

**Medical Malpractice Systems around the Globe:
Examples from the US- tort liability system
and the Sweden- no fault system**

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Abstract:

In this paper two main medical malpractice systems are discussed - tort liability system in the US and no-fault system adopted in OECD countries- most notably in Sweden. These systems were discussed from administrative issues, deterrence, financing, compensation, costs occur to parties involved in malpractice cases, quality of care and finally their impact on health care costs. Tort liability system is a “social insurance of a market society” where patients are compensated when the negligence is proved to be the cause of the injury, whereas no-fault system is a “social insurance of goodwill” where the patients are compensated without proof of providers’ fault. Tort litigation system has been criticized for being inefficient, unfair, and costly to both patients, health care providers and to health care system. No-fault system is introduced as an alternative to tort system and adopted by many developed OECD countries. Although the system is more efficient and less costly for providing compensation to patients, it limits the patient’s right to appeal, and it appears that there is a trade-off between deterrence and the lower litigation costs. In order to overcome problems associated with the tort litigation system, several methods are suggested as an alternative current tort system in the US. These methods are discussed briefly at the end of the paper to provide information on different methods so that the countries who are in a process of planning to set a medical malpractice system could tailor some of suggested methods to their needs. There is no perfect medical malpractice system when the costs of litigation, deterrence, quality of care, financing, and fairness of compensation are considered simultaneously. Therefore, countries should adopt medical malpractice system by tailoring their functions to the conditions and the needs of the country.

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Introduction

Medical malpractice begins with an injury or an adverse outcome to a patient occurring during the medical care. Patients and families suffer from emotional and financial burden of these adverse outcomes or injuries and seek compensation for their economic/ medical costs, and pain and suffering. But not all injuries result from malpractice or substandard of care. Medical malpractice arise from a pool of alleged medical injuries, some of which involve physician or hospital negligence or medical errors, and some are result of nature of care (e.g., complication of treatment procedures, new and complex medical technologies, lack of adequate equipment). As a result, not all injuries receive compensation.

There are two main malpractice systems, adopted by few developed countries around the globe. Tort¹ litigation system adopted in the US is a civil court system which determines the compensation based on negligence. Under the tort litigation, compensation is payable when the negligence of care is proved to be the cause of injury by the injured patient. The deterrence effect of the system depends on how physicians perceive the tort litigation system. The “no-fault system” adopted by many OECD countries- notably, Sweden, Finland, New Zealand, Quebec Canada, and Australia, retains the proof of negligence², but the compensation is based on proof of “causal” connection³ between treatment and injury. The system allows patients to be compensated without proof of provider’s fault or negligence. The deterrence objective is defined differently in the system. Thus, instead of deterring physicians from substandard care, the system encourages physicians to collaborate with the system in detecting what caused the

¹ By definition, tort is a wrongful act other than a breach of contract for which relief may be obtained in the form of damages or an injunction.

² The system does not ignore the conventional principle of negligence which serves as a prerequisite for compensation with respect to diagnostic injuries- which will be discussed later in the text.

³ The definition of causation will be given in detail later in the text. But under no-fault system the compensation is payable once the causation is established. The causation is rather a complex issue because many factors are taken into consideration such as the probability of adverse event of the outcome given, timing of treatment, lifestyle and health status of patients. For example, for drug related adverse outcomes, if a women under 40 years of age has a thrombotic illness and has been taking oral contraceptives, and she is neither a heavy smoker, not overweight, compensation is usually paid in an adverse outcome of using thrombosis. But a women is 41 years old, had used oral contraceptives for over ten years and has thrombosis a few days before a knee surgery, no compensation is awarded because the risk is increased by the operation.

injuries. Although the application of no-fault system differs slightly in each country, the basic idea is to eliminate fault or blame from the system of compensation, to increase the fairness by making the claim process simple so patients with meritorious cases could access the system easily and be awarded for compensable injuries occurred during the medical treatment.

Both tort litigation and no-fault systems share the same goal; compensate victims of injuries and deter substandard care, but apply different methods to increase effectiveness, and fairness of the system in compensating victims and deterring substandard medical care, while controlling direct and indirect health care costs of the malpractice system. The paper will evaluate the structure of these systems from effectiveness, compensation, administration, financing, deterrence/ quality of care, and health care costs perspectives. The tort litigation system was subject to two reforms in mid 1970s and mid 1980s in the US. The paper will compare the tort litigation system before and after reforms took place. Moreover, the paper will discuss briefly the alternative dispute systems suggested by medical associations, and health and liability insurers, as an alternative to current tort litigation system.

I. Structure of Medical Malpractice Systems

Tort Litigation System: Tort litigation system is defined under the laws of medical malpractice which are an application of tort law modified for medical liability. Tort law sets a regulatory base for people to seek compensation for an adverse outcome caused by the negligent behavior of other parties. Negligence is defined in law as “*a wrong which constitutes a ground of legal liability even though the fault upon which it is predicated is attributable to imprudence or to a lack of skill rather than to a conscious design to do wrong and notwithstanding the lawfulness of the enterprise in the conduct of which the negligence occurs*” (57 A. am. Jur.2nd. No.32). Thus a person can be held liable for negligence only where he has failed to perform the standard of care which the law requires him to observe. **Thus, by law, injury in itself confers no legal right and negligence in itself is not liability.** An adverse medical outcome does not automatically infer negligence. Negligence is the issue to be adjudicated. Once the negligence is found, law offers the patient a private, judicially enforced remedy- typically money- for

certain injuries. Monetary awards are intended to compensate patients or their families for their losses, and to deter negligent behavior by threatening providers to pay for these damages. Thus, under the laws of medical malpractice, physicians, hospitals, and other health care providers are liable for the adverse outcome of the medical care that results from their negligence.

No-fault system: Until 1975, victims of medical injuries were compensated under Swedish Tort system. In 1975, compensating victims of medical injuries came to political consideration to the extent which the current tort system was not easy to access (average 10 claims/year before 1975) and the treatment injuries were not defined broadly to be qualified for compensation (Oldertz 1986). Therefore, there was a need to base compensation on more objective grounds than was possible according to tort law, without necessarily ascribing the act causing the injury as negligent or wrongful. In mid 1970s, Sweden established a comprehensive social insurance schema to cover adverse health outcomes due to work related injuries/accidents or medical/drug complications. The social insurance schema covers victims- and the families- for medical expenses and wage loss due to illness or injury, regardless of cause. First social insurance - the security insurance- was established in 1974 to cover work-related injuries including work related diseases.⁴ After security insurance came into affect, the Association of County Councils (representative of county councils⁵) and a consortium of insurers started to negotiate introducing a comprehensive compensation system for medical “treatment injuries”⁶. After the negotiations the patient insurance or patient compensation insurance (PCI) was introduced in 1975 to provide supplementary⁷ insurance for medical injuries. Finally the pharmaceutical insurance established in 1978, to cover adverse drug related health outcomes.

The PCI is a voluntary insurance program providing compensation to victims of medical injuries without proof of provider fault. Patients, if not satisfied with the

⁴ Security insurance is based on a collective agreement among labor market organizations in which insurance conditions play a part. Under security insurance an employee cannot sue negligent employer, but paid compensation even if he is himself is responsible for the accident.

⁵ County councils organize and finance the medical care in Sweden and majority of physicians are employed by these councils.

⁶ Treatment injury is an injury or disease of a physical nature which arising in connection with interventions- surgical, diagnostic, etc.

⁷ that is added to compensation provided through other social and collective insurances.

compensation, retain right to pursue court. The PCI covered for injuries occurring in public hospitals and clinics run by county councils. Initially, the physicians employed by county councils were covered by the PCI. However, later on the PCI provided coverage for all private physicians, dentists and others. The PCI is supplementary to a general social insurance system and selects for additional compensation injuries that are caused by inappropriate medical care⁸. The PCI does not handle the discipline of medical providers. That responsibility is given to Medical Responsibility Board (MRB) (Patricia Danzon 1994). The responsibilities of MRB will be discussed in the deterrence section below

a. Definition of Compensable Injury:

Tort litigation system: Under the tort litigation, compensation is payable when the negligence is proven. Negligence is determined when the patient proves that the care/treatment has not met the standard of skill and care defined under the laws of medical malpractice. According to law, standard of care can be assessed by expert testimony⁹, medical texts and sometimes other authoritative materials such as Clinical Practice Guidelines¹⁰. The compensation under the tort litigation system does not only cover for the medical injuries caused by the negligence of physicians but also for injuries caused by patient management errors. These include: (i) negligence in diagnosis (fail to test when necessary, fail to do the proper test, or fail to test in proper time) or negligence in physician examination (making the wrong diagnosis or making the right diagnosis but selecting the wrong treatment), (ii) negligence in test results or negligent interpretations of findings; (iii) improperly communicating treatment decisions to the patients and (iv) iatrogenic reaction related to therapy or therapeutic misadventure.

For injuries to be compensated, a threshold set for patients to bring the claim within a time limit,- 2 to 8 years, depends on when the injury is discovered. In other words, many injuries are not discovered at the time of their occurrence, therefore, States

⁸ The adverse outcomes of disease or appropriate medical care receive only the basic social insurance, not compensation from the PCI.

⁹ That allows medical professionals to set their own legal standards of conduct by adopting their own practices. Although it may sound simple in conception, evidence show that it is difficult to implement in practice. Because both sides hire medical experts whose standard of care assessments contradict to each other in the court.

¹⁰ Clinical practice guidelines published by physician groups and the Federal Agency for Health Care Policy and Research,

amended the threshold based on the discovery rule which extended the threshold until after the discovery of the injury.

No-fault system: Under no-fault system, “compensable treatment injury” must occur during medical or health care activities and must be of a physical nature. The “health care” here refers only to health care with a medical connection that is directed to individuals in the form of treatment (Oldertz 1986). No-fault system set prerequisites and threshold for patients to file a claim. A claim is compensable if the patient have: reported sick for a minimum of 30 days (to qualify for compensation for non-economic losses), or been hospitalized for at least 10 days, or suffered permanent disability; or died. The threshold for a claim is set within three years from the injury becoming apparent. The maximum limitation to file a claim is set for ten years from the time when the injury was caused. When the claim is filed, the compensation is granted or denied on the basis of *patient eligibility* rather than physician’s fault. The patients’ eligibility for compensation is defined in the “treatment injury” criteria set by the patient compensation insurance PCI. Under the treatment injury, the compensation is based on existence of three factors; (1) there should be a direct connection between the health care and injury to the extend which the injury must occur during the medical treatment which is delivered through the health care system and the care must be given by a physician or health care provider employed in the health care system including privately employed physicians, dentists and others; (2) the treatment was not medically justified¹¹; (3) the injury could have been avoided if the patient had been treated as effectively in another way. Bottom line is that compensation is linked to the medical causation of the injury¹². Although the medical causation is a necessary condition, it is not a sufficient condition for compensation and the risks of standard of care are explicitly not compensable. In other words, the compensation will not be paid for an unavoidable injury or if the injury is a consequence of a risk assumed in order to avoid a threat to life of seriously disabling conditions of illness. More over, injuries occurring after the treatment are not normally

¹¹ When a physician decide the types of treatment method , he/she must consider how the illness should be treated effectively and all the associated risks of complications. If the decision is made according to accepted scientific knowledge, no compensation is made for a complication even if the outcome is very severe, and is completely unexpected or unforeseeable by the patient.

¹² For example a fall out of bed would normally be compensable but the outcome after a fall from a chair or while walking would depend on circumstances (Brahams 1988)

compensable. Five groups of injuries that are covered for compensation under the PCI are related to; (1) real treatment injuries; (2) injuries caused by diagnostic interventions; (3) injuries caused by incorrect diagnosis; (4) accidental injuries; and (5) infection injuries (Brahams 1988, Oldertz 1986) (more in the Annex II).

b. Determining compensation

Tort litigation system: Determination of compensation depends on when the case is settled by both parties. Compensation can be paid; (1) right after a complaint issued to the physician and the case was studied by the physician insurance company¹³; (2) after an arbitration process when both sides bring their cases and documents and determine the merit; or (3) after a jury trial. In many cases, both sides try to settle before case goes to trial. At this stage, the decision whether to offer and settle or whether to go for trial depends on each party's assessment of the probability of winning and the costs of going to trial. Both sides' assessments usually are based on how likely that a jury would find the physician or hospital negligent. Since US legal system is based on jury trials, how negligence is defined and determined by jury trials is a central to both settlements and jury decisions. When the case goes to trial, jury decides whether the negligence exists. If it exists, then the jury decides the compensation for the following damages:

- a. Direct economic losses: These are the direct costs incurred as a result of injury, such as health care expenses, loss of earning, and other expenses.
- b. Non-economic losses: These are assessed based on pain and suffering and the jury grant remedies for pain and suffering patient or the family have due to adverse outcomes of medical treatment.
- c. Punitive damages: These are assessed based on physicians' practice whether his/her negligence was intentional, malicious, or outrageous with a disregard for the patient's well-being.

When deciding compensation, jury may or may not take into consideration the other collateral sources such as health or disability insurance policy that would compensate victims for the adverse outcomes of medical care (details of the tort law specifying collateral sources given in the Annex I).

¹³ According to OTA, approximately 80 percent of medical malpractice claims are settled through private negotiations between the physician's insurer and the injured patient (plaintiff)..

No-fault system: The basic social insurance schema cover citizens for medical expenses and wage loss due to illness or injury, regardless of cause. Compensation for medical injuries is determined after collateral benefits patient receives from other insurance schemas. are deducted. For example, medical expenditures are covered under patients' health insurance schema and the PCI deducts these expenditures from the total compensation. The compensation for economic damages is paid, in essence, according to tort law by assessing damages for personal injury. The economic losses are usually compensated fully (up to 90% of wage losses- the amount reduced to 75% in 1996) (Studdert et.al, 1997). Non-economic losses were determined based on age of patient, and severity of injury and the awards are standardized. Thereby the outcome is more consistent and predictable. Compensation for non-economic damages paid periodically not lump sum. Compensation for pain and suffering has an upper limit which is updated from time to time.

c. Administration

Tort litigation system: Administrative procedures of medical malpractice system (e.g., filing a claim, proving negligence, settlement) are defined under the laws of medical malpractice. Medical malpractice- from initiation to verdict- usually takes several months- if not years. The decision to seek compensation is usually made in consultation with an attorney. Attorney's fee in the medical malpractice is based on contingency fee basis and paid out of the patient's award- some states have limited attorney fees in order to reduce incentives to bring claims. Before the case is initiated, patient's lawyer hires a medical expert to screen the medical records¹⁴. When a case is initiated, the case enters into "information exchange" process. This is done either voluntarily or under the court "discovery" procedures which require both sides (plaintiff (patient, his/her attorney) and defendant (physician, physicians' insurance carrier, and physician's attorney) to provide relevant information to each other. The aim of this process is to assess the merits of the claim- whether it is frivolous or not, and to provide for early settlement for meritorious cases. When the parties cannot settle during the

¹⁴ Many malpractice claims go no further than pre-trial inquiry, when the medical record can be screened by the patient's attorney using hired medical experts. About 37 percent of claims closed nationwide in 1984 were dropped or settled before a legal suit was even filed in a court, and 36 percent resulted in a payment to the patient (US Congress General Accounting Office, Medical Malpractice Characteristics of Claims Closed in 1984, GAO:HRD 87-21).

discovery stage, the case usually goes to court. A jury listens both sides argument and the verdict is based on evidence presented to court, but the level of award, especially for non-economic losses often involves in jury's feeling of being able to do something for the injured patient.

No-fault system: The claim process starts with a need for a lawyer¹⁵ and involves filling in a form. No-fault system made the filing for claims simple for patients and both physicians or patient counselors in hospitals help patients to file the claim forms. In the system, contingent fees for attorneys are banned. When a patient decides to take the case to court, he/she more likely bear her/his own legal costs. Until, 1995, the claims were sent to medical assessor at the patients insurance company, and administered by the monopoly of consortium of insurers. In 1995, the responsibility of administering claims were taken from consortium of insurers after Sweden joined to EU. The operations relating to treatment injuries within the county council's health care system were consolidated into a single company, County Council Mutual Insurance Company (CCMIC) which was established by the Federation of Country Councils (FCC)- an organization that represents Sweden's country councils. The CCMIC and two health insurance companies jointly formed and owned a company PSR, to administer the claims management functions. The PSR decides the claim on the basis of written notes and medical reports provided by the injured patient and the physician- occasionally, the victim was called to give more information on medical condition or prognosis. The decision of the PSR is sent to patient by mail, and if the compensation is rejected and the patient does not accept the PSR's decision, he/she can appeal to a Patient Claims Panel that includes four representatives- two from patient and provider side-, and one medical expert appointed by the government. Although the Panel's decision is not binding, it overrules the PSR's decision. If the patient is not satisfied with the Panel's decision, the patient may further appeal to Swedish Court of Appeal. This is an arbitration process and the Court's decision is final or binding. Both Panel and the Arbitration process are usually closed to public and the evidence is usually submitted in writing. The process from initiation to court decision takes fairly short- in six months.

¹⁵ In theory, an injured victim does not need an attorney until he/she is dissatisfied with the decision of the Patient Claim Panel. But evidence show that victims do not feel comfortable starting the process without a lawyer

d. Financing

Tort litigation system: The direct financing of administering the malpractice system is borne by liability insurers. Since all physicians are insured, generally they do not bear the costs of a malpractice suit directly¹⁶. But physicians indirectly finance the system through their premiums. In many cases, the insurance carrier pays for the full award, but in some cases, if the award exceeds the amount specified in liability policy, the physician is liable for paying the rest. The costs of administering medical malpractice depends on both parties' decision on how far they would like to pursue the process –filing complaint only, settling in the arbitration process, or going to court. Part of the financing of administering the malpractice system is indirectly borne by the patients by paying for physicians' defensive medicine practices.

No-fault system: The system is mainly financed by county councils and administered by the patient compensation insurance PCI. County councils raise their contributions through taxation (income taxes) and contribute to the PCI on a per capita basis. Part of PCI is also financed by a flat nominal charge for outpatient visits to general practitioners, and the premiums paid by private physicians and dentists. The liability premiums set by the PCI is low and not based on experience based. As a result, the financing medical injuries are passed through directly in county council taxes, rather than being allocated as a cost to individual hospitals and clinics.

e. Deterrence

Tort litigation system: It is expected that the judicial remedies for negligent care give signal to physicians to deter from negligent or substandard care. Moreover the non-pecuniary costs of litigation process on physicians (time lost during court trial and pre-trial file preparation, humiliation, loss of reputation, depression etc.). would also give strong signal not to practice substandard care.

Evidence is not clear whether the deterrence impact of tort litigation of malpractice system achieved its objectives on reducing the frequency of adverse outcomes and changing physicians' practice behaviors towards more standard of care. Physicians claim that the current system encourages them to practice defensive medicine-

¹⁶ Although experience-rating of physicians is rare, financial sanctions do occur in physician-owned companies.

ordering unnecessary and costly procedures to minimize a chance of law suit, to the extent in which the defensive medicine is considered one of malpractice factors increasing the health care costs. The term “defensive medicine” is defined as physicians’ ordering of tests and procedures or avoidance of high-risk patients or procedures “primarily (but not necessarily solely) to reduce their exposure to malpractice risk (OTA, 1993). Under this definition, when physicians run extra tests, spend more time with patients as part of defensive medicine, then they are practicing positive defensive medicine as long as these practices are beneficial to patients. But when they avoid high risk patients or procedures, or order tests and procedures to the extent which these do not add any benefits to outcome, then they are practicing negative defensive medicine. In sum, defensive medicine could lead to achieving goals of deterrence as well as those that are costly or wasteful.

In the tort litigation system, the malpractice insurance premiums in a geographic area or in a medical specialty also signals physicians to deter from substandard care. Thus the premiums may be a good overall proxy for the amount of pressure that the malpractice system puts on physicians and hospitals to change their behaviors.

Since the premiums are considered one of the deterrence factors, it would be useful to discuss the structure of medical insurance premiums, actuarial calculations, and types of policies next.

Deterrence impact of physicians’ liability premiums:

(i) Medical malpractice insurance:

Physicians purchase insurance policies against malpractice claims and the monetary costs of awards settled or granted by a jury verdict. The premiums paid by physicians depend on various factors, such as where they practice, age, gender, specialty or sub-specialty of practice, years in practice and attendance at risk management training sessions (Yurekli 1999). Malpractice premium of a physician is almost never based on his/her specific experience in malpractice claims. Because malpractice experience for an individual physician is rare and unpredictable that past experience is considered as a poor indicator of future claims. Although experience-rating is rare, financial sanctions do occur in physician-owned companies. But the current premium system is still

premature associating individual physician's premium or malpractice cost with the changes in his/her practice behavior.

(ii) Determining liability premiums:

Insurance companies face an uncertain risk in medical malpractice claims. Since the frequency of claims is unnoticeable small compared to high severity, insurers do not base rates on a physician's claim history. Instead, they rate physicians primarily by specialty. Each specialty pays premiums based very closely on its own experience and with less spreading of risk among specialties. Number of physicians in each specialty and number of physicians who provide risky services in that specialty would affect the premium rates for physicians practicing in that specialty. For example, OBGYN is considered to be high risk group specialty. It is important to know total number of obstetricians/gynecologists as well as how many of them practicing obstetrics in order to determine premium rates.

Insurance companies' key problem is to estimate what the costs will be and hence what premium is needed to cover them. To do so, actuaries first assemble historical data on claims experience with which they feel comfortable. Then actuaries predict what the losses will ultimately be for each of the past policy years when all possible claims are fully run off. They call this "developing" the loss experience to "ultimate". Using these ultimate values, actuaries next calculate how these developed losses related

Box 1: Liability premiums of physicians

Total paid liability premiums from physicians and hospitals were estimated to vary between US\$205.4 and US\$370.6 million in 1970. In New York State average physician paid US\$1,000 for liability coverage in 1965. Physicians did not face any difficulty in getting insurance. When the malpractice suits against physicians started to increase in the mid 1970s, physicians face high liability premiums or difficulty of getting a liability insurance. The average premium paid by physicians in 1972 was US\$1,611 in New York State, US\$3,400 in Florida, US\$2,506 in Los Angeles, US\$1,475 in New Jersey and it rose roughly US\$15,000 a year per physician nationwide in mid 1980s. In 2002, a survey of physicians show that physicians in Kentucky faced an average 78 percent increase in their annual premiums. Emergency room physicians reported 204 percent increase, orthopedists 122 percent, and OBGYN 64 percent increase in their liability premiums.

to premiums as loss ratio (losses as a fraction of premiums) or pure premiums (amount of premium needed to cover one “exposure” or base-rate-class physician). Then they “trend” loss ratios or pure premiums into the future period to be covered by the premiums being set. Having predicted losses as loss ratios or pure premiums, actuaries finally determine what premium is needed to cover them, as well as other costs that must be loaded onto losses for the insurer to remain in business. It is important for insurance companies to identify high and low risk physicians in advance to estimate their loss ratios. If the number of high risk physicians outnumber the low risk physicians in their pool, their estimated physician premium rates will naturally be higher. Although insurance companies set premiums based on specialty, there is a general trend, especially in the US, among insurers to apply experience-based rates to their enrollee physicians since mid 1990s.

It is important to keep in mind that insurers increase their revenues both from liability premiums and also the returns they receive by investing these premiums in money-making assets- notably in stock market. So the premiums were determined based on investment potential of these premiums as well as the need to cover for future losses of the insurers. In other words, when the premiums vary from year to year, the reasons may have nothing to do with changes in the level of malpractice claim activity¹⁷.

(iii) Types of medical malpractice liability insurance :

Physicians in tort liability system face two types of liability policies. Occurrence base professional liability and claim base. Occurrence base professional liability covers physicians since the inception of medical malpractice coverage. An occurrence policy covers physicians against all claims that may result from care and services provided while a policy is in effect, without regard to the date an actual claim is made. Under the occurrence base policy the physician is protected from all liabilities that may occur in the future. Toward to mid 1970s, insurance companies started to change the occurrence base liability coverage to claims base liability, and currently, occurrence base policies replaced with claims made policies. The claims made policy covers a physician only claims which

¹⁷ Thus the premium in any year approximates the amount that must be invested (at the expected interest rate) to pay off losses as they occur in the future, meet operating expenses, and repay the investors in insurance companies for the risks they bear. As the interest rate expected from capital investments rises and falls, premiums are adjusted accordingly to assure a competitive rate of return to the investors. Therefore as the interest rates vary over time, the premiums will too .

occur and are reported to the physician's insurance company during the coverage period. The difference between claims made and occurrence base policies, in occurrence base policies cover physicians indefinitely for future claims, whereas, claims made policy covers as long as the policy is in effect. In the claims made policy, physicians require "tail coverage" after policy is not in effect, while, occurrence base policy includes unspecified future liabilities in the original premium price. The claims made policies shift the risk associated with the future claims from the insurer to the policy holder. Under the claims made policy, insurance companies raise premiums as the frequency and severity gets worse and keep premiums stable as long as malpractice market looks stable.

No-fault system: The no-fault system is designed to provide compensation without regard to deterrence. When the injured patient is compensated the individual physician does not suffer from blame, financial loss, or reputation loss as a result of the successful claim. Under this system it is believed that it is possible to obtain a fairly accurate idea of those risks which can be connected with different types of treatment methods. It is assumed that physicians and other medical providers will be more inclined to give information regarding complications, as this will influence eligibility of compensation for the patient. Experience show that since the system does not look for someone to blame, the physicians have become much more open to providing information concerning what caused the injury then when malpractice alone justified compensation. The information sent to insurer is confidential and in principle, it is not released to the authorities or to private persons. In other words, there is no connection between deterrence and the compensation. The discipline of medical providers is handled by Medical Responsibility Board (MRB). Patients can file claims with the MRB, which, following investigation, may result in a reprimand or a warning to the provider, but this has no financial consequences for the physician or the patient. Therefore, the MRB does not have deterrence effect on physicians' practice behaviors. In order to maintain physicians' full compliance and collaboration for the patients' compensation, the PCI and MRB does not share information with each other about physicians, injuries, or their decisions. Decoupling of compensation and deterrence is the key issue to maintain physician cooperation in patient compensation through the PCI.

Malpractice insurance liability premiums under no-fault system: Under the no-fault system, it is mandatory for health care providers to have a liability insurance. A consortium of insurers- consist of two large insurance providers in Sweden- provide liability insurance to physicians. As discussed in the financing section, county councils pay premiums to PCI which are assessed on a flat per-capita basis for each county council-that is ultimately funded largely through the income tax-, regardless of claims experience. Private physicians and dentists contribute to PCI through premiums and are covered by an individual policy by the PCI. These assessments are adjusted retroactively as costs are incurred, including full pass-through of the insurers' expenses. Thus the functions of the consortium of insurer are purely administrative to the extent which the consortium of insurer retains none of the underwriting and risk-bearing functions that are fundamental to liability insurance in competitive insurance markets¹⁸ (Patricia Danzon 1994).

f. Effectiveness:

The effectiveness of the malpractice system in compensating victims of medical injuries depends on how closely the set of injuries eligible for compensation matches the set of compensated victims.

Tort litigation system: The financial burden of pursuing medical malpractice is very high for victims of medical care under the tort litigation system, and the burden increases as the process takes longer- in the US, only 10-12% of total claims reaches to verdict by court. More over, when the case reaches to court, there is no guarantee that the jury will award the patient- in mid 1970s, every four out of five cases ended in favor of defendant, and if awarded, it is not clear whether the award will cover the victim's litigation costs. Because of its lengthy and costly process, many victims with meritorious case do not file claims. For physicians and the insurers, the outcome of the jury verdict is

¹⁸ Finland who modeled insurance schemes on Swedish lines, also requires all health care workers to have a liability insurance. When a party is uninsured and has a claim against, then the patient insurance association pays the patient and then collects the increased premium from the party- ten times the normal premiums. Government pays 1.5% of total public liability premiums; the rest is shared by the health district in proportion to population. For health care organizations and companies: the premiums for companies are calculated as % of salaries, vary between 0.15% for an organization offering health care for employees, and 0.62% for a private hospital where operations are done. Private sector (individuals) pay annual premiums. Pharmacists carry individual professional indemnity cover but are not part of the scheme. In an adverse event, patient insurance association would pay compensation to patient and reclaim it (or a proportion) from the pharmacist's insurers.

not predictable and jury often grants higher awards for non-economic losses. Effectiveness of tort litigation system has been criticized and many offered reforming the tort litigation system or suggested alternative methods to replace tort litigation. The reforms and the alternative methods will be discussed at the end of this section.

No-fault system: In order to increase the chance of detection of medical error, and compensate the victims of adverse outcomes, no-fault system eliminated fault or blame from the system of compensation and made the process of filing claims easier for injured patients. When PCI established in 1975, the number of claims filed increased from 682 in 1975 to almost 5000 in 1985, but dropped to an average 3000 per year from 1986 to 1991. In 1992, over 5000 claims were filed. During 1975-1986, 55% of claims received compensation. The proportion of received claims decreased to 18% during 1986-1991 but increased to 40% in 1992. (Patricia Danzon, 1994, Studdert et.al., 1997). In 1992, the claims frequency was 21 per 100 physicians which was 50% higher than the claims filed against physicians in the US –13-16 per 100 physicians. (Patricia Danzon, 1994). Over 80% of PCI insurance premiums reaches patients as compensation compared to roughly 40% of the US malpractice insurance premiums (Danzon 1994).

Table 1: Swedish no-fault system claims and compensation, 1975-1991

Number and cost of claims under the PCI		
	Jan 1975- July 1986	July 1986 Dec. 1991
Total Claims	44,647	18,243
Resolved	40,306	18,666
Number compensated	22,252	3,354
% of resolved	55.2	18
Denied compensation	18,054	15,312
% resolved	44.8	82
Total cost of payout (SEK)	478m	380m
Costs per paid claim (SEK)	21,226	113,298

Source: Oldertz (1986, p. 655-656), Danzon 1994

g. Medical malpractice systems and health care costs

Tort litigation system: There are essentially two ways in which malpractice law alters health care costs; directly through the costs of administering the malpractice system; and indirectly, through the effects of the malpractice system on physicians

behavior. The direct costs of administering the malpractice system are borne by health care providers to the extent which they pay the system through malpractice insurance premiums. In 1991, the total costs of medical malpractice premiums was US\$ 4.86 billion which accounted for 0.66 percent of total health care spending in the US (excluding malpractice costs of self insured hospitals which is estimated as 20 to 30 percent of total premiums). When self-insured hospitals premiums are added into estimation, the direct cost¹⁹ is still less than 1 percent of total national health care expenditures (OTA 1993). Under the tort litigation system, the direct costs of medical malpractice, measured by insurance premiums paid by physicians, hospitals, Health Management Organizations(HMOs)- type of health insurance-, and other providers, account for less than 1 percent of the health care budget. However, it is believed that the hidden cost of medical system is the practice of defensive medicine. Many physicians in high risk specialties claim that they practice defensive medicine by ordering more tests, spending more time with patients and keeping records, or avoiding high risk patients or sending them to specialists. Under these behavior changes, the defensive medicine practices could be beneficial to patients, though potentially costly.

No-fault system: Under no-fault system, the frequency of claims filed per physician is estimated at least 50 percent higher than the tort litigation system in the US. The PCI costs roughly \$2.38 per capita or 0.16 percent of health care costs in Sweden- there is more than 10 fold difference between US costs. Administrative overhead is estimated as 18 percent of total PCI premiums²⁰, compared to roughly 60 percent in the United States (Patricia Danzon, 1994, Studdert et.al, 1997).

Swedish no-fault system also faces pressure from costs of no-fault system and tries to keep the cost manageable. For example in 1975, PCI compensated 90 percent of income loss for injured patients, that reduced to 75 percent in 1996.

¹⁹ In that estimation, the health care institutions in-house costs of attorneys whose job it is to oversee the institutions legal affairs, and also the time and personal funds physicians spend in defending themselves. Evidence show that physicians who had been suit spent on average 6 days working on the case. About 6 percent spent out of pocket money to retain their own lawyers and 2 percent paid their own money to settle claims brought by patients.

²⁰ There are several reasons for low overhead costs of PCI. Among them, the PCI shifts costs and collects economic loss from other insurance schemes. High proportion of total compensation paid by the PCI is for the pain and suffering which are standardized so it is predictable how much patients would receive for noneconomic losses. When compared to US, the compensation for noneconomic losses are modest.

II. Alternative methods and reforms of tort litigation system in the US,

Current tort liability system has been criticized on the grounds that the system costs too much and is an inefficient and unpredictable means of compensating patients who faced adverse health outcomes by substandard medical care. Numerous medical malpractice reform provisions have been proposed to the extend which reforms focused exclusively on strategies that would change the way malpractice claims are handled in the legal system “tort reforms”. Some reforms suggested to stay in tort liability system but change in some of its legal rules, and some suggested broader changes in decision of malpractice claims. Some have suggested to eliminate the fault-based system and create a new system of compensating victims of adverse outcomes.

Tort Reforms: Patients’ decision to file a complain or sue for compensation under tort system depends on several factors including severity of injury, cost of litigation (net of legal fees and other costs), expected return from litigation, and most importantly the judicial system which plays a significant role in discouraging/encouraging victims to seek compensation. Before 1970s, tort environment was considered pro-plaintiff (please see box 2 and 3 for more details), due to the rapid increase in frequency and severity of medical malpractice claims and the accompanying increases in liability insurance premiums.

Tort system faced reforms in mid 1970s and 1980s to the extend which the reforms focused on altering the financial incentives to sue by reducing the monetary size of lawsuits and changed the legal rules of the system to discourage lawsuits, regardless of

Box 2: US experience on medical malpractice claims in 1970s

Although legal environment is considered as pro-plaintiff before 1970s, the frequency of claims were much lower than after late 1960s to mid 1970s. It is well documented that until 1970s medical malpractice suits are very rare events. In 1950s, physicians face one claim per 100 physicians per year and until late 1960s claims frequency have risen dramatically. Physicians face one claim per 37 physicians by 1968, in 1970 an estimated 12,000 incident medical malpractice claims were filed but one third of them were warning files rather than true claims. Total compensation to patients was estimated to be US\$80.3 million and median payment for those incidents was US\$2,000 (in 1970 dollars) or average indemnity for successful claims paid for US\$40,000 in 1970 (in 1990 dollars).

The increasing claims frequencies during the late 1960s and early 1970s raised questions about the causes behind these increases. The increasing complications for treatment procedures, new medical technologies which raised the risk of serious injuries, and the specialization of physicians which broke down the traditional relationships of trust between patients and physicians were among the potential causes of increasing number of claims.

In 1975 claim frequency reached its peak one claim per 8 physicians per year and by mid 1980s it decreased to 1 claims per 10 physicians. Average indemnity rose to US\$150,000 by the end of 1980s.

their merit. In general the intention of the reforms were not only to affect the malpractice environment by altering frequency and severity of claims, but also to limit the costs of litigation and avoid the uncertainties of future claims. However, the tort reforms never addressed how to increase the effectiveness of tort system by increasing patients access to court, and compensating all meritorious claims.

Patients' access to litigation system and the compensation schema was affected by limiting malpractice awards (caps on damages, collateral damages), limiting access to courts (e.g., pretrial screening, statutes of limitation rule), and by changing the legal rules for determining physicians negligence (e.g., establishing legal standard of care by practice guidelines).

Box 3: Tort litigation environment before reforms

I. Legal environment was considered as pro-plaintiff due to lower litigation costs; and higher compensable damages because the other collateral sources –life insurance, work compensation insurance etc. was not admitted in the court and not considered in the award. Injured patients recovered damages from a defendant- physician or physician's liability insurance carrier- even if most of the patients' economic losses were reimbursed by insurance or government benefits.

- a. Patients' litigation costs were lower since the attorneys bear all the costs. Thus, the patient neither paid up front costs for filing the suit nor accepted any financial risks if the claim was found frivolous or the suit was lost²¹.
- b. Patients were not required to present expert witness testimony regarding the standard of care and causation of the adverse event. . It was sufficient to submit medical text as evidence of standard of practice as an expert testimony²².
- c. Patients were compensated a single lump sum for the damages which covered both current and expected future losses incurred.
- d. Physicians could have faced medical malpractice claims long after the injuries occurred because there was no time limits for patients to filing a claim against physicians after an injury occurred

The reforms can be classified into three categories for their aim.

First type of reforms aimed at limiting patients access to the courts by discouraging victims to proceed claims through raising the transaction costs of bringing claims. These reforms include statutes of limitations that brings time limitation for filing a claim. An injured patient cannot access the litigation system after the time limit

²¹ It is important to point out that on one hand this created difficulty on patients to find an attorney for the malpractice cases, but on the other hand attorneys may get attracted to these claims since there was no limitations on the attorneys' fees and as a result attorneys can receive 30 to 50 percent of the patients' damage awards as a fee.

²² That put burden on physicians to prove that negligence was not the cause of adverse event

exceeds. Other reform which limits access to court is the use of pretrial screening panels which requires an expert panel (consists of a physician, or other health care worker, a legal professional- retired judge or lawyer) to review both sides cases before injured patient/attorney decide whether or not to proceed the case to court. Limiting attorney fees may discourage lawyers from taking on meritorious claims whose expected financial returns are low.

Second type of reforms aimed at reducing the number of claims by changing the litigation process or by reducing incentives to file claims. The legal doctrine of *res ipsa loquitur* (the thing speaks for itself) was not allowed to be applied for medical malpractice cases since it reduced the need for expert testimony. Under this doctrine, the physician was responsible to prove that negligence did not occur. After abandoning *res ipsa loquitur*, victims were given the responsibility to prove that negligence occurred. The reforms also brought penalties for both sides if any side brings fraudulent, non-meritorious claims or defense. And the lawyers' were given financial penalties if they bring such cases. Some reforms allowed collateral sources rule to be included in the calculation of compensation. Under collateral source rule, the patient's award will be reduced by the amount of reimbursement patient receives from other sources, such as government benefits or insurance that may cover her/his losses. The most direct way of discouraging claims is to impose caps on damage awards. Some states brought caps on non-economic damages²³, some brought caps on both non-economic damages and economic losses²⁴.

Third type of reforms aimed at reducing the probability of a victim's winning chance by changing the legal rules for determining physician negligence. The reforms mainly aimed to reach quick resolution to reduce costs of litigation for both sides, and to reduce possibilities of unpredictable awards granted by juries. Many of these reforms suggested changes in current tort liability system to the extend which the provisions

²³ 14 states place limits on noneconomic damages which range from \$250,000 to \$1,000,000. There were some exceptions.

²⁴ Losses for non-economic damages are very difficult to quantify with remedies and juries have no clear guidance how to determine them. Evidence show that emotional desire of the jury to do something for the victim often causes unduly high awards (Bovbjerg, Sloan, Blumstein "Valuing life and limb in tort: Scheduling "pain and suffering" NWUniversity Law Review 83(4), 908-976, 1989

would alter legal issues and costs associated to patient's access to litigation system and compensation schema.

B. On-going discussions on suggested reforms

I. Alternative dispute resolution (ADR). This reform can be categorized as procedural reforms. It proposes replacement of the trial and jury system with a less formal process involving professional decision makers. It attempts to reduce the costs of resolving a malpractice case, facilitate quicker solution of claims, create more rational and uniform damage awards, and or decrease the adversarial nature of the litigation process (OTA, 1994). The main goals of ADR are: (1) to use a more experienced decision maker who is expert in the area of controversy than lay jury; (2) to reduce the costs of resolving a dispute; (3) to eliminate the role of "overgenerous juries"; (4) to reduce the costs of resolving small claims; and (5) to efficiently screen out non-meritorious claims (Metzloff. TB. 1992). The arbitration is the form of ADR that has been adopted by many states in the US but in malpractice cases the ADR has not been used extensively.

a. **Voluntary Binding Arbitration.** This is an alternative to the litigation process. Arbitration is meant to reduce litigation costs for both parties. It is a form of dispute resolution that is conducted privately by the parties to the dispute and an impartial third party, who is often an expert in the area. The arbitrator(s) hear both sides evidence and reach a decision in lieu of a judge or jury. Generally the decision of the arbitrator is binding and final upon the parties, although some arbitration procedures permit unsatisfied parties to seek subsequent judicial resolution of the dispute. Settlements in an arbitration process generates lower payments for victims compared to the payments granted in court²⁵.

II. American Medical Association proposal which has not been adopted by any states yet. This requires legislative action. It proposes that State medical board would be established to discipline physicians and resolve medical malpractice cases. Under this proposal, the filing claims will be simple and a legal counsel will be provided for poor patients who cannot afford a counsel. The proposal requires that the State boards will be

²⁵ In 1974, average award received from arbitration was \$26,000, compared to \$120,000 average award at verdict (Danzon P. 1985).

given authority to change some of legal rules such as change in definition of the standard of care, limit attorney's fees, and use the guidelines to promote consistency in damage awards. More importantly, the proposal suggest to use medical malpractice system to monitor physician quality by tying medical malpractice to the physician licensing and bringing a disciplining process. Consumer advocates expressed concern that State Medical Licensing Boards have little experience in disciplining physicians with respect to their medical competence and worry that the State Board will have the ultimate decision maker on quality check (OTA 1993). This proposal was not being realized and not being adopted yet in the US. Therefore i no impact known on patient's compensation.

III. Enterprise Liability: This proposal is suggested as a medical malpractice reform that might be incorporated into a larger health care reform initiative. It suggests fundamental change in malpractice system. It eliminates physician's liability and places the liability on the health care organizations in which the care was given. There are three main goals of enterprise liability; (1) to control and improve quality under the provision of health care; (2) reduce premiums of physicians; (3) to simplify the conflict resolution of malpractice. This is not a new concept and some health organizations that employ physicians directly apply some of the ideas by bearing legal responsibility for their staff physicians. According to proponents of enterprise liability proposal, there are three potential benefits. First institutions will have incentives to update and expand their quality assurance and risk management programs by incorporating risk management activities for doctors practicing under their plans. Under this proposal, the quality of care will be controlled under risk management programs and quality assurances, and the liability premiums of physicians will base on experience "experience-rated" at the institutional level. The main concern with this proposal is that the enterprise liability would mean the end of physicians as "*independent agents*" under the law in the US.

Table 2: Comparing types of medical malpractice systems and suggested reforms

	compensation scheme	Administrative costs	Benefits awarded	Equity in access to compensation	Contribution to quality control/deterrence	Financing	Effectiveness
Tort system	1. out of court settlement 2. court verdict	Costly for both parties.	Unpredictable, higher payments especially for pain and	Difficult, costly to prove negligence, difficult do	Yes by judicial remedies, premiums, humiliation, defensive	Indirectly by liability premiums, directly. By Insurers	Costly, lengthy, unpredictable

			suffering	access the system	medicine,		
No-fault system	For injuries fits into injury treatment criteria and avoidable. PCI is liable	Minimal, no litigation costs.	75% of economic-damages paid, non-economic damages payable for physical injury	Easy to file claims, no need a lawyer if not appealed to court,	Deterrence is not an issue. Control amount of indemnities to detain health care costs.	The county councils, liability premiums of private providers and co-payments for outpatient services.	Predictable awards easy access to system, less costly and short decision process
ADR	Informal process, with professional decision makers through arbitration	Less than tort litigation system	Suggests uniform damage awards, awards usually lower than court cases.	It is the process to detect and eliminate frivolous cases before proceeding further	Low punitive and non-peculiar costs to physicians, but does not encourage physicians not to practice defensive medicine	Physicians' insurers through liability premiums	Arbitration process is Not very effective in the US since many dissatisfied take the case to court
AMA	State medical board will decide	Minimum	Only for economic and medical costs	High since legal counsels will be provided for poor and easy filing claims	Will bring disciplining process by tying claims with the licensing	N/A	N/A
Enterprise	N/A	N/A	N/A	N/A	Quality control through risk management programs, experience-based premiums	Health care organizations liable, experience-based liabilities and taxes	Yes, very high

Conclusion

The paper provided detailed information on two medical malpractice systems, - strict tort liability system adopted by the United States and – no fault system adopted as an alternative to tort litigation system by Sweden. The purpose of the paper was not to compare two systems or discuss their pros and cons. Therefore the countries who are in a process of adopting medical malpractice system, should evaluate which system fits better for their needs by taking into consideration their current judicial, social insurance and

health care system. The tort litigation system was criticized for its inefficiency in compensating victims of medical injuries due to its lengthy and costly procedures; making difficult for patients to access to court; and its hidden costs on health care system through encouraging health care professionals to practice negative defensive medicine. Tort system faced two major reforms in 1970s and mid 1980s, but both reforms did not address how to increase the efficiency of the system by increasing patients access to court and compensating all meritorious claim. Instead both reforms made it difficult for patients to file a claim regardless of their merit. Although some alternatives are suggested, it is not clear how they can be implemented given the current judicial system and the rights given to patients by the federal or state constitution. For example, many states implemented arbitration process but due to patients' constitutional rights to sue, the arbitration process mainly stayed as voluntary and the decision is not binding- and in some states, the decision is not allowed to be submitted to court. Some states tried to cap the damage awards, but it was against to individual state's constitution, therefore, it was not implemented.

Although no-fault system reduces the lengthy and costly procedures, and compensates victims of medical injuries without putting any blame on health care providers, when examined carefully, this system also has its own barriers to overcome. For example, the information generated and deterrence signals sent by the PCI and MRB combined are surely less than in the US tort system. Therefore, it is not clear how the system deters physicians practicing substandard care and whether or not any loss in deterrence incentives outweighs the reduction in litigation costs. Under the no-fault system, efficiency of insurance system is not achieved- where the availability of insurance affects behavior and hence the number of injuries and claims. In competitive insurance market, insurers have incentives to invest in loss prevention and claims control if the marginal savings justifies the marginal overhead cost. Lets put it that way, if an insurer pays for every claim filed at the amount requested by the patient, overhead expense would be minimal, but the benefits would be high and the overhead ratio would be very low. But the insurer invests and provides loss prevention and risk management services to insured health care providers, and litigates claims that appear frivolous, this would lead to higher

overhead, lower loss payments and a higher overhead percentage. Meanwhile, the efficiency may increase if these investments in loss control reduce the number of injuries and frivolous claims. Therefore, if a country wishes to adopt no-fault system, retain deterrence and operate competitive liability insurance market, then it should not expect to have lower overhead costs. The PCI shifts most economic loss to other social insurance through collateral sources, and offers modest payments for noneconomic loss but limits the patients' rights to pursue for litigation by reducing their probability of appealing to the court. For example, patients' compensation criteria is defined in some detail in writing and the decision is administered by the PSR. Patients have very little opportunity for redress against the PSR's decision. Patients can appeal to the Advisory Panel and to arbitration or file a tort claim, but they probably would have difficulty obtaining a medical expert; and they would bear their own litigation costs. Therefore the system reduces incentives to pursue in litigation. As a result, the minimal litigation expense incurred by patients may reflect low expected payoff from appealing to court, rather than a high satisfaction with the PSR's decision.

As a summary, there is no perfect malpractice system when the cost, deterrence, efficiency and fairness of compensation are taking into consideration simultaneously. Countries may need to trade-off between costs of litigation and the other factors of malpractice market such as deterrence, competitive liability insurance market, effectiveness or fairness of compensation. . When tort system is in issue, then countries should evaluate their current litigation and judicial system, constitutional rights of citizens, before implementing user friendly tort system. When no-fault system is in issue, then comprehensive social insurance schemes are necessary to be put in place before implementing the patient's compensation insurance for medical injuries.

Annex 1: Types of Medical Malpractice Tort Laws

Statutes of Limitation Rule: The statute of limitation is a legal limit on the time a patient has to file a suit. If a patient does not file a claim during the defined time period, losses the right to file a claim. A discovery rule can be defined under the statute of limitation rule. Since many injuries are not discovered at the time of their occurrence, the discovery rule requires that the statutes of limitation does not start until after the discovery of the injury.

Frivolous Suit Penalties: This rule brings penalty statutes for patients who brought a groundless claim or for physicians who brought groundless defense. The law requires the loser to pay the other party's attorney fees and court costs. Attorneys who are responsible for bringing groundless claim or defense against other party can be held liable for paying other party's litigation costs. Court can assess a reasonable attorney fees against any attorney or party who fails to voluntarily dismiss suit when a motion is filed by health care provider alleging that attorney or party knew or should have known they were unlikely to prevail.

Notice of Intent to Sue or Notice of merit. This law requires patients or plaintiff attorneys to provide notice to the physicians before the claim is filed. Attorney should inform the physician within certain time period (e.g., 60 days) after the service of the complaint. Law could require attorney to consult a person who has expertise in the area of the alleged negligent conduct. Under the notice of intent to sue or notice of merit rule, an expert consultant is required to review the known facts including such records, documents, and other materials which the expert finds to be relevant to the allegations of negligent conduct and, based on such facts has to conclude whether or not that the claim is frivolous or groundless. If injured patient is not able to obtain such a certification then the claim may not be filed.

Collateral Source Rule: Under this rule, the patient's award will be reduced by the amount of reimbursement patient receives from other sources, such as government benefits or insurance. In the US, some states brought mandatory reduction of the amount of verdict by the amount by which patient will be wholly or partially compensated for his/her loss by any other person, corporation, insurance company, or fund in relation to the injury, damage or death sustained.

Limit on Damage Awards: Injured patients or surviving parties seek a monetary damage award to cover all economic costs associated with the injury and compensation for non-economic loss for an injury or wrongful death due to negligence of a health care provider. Economic costs include lost wages, future income, past and future medical bills. Non-economic loss include physical and emotional pain and suffering, grief and emotional stress. Limit on damage award rule brings limitation on awards/compensations for both economic and non economic losses. For example, in US, state of Colorado limit non economic losses to \$250,000 unless court finds a justification to increase, but it cannot exceed more than \$500,000. The law also limited awards for the surviving parties of a wrongful deaths to \$250,000.

i. **Joint and Several Liability Rule:** This rule limits the compensation from multiple defendants to the amount equal to each physicians' proportional responsibility specify the share of liability among physicians who happen to involve the care of patient. Patient can sue all those who may have played a role in causing an injury and recover the full amount of damages from any combination of the defendant.

Annex II. Five groups of injuries that are covered under the PCI (Oldertz 1986);

(1) Real treatment injuries; These are the injuries arising in connection with medical interventions- e.g., surgical, diagnostic. For compensation to be payable, a treatment injury should be indemnified if the injury could have been avoided if the treatment method, just as effectively, could have been applied in another way.

(2) Injuries caused by diagnostic interventions; The injuries resulting from diagnostic intervention is compensable if, from the medical point of view, the risk was justifiable, and the subsequent complications was an unavoidable result of the treatment. Therefore, the complications caused by diagnostic interventions would be compensated if this is found reasonable with regard to the nature and severity of disease, the seriousness of the injury and the general health of the patient. (Carl Oldertz, 1986).

(3) Injuries caused by incorrect diagnosis; When symptoms of disease or illness have been interpreted in a way that does not coincide with the generally accepted standard of care, then the compensation is paid. Whether the interpreted diagnosis

coincide or not with the standard of care is assessed by a senior physician' decision based on his level of knowledge and experience in diagnosing the particular type of disease.

(4) Accidental injuries; related to the care a patient has received or should have received. The prerequisite for compensation of accidental injury is that the accident some way be related to the care. The compensation is payable for injuries as a result of activity for which hospital or the health care equipment is responsible for. The compensation cannot be paid for injuries that are caused by the basic illness, or direct symptoms of the basic disease.

(5) Infection injuries are covered by the PCI and are eligible for compensation because the real reason for the infection is often difficult to establish. Compensation is not payable if the injury is likely to be caused by the patients' own bacteria rather than by bacteria transmitted through treatment including during surgery. In general, no compensation is made when an infections is considered very likely to happen, because of the patient's reduced resistance or there is a particular risk of infection during an extensive operation for cancer.

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