ASSESSING THE QUALITY OF ELECTRONIC MEDICAL RECORDS IN ACADEMIC HOSPITALS: A MULTICENTER STUDY IN A DEVELOPING COUNTRY

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ABSTRACT

Introduction: The validity of medical research based on electronic databases strongly relies on the quality of recorded data. Although the use of hospital information systems in Iran goes back to 1990s, few studies have assessed the quality of electronic medical records. The aim of this study was to assess the quality of electronic medical records, in the MUMS (Mashhad University of Medical Sciences) hospital information system (HIS), especially valuable ones for education and research.

Methods: Samples of inpatient electronic records were selected in three academic hospitals: one general hospital (A) and two tertiary hospitals (B and C). We categorized all data elements of electronic medical records into five groups, including demographic, identification, diagnosis and treatment, administrative and financial; and laboratory and paraclinic. We asked 25 physicians from three academic hospitals to specify data elements with values of medical research and education (called research and educational data) in every group. Next we calculated recordability, completeness, and accuracy of five data groups according to the concordance between electronic records and corresponding paper records. Quality was calculated as a multiple of completeness and accuracy.

Results: For all data elements, recordability of the software was 58.5%. Quality of demographic, identification, diagnosis and treatment, laboratory and paraclinic, and administrative and financial data groups was 97%, 32%, 42%, 82%, 89%, respectively, in hospital A. Quality of mentioned data groups was 99%, 44%, 60.5%, 91%, and 95.5% in hospital B, and 98%, 41%, 61%, 30%, and 97% in hospital C, respectively. For data elements, which were selected as valuable for research and education, recordability of the software was 47%. Also, quality of these data categorized in demographic, identification, diagnosis and treatment, laboratory and paraclinic, and administrative and financial was 100%, 67%, 48%, 89%, and 76%, respectively, in hospital A; 100%, 59%, 69%, 95%, and 90% in hospital B; and 100%, 34%, 65%, 32%, and 100% in hospital C, respectively.

Conclusion: The low quality of electronic medical records was a result of incompleteness, while accuracy was relatively good. Results showed that the development and use of hospital information system focused on administrative and financial applications more than academic and clinical applications.

KEYWORDS: Assessing the quality of electronic medical record, Recordability, Completeness, Accuracy, Data quality

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