Natalia ALLEGRETTI

NATHCARE: Networking Alpine health for continuity of care

Duration: 1 September 2012 – 30 June 2015 (34 months)
Financing
The project is co-funded by the Alpine Space Programme:
- Total project costs: €2,753,000
- Total ERDF funds: €1,926,600

Project starting points

Demographic change is a global trend in Europe that particularly affects the Alps. The age index, showing the ratio between older people (those over sixty-four) and younger people (those under fourteen), reveals the dramatic extent of this problem, which is primarily the result of young people moving to nearby towns and cities for better employment opportunities. In the framework of a changing society, there is a need for specific political activities able to respond to new needs. Within the healthcare sector, the rising number of elderly can be easily translated into significant growth in the number of patients with long co-morbidities, as well as a wider range of age-related conditions. From a recent European study, about 80% of older adults have one chronic or long-term condition, and 50% at least two. Another dimension of this trend is the increasing number of women delaying motherhood: this causes more clinical risks and complications that require co-ordinated social and clinical services for taking care of woman. From such a perspective, the need to reduce the burden of increasingly older populations poses a common challenge for healthcare systems in the Alpine area and quality performance across care settings. Various forms of healthcare able to deliver better health to a changing population but, at the same time, able to support sustainable and efficient care systems, are needed. Organisational innovation supported by technology provides ways to best tailor care services both to the growing demand linked to ageing and to long-term expansion of diseases, and to offer the same level of services as in metropolitan areas to encourage residents to remain in the Alps. The main drive should be a move towards an integrated social and healthcare model fostering the concept of collaborative activities between hospitals and areas to support continuity of care and overcome fragmented interventions. Future healthcare systems thus need to deliver high-quality care while using cost-effective models.

Project purpose, objectives and content

Addressing a health-related condition – be it an acute or long-term disease – in modern healthcare systems requires the involvement of multiple professionals, each of them focusing on a facet of an intricate picture that needs integrated management. The need for more efficient ways to integrate and circulate both knowledge and clinical information among all participants during care is high and often unaddressed in the modern healthcare system.

NATHCARE's main goal is to provide ICT solutions addressing this problem and also to ensure that remote areas may enjoy the same opportunities as metropolitan areas as far as health is concerned. NATHCARE has designed and consolidated, and is validating, a model embracing all players in the system for securing economic sustainability and improved organisational adaptation of healthcare services. The proposed model, starting from the regional healthcare systems involved, analyses the process for appropriate hospital territory integration by mainly, but not exclusively, addressing long-term diseases from the perspective of continuity of care as a dimension of demographic change.

A central role in the project is played by "local healthcare communities", which represent the physical and organisational localisation of NATHCARE service experimentation. Each local community, nine in total, is identified according to the specific healthcare model in use at the regional level and is envisaged as networking all the stakeholders – patients, hospital-based healthcare professionals and territory-based healthcare professionals – involved in long-term care management.

The project strategy aims to promote exchanges of evidence-based information on best-practice and state-of-the-art management of health-related conditions starting with long-term diseases; supporting the implementation

of best practices described above at the NATHCARE pilot site level through the use of ICT tools and an innovative organisational approach; empowering patient profiling and identification for sharing over the entire NATHCARE consortium guaranteeing patients deserved treatment regardless of their location.

The NATHCARE approach was conceived taking into account that most healthcare systems target chronic conditions, implementing a "traditional" disease-care model that is mostly physician-centred, episodic, strongly focused on acute care and reactive rather than proactive. Modern healthcare systems are struggling with the commitment to develop new care models, overcoming some inadequacy of "traditional" approaches, designing models that should be patient-centred, integrated and proactive with care delivered by a healthcare team. This means that, to ensure an adequate response from health systems for this dimension of demographic change, measures such those listed below should be implemented:

- Better coordination of care across health and social services, as well as across different levels of health care, is seen as crucial;
- Because many older people inappropriately remain in hospital, a number of measures can be applied to allow for more treatments out of hospital;
- Encouraging better self-care: increased health literacy and better access to technology, such as computers and the internet, may help improve the understanding and management of specific diseases.

Such measures have been taken into full account by the NATHCARE project in developing a "management solution for long-term care patients" through a three-pronged strategy: 1) *Integration of primary care:* integration of primary and secondary healthcare processes to establish an up-to-date patient care plan. This is intended to support the implementation of a patient-centred, coordinated care model, targeting patients requiring continuous and coordinated care, 2) *Knowledge management:* aimed at capitalising the professional competencies present in the NATHCARE network, making them available to all professionals and organisations. The final goal is to improve the level of service towards the highest standard available and to promote cooperation among centres participating in NATHCARE, 3) *Patient empowerment:* this is an essential part of NATHCARE focused on increasing awareness and promoting healthy lifestyles.

A coordinated care model simplifies the dialogue between different providers of healthcare services involved in caring for patients affected by chronic conditions and co-morbidities, such as elderly patients. This makes coordinating care across various levels of healthcare particularly important (integration rather than fragmentation). Better coordination and a greater emphasis on preventive services are advocated as a way to reduce hospital admissions and length of stay. With this has come a shift towards care and treatment moving out of the hospitals and into the community and the home, leaving patients and family with a greater responsibility for their own health. In line with this health transition, the focus on patient responsibilities and their role in managing their health has grown substantially and is an increasing focus of health policy. Empowering patients means providing them with the opportunities and the environment to develop the skills, confidence and knowledge to move from being passive recipients of care to active partners in their healthcare. To do so, information needs to be much more easily available and understandable; increased health literacy and better access to technology, such as computers and the internet, may help patients engage more in self-care. More structured access to knowledge promoting exchange of evidence-based information about best-practice and state-of-the-art management of health conditions will support healthcare professionals in delivering better care and in becoming more effective communicators.

The technical development of the model led to deployment of the NATHCARE system, allowing the start of the project pilot phase. The results of the model evaluation as implemented and used in real environments during the project testing phase, benchmarked with chronic disease management models currently adopted, will be offered to policymakers as an example for inspiration for adopting orchestrated policy strategies to mitigate the impact of demographic change on healthcare systems.

Work package content

The project is divided into eight work packages. Each work package is divided into a number of actions.

The project work packages:

- *WP1: Project Preparation*: Project proposal preparation.
- *WP2: Project Management*: Project management including content coordination and financial and economic management.
- *WP3: Information and Publicity*: Dissemination and awareness creation about the project and its results.
- *WP4: User Requirements*: Analysis of users' needs and requirements. Definition of the system's functional specifications.
- *WP5: Model Design*: Description of the NATHCARE model, which proposes a common, overarching architecture, which takes into account the diversity of regional implementations. Definition of the legal, technical and organisational rules to be applied to model implementation and operation.

- *WP6: Services and Platform Design*: Technical design, development and integration of the NATHCARE platform and services devoted to support the regions involved to best cope with dimensions addressed by the project as part of demographic change.
- *WP7: Testing and Piloting*: Implementing the NATHCARE system at pilot sites, training and pilot operational activities.
- *WP8: Assessment*: Analysis and assessment of current healthcare models devoted to continuity of care in partner regions. Evaluation and assessment of the NATHCARE model. Definition of the NATHCARE reference framework to be used at the political level as a reference for conceptualising policy guidelines.

Project results

The project has achieved relevant intermediate results, including:

- An analysis of the functional, technical, organisational and legal requirements conducted at the level of hospitals, healthcare organisations and professionals aimed at mapping current ways to manage chronic and long-term patients, and also identifying major elements for improvement of the chronic-disease and long-term-care management process.
- Definition of the functional and non-functional requisites shaping the NATHCARE model, which provides a set of ICT-based services integrating primary and secondary care, knowledge management and patient empowerment.
- A model conceived as a modular system composed of building blocks that can be customised according to three different scenarios for implementation: 1) a standalone solution, which was completely developed by the NATHCARE technical team, 2) an integrated solution, in which components of the NATHCARE standalone solution are replaced by components that are available at the pilot site, or 3) an organisation's own application, in which an already-existing solution is in place and is integrated with a knowledge management tool developed within the project.
- A network of nine local healthcare communities, geographically consistent, regionally based and qualified in each territory in the light of healthcare responsibilities and professionals' roles, gathering all the players in the care system to localise the pilot actions and to test and validate the NATHCARE model.
- A complete system prototype composed by two dedicated application modules: the Knowledge Management Tool and the Care Plan Tool. The NATHCARE system user interface (the main point of access to all NATHCARE services by system users) has been conceived to be as user-friendly as possible to facilitate use of the application and to create a pleasant and agreeable "look and feel" of the overall system. Deploying the system has allowed the start of the project pilot phase with different timing.
- A defined methodological approach and related indicators for assessing both current healthcare models and the NATHCARE model. The effectiveness of the proposed NATHCARE model will be measured starting from an in-depth analysis of current healthcare models applied in each piloting region for managing chronic and long-care term conditions, in order to understand the extent to which the NATHCARE model can improve them.
- A preliminary policy guideline providing an initial view of the lessons learned through implementing the project activities and outlining the initial results that the project team can offer stakeholders for further reflection.

Project partners

NATHCARE has a geographical coverage including nine regions in the Alpine area and is coordinated by a consortium composed by regional institutions in charge of healthcare and eHealth governance and policy implementation, healthcare organisations and hospitals, and competence centres combining technical and clinical skills.

The NATHCARE project partners are:

- Lombardy Region: General Directorate for Health (Italy), lead partner
- INSIEL s.p.a, RDT European Projects (Italy)
- Autonomous Province of Trento, Local Ministry of Health and Healthcare Policies, Department of Health Policies (Italy)
- Garmisch-Partenkirchen Hospital (Germany)
- Healthcare Cooperating Group, Rhône-Alpes Information System for Healthcare (France)
- Rhône-Alps Regional Oncology Network (France)
- Healthcare Cooperating Group, EMOSIST, FC (France)
- INSA, LIRIS, IT Department (France)
- Villach Regional Hospital (Austria)
- Golnik University Clinic of Pulmonary and Allergic Diseases (Slovenia)
- Geneva University Hospitals (Switzerland)

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