Inter-university clinical informatics education program for co-medical students*

Hinako Toyama[a], Jun Nishihira[b], Michio Naito[c], Tetsuo Kawamura[d], Shunji Wakamiya[e], Norio Sasagawa[f] and Akikazu Tamaki[g]

[a]International Univ. Health and Welfare, [b]Hokkaido Information Univ, [c]Fujita Health University, [d]Suzuka University of Medical Science, [e]Kawasaki Medical Welfare Univ., [f]Hiroshima International Univ., [g]University of East Asia

Abstract

In order to promote the utilization of digital clinical information among co-medical staff, seven universities in Japan have planned to introduce the Electronic Health Record (EHR) system for education on the virtual private inter-university network (VPN) and to develop materials involving fictitious model patients used for learning team medicine via EHR. The EHR system and the associated educational materials have been evaluated by these seven universities. The materials for fictitious patients, including medical records, study results, and medical images, were added to a database developed for EHR education. This program was evaluated using a questionnaire administered to students and the administrators of hospitals employing students who have graduated.

Keywords:

EHR, Education program, Co-medical staff, Clinical record

Introduction

Utilization of the Electronic Health Record (EHR) system and information technology in hospitals increases each year in Japan, and the introduction of a prospective payment system and on-line claim methods has promoted the spread of digitized clinical information. However, educational tools and materials on EHR and medical information technology for students of health and welfare are currently lacking. The present study aimed to develop educational methods using EHR systems and to evaluate the materials and methods developed by this program in order to promote the development of information technology (IT) skills among co-medical staff.

Materials and Methods

Subjects comprised 750 students in the departments of nursing, Physical Therapy, Occupational Therapy, Speech Therapy, Orthoptics and Visual Sciences, Radiological Technology, Health Service Management, Health and Social Service, Clinical Engineering, Pharmaceutical Sciences, and Dietetics and students participating in healthcare information technology and health information management programs. Three committees in charge of program management, development of medical records for fictitious patients, and examination of the educational program were organized. Three types of EHR were implemented in the virtual private inter-university network (VPN): students were able to access two types of EHR provided by two different venders via a terminal server using a remote desktop connection at each university, and another type of EHR was accessed using a web browser. A database (DB) of medical records for fictitious patients used for educational purposes was reconstructed. The educational method using materials involving fictitious patients and the EHR system was implemented on a trial basis at each university. The program was evaluated using a questionnaire administered to students and the administrators of hospitals employing students who have graduated.

Results and Discussion

An EHR educational system on the VPN at seven universities was developed and EHR training trial classes have been successfully implemented at each university. In these classes, although the network is accessed via a remote connection and the program uses medical record data for fictitious patients, students are able to use the EHR system comfortably, without feeling as if they are using a network. Medical records for 21 fictitious model patients have been generated with the participation of co-medical staff in various fields. These fictitious medical records have been registered into the database on the VPN and are commonly used in EHR classes at the seven universities studied. A questionnaire about EHR was administered to students at the beginning of the each class. The results showed that students considered EHR to be necessary in clinical practice, as well as that students are highly interested in EHR and want to learn more about it. In order to accomplish this goal, students should become more knowledgeable about the legal aspects of health information, health data standards, coding and abstraction of data, statistics, database management, quality improvement methods, and computer sciences.

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