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E-health services for Patient Centered Healthcare Teams

RemoAge
REMOTE SUPPORT OF AGED PEOPLE

E-health services for Patient Centered Healthcare Teams

T1.3 Remote multi-professional support

T1.1 Remote activity support in the homes

T1.4 Flexible support of family carers

Summary

Patient Centred Healthcare Teams are inter-disciplinary teams that offer an integrated approach to providing coordinated health care to patients over 60 years with complex long-term needs. Tablets are used to support patient treatment and follow-up of patients outside of the hospital. The goal is to improve communication and facilitate information exchange between team members, with external health care professionals and with patients and their families. Tablets enable direct communication with patients or with other health personnel (team members or other health professionals across sectors) from the patient's home over videoconference. Short videos or pictures can be stored on the tablet to be shared with colleagues at a later point of time. The service has given better information about the patients' condition for all health professionals. Team members also report of better quality of consultations when videoconference is used instead of telephone, and that pictures saved in the EHRs may make better documentation than text alone. Travel costs for patients may be saved because their problem is solved in a videoconference consultation with health care professionals. Health care staff may save travel costs and travel time because they see the patient on videoconference instead of travelling to the patient's home or watch films or pictures recorded in the patient's home.

Typology of Impacts

Tangible impacts

☒ **Improved access to services**
☒ **Cost savings**
☒ **Time savings**
☐ Reduced energy consumption
☐ Reduced environmental impact
☐ Business development
☐ Job creation
☐ Improved competitiveness
☐ Other tangible impacts (specify)

Intangible impacts

☒ **Building institutional capacity**
☐ Raising awareness
☐ Changing attitudes and behavior
☐ Influencing policies
☐ Improving social cohesion
☐ Leveraging synergies
☒ **Other intangible impacts**

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E-health services for Patient Centered Healthcare Teams

T1.3 Remote multi-professional support

Service end users

The services are meant for health professionals in the Patient Centered Healthcare Teams as well as patients and their families. Also other health professionals and home care workers benefit from the services.

Challenge

The services are tailored to make it possible to share information and communicate across long geographical distances using modern information technology. The use of the tablets has evolved naturally in the team, and the team members have come up with new ways to use it. Initially, the plan was to leave the iPad in the patient's home, and carry out planned supervision calls. The patient would also call the team if needed. However, many of the patients in the target group are both cognitively and physically impaired and using the iPad is too complicated for them. The iPads are now used for videoconferences, picture and videos. IPads have also been left in the patient's home with pictures or videos to supervise home care staff.

Service provider roles and Collaboration

Patient Centred Healthcare Teams (PACT) are inter-disciplinary teams that offer an integrated approach to providing coordinated health care to patients over 60 years with complex long-term needs. The teams are a collaboration between primary and secondary health care. Nurses, physiotherapists and occupational therapists from both the municipality and the hospital work in the teams. One of the teams have a pharmacist and a medical doctor. Four teams have implemented the RemoAge service; two teams are located at the hospitals in two urban municipalities and two other teams are located in rural municipalities.

Digital solutions and mobile devices are used and tested by team members to support patient treatment and follow-up of patients outside of the hospital. The goal is to improve communication and facilitate information exchange between team members, with external health care professionals and with patients and their family.

Service availability

The patient Centered healthcare teams in the four municipalities Tromsø, Harstad, Balsfjord and Karlsøy in Troms County have implemented the service.

Service Delivery, process and organization

During the project period, technical advisers have been part of the project team. The advisers have handled the set-up of iPads and the videoconference tool, training of users and the completion of user manuals for iPads as well as the videoconference tool. The team members report that both iPads and the videoconference tool are easy to use, but continuous practice is needed. If new team members require training, help is provided by their more experienced colleagues. A minimum level of technical support should be available

to the teams for the continuous running of the service, although the need is not very large since the teams manage updates themselves.

The service meets all data security regulations. A security adviser has been responsible for the Risk Analysis. Issues regarding confidentiality, integrity and availability were analyzed during the initial stage of the service development.

The iPad tool kits are stored in the team's offices. There are no formal super users in the teams, but one particular person has taken the responsibility to keep the batteries fully loaded and to remind the others to bring the iPad on home visits.

The iPads are used in the team office, in the hospital and in the patients' homes. The patients are often cognitively impaired and not able to handle the iPad on their own. Health professionals use the equipment, but the patients are always asked for consent when the iPad is used for clinical purposes.

Technology and tools

The services are based on the use of iPad Airs. The tablets are equipped with sim cards to be used when there is no Wi-Fi in the patient's home. A browser-based videoconference tool is installed on the iPads. All videoconferences take place within the secure health network. The iPad is part of a tool kit, which also includes a case, earphones, a charger, and a stylus pen. The videoconference tool is flexible and is also available using computers (team office), stand-alone videoconference units (videoconference studio) and mobile phones.

Passwords are used to access the Ipad and the videoconference tool, as well as to protect all pictures and videos stored on the iPads. However, information that can identify patients is never stored on the iPads. Pictures and films are always deleted from the iPads as soon as possible. Pictures may be transferred to the EHR for documentation purposes.

Service support

Technical support has been provided for the initial set up of the iPads and to establish accounts with the video conference tool provider. However, the users are responsible for normal updates of the software. The support has been provided by technical advisors that are a part of the project team. During the project period, technical errors that required assistance from the support team only happened a couple of times. These errors were related to the videoconference tool.

A minimum level of technical support should be available to all Patient Centred Healthcare Teams included in the project also after the project has ended. In the two rural municipalities, IT-personnel have received training and will take over responsibility for the further management of the equipment and the service. It hasn't been possible to secure agreements with the technical teams at the hospital to take over responsibility of the iPads and the videoconference tool. We have therefore made check lists that will make the two hospital teams able to manage updates and other problems themselves and also to make additional accounts in the videoconference tool. The list can also be used by new teams to establish the RemoAge services.

Implementation process

The team has worked together with the project group to find ways to meet the team's challenges. Based on experience from other projects, we decided to design services using iPads and a videoconference tool. The use of the iPad has evolved based on the team's needs. In addition, the project team has participated regularly at the team's workshops where patient cases have been examined and opportunities for use of the iPad service have been discussed. Training and technical support has been available from the project's technical advisers.

It is challenging to incorporate the iPAD-service into daily practice. From the beginning of the project, we saw that the level of use of the iPads varied between team members. Their interest in using the iPad seemed to, among other factors, depend on previous experience in using this kind of tool. Many find it difficult to for instance remember the passwords or how to transfer pictures from the iPads to the computer. More experienced users of mobile devices tend to bring and use the iPads more when visiting patients' homes than their less experienced colleagues. However, during the project period, the interest in using the iPads has increased.

Skills, knowledge and competences

The iPads and the videoconference tools are user-friendly and not much training was needed. Many team members have experience from earlier use of tablets. If needed, user manuals are always available in the tool kit.

Risks and Solutions found

The risk analysis found that there were concerns about outsiders who can see or listen to the videoconference. The health personnel have therefore been instructed to check that no one can overhear confidential information before the videoconference is initiated.
Another threat is the possibility that the iPad is mislaid, lost or stolen. Therefore, each iPad is provided with a unique PIN code. The PIN codes are not written down and the service "Find my iPhone" is installed in all iPads. However, this approach makes the service less user-friendly, as many find it hard to remember the PIN codes.

Not all patients have an internet connection in their homes. We therefore installed SIM cards in all iPads to make sure that a mobile internet connection is available if necessary. The 3G/4G coverage is good in all involved municipalities. However, throughout the project period, this option was not often needed. The teams have therefore reduced the number of mobile internet subscriptions to save costs.
The possibility exists that the videoconferences can't be carried out because sound or picture is of bad quality. However, the service may then be delivered the traditional way, so the patient will still get follow-up.

The hospital teams cooperate closely with the rural teams about patients who are discharged from hospital. The teams therefore requested a tool to make possible the sharing of pictures and videos between municipalities/institutions. We have not been able to find a tool that operates within security regulations when it comes to the sharing of information between different health institutions.

Communication and dissemination

The project group has participated in workshops with all four teams to give information about the project and the services. The further development of the services was also discussed. Presentations have also been given in other hospital settings. We have contributed with articles to the project newsletter. A Norwegian article (Link can be found in Part 3: visualisation) was distributed to the NSE network. A short video has been made in cooperation with team members to inform about the service. The video was published on the team's Facebook site as well as on the project web site. A presentation of the service was given at the Arctic Light E-Health Conference 1-2 February 2017 in Luleå, Sweden (http://alec2017.com/) as well as at the Norwegian conference "Normkonferansen 2016" 11-12 October 2016 in Trondheim, Norway. A public session was arranged at the project meeting in Tromsø in May 2016.

Service longevity

The collaboration between healthcare teams in different municipalities intensifies the need to overcome long geographical distances to work together. The iPads and videoconferences can be used for administrative purposes, in the patients' homes as well as in clinical settings for instance between the hospital teams and home care teams in the rural municipalities. The rural teams have shown great interest in the iPad service.

A minimum level of technical support should be available to all Patient Centred Healthcare after the project has ended. In the two rural municipalities, IT-personnel have received training and will take over responsibility for the further management of the equipment and the service. Checklists have been made that will make the two hospital teams able to manage updates and other problems themselves and also to make additional accounts in the videoconference tool. The list can also be used by new teams to establish the RemoAge services.

Output metrics

- Around 95 end users who have received the service (estimated number provided by the teams)
- 50 health and care professionals (team members) have received training and are working with providing the services
- 4 different Home care services in the four involved municipalities. We have no information on the number of home care staff who have benefited from using the service in providing treatment and care for patients

Tangible impacts

Improved access to services

Earlier clarification and treatment is made possible because team members on home visits can receive advice on how to handle a problem or a procedure, or clarify whether the patient should see his/her GP or a specialist to get necessary treatment.

Cost savings

Travel costs for patients may be saved because their problem is solved in a videoconference consultation with health care professionals. Health care staff may save travels because they see the patient via videoconference instead of travelling to the patient's home or watch films or pictures recorded in the patient's home.

Time savings

Health care staff saves time when they see the patient over videoconference instead of travelling to the patient's home or get access to videos or pictures recorded in the patient's home.

Reduced environmental impact

Travels are saved for patients as well as health professionals.

Intangible impacts

Building institutional capacity

Administrative meetings via videoconference have contributed to improved coordination of involved health and social care workers at the discharge of patients from hospital as well as better planning of follow-up actions. Pictures of for instance ulcers shown to specialists improve the capacity of health professionals to handle similar situations on their own.

Other intangible impacts

Better information about the patients' condition for all health professionals because the patient and the patient's home situation can be discussed over videoconference or different aspects of the patient's home situation can be filmed to be reviewed at a later time by the team or other health professionals. Team members report of better quality of consultations when videoconference is used instead of telephone, and that pictures saved in the EHRs may make better documentation than text alone.

Video

Ehealth Services for patient centered care teams: https://vimeo.com/245201761
Interview with Tromso RemoAge project leaders: https://youtu.be/rzYGDZFVY2s

Article

http://remoage.eu/content/house-call-ipad-norway

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