The Capital Region of Denmark

REGION H

User participation in design of a Process Oriented Medical Record

- when and how?

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MEDINFO 2007

Introduction

- The described EHR project was aimed at developing a Process Oriented Medical Record (POMR) for about 25.000 clinical users in the Capital Region of Denmark
- We knew that an it-project's success depends on user participation
- And we learned that you must clarify from the beginning:
  - What is the purpose of user participation in this phase of the project
  - Which methods of user participation are the best to use in this phase of the project

Materials

The EHR project was based on the following principles. The POMR should:

- Be interdisciplinary
- Be problem oriented
- Be based on the concept of period of care
- Contain highly structured data
- Make it possible to reuse data for different purposes like:
  - Quality assurance and quality development
  - Management information
  - Research
  - Billing

Meaning that the POMR would introduce a second order change in the organization

Methods

Four fundamentally different methods of user participation were used in different phases of the design process:

- Focus groups – in review of system specification
- Scenario based approach – in design of data presentation
- Use case – in design of process oriented data capture
- Prototyping and usability testing – in design of principles for data capture

Results – Focus groups

- Were used to review and discuss system specifications consisting of textual descriptions
- Resulted in a lot of comments including:
  - Comments to the wording of a specification
  - Rejections of functionality
  - Proposals of new functionality
  - Concerns

➢ Users were often uncertain whether the functionality described could support the clinical workflows

Results – Scenario based approach

- Was used to design the user interface for obtaining overview of the POMR
- Nine generic clinical scenarios were designed based on a combination of literature and knowledge of clinical practice

➢ The method helped relating the known daily workflow to the needs of data presentation i an EHR – linking together the known chronological based record to the new and unknown process oriented record

Results – Use Case

- Was used to focus on the application's workflow support in capturing data
- Resulted in long and very detailed textual descriptions

➢ The users in general found the method difficult and time-consuming

➢ But several questions of how to support clinical workflow were answered

➢ The vendor developed prototypes based on the use cases

Results – Prototyping

- Was used to design the user interface
- Facilitated the users' decision-making
- The prototypes were usability tested

➢ The users preferred the use of prototypes for designing system functionality and user dialogues

➢ The vendor recognized the benefit of prototyping, but found it time-consuming and expensive regarding the need of resources

Discussion

- Focus groups
  - Many users have difficulties in visualising a future system when descriptions are solely paper-based and textual
- Scenario based approach
  - Less useful for designing detailed workflows, but suitable for answering generic questions of data representation
- Use case
  - Difficult to use for ”ordinary” users, but very useful in designing data capture processes
- Prototyping
  - Facilitate users ability to make decisions about the system design, but even more useful if tested in medical simulation environments

Discussion - Which user participation method?

- Which degree of organizational change will the system implementation cause?
- How many end users are to be involved in decisions about the system design?
- Are the questions about data capturing or data presentation?
- Are the questions about principles or detailed functionality?
- Is the purpose to facilitate end user ownership or to capture detailed information about clinical practise?

Conclusion

- The development of an interdisciplinary POMR means second order change in Danish clinical work
- There is no universal method for user participation
- Methods must be chosen based on the degree of organizational change
- The more organizational change a project implies the more the need of using visualizing methods for system design
- You must distinguish strictly between designing functionality for data presentation or data capture and let your choice of method of user participation depend hereon

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Acknowledgement

- Lead clinician Bo L. Hejl, WM-data Denmark

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