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Developing a System to Provide Patient-centered Information Handouts about Laboratory Tests

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Abstract and objective

The explanations given to patients scheduled for laboratory tests tend to be inadequate because medical doctors are faced with too much work and too little time. To improve this situation, we developed a system to provide printed handouts using a hospital information system (HIS). First, we conducted a questionnaire survey to clarify the patients' needs for explanations regarding specific blood tests. Next, we developed a system that generated explanation handouts for those blood tests. The results showed that patients have high demands for sufficient blood test information and preferred printed explanations. As our system required only 1.36 sec after receiving an arrival message from the server to the start of printing, we believe that our system is practical.

Keywords:

information disclosure, hospital information systems, information services, patient handout

Introduction

While providing patients with sufficient explanations about medical practices is important, those given to patients scheduled for laboratory tests tend to be brief. The main reason in Japan is that physicians are constrained by heavy workloads that leave too little time [1, 2]. This study clarified patients' needs using a questionnaire survey and developed a system to provide patients with handouts that explained blood tests.

Methods

We surveyed outpatients on their needs for information about specific blood tests. Outpatients at the University of Tokyo Hospital were asked to complete a questionnaire consisting of 27 questions. Based on the results, we chose paper as the information medium because it has the advantages of being able to be 'read anytime, anyplace, without any tools' [3]. We selected 72 items for the handout content, which covers about 70% of the target orders, and wrote an explanation for each These explanations were verified by a physician and the staff of the clinical laboratory center. We developed a system for printing the handouts explaining laboratory tests (Figure 1) and evaluated its performance by measuring the operational time.

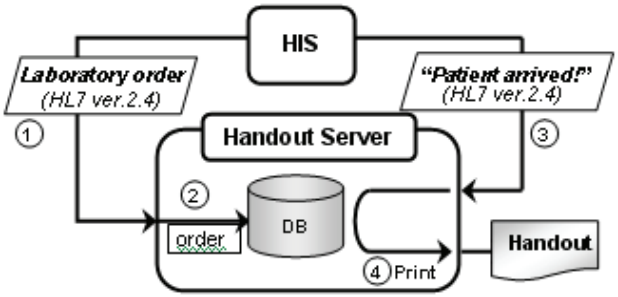

Figure 1 - An overview of our system (1) The HIS sends a laboratory order to the Handout Server. (2) The Handout Server parses the order and saves the information. (3) The HIS sends the patient's arrival message to the Handout Server and (4) the Handout Server prints a handout for the patient

Results

The results of our survey indicated that over 80% of the respondents demanded that information and handouts be provided before blood tests. They were particularly interested in the purpose and subitems of the test (Fig. 2).

The response time speed was shown in figure3. Since it was on average 1.36 sec from receipt of a patient's arrival message to the start of printing (Fig 3), our system was shown to be practical.

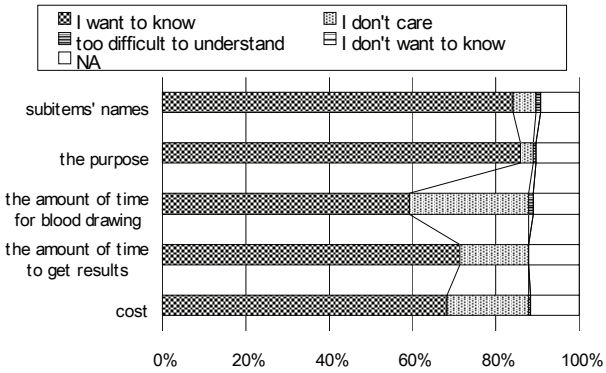

Figure 2 - "Would you like to know this information of the test?"

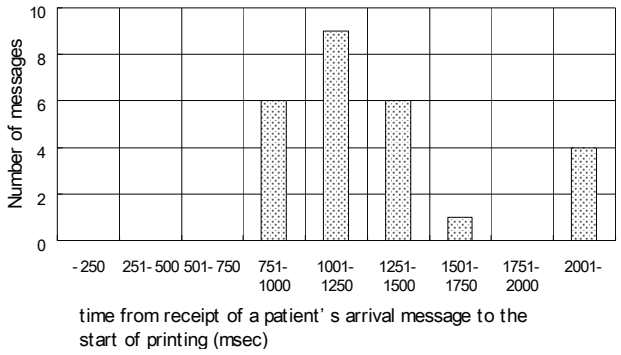

Figure 3 - The response time speed of our system

Discussion

Since the handout server is connected to the HIS over HL7, one can easily introduce it in another hospital.

Both the amount and the quality of information are limited as long as using paper as the information medium. One could direct patients who need more information to other information sources (e.g. web pages and books) and our system serves to provide minimal information.

Conclusion

So far, we have seen that many patients have needs for information about specific blood tests, and developed a system to provide them with handouts that explained blood tests. A further evaluation on the usefulness of the handouts is scheduled in 2007.

References

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