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Annex 1: Report on eHealth in Europe: Reality and Challenges Ahead

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Executive summary

A Science and Technology Options Assessment (STOA)[1] session of the European Parliament held an eHealth session in the Altiero Spinella building on Tuesday 1st December 2015. More than 80 persons attended. The attendees included STOA officials, current and former members of the European Parliament, representatives from other European institutions such as the European Economic and Social Committee, regular STOA session attendees, United4Health (U4H) project partners, U4H user policy advisory board members, and a range of stakeholder associations.

The session introduced the U4H project to a wider audience and shared its preliminary policy messages with European institutions and national and regional policy-makers.

Five core clinically-related messages are emerging from the United4Health project:

- Health systems across Europe face significant challenges.
- Telehealth is at least as safe and effective as usual care.
- Telehealth can improve self-management and support health coaching.
- Even when the clinical results are neutral, three other factors need to be taken into account since they affect deployment
  - The evolution of the technology,
  - The urgent needs for changes in healthcare provision,
  - The challenges to the sustainability of the healthcare systems and organisations.
- ICT-supported care pathways can act as a "life-jacket" for patients, collaboration on the part of all stakeholders is needed in their development, and they take time to formulate.

On that basis, the United4Health project underlines the need for policy makers to:

- **Secure a policy environment which promotes and supports telehealth use as a core component of routine service delivery.**
- **Set out a national consistency of approach together with the ability for local adaptation.**
- **Empower people and healthcare professionals to take full advantage of telehealth through promotion, training, skills development and education.**

While there is no absolute guarantee of success, developing an unambiguously supportive and consistent policy environment will empower individuals and organisations to take the difficult decisions needed to redesign their services.

Among the main opinions expressed by attendees at the event, particularly where they perceive gaps in policies that still need to be filled, are the following:

- Experience with scaling-up eHealth in Europe
  - Resolve the substantial systemic differences among European countries e.g., with regard to payment systems for services.
  - Ensure that clinicians are reimbursed if they offer services via telemedicine.

[1] http://www.europarl.europa.eu/stoa/, accessed 14th December 2015.

- Encourage institutions, like the European Commission, to require interoperability among eHealth systems and services, provision of personalised services, and cheaper technological solutions.
- Coordinate the various existing action plans and maps around health/eHealth issues (including e.g., in research areas such as neuroscience).
- Fund patient advocacy, and examine whether there are particular challenges when telemedicine is used by specific types of patients (e.g., cancer patients).
- Handle the challenges to digital literacy of particular (groups of) individuals (e.g., technophobes and older adults).

- eHealth in Europe and the role of European Union policy
  - Focus on the regional deployment of eHealth.
  - Encourage the use of common indicators and measurements, especially indicators that can support national and regional policy-makers who want to deploy eHealth.
  - Ensure the transfer of research project results and benefits out into the public arena.
  - Focus on making big data available from large public organisations like the European Commission, the World Health Organization and the Organisation for Economic Co-operation and Development.
  - Explore the possibilities for both the private sector and public sector to come together around eHealth/health.
  - Concentrate on well-being and health, not just sickness.
  - Focus on the messages of: My body, my data.

1 Introduction and Welcome

1.1 Purpose of this document

This document provides details of the Science and Technology Options Assessment (STOA)[2] session of the European Parliament held in its buildings on Tuesday 1st December 2015. This session introduced the United 4Health (U4H) project to a wider audience. It ensured that its preliminary policy messages were shared with representatives from both European institutions and national and regional policy-making bodies. The document focuses on any new policy-related messages that emerged particularly at the end of the afternoon.

1.2 Overview

The STOA session was held in the Altiero Spinella building of the European Parliament[3]. More than 80 persons attended. They included STOA officials, current and former members of the European Parliament, representatives from other European institutions such as the European Economic and Social Committee, regular STOA session attendees, U4H project partners, U4H user policy advisory board members, and a range of stakeholder associations (e.g., associations representing neuroscientists, and patients with cancer).

The session's thrust was that European healthcare systems are at a crossroads. Balancing cost, accessibility and quality of healthcare is a difficult equation to resolve. Doers from the field confronted policy-makers on what it really means to use eHealth and mHealth at scale to transform healthcare delivery. Since the pace of technology innovation is ever-increasing, attendees were invited to look forward into the future of healthcare transformation.

The session was chaired by MEP Eva Kaili (Greece) and moderated by former MEP John Bowis (United Kingdom). It was administered by Gianluca Quaglio, STOA research administrator. Marco d'Angelantonio and Marc Lange of the U4H project had had regular communication with Mr Quaglio during the preparation stage for the session.

The session consisted of three parts: Part 1 – experience in scaling-up eHealth services; Part 2 – eHealth in Europe and the role of European policy; and Part 3 – a panel discussion about eHealth in Europe. Each session is described in more detail in the sections (2, 3 and 4) that follow.

All the PowerPoints presented at the event are available on the European Parliament STOA website.[4]

Attendees, including those participating via web streaming, were encouraged to join the session conversation online through the Twitter hashtag #ehealthSTOA.

2 http://www.europarl.europa.eu/stoa/, accessed 14th December 2015.

3 http://www.europarl.europa.eu/stoa/cms/cache/offonce/home/events/workshops/ehealth;jsessionid=334AA0493C9C6545B0B79E91CE40AF6C, accessed 14th December 2015.

4 http://www.europarl.europa.eu/stoa/cms/cache/offonce/home/events/workshops/ehealth;jsessionid=334AA0493C9C6545B0B79E91CE40AF6C, accessed 14th December 2015.

1.3 Welcome

Ms Eva Kaili, MEP and First STOA Vice-Chair, welcomed the attendees. She introduced the history of the STOA and its role in building bridges between policy-makers and the scientific community. She announced that the overall aim of the session was to focus on making eHealth a practical reality, and not just a dream.

Eva Kaili, MEP and John Bowis

Ms Kaili described the current situation for eHealth in Europe, which aims to improve the health status of Europeans while keeping cost expenditure in line. Telehealth is already here in Europe, and is here to stay. An important role in this initiative is played by the European Innovation Partnership on Active and Healthy Ageing (EIP AHA)[5] and which aims to extend the average healthy lifespan by two years by 2020. The task is now to obtain all the important benefits promised by eHealth She noted, however, that with the arrival and integration of new groups of people in Europe, coping with challenges to healthcare systems and services will remain difficult for the Member States.

Questions were encouraged of the audience around such issues as: the convergence of health care systems; how quickly people can benefit from changes to healthcare systems, including new products and services now available via mobile phones; and how to be ready for appropriate privacy and security legislation that matches health and care expectations.

[5] http://ec.europa.eu/research/innovation-union/index_en.cfm?section=active-healthy-ageing, accessed 14th December 2015.

2 Part 1 - Experience in scaling-up eHealth services

This session consisted of four presentations: A generic presentation was made by a representative from the European Commission, followed by talks from regional decision-makers and clinicians in three different European Member States (Greece, Italy and Slovenia). The introductory presentation listed current and future opportunities for stakeholders and the public at large, and catalogued the ways for people to get involved in offering feedback and input on current and upcoming eHealth directions in the fields of both policy and research. The last three presentations showed what can be achieved in terms of deploying eHealth applications for people and patients who are experiencing chronic conditions such as heart failure and diabetes. One of the examples was from an initiative that had been set up using regional and structural funds, the two others were Information and Communication Technology Policy Support Programme[6] large-scale pilots, the Renewing Health project[7] and the United4Health project[8].

The three real-life presentations show that scaling-up eHealth services can be successful and its results can be measured positively. Pilots can be used to herald whole country scale-up, expansion of shared services between Member States, but also across continents. Services can also hypothetically be transferred from one chronic condition to another. Finally, Europe's people can become involved in offering their feedback on upcoming eHealth policy and deployment directions.

These descriptions of real-life policy experiences culminated in audience members expressing at least seven areas in which they felt policy messages needed to be strengthened. These seven messages are contained in a box at the end of this part of the document.

2.1 Key trends and developments in eHealth in Europe

Pēteris Zilgalvis, head of unit in the European Commission's DG Connect, described policy, research and deployment developments in eHealth from the perspective of his directorate-general.[9] He began by citing data on which countries in Europe are working to grant access to patients to their healthcare records and the percentages of people seeking healthcare information online.

Among the European Commission documents that describe the various legal, consultative, policy and research instruments outlined in his talk, Dr Zilgalvis referred to: the 2011 cross-border directive on patients' rights, the digital single market strategy, the 2012 eHealth Action Plan, the green paper on mHealth, and the Horizon 2020 work programme for 2016-17. Concrete activities mentioned included the Connecting

6 http://ec.europa.eu/cip/ict-psp/index_en.htm, accessed 14th December 2015.
7 http://www.renewinghealth.eu, accessed 14th December 2015.
8 http://united4health.eu, accessed 14th December 2015.
9 http://www.europarl.europa.eu/stoa/webdav/site/cms/shared/2_events/workshops/2015/20151201/Pēteris%20Zilgalvis.pdf, accessed 14th December 2015.

Europe Facility programme, the EIP AHA, and the work of the associated eHealth Network and eHealth Stakeholders' Group. Internationally, perspective, together with the World Health Organization and the International Telecommunications Union, the European Commission will seek to set up an innovation hub on mHealth to address non-communicable diseases and collect evidence of about them.

Upcoming activities in which stakeholders can get involved include a mid-term consultation on the 2012 eHealth action plan and a consultation on documentation produced by the working group on mHealth on mobile apps. Attendees were encouraged to respond to calls for consultation on prospective policies and to get involved in current and future research and deployment programmes.

2.2 Deploying an eHealth network: the Aegean health care system

Mr Charalambos Platsis of the 2nd Regional Health Authority, Piraeus, Greece, described work done by his region to develop health units equipped with telemedicine infrastructure (called the National Telemedicine Network or EDIT).[10]

The system covers health domains such as primary care, prevention and mental health. One of the system's main focuses is on eLearning, enabling Greek healthcare professionals – particularly clinicians – to attend from a distance lectures on telemedicine or telepsychiatry given at major hospitals in the cities of Athens, Piraeus and Thessaloniki.

Telemedicine units have been set up on remote Greek islands in the Aegean that are linked up to major hospitals in Athens and Piraeus. Using state-of-the-art technology equipment hooked up to stethoscopes, local island staff are able to conduct clinical examinations on patients and transmit the results real-time to specialist doctors based elsewhere. Assistance is available from a hub or coordination centre.

Now, the challenges are to persuade people to want to use the system, and doctors to want to use it. The region is preparing to deal with challenges both at the procurement phase and in terms of the culture of acceptance by personnel and patients.

In future, the region is hoping that the system will cover the whole of Greece, including the primary healthcare sector, providing services to people with specific needs such as those in immigration centres and prisons and on ships, and be supported by both mobile units and offer translation/interpretation services. The region aspires to see the initiative linked up with other European hospitals as well as American hospitals.

10 http://www.europarl.europa.eu/stoa/webdav/site/cms/shared/2_events/workshops/2015/20151201/Charalambos%20J.%20Platsis.pdf, accessed 14th December 2015.

2.3 eHealth for congestive heart failure: experience from Veneto, Italy

The Renewing Health large-scale pilot involved 7,000 patients.[11] Claudio Saccavani of Arsenal IT, Italy,[12] discussed the results of an initiative on tele-home monitoring for patients with congestive heart failure. Its results were measured by using a health technology assessment (HTA) approach called the Model for Assessment of Telemedicine (MAST).[13]

Focusing on congestive heart failure, the system enabled patients to measure their own blood pressure and weight at home and to transfer the results to a regional telemedicine centre. The patients were very happy with the initiative, their satisfaction levels were very high, and they had no worries about privacy. Care-givers' attitudes were very favourable too.

The aim of the initiative was to focus on lowering the use of overall healthcare services, by preventing patient hospitalisation. The study's primary results were positive: there was a reduction in the numbers of hospitalisations, bed days and visits to specialists. The average cost reduction was around 1,000 euros per patient per year, which can save the region around 40 million euros annually. With the modified organisational workflow, a single nurse can now interact with about 1,000 patients a year. The initiative resulted in patients accessing health facilities only when they really needed them.

In addition, Mr Saccavini announced that, this year, the Veneto region is running a Call for Tender through which 30,000 citizens will be able to use similar telemonitoring services. In January 2017, there will be complete integration with other European regions using the epSOS model[14] and with the United States thanks to the work of Trillium Bridge.[15]

"*Veneto is determined to learn every lesson we possibly can!*" said Mr Saccavini. It is about moving from evidence to policies. The Veneto region believes that it is on a journey on which it is moving from smaller-scale pilots to large-scale pilots and, eventually, towards the use of population-based big data.

2.4 eHealth for coaching people with diabetes in Slovenia

Clinician, Stanislav Pušnik, from the Healthcare Centre Ravne na Koroškem, in Slovenia offered an overview of the region's work on deploying eHealth for people with diabetes as part of the United4Health large-scale pilot.[16][17]

11 http://www.renewinghealth.eu, accessed 14th December 2015.
12 http://www.consorzioarsenal.it, accessed 14th December 2015.
13 http://www.renewinghealth.eu/documents/28946/396054/Model+for+Assessment+of+Telemedicine+MAST.pdf, accessed 14th December 2015.
14 http://www.epsos.eu, accessed 14th December 2015.
15 http://www.trilliumbridge.eu, accessed 14th December 2015.
16 http://www.europarl.europa.eu/stoa/webdav/site/cms/shared/2_events/workshops/2015/20151201/Stanislav%20Pušnik.pdf, accessed 14th December 2015.

This practical coaching application enables patients to take their own blood glucose measurements at home and transmit them to a central location via Bluetooth. If needed, diabetologists are available at the centre. The equipment and service was fully tested before it was used. Patient profiles and measurements are available once a week, and daily profiles are available graphically on an online portal.

The technology has enabled beneficial changes in therapy. Comparisons have been made of the initiative's HbA1c results[18] for patients who were classified into intervention and control groups. There was a meaningful drop in the HbA1c levels of the intervention group which, for example, permitted the postponement of lower limb amputations for a whole year. After one year of telemedicine monitoring, 64 and 17 patients respectively had reduced HbA1c results. The patients are able to use the technology, and benefit from it. Many patients want to continue using the system – as one patient said "*Finally, someone cares about me!*"

In terms of lessons learned: while patient recruitment proved to be harder to achieve than expected, those with previously poorly managed diabetes benefitted the most from the intervention. Changes in regular care protocols have been based on risk evaluation, and the results show the possible reduction in need for future treatment. Medical professionals are excited by the results! Results can be explored in person during patient appointments.

With regard to the region's future plans, it wants to scale up the services so that it is available to more diabetic patients (including those with HbA1c ratings of more than 8 per cent). It can also see the system's potential importance for patients with other conditions e.g., obesity, hypertension or having had heart and kidney transplants. It would like to see these telemedicine services provided nationwide in Slovenia at the highest level of quality (e.g., with certification provided, and using either national or international codes of practice).

2.5 Questions asked and opinions expressed by the audience

As a result of the presentations, the facilitator observed that eHealth can obviously offer the opportunity to overcome all sorts of healthcare silos, and bring together both health care and social care. Nevertheless, appropriate data sharing and relevant data protection, combined with how to seek for patients' consent, remain of concern.

Among questions posed to the presenters were those which came from representatives of the Continua Alliance,

[17] http://united4health.eu, accessed 14th December 2015.
[18] B=Hba1c is a measurement of haemogoblin to identify its glucose concentration.

European Cancer Patient Coalition, and the European Society of Cardiology. Opinions expressed by attendees related to the six issues highlighted below.

Box 1: Experience on scaling-up eHealth in Europe

- Resolve the substantial systemic differences among European countries e.g., on payment systems for services.
- Ensure that clinicians are reimbursed if they offer services via telemedicine.
- Encourage institutions, like the European Commission, to require interoperability among eHealth systems and services, provision of personalised services, and cheaper technological solutions.
- Coordinate the various existing action plans and maps around health/eHealth issues (including e.g., in research areas such as neuroscience).
- Fund patient advocacy, and examine whether there are particular challenges when telemedicine is used by specific types of patients (e.g., cancer patients).
- Handle the challenges to digital literacy of particular (groups of) individuals (e.g., technophobes and older adults).

3 Part 2: Challenges related to the deployment of eHealth in Europe

This session built on the grassroots challenges explored in Part 1 of the session to the deployment of eHealth in routine care in the European Union. It contrasted these real-life experiences that offer a first overview of the results of the U4H project with two sets of studies undertaken by academic researchers.

All the academics had used different social science approaches in their work. Telehealth appears to be an issue that is much more organisational than technical.

Measuring eHealth/telehealth deployment is important, as is using appropriate indicators. The U4H project has undertaken a comparative study of intervention and control groups on all its sites combined with the re-use of the MAST methodology first used in Renewing Health.[19]

In this part of the programme, there was no time for a specific question-and-answer session, however, all the participants were asked to join the policy-related panel discussion which is reported in Part 3 of this report. Policy messages emerged particularly from that last part of the session.

In summing up, the facilitator emphasised the growing need to look beyond traditional partnerships so that policy-makers and governments start to explore bridging the gaps between healthcare, social care and housing, for example.

3.1 Challenges for the deployment of eHealth in routine care within the European Union

Assistant Professor Alexander Hörbst, of the University for Health Sciences in Austria, has undertaken meta-analyses of the literature on eHealth deployment. His opening point was that descriptions of the challenges to eHealth have been basically the same for some time. In his latest co-written publication, with its focus on integrated care, published in the *2015 Yearbook of Medical Informatics*, he writes: "*It is important to incorporate experiences made/ collected over time,* ***as the problems encountered seem to remain almost unvaried***.[20] *In order to support further systematic investigations on the topic it is necessary to rethink existing concepts and definitions to realign them with the ideas of integrated care*."[21]

Academics love to focus on definitions, and this meta-study has gone back to the founding set of definitions of

[19] http://www.renewinghealth.eu, accessed 14th December 2015.
[20] Our emboldening.
[21] Cf. Hoerbst A, Schweitzer M. A systematic investigation on barriers and critical success factors for Clinical Information Systems in integrated care settings. *Yearbook of Medical Informatics*, 2015. http://www.ncbi.nlm.nih.gov/pubmed/26293853, accessed14th December 2015.

eHealth, starting in 2005. To be provocative, said Professor Hörbst, a more current definition of eHealth could be "*predominantly new technology, with substantial cost*", a description which the United4Health project[22] is attempting to challenge.

For Alexander Hörbst, perhaps the most complete picture of all the challenges, and how to turn them around using positive critical success factors, was provided by the recently completed MOMENTUM thematic network.[23] In contrast to many studies which focus purely on analysis of the literature, the essential difference in this initiative was that its results emerged from the actual work of telemedicine doers who shared their real-life experiences with each other. The United4Health project is also very much concentrated on actual deployment.

Within the European Federation for Medical Informatics (EFMI), Professor Hörbst worked on a study that focused on the strategic, professional and organisational issues around eHealth.[24] Around 2011, among the biggest challenges perceived were the eHealth legal framework and national strategies.

Alexander Hörbst's own perception of the field today is that the challenges are more organisational than technical. A 2015-reported study that he has run reviewed over 40 publications dating from 1994-2014. It organised the literature into a two-part structure that focused on barriers and success factors. The study enabled Professor Hörbst to analyse the results of many useful European Commission co-funded studies that have taken place over the past decade e.g., *eHealth is worth it!*[25] and the electronic health records impact study: *Interoperable eHealth is worth it*![26], concluding with the work on the MOMENTUM critical success factors.[27]

Among his concluding remarks about what future studies are to be advised, Alexander Hörbst advocated the need for:

- Operationalisation of the results of all these types of studies.
- Appropriate evaluation.
- A sound understanding of the market.
- Avoidance of known barriers.
- The introduction of incentive schemes that are financial, functional as well as innovation-oriented.

The United4Health project has made many similar observations in its policy messages.[28] These are findings which are increasingly being supported by the large numbers of real-life and academic initiatives that are underway.

22 http://united4health.eu/, accessed 14th December 2015.
23 http://telemedicine-momentum.eu/project/, accessed 14th December 2015.
24 Moen A, Hackl W, Hofdijk J, Van Gemert-Pijnen L, Ammenwerth E, Nykänen P, Hoerbst A. eHealth in Europe – status and challenges. *European Journal for Biomedical Informatics*. 2012, 8(1)
25 http://www.ehealth-impact.org/download/documents/ehealthimpactsept2006.pdf, accessed 14th December 2015
26 http://www.ehr-impact.eu, accessed 14th December 2015.
27 http://telemedicine-momentum.eu/wp-content/uploads/2015/02/D3.4_v1.0_ValidatedBlueprint.pdf, accessed 14th December 2015.
28 http://united4health.eu/wp-content/uploads/2015/12/U4H-Policy-Message-Briefing-STOA-30-11-2015.pdf, accessed 14th December 2015.

3.2 European Union country comparisons in eHealth: some policy and research directions

Professor Wendy L. Currie from Audencia-PRES LUNAM, Audencia School of Management, in France described her six-year long comparative study that is on-going. The TEMPEST study originated with a large consortium of partners, particularly supported by Microsoft. It examined the whole European landscape on eHealth and discussed the priority areas for the field. Its main focus was on "transformational health".

Different forms of eHealth have been around for more than half a decade. In particular, electronic medical records have been available since the 1950s. In 2009, the main barriers and challenges that people had to face were those of access, mobility and cost. eHealth should be seen not as a technology issue, but as a user-related issue.

The TEMPEST study examined what was happening in the 28 European Member States. Its results show how different the size of the country populations are, and how much larger they are in particular in six of the states (France, Germany, Italy, Spain, Poland and the United Kingdom).

The TEMPEST methodology allows policy-makers to make better informed decisions about the intersection between health and technological factors.[29] It aggregates quantitative indicators (it drew on similar work on indicators by large international organisations such as the World Health Organization and the Organisation for Economic Co-operation and Development). It benchmarks performance and allows comparisons.

The study's original 84 indicators that have now grown to 150. Chiefly they show the variety among Member States. They show the differences in readiness (for example, most recently in mHealth) among the states between front-runners, leapfroggers, followers, and laggards.[30]

Professor Currie's interesting observations included the need to focus on:

- The basics, especially general purpose technologies.
- IT and organisational issues together.
- The fact that, in countries where there is a mature healthcare market, populations do not necessarily have the impetus to use eHealth.

TEMPEST has come to eight recommendations with regard to the need for:

- Close alignment between the eGovernment and eHealth domains.
- Expenditure.
- Investment in broadband infrastructure.
- Investment in states where large numbers of people have never used the Internet.

[29] http://www.palgrave.com/page/detail/the-palgrave-international-handbook-of-healthcare-policy-and-governance-ellen-kuhlmann/?K=9781137384928, accessed 14th December 2015. Cf. W.L. Currie and J.M.M. Seddon (2015) E-Health Policy and Benchmarking in the European Union. *The Palgrave International Handbook of Health Policy and Governance*. Palgrave MacMillan: London.

[30] http://www.palgrave.com/page/detail/the-palgrave-international-handbook-of-healthcare-policy-and-governance-ellen-kuhlmann/?K=9781137384928, accessed 14th December 2015.

- A focus on cross-border services.
- An increase in general practitioner and clinics' web portals.
- Education and training for people who want to look for health information on the Internet.
- Achieving quick wins around health awareness issues e.g., using mHealth.

Again, the United4Health project has made many similar observations in its policy messages, particularly with regard to cross-border initiatives, education and training, and the importance of the local (national or regional) context.[31]

3.3 Patient and clinician perspectives on eHealth in Europe

United4Health is one of the largest multi-centre large-scale deployments: it has involved 19 sites in 12 countries with more than 10,000 patients. United4Health is enabling a clear seven-step approach of how to progress from telehealth innovation to adoption in real-life. United4Health has explored the potential for patient-centred care throughout Europe using telehealth and telemedicine applications. The project is about to come to an end in January 2016.

Key policy messages – emerging from the real-life experiences explored in the United4Health project – can make a difference.

United4Health shows that deploying telehealth solutions at scale in a health and care system is increasingly regarded as a key enabler for the delivery of sustainable health and care services. Evidence has shown that the transformational change need for eHealth initiatives to be successful on a large scale needs both bottom-up willingness to change and top-down policy support.

Dr. Panos Stafylas, scientific coordinator of the United4Health project, discussed the latest clinical findings fresh from United4Health, particularly with regard to what the project has meant to patients and healthcare professionals.[32] While these are preliminary data, a more formal release of the project results will occur in one month's time on 18th/19th January 2016.[33]

Panos Stafylas showed that more than 11,000 publications on telemedicine have been published between 1967-2012: they indicate that telehealth is at least as safe and reliable as usual care. However, the need for an understanding of the economic benefits of telemedicine is becoming more important and more challenging. Are policy-makers ready to support deployment in real life? What about patients and healthcare professionals too?

[31] http://united4health.eu/wp-content/uploads/2015/12/U4H-Policy-Message-Briefing-STOA-30-11-2015.pdf, accessed 14th December 2015.
[32] http://united4health.eu/, accessed 14th December 2015.
[33] https://www.ehtel.eu/references-files/jointsymposium2015/Joint%20Digital%20Healthcare%20Symposium%20Schedule%20January%202016.pdf, accessed 14th December 2015.

Dr Stafylas traced the history of the development of United4Health from its roots in the earlier Renewing Health large-scale pilot.[34] United4Health has provided an investigation and assessment of deployment challenges, it was not a clinical trial. It has tested three types of services (telemonitoring, health monitoring and coaching, and online health monitoring/support),[35] by using the MAST methodology to investigate the relevant impacts and effects.

Over 10,000 patients have been engaged in the initiative, of which almost 5,000 formed the evaluation population. More than 1.5 million patient days of follow-up have been involved!

Patients with three types of conditions have been studied during the three years during which the project has taken place. A rapid overview of the results shows that:

- For patients with diabetes, HbA1c readings have reduced significantly; more patients who used the technologies reached their targets.
- For patients with chronic obstructive and pulmonary diseases, there have been reductions in hospitalisations with fewer days hospitalised.
- For patients with cardiac heart disease, both admissions and days hospitalised have been significantly reduced. The overall measures show reductions in hospital use and a shift towards primary care.

More than 90 per cent of patients are satisfied with the services offered! They view telehealth as a complement to usual care, and not as a substitute for other healthcare provision. Telehealth has, however, successfully become part of usual care in European regions and countries such as Galicia (Spain), Scotland (the United Kingdom) and Norway.

The five main clinically-related messages that are emerging from the United4Health project are highlighted in Box 2 (below).

Box 2: Key United4Health clinically-related messages

- Health systems across Europe face significant challenges.

- Telehealth is at least as safe and effective as usual care.
- Telehealth can improve self-management and support health coaching.
- Even when the clinical results are neutral, three other factors need to be taken into account since they affect deployment (the evolution of the technology; urgent need for changes in healthcare provision; and challenges to the sustainability of the healthcare systems and organisations).
- In terms of information and communication technology (ICT)-supported care pathways: they can act as a “life-jacket” for patients, and collaboration on the part of all stakeholders is needed in their development, and they take time to formulate.

[34] http://www.renewinghealth.eu, accessed 14th December 2015.
[35] http://united4health.eu/wp-content/uploads/2015/12/U4H-Policy-Message-Briefing-STOA-30-11-2015.pdf, accessed 14th December 2015. See page 7-8.

4 Part 3: eHealth in Europe and the role of European Union policy - A panel

The session culminated with a panel discussion on the priorities for eHealth in the European Union and the role of European policy.

The panel contributors, in alphabetic order, were:

- Wendy L. Currie, Audencia-PRES LUNAM, Audencia School of Management, France.
- Marco d'Angelantonio, HIM SA, Belgium.
- Alexander Hörbst, University for Health Sciences, UMIT, Austria.
- Panos Stafylas, scientific coordinator – United4Health project.
- Madis Tiik, Estonian e-Health Foundation, Estonia.
- Pēteris Zilgalvis, DG Connect, European Commission.

The session was led by Ms Eva Kaili, MEP and First STOA Vice-Chair, together with John Bowis ex-MEP, facilitator of the afternoon's session.

To launch the conversation, starter questions were asked of the panellists by the panel facilitator. They included:

- What role do legislators play in determining levers for the transformation of health care such as reimbursement?
- How to cope with the diversity of European health care systems as opposed to the need for interoperability and standardisation?
- What measures can be adopted by the European Union to accelerate the deployment of telehealth at scale and in routine care?

The initial points made by the panellists focused on major policy messages related to policy environments, national consistency, and education and training. They paid attention to both the public and private sectors, the needs of citizens, and options for handling data protection.

Box 3: Main policy recommendations

Marco d'Angelantonio (HIM SA) reinforced United4Health's three main recommendations. The project findings include the need to:

- Secure a policy environment which promotes and supports telehealth use as a core component of routine service delivery.
- Set out a national consistency of approach together with the ability for local adaptation.
- Empower people and healthcare professionals to take full advantage of telehealth through promotion, training, skills development and education is also important.

While there is no absolute guarantee of success, developing a supportive, unambiguous and consistent policy environment will empower individuals and organisations to take the difficult decisions needed to redesign their services.

Wendy L. Currie (Audencia-PRES LUNAM, Audencia School of Management) suggested that a main thrust for attention should be to bridge the current split between healthcare that is offered either through the public sector or the private sector. Another focus of attention should be data protection: Dr Currie drew attention

to the 1996 HIPAA law in the United States,[36] according to which companies can be fined up to 2 per cent of their annual turnover if they fail to take care of how they use, store and secure health and care data.

Madis Tiik (Estonian e-Health Foundation) proposed to focus more on citizens and on a broader view of health and well-being). He emphasised the needs of those who are presently heavy users of either healthcare services or social care services. He suggested that in current healthcare there is still too much concentration on "sick care". He advocated the need to integrate many more services together, rather than considering solely healthcare. Promising examples worldwide should be explored.

The panel facilitator remarked that it was important to look at both the medical and social outcomes of technology use. It is easy to overlook the "soft" benefits of telehealth in a variety of sectors of society (such as housing) when policy-makers and researchers focus uniquely on sickness. Sometimes sickness is a symptom of another cause, and not the problem. Gaining the trust, involvement and adherence of patients to medicines/treatments is also extremely important.

A member of the audience, the **co-Chair of the Healthy Life Extension Society** ("science for longer and healthier lives"),[37] drew attention to the need for a focus on healthy ageing and not just on health/sickness. He referred to the work of such United States-based research-oriented companies as Calico Labs[38] and Human Longevity Inc.[39] He advocated extending of use of big data to enhance healthy ageing in old age.

As a result, the panellists focused in issues related to big data. In particular, **Claus Nielsen of the Continua Alliance** announced his sense that the current approach on data ownership in Europe is currently totally wrong. Instead, the European Parliament and the European Commission are in positions to pave the way to ensure that data can flow while still using appropriate standards and regulations. His message was to liberate people so that they have the opportunity to handle their data themselves! Another attendee enquired more cautiously about the geographic location of European major data centres and servers. Another asked about sources of innovation funding in Europe.

Box 4: Big data and open data

Pēteris Zilgalvis (European Commission) made three points: First, he emphasised the role of the EIP AHA in generating stakeholder involvement and spreading the word about telehealth use: a relevant meeting is the fourth partnership conference to be held in Brussels on 9-10th December 2015.[40] Second, he emphasised the possibilities offered by big data for public health, and stated that there needs to be more public sector interventions that enlarge this field.[41] Further consolidation of activity in Europe on this would be welcome. (This topic was explored at the 16-17th November 2015 European Data Forum 2015 in Luxembourg.[42]) Indeed, the European Commission has a year-old "lighthouse

36 http://www.hhs.gov/ocr/privacy/hipaa/understanding/, accessed 14th December 2015.
37 http://www.heales.org/nhs/, accessed 14th December 2015.
38 http://www.calicolabs.com, accessed 14th December 2015.
39 http://www.humanlongevity.com, accessed 14th December 2015.
40 https://ec.europa.eu/research/innovation-union/index_en.cfm?section=active-healthy-ageing&pg=partners-conference-2015, accessed 14th December 2015.
41 https://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2442-sc1-pm-18-2016.html, accessed 14th December 2015.
42 http://2015.data-forum.eu, accessed 14th December 2015.

initiative" on big data.[43] Big data can, of course, totally up-end traditional business models. Third, he remarked that the upcoming Data Protection Regulation is very soon to be agreed.[44] It will likely specify the use of data for public health, (medical) research, and other areas that will support the public good. What, he wondered, if people could be incentivised to share data and receive particular rewards if they agree to have their data used for other, wider, purposes?

In a second intervention, Dr Zilgalvis focused on the many new instruments for innovation financing available from the European Commission: for example, the 2016-2017 Horizon 2020 work programme places a focus on rapid innovation and research projects getting nearer to the market,[45]; it also supports an innovation prize for food scanners.[46]

Marco d'Angelantonio (HIM SA) reflected that, as a result of Internet users accepting cookies, Google – as an example of a company – probably knows more about the health status of Internet users in Europe than do patients' own general practitioners. It would be great, he said, if people's data could become available to medical doctors. If patients want their own health data to be freely available, he suggested, this should be allowed.

Wendy Currie (Audencia-PRES LUNAM, Audencia School of Management) spoke of the vast amounts of health data from the OECD and WHO which are only published with two to three years' delay. In terms of her own TEMPEST analysis work, she would like it to be submitted to time series analysis.[47]

The panel facilitator suggested that treatment/medication compliance can be improved when the patient knows that someone is monitoring their compliance/adherence.

A member of **neuroscience research community** remarked that it can be reassuring for patients to know that people/systems monitoring their data could interpret for them how they actually feel. He expressed the opinion that it is everyone's responsibility to know how their own "machine" (i.e., body) works. Through a growth in health literacy, patients will sooner or later come to be judged as being as competent as physicians. A revolution is needed in health education systems through the use of customised software and massive open online courses.

A last round of interventions was made by the panellists. They were asked what their specific requests would be to either the European Parliament or the Council. They offered comments as follows:

Box 5: Specific requests to the Parliament or Council

Marco d'Angelantonio (HIM SA): Encourage regions to use the European structural funds for the purpose of telehealth deployment. Help the more than 300 regions in Europe to be supported when deploying eHealth services! In United4health, so far only 14 regions have been helped.

[43] https://ec.europa.eu/digital-agenda/en/towards-thriving-data-driven-economy, accessed 14th December 2015.
[44] http://ec.europa.eu/justice/data-protection/reform/index_en.htm, accessed 14th December 2015.
[45] http://europa.eu/rapid/press-release_MEMO-15-5832_en.htm, accessed 14th December 2015.
[46] https://ec.europa.eu/research/horizonprize/index.cfm?prize=food-scanner, accessed 14th December 2015.
[47] https://en.wikipedia.org/wiki/Time_series, accessed 14th December 2015.

Panos Stafylas (United4Health project): Take a clear position about which indicators are relevant, particularly the crucial indicators that could encourage national and regional policy-makers to adopt eHealth services. The European Commission, in particular, could ensure that the projects it funds share common indicators.

Pēteris Zilgalvis (European Commission): Suggested to "*make good disruptive innovation sustainable once it is starting to disrupt in the public interest*." Important ways to sustain positive disruption could already be occurring in and through small- and medium-sized enterprises, and could be supported by the development of a code of conduct for the use of good mHealth apps. The population in general also has the opportunity to offer feedback to the upcoming mid-term assessment of the Horizon 2020 programme[48] and the mid-term overview of the 2012 eHealth Action Plan.

Alexander Hörbst (University for Health Sciences in Austria): Encourage the support and financing of completely new, disruptive innovations. Note that, ultimately, the challenges are not about cash. Rather, the immense amount of work that is being done, and ideas emerging, through science and European Union projects need to be spread, into the real world. In this way, people can benefit from the outcomes that scientific projects produce.

Wendy Currie (Audencia-PRES LUNAM, Audencia School of Management): Close the gap between policy-makers and academics. Too much scholarly research published in 4-star journals is not practically relevant to people. Instead, fund the kinds of research that are relevant to people living throughout the whole European Union community!

Madis Tiik (Estonian e-Health Foundation): Focus on the messages of: My body, my data. Liberate the data! Take patients on this new journey, and the whole problem will be dealt with quicker.

[48] http://ec.europa.eu/smart-regulation/roadmaps/docs/2015_rtd_005_evaluation_ie_horizon_2020_en.pdf, accessed 14th December 2015.

5 Conclusions

Ms Eva Kaili MEP thanked the speakers and attendees for their participation and input. She announced that the afternoon had offered a good opportunity to focus on STOA's strengths by mixing together scientists, policy-makers and citizens so that they all understand the important messages on a given topic – in this case, eHealth deployment. Holding the event had helped move eHealth as an issue further up the policy agenda!

Ms Kaili was pleased that all present had heard – from the United4Health project, among others – concrete accounts of eHealth deployment case studies around Europe.

She advised people not to be overwhelmed by the slow speed of progress. Instead, Europeans ought to let data flow, especially when it involves their health; indeed, more appropriate legislation on health data should soon be available.

Ms Kaili's own suggestion was that a better public campaign on eHealth is needed, with both citizens and patients being educated to take care of themselves from an early stage in life! Making progress on eHealth is not so much about money, she proposed, rather it is about the 28 Member States working together to exchange data.

Last but not least, Ms Kaili anticipates that there might be a further opportunity for the STOA to organise a future event on mobile health (mHealth).

Appendix A: Participants and presentations

List of Participants

Information not to be disclosed for privacy reason.

Presentations

The presentations from the STOA Workshop can be viewed on the workshop website: http://www.europarl.europa.eu/stoa/cms/home/events/workshops/ehealth

The STOA session has been podcasted and is available at http://www.europarl.europa.eu/news/en/news-room/20151126IPR04946/Science-and-technology-options-assessment-meeting-01122015