogue and international cooperation on eHealth at global level

Action 16 - The European Commission shall enhance its work on data collection and benchmarking activities in health care with relevant national and international bodies to include more specific eHealth indicators and assess the impact and economic value of eHealth implementation.

Under Action 16, the European Commission shall enhance, from 2013, its work on data collection and benchmarking activities in health care with relevant national and international bodies to include more specific eHealth indicators and assess the impact and economic value of eHealth implementation.

1. I am involved in the eHealth activities relying on data collection and benchmarking for the assessment of impacts and economic value of eHealth implementation. (Yes/No; if no, skip to next question)
2. There is a clear need for the EU to contribute to data collection and benchmarking.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

3. Resources of the EC are adequate to contribute to international benchmarking work/development of indicators on eHealth.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

4. EU actions contributed to data collection and benchmarking at EU level.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

5. Work undertaken at EU level is aligned with work of international bodies (OECD, WHO).

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

6. EU action is aligned with MS contribution to work in international bodies.
Action 17 - The European Commission shall promote policy discussion on eHealth at global level to foster interoperability, the use of international standards, develop ICT skills, compare evidence of the effectiveness of eHealth, and promote ecosystems of innovation in eHealth

Under Action 17, the European Commission shall promote policy discussions on eHealth at global level, from 2013, in order to foster interoperability, the use of international standards, develop ICT skills, compare evidence of the effectiveness of eHealth, and promote ecosystems of innovation in eHealth.

1. I am involved in the eHealth activities relying on interoperability, the use of international standards, the development of ICT skills and innovation in eHealth at global level. (Yes/No; if no, skip to next question)

   Yes
   No

2. There is a clear need for the EU to contribute to international policy dialogue on eHealth.

   1. Strongly agree
   2. Agree
   3. Somewhat agree
   4. Disagree
   5. Strongly disagree
   6. I do not know

3. Resources of the EC are adequate to contribute to policy dialogue.

   1. Strongly agree
   2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
6. I do not know

4. EU actions contributed to promote policy dialogue on eHealth at the global level.

1. Strongly agree
2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
6. I do not know

5. EU actions contributed to enhance international cooperation on eHealth.

1. Strongly agree
2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
6. I do not know

6. Work undertaken at EU level is aligned with work of international bodies (OECD, WHO).

1. Strongly agree
2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
6. I do not know

7. EU action is aligned with MS contribution to policy dialogue.

1. Strongly agree
2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
6. I do not know
Impacts and added-value of the eHAP

1. What are expected impacts of the eHAP? Please rank the following.

<table>
<thead>
<tr>
<th>Impact</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raising awareness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Better coordination and cooperation on eHealth at EU level</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Increased transparency</td>
<td></td>
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<tr>
<td>Other (please specify)</td>
<td></td>
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</tbody>
</table>

2. The eHAP contributes to the achievement of eHealth objectives at EU level.

1. Strongly agree
2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
6. I do not know

Please elaborate on the above.

Free text box

3. What do you consider open issues/challenges in eHealth?

Free text box

4. Do you feel there are some missing elements/issues not currently being addressed by the eHAP? What other topics do you want the eHAP to include?

Free text box

5. What is the added value of the eHAP? Please rank the following:

<table>
<thead>
<tr>
<th>Added value</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
</table>
Raising awareness on eHealth, including among new stakeholders

Better coordination and cooperation through a structured approach and cohesiveness in action at EU level

All actions on eHealth are brought together through the eHAP, not only actions for the EC, but also for MS and regional authorities

Better coordination and cooperation with external stakeholders, especially with MS through a framework for their activities

The eHAP provides solid grounds to justify public investment in eHealth activities

Other (Please specify)

|-------------------|----------|-------------------|-------------|---------------------|----------------|

Please elaborate on the above.

*Free text box*

7. All objectives of the eHAP are still relevant.
1. Strongly agree
2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
6. I do not know

Please elaborate on the above.

Free text box

8. The eHAP contributes to a paradigm shift in the health sector (Cross-border dimension; empowerment of citizens and patients, etc.).

1. Strongly agree
2. Agree
3. Somewhat agree
4. Disagree
5. Strongly disagree
6. I do not know

Please elaborate on the above.

Free text box
Annex E. References

In this annex, we present a non-exhaustive reference list gathered through desk research and strategic interviews.

Legislation and policy documents
- Directive 95/46/EC on the protection of individuals with regard to the processing of personal data and on the free movement of such data (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31995L0046:en:HTML)
- Memorandum of Understanding between the United States Department of Health and Human Services and the European Commission on cooperation surrounding health related information and communication technologies.
- Medical Devices Directives

- Innovation Union communication and reports (http://ec.europa.eu/research/innovation-union/index_en.cfm?pg=keydocs)
  - European Innovation Partnership on Active and Healthy Ageing
- eHGI discussion paper on semantic and technical interoperability (http://ec.europa.eu/health/ehealth/docs/ev_20121107_wd02_en.pdf)
- eHealth Network Work programmes
- CEF work programmes (http://ec.europa.eu/digital-agenda/en/connecting-europe-facility)
  - work for the eHealth DSI will be launched in 2015 under CEF Work Programme 2015 (http://ec.europa.eu/digital-agenda/sites/digital-agenda/files/1_en_annexe_acte_autonome_part1_v2.pdf)
- HTA Network work programmes:
- eHealth Network adopted guidelines on minimum data sets in accordance with coss-border directive (http://ec.europa.eu/health/ehealth/docs/guidelines_patient_summary_en.pdf)
- Horizon 2020 work programmes

Studies and reports:
- Study by EpSOS “Legally eHealth – Putting eHealth in its European Legal context” (http://www.epsos.eu/uploads/tx_epsosfileshare/Legally-eHealth-Report_01.pdf)
- Study on eHealth infrastructures (http://www.ehealth-strategies.eu)

Projects
- List of project in eHealth financed by the EU (http://ec.europa.eu/health/ehealth/projects/index_en.htm)
- Antilope Project (http://www.antilope-project.eu/front/index.html)
- CALLIOPE : http://www.calliope-network.eu/
- epSOS pilot completed in 2014 (http://www.epsos.eu/)
- eSENS (http://www.esens.eu/real-life-piloting/e-health/)
- EXPAND project (http://www.expandproject.eu/)
- H2020 projects:
  - STOPandGO (Sustainable Technologies for Older People – Get Organised) is a Public Procurement of Innovative Solutions (PPI) Pilot project funded by the European Commission under the Seventh Framework Programme (FP7). (See: http://ec.europa.eu/programmes/horizon2020/en/news/new-public-procurement-innovative-solutions-ppi-pilot-project-sustainable-technologies-older);
  - INCA has as a final aim to coordinate the socio-sanitary services of the different administrations, aiming to reduce costs, improve patient experience and achieve greater efficiency and value from health delivery systems (see: http://ec.europa.eu/programmes/horizon2020/en/news/new-european-project-wide-deployment-integrated-care-now-launched).
  - e-Wall project: A new EU research project will over the next three years develop an electronic wall that can help those weakened by age enjoy greater independence and increased quality of life at home. (See:

- UNCAP - Ubiquitous iNteroperable Care for Ageing People (See: http://www.uncap.eu)
- ehcoBUTLER, planning to develop and test an open ICT platform that enables elderly to simply integrate their leisure and care apps (See: http://www.ehcobutler.eu/)
- IN LIFE, INdependent LIving support Functions for the Elderly (See: http://www.inlife-project.eu).

- iLINC (https://www.ilincnetwork.eu/)
- Semantichealth-Net (http://www.semantichealthnet.eu/)
- United4Health (http://united4health.eu)

Others:
- Past work on eHealth benchmarking http://www.ehealth-benchmarking.eu/
- News articles:
European Commission

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