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Original Research Article

A survey on hospital patients coding accuracy in Ahvaz, Iran

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Abstract

Background: The diagnosis coding and medical procedure are methods of treatment that helps patients to organize and classify information correctly. Coding is a related factor with the quality to provide the data of illnesses and injuries.

Aim: To examine rate of the coding accuracy of hospital patients of Imam Khomeini in Ahvaz (Iran) during spring 2010.

Material and methods: In this cross-sectional study that was performed in 2010, society of investigation was 5062 records of patients admitted to the surgical ward of Imam Khomeini Hospital in Ahvaz from which 260 records were selected incidentally and orderly. Instrument of data collection was a checklist developed by the researchers based on library resources and the accuracy was confirmed in the narrative checklist used by expert faculty in this. After the data were collected, they analyzed using Excel software.

Results: The most accurate coding was related to other procedures (92.61%) and least accurate coding was related to the major diagnosis (84.91%) and the lowest completeness of the encoding was related to other diagnosis regarding 66.88%.

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Conclusion: The results showed that the accuracy of diagnosis coding and procedure was optimal, but the level of completeness of diagnosis coding was too low regarding to hospital training.

Key words

Coding, International Classification of Diseases, Records, Diagnosis coding, Hospital.

Introduction

Over the past decades, many high-level health care managers and planners in each country try to find the effective factors to the quality of treatment and their impact and selected the motto of "improving quality health care by improving the quality of information" from the their main goals. The health institutions should consistently apply quality control (QC) to assess the quality of health care continuously. The patient's medical record is the first and most important source of collected information, because each record contains enough data to identify the full special patient, registered health issues and record any treatments [1]. All health care plans are performed based on illness data [2]. This subject is possible only using the exact classification of diseases and related law performance. The use of patient information will only be possible when they are properly organized and categorized. This is performed by coding of the diagnosis and treatment [3]. Coding is a related factor to the quality that is possible by coding medical records and recovery diseases and injury [4].

Today, it is used coding records as a basis for reimbursement of medical expenses, tracking workload, allocation of resources and checks the stay. By classification of diseases and procedures can studied rate of illness, procedures and its processes, the quality of care, cost of health care and health care resource utilization rate [5].

In Abadalhak opinion, in search of coded data quality, different components such as reliability, validity, completeness and timeliness should be assessed. Including factors that cause coding errors are defects in the review of the entire record, the original diagnosis wrong choice, choosing the wrong code, not valid diagnosis or procedure coding based on the content of the record, errors in entering codes in the database, on billing and poor registration data, which may be mistaken coding [6].

Several studies have been done on quality coding which many of them have only emphasized on coding accuracy. In studies in “Australia”, “Great Britain” and “Saudi Arabia” on the quality of medical records coding was revealed that the original coding accuracy were 87.91% and 70% [7, 8, 9]. Also, in a study assessing the accuracy of diagnostic coding was carried out based on ICD-10 in Kashan, Iran diagnostic coding accuracy was reported 77.3% [10].

Since the coding provides the ability to retrieve the information in the medical records for meeting different clinical, administrative, financial and research objectives, importance of illness coding accuracy, procedures and quality assurance database is growing day by day [11] and only if all the required data are recorded in the records, the records have necessary sufficiency for correct coding and If these data are not fully recorded, allocated codes can not to be correct and their useful reduces in illnesses prevention programs and since most studies express likely to affect the poor documentations on the quality of the code and they are said that it is an important factor of coding errors, so sufficient documentations of the required data coding is essential [12].

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Therefore, with regard to the importance of accurate coding for scientific and financial purposes, the present study in Imam Khomeini hospital of Ahvaz was performed to examine the situation of surgical records coding and effective strategies for improving their records coding level and finally improve reflection of illnesses and surgical procedures data.

Material and methods

In this cross-sectional study that was performed in 2010, the study population consisted of 5062 cases of hospital surgical ward of Imam Khomeini Hospital in Ahvaz that 260 cases were selected by simple random classified sampling method. Instrument of data collection was a checklist developed by the researchers based on library resources that the rate of completeness and accuracy of the registered codes was confirmed in the narrative checklist used by expert faculty in this field. Scholar collected the data to go to medical records and study records (angiography, orthopedics, urology, pediatrics, general surgery, gynecology, ophthalmology, cardiology and ENT sections). Researcher to determine the accuracy of coding re-encodes the files to be doing and reliability and validity of codes given by the teachers of the health information technology were studied and verified. Then, the collected data were analyzed using descriptive statistics Excel software.

Results

Results showed that among 260 records that were selected for coding, 89.24% was code for the primary diagnosis and 10.76% was no code for primary diagnosis. Among the 250 records that mentioned primary procedures, 94.2% was procedure code. Besides, among the 173 records that mentioned the other procedures, 86.13% was code and 13.78% of records were no code though they listed other procedures as per **Table - 1**.

Also results showed that among 232 records in which primary diagnosis had code, 84.91% of them were correct and coding 15.09% primary diagnosis had no adequate health codes. Also among the 101 records that mentioned the other diagnosis, 88.1% were correct and among the 231 records that coded primary procedure, 91.34% had correct code and also among the 149 records that coded the other procedures, 92.61% were correct and 7.39 % of other procedure codes were not correct as per **Table - 2**.

Discussion

Results showed that 89.24% of the records of primary diagnoses were coded entirely and 33.12% of other diagnoses, were not coded entirely, also 92.4% of primary procedure and 86.13% of other procedures were coded entirely that this important difference between completeness of the diagnosis coding and primary procedure indicates that coders often use an acceptance code for coding and in a study performed by “Taheri” entitled “the accuracy of procedures coding“, in 24.4 % of cases coders just have to be satisfied with the acceptance form [13]. Also, due to illegible and incomplete documentation records that was used coders in some cases as single code which a serious dyer carried out a research to assess the rate of adequacy of external causes of injury data in Kashan, Iran and they were concluded that only 44.3% of the records in this study contain the data that needed sufficient data for the complete coding. Also Ahmadi, et al. carried out a research at educational hospitals of Beheshti University, Iran in 2007, they were reported that the rate of completeness of coding in were 97.96%, 96.91% and 93.06% for primary diagnosis, 90.76%, 95.02% and 88.08% for other diagnoses, 98.96%, 94% and 93.7% for primary procedures and 65.95%, 93.97% and 85.35 % for other procedures, respectively. In

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Ahmadi, et al., better procedure coding was observed comparing to the current study [14].

Also, the findings showed that the primary diagnosis accuracy were 84.91% and 15.09% of the primary diagnosis coding was not adequate accuracy and 88.1% of other diagnosis codes was adequate accuracy and 11.9% of other diagnosis was not adequate accuracy. In a systematic study of the coding accuracy when releasing performed by Bell, et al., in British, Velz and Scatland in 2001, they reported that the accuracy of diagnosis coding in British and Velz was 91% and procedure was 96.5% and in Scotland the accuracy coding was 82% [8]. The findings showed that the rate of the coding accuracy was similar to the current study and was equal to the coding accuracy in Scotland. Also, in the study performed by Farzandi Poor, in which diagnosis coding accuracy was 77.3% and 22.7% errors were seen [10]. This study was compared to the current study indicated that coding level was improved by passing time but it has difficulties that lead to reduction of the coding accuracy.

Also, the results showed that accuracy of primary procedure codes was 91.34% and other procedures were 92.61%. With regard to examine accuracy of medical procedures coding performed by Taheri, he concluded that accuracy of procedures coding is 81.3% [13] that the current study was a relatively better level of procedure coding rather than Taheri study which encoders using ICD9-CM for procedures coding can be considered valid.

Conclusion

The study showed that the rate of completeness of other diagnosis codes and other procedures and also the accuracy of diagnosis coding has not a desirable level and it is necessary that coder's study medical records completely and aren't satisfied with single coding and responsible persons hold educational courses for coders. Also, this study showed that the rate of procedures coding accuracy is at a very desirable level. With regard to the obtained results, it is recommended that coders use one volume of ICD book and in addition to admission and discharge forms use other forms because using more information included in the record increases coding quality and when they meet to a new illness, unreadable ambiguous record and new abbreviations use a medical consulting.

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Table - 1: Distribution of abundance the completeness of diagnosis and procedure codes.

Completeness of the code					
Have not		Have		Total	
(%)	Number	(%)	Number		
10.76	28	89.24	232	260	Primary diagnostics
33.12	50	66.88	101	151	Other diagnosis
7.6	19	92.4	231	250	Primary procedure
13.87	24	86.13	149	173	Other procedures

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Table - 2: Distribution of abundance the completeness of diagnosis and procedure codes.

Have not		Have		Total	
(%)	Error number	(%)	Correct number		
15.09	35	84.91	197	232	Primary diagnostics
11.9	12	88.1	89	101	Other diagnoses
8.66	20	91.34	211	231	Primary procedure
7.39	11	92.61	138	149	Other procedures