

The nurse as paradoxically accountable case manager—shifting tasks and boundaries in telemedicine

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ABSTRACT

Telemedicine is defined as diagnosis, treatment and monitoring among doctors, nurses and patients separated by space, but mediated through information and communication technologies. We argue that a unique experience of confidence and proximity between patient and nurse is provided through continuity and the practical set-up of screen and device in telemedicine. This embraces new standards and possibilities for professional discretion and accountability for nurses, but also an increasingly complicated relation to still more absent doctors. This situation provides a dilemma that we characterize as 'paradoxical accountability'. The study draws on observations, interviews, photos and desk research in relation to a large 34 mio DKK pilot project at four hospitals in Copenhagen in relation to treatment and care of 120 patients with chronic obstructive pulmonary disorder (COPD). The empirical study was carried out in a three months period. Twenty screen mediated conferences between nurses and patients was observed and two workshops focusing on nurses' photo elucidation of the practice of telemedicine with particular focus on shifting tasks and boundaries in relation to other professions was undertaken. The method of 'Interview to double' was used and the overall analytical ambition was to start the study in the middle of things i.e. in the practical exercise of telemedicine and from this position to explore the emergent becoming of tasks, routines and relations. The article analyzes reconfiguration of tasks and boundaries related to nurses' work with telemedicine. The study contributes to practice theory and draws predominantly on Susan Leigh Stars notion of 'infrastructure'. In this perspective infrastructure is seen as human and non-human conduct that is embedded into wider organizational conventions, sites and structures. The analysis demonstrates that the nurse is given and imposed to a new responsibility as an allround case manager, but a decreased access to pivotal clinical decision makers i.e. lung doctors. The article discusses how these new cartographies of relations integrate the professions they constitute with functions of power and elucidate emerging boundaries among nurses and doctors and points to the practical and ethical problem of leaving the nurse increasingly accountable, alone and dependent.

INTRODUCTION

In this paper we explore what telemedicine does to nurses' tasks and the relations between nurses and doctors. Politicians and health managers discuss with worried look appearing costs, efficiency barriers and demographic challenges. With regard to this; welfare technological investments are often proposed to be not only a viable solution (Danske Regioner, 2012), but also at the core of modern western society (World Health Organization, 2010). A growing amount of aspects of public health

care depend on welfare technology arrangements that affect the way professionals in public health care relate with the patients (Aanestad & Olausson, 2010) and with each other, how boundaries and tasks are defined and how they get the job done (Hansen, Grosen & Kamp, 2014). It is to these results the argument of this article speaks. Welfare technology is generally defined as an artifact that is introduced for the betterment or efficiency of care for the citizen or to ease, reorganize or streamline a specific task (Nordic Centre for Welfare and Social Issues, 2010). Research in telemedicine focuses predominantly on implications for the patients, and substantial work has argued that telemedicine and welfare technology supports quality and efficiency of treatment and care (Phanarath, Kayser & Vingtoft, 2014; Sorknaes, 2013; Cutler and McClellan, 2001). There is, however, a body of studies, which focuses specifically on how the practice of telemedicine transforms the working lives of the care providers (Oudshoorn, 2008, 2009, 2011). This research points towards discrepancies between political/managerial plans and health care practices. Whereas, the functionality of welfare technology decided by politicians is inscribed into the device; the way nurses and doctors incorporate the technology in their working lives differ (Suchman, 2007, Akrich, 2000). We argue that the practice of telemedicine is embedded in and takes its form in relation to the work practices of the care providers. In terms of this Mol, Moser and Pols (2010) for instance argue that it is too simple to oppose 'warm hands' with 'cold technology' and that telemedicine and welfare technology, not only replace the care provider, but rather changes health care and leads to new configurations of care. These emergent configurations of care are what this paper treats and it is to this body of research, the contribution of the paper speaks. Pols & Willems (2011) points at how the screen mediated contact between nurse and patient translates the focus of the encounter by ignoring a broader perspective of the patient's life and privileges the patient's medical condition represented by a few parameters. With regard to this, they argue, contact by way of screen may be a barrier to a professionally satisfying work situation (see also Pols, 2010). Another study stresses how the standards of the technologically mediated meeting alters the character of the observations made, and also that the lack of validity of the patients' own measurements and observations constitute a completely new and pivotal factor of uncertainty in relation to public health care and treatment (Oudshoorn, 2009). A number of studies point at new tasks arising as an effect of telemedicine. These tasks have predominantly to do with such issues as providing training in self-measurement and physical exercises, but they are also related to installation and maintenance of IT equipment in private homes (Mort, May & Williams, 2003). This kind of work is often not visible in the care providers' organizational context and thus turns into what is framed as 'invisible work'. In the perspective of the professionals' time spent on invisible work is typically related to problems concerning allocation of resources and lack of appreciation (Oudshoorn, 2008; Lampland & Star, 2008; Langstrup, 2014).

Furthermore, some studies take a look at telemedicine with regard to care values and ethics. It has for instance been argued that the effects of telemedicine are difficult to evaluate (Astell, 2006; Pols & Willems, 2011) and that telemedicine unfairly delegates complicated roles of 'diagnostic agents' to very sick patients (Oudshoorn, 2008). Studies, moreover, point at the crucial challenge the care providers have in succeeding to create a relevant interplay between the individual patient and the welfare technology. When this effort is unsuccessful the result is stressful work that is

experienced as unethical and demeaning for caregivers as well as for patients (Nickelsen, 2013a, 2013b).

Based on existing knowledge and empirical observation this article explores the following questions: What does telemedicine imply for the professional practice of nurses? What does telemedicine do to tasks and boundaries in relation to other professions? So far, the mentioned body of knowledge has focused on changes in health care with regard to screen mediated communication and also the appearance of undetected invisible work, but no research has clarified the impact of telemedicine on for instance professional discretion and autonomy.

The title of this article “The nurse as paradoxically accountable case manager” refers to the empirical observation that the screen and measurement, in spite of obvious geographical distance on one side entails continuity with regard to the relation between patient and nurse and on the other side leaves the nurse dependent on resources she cannot control. We study the implication of this in order to find out what this implies for the professional participation of nurses. We argue and conclude that the practice of telemedicine at the same time embraces immersion, to work alone, accountability and complication in terms of decreased accessibility to clinical decision makers.

ANALYTICAL INSPIRATION

The impetus of the following analysis is the ongoing discussions in practice theory (Nicolini, 2012, 2011, 2007, and 2006), socio-material organization theory (Orlikowsky, 2012) and knowledge sociology (Star, 1999). Star (1999) defines an organizational infrastructure as embedded into other structures, as transparent in use; it has scope beyond the singular situation, it is learned as part of membership, it links with conventions of practice, it becomes visible during breakdown and it is not global, but fixed in modular increments. Furthermore, she points to some important difficulties in relation to exploring infrastructure. Firstly, infrastructure means different things to different groups of people. Secondly, it is often mundane to the point of being invisible (figures, forms). Star proposes to include explicit ethnographic exploration of the design of the infrastructure as well as the invisible work carried out in order to make the infrastructure perform as intended.

However, organizational infrastructure is never just fixed. It is always in flux; it evolves a practice of figuring and refiguring (Knoespel, 2001, 147). Put simply, infrastructures are both ordering and disordering with respect to the network of power relations, which they map and set in movement. In terms of this, we might observe organizational infrastructure not only for insights into modes of care and control, but also for insights into forms of resistance and tactics of the professionals. An infrastructure is not simply maintained order, but furthermore a human and non-human diagram; a sociomaterial map or a cartography of possibility (Butler, Jeanes & Otto, 2014; Hetherington, 2011; Munro, 2000). As part of infrastructure are also a number of interfering sites. Star & Griesemer (1989) discuss collaboration among sites as a matter of how common standards at the same time bring sites together and allow a number of different performances across sites. We draw on this tenet and explore the sociomaterial arrangement of telemedicine and the negotiation and

restructuring of boundaries that make certain participations available (Orlikowski, 2012).

Taking this approach the article focuses on how health care practice and the nursing profession interfere with doctors; the health political vision of welfare technology and the concise standards of the specific telemedicine service (Carlile et al, 2013; Nicolini, 2012). More precisely, our analytical ambition is to start the study in the middle of things i.e. in the practical exercise of telemedicine and from this position to explore the emergent becoming of tasks, routines and relations.

SHORT CONTEXT OF THE EMPIRICAL STUDY

Due to a 4.561.000 euro grant from the Welfare Foundation (Fonden for Velfærdsteknologi) the pilot project 'NetKol' has as one of its central purposes to investigate the labor-saving potential of introducing telemedicine in care of patients with chronic obstructive pulmonary disorder (COPD). The empirical material discussed relates to a qualitative study conducted late 2014 and early 2015 on effects for nurses at four hospitals in Copenhagen of on-screen care of patients in their own homes. When we were involved overall 120 patients and a control group were enrolled in the project.

RESEARCH DESIGN

The following data is included in the study: Document studies; two planning meetings with the project managers; two subsequent workshops with the 10 involved nurses from four hospitals; nine 3 hour participant observation sessions, 13 transcribed 30 min. semi-structured interviews, 52 photos and 9 notebooks made by nurses. In the role of participant observer one of the authors attended 20 outpatient screen mediated meetings between the nurse at the hospital and the patient at home. All observation occurred at the four hospitals. During observations the method of 'Interview to the double' was conducted (Nicolini, 2009). This is a technique which requires interviewees to imagine they have a double who will have to replace them at their job the next day. The informants were asked to provide necessary detailed instructions about their telemedicine work, which would ensure that "*the ploy was not unveiled and the double was not unmasked*" (Nicolini, 2009). The result of this was a detailed insight into the rhetorical resources interviewees had at their disposal to see themselves as telemedicine nurses. As an ending to these combined observations and interviews a more formal interview based in the researchers emerging questions was recorded and transcribed.

At the initial meeting with the group the nurses were given this instruction "*Take 5 photos with your mobile phone of situations that illustrate cooperation, quality and flexibility related to telemedicine! In the notebook please record for each image: What does the photo envision? When and why was it taken? What does the photo point at in terms of the focus of this project?*" All photos and notebooks were collectively examined at a three-hour long presentation and discussion. This gave the nurses an affordable opportunity to provide their version of the special features of telemedicine (Warren, 2008). At the first meeting the nurses insisted that we should involve the doctors, which we then did by way of interviewing. To the extent doctors have been involved it has been to gain insight into the broader professional view of implications

and to analyze interdisciplinary boundary effects. In total, four medical doctors' there of two chief physicians were interviewed. The practical part of the study spanned over a period of 3 months. Based on this a 20 pages report on implications of telemedicine on cooperation and the working environment was sent to the NetKol board of directors as well as to all involved hospitals. The presented observations and arguments were further expanded based on comments from participants on this report.

ANALYSIS

The Arrangement of the Work Site and the Primary Tasks in Telemedicine

All tele worksites across hospitals are shaped by the same technological arrangement: Two large screens, a set of headphones with microphone, various checklists, medicine devices for demonstration and various directories to look up. The two screens make it easier to go flexibly in and out of the four IT systems, with which the nurses are constantly occupied: The telemedicine system (Open Tele), the journal system (OPUS), settlement and the booking system (GS), and the service and support provider's troubleshooting system (see photo 1, 2, 3,4).



Photo 1 – Two screens with three open applications. Photo 2 – The nurse in a video meeting with headphones and microphone. Photo 3 – Medical devices for demonstration. Photo 4 – Illustration of the bell system in Open Tele.

The nurses' primary task is to monitor and respond to the patients' submitted weekly measurements of weight, oxygen saturation and heart rate, as well as responses to four questions concerning shortness of breath, coughing, amount of slime, and color of slime. These measurements are undertaken by the patient at home and sent to the hospital via Open Tele. If the measurements are uncontroversial green bells appear at the Open Tele interphase at the hospital. Blue bells appear if the patient has failed to send measurements. In case the measurements depart from the norm yellow bells appear. Do the oxygen, heart rate or weight measurements depart more than 4 % red bells show up at the Open Tele screen (see photo 4). In the event of a red bell the nurse is required to call the patient. According to the nurses this routine constitutes a meaningful and clear infrastructure for monitoring.

A videoconference is carried out once a month with all patients. During this meeting the nurse wings in a checklist to obtain an overview of different parts of the conversation. She asks about well-being, exercise, diet, use of medicine, technical problems etc. The meeting typically lasts between 15 and 25 min. After the interview, she records first in Open Tele, then in OPUS, so in GS and finally if a technical problem appears, in the service and support provider's troubleshooting system. If the patient reports a deterioration of the condition; a saliva sample must for instance be

sent to the laboratory. For this purpose, the patient has already been provided with saliva supports and envelopes in the home. In other cases, the nurse must consult a doctor to obtain a change of medication, a blood test, X-rays or otherwise. Once a year, all enrolled patients talk to a doctor. This may be by physical attendance or on screen.

Location of the Telework Site Complicates Clinical Decision Making

We have now shortly described the general tasks of the telecare work site, but the infrastructure differs importantly from hospital to hospital. For instance, at one of the hospitals a small telemedicine office is located in the lung disease ward, which happens to be several minutes of walking from the lung clinic. This crucially complicates access to medical doctors. Due to general problems with lung doctor resources in most of the pilot period, access to a doctor at this hospital is made possible via SMS send directly to the chief physician. This in many ways unpractical positional priority of the telework site is justified by the fact that the most engaged nurse has been employed in this ward for many years. At another hospital the telemedicine office has two telework sites and the office is located in the lung clinic. Since no lung doctors are employed at this hospital it is undeniable that access to doctors and clinical decision making is difficult. Lung doctors from still another hospital do what they can to fill this function.

Virtual Screen Interaction Impairs Contact

By way of the screen and measurement the patients learn to take more direct responsibility for their own body. This constitutes an important incentive for nurses to apply technology. One nurse for instance states *"the fact that the technology is useful to the patients stimulates me to learn more about the technology and bring myself in a situation where I can do more with technology and thus become more effective as a nurse"*. But much is to be learned often only the upper half of the patient's face or the right side of the body can be seen on the screen. The nurses tell each other stories about cameras in the patient's home pointing at the ceiling or they laugh about patients that were not appropriately dressed or fell below the angle of the camera during the conference. Together, one must for instance find a rhythm where the talk time switches between the one and the other. It is important not to speak at once, followed by hesitant pauses. There are also problems with the clinical assessment since the nurse, as mentioned, only sees very selective parts of the patient's body, typically the face and upper part of the body. A nurse clarifies the risk that this is associated with *"I do not feel I can use my clinical gaze in the same way when I see a patient behind a screen. You are confronted with slightly lower sound quality, and the colors are not always optimal. I can only really see their face.... I am not able to listen to their breath as if they are sitting across me. It is impossible to notice if they have cold fingers when they put the oxygen meter on. You can only ask whether this is the case. I cannot observe whether they have blue lips and nails "*. Against this background, she argues that the screen mediated contact with the patient is in some ways worse than the physical encounter in the clinic. The argument is that telemedicine impairs the ability to exercise a serious assessment as long as there is no opportunity to see the patient "in real life" also. Thus, as it has already been argued by Pols & Willems (2011) and by Pols (2010) much point to the possibility that virtual screen interaction impairs immediate contact and oversimplifies

the resources available for assessment to a few medically defined figures and numbers. This is not surprisingly a nuisance to nurses and a barrier to qualified assessments of the general situation of the patient.

Longer Sequences of Continual Contact Offer Immersion

In the telemedicine service the nurses more independently prepare and follow up on measurements than they do both in the clinic and in the ward, and since they attend the telemedicine office certain weekdays they also meet the patients more often. The continuous follow-up on weekly measurements provides the nurses with a unique understanding of the patients' health condition. One nurse for instance explains "*they (the patients) open up more, so it's easier to help them because you get a closer cooperation, than if you only see them every six months for 15 minutes*" (as is often the case in the clinic). Another pivotal aspect in the telemedicine service that supports strong relationships is the fact that the virtual meeting with patients is booked one hour apart. In relation to normal controls in the clinic (15 min.), this means there is plenty of time to interpret measurements and evaluate the implications of the measurements in relation to the patient's everyday life. Typically, in the clinic a medical doctor is waiting and so are perhaps twenty patients. A telemedicine nurse estimates "*to have time available gives you job satisfaction and it really makes a difference*". This is in opposition to what is often the case in the clinic, where the nurse works under a constant time pressure. There are for instance types of conversations with patients that the nurse never starts, because they know they do not have the time available to finish them. "*Then you say, let's talk about that next time! And you know very well that there may be no next time*". Thus, in relation to the question of time; to work as a nurse in the lung clinic and in telemedicine indeed constitute different work situations. In the clinic the nurse works under a constant time pressure, whereas the telemedicine nurse has time available to professional immersion, to plan the conferences, to scrutinize measurements and to talk with patients.

The Nurse as Case Manager

The point we are making is that the alternative cartography of relations that telemedicine realizes has important implications for the participation of the nurse. In spite of the evident geographical distance and the partly impaired screen interaction, the telemedicine infrastructure links patient and nurse together in mutually enriching relations. This is done by way of a routine of continual coherent meeting allotting sufficient time; by way of intensive virtual encounter focusing on voice and face; by way of close follow-up by way of weekly submitted measurements and not least by the fact that the nurse enjoys the position as the patients' primary contact and entrypoint to the hospital. As it appears from the preceding, telemedicine embraces a portfolio of more professionally demanding and responsible tasks for the nurse.

Whereas, the doctor and nurse collaborate closely in the clinic and divide tasks between them, in telemedicine, the nurse, is alone and cannot simply lean back and rely on the doctor's decision. Here, the discretion and knowledge of the nurse stands alone and the doctor needs to be actively sought in situations where this is estimated to be pivotal. Most of the nurses are satisfied with this new and more responsible position, although our empirical material elucidates that in front of an unexperienced

nurse, the demand on knowledge and expertise may appear as a source of great insecurity. Most nurses explain they appreciate the calmness, immersion and expertise that the telemedicine service comprises, others miss colleagues and some simply states *"it may be too silent"*.

Collaboration, Tensions and Boundaries between Doctors and Nurses

The collaboration between doctors and nurses is a source of frustrations. The telemedicine service has provided the nurses with an opportunity to book videoconferencing flexibly. While the nurses appreciate this; the doctors are skeptical. Rather than to follow highly standardized and labor-intensive procedures, the doctors think the telemedicine service ought to be more flexibly launched according to the patient's (not the nurses) needs and goals. Moreover, the doctors are worried that the highly standardized routines seize the patients time without mentionable clinical results. Among doctors, there is doubt whether the screen mediated meeting after all relieve treatment and care. Doctors support the point that close telecare follow-up in relation to the very sick COPD patients provides security, but stress that the research is not yet able to document decrease in the decisive parameter of re-hospitalization. Hence the doctors are concerned that politicians in their eagerness to appear modern blindly oversell the benefits of telemedicine. In relation to the screen mediated contact a doctor says *"I am able to hear in a telephone whether a patient's breathing is in a bad condition. I am not sure how much extra I get informed by looking at a patient on a screen"*.

This point of view stands in opposition to repeated performances and statements by nurses. While nurses are professionally engaged with the patient and have sufficient time to undertake the screen mediated encounter the doctors have a full program at the clinic. Hence, there are easily identifiable tensions among doctors and nurses regarding conditions for contributing to the telemedicine service. The question that nurses repeatedly pose is *"How do we get faster and better contact with the doctors"*. With regard to this question a nurse took a picture of the doctors' roster before we observed and interviewed her (photo 5). The photo illustrates the telemedicine column in the doctors' roster for telemedicine and that this column is consistently not completed (see the red arrow on photo 5). This photo illustrates that the task of telemedicine is not assigned to a specific doctor, despite such a task obviously exists not only in everyday practice and in the shape of an already allotted grant, but also as a column in the doctors' duty roster. In spite of the strong need to draw on the lung doctors' professional knowledge the contribution of the lung doctors appears to be formally abandoned. As a consequence, it is the day hospital doctor, who has to deal with inquiries from telemedicine and since the day hospital doctor has already recorded a full day program at the clinic, he/she needs to be caught in between other tasks or during breaks. Not surprisingly, the consequence is that clinical decision making is often postponed and this means that doctors act as bottlenecks in the telemedicine infrastructure. According to a nurse *"You have to come crawling, almost begging. I've gone all day waiting for a response from a doctor". "When you want to get hold of a doctor you need to beg: could you just help me?" "Some of them respond; I cannot; it simply is not, and who have the telemedicine today, I can not and what do you want me to do?"*

do."In telemedicine *you are more responsible than you are in the clinic*" a nurse state. In telemedicine it is typically the nurse that summarizes and she is in the position to decide what to do, unfortunately when this involves medication which is quite often the case this implies involvement of the absent doctor, who then has to be found out there.

It may be summarized that at various hospitals there are different practices and routines with regard to how nurses and doctors collaborate. However, we observed repeatedly that the telemedicine nurse participates more in the position of an expert in clinical questions than is the case in the clinic; this leaves the telemedicine nurse accountable, but professionally alone. The flip side of this is; while the telemedicine service embraces the potential for nurses to work as case managers and experts, the doctors become more distant decision makers whom the nurses are not less dependent on.

The Nurse as a Dependent Expert

As a result of the continuous contact and the strictly standardized and repeated follow-up on measurements the nurses are confronted with an array of complicated clinical questions. The weekly measurements that the patients submit often provide an opportunity to identify symptoms that the nurse, or any other professional, might not otherwise have any opportunity to discover. A nurse states poignantly "*We have repeatedly discovered that the patient had a heart condition*". This point toward a need and demand of a broad clinical knowledge outside the relatively narrow lung medical specialty, but also to be able to act and intervene appropriately in relation to the patient based on emerging observations. Since, it is the telemedicine nurse who decides when and how to involve the doctor the telemedicine infrastructure remediates pivotal professional issues such as professional discretion and expertise. The telemedicine nurse is assigned more accountability as a professional than clinic nurses and has now in the role of a case manager a still more important role to play with regards to the patient's overall course of care and treatment. This responsibility makes them talk about the patients as "*their own patients*". In relation to the clinic, the telemedicine nurse is offered a central position particularly in relation to the patients care and the preventive effort in order to avoid another hospitalization. This brings with it that the nurse's professional expertise concerns broader areas and fields of clinical expertise. In other words she must "stand on tiptoe". The telemedicine nurse constitutes, we argue, a paradoxically accountable expert, because although she works professionally alone; independently and in a continuous and close relation to the patients, shes is dependent on the distant and busy lung doctor. Thus our main observation and argument is that the telemedicine infrastructure evokes the nurse as an accountable and knowledgeable participant and professional, but a professional that is only partly in control.

CONCLUSION

Based on practice theory (Nicolini, 2012) and Stars notion of infrastructure as a human and material map of relations that is embedded into other structures this article analyzes ongoing reconfigurations of the tasks and boundaries in the telemedicine service and has been driven by two questions: What does telemedicine as a practice do to tasks, routines and boundaries among professional groups? And

what does telemedicine imply for professional discretion and accountability among nurses? The pilot project of NetKol carried out in relation to COPD patients at four hospitals in Copenhagen has been studied ethnographically in a three month period. By way of combination of document studies, interviews, observation and photo method the analysis in this article centers on the shifting cartography of relations in telemedicine. Across hospitals the studied telemedicine service consist of monitoring and following-up on the patients' weekly submitted measurements in terms of weight, oxygen saturation and heart rate, as well as their responses to four questions. These measurements are sent from the patient's home to the hospital via the Open Tele application, with regard to which the nurse monitors and responds to the patients. The immediate, but hardly stable and continuous, positive effect for the profession of nursing has to do with the confidence and accountability that the telemedicine cartography of relations make available for the nurse; firstly, plenty of time; partial control and professional immersion is made available. Secondly, a mutually meaningful long stretched experience of proximity and continuity between nurse and patient. Thirdly, the nurse is both offered and imposed a position, which demands more professional knowledge due to the status of a primary contact person and case manager for the patient.

In the telemedicine service there is a strong focus on managing the uniform and highly standardized measurements. One of the flip sides is that a lot of invisible work and concern about making the technological aggregates work becomes part of the job. This applies to both image and audio. There are many intricacies, details and tricks to be learned in relation to the only partly viable screen interaction in relation to which many disruptive technical problems occur continuously; in terms of logging on, stuttering picture, screenpicture that sometimes completely disappears in the moment of submitting the measurements, much time spent in contact with the support technicians. The telemedicine work is operated via several applications. This leads to time spend on writing more or less the same information into several applications leading to repeated overflow of documentation.

Most importantly, in the telemedicine service it is more complicated for a nurse to consult a doctor than it is in the clinic and in the ward. In addition to a general lack of lung doctors in Denmark, this problem is a premise not only for the telemedicine service and the NetKol pilot project, but also for the much broader health political vision of welfare technology. Moreover, it is hardly surprising that it is difficult to consult a doctor, when obtaining a labor-saving potential stands centrally as a through going tenet for the entire project and endeavour. The experienced difficulty of consulting doctors with regard to posing medical questions is articulated in the field as the most important health service barrier to the realization of a performative telemedicine service. The nurses are imposed more knowledge intensive jobs and more sustained relations to patients and thus act as pivotal entry points to the hospitals. We argue the nurses are positioned as "paradoxically accountable" case managers. In order to do their important job, they are dependent on the medical expertise, which as we have argued to some degree dropped out of the formal telemedicine service.

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