Integrated care model adapts to the needs of dementia patients

Chronic dementia diseases share needs such as medication control, patient empowerment and caregiver support. A powerful integrated care platform is also going to tackle variable patient-specific requirements.

Almost 10 million Europeans live with Parkinson’s, Alzheimer’s and other dementias, and ageing promises to double this number by 2030. Integrated care models address how care services could be coordinated and delivered to deal with people’s needs in a more efficient way while considering all stakeholders’ demands and perspectives.

The core goals of the ICT4Life project according to its coordinator Alejandro Sánchez-Rico “were to address this context of integrated care for neurodegenerative diseases, specially Alzheimer’s and Parkinson’s diseases.” Development of an ICT-integrated care platform supports information sharing and coordination.
among all care actors.

From inception to successful conclusion

The first ICT4Life Advisory Board meeting coincided with the design phase and the main guidelines on the privacy and ethics requirements related to project objectives based on sensorial tracking, gathering and analysing of patient data. As well as appropriate patient consent procedures, end-user involvement within the project was considered important, including the patient, formal and informal caregivers, and health and social professionals. Needs for exploitation for research and design of the technical implementations were also addressed.

At project conclusion 3 years later, ICT4Life has developed a modular platform providing six cluster services for integrated care adaptable to different end users’ needs. The platform joins sensor-based monitoring of patient status and evolution and functionality services provided to all stakeholders involved in the care of Alzheimer's and Parkinson's diseases.

A feedback-based decision-making engine integrates patients with caregivers’ data. The system also incorporates improved interaction mechanisms with interfaces through smart TVs, smartphones and desktop applications. As an added extra, knowledge is created on comorbidities. The ICT4Life Platform has been validated in real scenarios in Spain, France and Hungary – with positive feedback among users confirming its value proposition to support integrated care.

Inclusion of a gender perspective was an important feature of ICT4Life, regarding both the high-level professionals who participated in the project and the end users in the testing and pilots. Mirela Popa, postdoctoral researcher at partner institution Maastricht University, states: “We should never tell our children or students that they cannot achieve something, instead we should always motivate and encourage them to do what they like, no matter their gender, social or economic situation.”

Challenges of technology integration

Barriers to a flexible, scalable platform boil down to the sheer range of systems to be added coupled with discontinuation of the obsolete. “As there are several technologies involved in the sensorial tracking, data analysis and machine learning, data storage and user interfaces, integration is based on standard cloud technologies,” explains Sánchez-Rico. This also supports the flexibility and scalability of the project results, valuable for exploitation. “We faced some challenges due to the discontinuation of some technologies that required us to adapt and work on the integration of substitute technologies,” he adds.

Forging forward

ICT4Life’s platform is prepared to be adapted to different market scenarios, some solutions are already being used for further research or in market proposals. In time, the market will become more interesting with new and greater opportunities as integrated care approaches are established among European regions. The ICT4Life result with its flexibility, modularity and scalability is prepared to face the upcoming
Sánchez-Rico sums up the ICT4Life response to the variability in European healthcare markets. “A wide diversity in structure, governance, funding and care provision makes the market complex and requires a tailored approach for exploitation being able to adapt the technology to different stakeholders in each region or country.”

**Keywords**

ICT4Life, integrated care, dementia, Alzheimer’s, Parkinson’s, healthcare

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