

Tele-ECG - a component in nearby care development

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Introduction

Nearby care is an important component in modern health care provision by the side of planned and specialised care. Nearby care is the entrance port to the care processes, but is also the level of care that manage diseases requiring frequent contacts with the health care. Nearby care is, from the patient's point of view, meant to be a seamless care involving care from the municipality, primary care and the nearby hospital. This development is in Sweden hampered by obstacles due to organisational borders.

Patients with chronic heart diseases are rather frequently seen at the nearby hospital's acute department. Many of these patients are old and are subject to home-based health care in elderly homes or private homes. When these patients feel a change in the health state or symptoms from the heart, the nurse from the municipality is in most cases consulted for advice. The nurse's base for an advice is knowledge of the patient history, blood pressure and pulse rate. This rather limited information for decision may cause admissions to the nearby hospital's acute department for extra security reason. A transport to the hospital is very uncomfortable for many elderly patients and means an additional load to the acute department. In this project we will investigate if an actual ECG and a telephone call to a physician at the nearby hospital's acute department will change the nurse's decision pattern. We will investigate if this added information base for decision will avoid unnecessary transports to the hospital, but also if this may speed up the process for patients with non-typical symptoms where an acute visit at the hospital is important. We will also investigate if the nurse/physician communication will cause other types of changes in disease management as for example changes in pharmaceutical treatment.

Methods

Portable ECG-devices and telecommunication service from Telemedizinische Service und Gesundheits Zentrum GmbH (TSGZ) in Bad Segeberg Germany was used for this project. The service comprises a small ECG device for 12-lead ECG (Card Guard 7100TM) and a telephone transmission to a server at TSGZ in Bad Segeberg that converts the ECG signals to an ECG-chart and sends it by mail to the acute department at the nearby hospital. This type of devices has been validated in a study with 128 patients where patient recorded ECG were compared to conventional 12-lead ECG [1].

This type of devices has been used by patients with chronic heart failure [2] or by general practitioners to send ECG for interpretation by cardiologist [3]. Our approach is to supply nurses (about 30 devices) at elderly homes and in home care teams with the device as a support to management of patients with heart related symptoms. The device will be used only in non-acute situations while the ordinary emergency call is used for the acute situations. The nurses have got ECG-devices and a telephone number to the nearby

hospital's acute department. When a patient complains of discomfort that may be heart related, the nurse will register an ECG and send it to the emergency department as described above. Thereafter the emergency department is called by the nurse to give additional information regarding the patient's symptoms and discuss further actions with the physician. An evaluation form will be filled in after each ECG-transmission.

This project is a part of the Interreg III B project "eHealth for regions" and telecardiology applications based on this service will also be implemented in Finland, Lithuania, Poland Germany and Denmark.

Results

The project started its running face mid of February 2006. The preparation face contained information and education to each team separately. Evaluation forms was created for the municipality nurses, the nurses at the acute department and the physicians who receives the ECG for consultation. The evaluation forms show the decisions taken based on the tele-consultation. We will evaluate medical, level of care and comfort aspects.

Discussion

This project contains no technical development but is focused on a new way of working for the nearby care. One side-effect of the project might be to bridge gaps between organisational borders. Another side effect we already noticed is that the GP may ask the home care team to use this device to take routine ECG at the patient's home instead of transporting the patient to the primary health care centre for this purpose.

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