Exchange of information between hospital and home health care: A longitudinal perspective

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Abstract. In this paper we present a longitudinal perspective of exchange of information providers in hospital and home health care. More specifically we address how this practice has changed over the last six years. In three different studies we have investigated how the information exchange between hospital and home health care throughout a patient transition from admission to discharge has changed over the last six years. The information processes have gone from being mainly paper-based to being digitalized. However, there are still professional challenges to overcome which may contribute to improvements for patients in transition.

Keywords: Patient trajectory, hospital, exchange of information, longitudinal study, discharge, electronic patient record, electronic health record

1. Introduction

Efforts to keep patients out of hospital and care for them in their homes have become a mantra for meeting future health care challenges [1]. One consequence is that patients living at home, who are characterized by multiple co-morbidities and rapid changes in health status, frequently need health care from different professionals and across care settings [2]. However, it is well recognized that the exchange of information needed to support such transitional care has been challenging for many years [3-7]. These challenges have implications for how patients manage their situation after a hospital stay [8, 9]. Providers report that information is insufficient or lacking at patient discharge [10]. Access to relevant, accurate, and timely information for providers who are involved in caring for patients is recognized as being significant for providing high quality and safe health care [11]. Therefore, it is imperative to improve how information is exchanged in health care.

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Introduction and use of EPRs has been proven to facilitate the provision of care [12]. In Norway, where the current study was conducted, all hospitals and municipal health care services have implemented and used electronic patient records (EPR) for years. However, hospital and home health care settings have different EPR systems which are not compatible. Thus, oral communications, use of telephone and ordinary mail have been the usual ways of exchanging patient information across health care settings [13].

To overcome this shortcoming, national initiatives were taken in 2011 and an electronic messaging system (e-messages) has been introduced in Norwegian healthcare. The e-message system was designed to support different phases of a hospital stay with a set of specific messages for targeted purposes, including some standardized messages and a dialog message. Our research question was: how has information exchange between hospitals and home health care throughout a patient's transition from admission to discharge changed over the last six years?

2. Methods

This paper departs from three explorative studies addressing exchange of information between hospital and home health care services during patients' transition between the two. All three studies were conducted in Norway. Data were collected by semi-structured interviews in 2008, 2011/12 and 2014. Providers in both the hospital and home health care services were interviewed, but for the purpose of the present paper, we report on the hospital providers' perspective. The hospitals were big university hospitals and at the two latter data collections providers at the same university hospital were approached. Of the total 53 participants who were interviewed, 22 were interviewed in 2008, 14 in 2011/12, and 17 in 2014. The inclusion criterion was that the informants must have been working for a minimum of six months to be able to have gained experiences about collaboration and information processes with the home health care services.

All the interviews opened with the following question: 'Tell me about your collaboration with the home health care sector'. This opening question guided us in the rest of the interview with the main topic of how they experienced their information processes and how they assessed the quality of their collaboration. All the projects were approved by the Norwegian Social Science Data Service. Access to the hospitals was given by the directors and the providers were recruited through a contact person in each department. All informants gave their informed consent.

2.1. Analysis

For the purpose of the current paper, we analysed data from all the three studies applying a deductive–inductive approach [14]. First, a matrix was developed for each of the studies in which a text element about the clinicians explained how information was exchanged at patients' admittance to hospital, during the patients' stay at hospital including discharge planning, and at patients' discharge from hospital to home health care. Thereafter we

identified text elements regarding how the providers exchanged information across the settings for each of the phases. Then we identified texts that highlighted critical information aspects during the patients' transition and hospital stay. The matrix was useful for further inductive in-depth analysis of identifying changes over time. To ensure trustworthiness, the analysis was discussed in the team several times during the process.

3. Results

The analysis showed two overall findings. The first finding was that the mode of exchanging information changed across the three data sets. The most remarkable change was the transition from using mainly paper-based and oral information exchange in 2008, via hybrid systems in 2011/12, to becoming digitalized in 2014, as shown in Table 1. The reason for these changes was that the collaborating organisations had developed and implemented integrated e-messaging in their EPR systems. At all the three points of data collection the informants pointed out that even though electronic communication had improved their access to each other, the telephone was still an important tool for them to discuss relevant information.

Table 1. Modes of information exchange

2008	2011/12	2014
Mainly paper-based and oral exchange of information across settings	Initiatives for electronic exchange of information across settings	Electronic messages integrated in EPR and the main mode for information exchange across settings

The second overall finding was less visible but significant with regard to how communication and collaboration between the hospital and home care setting intervene in information processes and management in a patient trajectory from hospitalization to discharge. Table 2 shows how the characteristics of the collaboration in patient transition between hospital and home health care changed throughout a patient hospital stay from admission to discharge.

Table 2. Characteristics of the collaboration in patient transition between the hospital and home health care setting

Patient trajectory	2008	2011/12	2014
Admission	Information almost absent but wanted and requested	Increased attention but not incorporated in daily routines	Routinized but still vulnerable

During hospital stay	Power hierarchy	Contracting perspectives of patients needs	Communicating and negotiating right level of care
Discharge	Limited awareness but arbitrary	Increased awareness but insufficient	Embedded in practice but not professionally anchored

The "distance" between hospital and home health care diminished from 2008 to 2014. At the first data collection there was little attention to the need for exchanging information at admission. With the introduction of e-messages to the nursing staff, this exchange of information went from being almost absent to being the normal practice. However, information exchange can still fail if nurses do not follow the guidelines.

The power hierarchy identified for the hospital stay period in 2008 refers to patients' post-discharge needs. Hospital providers were not very aware of the knowledge the home health care nurses had about the patients. This tendency was obvious in the next study as well; however, in the second sample they had more discussions and addressed the level of information exchange at admission and discharge, while during the hospital stay reflects more the interaction and collaboration between hospital and home health care sector in their planning for the patients discharge and future care. In 2014 they communicated and negotiated about the patients' post-hospital need via the electronic dialog message. And if they found it necessary they also used the telephone.

At patient discharge the awareness of the need for discharge information went on a continuum from being very scars and limited to some awareness and to become eembedded in the nurses' daily practice.

4. Discussion and conclusion

Most studies have addressed the exchange of information at patient discharge [10]. In this paper we explored exchange of information across the patients' trajectory from hospitalization to discharge over the last six years. For the 10 last years the authorities in Norway have made recommendations and launched strategies to improve the information exchange between different health care settings [2, 15]. Our study shows that changes have occurred from the first initiatives taken at the national level in 2005 to the present practice. The change that has had the most evident impact has been the introduction of the e-message system. Not only does it work as a tool for exchanging information but it also serves as a catalyst for the nurses' awareness and reflection on what information collaborators need to receive to care for the patients. However, in line with previous studies, our study suggests that there are still professional challenges to overcome to ensure accurate information [7].

The advantages of using e-messages go beyond what EPR provides as an information system. Even more than the EPR, which mostly documents treatment and care that already has taken place, e-messages also serves as a tool for communication and planning future actions. Nurses report that being able to connect with other care providers has led to more

efficient, better quality and safer patient transitions [3]. Based on these studies we do not know the effect of these new systems on patients. This should be investigated in future studies. However, we conclude that the digitalization of patient transitions has improved the care processes.

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