Defensive medicine: a practice in whose defense?

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Abstract

Cases of litigation against physicians have been growing in Brazil: there are currently three new lawsuits filed per hour related to alleged medical error. The purpose of this study was to analyze if both the physician who is sued and the physician who knows another physician who has been sued change their clinical behavior due to the fear of appearing as a defendant in a lawsuit seeking compensation for medical error. In all, 104 questionnaires were answered by physicians of 28 different specialties, 53 (51%) being women and 51 (49%) being men. The relationship between variables such as marital status, the average time since graduation, employment links, among others, and the daily practice of defensive medicine. The study aims to promote the debate about the change in clinical behavior due to the physician's interest in not being sued by removing the link between their conduct and the patient's diagnostic hypothesis.

Keywords: Defensive medicine. Medical errors. Malpractice-Imprudence.

Resumo

Medicina defensiva: uma prática em defesa de quem?

Casos de litígio contra médicos têm aumentado no Brasil: já são três novas ações por hora em decorrência de suposto erro médico. Este estudo objetivou analisar se o médico processado e o profissional que conhece outro colega de profissão que também passou por tal situação alteram a conduta clínica com receio de figurar como réu em ação indenizatória por erro médico. Foi aplicado questionário a 104 médicos de 28 especialidades, 53 mulheres (51%) e 51 homens (49%). Analisou-se a relação entre variáveis como estado civil, tempo médio de formado, vínculos empregatícios, entre outras, e a prática cotidiana da medicina defensiva. O estudo busca promover o debate sobre a alteração da conduta clínica por interesse do médico em não ser processado, desvinculando sua prática e a hipótese diagnóstica do paciente.

Palavras-chave: Medicina defensiva. Erros médicos. Imperícia-Imprudência.

Resumen

Medicina defensiva: ¿una práctica en defensa de quién?

Los casos de litigio contra médicos han aumentado en Brasil: ya son tres nuevas acciones por hora, como consecuencia de un supuesto error médico. Este estudio tuvo como objetivo analizar si el médico procesado y el profesional que conoce a otro colega de profesión que pasó por tal situación modifican su conducta clínica ante el temor de figurar como reo en una acción indemnizatoria por error médico. Se aplicó un cuestionario a 104 médicos de 28 especialidades, siendo 53 mujeres (51%) y 51 hombres (49%). Se analizó la relación entre variables como estado civil, tiempo promedio de egreso, vínculos laborales, entre otras, y la práctica cotidiana de la medicina defensiva. El estudio procura promover el debate sobre la alteración de la conducta clínica por interés del médico en no ser procesado, desvinculando su práctica y la hipótesis diagnóstica del paciente.

Palabras clave: Medicina defensiva. Errores médicos. Mala praxis-Imprudencia.

Research

Aprovação CEP-Famerp Parecer 2.415.138

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Declaram não haver conflito de interesse.

Defensive medicine originated in the 1970s and is *characterized by the use of diagnostic-therapeutic procedures with the explicit purpose of avoiding litigation due to bad medical practice* [1]. This means that, initially, taking into account the documentary framework (laboratory tests, diagnostics and/or imaging exams), doctors do not assume treatment of the patient to reduce the risk of litigation for alleged professional misconduct.

The occurrence of this is corroborated by several studies, mostly foreign, such as Dove and collaborators [2] who investigated 824 physicians, 93% of which confirmed this practice. Given the increase in lawsuits against physicians, including in Brazil [3], defensive medicine is used as a strategy by health professionals, especially physicians, to make lawsuits difficult and to reduce the risk of compensation to potential victims.

Superior Court of Justice Minister Nancy Andrighi considered, in Special Appeal (Recurso Especial) 908,359/2008, that the physician-patient relationship is at its worst moment:

Not so long ago, medicine was practically an art, the art of healing. Family physicians accompanied individuals throughout their lives and their descendants. Being able to diagnose a disease by touching the patient's body, considering the person's history, trends and propensities. It healed by valuing the individual. However, this reality has given way to business medicine, where personal care is replaced by mass, impersonal care. This judgment, framed in a trial of medical error, declines the understanding of the judiciary about medicine, where the physician-patient relationship is mitigated by profit [4].

Technological development in medicine has relegated the uniqueness of the patient (emotions, beliefs, and values) to the background. In the same vein, medical training has become increasingly specialized, and working conditions have also changed, restricting the physician's contact with the patient and demanding more comprehensive training [5]. In this context, this study aimed to analyze the physicians' perspective on possible lawsuits for bad professional practice, as well as to verify if they use defensive medicine in their daily life and which variables contribute to it.

Methods

This is a cross-sectional, exploratory and descriptive field study, with statistics derived from a convenience sample. The universe investigated includes physicians of different specialties from São José do Rio Preto, São Paulo, Brazil. Between November 2017 and April 2018, participants answered a survey questionnaire, which included specific data about their medical life. The variables refer to the knowledge of the term "defensive medicine" and its use in clinical practice, considering whether the physician has already been sued for error, whether they know any colleague who has experienced such a situation and whether this influences their clinical conduct.

Data were organized in Microsoft Excel software. For statistical analysis, the following metrics were used: mean, Shapiro-Wilk normality test and Kruskal-Wallis test. For samples with qualitative data, inferential statistics were used using the chi-square partition test, Fisher's exact test, and the Mann-Whitney test. It is noteworthy that the study complies with the ethical and legal principles related to the theme.

Results

The questionnaire was applied to 104 physicians from 28 specialties, being 53 women (51%) and 51 men (49%). The mean age of the population studied was 35.7±12.1 years, ranging from 23 to 71 years. Regarding marital status, 57 (55%) physicians were single, 39 (37%) married, 6 (6%) divorced and only 2 (2%) reported being in a stable union. Of the total participants, 74 (71%) had no children and 30 had children with a mean age of 16.14±11.45 years, of which: 11 physicians (11%) had only one child, 13 (13%) had two, 4 (4%) had three, and only 2 (2%) had four children.

The average time since graduation was 10.72±12.22 years, and the predominant specialty was the medical clinic, with 31 (30%) representatives, followed by 7 (7%) in infectious diseases, 5 (5%) dermatologists and 5 (5%) gastroenterologists. Dividing the specialties into four groups (clinical, surgical, procedures and special group, with specialties that can work in the clinical and/or surgical area), it is concluded

that 67 (64.42%) were in the clinical group, 14 (13, 46%) in the surgical group, 11 (10,58%) in the special group and 12 (11,54%) were in the group that performs procedures.

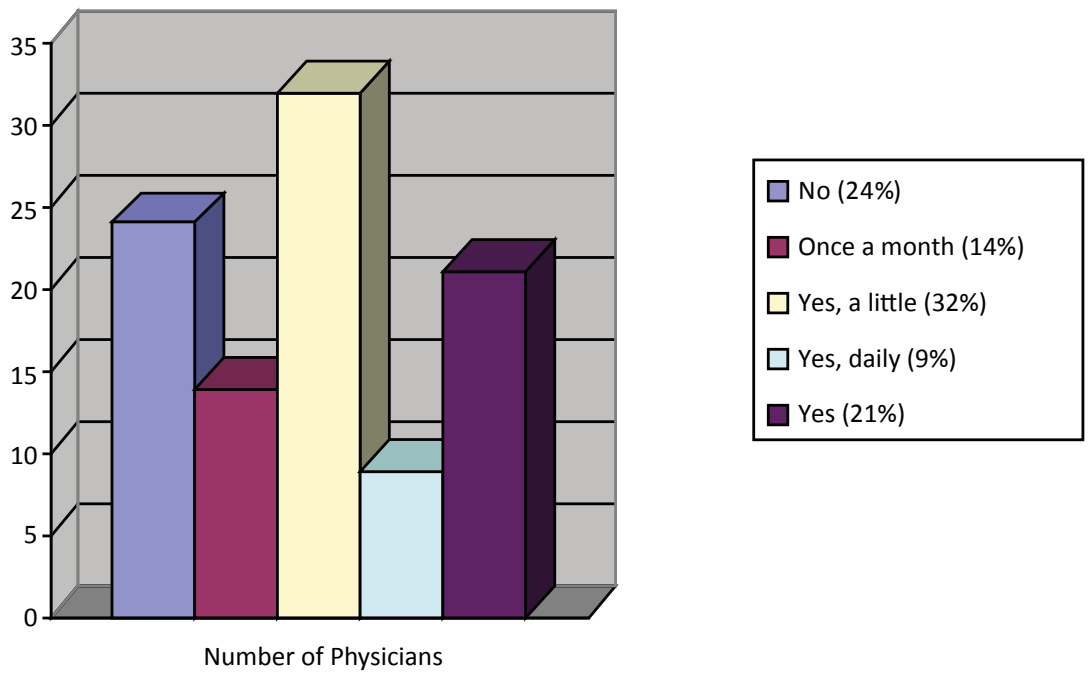
Of the 104 respondents, 94 (90%) work in a hospital; 38 (36%) work in private clinics; 29 (28%) work in educational institutions; and 27 (26%) have municipal, state or federal jobs. Among the other areas of expertise, 3 (3%) work in the Emergency Care Unit, 3 (3%) in the Emergency Mobile Service; 2 (2%) in Basic Family Health Units and 1 (1%) in the Medical Specialist Outpatient Clinic. The percentages do not total 100% due to the concomitant exercise of employment relationships.

The average hours worked per week was 57.58±17.7, and 78 (75%) professionals confirmed to be on a shift system. In the weekly distribution, 17 (21.79%) physicians reported that they work one shift, 34 (43.59%) work two, 13 (16.67%) work three, and 14 (17.95%) work four shifts or more. As for the time, 50 (64.10%) participants make night and day shifts, 21 (26.92%) only do night shifts, and 7 (8.97%) work only daytime shifts. Only 1 physician in the sample works only in one place.

Profile of physicians practicing defensive medicine

Of the total participants, only 48 (46%) were familiar with the concept of "defensive medicine" and 12 (25%) of them had not practiced it in the previous year. On the other hand, of the 56 (54%) who did not know the term, 42 (75%) still practiced defensive medicine. Note that most physicians rarely resort to this practice, as shown in Figure 1. One participant did not answer this question.

Figure 1. Frequency of physicians who practiced defensive medicine in the previous year



From this context, the researchers analyzed the profile of professionals who practice defensive medicine, regardless of whether or not they are familiar with the concept. Table 1 shows the characteristics of the physicians who answered this question. The only category that pointed out a statistically significant difference was marital status. Physicians who were or in stable union answered "yes" or "no", while singles predominantly chose intermediate alternatives.

Although they do not show a statistically significant difference, some categories deserve to be highlighted. Physicians who refused to practice this type of medicine had a slightly higher average age than those who use it. Also, most professionals with children responded that they did not practice or practiced little defensive medicine. The response from physicians on shifts is also noteworthy, as they were more involved in defensive medicine than those not on shifts.

Table 1. Profile of physicians who did or did not practice defensive medicine in the last year

Did you practice defensive medicine in the last year?	No (n=25)	Once a month (n=14)	Yes, a little (n=33)	Yes, daily (n=9)	Yes (n=22)	*p*
Mean age (years)	41,16	31,1	35,3	34,6	33,9	0,1065
Mean time since graduation (in years)	16,1	5,7	10,6	8,5	9,1	0,0964
Males	13	6	14	5	12	0,8631
Single	11	11	24	7	9	0,022
With children	12	2	11	1	4	0,0753
Clinical specialty	18 (n=20)	12 (n=13)	17 (n=24)	6 (n=8)	13 (n=24)	0,3546
Place of work						
Hospital	22	13	31	8	19	0,996
Private clinic	13	2	12	2	9	0,164
Municipal, state or federal job	9	2	9	1	6	0,4958
Teaching institution	9	3	7	3	6	0,7382
Average hours worked per week	57	57,4	52,5	63,6	64,5	0,3078
Physicians who work in shifts	16	10	24	9	17	0,32

Three inferential statistical tests were used in this study. The first was the Shapiro-Wilk normality test, intending to verify the distribution of quantitative samples and define which would be the safest test for the analysis. As the samples had a nonparametric distribution, the Kruskal-Wallis test was used. For samples with qualitative data, the inferential statistics were made by the chi-square partition test.

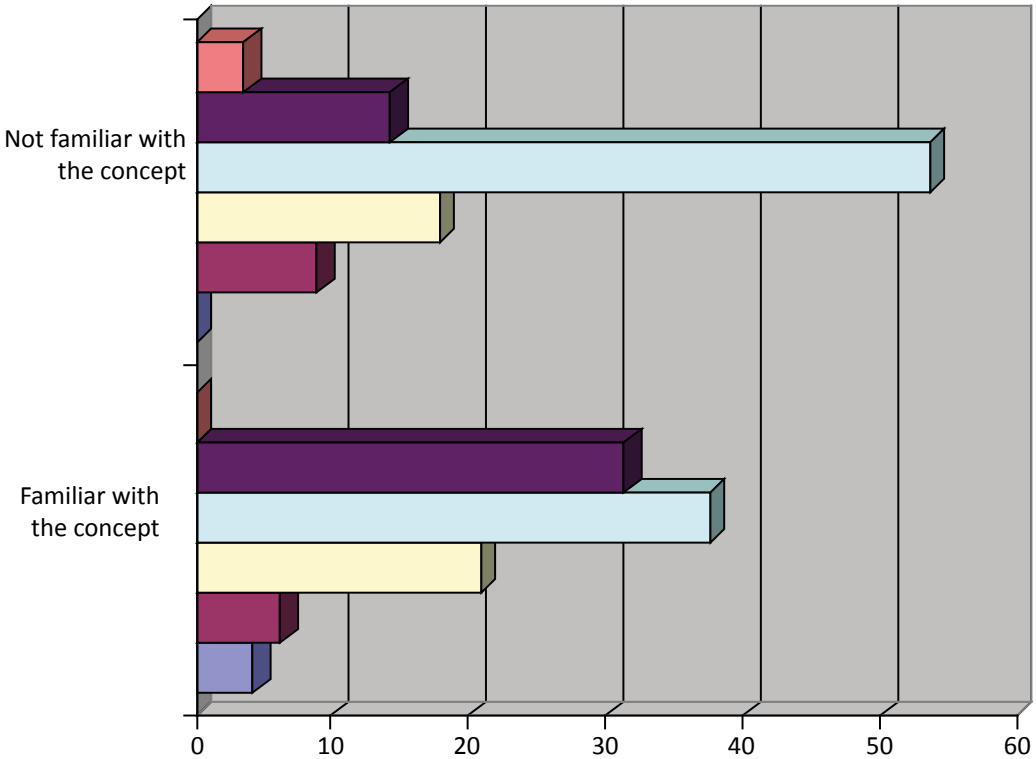
Familiarity with the term "defensive medicine" influences medical practice

- ***Exam requests***

Figure 2 illustrates how familiarity with defensive medicine influences the demand for tests that would be unnecessary for patient assessment, prognosis, and treatment. Physicians who know the term replied that at least one exam would be unnecessary for the patient. Also, only those who know about defensive medicine said that they asked for almost all unnecessary tests. The opposite is true for physicians who are unaware of this concept: some said they do not require unnecessary examinations, and none of them usually request almost all irrelevant exams from their patients.

Statistical analysis was performed by the chi-square test, indicating p=0.1015. This indicates that there was no statistically significant difference between the groups. As for the examination requests made by the patients themselves, knowledge about defensive medicine also influenced the medical practice. No participant failed to order exams requested by patients, and 11 physicians (23%) usually order five or more exams. Only three of those unfamiliar with the term ask for five or more than those requested by patients. This difference was statistically demonstrated by the chi-square test, which generated p=0.0194.

Figure 2. Familiarity with defensive medicine and how it interferes with the request for further tests



	Not familiar with the concept	Familiar with the concept
0	0	3.5
1	31.25	14.3
2	37.5	53.6
5	20.83	17.8
More than half	6.25	8.9
Almost all	4.16	0

- ***Medical error lawsuits***

Of the 104 respondents, 12 have undergone some kind of lawsuit; of these, only four knew what defensive medicine was. This difference was not statistically significant because Fisher's exact test resulted in p=0.3771. Of the 12 cases, six were still pending at the time of data collection, and the remainder were resolved without condemnation of the physician. It is worth noting that all acquitted professionals, even those who denied knowing the term "defensive medicine", asked the patient for at least one irrelevant examination.

- ***Fear of lawsuits interferes with medical practice***

Of the 101 physicians who answered this question, 76 (75%) believe that fear of prosecution interferes with test requests and medical practice. Of the 47 who are familiar with defensive medicine and answered this question, 34 (72%) believe that fear interferes with practice and 42 (78%) of the 54 physicians who were unfamiliar with the term thought the same way. This difference was not statistically significant, as indicated by the statistical analysis via the chi-square test (p=0.6888). Therefore, knowledge about defensive medicine does not dispel or increase the fear of lawsuits.

- ***Knowing someone who has been sued interferes with the practice of defensive medicine***

Of the 104 respondents, 85 (82%) had a colleague who had already been sued, and 59 of these (69%) claimed that this influenced their clinical

or other behavior. There was no difference between those who knew or did not know about defensive medicine (chi-square test p=0.8910). Knowing the concept was also not statistically significant between these groups (p=0.9845).

According to these results, most physicians know someone who has already been sued, and this influences their clinical behavior or in other ways. However, this does not lead physicians to study ways to protect themselves against this risk; otherwise, those who claim to know prosecuted professionals would know the meaning of defensive medicine.

- ***Physicians request more tests than necessary***

There was no significant influence on participants' familiarity with defensive medicine and response, as 46 (95.83%) of the 48 who know the term partially or completely agreed with the phrase "physicians request more tests or perform more procedures than would be necessary, to protect against prosecution ". Among the 56 who did not know the concept, 46 (82.14%) responded the same way. The statistical basis was measured by the Mann-Whitney test (p=0.0260).

- ***The number of exams will decrease if physicians feel protected from prosecution***

In this item, 35 (73%) of the 48 physicians who knew defensive medicine agreed in part or completely to the statement "Excessive use of examinations and procedures will not decrease unless physicians feel protected from prosecution", while 29 (52%) of the 56 physicians who did not know the term also considered it valid. This difference was not confirmed by the statistical analysis of the Mann-Whitney test (p=0.051), a value very close to the significance level used in the article.

Discussion

The sample had an average age of 35.7 years, most of the respondents were females. This confirms the feminization of medicine in Brazil, a phenomenon that has occurred since 2009 with physicians aged 34 and younger [6]. The average hours worked (57.58) are in line with that of the São Paulo Medical Demography 2017 [6] where 54% of the physicians said they were "at full capacity", but far from the overhead considered for the weekly workload (80 hours or more).

A study by Oliveira [7] corroborates research by the Regional Council of Medicine of the State of São Paulo [8], clarifying that, despite the protocols, guidelines, and recommendations of the Federal Council of Medicine (*Conselho Federal de Medicina*, CFM), physicians have extensive working hours and various employment relationships. According to the author, these professionals increase their exposure to the risk of error when caring for an excessive number of patients, making quick decisions, usually under pressure and stress, with short rest periods, inadequate nutrition and little time at home.

Other studies [9-11] emphasize that the association between work overload, lack of time for daily tasks, reduced staff and a high contingent of people eager for care increases the likelihood of medical error. The number of 56 (54%) participants unaware of the concept of defensive medicine is not compatible with almost three decades of the terminology, which began to be used in the United States in the 1990s [12].

Some categories, despite not presenting statistically significant differences, bring interesting information. Usually, female physicians establish a better relationship with patients. In this study, the age of respondents and the fact that they are mostly women with children may have contributed to defensive medicine being used less, perhaps due to a greater awareness of the possibility of litigation or stress arising from prosecution for medical error. Based on the corroborated average age of 35.7 years (±12.1) and the phenomenon of feminization of medicine that has occurred in the country since 2009, and which was confirmed in this study, it can be seen that women have more quality in the midst of their physician-patient relationship and are therefore less likely to be sued even if they are more afraid of it.

The work of single professionals and staff on shift is more subject to fatigue, due to the high workload of shifts. The former are those who use defensive medicine least to protect themselves from possible prosecutions, especially due to immaturity in dealing with patients and inexperience about the risks in this relationship.

The Código de Ética Médica – CEM (Code of Medical Ethics), according to CFM Recommendation 1/2016 [13], brought new demands on patient autonomy and generated a paradigm shift regarding the physician-patient relationship. According to CEM Fundamental Principle XXI [14], approved in 2009, the healthcare

http://dx.doi.org/10.1590/1983-80422019274358

professional must abide by the choices expressed by his patients regarding diagnostic and therapeutic procedures, provided that they are appropriate to the case and scientifically recognized as valid.

For Cunningham and Wilson [15], positive defensive medicine may be linked to decreased patient confidence and poor professional ability to make decisions under pressure. In addition, increasing hospital referrals and admissions, preventive identification of patient problems, excessive documentation and consent, and changes in professional teams also favor this practice.

Negative defensive medicine, on the other hand, is characterized by changes in the response to particular complaints, as happens, for example, when the obstetric care and intensive care is extinguished. Sometimes the medical specialty is moved from rural to urban areas, or care is taken from patients in health conditions who are at imminent risk of court demand.

Of the 12 participants processed, seven are women and five are men. Half of the sample of litigants is in the most prosecuted specialties in the country: gynecology and obstetrics, general surgery, anesthesia, ophthalmology, and plastic surgery. The majority of women contradict studies biased toward the idea that female physicians are more likely than their male counterparts to harmonize the physician-patient relationship by adopting a more democratic style of communication, promoting collaborative relationships, discussing treatment more, and involving the patient in decision-making [16,17].

From 2010 to 2014, cases of medical error in the Superior Court of Justice (STJ) grew 140%. The increase between 2016 and 2017 was 49%, totaling 1,183,812 new cases in 2017 alone. In general, the most demanded medical specialties are gynecology and obstetrics (43% of cases), trauma-orthopedics (16%), plastic surgery (7%) and general surgery (7%). Concerning the parties involved, a curiosity: most actions are filed by female patients; on the other hand, the most prosecuted physicians are male (STJ) [18].

The literature confirms the complexity of the relationship between the quality of medical care and judicial claims of patients. Adverse events, with unwanted outcomes, do not necessarily incur litigation; however, legal and/or administrative proceedings may arise even if the standard procedure has been followed in an exemplary manner. Much research in several countries has shown that both cases have a significant impact on physicians' professional performance [15].

The threat of facing litigation and the perception that the healthcare system is unfair – unbalanced in favor of the patient, with legislation supporting the reversal of the burden of proof (Consumer Protection Code – art. 6, VIII) [19] generate immense reluctance in the medical profession to report failures and neglect. It deals with the error retrospectively, fixing the blame rather than repairing the system to prevent further problems. Even more advanced societies are still far from popularizing and universalizing the dialogue on the subject, which continues to be defensive, with few effective methods to recognize avoidable medical errors [2].

Patients, being increasingly insecure, find support for their intention to sue the physician in the media, since high-circulation vehicles such as *Veja*, *The New York Times* and *O Estado de São Paulo* blame the professional for the chaos of health in Brazil and in the world. It is disseminated, for example, that medical error kills more than cancer in Brazil:

- *A new study suggests that medical failures kill more than two people every 3 minutes in Brazil* [20]*;*
- *World Health Organization: Going to the hospital is riskier than traveling by plane – millions die every year from medical errors or hospital infections* [21];
- *Medical errors are more frequent, says research – study listed incidents between 2002 and 2008. There are cases of patients who had the wrong side of the brain operated on, and healthy organs removed* [22];
- *Physicians-specific insurance market is booming – at one of the carriers, the number of benefits sold to healthcare professionals has advanced 40% in 2 years* [23].

A study points out that, in 2015, medical malpractice was responsible for the deaths of 1,190 Brazilians a day, being the first or second cause of death in the country, including cardiovascular disease and cancer. In addition to lost lives, the study projects that adverse events consumed about 5 to 15 billion reals in Brazilian private health resources that year [23].

Medical malpractice cases in Brazil fall under the Civil Procedure Code [24], based on the Consumer Protection Code, which gives rise to the reversal of the burden of proof [25]. With this appeal, the accused must prove that there was no blame or negligence.

It is up to the plaintiff to prove only the damage and the causal link between them and the act. The gratuity of justice, often granted by the judiciary, still favors patients by exempting them from financial costs and procedural fees, as the lawyer also works with the promise of payment linked to the result of the demand. Thus, the physician or health service is condemned as a prize, which, if not achieved, does not pose a contrary risk.

Final considerations

In the light of ethics, it is concluded that the consequences of defensive medicine and its knowledge by patients tend to make the physician-patient relationship even more difficult, due to the reduction in patient's confidence in the professional. The lengthening of the deadline to diagnose the problem and seek a cure, in addition to punishing the patient who depends on the Unified Health System, substantially increases the cost of health services, both public and private.

The lack of incentive for mediation and conciliation in the hospital sector also favors defensive medicine, since the physician would feel more protected if each institution had an internal segment to deal with patient relationships. Of the researched group, most use defensive medicine to guard against prosecution for professional misconduct.

The frequency with which participants practice defensive medicine is relevant: 75% said they use this measure daily. It was also found that singles practice it less, while on shift practitioners practice it daily. Several factors contribute to this scenario, such as requests from patients, fears of physicians about possible liability claims, and the knowledge of a prosecuted colleague, which directly influences clinical conduct, as found in this study.

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Participation of the authors

Homaile Mascarin do Vale, the main writer of the article, proposed the structure of the full text and was responsible for the parameterized data. Maria Cristina de Oliveira Santos Miyazaki, a critic, has included changes and improvements in the rationale of the arguments.

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Recebido: 4.10.2018
Revisado: 9. 1.2019
Aprovado: 21. 1.2019

Research