Management of IT Systems in Primary Health Care (PHC): A Finnish Case Study

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INTRODUCTION

National guidelines in Finland call for nationwide access to electronic patient data by 2007 (1, 2). Most of the technical infrastructure to meet this demand has been implemented, in particular all health care providers (Health Centres) in PHC have utilised electronic patient record (EPR) systems for some time. In addition to the technical infrastructure itself, however, it is also necessary to develop management, support and training required for EPR systems to function as efficiently as possible.

A long term project was started in the Finnish region of South-Ostrobothnia in 2003 to study the impact of EPR systems on availability and flow of information between public PHC and secondary care. As part of this major project, it will also be evaluated how well EPR systems in PHC can meet the needs of general practitioners (GPs) and other health care professionals for specific information. Previous studies have indicated differences in quality of data in EPR systems (3). Previous research has also indicated differences in performance and ranking of patient data for different EPR systems (4).

The focus of this study is to investigate further what reasons govern the performance or utility of EPR's in use in PHC, and in particular to investigate the role of IT management and user training in the overall performance of these systems.

METHOD

This study was conducted in the South-Ostrobothnia region. The total population of the region is 196 000; PHC is provided by 16 Health Centres. Secondary care is provided by Seinäjoki Central Hospital (560 beds) and Ähtäri hospital (28 beds).

In the first phase of this project, GPs from the research group identified all patients who received anticoagulant (AC) treatment on 1st April 2004 from the EPRs of eight Health Centres (population base 132 621). The GPs were requested to access 20 specific types of agreed-on information from patient journals (EPR). This patient group was deemed appropriate for this type of study because the information dealt with is specific and thus relatively easily quantifiable, for instance: start date of treatment, main reason for treatment, Internationalized Normalized Ratio (INR) target level, last INR value. The INR value is an indication of blood coagulation, and thus a important idex that must be determined for patients receiving anticoagulation (AC) treatment.

After analysis of information accessibility from EPR's for this patient group was completed, feedback and discussion sessions were carried out with GPs participating in this study (4). Reports on IT management and staff training practices in the Health Centres were requested initially in a non-structured format. Based on these reports, a more detailed and structured questionnaire compilation has been started. The collection and analysis of this data is currently taking place.

RESULTS

The Health Centres participating in this study used three different types of EPR, with one system being utilised in 5 Health Centres. The EPR systems had been operational for a relatively long time: up to 9 years. The total number of AC treatment patient cases analysed was **2 389**. All of the 20 specific types of agreed-on information requested was available via the EPR for 73% of all the cases, ranging from 52% to 93% for different Health Centres (table 1). There were major differences within individual EPR system performances which did not correlate with the period of use of the system.

It is expected that the additional information currently being gathered from the Health Centres will shed more information on the correlation between data quality and general IT management practices.

DISCUSSION AND CONCLUSIONS

The feedback and discussion sessions conducted with GPs participating in this study indicated that there were few if any purely technical reasons why certain information was or was not available in the EPR. It appears that user behaviour and general aspects of how the IT systems were managed were significant. Factors like number of staff substitutes that were previously untrained in the use of a particular EPR, and the training and delegation of tasks within professional groups seemed to have an impact on how the EPR systems were used and on the quality of data entered in these systems.

Table 1. Accessibility of specific information from EPR for AC treatment patients in 8 Health Centres in South Ostrobothnia, Finland

Health Centre	EPR system	Years in use	Proportion of cases for which all information requested obtained (%)
a	x	2,2	86
b	y	4	55
c	y	4	61
d	y	9	93
e	y	8	71
f	y	7	80
g	x	1,8	74
h	h	6	52

Initial results also indicated that the workflow in all Health Centres might not be optimal for EPR use. This study implies that in addition to the direct expenditure in EPR systems, more emphasis should be placed on IT management, training and "best practices" dissemination.

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