

Dealing with Organizational Change when Implementing EHR Systems

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Abstract:

Over the past years researchers at Aalborg University have been developing a method for examining change readiness of hospital staff during the implementation of new IT-systems. (CRR; Change readiness-research). The aim is to provide the hospital-management with a tool that will lead to an optimal implementation of new IT-systems. The method has recently been used in department Y at Skejby Hospital, Skejby, Denmark. 81% out of 241 employees answered the distributed questionnaire, and the results showed, that the employees have some expectations to the new EHR- system, which are important to either confirm or reject, on the other hand a great part of the employees lack basic computer skills. Thus the CRR-method has provided the Organization with important information before the implementation of the new EHR-system.

Keywords:

Organisational issues, change readiness, EHR implementation

Introduction

With the introduction of “National IT-strategy for the Healthcare-sector 2003-2007”[1,2], the Danish Ministry of the Interior and Health has set the scene for the implementation of EHR in all Danish hospitals within the next years, one of the objectives reads; “all Danish hospitals have implemented EHR based on shared standards before the end of 2005”. The implementation of EHR in hospital wards will, however, introduce a number of different changes in organizational matters, e.g. in work procedures, in competences and in personal/professional status. These changes will: start already before the EHR system is implemented and will continue as follow-up processes for a long time afterwards.

Research by the EHR-Observatory¹ has shown, that far from all implementations of EHR have been successful [3]. Almost all EHR projects have been delayed, and the project-objectives have in most cases been reduced compared to the original plans. Lately attention has been drawn to the fact, that a possible explanation to many of these bad experiences, could be found in the fact that only few resources were spent on preparing the employees for the changes mentioned above [4]. On this background the re-

search project SITOR² has been established with the purpose of developing methods, which can contribute to ensure a successful implementation of EHR.

Conceptual framework

Two American researchers: Nancy M. Lorenzi and Robert T. Riley have through intensive studies within the American health sector identified three keycomponents important to deal with, when implementing new IT-systems. These are: Hardware, Software and Peopleware. Peopleware refers to the organisational or the human aspects, when implementing e.g. EHR.

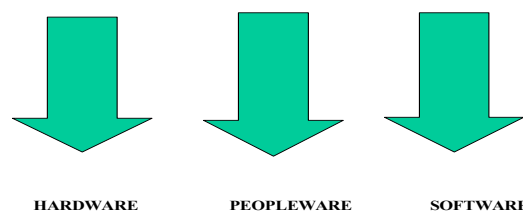


Figure 1 - Keycomponents when implementing new IT-systems

Usually managements and IT-supporters first focus on Hardware and Software and then – if at all – on Peopleware. This might be because of lack of understanding for – or lack of knowledge about – the importance of the Peopleware aspect, when implementing new IT-systems. This aspect is however extremely important, as Lorenzy and Riley have shown, the greatest problems when implementing EHR are those of organisational nature in the form of resistance from the employees towards the new system, and thus not of technical nature [5]. It has also been found, that the resistance are focused on different aspects:

- Against those responsible for the changes
- Against the frequency of changes
- Against changes in the organisation
- Against the specific IT-system which is to be implemented.

1. EHR-Observatory was established in 1998 by the Ministry of Health to monitor the development of EHR in Denmark.

2. SITOR: Organizational-model via a view to optimising the human resources connected to implementation of new technology in the healthcare sector.

Besides this, the results show that resistance against changes is closely related to the way each individual employee experiences the following conditions:

- Pressure connected with having to develop new skills
- Fear of looking stupid or incompetent within these new skill areas
- Fear of losing professional status
- Pressure connected to the expectations by the management about better performances and more effectiveness
- Pressure connected to the expectations about less mistakes due to more control exerted by the management
- Pressure connected to the fear of losing ones job because of the new technology

The research results thus showed that to ensure the most successful implementation of a new IT-system, it is important that the organization - before implementing the system - examines and take precautions against both the aspects of resistance and the possible personal factors causing resistance.

These findings form the basis for Lorenzi's and Riley's development of a research method for examining change readiness (CRR). The method is designed as a questionnaire, which is divided into four main categories, which together cover both the different aspects of resistance and the personal factors mentioned above.

These main categories are:

1. Do the members of the organization know the main objective of the organisation, and do they feel, that they are working together and towards a common goal?
2. What do the members of the organization know about the specific EHR system, they are to implement, and do they agree that the implementation of this is a necessity to fulfil the objectives of the organisation?
3. How is the attitude of the members of the organization towards having to carry out the changes induced by the implementation of the new EHR system?
4. Do the employees feel confident that the management has the ability to plan and carry out the implementation?

Lorenzi's and Riley's point is: that it is essential to involve the employees already at the planning stage to achieve a common ownership towards the new technology.

At Aalborg University we have elaborated the questionnaire during the past years in order to adopt the specific Danish conditions. This work has been carried out by use of the method in several hospital-wards in Denmark. The result is that now the questionnaire contains five main categories corresponding with the categories mentioned above - but with the second category divided into two. The questionnaire has - before use - in every case been adjusted to the specific ward in co-operation with an interdisciplinary team from the hospital.

Present study

Objects:

An assessment of change readiness can be viewed as a management tool developed to uncover the attitudes of the organization

towards changes caused by implementation of new IT systems. The study-results give the organization opportunity to exert specific effort towards categories, which according to the study are found problematic by the members of the organization. Thus the object of an assessment of change readiness is to contribute to a successful implementation of EHR in a hospital ward. An intermediate object is further development of the assessment of change readiness as a method.

Methods and material

In the spring of 2003 a CRR was accomplished on the Gynaecological-Obstetric Ward -Y at the Hospital of Skejby, Skejby, Denmark. All the different professionals at the ward have participated in the study. Subsequently a focus-group interview was made with participation of employees from different professions. The data analysis has been carried out partly as a frequency analysis, partly as cross analysis of different answers.

Results:

The questionnaire:

241 questionnaires were handed out to the employees of the ward. 196 answered the entire scheme or part of the scheme, which gives a response rate of 81.

Regarding experience with computers, the study has shown, that while 73,7% of the doctors and 76,7% of the medical secretaries are either "super-users" or have "much experience", only 15,6% of the nurses have an equivalent experience. None of the auxiliary nurses have this type of experience with computers (Table 1).

Table 1: Experience with computers

Experience	Number	%
None	0	0,0
Little experience	25	12,8
Some experience	63	32,1
Much experience	44	22,4
Super-user	9	4,6
No answer	55	28,1
All together	196	100,0

As to the knowledge about the specific EHR system, which is to be implemented, 31,3% answered, that they "know in detail" or "know the outline" of the new system, while 61,8% answered, that they "know about parts" or "have a superficial knowledge" about it. 7% do not know anything about the system.

A predominant positive attitude towards the implementation of EHR is seen in the study, as 69,5% of the employees answer either "I fully agree" or "I partly agree" to the question: "I look at our staff as a group of employees, who look forward to working with the implementation of the EHR" (fig.2). Equally - 80,6% of the employees answer, that they *personally* look forward to working with the implementation of the EHR (fig.3).

More than 60% of the employees agree - partly that essential areas in their daily work will be improved by the implementation of EHR - partly that EHR will have a positive effect on the qual-

ity of the health professional work in the ward. About 80% of the employees mean that in the long run implementation of EHR is a precondition for the survival of the ward.

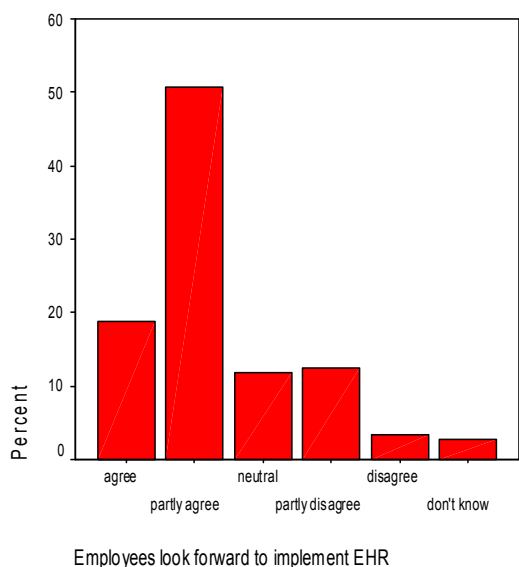


Figure 2 - I look at our staff as a group of employees who look forward to working with the implementation of EHR. (n=144)

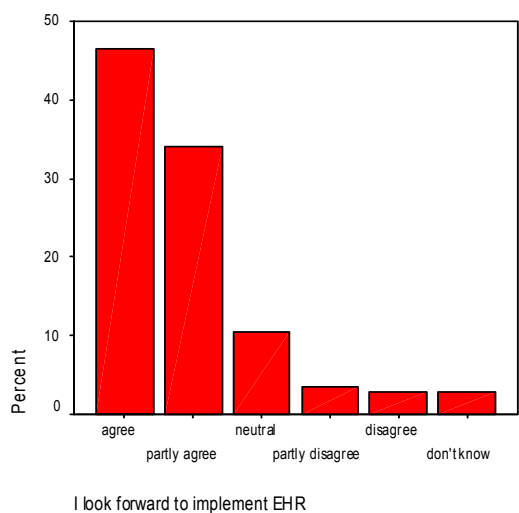


Figure 3 - I feel like setting about the jobs connected to implementing the EHR. (n=144)

As to the aspect of fear of losing ones job, the study shows that 25% believe that they have colleagues, who are in danger of losing their job because of EHR. Only 5% think that this risk includes themselves. If one looks at the connection between profession and fear of losing the job because of EHR, it is seen that approximately 50% of the medical secretaries think that their colleagues bear this risk, while only 3% find that they themselves are included. Equally – approximately 35% of the

nurses believe that colleagues are in risk of losing the job, while nobody thinks that this risk includes themselves.

As to the support given from the management of the ward during the implementation of the EHR, approximately 46% believe that this will be given (fig.4). As to support from the hospital management, only 23% believe in this (fig.5).

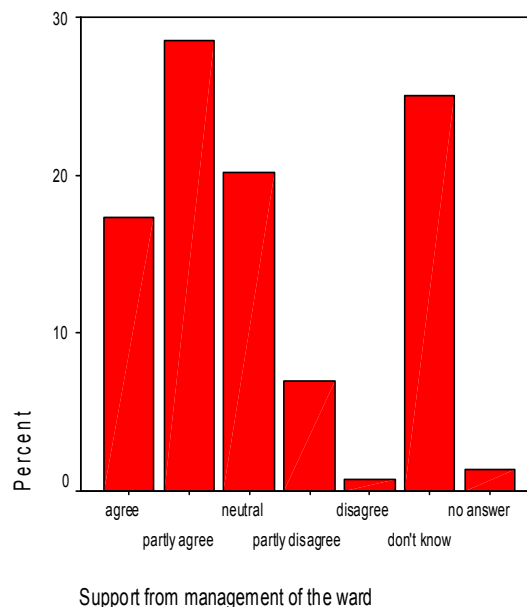


Figure 4 - When the EHR is to be implemented, it will be possible to get the support needed from the management of the ward. (n=144)

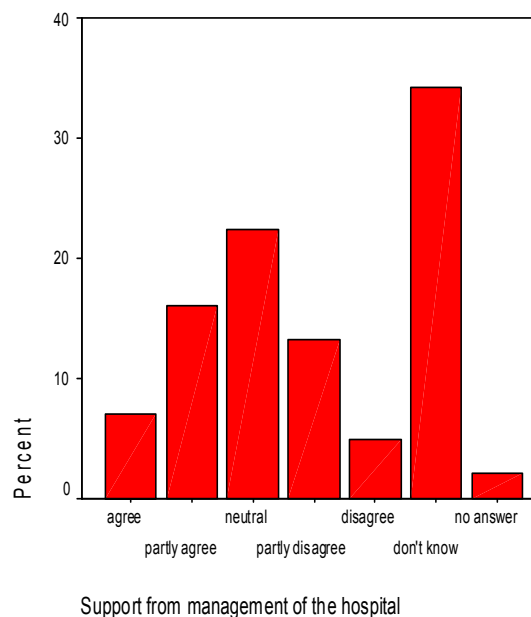


Figure 5 - When the EHR is to be implemented, it will be possible to get the support needed from the management of the hospital. (n=144)

Approximately 43% of the employees believe that enough time will be devoted to the implementation of the EHR, while the rest of the employees do not know – or think – that this will be the case. Finally – approximately 73% of the employees mean that it will be a great burden to implement the EHR.

Focus-group interview with employees in ward Y:

The focus-group interview showed that the participants had correctly understood the meaning of the questions, and they had answered accordingly. Furthermore the participants expressed great content with the form that the questionnaire has now.

Discussion:

This study shows that it is important that the management carry out several initiatives in different area, before implementing the EHR:

First, the employees show determination and willingness to begin the implementation of the EHR – despite the fact that a great number of them do not have particular knowledge about the system they are going to implement. This could suggest that the employees have expectations to the new system – realistic or unrealistic – which are important for the management to either refute or confirm.

Second, as the nurses and the auxiliary nurses are seen to lack basic computer skills there is need for basic instruction in the use of computers.

Third; the results show that most of the employees fear that the implementation will be felt like a real strain, as they believe that neither the hospital management nor the management of the ward will offer adequate support or the sufficient time to implement the EHR.

This study therefore recommends to the management - prior to the implementation - to thoroughly involve the staff in the process and to inform the employees about the abilities of the new system as well as the amount and the type of support the employees can expect.

Conclusion:

This study has shown that the CRR is a useful management-tool aiming at improving the most successful implementation of the EHR. It has been shown that it is possible by use of the CRR to identify both the aspects of and the personal factors causing the employees' potential resistance to the EHR. The use of the CRR also makes it possible to identify which professional grounds the efforts must be focused on.

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