

TransCare

New care pathways for supporting TRANSitional CARE from hospitals to home using AI and personalised digital assistance

KEYWORDS

Transitional care, Machine Learning, Personalized digital assistance, Readmission avoidance, Solution scaling, Healthcare systems integration,

DURATION

36 months

ABSTRACT

As seniors get older, they may face a variety of health challenges and multimorbidity patterns that require hospitalisation. While it's natural for seniors to want to return home as soon as possible, adjusting to life and following the prescribed treatment plan after hospitalisation can be difficult. This makes the risk of readmission during their convalescence periods after discharge to be high. In the case of heart failure, 25% of the patients require readmission within one month of hospital discharge, and 40% within 3 months after discharge. The 30-day rehospitalization rate is approximately 25% for patients with heart failure or dementia, and around 17% for patients with diabetes. The causes of this phenomenon are multifactorial with both patient and healthcare system factors. The older adults chronic condition is an important factor that contributes to their fragility, complicated by additional risk factors such as deficits in activities of daily living, social situations exposing them to relative isolation and lack of support, cognitive challenges especially when illnesses strike, and emotional anxiety. A fragmented approach to transitional care where patients receive care from different providers, municipalities, facilities or at home without a unified care plan fails to support patients to stabilize and avoid acute deterioration from chronic diseases, having economic consequences, due to high rates of preventable hospitalizations and emergency and ambulatory department visits. The technology-assisted transitional care models can help the healthcare providers to better monitor patients' conditions, provide timely follow-up care, and communicate more effectively with patients. This can help reduce the likelihood that a chronically ill older adult will need to be readmitted to the hospital, ultimately improving their health outcomes, and reducing healthcare costs. In a previous Active Assisted Living project (H2HCare) we have developed an innovative Information and Communication Technology driven solution for assuring the continuity of care for patients in their transition from hospital to home. It allows for assessing elderly patients prior to discharge by stratifying the risks for hospital readmissions, remote monitoring of daily life activities, vital signs and medication using Internet of Things sensors and Machine Learning to identify situations leading to rehospitalization and provide post discharge personalised recommendations using digital assistants. In the project longitudinal trials, the patients have had a positive experience with the technology, and it can reduce the cost of care for hospitals, but significant challenges still need to address to fully realise its potential such as the redesign care pathways to integrate the technology, establish data sharing requirements, and provide clinical evidence demonstrating the impact on reducing the risk of readmissions. The main goal of TransCare project is to address the open challenges previously identified in implementing technology-assisted transitional care, by supporting the adaptation and scaling of the solution already developed technology, to a larger number of patients and considering the specific contexts of

different healthcare systems in Europe as well as different types of multimorbidity patterns. Support objectives: (i) study how the care pathways will need to be redesigned for allowing the integration and usage of the technology in different settings providing the necessary knowledge for care relocation from hospital to home (e.g. payment models, hospitals incentivisation, etc.); (ii) setup and conduct longitudinal trials to assess the potential of the technology to reduce rehospitalization rate within 30 days aiming to establish a clinically validated value proposition for the technology; (iii) adapt and scale the developed technology for transitional care considering the specificity of the different contexts in which the trials will be conducted.

PARTNERS

PI	Organisation	Country
Anghel	Technical University of Cluj-Napoca	Romania
ANCHIDIN	INSTITUTUL INIMII NICULAE STANCIOIU CLUJ-NAPOCA	ROMANIA
Barbarossa	Istituto Nazionale di Ricovero e Cura per Anziani	Italy
Gabrielsen	Farsund Kommune	Norway
Hellman	Karde AS	Norway
Solberg	Tellu AS	Norway