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*Athanassios Vozikis, Athanasios Panagiotou, Stefanos Karakolias*

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## A Tool for Litigation Risk Analysis for Medical Liability Cases<sup>1</sup>

Athanasios Vozikis<sup>2</sup>, Athanasios Panagiotou<sup>3</sup>, Stefanos Karakolias<sup>4</sup>

### Abstract

Mistakes in the context of medical care can occur anywhere in the healthcare system. On the one hand, the doctrinal uncertainties, which lie at the heart of the current medical liability system, combined with the inherent uncertainty of medical science and the human body's complexity, create an extremely "foggy" landscape. On the other hand, litigation is not always effective. Thus, it is essential to cope with the uncertainties in a reasoned way. This paper presents a tool for litigation risk analysis in medical liability cases which permits identification of the multiple uncertainties that will affect the potential outcome and the exploration of their interrelationships. The basic uses, purposes and features of the tool will be presented. In addition, its core advantages as well as its aims, benefits and financial/social/scientific impact will be discussed.

**Keywords:** medical liability; medical negligence; civil liability; compensation; decision analysis; litigation risk analysis; decision trees; health care; medical errors

### Introduction: Medical Liability as a Contemporary Issue

Mistakes during medical care can occur anywhere in the healthcare system (European Commission, 2006). In Greece, the assessment of the nature and total financial burden of medical errors is difficult and cannot be accurately approached, due to the lack of data from an organized information system (Riga et al., 2014). According to the Eurobarometer of the European Commission (2014), 78% of the Greek respondents think it is likely that patients could be harmed by hospital care and 71% of the respondents think it is likely that patients could be harmed by non-hospital healthcare. Moreover, 20% of the Greek respondents have - personally or through a member of their family - experienced an adverse event while receiving healthcare (European Commission, 2014). Generally, the amount and level of compensation awarded by courts for medical errors in Greece is worryingly high, with the frequency and the amount of mean compensation increasing dramatically in the late years (Vozikis & Riga, 2008; Riga et al., 2014). The Greek redress system is a traditional tort system. Even though according to the Greek Civil Law a claim for medical negligence can be based on either contract or tort law (or –cumulatively- on both), tort is the prevailing legal basis.

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<sup>2</sup> Associate Professor, Laboratory of Health Economics and Management, Economics Department, University of Piraeus, Greece.

<sup>3</sup> LL.M., PhD Candidate, University of Piraeus.

<sup>4</sup> Researcher, University of Piraeus.

## The doctrinal issues

On one hand, the doctrinal uncertainties lie at the heart of the current medical liability system. Specifically, the - central to the medical liability regime - notions of “*fault*”, “*standard of care*” and “*causation*” are unclear (Panagiotou, 2016). This vagueness, combined with both the inherent uncertainty/inexactness of medical science and the human body’s complexity, create an extremely “foggy” landscape, especially when medical liability must be attributed, and these notions need to be specified in a particular case (Panagiotou, 2016). Both the legal and the medical communities are equipped with ambiguous theoretical tools, which need to be specified based on particular facts, a task which has been proved to be very challenging (Panagiotou, 2016).

## The Uncertainties of Litigation

On the other hand, litigation is not always effective. Although the basic goal of the tort system is to compensate adequately and fairly those injured due to substandard care (Common Good, 2006), research has shown that it fails to achieve the particular aim. Negligence-based standards leave many patients harmed by preventable injuries ineligible for compensation (Baker 2005; Bovbjerg and Berenson 2005). The aforementioned vague concepts of tort law for the formulation of the required standard of care (based on which, the physician’s professional conduct is evaluated), the judge’s lack of technical knowledge and expertise and the significant failings of the basic procedure (medical expert testimony) established in tort systems to help the court go through the relevant scientific evidence, render fault-based liability systems ineffective with respect to the judgment of error and the identification of negligence/fault (which is the core of the liability determination).

Even when the tort system does provide redress, it lacks fairness and horizontal equity in payments (Common Good, 2006). Although the rationale behind redress is for the victim to be fully compensated and be put back in the position, in which he/she would have been, if the injury had not taken place, this is almost impossible to be achieved, especially by a court (Vliamos & Chatzis, 2009). The distribution of compensation by Greek courts is problematic, as the latter grossly underestimate lost future earnings and hedonic/non-monetary damages (Vliamos & Chatzis, 2009). Greek judges inevitably consider the impact of the fiscal crisis on the public health care system, the already suppressed budgets of public hospitals and the potential effect of compensation decisions on their operation, when they determine the compensation level. Furthermore, tort litigation not only undercompensates, but also presents significant delays regarding the resolution of disputes, with the profound financial and emotional ramifications to harmed patients and their families. In addition,

lengthy litigation diverts doctors' professional attention from the clinical care to the courtroom (Grad, 1986).

### **Decision analysis: A reasoned and organized way to deal with medical litigation uncertainties**

To effectively manage a dispute, it is essential to cope with uncertainties in a reasoned way. Business people have traditionally used decision analysis to model complex decisions involving multiple uncertainties (Lewis & Roca, n.d.). More recently, the legal community abroad has started using decision analysis as a methodology for making decisions in complex litigation (Victor, 1985). Given that medical liability litigation in Greece is associated with major uncertainties, increasing delays and costs, it is necessary that the efforts to reach settlements early in the litigation process or use mediation be intensified. Decision analysis will help disputing parties (patients and/or their families, physicians, their lawyers, hospitals, and insurance companies) evaluate their litigation alternatives.

The first step in performing a good risk analysis of litigation is: 1) to identify the uncertainties that will affect the amount of money the client will be ordered to pay (if defendant/physician/hospital/insurance company) or will be awarded (if plaintiff/patient and/or family), and 2) to explore their interrelationships (Glidden at al., 2016). The key product of risk analysis is a *decision tree* (Victor, 2001).

When all the key uncertainties of a case and their interrelationships have been identified, this information is converted into a decision tree (Glidden at al., 2016). The decision tree presents all the possible litigation scenarios, along with their respective consequences, and, thus, is an extremely useful tool in examining/analysing how the legal and factual uncertainties in a case could play out (Glidden at al., 2016).

Hence, a decision tree puts multiple uncertainties into perspective, taking all potential outcomes into account (Lewis & Roca, n.d.). It constitutes a tool for making effective decisions, keeping a record of the way you reached them, and improving the chances of achieving a good outcome (Lewis & Roca, n.d.). Decision analysis relies on the idea of *expected value*. "Expected value" is the value of a potential outcome, multiplied by the probability of happening. In the multiple uncertainty world of medical dispute management, it is the weighted average value of all potential outcomes.

The legal community usually expresses its opinions in qualitative, not quantitative, terms, e.g., "It is probable that ....;" "It is more likely that ....;" "There is a good chance that ...." However, a lawyer's "probable" may mean 55 % to her, but 85% to you. On a million-dollar decision, that can be a

\$300,000 misunderstanding. Thus, it is essential that a common and measurable language be used (Lewis & Roca, n.d.).

Probabilities expressed in percentages provide the essential qualitative ingredient as shown in the following example (taken from Lewis & Roca, n.d.: 1-2): “The plaintiff (patient) has offered to settle for 60.000 euros. My best estimate is that I have a 40% likelihood of being held liable. If I am held liable, there is about a 25% probability the verdict would be in the 225.000 range, a 50% probability of being in the 100.000 range, and a 25% probability of being in the 35.000 range. Should I accept the offer?”

But when there are several variables (and this is certainly the case with respect to medical liability litigation, where multiple legal and factual issues play a significant role in the outcome), the human mind faces difficulties structuring, keeping in mind, and analyzing all the possible outcomes (Lewis & Roca, n.d.). *Decision trees* are the essential tools to express opinions in quantitative terms.

### **Basic Uses, Purposes and Features of Decision Making in Litigation**

The primary ways lawyers and clients use decision tree analysis in litigation are the following: (i) to be sure the lawyers have a clear understanding of the key issues, uncertainties and exposure presented by a case; (ii) to gain settlement permission from the client; (iii) to convince the other side to accept a given settlement; (iv) to persuade a mediator or even a judge of the rationale of their position; and (v) to plan a cost-effective litigation strategy (Victor, 2001).

The basic *purpose* of decision trees is to show the most important and uncertain *ultimate issues* and *influencing factors* if the case is litigated (Victor, 2001). The identification of the major *uncertainties* and the determination why a case can still be lost even if you have won an important issue are of the utmost importance. It certainly helps parties make better judgments as well as identify areas where you need more *factual investigation* or *legal research* (Victor, 2001). It is a lawyer’s best subjective opinions on the major *uncertainties* in a case, their *interrelationships* and *consequences*, and their *probabilities* of occurring (Victor, 2001). The *ultimate issues* are those whose outcomes individually or in combination would be dispositive of the case with respect to liability (provision of health care services, fault on the part of the health care professional, causation etc.), plus those comprising the major components of damages (Victor, 2001). The *influencing factors* are those uncertainties that will influence how the ultimate issues are resolved (civil procedure rules, admissibility of a document, role of a witness etc.) (Victor, 2001). They cannot directly resolve the case, but they influence the outcomes of some of the ultimate issues.

A decision tree used in litigation usually has two branches: "litigate" and "settle." The "settle" branch may constitute the other side's most recent offer, or it may constitute the lawyer's estimate of what the adverse party might accept in settlement (Hoffer, 1996). The "litigate" branch usually includes branches which represent the different events that may arise during litigation (Hoffer, 1996).

The parts of a decision tree are the following: 1) *Decision node*, represented by a square, constitutes a strategy choice that is totally within your control (even though the consequences are not) (Victor, 2001). Your possible strategic options would be written on the branches (horizontal lines) that follow the node (Victor, 2001), 2) a *chance node*, represented by a circle, identifies an uncertainty—something that is not totally within your control (Victor, 2001). The branches that follow a chance node show the possible ways in which the uncertainty might be resolved (Victor, 2001).

There can be any number of branches following a chance node (Victor, 2001). The uncertainty on which they focus must be capable of being resolved in at least one of the ways shown on the branches, in no more than one of the ways shown, and in no additional ways beyond those already shown (Victor, 2001). The probabilities, which are shown under each branch, represent the lawyer's (or mediator's or other's advisor's) qualitative "best guesses" of the relative likelihood of the possible outcomes of each branch (Victor, 2001). They are shown under their respective branches (Victor, 2001). Probabilities at a chance node must sum to 100% (see Table 1).

**Table 1: Advance Decision Tree**



Source: <http://www.settlementperspectives.com/wp-content/uploads/2009/07/advance-decision-tree.pdf> (Accessed: 15/10/2021)

When deciding and reviewing the *probabilities*, it is essential to go behind the numbers based on different important *considerations*. For example:

- 1) what supports your judgment on both sides of the specific issues like the existence or non existence of fault/malpractice, negligence (breach or non-breach of the required standard of care), and the causal link between the physician's conduct and the damage caused to the patient etc.)
- 2) What evidence (unfavorable as well as favorable such as the existence of relevant clinical guidelines and/or clinical protocols, the content of relevant medical records, relevant medical literature, written medical expert opinions) do you have?
- 3) What witnesses (harmful as well as helpful) are we going to confront?
- 4) Are the witnesses physicians of the same or different specialty (compared to the defendant)?
- 5) What experience does each expert witness have?
- 6) What specific/special expertise (if any) does each expert witness have?
- 7) Are there any previous decisions (bad as well as good) on the issue?
- 8) How have the courts handled/resolved similar cases? Based on which arguments and jurisprudence?
- 9) What general factors (such as a. the physician's specialty, expertise and/or specialized training in the specific medical subfield, b. the severity of the patient's injury/ damage, c. the fact that the patient was the only source of income for the family, d. the family's financial status and/or lack of social insurance, e. his/her children's age, f. the inefficiencies of the health and social care provided by the state) may come into play?

### **Stages and Research Methods of the Project**

The steps of our research are briefly outlined below:

**Stage 1:** Identification and analysis of the key uncertainties/issues and influencing factors that arise in the context of medical negligence cases and have an impact on its outcome as well as their interplay/interrelationships.

**Stage 2:** Examination of decision tree analysis and the major issues/practical features of its application in order to use it for the development of decision trees in the field of medical liability in Greece.

**Stage 3:** Practical application of decision tree analysis in order to conduct legal risk evaluations with reference to medical liability cases (case-studies and practical examples):

- Incorporation of all the key uncertainties (the tough legal and factual questions), which will have emerged at the previous stages, into the decision trees,

- Assigning probabilities to the possible outcomes of each uncertainty /issue (based on the role/weight of each issue and influencing factor in the relevant cases, as it has emerged based on the research findings of the previous steps),
- Measuring the value of litigation and its alternatives.

### **Core Advantages of the Proposed System**

The advantages of the proposed system are the following:

**1) Facilitation of decision-making:** Analysis of the risks inherent in following a specific strategy and identification as well as structuring of the important issues leads to an understanding of their significance. Hence, the judgments, choices and decisions of the parties involved in medical negligence litigation are made based on reasoned, thoughtful analysis. Decision trees also lead to better communication about the dispute between both opposing parties and lawyer and client (and this very significant in medical disputes that are inherently emotional).

**2) Early settlements (Victor, 2014) and the use of alternative dispute resolution methods (such as mediation):** Litigation is costly, unpredictable, emotionally draining, and inefficient. Its negative consequences are intensified in the complicated area of medical liability. Showing the uncertainties of the case, keeping reasons why specific issues will be won or lost and determining the probabilities of prevailing on an issue may lead the various parties to choose an early, cost-saving dispute resolution method and avoid the emotional aspects of the dispute.

Specifically, the use of decision trees and probabilities should create an environment helpful to dispute resolution. The decision tree shows both parties that not all scenarios in the case conclude in a total victory—or defeat (Victor, 1990). In addition, the use of probabilities shows recognition that litigation has no sure outcomes but contains *risks* and *uncertainties* (Victor, 1990). A good decision tree analysis should also force discussion to the level of individual issues, influencing factors, and probabilities rather than the overall value of the case (Victor, 1990). Discussing the merits issue by issue, in numerical probabilities, helps to define real differences and, thus, disclose true settlement potential (Victor, 1990).

Mediation is a process with multiple benefits for both the parties involved and society. Its advantages are: a) speed, b) impartiality, d) confidentiality, e) low cost, f) flexible procedure, g) maintaining good relations, h) enforceability of the agreement, i) the parties decide the outcome having control over the process.



In addition, mediation is particularly important (Gitchell, & Plattner, 1997) in the healthcare sector, as according to the European Hospital and Healthcare Federation, it allows hospitals to prevent conflicts before they occur, to create ground conducive to an out-of-court settlement, and to identify and resolve the deeper issues that led to the conflict (Hope, 2012).

In Greece, the new legal framework for mediation (Law 4512/2018) makes it a mandatory stage of disputes concerning claims for compensation of patients or their relatives against physicians, which arise in the exercise of the professional activity of the latter. Therefore, given this new framework, the use of a litigation risk analysis tool to come to agreement in the context of mediation in medical liability cases presents both significant research interest as well as prospect of wider practical application.

### **Aims- Benefits-Financial/social/scientific impact**

The *key aim* of the project is to apply a litigation risk estimation system to medical liability cases in Greece as a tool to: a) ameliorate decision- making, b) reduce medical liability litigation uncertainty, c) evaluate litigation alternatives in a reasoned and organized way and, *thus* d) facilitate settlements and enhance the use of mediation in civil cases and, *hence*, e) decongest Greek courts as well as f) contribute to the sustainability of the National Healthcare System.

By helping them make more disciplined, more thoughtful, and more accurate decisions, decision tree analysis will have a positive social and financial impact and it can be proved beneficial to all the parties involved in medical injury litigation. Particularly it will benefit:

- a) **patients and/or their families (claimants)**: Good settlements will be facilitated and the aforementioned disadvantages of malpractice litigation could be avoided.
- b) **Physicians (defendants)**: Facilitating good settlements and avoiding the negative consequences of litigation such as the financial ramifications, the repercussions on their professional reputation and the psychological impact on physicians, which in turn lead to the practice of defensive medicine.
- c) **Hospitals**: they will be able to make effective litigation risk analysis and, thus, make the most advantageous (from a financial perspective) decision.
- d) **Attorneys**: they can express their opinion on the possible outcome of the relevant cases and their alternative options in quantitative terms away from the inaccuracy and highly speculative nature of subjective –based on experience- judgments and estimations.

- e) **Mediators:** They may convince the parties reach a commonly accepted solution to their dispute.
- f) **Insurance companies:** They can conduct more effective malpractice litigation risk analysis, and this can contribute to their long-term financial sustainability.
- g) **Health Care and Social Insurance System:** Given that significant financial resources of public hospitals are diverted to the payment of damages for medical liability, decision analysis may contribute to their financial sustainability and stability. Decision trees will assist patients harmed by medical errors (and their families) make informed decisions whether to start a claim or not and many of them may abandon the litigation option and prefer either the settlement or the use of alternative dispute resolution methods (like mediation). Taking into account that the use of mediation in the field of administrative law (and specifically for the resolution of disputes between individuals and the state) is discussed, decision tree analysis could also be useful (in the future) for effective decision-making and facilitation of settlement with respect to disputes between patients and public hospitals. The resolution of these disputes through mediation could result in more efficient control of administrative fees, savings from the courts' operational costs, quicker administration of justice and decongestion of administrative courts. At the same time, it could contribute to combatting bureaucracy and maladministration by enabling public services to improve substantially.
- h) **The judicial/civil justice system:** The early settlements and the use of ADR methods will lead to the decongestion of courts (since fewer cases will finally reach them), will make the administration of justice quicker (the cases which finally reach the courts will be resolved more quickly), and will secure cost savings.

## Conclusion

In conclusion, it is the first time at both national and international level that research focuses on the application of decision tree analysis to a specific litigation area. Decision trees and their application to litigation risk analysis have never been studied in Greece. Taking the multiple uncertainties and the complexity of medical liability cases into consideration, the relevant litigation area constitutes a good ground for decision tree research.

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