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Analysis of Factors and Medical Errors Involved in Patient Complaints in a European Emergency Department

Pauline Haroutunian[1], Mohammed Alsabri[1], François Jerome Kerdiles[2], Adel Ahmed Abdullah Hassan[3], Abdelouahab Bellou[1*]

1. Emergency Medicine Department, BIDMC, Harvard Medical School, Boston, USA.
2. Emergency Medicine Department, University Hospital of Rennes, Rennes, France.
3. Surgery Department, Thamar University, Thamar, Yemen.

***Corresponding author:** Abdelouahab Bellou; Email: abellou@bidmc.harvard.edu

Abstract

Introduction: Patients' complaints from Emergency Departments (ED) are frequent and can be used as a quality assurance indicator.

Objective: Factors contributing to patients' complaints (PCs) in the emergency department were analyzed.

Methods: It was a retrospective cohort study, the qualitative variables of patients' complaints visiting ED of a university hospital were compared with Chi-Square and t test tests.

Results: Eighty-five PC were analyzed. The factors contributing to PC were: communication (n=26), length of stay (LOS) (n=24), diagnostic errors (n=21), comfort and privacy issues (n=7), pain management (n=6), inappropriate treatment (n=6), delay of care and billing issues (n=3). PCs were more frequent when patients were managed by residents, during night shifts, weekends, Saturdays, Mondays, January and June. Moreover, the factors contributing to diagnostic errors were due to poor communication, non-adherence to guidelines and lack of systematic proofreading of X-rays. In 98% of cases, disputes were resolved by apology and explanation and three cases resulted in financial compensation.

Conclusion: Poor communication, LOS and medical errors are factors contributing to PCs. Improving communication, resolving issues leading to slow health care provision, adequate staffing and supervision of trainees may reduce PCs.

Key words: Communication; Diagnostic errors; Emergency department; Patient complaint

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INTRODUCTION

Patients visit often the emergency department (ED) where medical errors and patient complaints may occur (1, 2). The rate of harm caused by medical errors has remained constant in the healthcare system over the last decade (3). Despite the unfavorable view of patient complaints (PCs), such complaints should be appreciated and used effectively (4). Studies suggested that patients may play a role in detecting and preventing medical errors because they can identify flaws and incompetence accurately (5). In several studies, the majority of ED PCs were directly due to poor attitude and communication, and some of them were related to medical care and waiting time issues (4, 6-9). Complaints are typically made by patients and families, and although in rare cases patients have asked for compensation, the large majority of ED complaints are resolved (4). In spite of the importance of the PCs analysis as a quality assurance tool, the nature, frequency and outcomes of ED complaints in Europe have been poorly studied. The objective of this study was to describe and analyze factors and medical errors involved in PCs in the ED.

METHODS

Study design

It was a retrospective cohort study of factors involved in the occurrence of PCs in the ED of a University Hospital, Rennes, France from 2009 to 2012. The study was approved by the Ethical Committee Review Board.

Study population

Patients involved in a written complaint sent to the ED were included. All complaints related to a problem with the care are managed by the head of the ED. A complaint is defined as PC sent to the head of the ED or to the hospital director. The following criteria were excluded: oral communication, and telephone conversations.

The structure and schedule of typical shifts in our ED are described as follows: The daytime shift starts at 8:30 to 18:30 with one attending physician responsible for the observation unit (Block 1) management assisted by one resident. Another attending physician is responsible for the management of the triage section with two nurses (Block 2). The third attending physician is responsible for the fast track management assisted with two residents (Block 3). The forth-attending physician is responsible for the management of the resuscitation room without assistance from one resident (Block 4). Finally, the diagnostic and treatment area dedicated to complex patients (Block 5) is under the supervision of one attending physician assisted by two residents. In summary, in the daytime five attending physicians are present in the ED assisted by five residents. During the night shift from 18:30 to 8:30, the number of attending physicians drops from five to two. One of the two attending physicians supervises the fast track and helps the nurses working in the triage area and one attending physician supervises the diagnostic and treatment area and the resuscitation room. Each attending physician supervises two residents. In summary, two attending physicians and four residents are presents during the night shift. Over the weekends, two attending physicians are present from 8:30 to 18:30 assisted by four residents with the same number of doctors during the night shifts. One supplementary attending physician supervises the observation unit from 8:30 to 18:30 without a resident. Residents can manage patients alone but refer to the attendee when needed. Residents can manage patients alone but consult with attending when needed. The attending validates decision of resident regarding discharge or admission of the patients. After the root cause analysis process, the head of the department writes systematically an answer sent by the Healthcare Quality Department to the complainants and explains the errors that occurred during the care in the ED and apologizes. To improve the quality of care, this written answer without the name of the patient is forwarded to the healthcare providers towards whom the complaints are addressed. All complaints are reviewed on monthly basis during the quality assurance meeting and medical error cases are presented during the mortality/morbidity monthly meetings.

Data collection

All complaints were analyzed by AB et FJK. Patient data were collected from the ED patient record. Length of stay (LOS), and contextual factors such as weekday, weekend, daytime or night, and inflow affluence of visits were recorded. The diagnosis, the patient's referral status as well as the type of doctor involved were examined. In addition, information was obtained regarding; the letter from the hospital administration addressing the PCs to the ED, the date of the complaint, the date of the response, and the type of complaint. The author of the PC was also recorded.

In order to ensure the consistency of handling and to minimize bias in the reading or interpretation of the complaints and their related issues, a single person was appointed to read the PCs.

Statistical analysis

Qualitative variables were compared with the Chi2 test, and since the subject sample was small, the t-test was used. All information was recorded in EXCEL, and statistical tests were performed using the SPSS software. It was observed that P value was statistically significant ($p < 0.05$).

RESULTS

Out of 172,092 of the ED visits, there were 85 PCs which gave a rate of 0.49 per 1,000 ED visits over 43 months (n=28, in 2009, n=21, in 2010, n=25 in 2011, n=11, in 2012). Distribution and characteristics of PCs and their contributing factors are described in Table 1.

Twenty-one cases were due to diagnostic errors that the consequences and responses to each complaint and preventable factors related to all diagnostic errors complaints were studied and summarized in Table 2.

Demographic and logistic

Females represented 56 %. The mean age was 54.9 years with two peaks in the 25-45 and the 75 years and above. The delay between the ED visit and the complaint was 46.3 ± 91 days and the delay of the response to the complaint was 75.8 ± 68.7 days. It was observed that the letter of complaint was sent by: family (n=53, 62%), patient (n=29, 34%), attorney (n=1, 1%), or other (n=2, 3%).

Type of PCs and Professionals involved

Lack of communication was the most frequent with 25 complaints (30%). LOS represented 24 complaints (28%), while, diagnosis errors were accounted for 21 of PCs (24%). The remaining issues of complaint were: comfort and privacy issues (n=7, 8%), pain management (n=6, 7%), inappropriate treatment (n=6, 7%), delay of care (n=3, 4%), and billing (n=3, 4%). Complaints in older patients were related to non-compliance with a basic need, followed by LOS. In younger patients, complaints were related to poor pain management and misdiagnosis.

Table 1: Distribution and characteristics of patients' complaints and their contributing factors.

Distribution of complainants	**Number (n) of complainants**	**(%)**	
Patients' families	53	62	
Patients	29	34	
others	2	3	
Patients' appointed attorneys	1	1	
Contributing factors to the patients' complaints	**(n)**	**(%)**	
Poor communication	25	30	
Long length of stay	24	28	
Medical errors	21	24	
Comfort/food and privacy/confidentiality issues	7	8	
Inadequate pain management	6	7	
Inappropriate treatment	6	7	
Delay of care	3	4	
Billing issues	3	4	
Distribution of contributing factors to the patients' complaints according to age			
Elderly Patients ≥60 years	Comfort issues	Long length of stay	
Young patients <60 years	Poor pain management	Misdiagnosis	
Distribution of patients' complaints towards medical staff	**(n)**	**(%)**	
Physicians	44	52	
Unspecified	20	24	
Clerks at triage	12	14	
Nurses	9	10	
Distribution of patients' complaints with the regard to days of the week	**(n)**	**Total # of visits**	
Saturdays	19	25,400	
Mondays	15	25,204	
Fridays	13	25,440	
Sundays	13	25,787	
Thursdays	11	23,803	
Wednesdays	8	23,030	
Tuesdays	8	23,417	
Distribution of patients' complaints with the regard to months of a year	**(n)**	**Total # of visits**	
January	14	16,900	
June	10	16,437	
March	9	16,751	
December	8	12,042	
February	8	14,724	
October	7	12,363	
April	7	15,730	
July	6	15,795	
August	5	10,967	
September	5	12,002	
November	4	11,154	
May	4	16,699	
Distribution of most common contributing factors to the patients' complaints between surgical and non-surgical groups	**Non-surgical(%)**	**Surgical(%)**	**p-value**
Poor communication	41	4.8	P<0.001
Long length of stay	3	33	P<0.001
Medical errors (calculation was done in 21 PCs)	4.8 (1/21) or 1.2 (1/85)	95.2 (20/21) or 23.5 (20/85)	P<0.001
Distribution of contributing factors to the patients' complaints between admitted and discharged groups	**Contributing factor**	**(%)**	
Admitted group	Long length of stay	54%	
Discharged group	Poor communication	68%	

Table 2: Medical errors detected through patients' complaints.

Case No.	Clinical symptoms	Initial diagnosis at the Emergency Department	Final diagnosis	Responses and Consequences of the complaints	Preventable factors
1	Unusual headache, normal neurological examination	Migraine	Cerebral thrombophlebitis leading to death after 48 hrs	Compensation for the assigned complaint	Non-adherence to clinical practice guidelines- Poor communication with patient
2	Abdominal pain in hypogastrium and right iliac fossa, fever	Functional pain with normal ultrasound	Acute appendicitis	Letter of apology and explanation	Non-adherence to clinical practice guidelines- Poor communication with patient
3	Abdominal pain	Renal Colic	Adnexal torsion	Letter of apology and explanation	Lack of decision making tree for management of abdominal pain
4	Abdominal pain	Constipation	Adnexal torsion	Letter of apology and explanation	Lack of decision making tree for management of abdominal pain
5	Head Trauma	Minor head trauma	Benign paroxysmal vertigo	Letter of apology and explanation	Poor communication with the patient
6	Scrotal pain	Epididymitis	Testicular torsion	Specialist consultation, filing lawsuit against the health care providers	Non-adherence to clinical practice guidelines
7	Left arm trauma	Contusion	Fracture	Letter of apology and explanation	Missed-diagnosis
8	Head injury with initial loss of consciousness, scalp laceration, vomiting, diarrhea	Minor head trauma	Hemorrhagic cerebral contusion & skull fracture	Letter of apology and explanation	Non-adherence to clinical practice guidelines
9	Facial and arm trauma under influence of acute alcohol intoxication	Contusion	Displaced fracture of mandibular condyle, non-displaced fracture of mandible, fracture of radial head	Letter of apology and explanation	Lack of consultation with supervising physician
10	Wrist pain and left elbow pain due to assault	Contusion	Scaphoid fracture	Letter of apology and explanation	Missed-diagnosis
11	High kinetic energy trauma on highways, Motor Vehicle Accident	Contusion	Cervical spine fracture	Letter of apology and explanation	Non-adherence to clinical practice guidelines
12	High kinetic energy trauma on highways, Motor Vehicle Accident, pelvic trauma	Fracture of acetabulum	Acetabular and Ischiopubic fracture	Letter of apology and explanation	Missed-diagnosis
13	Injury of thoracic and lumbar spine and ankle pain due to fall from height of 3m (9.84 ft)	Contusion	Fracture of thoracic vertebrae and calcaneum	Letter of apology and explanation	Missed-diagnosis
14	Arm trauma due to fall from height	Contusion	Fracture of head of the humerus	Compensation to the patient	Missed-diagnosis
15	Head trauma with loss of consciousness and costal trauma on the setting of acute alcohol intoxication	Contusion	Rib fracture	Letter of apology and explanation	Poor communication with the patient
16	Thoracic spine trauma due to fall from height of 2.5 m(8.20 ft)	Contusion	T12 fracture	Letter of apology and explanation, fixation of the fracture	Missed-diagnosis
17	Repeated fall, difficulty in walking	Contusion	Fracture of femur	Letter of apology and explanation, fixation of the fracture	Missed-diagnosis
18	Abdominal pain, vomiting	Constipation	Small bowel obstruction	Compensation to the patient	Non-adherence to clinical practice guidelines
19	hypogastric abdominal pain	Mittelschmerz	Hemorrhagic rupture of corpus luteum	Letter of apology and explanation	Not referring and transferring the patient on-time
20	Abdominal pain, vomiting, fever, normal lab findings	Functional pain	Cholangitis	Letter of apology and explanation	Lack of decision making tree for management of abdominal pain
21	Mechanical trauma to ankle	contusion	Bone	Letter of apology and explanation	Missed-diagnosis

common reasons were prolonged LOS and the lack of communication, except for 2010 in which the most common cause was due to misdiagnosis. Professionals involved in the complaints were: physicians (n=44, 52%), nurses (n=9, 10%), clerks at triage (n=12, 14%), and unspecified (n=20, 24%).

The Relationship between PCs and patient visits

The number of visits per day was significantly different in PCs as compared to the group without complaints (150±3 vs 132±2, p=0.03). Complaints were more frequent on Saturdays, and Mondays, and during the months of January and June. 71% of PCs were related to care during the night shift and 42% during the weekends when ED visits were more related to a surgical problem. LOS was the main complaint in 54% of patients who were admitted and communication problems was found in 68% of discharged patients.

Medical errors and PCs

Twenty-one cases were due to diagnostic errors which occurred more often when residents managed patients without supervision (25% vs 13% by attendees, $p<0.05$). 76% of diagnostic errors were found in the group of patients who were discharged and in young patients ($p<0.05$). Diagnostic errors occurred when the chief complaint was surgical (95.2%=20/21 cases vs 4.8%=1/21 cases in non-surgical cases, $p<0.001$). LOS were more frequent in surgical cases (33% vs 3%, $p<0.05$) and communication in non-surgical cases (41% vs 4.8%, $p<0.05$). The distribution of medical conditions related the diagnostic errors is shown in Table 2: trauma (n=13), abdominal pain (n=6), neurologic condition (headache) (n=1), and scrotal pain (n=1). After reviewing all 21 cases of diagnostic errors, we figured out the avoidable factors such as lack of proper systematic proofreading of X-rays in cases of trauma, non-adherence to medical guidelines in abdominal pain, insufficient communication with patients, and lack of specialist consultation (Table 2).

Outcomes of the PCs

In 98% of cases, disputes were resolved without any legal action by providing letters of apology and explanation from the hospital to the corresponding patients, their families or to their appointed attorneys and three cases resulted in financial compensation to the patients.

Discussion

The PCs rate in our study was 0.49 per 1,000 cases, which is lower as compared to other studies (2, 10). The majority of the PCs were mainly due to insufficient communication and prolonged LOS, and a significant amount was related to misdiagnosis. In contrast, Wong et al. showed that PCs were mainly due to organization and logistics, communication, and standard of care (10). While Zengin et al. showed that the majority of PCs were mainly due to poor attitude, communication and medical care (4).

Several studies have shown that practice in the ED which is subjected to marked stress may lead to the occurrence of errors (11). On the other hand, it has been shown that PCs and physicians concerns about quality assurance should be used as a tool to identify the near miss and medical error cases and prevent adverse events (12). In our study, we exhibited that factors that seem to increase the risk of medical errors were, incorrect interpretation of X-rays and when the doctor managing patients was a resident, which was also found by Kachalia et al. (13). Another explanation for medical errors is lack of adherence to medical guidelines as shown in Table 2.

In our study, there was an increase in PCs on Saturdays and Mondays compared to other days. There was also a significant increase of complaints during night shifts and on the weekends where the number of healthcare providers is less comparing with other weekdays and daytime shifts. Therefore, in these times, the increase of medical staff working in the ED can reduce PCs.

The majority of complaints was closed without compensation or raised criminal proceedings, which is similar to other studies (10, 11, 14, 15).

Limitations

This study has some limitations. The small number of formal written complaints, is positive in terms of quality of care, but could be a limitation regarding statistical analysis. The focus of the study has only been on written complaints although it is acknowledged that many complaints are expressed orally, immediately after the visit to the ED and also by telephone. Finally, reading the files may represent some subjectivity in the interpretation of the complaints' statements. But complaints were analyzed independently by two reviewers which strengthen the rating.

Conclusions

This study showed that PCs are rare in the ED. Communication, LOS and diagnostic errors are the main causes of PCs. The large majority of complaints are resolved, usually by explanation or apology. Our results suggest that improving communication with patients, reducing LOS, and providing adequate staffing and supervision of trainees may decrease PCs and medical errors.

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AUTHORS' CONTRIBUTION
Pauline Haroutunian and Mohammed Alsabri contributed equally to the conception, formulation and drafting of the article. *Abdelouahab Bellou as the principal investigator, contributed to the conception, formulation and drafting of the article, participated and supervised the elaboration and every step of the paper writing process and as a corresponding author, will handle correspondence at all stages of refereeing, publication and post publication. François Jerome Kerdiles was involved in gathering and analyzing the data and contributed to the conception and the drafting of the paper. Adel Ahmed Abdullah Hassan, as a co-author, contributed to the elaboration and revision of the paper.

CONFLICT OF INTEREST
Authors disclose no conflict of interest.

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