

## Clinical Reviews in Emergency Medicine



### MALPRACTICE IN EMERGENCY MEDICINE—A REVIEW OF RISK AND MITIGATION PRACTICES FOR THE EMERGENCY MEDICINE PROVIDER

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**Abstract—Background:** Malpractice in emergency medicine is of high concern for medical providers, the fear of which continues to drive decision-making. The body of evidence evaluating risk specific to emergency physicians is disjointed, and thus it remains difficult to derive cohesive themes and strategies for risk minimization. **Objective:** This review evaluates the state of malpractice in emergency medicine and summarizes a concise approach for the emergency physician to minimize risk. **Discussion:** The environment of the emergency department (ED) represents moderate overall malpractice risk and yields a heavy burden in finance and time. Key areas of relatively high litigation occurrence include missed acute myocardial infarction, missed fractures/foreign bodies, abdominal pain/appendicitis, wounds, intracranial bleeding, aortic aneurysm, and pediatric meningitis. Mitigation of risk is best accomplished through constructive communication, intelligent documentation, utilization of clinical practice guidelines and generalizable diagnoses, careful management of discharge against medical advice, and establishing follow-up for diagnostic studies ordered while in the ED (especially x-ray studies). Communication breakdown seems to be more predictive of malpractice litigation than injury experienced. **Conclusions:** There are consistent diagnoses that are associated with increased litigation incidence. A combination of mitigation approaches may assist providers in mitigation of malpractice risk. © 2018 Elsevier Inc. All rights reserved.

**Keywords—**malpractice; litigation; emergency medicine; risk mitigation; risk reduction

### INTRODUCTION

Malpractice has long remained a topic of interest to the emergency physician and law community. *The New England Journal of Medicine* published an analysis of data, which included records on 40,916 closed malpractice claims from 1991 through 2005, involving all U.S. states (1). Emergency medicine was the 15th most likely to be involved in litigation out of 25 medical specialties. Ranking in front of emergency medicine, (respectively, listed from greatest malpractice risk): neurosurgery, thoracic surgery, general surgery, orthopedic surgery, plastic surgery, gastroenterology, obstetrics, urology, pulmonary medicine, oncology, cardiology, gynecology, neurology, and internal medicine (1).

Emergency physicians as a whole carried a 7.5% annual risk of litigation and a 1.5% risk of closed claim indemnity payment (indemnity defined as the total malpractice payment to a plaintiff in either a settlement or adjudication of a claim; closed claim referring to claims that have completed all legal processing, including appeals) (1). Overall, emergency medicine (EM) is associated with relatively moderate malpractice risk, with litigation incidence approximately equal to the average of all specialties, with fewer concluding in indemnity payment than average physician claims (1–3).

Understandably, emergency physicians fear the loss of time and money in the setting of litigation, and this has been shown to drive medical decision-making, manifesting in excessive diagnostics and admissions (4–8). In a survey of 824 physicians from high-risk specialties (including EM), nearly all providers (93%) reported defensive medicine practice (9). Fear of malpractice has been shown to influence both regional emigration and the abandonment of procedures and practices felt to be at higher malpractice risk (10,11). Rather than fear driving unnecessary medical intervention and abandonment of specialty practice elements, a concise clinical summary for litigation risk reduction would benefit the emergency physician.

## METHODS

The following strategy was searched in Medline via PubMed on November 28, 2017: (“emergency department and malpractice”) AND (“risk reduction” OR “risk management” OR “prevention”), retrieving 173 results. Articles published in languages other than English were then filtered out, leaving 167 for review. Only scientific studies were to be considered, so case law, expert opinion, correspondence, and letters to the editor were discarded.

The results were then evaluated for relevance, during which studies on adverse events not resulting in legal ramifications and those focusing on malpractice for other disciplines were excluded. Conference proceedings were also excluded. We included 40 articles focusing on malpractice claims against emergency physicians and residents.

On November 29, 2017, the search was run in Embase, retrieving 55 results. Of those, 53 were in English, and 43 remained after duplicates from the PubMed search were removed. After excluding for relevance and publication type, five studies were selected. Running the search in Cochrane on December 4, 2017 yielded three results, one of which was both unique and relevant. When results were further evaluated, 18 articles were removed due to lack of relevance to the emergency provider, leaving a total of 28 malpractice articles. An additional 24 articles were hand selected, for a total of 52 studies chosen for inclusion in this review.

## DISCUSSION

### *Litigation Cost*

Regardless of incidence of litigation, the obligation of physicians’ time and money is extensive (2). In a study of closed malpractice claims in Illinois from 1995–2004, the average case length was 46 months (2). Median

indemnity in EM ranges between \$85,000 and \$220,000 (1,2). Indemnity is heavily skewed right by relatively infrequent closed claims of high indemnity (1,2). Of note, 80% of cases where indemnity payout was > \$1,000,000 involved patients aged 1 year or less (2).

### *Breakdown of Risk*

Recent literature seems to indicate that malpractice risk is random, and thus only dependent on years in practice and ED volume (the statistical equivalent of risk exposure) (12). However, this recent analysis of 4.5 years of ED visits (9,477,150 total) resulted in only 98 malpractice claims, involving 90 physicians—a relatively small *n* amount of cases to detect trends (12). Upon review of larger malpractice case sets and error, we detected trends in diagnoses, type of error, and provider characteristics.

*Trends in diagnoses.* In a 23-year study of 11,529 analyzed claims arising from an emergency department (ED) from 1985–2007, emergency physicians were the primary defendants in a small proportion of claims (19%) (13). The vast majority of claims resolved in favor of the physician (13). Additionally, most cases close without indemnity payment (70–80%) (1,13).

Certain diagnostic areas share a great bulk of malpractice claims, consisting of both high- and low-risk diagnoses (14). The most consistently observed high-risk diagnostic areas of emergency malpractice are chest pain/missed myocardial infarction, abdominal pain/appendicitis, intracranial bleeding, and pediatric fever/meningitis (see Table 1) (13–17). Low-risk diagnoses are dominated by wounds with neglected foreign bodies and missed fractures (13–17).

In an application of root cause analysis of Dutch closed and settled claims, 78% of analyzed incidents represented missed fractures, luxations, or tendon lesions (18). In a study of 256 closed cases originating in the Netherlands, 82% (210/256) involved minor surgical conditions predominating in fractures, luxations, wounds, and tendon injuries (19). Out of 953 diagnostic errors at a busy ED in the United Kingdom, 79.7% represented missed fractures (20). In an evaluation specifically evaluating trauma malpractice, missed fractures represent the greatest frequency of litigation; though cervical spine injuries return the greatest indemnity award (21).

The frequency of diagnosis-related claims is similar to the areas of greatest monetary losses: fractures (23%), chest pain (21%), abdominal pain (4%), subarachnoid hemorrhage (3%), wounds (2%), fever/meningitis (0.9%), epiglottitis (0.6%), and abdominal aortic aneurism (0.1%) (14,16). Consistently, the diagnosis associated with the largest indemnities is missed acute myocardial infarction (13,14,17). In claim reviews

**Table 1. Most Frequent Diagnosis-Related Malpractice Claims by Closed Claim Analyses (U.S. Based) (13,15–17)**

	Brown et al., 2010 (13)	Karcz et al., 1996 (17)	Karcz et al., 1993 (16)	Karcz et al., 1990 (15)	Combined Relative %*	Weighted Avg†
Chest pain or missed acute myocardial infarction	992	57	30	20	9.5%	8.7%
Missed fractures	688	97	20	54	11.8%	6.5%
Abdominal pain or appendicitis	637	55	14	20	7.8%	5.7%
Wounds	184	109	26	64	10.7%	2.4%
Intracranial bleeding	NR	20	4	14	3.60%	3.60%
Aortic aneurysm	222	NR	2	6	1.70%	1.90%
Pediatric fever or meningitis	NR	8	4	3	1.5%	1.5%
Epiglottitis	NR	4	1	3	0.7%	0.7%
Total cases (n)	11529	549	199	262		
Years analyzed	1985–2007	1975–1993	1988–1990	1980–1987	1975–2007	

NR = not reported.

\* Averaged percentage of closed claim cases attributed to each high-risk diagnosis (all years combined; sample sets treated independently).

† Weighted average percentage (by case size [n]) of closed claim cases attributed to each high-risk diagnosis.

where incidence of missed acute myocardial infarction was relatively low (10.4%), the relative cost was exorbitant (25.5% of all indemnity, or 245% greater than would be predicted) (17).

**Trends in error.** Specific preventable errors are consistently associated with litigation occurrence. These include diagnostic fallacy (#1), failure to document (family medical history, medical decision-making, and reassessment), poor communication with patients, history of adverse relationships and malpractice, failure to follow up on diagnostic testing, provider sleep disruption, ED crowding, and nursing flow (14,22–32).

Consistently, the most frequent source of error among closed claim analyses is diagnostic process breakdown, leading to litigation in up to 71% of cases (24,25,30,32,33). In a recent study specifically identifying sources of missed and delayed diagnoses, the two most common causes for diagnostic error were failure to obtain an appropriate test (58%) and incorrect interpretation of a diagnostic test (37%) (25). In the evaluation of 953 diagnostic errors in a UK ED (consisting of mostly missed fractures), misreading a radiograph was the most frequent cause [similar to other UK-based investigations (20,34)].

Diagnostic error, however, is multifactorial (23,25,26,28). Inadequate supervision, poor handoffs, less experienced providers, and non-EM-trained physicians all seem to be contributing factors to cognitive errors of the diagnostic process (23,25,29).

Closed claim analysis also implicates charting, specifically, the lack of documentation of: family medical history, medical decision-making, relating diagnostics with the differential diagnosis, and reassessment prior to discharge (22).

ED crowding and nursing flow—(through lack of patient visibility, inappropriate organization of medical

supplies, and lengthy walking distances to patient rooms)—jeopardize quality of care and increase likelihood for error (24,26,28).

**Trends in provider characteristics.** In a review of 428 closed emergency malpractice claims from 1982–1997, indemnity was paid in 22.4% of closed claims against non-EM-trained, and 13.3% against EM-trained physicians ( $p = .04$ ), significantly identifying formal EM training as a malpractice risk reducer (23). The annual cost of malpractice insurance for non-EM-residency-trained physicians was found to be twice that of EM trained (23). Additionally, training of residents in medicolegal risk reduction may hold promise for litigation protection through trends in improved risk-reduction documentation (35).

Conversely, resident involvement in the ED may confer a greater risk, as was observed in a Netherlands closed claims study involving an ED from 1993–2001 (19). Similarly, senior house officers in the United Kingdom (postgraduate year 2 or greater) were responsible for the majority of ED errors (20,34).

Poor communication with patients places the physician at risk for litigation (14). In a study of U.S.-based EDs, a patient in the lowest quartile of patient satisfaction was twice as likely to file a complaint (36). Providers receiving two complaints or more were four times as likely to experience risk management episodes (36).

One review found no clear association between adverse outcomes and legal risk (14). Rather, risk was associated with poor communication skills, adverse relationships, physicians' prior malpractice history, and proximity to law office advertisements (socioeconomic status was not related to propensity to sue) (14). In an evaluation of medicolegal cases regarding cauda equina syndrome, the actual degree of functional loss did not seem to affect verdicts (37).

Compounding communication difficulties in a busy and crowded ED, shift-work-related sleep disruption can distort the physician's clinical decision-making, as well as degrade interactions with patients (31). The latter part of all shifts is associated with increased error, whereas night shift as a whole is significantly associated with diminished physician performance and mood (31). Encouragingly, emergency physicians who observe a day of rest for religious reasons have been associated with less involvement in malpractice lawsuits (38).

### *Prevention of Litigation*

Tort reform has demonstrated drastic savings in both the cost and prevalence of malpractice lawsuits (39). Conversely, in evaluation of system breakdown in closed claims, certain key behaviors continue to be associated with malpractice claims. Aside from attempting to bring about tort reform legislation, providers should mitigate risk by being aware of these behaviors: clear patient communication, intelligent documentation, utilization of clinical practice guidelines, generalizable diagnoses, reassessment, understandable discharge instructions, and careful management of departures against medical advice (14–16,22,26–28,40–50).

**Communication.** Patient communication is found to be more closely associated with legal risk than the nature or magnitude of adverse outcome (14). Patient satisfaction can be improved by increasing time spent on health education, physical examination, and discussion of treatment effects (48). These practices are independently correlated with improved visit-specific satisfaction (48). In the event of a negative outcome: recognize feelings of disappointment, express regret for the occurrence of the adverse event without admitting fault, and offer a proposed plan of action with frequent understandable patient/family updates, while documenting this discussion (44). The authors warn against closing lines of communication (44).

**Documentation.** Preformatted charts and spoken-word-to-text tools (e.g., *Dragon*; Nuance Communications, Inc., Burlington, MA) improve documentation, resulting in more complete charts, decreased malpractice risk in closed claim analysis, increased patient interaction time, and improved patient satisfaction (16,42,43). In the perfunctory charts, risk assessment demonstrates that the most consistently lacking elements relate to failure to review family history, lack of documentation of medical decision-making, and weak documentation of reassessment prior to discharge (22).

Protection can also be afforded by adherence to clinical practice guidelines (CPGs). Defense attorneys have

used CPGs as exculpatory (exonerating) evidence, resulting in fewer indemnity payouts, conferring substantial liability protection (15,22,45). Conversely, the lack of adherence to CPGs has been utilized as inculpatory evidence (22,45). When guidelines were used against physicians, CPGs were challenged in only 23% of cases, treated similarly to an expert witness (22). This highlights the importance of clear documentation of medical decision-making if deviation from CPGs is apparent.

With litigation significantly related to diagnostic failure, chart coding becomes important for malpractice prevention (24,25,30,32). Broadness of diagnosis need not reflect a clinician's failure of precision, but recognizes the possibility of more serious diagnoses. For instance, misdiagnosis of appendicitis resulting in litigation often accompanies an ED diagnosis of gastroenteritis (49). Thus, in high-risk situations, we recommend a broad diagnosis, with clear follow-up in the event of the patient's failure to improve.

**Discharge.** Reassessment (especially of sobriety) prior to discharge is of paramount importance in malpractice risk reduction (16). The authors suggest holding and re-evaluating all intoxicated patients to ensure clinical improvement and stability prior to discharge. This group comprises a high percentage of missed fractures and intracerebral hemorrhages (16). Prior to discharge, one should ensure the following: stable vital signs, clinical sobriety, ability to care for oneself, no new complaints, and the complete evaluation of all documented triage complaints.

Poorly advised discharge information is associated with increased malpractice risk, whereas improved follow-up information and discharge instructions have discernible malpractice protection (22,47,49). Language should be as simple as possible, as many ED patients are limited in literacy (up to 40% < 8th grade reading level; 20% are functionally illiterate) (40,46,50). At 24–36 h post ED discharge, up to 80% of patients will have knowledge deficits regarding discharge instructions relating to home care and return precautions (41).

Logistically, discharge paperwork and instructions should be structured and preformatted to include the following five elements: 1) purpose of discharge instructions, 2) diagnosis and expected course, 3) potential complications, 4) instructions on the use of medications, and 5) specific follow-up, including time course and pending diagnostic studies (50). Lastly, physicians must verbally explain pending tests; importance of, and consequences related to, missed follow-up; and document these discussions and receipt of discharge paperwork by the patient (16,27,50).

**Leaving against medical advice (AMA).** The authors recommend that prior to discharge AMA, ensure the



patient 1) is fully informed of risks and alternatives prior to their withdrawal of their personal consent to treatment, 2) has mental capacity to make this decision, and 3) does not meet involuntary admission criteria.

AMA forms typically necessitate an 11th grade reading level, and AMA discharges involve a complex discussion and situational understanding, demanding a level of education beyond that of the majority of ED patients (46). The AMA discussion should be clearly documented, including the patient's reasons for leaving, ideally in the words of the patient. Instructions for time-specific follow-up should be provided, along with an open invitation for return if the patient reconsiders or experiences changes in status (22). One should also make and document attempts to offer a potentially incomplete treatment plan as a middle ground, if the patient will agree to it (e.g., offer oral antibiotic prescription despite the recommendation to be admitted for intravenous antibiotics).

Patients leaving AMA represent a high-risk cohort, despite the misperception that AMA documentation absolves the physician from culpability in the event of a bad outcome. AMA discharge affords only partial protection in most malpractice cases, connoting contributory negligence (40). Contributory negligence implies the physician is not entirely responsible, but retains a contributory factor in fault and is expected to cover part of any indemnity awarded to the patient (40).

*Follow-up.* Scheduled follow-up from ED discharge has demonstrated reduced diagnostic error (diagnostic error representing the leading cause of malpractice in closed claim analysis) (51). Text message reminders of follow-up appointments have also shown potential in encouraging appointment compliance (52).

After the disposition of the patient has been established, the emergency provider should follow up on all diagnostic studies ordered while in the ED, as this is of critical risk-reduction importance (16). Pending radiographs are associated with poor follow-up, resulting in high ED provider litigation (16).

## CONCLUSION

Malpractice in EM represents a significant burden of time and money and continues to influence decision-making among ED providers. Consistently high-risk areas include missed acute myocardial infarction, missed fractures and foreign bodies, abdominal pain/appendicitis, wound complications and tendon injuries, intracranial bleeding, aortic aneurysm, and pediatric fever/meningitis. High-risk patient subsets include the acutely intoxicated and the very young. Diagnostic error remains the most common cause of litigation; conversely, positive

communication with the patient is paramount and could be more important than the medical outcome. To reduce malpractice risk, the emergency physician should practice clear patient communication, intelligent documentation, utilization of CPGs, and generalizable diagnoses. Prior to discharge, all patients, especially the intoxicated, should have a reassessment, clear discharge instructions, and follow-up for any pending or concerning diagnostic studies.

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### ARTICLE SUMMARY

#### **1. Why is this topic important?**

Malpractice risk continues to daunt the emergency medicine community, and litigation, although relatively rare, represents a major cost in both time and money for emergency physicians.

#### **2. What does this review attempt to show?**

There are certain recurrent and therefore predictable areas of malpractice risk: patient diagnoses, medical error, the diagnostic process, documentation, department logistics, and patient communication.

#### **3. What are the key findings?**

Diagnostic error remains the most common cause, yet clear and sincere communication with patients substantially reduces risk, even in the setting of negative outcomes. To minimize malpractice risk, providers are advised to be aware of the diagnoses that comprise a predominance of litigation events, as well as the provider characteristics consistently associated with malpractice.

#### **4. How is patient care impacted?**

The suggestions herein will likely lead to decreased misdiagnosis and unnecessary testing. The discharge and follow-up recommendations are suspected to improve patient outcomes. By understanding the nature of malpractice risk and how to reduce this burden, fear-driven practice patterns and physician stress is expected to decrease, while improving patient interaction and empathy.