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Hospital Income Loss due to Incomplete Clinical Documentation: A Survey of Service Items and Potential Causes in the Iranian Teaching Hospitals

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Abstract

Background and Objectives: Many Iranian public hospitals are faced with serious financial challenges such as shortage of income and heavy debts. Nevertheless, many of the healthcare services are often remained unearned for not being included in the clinical records or patient bill, resulting in considerable loss of legitimate hospital income. Given the limited studies in this area in Iran, the present study aimed to survey the undocumented healthcare services which are potentially income-generating, and the factors contributing to the deficient documentation.

Methods: A cross-sectional retrospective study was conducted. A sample of 400 clinical records was selected from six hospitals affiliated with Shahid Beheshti University of Medical Sciences in proportion to the number of hospital beds and the rate of discharges. A checklist was developed to record the delivered healthcare services, which were incompletely documented or neglected in the patients' bills. Using a researcher-made questionnaire, we also asked the opinions of financial managers, the income managers, the chief operators, and other personnel of the discharge unit, with regards to the human resources factors influencing clinical documentation and accounting.
The tariffs for the health services were calculated based on the corresponding K value, extracted from the California Book of relative values of diagnostic and therapeutic services. Data were summarized and analyzed using descriptive statistical methods.

Findings: NG tube insertion; CVP insertion, lumbar puncture, pleural tap and cut down were the five most frequently neglected medical services in the clinical records. Overall, 998 services for the amount of 75 million RIs were not documented. Only a minority of the personnel of the finance departments had a background of education in accounting. In addition, the majority of financial department personnel had not attended any training course related to the documentation of healthcare services and discharge process. On average, 20 medical records are examined on a daily basis by a single operator in the pre-discharge stage, ranging from 13 to 25 records. In addition, the employees of the discharge units were found to have the dual task of examining clinical records and discharging the patients.

Conclusions: Our study identified a number of potentially income-generating healthcare services that are often left unearned in Iranian hospitals. Identification of these services may help prevention of the associated income loss in future. We also identified a number of factors that may contribute to inaccurate documentation of healthcare services. The importance of issue and the possible existence of other factors contributing to incomplete clinical documentation and hospital income loss recommend further large-scale studies.
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Keywords: Healthcare services documentation, Inpatients, Hospital

Background and Objectives

In most developing countries 5-10% of the governmental costs are allocated to the health sector [1, 2], while the hospitals of these countries consume 50-80% of this amount [3]. At the same time, the financial performance of health settings is limited due to various types of inefficiencies in management process, particularly financial ones. As such, effective control over the financial status, procurement of the required financial resources, and increase in the income efficiency are among the major concerns in the current hospital management [4].

Among the important aspects of hospital management inefficiency is the incomplete documentation of the delivered healthcare services, which leads to

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insurance deductions and lack of payments. For instance, a study conducted in Ardabil (Northwestern Iran) showed that many clinical records had not included such data as final diagnosis, primary care, main death cause, and external causes, which had resulted in deductions [5].

Lack of accurate documentation of health services is crucial from two points of view: first, patient health and clinical outcomes. According to Murphy, appropriate documentation has an important role in the effectiveness of patient treatment [6]. It is well established that accurate and correct documentation of patients' data positively impacts the efficiency of treatment and accelerates the subsequent processes [7]. Second, inaccurate documentation will result in financial losses, which negatively affect hospital financial performance. The financial losses associated with incomplete documentation appear in two forms: *1) Insurance deductions:* high insurance deductions is a major problem for Iranian hospitals, varying from 5 to 20% [3, 8-10]. According to Mohammadi [11]; while more than 70% of the hospitals' income comes out of the patients' pockets, 90% of the insurance deductions are related to them [11]. *2) Loss of income from the delivered services*: a large fraction of the hospital some healthcare services remains unearned due to unawareness of the physicians and other clinical staffs about their potential income making, and thus neglecting their inclusion in the patients' bills. While the first type of hospital income loss is largely debated, the second type is poorly studied. Thus, the present study aimed to highlight the health services most prone to defective documentation, leading to financial loss of the healthcare organizations.

Methods

A cross-sectional and retrospective study was conducted. A sample of 400 clinical records was selected from six hospitals affiliated with Shahid Beheshti University of Medical Sciences (SBUMS) in proportion to the number of hospital beds and the rate of discharges. A checklist was developed to record the delivered healthcare services, which were incompletely documented or neglected in the patients' bills. Using a researcher-made questionnaire, we also surveyed the financial managers, the income managers, the chief operators, and other personnel of the discharge unit, with regard to the human resources factors related to clinical documentation and accounting.

The tariffs for the health services were calculated based on the corresponding K value, extracted from California Book of relative values of diagnostic and therapeutic services. Data were summarized and analyzed using descriptive statistical methods. The SPSS Version 17 Software Package was used for data analysis.

Ethical issues

An approval for conduction of the study was obtained from the Ethical Committee of SBUMS, Tehran, Iran.

Results

Out of 33 respondents, 27.2% had a university certificate in accounting, 69.7% had a non-relevant education, and 51.5% had a work experience of 5 years or less. Only 11.1%, 5% and 15.2% of the respondents had participated in the courses related to services documentation, discharge-income management, and health information system (HIS), respectively. Only 44% of the respondents stated to have task description.

The discharge units of all the hospitals were open on holidays. Also all of the surveyed hospitals had established a specific unit to investigate the inpatients' records and identify the neglected services. There was an income management unit in all hospitals; however, only 50% of them had an income committee.

Survey of the clinical records identified 25 service types, which had not been included in the bills. Table 1 shows the neglected services, the corresponding K values, and the calculated tariffs.

By review of the clinical records, 998 unearned services for an amount of 74,289,754 Rls were identified. Operating Room with 50 service types for 4,867,500 Rls was subject to the largest loss, followed by Special Ward with 552 service types for 41,982,000 Rls, and General Ward with 396 service type for 32,801,850 Rls.

Figure 1 compares the average neglected income among the surveyed hospitals. Although hospital 5 had recorded the lowest rate of income loss, it does not necessarily indicate the higher performance; rather it can be a result of low bed occupancy rate. The total unearned income of the hospitals was calculated to be 5,235,895,560 Rls (Table 3).

In the surveyed hospitals, on average, 20 medical records are examined on a daily basis by a single operator, ranging from 13 to 25 records. In addition, the employees of the discharge unit had the dual task of examining the clinical records (in terms of number of visits, stamps, bed count day, consumables, and clinical and non-clinical cases) and discharging the

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Table 1 Undocumented delivered health services and their costs

Service	K Value of Surgery (88,000 Rls)	K Value of Internal Medicine (6500 Rls)	Costs (Rls)
NG Tube Insertion		9	58,500
CVP Insertion	1		88,000
Lumbar Puncture (LP)	1		88,000
One Time Pulse Oximetry		6.2	40,300
Constant Pulse Oximetry		12.5	81,250
Tracheal Intubation	1.5		132,000
ABG Test (Arterial Blood Gas)	0.4		352,000
Bladder Wash	0.2		17600
Stomach Wash		9	58500
Chest Tube Insertion	1.5		132,000
One Time Monitoring		28	182,000
Constant Monitoring		40	260,000
CVC Insertion	2		176,000
Dressing by Physicians		3.5	22750
Suturing by Physicians	1.7		149,600
Tracheostomy Tube Insertion	5.2		457,600
Splinting	0.5		44000
Medication Injection by Physicians		4	26000
Nose Tamponing	1.3		114,400
Cut Down	1.5		132,000
Ascites Tapping	2		176,000
ABG Analysis		12.5	81250
ABG Analysis (3 times or more)		27.5	178,750
Pleural Tap	2		176,000
CPR		28	182,000

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patients. Considering the number of clinical records, the discharge operators can only spend, on average, 2.5 hrs per day on processing the records, and the rest of their time is taken by discharge process. As such, they have at best a short time of 8 minutes to examine each record.

Discussion

Based on our results, only a minority of the personnel of the finance departments (including the income and discharge units) had an education background in accounting. In addition, it was found that the majority of financial department personnel had not attended any training course related to the documentation of healthcare services and discharge process. Another survey by Omrani *et al.* also revealed that most of the ward clerks and personnel working in the discharge and of the surveyed hospital did not have a related educational background nor did they attend any relevant courses [8]. Menne *et al.* emphasize the importance of relevant and adequate education to the performance of healthcare human resources and conclude that it can promote both job satisfaction and quality of healthcare services [12]. Mounting evidence points to the notion that continuous education is key to the improvement of healthcare quality [13]. Studies have further indicated that recruitment of staff with appropriate educational background can lead to enhanced quality of the healthcare documentation [14].

Most of the surveyed personnel stated that they had no written task description. The existence of

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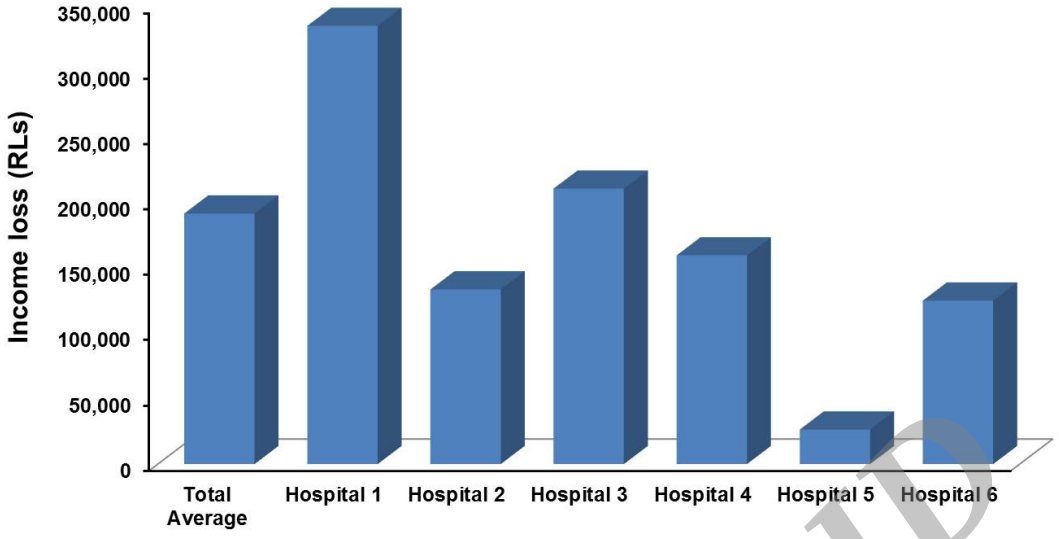

Figure 1 Neglected income of the surveyed hospitals

clear job descriptions is crucial to achieving high job performance. According to Gillies, provision of written task descriptions as well as clarification of the communication line would be highly supportive of human resources performance [15].

Another factor potentially leading to low incomplete healthcare services documentation is the large number of the clinical records processed by an individual operator (an average of 20 records per day). This, together with the additional task discharging the patients leaves them a very limited time to examine the clinical records for possible undocumented services. Implementing an efficient Health Information System (HIS) and immediate entry of services after delivery may be at least a partial solution to such a problem.

Nurses can play a crucial role in improving the healthcare services documentation. Based on the respondents' views, nurses seem rather apathetic to the services documentation because of the apparently time-consuming nature of this procedure and lack of motivation. Therefore, incentives should be provided to attract the cooperation of nurses in accurate documentation of the services.

Overall, our study highlights the need for revisiting the healthcare documentation processes in the teaching hospitals of Iran in order to prevent income loss. This is in line with recent emphasis placed by the Ministry of Health and Medical Education (MOHME) on the need for reforming the general and specific methods of the hospital finance management [16].

Conclusions

The present study identified and number of potentially income-generating healthcare services that might be left unearned in Iranian hospitals. Identification of these services may help bring the focus of hospital financial departments to prevent the associated income loss. We also identified a number of factors that may contribute to inaccurate healthcare services documentation, which would eventually lead to income loss. These include high workload of discharge department staff, high ratio of clinical records to the staff, lack of appropriate relevant educational background in personnel of the financial department, and lack of written task description. Although our study surveyed only a limited number of hospitals, the relevance of findings

Table 2 Number and costs of undocumented services in each hospital

Hospital	Number of Services (Per Year)	Cost (Rls Per Year)
No. 1	70286	1,539,341,310
No. 2	36000	863,119,500
No. 3	44264	1,300,259,660
No. 4	48558	1,260,331,090
No. 5	2769	116,650,560
No. 6	10750	156,193,440
Sum	212,627	5,235,895,560

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suggests that findings may hold true of other hospitals as well. However, the importance of the issue and the possible existence of other factors potentially contributing to deficient clinical documentation and hospital income loss recommend further large-scale studies.

Competing Interests

The authors declare no competing interests.

Authors' Contributions

The authors contributed equally to this study.

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References

1. Tourani S. Study of performance of general Hospitals in Iran university of medical sciences. *Ph.D Thesis.* In Health Care Management. Tehran Azad University; 1995. [Persian]
2. William N, Barnum H, Kutzin J. Hospital economics and financing in developing countries. Geneva: World Health Organization 1992.
3. Tavakoli N, Saghaeyannejad S, Rezayatmand M, Moshaveri F, Ghaderi I. Deductions applied by Khadamat-e-Darman insurance company on patients' bills at teaching hospitals affiliated to Isfahan University of Medical Sciences. *Health Inf Manag* 2008, **3**(2):53-61. [Persian]
4. Tavakoli G, Mahdavi S, Shokrolahzade M. The Comparative survey on deductions applied by Khadamat-e Darman Insurance Company on patients' bills at teaching hospital of Kerman in the first quarter of 2001. In: *1st National Conference on Resource Management in Hospital*. Tehran; 2003.
5. Masheoofi M, Amani F, Rostami K, Mardi A. Assessment data recording in hospitals of Ardebil medical university. Ardebil: Ardebil University of Medical Sciences & Health Services 2004.
6. Murphy B. Principles of good medical record documentation. *J Med Pract Manage* 2001, 16(5):258-60.
7. Mehrabi Y, Derayeh S, Minavand B, Mohammad Hossein T. Evaluation of information registration hospitalized patients in hospitals of Iran in 2002. *South Med J* 2003, **14(2)**:46. [Persian]
8. Omrani MD, Faraj Zade F, Rashidi GH. The amount and reasons income deductions in hospitals of Shahid Beheshti University of Medical Sciences in 90. *Med Coun IRI* 2012, 30(3):265-71. [Persian]
9. Dehnavieh R, Najafi B. The Survey on Causes and Rates of Deductions Applied by Khadamat-e-Darman Insurance Company on Patients' Bills at Hospitals of Firoozgar and Hasheminejad. Tehran, Iran: Special Scientific and Professional Public Health Care Insurance 2004. [Persian]
10. HEC. Supportive deputyship of Tabriz University of Medical Sciences.Tabriz: Health Economics Committee, Deductions Committee 2009. [Persian]
11. Mohammadi A, Azizi A, Cheraghbaigi R, Mohammadi R, Zarei J, Valinejad A. Analyzing the deductions applied by the medical services and social security organization insurance toward receivable bills by University Hospitals of Khorramabad. *Health Inf Manag* 2013,10(2):30-8. [Persian]
12. Menne H, Ejaz F, Noelker L, Jones J. Direct care workers recommendations for training and continuing education. *Gerontol Geriatr Educ* 2007, 28(2):91-108.
13. Phillips J. Strategies for active learning in online continuing education. *Contin Educ Nurs* 2005, 36(2):77-83.
14. Dellavari A, Ghanjal A, Teymourzadeh E, Sedaghat A, Mirhashemi S. Employment status of health-treatment services management alumni. *Journal Mil Med* 2010, **11**(4):203-08.
15. Gillies DA. *Nursing management: A systems approach.* Michigan: WB Saunders Co; 1994.
16. Ministry of Health reports. [http://hamahangi.behdasht.gov.ir]

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