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Does Healthcare Staff Change Working Procedures in Relation to Inter-Disciplinary Documentation in the Electronic Patient Record?

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Abstract

A comparativ and qualitative investigation with observation studies, interviews with staff observed and focus group interviews.

The study design included two groups: Group 1 (mono-professional documentation) consisted of two departments that had not introduced the electronic patient record (EPR). Group 2 consisted of two departments that had introduced the EPR.

The study showed that working procedures and division of work with documentation had not changed when comparing departments with EPR with departments without EPR. The division of work in departments with EPR clearly showed that decisions on the department's working procedures had not been taken. Decisions on who does what when a new electronic tool is introduced have not been taken. The mono-professional documentation thus continues as a new documentation method for inter-disciplinary documentation has not been considered.

Keywords:

working procedure, inter-disciplinary documentation, inter-disciplinary collaboration, electronic patient record

Introduction

Denmark is about to introduce an EPR for systematic and structured documentation enabling retrieval and reuse of data. The EPR is supposed to be inter-disciplinary and not just a common record.

It is expected that the EPR will result in organisational changes, changed work procedures and ways of dividing the work [1], in documentation of treatment and care and thus health professional services [2]. These changes will be a part of the construction of the EPR taking its starting point in a B-EPR (Basic structure of the EPR) made by the Danish National Board of Health [3].

When the EPR is introduced it is expected that there will be a change from mono-professional to inter-disciplinary documentation. This will be a major change for healthcare staff.

The approach to documentation in healthcare staff is different and influenced by ways of organising knowledge, insight, skills and education. Consensus thus has to be reached con-

cerning documentation methods and education in the new documentation methods. Fink [4] writes: ”The organisation based on profession and science constitutes a risk that the profession does not stick to the case and that the case is considered secondary or is neglected in the professional work"

Methods

A comparative and qualitative investigation [5] with

- Observation studies
- Interviews with observed staff
- Focus group interviews.

The study design included two groups. Group 1 consisted of two departments that had introduced the EPR (paper documentation form). Group 2 consisted of two departments that had introduced the EPR (electronically based documentation form). The study was carried out in June 2005.

Observation studies were conducted at four surgical departments with similar specialities. The departments in question collaborate concerning surgical specialities.

Routines of documentation and communication concerning patients were observed at all four departments for two days at each department using the same observation guide. Working procedures were recorded by the two observers (the authors of this paper) in a table (Figure 1).

Communi-cation Nurse	*Documenta-tion Nursing record*	*Documenta-tion Medical record*	*Communi-cation Doctor*

Figure 1 - Observation guide

Analysis of the completed tables from the observation studies are compared in the following way:

- Mono-professional documentation
- Everything noted by each healthcare professional on personal notes
- Inter-disciplinary communication

Figure 2 shows a schematic view of specific times when collection of professional documentation/communication data on a patient was made.

Time	***Documentation***	***Parts in the documenta-tion***
Morning	*Written documentation of the patient from the day before.*	*Nursing record Medical record*
Morning	*Oral report written down*	*Nurse-nurse dialogue*
Before meeting the patient	*Written down what the nurse has communicated to the doctor*	*Nurse-doctor dialogue*
Before meeting the patient	*Written down the communi-cation between doctor and nurse*	*Doctor-nurse + other healthcare staff dialogue*
Meeting with the patient	*Written down communica-tion between patient, doctor and nurse*	*Patient-doc-tor-nurse dia-logue*
After meeting with the patient	*Included written documen-tation in medical and nurs-ing records and record of other healthcare staff*	*Medical record Nursing record Other health-care staff records*
	Included written supporting notes	*Nurse's own notes*

Figure 2 - Specific times in the observation study

Observation studies were followed by individual interviews with the observed healthcare staff using a structured interview guide. The interviews were used to validate the observations. The interviews were opinion condensed and subsequently opinion categorised.

As follow-up on observation studies and interviews with individual staff focus group interviews were conducted at each of the two departments with EPR.

The focus group interviews were opinion condensed and subsequently opinion categorised.

Participants

The following participated in the study:

- 12 doctors with seniority between 4 and 30 years
- 11 nurses with seniority between 5 and 33 years.

Results

Results on working procedures concerning documentation and communication concerning the patient were divided into:

- Collection of information
- Communication before meeting with the patient
- Meeting with the patient
- Communication after meeting with the patient
- Documentation

Collection of information

Before healthcare staff met with the patient information was collected.

At the two departments without EPR the nurse on night duty either gave a thorough status on patients or no report.

The nurses themselves also read the paper records.

At the departments with EPR the nurse on night duty at one of the departments made a deviation report on one observation day but no deviation report was given on the second observation day. Furthermore, the daytime nurse read the EPR. At the other department with EPR the nurses read about patients in the EPR without having received report from the nurse on night duty.

The doctors started with a morning conference where they received report on patients from the attending doctor. Patient records were not used at morning conferences. The working procedure applied to all departments involved in the study.

In focus group interviews doctors at one of the departments with EPR reported that they searched information about patients as a supplement to the morning conference.

Healthcare staff collected more information before meeting with the patient and the other staff involved in the care of the patient. Here the available information was medical and nursing records or the EPR.

The nurses collected the continuing documentation material during the day on a note. All eight used notes. The note was the nurse's own or a common note for the department including all patients where comments are written on each individual patient.

The observation studies revealed that all healthcare staff read the documentation of their own staff group before meeting with the patient. The doctors did not read the documentation on patients they knew. One doctor from a department without EPR read the documentation during the meeting with the patient.

The distribution of reading other staff groups' documentation showed that five in eight nurses always read documentation of other staff groups; three in eight nurses sometimes read documentation from other staff groups. None of the eight doctors read documentation of other staff groups.

In focus group interviews doctors said they read documentation by other staff groups.

In the interviews in connection with the observation studies it was asked directly if documentation from other staff groups was read. Two in nine possible in departments without EPR answered "no" and one in ten possible in departments with EPR answered "no". In departments without EPR seven in nine possible answered "yes" and in departments with EPR nine in ten possible answered "yes". This is not in accordance with the results of the observation studies.

In departments without EPR all nine read documentation from other staff groups compared with eight in ten at departments with EPR. In departments without EPR eight in ten consulted other staff groups compared with ten in ten in departments with EPR.

The admission description in the medical record and the nursing record were read by the nurses. Relevant parts of the medical record were read by a third of the informants at department without EPR compared with half at departments with EPR.

Doctor's notes from rounds were read by one in nine at departments without EPR. Notes from rounds were not used in the daily documentation.

The medicine list was checked by doctors and nurses by five in nine at departments without EPR and by three in ten at departments with EPR. At the two departments without EPR the medicine list was electronic. This was also the case for one department with EPR. At departments without EPR, blood samples were checked by both doctors and nurses in three out of nine compared with two in ten at departments with EPR.

At departments with and without EPR all nurses read the daily notes by nurses.

The healthcare staff 's patient information comes from oral reports in three out of four in departments without EPR and no persons reported in departments with EPR.

However, doctor-nurse communication was highlighted by both doctors and nurses at departments with and without EPR.

Communication before meeting with the patient

In six of the eight observation studies there was communication/dialogue between the doctor and the nurse to prepare before meeting with the patient. The two cases where there was no communication took place at a department with EPR. This is in accordance with doctors knowing the patient in advance.

Observations showed that in departments without EPR communication took place before meeting with the patient. The same observation was made at departments with EPR.

In focus group interviews one department stated that they were now better prepared for rounds because they had consulted the record before meeting with the patient. They also stated to have a better overview of the patient's situation.

At the same time it was pointed out that it can be difficult to get an overview of complicated cases where patients have been admitted for a longer period.

Meeting with the patient

In the department without EPR the doctor brought the medical record with him to the meeting with the patient.
Doctor-nurse communication during the meeting with the patient took place in six out of eight cases. In one case where there was no communication there was no direct meeting with the patient. The doctor was briefed by phone by the nurse and the doctor made prescriptions by phone. This was unusual and caused by an emergency surgery. In the other case dialogue was sparse due to external circumstances.

Communication after meeting with the patient

At departments without EPR there was only doctor-nurse communication after the meeting with the patient in two out of four possible situations.

At departments with EPR there was no doctor-nurse communication after meeting with the patient.

Documentation

After the meeting with the patient documentation was made in the medical record.

At departments without EPR healthcare staff groups each had their own record. The doctor dictated notes to the medical record and the nurse wrote in her own mono-professional record.

In departments with EPR the nurses all made their own documentation in the EPR; two doctors dictated to the EPR and two doctors made their own documentation in the EPR.

At the two departments with EPR the design of the patient records was different. There was non-structured and structured documentation. Before the department with non-structured documentation began using the EPR they analysed present and future workplace procedures.

The other department worked with structured documentation and standard plans. In the standard plans there were some charts which could be used by all healthcare staff. At this department with EPR they had not worked consciously with workplace procedures only indirectly by working with functionalities in the use of the EPR in different situations.

When asking the question how to pass on information concerning the patient, all dictated or wrote in the record as described above. Based on the answers it appeared that healthcare staff communicated internally about the patient.

At departments both with and without EPR nurses passed on problems/deviations orally to other nurses.

At departments both with and without EPR the junior doctors dicussed with another doctor whereas more experienced doctors did not.

Documentation of the meeting with the patient was made by the doctor immediately after the meeting at departments both with and without EPR.

The nurses made their documentation at the end of the day except for one who made her documentation immediately after the meeting as she had the available time that day.

Another general pattern was that doctors and nurses did not document the same number of times during a day. The nurses documented three times a day and the doctors once a day unless there were complications in the patients.

Conclusion

We conclude:

- That work porcedures and division of work concerning documentation had not changed significantly in departments with EPR compared with departments without EPR.
- That the daily communication between staff groups had not disappeared using the EPR as attention was given to communicate nuances in the treatment and care of patients orally.

Specifically concerning the documentation and communication flow we can conclude:

Collection of information for doctors and nurses had not changed significantly in departments with EPR. The doctors' morning conferences were still run without using the patients' records. The use of notes was also the same in departments with EPR. Doctors' notes from rounds were still only read by a few in staff groups including the doctors themselves; on the other hand, nurses' daily notes were still read by all nurses in the departments with EPR. The admission notes from the doctor and the nursing record were read by all nurses. Relevant parts of the medical record were read by more people in departments with EPR compared with departments without EPR. Communication took place between healthcare staff groups before meeting with the patient by reading the EPR. This was also the case in departments without EPR.

The meeting with the patient had changed as the patient's record was not brought to the meeting in departments with EPR. The healthcare staff had read the EPR, which is always accessible and updated, before the meeting and felt more updated on the patient's situation.

Communication after the meeting with the patient had changed as departments with EPR did not have any communication after the meeting with the patient.

Mono-professional work procedures in departments without EPR concerning documentation and communication including dialogues about the patient still existed in departments with EPR except in one EPR department where it was still possible to dictate to the medical secretary. At the EPR departments it was possible to see notes from all health professionals concerning the patient. However, we can conclude that this possibility was used to a limited extent. New procedures on documentation and communication had not been described or communicated to end users at the EPR departments. We can concluded that the work procedures used were similar to procedures in the same specialised departments without EPR. The timing of documentation of treatment and care was similar to departments without EPR and doctors still made their documentation immediately after treatment while the nurses collected notes and made their documentation at the end of their shift.

Discussion

When the health professional content must be ensured in the EPR organisational changes are necessary. We chose Leavitt's organisation model [1] to focus on the different variables of an organisational change. The variables in the model have been adapted to the areas we wanted to shed light on. In one department with EPR it was stressed again and again that the healthcare staff was better up-dated on the patient than before the EPR. EPR has thus changed/ increased the professional level from an inter-disciplinary perspective. At the same time their behaviour has changed. Doctors and nurses communicate and read the EPR together before they meet with the patient. This communication is very important for healthcare staff in order not to lose knowledge providing poor conditions for the inter-disciplinary work on a long term basis.

The work procedure has also partly changed documentation. At especially one department it has resulted in double-documentation to be minimised. This is due to the structure of EPR and the use of standard plans. At this department they have used the possibilities in the EPR to support healthcare professional processes through standard plans based on the guidelines in the department and reference programs [6][7].

Artefacts, notes - both common and personal - survive in departments with EPR. The overview provided by the artefacts has not been achieved by the two different EPRs as we have observed. According to Leavitt [1] new procedures have not been used in connection with different artefacts and the use has thus not changed.

Healthcare staff has not focused on these artefacts or learned how to work without using the artefacts. New procedures using the artefacts through the EPR could assist in providing an overview of the patient's documentation where problems are highlighted using the common data.

EPR has changed some procedures but still staff do as they normally do. EPR has to be used for some time before procedures are changed. Procedures will change, but gradually [8].

If procedures are not analysed and adapted, EPR can be perceived as a disturbing element and healthcare staff will experience that they do not control their own daily work [9].

Our observations showed that EPR had not influenced previous work procedures. The notes from rounds at EPR department were still not read. Despite this doctors continued to write notes from rounds every day, which means they continued the same procedures without considering if documentation could be made someplace else. This could be because it is not an activity for the doctors to document in the EPR but the purpose is to produce a detailed copy of what has happened. According to Berg M [10] documenting in the EPR is an activity which is directly relevant for the work itself, a process of finding "the right diagnosis".

The possibility of reading the patients' records electronically during the doctors' morning conference had not been used. If the procedure in connection with the doctors' morning conferences had been analysed at departments with EPR the result could have been to change morning conferences from conferences without using records to conferences using records. Doctors would thus not have to remember the patients' treatments etc. but could view the entire amount of documentation at the conference and make decisions accordingly.

Today healthcare staff knows the work division concerning documentation but it is not described in detail or discussed in the departments.

The future with common data in connection with e.g. meeting with the patients means that the inter-disciplinary effort must be focused to ensure necessary data are collected to use in different databases according to the Danish Quality Model [11], and that the meeting with the patient is the responsibility of the entire inter-disciplinary group.

Collection and use of high quality data also mean that documentation must be real-time. Today documentation is not real-time for the nurses. They still make their documentation at the end of a shift at departments with and without EPR.

The doctors at the one department with EPR still dictate to the medical secretary which is not real-time either. Moreover, there are differences in the documentation frequency; doctors document once a day and the nurses three times a day.

The lack of real-time registration will have consequences for patient safety due to mistakes in documentation if documentation is not up-dated.

The strengthening of the professional profile and the collabo-

ration on common data will increase the professional level according to Leavitt [1] affecting the three other variables. The variable documentation will change as a new method of documentation is needed to collect and use multi-disciplinary patient data instead of mono-professional.

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A full discussion of the study and the methodology used can be downloaded from www.olsgaardnicolajsen.dk (in Danish)

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