DECI Report Summary

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Periodic Reporting for period 3 - DECI (Digital Environment for Cognitive Inclusion)

Reporting period: 2017-06-01 to 2018-05-31

Summary of the context and overall objectives of the project

The progressive increase in the average human lifespan generates a rising importance of problems and issues related to ageing: these include cognitive impairment. Cognitive impairment reduces the ability of taking care of themselves and impact on the risk of social isolation, institutionalization and mortality.

In this context, the goal of the project is to define an innovative business model to supply assistance services, allowing independent living for elderly people, especially for those affected by mild dementia or Cognitive Impairment.

Work performed from the beginning of the project to the end of the period covered by the report and main results achieved so far

"According to the project goal, the innovative outputs produced by the DECI project are the following:

1. Integrated platform and related integration interfaces that include (see DECI digital solution image):
   - Integrated Care platform: Web-based interface for clinical professionals to share information about the patients (e.g. clinical data, assistance project, relevant clinical events);
   - Activity monitoring system: activity monitoring system worn by the patients based on an actigraphy smartwatch which allows registering the number of steps, intensity of the physical activity and where it took place;
   - Coaching and training system: mobile application for the patients to interact with the Case Manager or access to educational material, follow a computer based cognitive simulation, follow a computer based physical activity program;

2. The Service and Organizational model (see DECI organizational model) that includes a remote monitoring of patients’ physical activities and of the adherence to cognitive and physical exercises and a continuous communication among clinicians and patients/caregivers. This is provided within a new organizational model that includes a Case Manager who follows the patient during his/her overall care path and accesses the DECI system. In Sweden, there is an additional innovation: the DECI mobile team consists of a multidisciplinary team visiting patient’s home.

3. The general Business Model and the Coherence Matrix (see DECI Business model image): the methodological approach to the design of a new technological, service and organizational model for elderly people affected by MCI and MD in every EU Country and its evaluation. The Consortium designed a Coherence Matrix that supports each EU Country in defining its own business model, according to its specific needs. The tool also underlines the common needs and technological functionalities among the different EU Countries.

These results were implemented in the four pilot sites: Italy, Israel, Spain and Sweden. During the Y3 the Consortium had a delay in the patients enrolment and in the implementation of the DECI solution in the pilots (see D8.4). For that reason, the Consortium enrolled a total of 508 patients and included in the WP6 evaluation reports only the patients who finished the
intervention by the end of April (138). The enrolled patients for each Country are reported in the “DECI patient” image. However, three pilot sites (Italy, Spain and Sweden) will finish the 6 months of intervention after the project end.

The Consortium analysed the results from different perspectives in each pilot site with quantitative and qualitative methods. The synthesis of the results is reported in the image “DECI results”.

In order to help decision-makers to make informed decision regarding future implementation of DECI, the business cases for each pilot site was also defined. In all, implementing the DECI solution will not result in a huge saving of money (except for the Italian and Spanish contexts), nor will it cost money. Furthermore, quality of life will not be affected. On the other hand, illness is prevented at no extra costs (which means a decreased burden for older adults), patient satisfaction rises, and care professionals gain skills (at the cost of an increased workload).

The Consortium defined also two transferability examples of the application of the DECI results to other healthcare settings (The Netherlands and the Italian Lombardy Region).

The Consortium also performed prepared individual partner exploitation plans as well as a preliminary business plan for the future commercial exploitation of the DECI digital solution. The evaluation of the pilots revealed the need for further development of the DECI solution.

Progress beyond the state of the art and expected potential impact (including the socio-economic impact and the wider societal implications of the project so far)

“In the following lines, we describe the status of the DECI contribution to the expected impacts from the call declared in the DoA:

“Outcome evaluation is conducted versus a control group of patients with similar characteristics”; “Improved patient value including wellbeing, awareness of his/her health status, capability to self-manage his/her illness”; “From an ICT supplier’s point of view, set of indicators and business case are developed, in order to evaluate both effectiveness of the intervention and possibility to replicate the project to manage different forms of socio-care settings”.

The Consortium defined the a general evaluation framework from different perspectives (D6.1). Moreover, the project demonstrated the positive societal benefits within the 3 years in all the pilots (D6.2).

Regarding the following expected impact declared in the DoA: “based on the pilots’ results a business case for each country (composed of organisational model and supporting IT solution) based on KPIs is developed. An important step of the project addresses the viability for such models and technologies to be implemented in other care settings including patients’ homes”.

The Consortium defined a general Business Model specialized in each pilot site (D3.1) and design the business cases for each pilot site (D6.2). Moreover, the Consortium defined two examples of transferability of the Business Model in another Country (The Netherlands) and in a specific regulatory context (Italian Lombardy Region), see D6.3.

Regarding the following expected impact declared in the DoA: “reduction of average early hospitalization – or in medical care residences – per groups of patients. Prove cost-effectiveness feasibility improvements for existing care models via ICT support”.

A BM feasibility check was performed in each pilot site, accordingly to the local systems (D3.1). Moreover, a cost-minimization analysis was designed and delivered in D6.1. The qualitative analysis demonstrated the efficiency of the DECI solution from the patients’ and caregivers’ point of view (D6.1). Moreover, the designed business case demonstrated the economic efficiency of the DECI solution (D6.2).

Regarding the expected impact declared in the DoA: “Improved patient value including wellbeing, awareness of his/her health
status, capability to self-manage his/her illness".

The Consortium definition of the KPIs from different perspectives in D6.1. The evaluation of KPIs demonstrated a decreasing of the quality of life for patients in control groups (with a statistical significance) and an improvement in quality of life for the intervention groups (without a statistical significance).

Finally, as regards the following impact: ""From an ICT supplier’s point of view, set of indicators and business case will be developed, in order to evaluate both effectiveness of the intervention and possibility to replicate the project to manage different forms of socio-care settings"". The Consortium definition of the KPIs from different perspectives in D6.1. Moreover, the Consortium defined a preliminary Business Plan for the DECI digital solution (D7.3).

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