

# Malpractice Allegations in Adult and Pediatric Emergency Departments Resulting in Death

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<sup>1</sup>Istanbul Forensic Medicine Institute, Konya Forensic Medicine Branch, Konya, Turkey

<sup>2</sup>Istanbul University Cerrahpaşa-Cerrahpaşa Faculty of Medicine, Department of Forensic Medicine, İstanbul, Turkey

<sup>3</sup>Bolu Abant İzzet Baysal University Faculty of Medicine, Department of Forensic Medicine, Bolu, Turkey

<sup>4</sup>Uşak University Faculty of Medicine, Department of Forensic Medicine, Uşak, Turkey

## Abstract

**Aim:** This study aimed to increase the awareness of physicians working in adult and pediatric emergency departments (ED) about malpractice allegations.

**Materials and Methods:** A retrospective analysis was conducted of cases with malpractice allegations occurring in ED from the lawsuit files decided by the First Specialization Board of the İstanbul Forensic Medicine Institute between 01/01/2012-31/12/2014.

**Results:** Evaluation was made of 556 cases, comprising 357 (64.2%) males and 199 (35.8%) females, with a mean age of 38.92±24.8 years (minimum: 0, maximum: 87), with the highest number of cases in the 40-59 years age group (n=157, 28.2%). Two-thirds (n=377, 67.8%) of the cases with alleged medical malpractice occurred in a public hospital. The board decided that 24.4% (n=136) of the cases were medical malpractice. Of 556 cases, 1.102 physicians were accused and 151 physicians (13.7%) were found to be at fault by the board. More than half of the physicians accused of medical malpractice (51.7%) were general practitioners. The most common cause of malpractice in 136 files was diagnostic error (n=79, 58.1%). The most common actions of malpractice were failure to diagnose on time, and misdiagnosis (n=29, 21.3%). The most frequent diagnosis was trauma (n=156, 28.1%).

**Conclusion:** Most of the malpractice allegations against the physicians working in the ED were unfounded and dismissed by the board. order to avoid diagnostic errors, it can be recommended that novice general practitioners should not be employed alone in ED without the support of more experienced colleagues.

**Keywords:** Malpractice, emergency department, trauma, diagnostic error, forensic medicine

## Introduction

The average physician in the United States (USA) spends approximately 11% (50.7 months) of his or her professional life with unresolved manifest malpractice allegations (1). In emergency departments (ED), physicians must manage patient populations with risky and different diseases with limited time and resources. This makes working in the ED a high risk of malpractice allegations (2). Three-quarters of emergency physicians in the USA must face a malpractice lawsuit at least once in their lifetime (3). Emergency physicians work in a knowledge-poor, high-risk, but technology-rich environment. This makes it very easy for physicians working

in the ED to turn to defensive medicine (4). In a study conducted in Spain, 89.8% of emergency physicians performed unnecessary diagnostic tests, and 63% prolonged the patient's stay in the ED (5). Malpractice lawsuits wear away at physicians due to both long duration and high compensation rates (6,7).

Prolonged malpractice lawsuits may affect the decisions of physicians as well as cause serious psychosocial effects in the short- and long term. In a survey by Kayipmaz et al. (8), it was reported that the judicial or administrative investigations of 41.5% of emergency medicine physicians affected their medical decisions. In another study of 1206 primary care physicians, those with malpractice disputes were found to have significantly



**Corresponding Author:** Erdem Hösükler MD, Bolu Abant İzzet Baysal University Faculty of Medicine, Department of Forensic Medicine, Bolu, Turkey  
**Phone:** +90 507 210 55 46 **E-mail:** drerdemhmkale@gmail.com ORCID ID: orcid.org/0000-0002-7736-748X

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lower overall health and mental health (9). As malpractice allegations have more than one negative effect on physicians, they need to be investigated in depth and understood very well. In the USA, death in the adult ED and urgent care setting was the most common severe injury cited in closed adult malpractice claims. Moreover, 38.5% of all closed malpractice allegations and 42.8% of all compensated allegations resulted in death (10). The relationship between death and malpractice has also been proven in other studies (11-13). Examining cases of alleged malpractice that resulted in death will considerably contribute to a better understanding of these cases.

This study aimed to evaluate adult and pediatric emergency cases that resulted in death where medical malpractice allegations were filed to increase the awareness of physicians working in adult and pediatric ED about cases with alleged medical malpractice.

## Materials and Methods

### Sampling

Medical malpractice claims alleged cases that occurred in the ED and resulted in death were retrospectively analyzed from among the report archives of the First Board of Specialization of the Council of Forensic Medicine between 01/01/2012 and 31/12/2014.

### Diagnostic Methods

The First Specialization Board of the Istanbul Forensic Medicine Institute acts as an expert appraisal in cases filed by the judicial authorities across the country regarding allegations of medical malpractice resulting in death. When a lawsuit file containing an allegation of medical malpractice is sent to the board by the judicial authorities, a rapporteur is first assigned to the file. After the rapporteur examines the entire file, if there is missing information in the file, this information is requested from the judicial authorities. When all the necessary information for the evaluation is completed, the rapporteur prepares a preliminary report in which he records all the information in the file (statements of the accused and witnesses, all medical documents, etc.) and presents this preliminary report to the chairman and members of the board. After the detailed evaluation of the chairman and members, a final report is prepared and report sent with a lawsuit file to the judicial authorities about whether the physician is at fault or not.

### Data Collection and Implementation

While the data were being recorded, the following parameters were scrutinized: the gender and age of the cases, the healthcare organization where the incident occurred, the reason for the visit

to the hospital, specialties of the physician, the clinical diagnosis and the phase at which confirmed malpractice occurred. Although this study was designed as a retrospective study with no identification data or human/animal subjects, and was therefore beyond the scope of the informed consent doctrine; all procedures in the study were performed after obtaining scientific approval of the Ministry of Justice Council of Forensic Medicine dated 15/12/2015., no. 21589509/1020 and in accordance with the 1964 Helsinki Declaration including its later amendments.

### Statistical Analysis

The data obtained in the study were analyzed statistically using the Statistical Package for the Social Sciences 21.0 software (Armonk, NY, USA). Descriptive statistics were presented as mean±standard deviation, minimum (min), and maximum (max) values for continuous variables, and as frequency and percentage for categorical variables.

## Results

This study included 556 cases, comprising 357 (64.2%) males and 199 (35.8%) females. The age of 10 cases could not be determined. The mean age of the remaining cases was 38.92±24.8 years (min: 0, max: 87), with the highest number of cases in the 40-59 years age group (n=157, 28.2%). Two-thirds of the cases (n=377, 67.8%) occurred in a public hospital (Table 1).

The board came to a decision on medical malpractice in 136 (24.4%) cases. Of 556 lawsuit files, 1102 physicians were accused

	n	%
<b>Gender</b>		
Male	357	64.2
Female	199	35.8
<b>Age group</b>		
0-17 years	134	24.1
18-39 years	133	23.9
40-59 years	157	28.2
≥60 years	122	22
Unknown	10	1.8
<b>Hospital visited</b>		
Public Hospital	377	67.8
Private Hospital	60	10.8
Training and Research Hospital	54	9.7
University Hospital	17	3.1
Military Hospital	4	0.7
More than one hospital	44	7.9
<b>Total</b>	<b>556</b>	<b>100</b>

and 151 physicians (13.7%) were found to be at fault by the board (Table 2).

More than half of the physicians accused of medical malpractice (51.7%) were general practitioners (Table 2). General practitioners (n=97, 64.2%) constituted the largest group among physicians reported to be at fault. When the top ten most frequently accused medical branches were evaluated, 24.2% of pediatricians (8/33), 17% of general practitioners (97/570), 14.5% of internal medicine physicians (11/76), 12.3% of general surgeons (8/65), 9.8% of orthopedists (5/51), 8.5% of neurosurgeons (5/51), 8.2% of emergency medicine specialists (5/61), 6.25% of cardiologists (5/51) and 3.2% of neurologists (5/51) were decided to be at fault. No fault was attributed to any anesthesia and reanimation physician.

In 136 files, malpractice was most frequently attributed to diagnostic error (n=79, 58.1%). The most common actions causing the malpractice were failure to diagnose on time, misdiagnosis

(n=29, 21.3%), and not requesting necessary examinations and X-rays (n=25, 18.4%) (Table 3).

When the primary diagnoses were evaluated; the most frequent diagnosis was trauma (n=156, 28.1%), followed by infection (n=119, 21.4%) (Table 4). Diagnostic error was the most common error in trauma, infectious diseases, cardiopulmonary system diseases, gastrointestinal system diseases and neuropsychiatric diseases (Table 5). Diagnosis and treatment errors were most frequently seen in trauma patients, and follow-up errors were most frequently observed in cardiopulmonary system diseases (Table 5).

## Discussion

ED are a chaotic environment that wears away at physicians, with excessive patient load, long working hours, and limited time for diagnosis. However, despite all the difficulties, physicians must meet the general standard of care in every environment

**Table 2. Branch distribution of all physicians and physicians with medical malpractice**

	Total physicians		Physicians with medical malpractice	
	n	%	n	%
General practitioner	570	51.7	97	64.2
Internal medicine	70	6.9	11	7.3
General surgery	65	5.9	8	5.3
Emergency medicine	61	5.6	5	3.3
Orthopedics and traumatology	51	4.7	5	3.3
Brain and nerve surgery	47	4.3	4	2.6
Anaesthesiology and reanimation	46	4.2	0	0
Pediatrics	33	3	8	5.3
Cardiology	32	2.9	2	1.3
Neurology	31	2.8	1	0.7
Chest diseases	14	1.4	2	1.3
Infection diseases	14	1.4	1	0.7
Otorhinolaryngology	9	0.8	2	1.3
Cardiovascular surgery	9	0.8	0	0
Radiology	8	0.7	0	0
Urology	7	0.6	0	0
Thorasic surgery	6	0.5	3	2
Family physician	5	0.4	0	0
Obstetrics and gynecology	5	0.4	0	0
Plastic surgery	4	0.3	1	0.7
Pediatric surgery	4	0.3	1	0.7
Psychiatry	4	0.3	0	0
Ophthalmology	1	0.1	0	0
<b>Total</b>	<b>1.102</b>	<b>100</b>	<b>151</b>	<b>100</b>

**Table 3. Distribution of error types in medical malpractice**

Classification of medical malpractice	n	%
<b>Diagnostic error</b>		
Not being able to diagnose on time	29	21.3
Not requesting necessary medical tests and imagings	25	18.4
Not requesting consultations	19	14
Lack of examination	6	4.4
Treatment error		
<b>Incomplete treatment</b>	8	5.9
<b>Follow-up error</b>		
Lack of follow up in treatment process	19	14
Not admitting the patients that need to receive inpatient treatment	9	6.6
Referring patients carelessly or not referring	9	6.6
<b>Breach of duty</b>		
Causing negligence/breach of duty by not being present at the hospital	1	0.7
Causing negligence/breach of duty by not attending consultation	6	4.4
Multiple reasons	5	3.7
<b>Total</b>	<b>136</b>	<b>100</b>

and at any time of the day (14). Additionally, physicians in ED may be prone to malpractice due to the intensity of the emergency condition, poor relationship with patients, failure to follow diagnostic tests, insomnia, failure to complete medical documentation, and a previous history of malpractice (15). In their career, 75% of emergency physicians face malpractice allegations at least once (3).

In studies conducted in Turkey, medical malpractice victims were generally male (16,17). In this study, most cases (64.2%)

**Table 4. Primary illness diagnosis distribution in health organizations**

	n	%
<b>Primary disease diagnosis</b>		
Trauma	156	28.1
Infectious diseases	119	21.4
Cardiopulmonary diseases	85	15.2
Neuropsychiatric diseases	56	10.1
Gastrointestinal disorders	39	7
Intoxications	31	5.6
Urinary tract diseases	9	1.6
Undiagnosed	1	0.2
Others*	60	10.8
<b>Total</b>	<b>556</b>	<b>100</b>

\*Others (anaphylaxis, diabetic ketoacidosis, myalgia, hyperglycemia, arthritis, bleeding from the ear, bleeding diathesis, pregnancy, dehydration, non-specific pain, etc.)

were male, in line with the literature. The mean age of the cases with malpractice claims in general surgery has been reported to be 39.9±17.82 years, with 61% between the ages of 20-49 years (17), and the mean age of the cases that resulted in death in the claims about general surgery was 7.5±18.78 years (16). Almost half (43.3%) of the claims related to obstetrics and gynecology were between the ages of 31-40 years (18). In this study, the mean age of the cases was 38.92±24.8 years (min: 0, max: 87), and the highest number of cases was found to be in the 40-59 years age group. Generally, malpractice claims are seen more frequently related to patients in the fourth decade of life, and therefore physicians should approach patients in this age group more attentively.

Previous studies have reported that the action leading to the malpractice claims were often in public hospitals (16,19,20)

**Table 5. Distribution of medical malpractice causes according to the primary diagnosis**

		Classification of medical malpractice									
		Diagnostic error		Treatment error		Follow-up error		Breach of duty		Multiple reasons	
		n	%	n	%	n	%	n	%	n	%
Primary disease diagnosis	Trauma	24	17.7	3	2.3	8	5.8	1	0.7	4	3
	Infectious diseases	17	12.5	1	0.7	9	6.5	1	0.7	1	0.7
	Cardiopulmonary diseases	11	8.1	-	-	4	3	3	2.3	-	-
	Gastrointestinal disorders	8	5.8	2	1.5	4	3	1	0.7	-	-
	Others	7	5.2	1	0.7	6	4.4	-	-	-	-
	Neuropsychiatric diseases	6	4.4	-	-	2	1.5	1	0.7	-	-
	Intoxications	4	3	1	0.7	3	2.3	-	-	-	-
	Urinary tract diseases	1	0.7	-	-	1	0.7	-	-	-	-
Undiagnosed	1	0.7	-	-	-	-	-	-	-	-	
<b>Total</b>	<b>79</b>	<b>58.1</b>	<b>8</b>	<b>5.9</b>	<b>37</b>	<b>27,2</b>	<b>7</b>	<b>5.1</b>	<b>5</b>	<b>3.7</b>	

and there are also studies reported that it occurred in private hospitals (18,21). In this study, two-thirds (n=377, 67.8%) of the medical malpractice allegations occurred in a public hospital. The small number of physicians working in public hospital ED and the high number of patient admissions seems to be closely related to the higher incidence of malpractice allegations.

In the Netherlands, 16% of malpractice allegations related to emergency medicine were upheld (22). According to data from the Physician Insurers Association of America, there were 11,259 emergency medicine-related malpractice allegations between 1985 and 2007, of which 31% resulted in compensation (23). Turkan and Tugcu found that 49.1% of 112 emergency services-related malpractice allegations in Turkey were upheld by the Supreme Health Council (24). In this study, 136 (24.4%) of the lawsuit files were decided by the board to be the fault of the physician. Of 556 files, 1,102 physicians were accused and the board decided that 151 (13.7%) were at fault. In other words, 86.3% of the physicians were unfairly accused and no-fault was attributed to their medical practices. Moreover, 17% (97/570) of general practitioners working in the ED were found to be at fault by the board, while this rate was 8% for emergency medicine specialists and 24.2% for pediatricians.

In the USA, in malpractice allegations that occurred in the ED with cases concluded between 2001 and 2015, emergency physicians were accused most frequently (33.5%), followed by internists (12.4%), family physicians (6.6%), radiologists (7.3%) and general surgeons (7.1%) (10). In the Netherlands, 76% of malpractice claims in the ED were related to emergency physicians, and only 15% were related to other medical branches (22). In this study, more than half of the physicians (57.3%) accused of malpractice were working as emergency physicians (general practitioner/emergency medicine specialists). Apart from emergency physicians (general practitioners and emergency medicine specialists), internists (6.9%) and general surgeons (5.9%) most frequently faced malpractice allegations.

Brown et al. (23) reported that diagnostic error (37%) was the most common malpractice in ED. In the USA, the most common reason for paying compensation due to malpractice in adult emergency services was diagnostic error (36.4%) (10). Studies have shown that in pediatric emergency services, physicians often had to pay compensation due to diagnostic errors (39-41%) (12,25). Morgenstern et al. (26) found that most allegations of emergency medicine malpractice were associated with underdiagnosis, misdiagnosis, and delayed diagnosis. In the Netherlands, the most common malpractice claims (48%) in emergency departments was the failure to make a correct diagnosis (22). In a study of emergency medicine physicians' medical malpractice, diagnostic error was the basis of 58% of the claims (13). In this

study, diagnostic errors (n=79, 58.1%) were the most common cause of malpractice, and the most common faulty actions were failure to diagnose on time, misdiagnosis (n=29, 21.3%) and not request the necessary tests/imaging (n=25, 18.4%).

Brown et al. (23) stated that acute myocardial infarction (5%) and fractures (6%) were the health conditions associated with the most complaints in emergency services. Myers et al. (13) reported cardiac arrest, pulmonary embolism and acute myocardial infarction to be the three most common diagnoses for which emergency physicians are most blamed for in malpractice. In a study covering a 15-year period, the most common diagnoses in malpractice claims closed with compensation payments were cardiac and cardiopulmonary arrest (9.1%) and acute myocardial infarction (4%) (10). In Taiwan, the most common causes of malpractice allegations in ED were infectious diseases (27%), central nervous system bleeding (15.9%), and trauma (12.7%) (7). Emergency physicians in Massachusetts are reported to be often accused of malpractice due to trauma-related injuries and fractures (27). Nearly half (49%) of allegations about ED in the Netherlands were related to fractures and dislocations caused by trauma (22). In this study, patients were diagnosed with trauma most frequently (n=156, 28.1%), followed by infection (n=119, 21.4%). The findings obtained in this study prove that sudden post-traumatic deaths increase the risk of physicians being accused of malpractice. Therefore, when patients are admitted due to trauma, good communication with the relatives, performing the necessary examinations and consultations, and keeping and maintaining the medical records, including informed consent, will protect physicians against malpractice claims and will strengthen the physician's legal positions.

The most common diagnostic error and missed diagnosis in ED have been reported to be minor traumas, such as fractures and dislocations (28). In Massachusetts, emergency physicians most frequently paid compensation for undiagnosed myocardial infarction (chest pain) and trauma-related fractures that were overlooked (27). In the United Kingdom, 79.7% of 953 diagnostic errors were determined to be associated with undiagnosed trauma-related fractures (29). Traumatic injuries were the leading allegation associated with diagnostic errors in a study in Japan (11). The condition associated with the highest compensation in ED has been reported to be the missed diagnosis of acute myocardial infarction (15). In this study, a diagnostic error was the most common error in trauma, infectious diseases, cardiopulmonary system diseases, gastrointestinal system diseases and neuropsychiatric diseases. The reasons for making the highest number of diagnostic errors in many diseases are the working of inexperienced practitioners, prolonged shifts, the excessive workload, and the need to diagnose in a short time.

## Study Limitations

This study had its strength as well as its weaknesses. The medical malpractice decisions in this study were merely the conclusions of an expert institution and did not reflect the final court judgment. The inability to include the court's final judgment was a critical impediment. As the Forensic Medicine Institute is not an exclusive authority, the board's expert report may be traversable, and the court is not obligated to follow the expert's conclusion. Another constraint was the lack of information regarding the compensation sums that the physicians were required to pay by the litigation. Furthermore, because this study only included cases that resulted in death, it cannot be said to effectively represent the complete sample.

## Conclusion

ED are one of the most important sources of malpractice claims. However, the results of this study demonstrated that a great majority of physicians (86.3%) were wrongfully accused of malpractice. General practitioners were blamed most frequently in emergency services and committed the most errors. The most common diagnosis in the health institution was trauma (28.1%), and in this study, diagnostic errors (n=79, 58.1%) were the most common reason for an allegation of malpractice. Considering that the physicians who were accused and made errors in this study were mostly general practitioners and the most common malpractice was diagnostic error, it can be recommended that newly qualified practitioners should not be employed alone in the ED without the support of experienced colleagues. In a previous study conducted in Turkey, 44.4% of emergency medicine specialists working in ED had adequate knowledge about the current legal regulations regarding malpractice, while this rate was 12.2% for general practitioners, and 63% of physicians had not received in-service training on legal responsibility (30). Therefore, training on malpractice claims and prevention strategies should be given to general practitioners who are just starting their professional life.

## Ethics

**Ethics Committee Approval:** The study were approved by the İstanbul Forensic Medicine Institute (no: 21589509/1020, date: 15.12.2015).

**Informed Consent:** Retrospective study.

**Peer-review:** Internally peer-reviewed.

## Authorship Contributions

Concept: E.G., İ.Ü., E.H., Design: E.G., İ.Ü., E.H., B.H., Data Collection or Processing: E.G., B.H., Analysis or Interpretation: E.G., İ.Ü., E.H., Literature Search: E.G., İ.Ü., E.H., B.H., Writing: E.G., İ.Ü., E.H.

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