USE OF DATA FROM A HOSPITAL ONLINE MEDICAL RECORDS SYSTEM BY PHYSICIANS DURING PREANESTHETIC EVALUATION

Gordon L. Gibby, MD, Guido Lemeer, MS, and Keith Jackson ME

ABSTRACT. Objective. There is no data on the use of hospital-wide online medical record (OLMR) systems by anesthesiologists. We measured how often anesthesiologists accessed the OLMR database maintained by the hospital, how often data was copied from this database into the clinic's computer system, and how much data was copied. Methods. In a preanesthetic evaluation clinic that has a computerized evaluation system designed for physician-entered data, a graphical user-interface prototype link provided access to the hospital OLMR database for users and was studied over a 37-day period. The software allowed the user to search the OLMR system by patient name, retrieve a text listing of the patient's record, and then copy and paste desired information into the forms of the preanesthetic system. Using embedded routines, we recorded how many times physicians searched for and retrieved medical records from the hospital OLMR database, as well as how many times they copied data to the preoperative database. As a measure of how much data was copied, the number of characters was also recorded. Results. Of 1,080 patients evaluated in the clinic during the study period, electronic searches of the hospital OLMR database for 221 patients (20.5%) were noted. Of these searches, 208 (94.1%, or 19.3% of 1,080 patients) successfully retrieved data from the patient's record. Data was copied for 170 patients — 81.7% of the successful searches. Of 7,525,153 characters retrieved, 262,269 were copied — an average of 1,543 characters per instance of copying. Conclusion. We conclude that anesthesiologists, given even crude graphical access to a hospital OLMR database, will retrieve and copy data, potentially increasing the accuracy of the medical records and saving time.


INTRODUCTION

Electronic storage and retrieval of information from medical records is becoming more widely used in the United States: 265 of 290 hospitals with 500 or more beds have some form of online medical record (OLMR) system (HBO & Co.: Partners in Healthcare, presentation, March 6, 1995). With such systems, medical records can be retrieved and, in some implementations, data from them can be copied and inserted into other documents. However, because this allows physicians to insert confidential medical data into virtually any document, use of the OLMR in this fashion is controversial (Downey M, personal communication, 1994). While, theoretically, the risk of compromising confidentiality can be minimized by techniques such as audit trails, user training, and user authentication [1], the use or the benefit of such
functions, and the incidence of problems they engender have yet to be studied.

We studied the use of a hospital-wide OLMR database made available through a computerized system designed for preanesthetic evaluation [2–4].

METHODS

At the study institution, a tertiary teaching hospital, an OLMR system in use since 1992 contains a 2-gigabyte database that includes both text and laboratory data in a structured query language [5]. The OLMR system automatically collects both physicians' dictations from the hospital's transcription department and results from specialized consultation services, including the following reports: anatomic pathology, bone marrow aspiration, bronchoscopy, cardiac catheterization, clinic letters and notes, consultations, discharge summaries, echocardiography, electrocardiography, endoscopy, history and physical examinations, Holter monitor, microbiology/virology, radiation oncology, radiology, surgical dictation, and treadmill exercise. It includes only medical records, not administrative or scheduling data.

By means of a combination of fiberoptic, coaxial, and twisted-pair networks and a password security system, this information can be accessed with older, character-based computer terminals from many treatment and office facilities associated with the study institution. However, these terminals could not run our preanesthetic evaluation system, and also were not present in the examining rooms of the preanesthetic evaluation clinic managed by the institution's department of anesthesiology.

The authors, therefore, constructed a graphical and mouse-based prototype link, the "Preop Clinic OLMR View" (Figure 1), which allows the hospital OLMR database to be accessed from the examining and clerical rooms of our preoperative evaluation clinic. Since March 1993, this prototype link has allowed access to the hospital OLMR database. The Preop Clinic OLMR View application presents a scrollable list of patients who are scheduled to visit the preanesthetic clinic that day. Users may select any listed patient, or may use a menu selection to enter the medical record number of a desired patient.

Once the patient's name is selected, all existing OLMR