

A digital tool to support physicians in understanding the situation of a patient with a complex healthcare history

BACKGROUND

Retrieving all relevant patient information to understand a patient’s medical history and situation is often a time-consuming process for clinicians. Studies report [1] a lack of workflow support when searching for information, leading to a high cognitive load from memorizing and navigating large volumes of data. Challenges include lack of access to information, insufficient exchange practices, information overload, and ineffective presentation of relevant details.

AIM OF THE STUDY

Describe the development process with usability testing of a digital tool, called DigiTeam, with information presentation on patients' concerns, conditions, and ongoing activities to support physicians in getting an overview of patients' medical and healthcare information from several sources.

METHOD

The DigiTeam prototype was iteratively developed between July 2023 and May 2024 using feedback from 17 physicians.

- “Think aloud” technique
- Observations of the participant's use of the prototype
- Semi-structured interviews to explore the user's perception of usability and overall experience.

DIGITEAM AIMS TO SUPPORT

- 1) access to all patient information in the EHR,
- 2) presentation of what matters to the patient,
- 3) an overview of involved health professionals and caregivers,
- 4) a summary of the history of the main health problems.

The development process was performed in 3 phases to report on major changes. The figures below show the final version of the prototype.

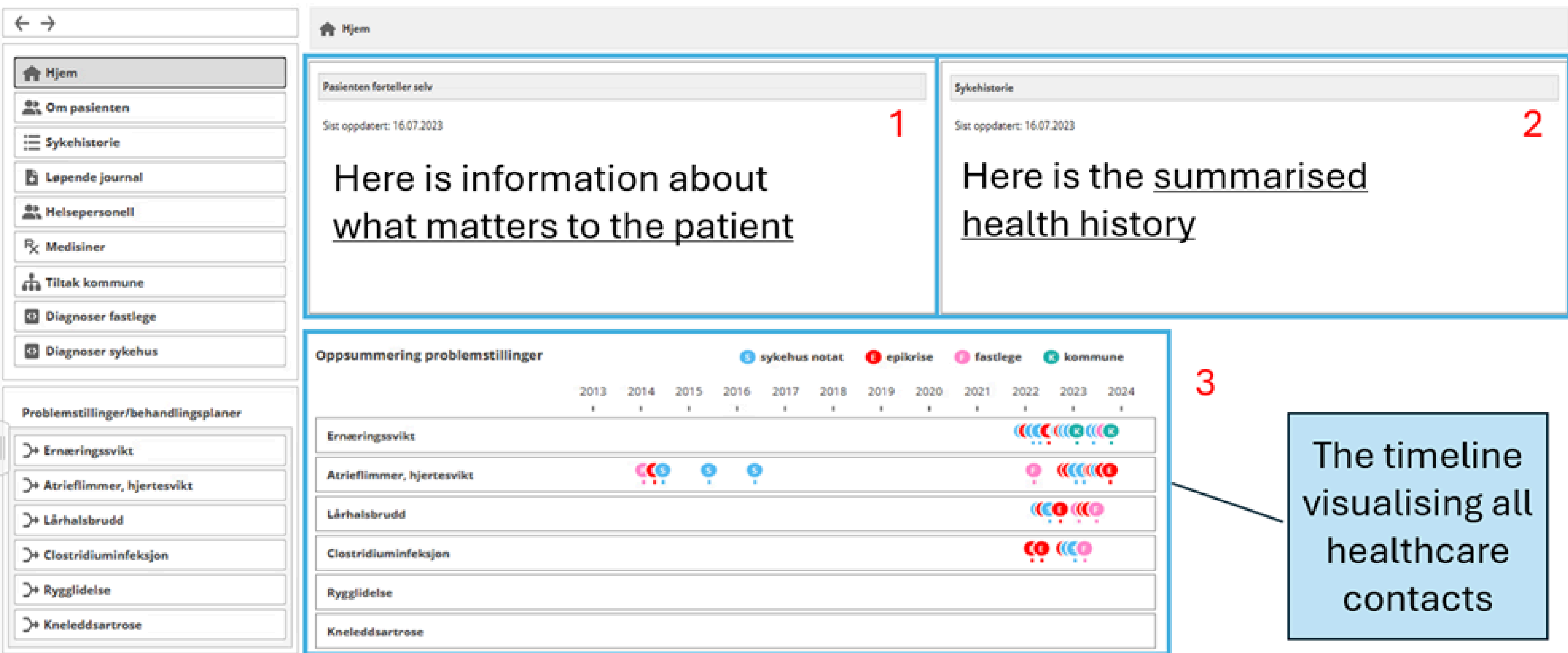


Figure 1, the final version of the overview page:

1) Shows a box with what matters to the patient, 2) shows a box with a summarized health history, and 3) shows a timeline for all healthcare contacts and the description of the markers.



Figure 2, the final version of the health problem summary page:

The picture shows a health problem summary (nr 4) with blue hyperlinks and a timeline for healthcare contacts above the summary. When clicking on a hyperlink, the medical note are displayed on the right side of the summary (nr 5)



RESULTS OF THE STUDY

The participants appreciated access to:

- The patient’s social and contextual information
- Clinical notes from several organizations
- Visualization of health problems on a timeline
- Summaries of main health issues with hyperlinks to the original medical note.

Changes in the prototype:

- Reduced the amount of information and repetition across the prototype.
- Healthcare contacts for each health problem are visualized on a timeline, replacing the previous boxes with text extract.
- The health problem pages feature a brief health history summary rather than chronological medical note extracts.

TAKE HOME MESSAGES

- Simplifying the layout and reducing the text density while keeping essential information were crucial throughout the development.
- Access to all relevant patient information, including what matters to the patient and contextual situation, was perceived as useful.
- Presenting information on timelines and summaries of medical histories can be valuable features in clinical practice.