
CONFERENCE ABSTRACT

Deploying telemonitoring services in an integrated care model

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Introduction: The prevalence of congestive heart failure is considerably high affecting 10% of the population older than 70 years old. Due to the population ageing and the increased survival to acute cardiac diseases, CHF is becoming more common, representing a public health problem. In consequence, it will become increasingly difficult to maintain the quality of care of patient suffering from CHF.

In this context, home telemonitoring appears to be a promising alternative to allow healthcare professionals to follow up patient's health status more closely and then facilitating early detection of worsening symptoms. However, the effectiveness of these interventions in real conditions has not yet been sufficiently tested, since the implementation of telemonitoring services is considerably complex. Frequently telemonitoring studies do not overcome the pilot phase and do not reach the expected success when it comes to scale and place the intervention in routine practice.

The aim of the project is to define and up-scale cost-effective and sustainable telemonitoring services for patients with CHF.

Definition of the organizational model and the ICT infrastructure of the telemonitoring intervention have been deeply discussed in an inter-organizational and multidisciplinary work group, reaching consensus on how to implement the services within an integrated organizational model.

Both the care pathway and the technological solution have been defined in order to design a sustainable service. On one hand, the organizational model is adaptable and flexible enough to be tailored to new contexts allowing new organizations to incorporate the service into their routine practice. On the other hand, a huge effort has been done to integrate distinct technological platforms which permit that the telemonitoring data flow from patient's home to the EHR.

Short description of practice change implemented: The patient who meets the inclusion criteria and signs the informed consent is enrolled in the intervention. The technical provider

is responsible for installing devices for the measurement of the heart rate, blood pressure, pulse-oxymetry and weight at patient's home within a week after recruitment. In addition, a personal alarm device for 24/7 real-time emergency detection is installed. The patient is trained in using the telemonitoring and telecare devices.

Following the clinician's prescription, the patient will routinely transmit his/her parameters at least once per week. The telemonitoring devices collect and send the data wirelessly to the gateway located at his/her home. The gateway device transmits the data collected by the patient to the alarm management system of the Telecare Centre.

The operator of the Telecare Centre checks the data sent by the patient and activates the predefined protocol agreed by a group of professionals, including clinicians, general practitioners, nurses, general directors and representatives of the social area. When clinical parameters are out of range, the operator first verifies the alarm situation by a phone call to the patient. If the alarm is validated, the operator triggers the protocol depending on the severity of the situation. The operator contacts the eHealth Centre composed of nurses; they then solve the alarm on their own, notify the general practitioner or the specialist, or activate Emergency Department.

If the patient uses the 24/7 real-time alarm device provided, the Telecare Centre's operator can contact the Emergency Department and/or social services. In addition, the Telecare Centre also solves any technical problems arising in the use of devices.

Key findings: 150 patients have been recruited from May 2014 to June 2015 and each patient has been followed up to 12 months.

Preliminary results:

42.25% alarms are technical

The remaining 57.75%:

- 79.7% do not activate alarm
- 20.3% out of range (54.8% false positive, 30.3% true alarms, 14.7% not confirmed)

Healthcare activities upon alarms:

- 84,1%: solved by eHealth Centre
- 5,1%: solved by primary care
- 10,7%: solved in secondary care

High patient and caregiver satisfaction

Highlights:

- The organizational model using telemonitoring services model has to be well adapted to the routine practice.
- Complete telemonitoring service required (device installation, maintenance and user training)

- Need of both administrative management and guarantee of good quality of telemonitored data (avoiding false alarms).
- Primary Care is responsible for proactive control of the patients
- Distributed leadership is crucial from the implementation process perspective (clinical, managerial and methodological)
- Need to share midterm results and collect feedback from front-line professionals to detect improvement areas

Conclusions: We have seen that project objectives have to be completely aligned with the central organization's strategic plan to ensure the sustainability of the services. Using corporative technological platforms and existing resource re-organization also contribute to the maintenance of the service in long term.

Keywords: up-scaling; integrated care; telemonitoring; icts
