

Incident Reporting in Mashhad Hospitals

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ARTICLE INFO	ABSTRACT
<p><i>Article type:</i> Original Article</p>	<p>Objectives: In this study, our aim was to evaluate and classify the voluntary error reports in the hospitals of Mashhad University of Medical Sciences. Patients have the right to receive health care in accordance to the best standards. Health care carries a risk of harm for patient safety, and with respect to today's stressful systems with a large number of patients, it would be inevitable. The meaning of risk management is to predict adverse events and reduce their occurrence.</p> <p>Materials and Methods: A voluntary medical error reporting form was designed and approved by the clinical governance team of Mashhad Medical University. They were then distributed inside hospitals in the way in which everyone (health providers and patients) could access them easily. The forms were collected and classified monthly in all wards. Classification was performed on the base of type, outcome and reporter. Data gathering took place from spring to autumn 2012. The data was analyzed by the SPSS software.</p> <p>Results: 2500 errors were extracted from 1000 voluntary error reporting forms of the 12 hospitals of Mashhad Medical University. The most frequent error type was treatment errors (36%) related to drug administration, standard procedures and surgical events.</p> <p>Conclusions: Error reporting as a basic activity has an important role in discovering pitfalls of the health care system. To promote the reporting culture, its non punitive base must become clear for all professors and staff members, because this kind of reporting could lead to fewer medical errors and higher staff awareness about probable errors.</p>
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Introduction

Evaluating the errors helps us to learn, identify and solve a major problem in health care systems, also this systematic approach does not intend to punish or blame individual personnel (1). Voluntary medical error reporting is a useful device for learning from the past. Collecting data of medical errors in a structural format provides a pathway to identifying the main cause, error pattern and its solution (2). Publishing the result of this system is essential for learning and promoting patient safety and health care quality. Voluntary medical error reporting is the central part of national patient safety policies in the U.S.,

Australia and England; because there is evidence that this system has improved the safety in industry before (3). Recent studies showed that unexpected events happen frequently without being identified because of a combination of cultural, institutional and legal factors (4). And that these barriers must be considered before the establishment of a voluntary medical error reporting system. Nevertheless, voluntary reporting happens in a safe environment with no fear of punishment, especially when the personnel accept its concepts and importance (5). Nowadays, many errors take place in our

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health care services which could lead to potential harms for the patients (6). In other words, health care is inevitably associated with an increased risk of patient safety (7). According to experts opinions 44000 to 98000 deaths occur due to medical errors in the United States of America, annually (8). Nevertheless, patients expect to receive health care according to the best standards and based on the latest scientific and clinical evidence (9). Error probability refers to the possibility of something bad or a loss happening, and it is a part of our everyday life. Risk management means the prediction of incidents and their risks and planning toward reducing them (10). With regards to the systematic approach to errors and by paying attention to the issue of human error possibility, the most important factor which affects the final outcome of an error in the field of patient safety is the way the system responds to defects and failure leading to the problem (11).

In the context of risk management for the implementation of a clinical governance program, a voluntary error reporting system was established in Mashhad Medical University. The aim of this study was to evaluate the voluntary reports in Mashhad hospitals.

Materials and Methods

In this cross sectional study the voluntary reports from 12 hospitals in Mashhad were gathered during spring and summer 2012. Data collection tool was a paper or electronic form which was designed by Mashhad clinical governance team and was at reach of everyone present in different hospital units (physicians, nurses, other personnel, patients). This form had three parts, first part for demographic information, second for writing a brief description of the error and third for estimating the consequence of the event. All collected forms were studied and the sampling method was census. Data analysis was performed with the SPSS software.

Results

2500 errors were extracted from 1000 voluntary error reporting forms of 12 hospitals of Mashhad Medical University. The most frequent type of error was treatment error (36%) including drug related, standard procedures and surgical events. The prevalence of documentation and paraclinical errors were 19.7% and 15.3%, respectively. Figure 1 shows the relative frequency of reported errors. 45.4% of the diagnostic errors occurred due to delayed diagnosis and 31.8% because of incorrect

diagnosis. Most of the treatment-related errors (46%) took place due to medication errors including wrong patient, wrong dose, wrong drug, wrong time, wrong administration method, etc (Figure 2).

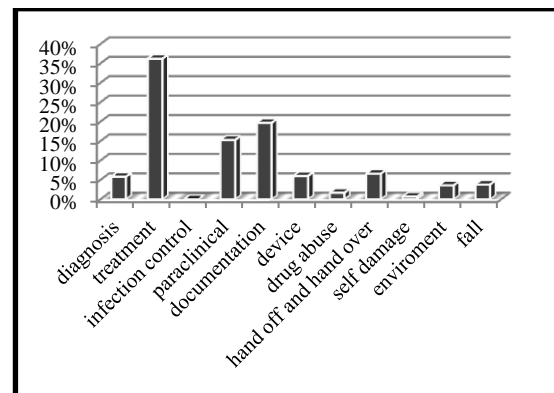


Figure 1: the relative prevalence of different types of errors in voluntary reports from hospitals of Mashhad University of Medical Sciences

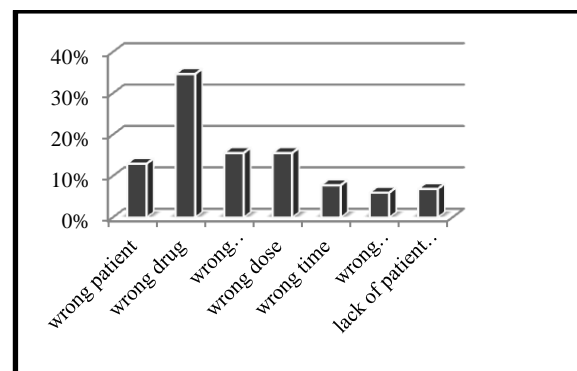


Figure 2: The relative prevalence of different types of medication errors in voluntary reports from the hospitals of Mashhad University of Medical Sciences

Wrong drug administration was reported as 34.7% of all cases and wrong administration method was 15.6% in the voluntary reports. Considering preoperative preparation management errors, the relative frequency was 22.2%, whereas wrong side surgery accounted for 16.6% of the reported surgical events (Figure 3). Documentation errors included errors happening at the time of checking physicians' order (53.5%) and HIS registration (12.5%). Malfunction of equipments with 56.2% prevalence was the most frequent error related to medical devices. Maximum cooperation was seen in the nurses group (91.4%), followed by other personnel, physicians and patients as 3.4%, 2.7% and 2.2%, respectively. The rate of reported errors was higher at night shifts

(40.4%). In general, 4.3% of the reported events led to death, 13.4% to severe harm, 39.7% to mild to moderate harm and 42.4% caused no harm.

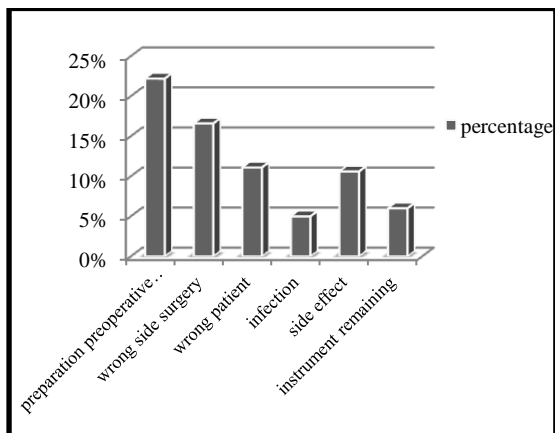


Figure 3: The relative prevalence of different type of surgical errors in voluntary reports in hospitals of Mashhad University of Medical Sciences

Discussion

Patient safety which is considered as one of the main components of quality of health care is defined as the avoidance of damaging patients who enter any health care system such as hospitals (12). These damages include drug related injuries, surgical events, fall, diagnostic errors, paraclinical errors, etc (13). According to the results of our study treatment errors, documentation errors and paraclinical errors were the most frequent clinical events reported in Mashhad hospitals and drug related events were the most common events seen in the treatment group. Nowadays, the prevalence of drug related errors is used as an indicator for estimating patient safety in hospitals (14). Wrong drug administration was the most frequent event in our reports, but in Vazin study conducted in intensive care units of Shiraz, most errors had occurred during drug administration and preparation and the prevalence of drug errors in his study was only 7.5 % (15). Fahimi in Tehran showed that 66% of drug events take place in the administration and preparation stage (16). In Alsulami systematic review on the Middle East drug events, there was a wide spectrum of drug events from 7 to 90 percent and most of the errors occurred due to wrong drug dosage (0.15 to 35 percent). Some of these errors might have occurred because of documentation errors which were classified as second rate (17). In the same study, errors happening in checking the physicians order phase were about 53%, similar to our report. Hartel in Switzerland concluded

that bad handwriting in 52% of cases led to documentation errors (18). In Australia Callen showed that documentation errors happened in 13% of cases while they were discharged and most of them were related to the handwriting of the prescribed drugs, especially cardiovascular drugs (19). These results justify the need for using computerized information management technology instead of performing it manually. Wu in USA showed that 55% of surgical events happen due to wrong side surgery and 38% because of incomplete operation (20). In our study, preoperative preparation management and wrong side surgery were more common. Wrong side surgery is an event which must never happen, so, safe surgery check lists were prepared to reduce such errors in Mashhad Medical University. Diagnostic error incidence was 5.8% but in Berner's study it was reported as 2-25% which was different between various units (21). In Mashhad, nurses played an important role in reporting and physicians did not cooperate well with this program. Hirose reviewed 6880 reports and concluded that in adverse events reporting, doctors and nurses had similar performance but physicians had less cooperation in reporting near missing or mild to moderate errors (2). In Nocklous survey in America 89% of the reporting was done by nurses (3). Evans' study, nurses had a greater collaboration in reporting in comparison to doctors (84% vs. 5%) (22). these results confirm that nurses are more responsible and sensitive in identifying and reporting their errors. This might be due to their active participation in training sessions on reporting errors. One of the strong aspects of our reporting form was the probability of contribution of patients and their families which would lead to greater participation of patients in their treatment decisions. Feijter emphasizes that for gaining a broader perspective; we should investigate the complaints and take into consideration active file search for medical errors besides using voluntary error reporting systems (23). Baker's survey showed that 42% of incidental events led to harm whereas 20% of them were preventable (24). In our study about 50% of events resulted in harm which might be due to the general perception that only severe adverse events should be reported. The higher rate of events at night and in morning shifts might be due to staffs' high workload and their fatigue. In Rogers's study the risk of committing an error was higher when personnel worked more than 12 hours a day or 40 hours a week (25). If nurses have enough time and are better connected with their patients, such errors could be prevented or reduced to an acceptable level (26). By establishing error

reporting as a fundamental activity, health care system weaknesses would be found more precisely. Health care systems need a continuous and long term infrastructure and should resolve the current doubts about punishment in order to promote the reporting culture and extend it to the whole body of the system. Such systems could help to increase personnel awareness and prevent similar events. Hospital administrators should adopt clear policies and decisions to promote this system by educating their personnel toward report all events even those which seem inconsequential with no harm for the patients. Also certain measures must be taken to increase the participation of physicians in this program. Regular analysis and publication of voluntary reporting data would be an effective way to learn from errors and avoid repeating such events in similar circumstances. It will also lead to the development of applied strategies for promoting patient safety.

Conclusion

Error reporting as a basic activity has an important role in discovering pitfalls of the health care system. To promote the reporting culture, its non punitive base must become clear to doctors and staff, as this kind of reporting could lead to fewer medical errors and higher staff awareness about probable errors.

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