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### Information Management for Patients in Transition

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Modernization of healthcare provision has led to increasing differentiation and fragmentation between healthcare organisations, for example between hospital and community healthcare providers. A growing number of elderly and chronically ill patients need nursing care after they have been discharged from hospital. Addressing and developing knowledge about the quality and continuity of care for patients in transition between hospital and community healthcare benefits both patients and hospitals.

The introduction of the Electronic Patient Record (EPR) has contributed to an increased exchange of information across healthcare boundaries. However, when hospitalised elderly and chronically ill patients need posthospital home healthcare, home care nurses do not automatically receive the accurate and timely information they need to provide appropriate care.

The purpose of this article is to report on how nurses in hospitals and homecare assess their information management when patients are transferred from hospital to home healthcare.

This paper will use a humanistic information management model (HIM) adapted from Procter's model. HIM is an alternative to the traditional way of explaining information management within a linear "input-process-output" model. HIM contributes to an understanding of the complexity involved in the way that communication is transferred and received in healthcare by highlighting how information is filtered during the four stages: Acquisition, processing, storage and dissemination of information.

The stages are linked to one another, as well as having independent functions, reflecting the complexity of this information exchange. Filtering of information takes place at every stage, based on the individual consciousness about the information, knowledge, values, situation and experience.

Hospitals and homecare organisations represent different cultures and conflicting objectives. Hospital nurses focus on the culture of acute care and episodic patient encounters. The homecare nurses mostly work with people in need of long-term care, and also on the patient's own experience of living with the disease. This has implications for the two nursing groups' interpretation of the information exchange between these two organisations.

#### Methods

A study of one university hospital and the affiliated corresponding home care agencies in Oslo communities surveyed 287 hospital nurses and 220 homecare nurses about how often and what information they exchanged between their two organisations.

The survey was conducted at two intervals: Before an Electronic Patient Record (EPR) system was implemented and then after the hospital implemented an electronic nursing discharge note integrated in the hospital's EPR system. The two groups of nurses received the same questions, replacing "send" with "receive" to correspond with the direction of the information flow.

## Findings

There are both similarities and discrepancies between the assessments of the hospital and homecare nurses regarding the structures for (how) and the content of (what) the information they exchanged.

When both hospital and home healthcare had implemented an EPR, it was not possible to exchange information directly between the two systems, as they were incompatible. Therefore, the hospital nurses sent paper documents with the patient at discharge. The two most frequently exchanged documents from the hospital to the homecare nurse were the nurses' and the doctors' discharge notes. Hospital nurses, however, reported providing the nurses' discharge note more often than the homecare nurses reported having received it. Once an electronic discharge note was implemented in the EPR, some of these differences decreased slightly.

With regard to what information they exchanged, it was found that hospital nurses selected information they felt reflected the reasons that the patient needed further care. They exchanged information about the patient's medical problems, need for nursing care and continuing care more often than the homecare nurses estimated. Both groups agreed that they most often exchanged information about the reason for patients' hospitalisation. The homecare nurses, however, asked for more precise information about the patients' medical condition and medication.

Nurses decided individually what information to include in the information exchange. In the EPR discharge notes, a predefined template was used, but this did not influence homecare nurses' assessment of the information they received.

Lack of information to the homecare nurses often made it necessary for these nurses to contact the hospital directly to obtain additional information.

## Discussion

How can we understand the discrepancy between the two nursing groups' assessment of their information management?

Instead of assuming that one nursing group is correct or incorrect in its perceptions, it is more fruitful to discuss differences in the two nursing groups by adapting the information filtering perspective from the HIM model.

The patient's situation, the context in which care takes place, and the characteristics of the nurses themselves are all significant for the information that nurses acquire about a patient. Most of the information we acquire is value-laden.

When hospital nurses produce information for their colleagues in the community, they acquire information from different sources—for example from patients themselves, from the patient's next of kin, from the patient's record or from other colleagues. Depending on what information they find relevant, and what is available, they decide what information to extract. Findings from the present study indicate that nurses select what they consider to be important to document in the discharge note.

Available information is processed, i.e. nurses filter information based on their professional competence, values, experiences, and information available about the patient. These factors all have implications for nurses' perception of what information they regard as accurate and essential in a specific situation. Nurses in this study differed in the information they exchanged based on the context in which they worked.

Hospitals and community healthcare systems in various local authorities in Norway are separated into two organisational structures—each with differing owners, objectives, responsibilities for patients and each governed by different laws. Therefore the two organisations represent different cultures and have different foci. This asymmetry may have implications regarding which patient information either group assumes, and perhaps fails to document at all.

What information nurses disseminate shows how they value those with whom they are working. The homecare nurses in this study perceived that they received less information about patient's admission, treatment, and continuing care than hospital nurses. Even if hospital nurses who sent the information, used predefined templates in EPR to guide them in their information process, it was not obvious that homecare nurses received appropriate information—information they felt was relevant to their practice and needs. From an information-filtering perspective, it is reasonable to state that the nurses' assessment is contextualized and based on their experiences and objectives, while homecare nurses interpret the message based on their experiences, values and objectives.

## Conclusion

These findings have implications for both hospital and community care managers. To develop appropriate and timely information and ensure that it is exchanged across healthcare boundaries, both healthcare managers and the providers themselves need to take into account the organisations' differing objectives and perspectives which might influence their information management. It is also significant to have knowledge about what information recipients require for patients in transition from hospital to homecare.

At this point, it is reasonable to conclude that both organisations and EPR technology are fragmented. Any future development of EPR should specifically address ways of supporting the complexity of nurses' information processes and take into account how healthcare providers filter information.

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