Communication between health care professionals

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Keywords: Communication, health care, health care professionals

1. Introduction

Effective communication systems between health care professionals are fundamental for execution of high quality health care. In this paper, field studies on the current communication structures between health care professionals belonging to different health organizations in a municipality in south of Sweden are presented. The issue elaborated in this paper are that there is no satisfactory way for health care professionals, for example the nurse to get in contact with the doctor but through using the phone. The challenge are to provide simple solutions for communication between health care professionals. One basic part in communication are to establish a communication channel. That is to get a connection to exchange information through. This is often done by technological mediators, providing feedback that the channel is established and the message has reached the receiver.

Currently used communications systems in health care are tools like, cell phones, email, fax, and paper messages. For care planning paper calendars and digital support systems for documentation of performed activities are used. Communicating the need to the specific expert and getting proper response in reasonable time.

State-of-the-art in communication platforms consists of secure and integrity preserving approaches with telemedicine systems for robust communication. Interoperability support in Health Care are described in Naqvi et al. 2010, Kjelland et al. describes the issues of public healthcare system for home and community health care. Security and integrity issues are important in health care related communications. Trends are moving towards more and more health data are collected from the private person in health care applications. Digital health care records and merging approaches are on the rise.

Presentation of an engineered prototype, based on agile approach, to be implemented in the municipality ends the paper.

1.1 Methodology

Field studies and agile methods has been the methodological approaches. Field studies has been performed in different health care organizations, this to provide different perspectives upon the communication issue. In home health care, district nurse and district medical doctor and in advanced home health care (specifically for palliative care). In the municipality home health care, several digital support systems are used. The main documentation system of planned tasks, and also used as mail systems is called Treserva. Furthermore other common mail programs are used. Thus the care givers, in this case the district nurse has to open and search for new emails in two different mail programs. For planning and documentation of planned tasks, an individual paper calendar is used. It is a physical product connected to the individual district nurse that has the responsibility for it. If the district nurse is sick, the person replacing him/her needs to physically collect the planning calendar usually coordinated with the owner or close colleagues. Phone, fax and paper notes are used for communication.

The agile approach has been performed both within the municipality and in cooperation with advanced health care. Thus including the partners of cooperation, with medical doctors and specialist teams. The principles behind the agile approach, a group of software development approaches are in essence continuous ad frequent iterations between requirements and engineering. Focusing on humans and communication rather than tools and formal documentation. It promotes adaptive planning, evolutionary development, continuous improvement and early delivery (Kent Beck et al, 2001).
1.2.1 Cases

In general, when initiating a case, the nurse in need of the competence of the doctor calls the doctor using the phone. As the doctor answers the vital information concerning the case are explained from the nurse perspective. The efforts needed by the doctor are discussed and if the doctor agrees, the effort is scheduled in the case. However as we can see in the next case, the phone call can create some issues regarding the ongoing cases that are to be carried out.

In the next case, the district nurse were visiting an elderly man with the main purpose of distributing, dispensing and create a new purchase list for medication. As the nurse has started the process of dispensing the medication, her phone starts ringing. The nurse says aloud that she need to focus upon this specific ongoing task since it is very complex and it can be critical for the subject if she sorts the medication wrong. The caller makes four phone calls, and the nurse refuses to answer the three calls, but on the fourth call she reluctantly answers. Knowing that answering in the middle of the complex dispense of medication in dosage unit, might result in wrong dosage of medication.

Communication solutions for easy access to health care staff between ongoing cases are desired. SMS is not allowed, nor chat or common instant messaging like ICQ solutions. Furthermore information concerning which task that are ongoing, and perhaps also the expected time when being available for communication are of interest.

Fax is used as a tool for communication, more specifically it is communication in hand-over of tasks and/or delegation of issues typically between care organizations. Predefined suggestions for actions are selected by x marking with pencil. Name and personal code number are specified in the fax. In the figure below, these numbers are anonymized.

Figure 1: In the pictures, to the left, the almost empty dosage case, in the middle the medication and to the right, the filled dosage case and the list of medicine to be purchased.

Figure 2: District nurses coordinating tasks in office. On the desk the planning and documentation paper calendar.

Figure 3. To the left, district nurse using fax for sending information about a case to medical doctor. To the right, an example of a fax, anonymized.
In the third case, as the nurse are communicating with patients that are in treatments in hospital and or just got discharged from hospital, the nurse asks the patient to tell the home health care what type of treatments he/she has received from hospital. This since the nurse are not sure that the information from the hospital reaches the home health care. In this case, communication between the different care holders are of vital importance to maintain an ongoing care situation for the patient. Furthermore, incoming calls interrupt in meetings, as one coordinator explains:

"If I make 10 calls a day, approximately 1-2 calls are not answered."

Coordinator at ASIH

Unanswered calls create a non-hand over of the task, makes the person calling keep the task in mind. The communication issues concerns in essence:

- phone calls are frequent
- incoming phone calls are disrupting in staff meetings
- fax are used
- scheduling of tasks are performed on different platforms
- documentation of tasks are done on different platforms
- planning of activities are done in each organisation
- coordination of planned activities could be made more effective
- some parts of the information and scheduling of cases are done on paper calenders (municipality)

In order to consider alternative approaches to the current communication issues, requirements engineering towards prototype are performed.

### 1.3 Prototype engineering

A communication platform can solve some of the issues presented in previous section. Information about cases, scheduling and instant messaging, video/audio recording possibilities and more communication enabling functions are desired. Below screen photos of the iACiH system are presented.

![Personnel availability and call, video, chat functions](image)

Figure 4. Screen photo of personnel, logged in or not, availability of personnel, call, video, chat functions.

In the following figure a screen photo of calendar function is displayed. Sharing information about tasks between health care professionals are one way of communicating, tasks that are currently performed and tasks that has been performed. As previously described, currently at the municipality, information about tasks are written down in paper calendar form. Functionality to share planning of upcoming tasks are desired.
Figure 5. Activities for a week displayed.

Menu
Open list of patients
Selection of date
Today’s planning:
extent

Figure 6. First side, initiating cases and gives access to other menus.

Note: ItACiH system is not to be considered as a medical record system. It is the user's responsibility to transfer the necessary information to the patient's medical record.
In the screen pictures in figure 4-7 example functions of the system are presented. The implementation are in Swedish and we have selected to translate the most important text to get an overview of the system.

1.4 Results
In this paper case studies in home health care are presented. This with the common denominator i.e. the need for better communication systems between health care organisations. Furthermore, we have presented the ongoing requirements engineering approaches towards a communication platform. Future work consists in filling in data in the platform, perform implementations and iterations, ongoing adjustments, updates and evaluation.

1.5 Acknowledgements
To VINNOVA, Sweden’s innovation agency for funding the itACiH project. Providing opportunities to collaborate with health care professionals participating in project. A big thanks to the health care staff providing opportunities for us to understand the challenges in the communication systems.

References