

Infinite possibility of ICT in medical and clinical fields: History and future direction of hospital information systems

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Abstract

In 1969, L. L. Weed proposed the description method of medical records for the Problem-Oriented Systems. His method is generally called Problem Oriented Medical Record (POMR) and made a great impact to medical and clinical fields. As POMR became popular, medical and clinical records have been drastically changed to be rather considered as scientific progress records. Nowadays, many information management systems at hospitals (hospital information system thereafter) such as EMR and EHR have been developed using POMR, and the same or a very similar trend among hospitals in Japan can be observed. As a result of this, a true e-health environment is expected to be thoroughly available near future. By using such systems, medical staffs store vast amount of clinical data and view them easily. While such advantages of Hospital Information Systems have been made, those good information resources are NOT effectively utilized for medical and clinical studies. In this lecture, certain aspects of hospital information systems in Japan are introduced in order for us to consider the effective re-use of medical records for clinical studies as a future direction.

More specifically, my presentation will be devoted to the introduction of the following topics: (1) histories of current agenda of Hospital Information Systems (HIS), (2) recent research projects to reuse archived clinical documents and (3) clinical data analysis systems. I will show you an example of actual HIS in Japan, and the outline of our resent topics, e.g. Document Image Processing, Figure Recognition Methods for Medical Document Retrieval. In addition, CLISTA!, Data warehousing for HIS developed and released by Medical Engineering Institute, Inc. is to be demonstrated when time permits.

Short Bio.

Hiroharu Kawanaka received the Doctor of Engineering from Mie University in 2004. He established Medical Engineering Institute, Inc. to develop Clinical Data Ware House systems. In 2005, he received the NEDO Industry Fellowship and worked at Mie Technical License Organization to support research collaborations between universities and industries. In 2009 he received the Ph.D. in Medical Science from Graduate School of Medicine at Mie University. He

visited the Cincinnati Children's Hospital as a visiting researcher in 2012. He is now an assistant professor at the Graduate School of Engineering at Mie University. His current topics are Medical and Welfare Informatics, Document Analysis Systems, Ergonomics and Evolutionary Computation. He is a member of IEEE, HIMSS and several other Japanese academic societies. He is also certificated as a Healthcare Information Technologist by the Japan Association for Medical Informatics.

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