

Medical Jurisprudence and Its Applications
An Analysis of Indian and International Legal Perspectives

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PREFACE

Welcome to Legal WIND (World in Discourse).

Medico-legal issues may result to litigation as an outcome of an act or omission, failure, carelessness, negligence or incapability of the authority to discharge his professional obligations. It also includes the application of medical knowledge in the administration of justice. Medico-legal cases are rampant in the southern part of Nigeria, because of high level of awareness and access to lawyers. This is in contrast to the northern part of the country where many regards these issues as an Act of God, because of the religious belief. In India, even though laws are there, the health legislations are very insufficient as compared to the amount of problems in the health care sector.

There is a need for having a comprehensive health care act, framed in order to tackle the entire health care sector to the objectives laid down in the different policies in India. Most of the common medico legal situations arise due to noncompliance with these rules and regulations. Medical error is a subset to human error. Legal and ethical obligation are reinforce when a complaints is in the hand. This Report will concentrate on nature, scope, importance and basis of medical jurisprudence and the issues in which medical professionals or personnel may be apprehended or charged before a court of law or respective Tribunal for their act or omission. We tried to bring a glimpse on Medical Negligence and the issues related to it, also about the Forensic Medicine and Its Application. Lastly, medical professionals need scientific knowledge, technical skill, moral understanding of the profession and awareness about relevant laws of the land relating to the treatment or care of a suffering patient.

Now, here we are at the horizon of a new journey. We know always "It's us, not me". The journey ahead is long but we will tread it step by step. Show some love and support to us, we are with you and you are with us. The next issue of this series will be uploaded soon. I am grateful to my Team and Team leaders for their hard work and efforts to make this Report successful. I hope you will like it for sure. If any suggestions or recommendations, please let us know and we will be happy to make ourselves rectified. Your feedback is crucial to us.

Warm Regards,

Aryakumari Sailendraja

Co-Founder and COO, Legal WIND (World in Discourse)

CHAPTER-1

MEDICAL JURISPRUDENCE-MEANING, NATURE AND SCOPE

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INTRODUCTION

Medical Jurisprudence can be defined as the use of medical expertise in the field of the legal system to uphold justice in both civil and criminal cases. It outlines the fundamental legal requirements that a medical professional must adhere to. The Latin words "Juris" and "Prudentia" mean "knowledge," respectively. Thus, it is the field that utilizes medically pertinent facts and then incorporates them into the legal system, aiding the criminal justice system.

It is crucial to understand the relevance of the evidence in order to convict a likely perpetrator. Thus, it became apparent that scientific concepts were needed. As this area expanded, the medical professional or doctor gained tremendous authority because they were now playing a crucial role by providing an expert opinion in many instances. However, great responsibility comes along with this authority. Despite the fact that medical law is a very old field, it is always changing due to changes in the legal system and technological advancements. The current article offers a thorough examination of medical jurisprudence from an Indian legal standpoint.

THE MEANING AND NATURE OF MEDICAL JURISPRUDENCE

Medical Jurisprudence¹ is the area of law that researches how medical information relates to legal questions. Less frequently, but possibly more crucially, a doctor can be called as a witness. The same limitations that apply to other witnesses also apply to doctors who appear in court to testify about what they have observed. The medical professional or doctor gained significant influence as the field developed and played a crucial role by offering expert judgment in cases. But with great powers come a great deal of responsibilities. The doctor-patient relationship, medical malpractice, ethical conduct, and professional misconduct are a few examples.

¹Stanford Emerson Chaille, "Origin and Progress of Medical Jurisprudence 1776-1876," 40 J Crim L & Criminology 397 (1949-1950).

Witnesses may testify to their findings in front of courts, administrative tribunals, inquests, licensing authorities, boards of inquiry or certification, or other investigative organizations. The certification of individuals for workers' compensation or other national insurance plans; the occurrence of birth or death; the reporting of any cases of specific infectious diseases to the authorities; and the determination of when mentally disturbed individuals need to be detained to protect themselves or others are all tasks that doctors are required by law to perform in the majority of countries.

HISTORICAL SIGNIFICANCE

Medical jurisprudence dates back to 4000–3000 BC, and the data recorded can be studied from the *Materia Medica* (about 2300 BC). Imhotep, the Egyptian ruler's personal physician and chief judge, is considered the first medico-legal professional. While other writings like the *Manusmriti*, *Sushruta Samhita*, *Yajnavalkya Smriti*, and others were crucial in preserving and regulating medical practice, the *Charaka Samhita* (circa 7th century BC) in India contains necessary regulations for physicians relating to their ethics and duties. An autopsy is thought to be the most important tool in medico-legal practice. In India in the 18th century, Dr. Edward Bulkley performed the first medico-legal autopsy.

This branch quickly expanded in all directions after being initially introduced in India.² The nation's first medical school opened in Calcutta in 1822. In the states of Madras and Bombay, this development carried on. In the past few decades, scientific practices have multiplicatively improved. In *Pratap v State of Orissa* (1977), Justice Fazal Ali said that medical law is not an exact science and that it is challenging for any doctor to pinpoint precisely when an injury occurred or when the accused may have had sex with the prosecutrix. The experiments performed and the results generated were sufficiently precise that they were utilized as evidence to support or contradict a defendant. This expansion has caused medical law to grow and diversify into a number of minor topics.

In forensic medicine, a medical specialty that helps identify crimes, law and medicine coexist more peacefully. In Anglo-Saxon law, forensic medical professionals are particularly helpful to the coroner's court in determining the cause of sudden and unexpected fatalities. In these situations, the post-mortem examination of the corpse is the main investigation carried out by a forensic specialist. This examination includes a comprehensive review of every organ and its contents, as well as microscopically research of

² (Theodore Silver, "One Hundred Years of Harmful Error: The Historical Jurisprudence of Medical Malpractice" (1992) 1992 Wis L Rev 119

some organs and chemicals, in addition to DNA testing. Dramatic tasks in forensic medicine include determining a body's size and sex by examining just a few bones; recognizing a corpse based on its dental pattern; and finding evidence of rape or unsolved murder. Typically, it requires figuring out when a person passed away or analysing the amount of alcohol in a driver's blood to figure out how impaired their judgment was.

Is it acceptable to hold a physician accountable in the event that a patient passes away after experiencing a severe allergic response to a medication that is widely used? A medical malpractice claim against the doctor may be made by the patient's family. The lawsuit's attorneys for the doctor and patient should be knowledgeable about the events leading up to the patient's tragic demise. In determining whether or not the doctor should be held accountable, medical jurisprudence will be helpful in this regard. Some of the cases involving medical law that are brought before the courts most frequently are listed below:

- Paternity Evaluation.
- Wounds and Injuries.
- A poisoning-related demise.
- Both the manner and the cause of death.
- Brutal demise

MEDICAL JURISPRUDENCE IN INDIA

Through judicial decisions where the topic of medical jurisprudence has always been given a respectable position, it is possible to better understand the development of medical law in the democratic nation of India³.

One such early case where the court consulted Lyon's Medical Jurisprudence for India by Waddell to comprehend the "marks of recent intercourse" in cases of rape was Ram Kala v. Emperor (1945), which came before the Allahabad High Court. According to Lyon, recent sexual activity is suggested if the vagina has a homogenous layer of smegma. Additionally, in accordance with Modi's Medical Jurisprudence, if the accused is not circumcised, the presence of smegma, which is shed during sexual

³ OSCOLA 4th ed. Cesare Biondi, "Medical Jurisprudence in Social Insurance and the Problem of Unification" (1926) 13 Int'l Lab Rev 793

activity, around the Corona Glandis is evidence against penetration. The smegma will build up if the victim skips a bath for twenty-four hours. The prosecution must prove the accused's guilt beyond a reasonable doubt, and in the current case, the prosecution was unable to do so despite the defence's having some defects that are not exactly consistent with the accused's innocence. The accused was declared by the court to be innocent under Section 376 of the Indian Penal Code, 1860, and was thus declared free.

In determining what asphyxia genuinely is and whether the deceased victim's death was caused by it in the case of *Mulakh Raj et al. v. Satish Kumar and Others* (1992), the Supreme Court of India referred to Taylor's Principles and Practice of Medical Jurisprudence. In this case, the doctor's findings during the post-mortem examination and his testimony were consistent with medical jurisprudence. All of the symptoms found on the deceased's dead body unmistakably prove that her death was caused by pressure on the neck. The Indian Penal Code, 1860's Section 302 was therefore used to charge the respondent.

The Delhi High Court used Parikh's Textbook of Medical Jurisprudence and Toxicology when it heard the case of *Virender v. the State of NCT of Delhi* (2009), which defines "sexual intercourse" as the slightest degree of penile penetration of the vulva, with or without semen discharge. Therefore, it is entirely possible to legally commit rape without endangering the victim's genitalia or leaving any seminal traces. The decision was made that the appellant's guilt for committing the offense under Section 376 of the Indian Penal Code, 1860, could not be sustained in light of the case's facts and the viewpoint offered by the aforementioned textbook.

The Rajasthan High Court was debating a rape case involving an adolescent girl where the victim's hymen was not torn in *Madan Lal v. State* (2012). Due to this, the Court considered medical jurisprudence as well as the arguments made by the case's parties. According to medical jurisprudence, rape can take place without the hymen being torn because of the hymen's more posterior location in teenage females. On the other hand, a thorough penetration is required if an adolescent girl's hymen is torn as a result of rape. The Labia Majora are the first organs the male organ contacts and depending on the intensity and force used by the accused and resisted by the victim, they are subjected to blunt, forceful strikes with apparent bruising. Examining the hymen and their level of damage is the most reliable source of information in the rape case. The prosecution's argument was clearly refuted in the current case by the medical evidence regarding the rape, and as a result, the accused was cleared of the charge under Section 376 of the Indian Penal Code, 1860. In this instance, the crime of assault with the intent to offend a woman's modesty was established, and the accused was found responsible for the offense punishable under Section 354 of the aforementioned Code.

In order to comprehend the definition of "strangulation," the Gujarat High Court relied on Modi's Medical Jurisprudence and Toxicology (26th Edition) when making its decision in the recent case of Bharatbhai Mohanbhai Chavda v. State of Gujarat (2021). According to the paragraph in question, a force other than hanging is used to squeeze the neck in a strangle. The deceased was smothered and strangled in her home, according to the court's ruling, and an attempt was made to remove her corpse by lighting it on fire. After that, her close family members made up a story about how she hanged herself. The Honourable High Court further noted that the Trial Court had correctly found the accused guilty of violating Section 302 of the Indian Penal Code, 1860, in the current case.

THE SCOPE OF MEDICAL JURISPRUDENCE

Understanding the framework of the Indian judicial system's classification of laws is required in order to comprehend the legal element of medical jurisprudence. As a result, the Indian laws that are governed by medical jurisprudence are listed below ⁴.

THE INDIAN PENAL CODE, 1860

The Indian Penal Code (1860) is the country's main criminal code. When linking medical jurisprudence to Indian law, the following provisions must be taken into consideration:

- According to Section 44, an injury is any unjustified harm to a person's body, mind, reputation, or property of any type.
- According to this clause, "harm" is defined as physical discomfort, illness, or infirmity that is brought on to a person.
- Section 320: This provision outlines a list of injuries that fall under the general category of grievous injury and defines what constitutes a grievous injury.
- Section 321: This section explains the intentional doing of harm.
- Section 322: This clause allows for intentionally causing great harm.
- Section 323: This section outlines the penalties for causing harm on purpose.
- According to this clause, the maximum sentence for intentionally inflicting harm with a dangerous weapon is three years in prison, either with or without a fine.

⁴ [com/medical-jurisprudence-and-related-laws-in-India/](https://www.com/medical-jurisprudence-and-related-laws-in-India/)

- Section 325: The clause outlines penalties for purposefully causing severe harm. The prescribed penalty is a maximum of seven years in prison or a fine.
- Using a dangerous weapon or method to intentionally cause great bodily injury is punishable under Section 326.
- Section 328: The clause specifies the fine for using poison to cause harm, etc.
- Section 351: According to this clause, assault is the threat or attempt to use physical force.

THE INDIAN EVIDENCE ACT (1872)

The Indian Evidence Act, 1872, is a piece of legislation that establishes guidelines for the admissibility of evidence in Indian courts of law and addresses related issues. When relating the significance of medical jurisprudence to Indian laws, Sections 45 and 114 A of the 1872 Act must be taken into consideration⁵.

- Section 45: This clause addresses professional judgments. The opinions of those with knowledge of the same are taken into consideration as relevant facts when the Court must form an opinion on a matter of foreign law, science, or art, or on the identification of handwriting. These people are referred to as experts.
- In a rape case, if the woman indicates in her evidence that she did not consent to sexual activity, the court will presume that she did not have to. This is in accordance with Section 114 A.

CODE OF CRIMINAL PROCEDURE, (1973)

The procedural legislation controlling criminal procedures in India is the Code of Criminal Procedure, 1973. The provisions that must be considered when discussing medical jurisprudence in India are sections 53 clause (i) and (ii), 54, 174, and 176.

- Section 53 (i): An accused person may be examined by a medical professional at the request of a police officer who is using reasonable force.
- Section 53 (ii) requires that any examination of a female accused be performed by or under the direct supervision of a female licensed medical professional.
- Section 54: A medical professional may examine a person who has been arrested at their request in order to obtain evidence that will support them.

⁵ Woodroffe and Amir Ali, Law of Evidence, 20th ed.

- Section 174: Police are required to inquire about and report suicides, etc.
- Section 176: Magistrate-led investigation into the cause of death.

INDIAN MEDICAL COUNCIL ACT, (1956)

The Indian Medical Council Act, 1956 is a law that re-establishes the Medical Council of India and regulates the upkeep of an Indian medical register, among other things. According to Section 20 A of the law, medical practitioners must adhere to a code of ethics, etiquette, and standards of professional conduct that will be established by the medical council. The infractions that constitute infamous behaviour in any professional respect, also known as professional misconduct, are defined by regulations adopted by the Council pursuant to subsection (i) of the aforementioned provision. These regulations are applicable regardless of any other provisions of any current law.

MEDICAL JURISPRUDENCE AND NEGLIGENCE

Both Indian and foreign legal systems recognize that breaching the law is never an acceptable defence. ⁶The presumption that everyone is aware of the law is another way to describe the norm. Every person owes it to themselves to comprehend the topics that most appeal to them. Because they can and should generally be familiar with the law, doctors in particular are treated as though they are and are assumed to be knowledgeable about it. The medical field operates in regions where success is not always guaranteed and where it is frequently reliant on factors beyond the control of a medical specialist, making it different from other careers in terms of professional responsibility. The greater awareness of a patient's rights in today's culture has made a medical expert more susceptible to being sued by a lawsuit of any kind, whether civil or criminal. The majority of practicing physicians in our country are still ignorant of the legal foundation for a claim of medical negligence.

The courts have long recognized the hazards associated with practicing medicine. Sections 88 to 92 of the Indian Penal Code, 1860 exempt doctors from criminal responsibility because it is presumed by the law that they always act in the best interests of their patients. The concept of good faith, however, presents a more challenging situation in a medical negligence case. According to Section 52 of the aforementioned

⁶ gov.in/rarebooks/manual-medical-jurisprudence-india-including-outline-history-crime-against-person-India

Code, "nothing is alleged to be done or believed in 'good faith' which is done or believed without due care and attention."

In a case involving medical negligence, the Supreme Court of India reiterated its positions, holding that "the medical practitioner must bring to his responsibility a fair degree of ability and knowledge and must exercise a reasonable degree of care." The highest or lowest level of care and competency, as assessed by the specifics of each case, is not required by the law. The test is the common or reasonable skill that a man who is practicing and claiming to have that exceptional ability has when a situation comes that calls for the use of that particular skill or competence. It is believed that the "duty of care" is a complementary notion that applies to healthcare providers and medical professionals.

The courts have always been very considerate of medical practice when it comes to professional negligence. A clinician has special obligations to his or her patients. If a physician does something that other clinicians of similar position, calibre, and competency would not do or if they neglect to do something that other clinicians would unquestionably do, they have engaged in negligence. Medical professionals are expected to practice with the utmost care, commitment, and adherence to accepted standards of practice while honouring the autonomy of the patient. At the time of registration, a medical professional must also abide by a copy of the Indian Medical Council's Code of Medical Ethics statement.

In a decision establishing the Code of Medical Ethics as the dominant rule for the medical profession, the Supreme Court of India established the legal foundation for the duty of care as a binding ethical and constitutional principle. In a sense, this provides Section 33 of the Indian Medical Council Act, 1860—which supports medical ethics in India—with legal backing. In a way, this gives medical ethics in India the support of the law.

PUBLIC INTEREST LITIGATION CONTRIBUTES TO THE GROWTH OF MEDICAL JURISPRUDENCE

The priority of the right to life and dignity was affirmed in a number of later PILs, which contributed to the development of the right to life and dignity. Thus, the Indian Constitution's Article 21 became the cornerstone of all social and civil-political rights, including those to health and healthcare. (6) Two of the various components of a huge number of healthcare lawsuits include the right to medical treatment for employees and civil rights litigation for the rights of people in jails and police custody. Even if there are fewer lawsuits concerning emergency medical care, they have shown structural problems in the industry of life-saving treatment. Specifically, with regard to patients from socially disadvantaged groups, these

include medical professionals' insensitivity and personal or professional disinterest, as well as delays or denials of care.

MEDICAL CARE IN CUSTODY

People held by the state, including those in the custody of the police or the courts, as well as those housed in state-run facilities like prisons and asylums are exposed to torture, cruel treatment, and abuse. They are also denied access to essential medical care. In *Poonam Sharma v. Union of India*, the Delhi High Court upheld the constitutional duty of police personnel and doctors to treat injured persons in medico-legal proceedings. The unquestionable character of the state's commitment is confirmed by Article 32 of the Constitution, which declares access to justice to be a fundamental right.

CONCLUSION

The growth of medical jurisprudence has been extremely beneficial to both the legal and medical realms. Both disciplines now function more efficiently thanks to increased understanding and cooperation. Previously intractable issues are now easily resolved thanks to the development of medical law⁷. It can be used to determine a child's paternity as well as the identification of human remains that have been irreparably altered in accidents like bomb explosions and factory fires, among other things. It can be applied to cases involving homicide, rape, and other offenses involving evidentiary laws. An autopsy is one medical jurisprudence method that can be used to gather vital evidence after a person has passed away. Ethics-compliant healthcare in India may be revitalized by the heart of ethics, which is enshrined in the Code of Medical Ethics and fortified by ethical jurisprudence. A comprehensive statute to institutionalize ethical principles for preserving the right to healthcare is one of the policy steps that would be necessary to streamline ethics in the public and private healthcare systems. Most importantly, medical professionals would need to persevere in their attempts to revive and return the field to its high ethical standards of patient care and alleviation of suffering.

⁷ [nlm.nih.gov/pmc/articles/PMC5022301/](https://pubmed.ncbi.nlm.nih.gov/pmc/articles/PMC5022301/).

CHAPTER 2

IMPORTANCE OF MEDICAL JURISPRUDENCE

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INTRODUCTION

Medical jurisprudence, also known as medico-legal jurisprudence, is the branch of medical science concerned with the application of medical knowledge in the legal system. (1) Medical science has a wide implication when it comes to the adherence to the law in order to solve numerous legal problems in civil as well as criminal cases. Most nations, including India, require their doctors to legally certify patients for national insurance plans, to certify the birth or death of a person, to notify the authorities of any cases of specific infectious diseases (like COVID-19), and to decide when mentally ill people need to be detained to protect themselves or others. The majority of the duties involved in medical jurisprudence are these everyday actions.

The doctor can also be used as a witness, which is less often but perhaps more relevant. Doctors are subject to the same restrictions that apply to ordinary witnesses when they testify in court only to describe things they have witnessed. They are referred to as "expert" witnesses if they must interpret such facts using their medical expertise, and they are expected to express their judgments impartially and without favouring the party who summoned them to testify.

HISTORY OF MEDICAL JURISPRUDENCE

Medical science and law have been related for a long time in the past. The bond that first united them was religious superstitions and magic. In earlier societies, physicians and jurists were united in the priest, the intermediary between God and man. Legal codes, social perception, and religious doctrines were all used to adjudicate a matter. (2) In 3000 BC, the Chinese were the first to publish information about poisons such as arsenic and opium. In ancient Persia, bones were put into one of seven classes ranging from simple to mortal, and early Egyptian laws were known to have the first medical men.

The earliest forensic scientist was possibly Song Ci (1186–1249). In his book, *Collected Cases of Injustice Rectified*, he documented every forensic method at the time. With his connections to the Papal States and the Catholic Church, Paul Zacchias was also one of the first leaders in medical jurisprudence.

Zacchias served as the Rota Romana's legal counsel as well as the personal physician to Popes Innocent X and Alexander VII. His best-known work, *Questions medico-legales* (1621–1651), pioneered the field of legal medicine. Zacchias' works contain popular superstitions about magic, witches, and demons at the time.

THE IMPORTANCE OF MEDICAL JURISPRUDENCE

Both the medical and legal fields have profited greatly from the development of medical jurisprudence.

A greater understanding has evolved, allowing both disciplines to operate more smoothly in the current society. With the advancement of medical jurisprudence, formerly insoluble problems can now be easily settled. It is of great importance to find out the child's paternity as well as identify the human remains that have been disfigured beyond recognition in incidents such as bomb blasts, factory explosions, and so on. It is also used to determine the involvement of murder, rape, and other crimes under evidence laws. A physician confronts laws almost every day. When called as a witness in a personal injury case as the treating physician, a doctor typically runs short of the law. When he is approached by a narcotics addict, a man with a gunshot wound, a young couple in need of a blood test, or when his assistance is requested as an expert in connection with a claim that another professional has been careless, he meets it. When he is compelled to provide a wide range of official reports or to keep tangible evidence for the advantage of a law enforcement agency, he is in direct violation of the law.

The growth of medical jurisprudence has been extremely beneficial to both the legal and medical fields. Both disciplines may now function in modern society with greater ease thanks to an increased understanding that has developed. The development of medical law has made it possible to resolve issues that were previously intractable. Finding the child's father and identifying the human remains that have been mutilated beyond recognition in accidents like bomb blasts and industrial explosions, among other things, are of the utmost importance. It is also used to determine whether rape, murder, and other crimes are involved while discussing evidence laws.

Medical jurisprudential procedures are not currently accepted as primary evidence, despite the fact that they have greatly benefited the legal profession. Technical findings, such as the outcomes of DNA tests, are still treated as expert evidence under the current Indian Evidence Act. This state of affairs will persist until Parliament drafts and passes a law. According to section 45 of the Indian Evidence Act of 1872, it has been, among other things, provided that the opinions of people who are specially skilled in science or art or any question as to the identity of handwriting or finger impressions are relevant facts and that these

people are referred to as experts when the court has to form an opinion upon a point of science or art or as to the identity of handwriting or finger impressions. All future scientific developments that allow an expert opinion on a topic can be applied to the expression of opinions on a scientific topic by people with specialized scientific training.

PROBLEMS WITH THE CURRENT LEGAL SYSTEMS

Law and medicine do not always get along. Medical confidentiality is the main cause of disagreements. Some medical professionals contend that any information obtained from a patient during a medical consultation is morally subject to complete secrecy and cannot, under any circumstances, be disclosed without the patient's consent. They think that without such a restriction, patients occasionally wouldn't provide doctors with all the information required to treat them. Other doctors (the majority in most nations) hold the opinion that, very infrequently, their duties to society supersede those to their patients.

According to the (3) situation in India right now, the aforementioned regulations have a number of drawbacks. Despite its many benefits, medical jurisprudence evidence is still seen as supporting expert opinion rather than being the main evidence. Under the Indian Evidence Act of 1872, the report of an autopsy procedure is very seldom considered documented evidence. Due to the doctor-patient confidentiality rule, doctors are regularly forced to make the decision of whether or not to disclose patient information to the legal system. The doctor is required to notify the police if he or she learns that one of his patients has committed a crime (other than suicide). If the doctor doesn't comply, there can be consequences. For the current system, the following reforms are suggested:

1. The creation of legislation that will rely heavily on medical precedent.
2. As long as further scientific test results are produced using accepted testing procedures, they must likewise be taken into account as documentary evidence.
3. The doctor is required to inform the proper authorities if a patient tries at suicide. This will help in addressing the factors that may have prompted the victim to take such drastic action and will also help to ensure the patient's safety going forward.

EMERGENCY MEDICAL CARE JURISPRUDENCE

The legal framework for emergency medical care in India in the 1980s laid the foundation for the creation of healthcare litigation by strongly overlapping it with ethical issues. The right to a decent life and the

State's constitutional duty to save a life were applied by the courts in subsequent litigation involving the medical community and private and public healthcare providers. Additionally, it made it simpler to establish healthcare as a fundamental right and construct healthcare jurisprudence. Emergency medical care raises a number of overlapping issues regarding health services, patient rights, and the roles of the state and the medical community because it frequently includes dealing with life-or-death situations. On the basis of moral-ethical principles that are at the core of the medical profession and the justification for the healthcare system in a welfare state, the indignity caused by the refusal to treat critically ill patients, which results in death, unjustified suffering, morbidity, and financial loss, has been challenged in court. (4)

Because of the medical-legal nature of these cases and the potential for harassment by the police and courts, bystanders rarely intervene to help the victims of such emergencies. Following a PIL filed by the SaveLIFE Foundation in 2012, the Supreme Court of India requested that the Central government draft guidelines for the protection of "good Samaritans" from police or other authorities in 2016. This action was taken in an effort to enact new legislation relating to accidents and emergency treatment. Santosh Ahlawat brought up the subject in the legislature. The issue of protecting doctors from legal hassles in medico-legal situations so that they can provide fast treatment to patients in need of emergency life-saving care has been addressed in another significant decision (*Pt. Parmanand Katara v. Union of India and Ors* (1989)).

The victim, Hakim Sheikh, was an agricultural labourer and a member of the labour union Paschim Banga Khet Mazdoor Samiti, in the well-known case of *Paschim Banga Khet Mazdoor Samiti v. the State of West Bengal* (1996). He fell off a train on his way to work, and five public hospitals refused to admit him. Due to a lack of available beds, the patient was denied entry. Finally, the victim was checked into a private hospital, where he was required to cover high medical costs. Surprisingly, the focus of "the Good Samaritan" discourse has shifted from the healthcare system to the healthcare of people from different socioeconomic classes about 20 years after the *Paschim Banga Khet Mazdoor Samiti* case. Without mentioning emergency care accessibility and availability for the underprivileged, this issue has been thrust into the public's consciousness. The upper middle class's access to such care via medical insurance seems to be sufficient, and they continue to ignore the underprivileged inability to access it.

Medical jurisprudence (5) makes explicit what happens when the ideals of saving lives and the duty of care are broken. Article 21 of the Indian Constitution, which guarantees the right to life, is said to have been broken by failing to provide immediate medical attention to a person in need of emergency care. This justification led to the inclusion of the medical industry in the 1986 Consumer Protection Act (CPA).

The medical community, as represented by medical organizations, has worked for more than ten years to bring physicians in particular and healthcare professionals in general under the CPA 1986. The long-standing objection of the medical community to any regulation of doctors under the pretext of professional self-regulation is best exemplified by the case of the Indian Medical Association v. V.P. Shantha (1995). In this instance, it was debated what constitutes a "service" as it relates to healthcare under various scenarios in order to determine the patient's consumer status. The cases made note of the fact those refusals to admit patients to public hospitals nearly always end in their deaths or treatment at private hospitals. The discontinuation of medical care owing to a lack of timely payment, medical misconduct, and the charging of exorbitant costs for treatment were also listed as ethical and medical malpractice issues at private hospitals.

MEDICAL NEGLIGENCE

A health professional's commission of errors or negligence may cause relatively small injuries, more catastrophic injuries, or even death. Since nobody is flawless, even someone who is knowledgeable and experienced in a given field may make mistakes. Errors happen to everyone, but it takes negligence to keep making the same error over and over again. The main cause of medical negligence is that it is frequently demonstrated that doctors or other medical staff did not exercise reasonable care when making diagnoses, performing procedures, administering anaesthetics, etc.

A standard of care outlines the proper course of treatment and dosage in accordance with the requirements that a doctor should keep in mind when treating his patients. Neither the highest nor the lowest level of care should be provided. In this case, the degree refers to the standard of care that a regular healthcare provider with the same education and experience would provide in the same neighbourhood under similar conditions. If the answer to this crucial question is "no" and you were injured as a result of the negligent care, you may be able to bring a medical malpractice claim. The Supreme Court ruled in the case of Dr. Laxman Balkrishna Joshi vs. Dr. Trimbak Bapu Godbole and Anr. That a doctor has certain stated obligations and that any violation of those duties can subject him to legal liability for medical malpractice. An acceptable standard of care is expected of doctors, one that has been established for their profession. In the circumstances of medical malpractice, a complaint may encounter the following difficulties:

1. Making decisions in medical malpractice claims takes time. So, occasionally, it causes the complaint to lose motivation.

2. Sometimes the doctor has a better chance of winning the lawsuit because of the hospital's reputation.
3. In other situations, the doctor may remove any pertinent evidence since they are aware that they were irresponsible, which causes difficulty for the complainant.
4. You must be aware of the limits of your insurance coverage since occasionally the insurance provider will deny a claim.

CONCLUSION

Therefore, Medical Jurisprudence and the law that we typically practice have been described in this article. Furthermore, the genuine meaning of the medical law with the aid of jurisprudence has been shown. Doctors are required to act in the patients' best interests, and they risk legal repercussions if they don't. On the other hand, if a patient poses a risk to others, a doctor may be compelled to act in their best interest. Inaction could result in legal action being taken against the doctor. Legal theories and their impact on society and how the law cannot be separated from jurisprudence because it is a significant component of it are also mentioned.

The fields of law and medicine have benefited greatly from the development of medical jurisprudence. Due to the enhanced understanding that has emerged, both professions may now operate in the current world with more ease. Thanks to the growth of medical law, it is now possible to address problems that were previously unsolvable.

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CHAPTER 3

BASIS OF MEDICAL JURISPRUDENCE

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INTRODUCTION

MEDICAL JURISPRUDENCE is the application of medical knowledge in the legal field for providing justice in both civil as well as criminal cases. It provides the basic legal guidelines which should be followed by a medical practitioner. The Latin expression 'juris' means 'regulation' and 'prudencia' means 'information'. Accordingly, it is the space which utilizes the medicinally applicable realities and afterward incorporates them with the general set of laws, giving help to the law enforcement framework. To convict a plausible guilty party, knowing the significance of the evidences is most extreme significant. Accordingly, the need of utilizing logical standards was felt. As this field developed, it provided tremendous capacity to the clinical specialist/specialist as they were currently assuming a vital part by having a well-qualified assessment in the cases. In any case, with this power came gigantic obligations. The specialist patient connection, clinical carelessness, moral behaviours, proficient offenses are a couple to name. The field of clinical statute is an extremely old field however with the coming of innovation and the changes being included the general set of laws, this branch is dependably a work in progress⁸. To totally see genuine significance and its significance one ought to comprehend how really did this field come right into it.

HISTORY OF MEDICAL JURISPRUDENCE

The HISTORY of clinical statute traces all the way back to 4000-3000 BC and the information recorded can be considered from the Materia Medica. Imhotep (around 2300 BC), the main equity and the individual doctor to the leader of Egypt was viewed as the primary medico legal master. While in India, the Charaka Samhita (around the seventh century BC) contained rules connected with the morals, obligations, honour, and so forth required to be trailed by a doctor. Different texts like Manusmriti, Sushruta Samhita, Yajnavalkya Smriti, and so on likewise assumed a significant part in keeping up with and managing the clinical practice. A dissection is considered as the main apparatus in medico legal

⁸Basis of Medical Jurisprudence

https://www.rxlist.com/medical_jurisprudence/definition.html accessed on 12 June 2022

practice. In the eighteenth century Dr. Edward Bulkley was quick to play out a medico-legal dissection in India. With the presentation of this branch in India, it didn't require a very remarkable investment for it to fill every which way. In 1822, the territory of Calcutta got the nation's first clinical school. This advancement further continued to the provinces of Madras and Bombay. Throughout the course of recent many years, the logical strategies have progressed by various folds. The tests performed and the outcomes got are exact to such an extent that they can go about as proof, adequate in itself to demonstrate or negate a convict. This development has likewise prompted the broadening and hence enhancement of clinical statute into various little branches. To fit all the more precisely in right now, the term clinical law has generally been supplanted by the new phrasing 'Scientific MEDICINE'. A portion of the significant branches in FORENSIC MEDICINE are:

1. forensic pathology,
2. forensic odontology,
3. forensic toxicology,
4. Forensic anthropology, etc.

Due to the indispensable efforts in this field, Dr. J.P. Modi is renowned as the Father of Indian Forensic Medicine. Before getting into the details, it is very crucial to understand the true significance and seriousness of forensic medicine to different professions.

The major professions involved in legal cases are:

- I. medicine department; consisting of doctors, nurses, pharmacists
- II. legal department; consisting of lawyers, judges, police

For improving the information on a faculty of clinical foundation various courses in measurable medication have been presented in their educational plan. Alongside giving legitimate direction this course centres on preparing the specialists in the significant progressions in the measurable medication field, their obligations, freedoms, morals, and so on. By giving logical proof and helping the legal executive and overall set of laws, the clinical field helps in fortifying a definitive of giving equity and consequently, helping all.

The legitimate experts i.e., the attorneys who might need to over and over experience the clinical issues in their training are not really mindful about the clinical language, information, calling and the related intricacies of this calling. The calling of a clinical staff is considered similar to the close to God. In any case, are specialists truly God? This is an inquiry that emerges on numerous occasions in the clinical

brotherhood. William Osler stated: "Medicine is a study of vulnerability and a craft of likelihood. Outright analyses are risky and are made at cost of the still, small voice"

The specialists are additionally people and it is unimaginable for them to be unerring. At the point when a basic slip-up of a specialist prompts the departure of a day to day existence, he is liable to the framework.

Commonly, in an odd situation, the specialists keep to the side their legitimate limitations and focus on the patient's prosperity and this frequently leads them as blameworthy in the court. To stay away from and hold such activities under a check, emergency clinics have their own legitimate firms who convenient screen crafted by the specialists.

While considering clinical statute one can't neglect specific questionable regions like job of specialist for proof assortment from crime location, leniency killing, organ transplantation, clinical carelessness, common carelessness, negligence, remedial misfortune, and so on. From the universe of fiction to the real world, the instances of Anesthetic and Operative Deaths are dependably under the spotlight.

The reasons for death because of sedative specialists can be found out through posthumous assessment. These causes might incorporate; excessive touchiness, heart failure, respiratory insufficiency, and so on. The heart failure and respiratory disappointment are the most widely recognized methods of death⁹.

These cases frequently welcome an examination on the clinical personals associated with the system. Legitimate office covers here with the clinical division and helps in sorting out whether it was a clinical carelessness or a clinical maloccurrence.

Some of the most common cases under medical jurisprudence include:

- ❖ paternity testing
- ❖ injury and wounds
- ❖ death due to poisons
- ❖ cause and manner of death
- ❖ Violent death, etc.

EUROPEAN DEVELOPMENTS

⁹Sneha Venkataramani, Medical Jurisprudence: An Indian Law Perspective
<https://www.legalserviceindia.com/articles/medooo.htm> Accessed on 12 June 2022

In 1553 the Germanic Emperor, Charles V, published and proclaimed the Caroline Code, which clearly stated in its pertinent sections that expert medical testimony must be obtained for the guidance of the judges in cases of murder, wounding, poisoning, hanging, drowning, infanticide, and abortion and in other circumstances involving injury to the person.

France also had an early start among European nations in the cultivation of a medico legal system. From 1570 to 1692, France enacted laws that, like those of Germany, favoured the development of legal medicine as an academic discipline. However, by 1690, medico legal offices became corrupt, and progress in legal medicine actually regressed, not to start on a forward march again until after the French Revolution in the next century¹⁰.

Meanwhile, in Italy, a physician named Fortunato Fedele published in 1602 a fairly comprehensive volume on forensic medicine entitled, *De Relationes Medicorum*. Another Italian, Paola Zacchia, a papal physician, published the huge *Questiones Medicina Legales*, which quickly overshadowed Fedele's work. Zacchia's book discussed in detail questions of age, legitimacy, pregnancy, death during delivery, resemblance of children to their parents, dementia, poisoning, impotence, feigned diseases, miracles, rape, mutilation, and the matters concerning public health. The work has deficiencies that can easily be explained by the era in which it was written; for instance, the knowledge of anatomy and physiology was sketchy and erroneous. The book also contains sections on the different methods of torture then in existence, and it has a section that deals with miracles. Despite these shortcomings, it was a worthwhile and influential volume.

Legal medicine was not treated as being just a theoretical pursuit. It was eventually brought into the courtroom. For example, in 1667 Schwammerdamm, in Germany, claimed that the lungs of a newborn baby would float in water if the baby had actually breathed. That is, if it was not stillborn and had lived and subsequently died, either by natural causes or by homicide. In 1681, the German physician Schreger used this test forensically, and secured the acquittal of a girl who had been accused of murdering her illegitimate child.

Legal medicine began to be promoted within formal educational circles. In 1650, Michiaelis, in Germany, delivered lectures on legal medicine. By 1720, professorships concerning the subject were founded by the state. Germany, in fact, established the first known medicolegal clinic in Vienna in about 1830 and a second one in Berlin in 1833. France established its first clinic in 1840. France has also provided, since 1803, that judges appoint medical experts who must be graduates in medicine and must have attended a

¹⁰Cyril H. Wecht, 'The History of Legal Medicine'
<http://jaapl.org/content/33/2/245> accessed on 12 June 2022

course (in earlier days this requirement was fulfilled by going to one or more lectures) and have passed an examination in legal medicine. France established its first professional Chair in Legal Medicine in 1794. Great Britain, in 1803, established its first Chair of Forensic Medicine at the University of Edinburgh. By 1876, there were chairs in all of its medical schools.

AMERICAN DEVELOPMENTS

In the United States, the first lecturer on legal medicine was Dr. J. S. Stringham, who gave his lectures in New York beginning at around 1804. In 1813, the first Chair of Medical Jurisprudence was established by the College of Physicians and Surgeons of New York City and was filled by this same Dr. Stringham¹¹. In 1815, the College of Physicians and Surgeons of the Western District of New York appointed Dr. T. R. Beck as the Professor of the Institutes of Medicine and Lecturer on Medical Jurisprudence. In the same year, the Medical Department of Harvard University appointed Dr. Walter Channing as the Professor of Midwifery. Dr. Benjamin Rush is credited with emphasizing the significance of the relationship between law and medicine in the early 1800s. As the nation's first surgeon general and a signatory of the Declaration of Independence, Rush established American legal medicine with his published lecture "On the Study of Medical Jurisprudence," which he delivered to medical students at the University of Pennsylvania in Philadelphia in 1811. The lecture dealt with homicide, mental disease, and capital punishment.

The works of Stringham and Rush inspired the teaching of medical jurisprudence in other American medical schools. Among the early teachers were Dr. Charles Caldwell in Philadelphia and Dr. Walter Channing at Harvard. In 1819, Dr. Cooper, a legal officer of distinction and president of the College of South Carolina, published Tracts on Medical Jurisprudence. This volume contained almost all available literature written in English on legal medicine.

In 1815 Dr. T. Romeyn Beck was appointed lecturer on medical jurisprudence at Western Medical College in New York state. In 1823, Beck published the Elements of Medical-Jurisprudence, which defined the field of legal medicine for about half a century of American medical practice. Beck's two volumes included impressive topics, such as rape, impotence and sterility, pregnancy and delivery, infanticide and abortion, legitimacy, presumption of survivorship, identity, mental alienation, wounds, poisons, persons found dead, and feigned and disqualifying diseases.

In 1838, Isaac Ray published A Treatise on Medical Jurisprudence of Insanity. In 1855, the year that Beck died, Francis Wharton, an attorney, and Dr. Moreton Stille, a physician, collaborated to publish A

¹¹ Theodric Romeyn Beck and William Dunlop. (1825.) Elements of Medical Jurisprudence, 2 ed., Oxford University Press.

Treatise on Medical Jurisprudence. In 1860, Dr. John J. Elwell, a physician and an attorney, published a book entitled *A Medico-Legal Treatise on Malpractice, Medical Evidence, and Insanity Comprising the Elements of Medical Jurisprudence*, which highlighted the issue of malpractice in the medical jurisprudence literature. Elwell's book presented excerpts from contemporary cases for the purpose of teaching physicians what to expect from malpractice litigation. Dr. John Odronaux, also a physician and an attorney, published *Jurisprudence of Medicine* in 1867 and *Judicial Aspects of Insanity* in 1878. In 1894, Randolph A. Witthaus and Tracy C. Becker published *Medical Jurisprudence, Forensic Medicine and Toxicology*¹².

For medical students and physicians, medical jurisprudence assumed the position of central importance in U.S. schools of medicine throughout most of the 1800s. During the course of the 19th century, the institutions, laws, and judicial decisions in America reflected the increasing influence of sound medicolegal principles, especially those pertaining to mental disease and criminal lunacy. After the Civil War, however, things changed drastically. Legal medicine became temporarily dormant. American Professor and Dean Stanford Emerson Chaille expressed his view of the deplorable condition of medical jurisprudence in the United States. Chaille demonstrated how the teaching of medical jurisprudence had deteriorated by noting that in some medical colleges the course had been dropped altogether. In others, it had been attached to some other subject, and in many colleges the teaching of medical students was entrusted to an attorney with no formal training in the medical field.

Even in the early 20th century, the teaching of medical jurisprudence was relegated to a position as an occasional subject taught outside the mainstream.¹³ However, by the middle of the 20th century, legal medicine underwent a renaissance, as evidenced by the establishment of the American College of Legal Medicine (ACLM), the founding of the Law-Medicine Institute at Boston University, and the rekindling of contemporary interest in a vast array of legal medicine issues, medical ethics, physician and patients' rights, and business and professional aspects of medical practice.

In 1867, the Medico-Legal Society was organized in New York. It was the first society in the world to be organized for the purpose of promoting the principles that an attorney could not be fully equipped for the prosecution or the defense of an individual indicted for homicide without some knowledge of anatomy and pathology and that no physician or surgeon could be a satisfactory expert witness without some knowledge of the law. Harvard University established a separate professorship in legal medicine in 1877.

¹² James C. Mohr. (1993.) *Doctors and the Law: Medical Jurisprudence in Nineteenth-Century America*, Oxford University Press, New York City.

¹³ Alfred Swaine Taylor and Frederick John Smith (ed.). (1920.) *Taylor's Principles and Practice of Medical Jurisprudence*, 7 ed., Taylor & Francis.

CHAPTER 4

MEDICAL NEGLIGENCE BY DOCTOR AND LAB TECHNICIAN

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INTRODUCTION

Medical negligence is an elusive concept in the Indian context. The total number of medical negligence cases filed in consumer courts from 2000 to 2017 in India was a meagre 31,159. While there is a possibility of this being a result of having diligent doctors and perfectly working hospitals throughout India, it is, unfortunately, the case of underreporting as articles say around 5 million Indians die due to medical negligence. According to the Minister of State for Health and Family Welfare Ashwini Kumar Choubey, in 2017, 69 cases of medical negligence were awarded punishment by the Medical Council of India (hereinafter referred to as 'MCI'). This formed 44% of the cases referred to MCI by the state medical councils. In 2018, 28% or 40 cases referred to MCI by state medical councils awarded punishments to doctors and until June 2019, 46% or 28 doctors were punished by MCI for medical negligence. Medical negligence is an issue that needs to have stricter liability and calls for deeper analysis as these cases deal directly with human life and such negligence only causes anguish to people who look at doctors as someone next to god. Such acts of negligence lower the trust of people in these institutions.

MEDICAL NEGLIGENCE

According to Halsbury's Laws of England, Medical Negligence has been defined as "Duties owed to the patient. A person who holds himself out as ready to give medical advice or treatment impliedly undertakes that he is possessed of skill and knowledge for the purpose. Such a person, whether he is a registered medical practitioner or not, who is consulted by a patient, owes him certain duties, namely, a duty of care in deciding whether to undertake the case; a duty of care in deciding what treatment to give; and a duty of care in his administration of that treatment. A breach of any of these duties will support an action for negligence by the patient". This definition has listed three duties of a doctor which was laid down by the Hon'ble Supreme Court in the case of Dr. Laxman Balkrishna Joshi vs. Dr. Trimbark Babu Godbole and Anr., and A.S.Mittal v. State of U.P., These duties are (a) duty of care in deciding whether

to undertake the case, (b) duty of care in deciding what treatment to give, and (c) duty of care in the administration of that treatment.

DEGREE OF CARE

At this point, it is pertinent to explicitly state the 'degree of care' to be exercised by doctors. There are three kinds of tests to determine the degree of care which are as follows:

1. Bola Test – In the case of Bolam v. Friern Hospital Management Committee, McNair, J. summed up the test as: The test is the standard of the ordinary skilled man exercising and professing to have that special skill. A man need not possess the highest expert skill.

The Bolam test states that if a doctor acts in accordance with a responsible body of medical opinion, he or she will not be negligent

2. Bolitho Test – In the case of Bolitho v. City & Hackney Health Authority, the Bolam Test was amended and the meaning of 'responsible body' of medical opinion was explained. Medical opinion was defined as an opinion with 'logical basis'.

3. Montgomery Test – The case of Montgomery v Lanarkshire Health Board is a fairly recent landmark judgment on the subject of medical negligence and it gives birth to the Montgomery Test. The Supreme Court of the United Kingdom held that doctors are now required to take reasonable care to ensure that the patient is aware of any material risks involved in any recommended treatment, and of any reasonable alternative or variant treatments. The 'Montgomery' case has raised the standard of reasonable test as the focus is now on 'reasonable patient' rather than 'reasonable doctor'. The law defines material risk as either a risk to which a reasonable person in the patient's position would be likely to attach significance or a risk that a doctor knows or should reasonably know is perceived to be of significance by this particular patient.

Nowadays, Bolam Test and Bolitho Test are the twin pillars of all assessments of medical negligence around the world. However, Bolam Test is still the most commonly accepted test in cases of medical negligence in India with the Bolitho Test being used only twice.

DUTY TO OBTAIN PRIOR CONSENT

The hospital and doctors have a duty to obtain prior consent for treatment, organ transplant, research purposes, disclosure of medical records, and teaching and medico-legal purposes. Consent can be (a)

express consent where it is oral or in writing; (b) implied consent where it is implied by the patient's conduct (c) surrogate consent where consent is given by family members (d) advance consent or proxy consent where either the consent is given in advance by the patient or it is given by an authorized person. It is important to mention here that in surrogate consent, generally, courts have held that consent of family members with the written approval of 2 physicians sufficiently protects a patient's interest.

In the case of *Samira Kohli vs. Dr. Prabha Manchanda and Ors*, the Supreme Court held that when the patient is neither a minor nor mentally challenged or incapacitated, there was no question of someone else giving consent on their behalf, and in that case, the consent given by the appellant's mother was not valid consent.

CASES OF IMMEDIATE TREATMENT

In cases of emergency treatment, the court has held many times that there is no question of waiting for consent. Consent is implicit in such cases. A surgeon who fails to perform a treatment in emergency cases must prove that the patient refused to undergo an operation not only at the initial stage but even after the patient was informed about the dangerous consequences. Waiting for the consent of a patient or a passer-by who brought the patient to the hospital is nothing but absurd and is an apparent failure of duty on the part of the doctor.

DUTY OF CARE NEED TO BE EXERCISED BY LAB TECHNICIANS

In the case of *Spring Meadows Hospital and Anr. v Harjol Ahluwalia*, the Honourable Supreme Court awarded a compensation of Rs. 5 Lakhs because of mental anguish caused to the parents of a child who became incapacitated and a compensation of Rs. 12 lacs to the child. While the amount of Rs. 12 lacs was to be paid by the insurance company, the balance amount was to be paid by the hospital as the nurse who administered the adult dose was not qualified. The case shows that the duty of care has to be exercised not just by the doctors but also the nurses, lab technicians, and other hospital staff.

WHAT DOES NOT AMOUNT TO MEDICAL NEGLIGENCE

Merely because the doctor chose a different procedure/ treatment to cure the disease does not make the doctor negligent. There is a need for stricter liability, however; even doctors are prone to making mistakes. It is completely possible for a treatment to be unsuccessful when it has a low success rate. A doctor performing their duty with due care and caution cannot be held liable for negligence.

In the case of Dr. Kunal Saha vs. Dr. Sukumar Mukherjee and Ors. the National Commission held that an error in medical diagnosis does not amount to a deficiency in service. The commission also held that the doctor can't be held liable for want of an exact diagnosis. In the case of Farangi Lal Mutneja vs. Shri Guru Harkishan Sahib Eye Hospital Sahana and Anr., the commission dismissed the claim of medical negligence based on a report received from the Medical Council of India which concluded that standard treatment protocol was followed and optimal procedures were carried out.

REMEDIES AVAILABLE IN CASES OF MEDICAL NEGLIGENCE

Medical Council of India

An aggrieved party can file a complaint of negligence against a medical practitioner to the concerned State Medical Council. The council can take action against the concerned doctor by suspending or cancelling their registration. The order of the State Medical Councils can be appealed to the Medical Council of India by the patient or the doctors. However, the Indian Medical Council Act, 1956 does not give them the power to compensate the aggrieved party. The MCI order can also be appealed in a court of law by the aggrieved party.

There are many flaws with this system as when doctors investigate the case there is a high probability of the decision being biased towards the doctor against whom the case is filed. Sylvia Karpagam argues that doctors, in general, hesitate to question other doctors and that there is a need for an independent, neutral, and external regulatory committee to hold doctors accountable for their actions. However, the MCI regulations don't allow any external body to judge the case.

According to a Parliamentary Report on the Indian Medical Council (Amendment) Bill 2013, the possibility of a conflict of interest between the inquiry team and the accused doctors in cases of medical negligence is high and the committee recommended that all cases of such medical negligence should be inquired into by a Committee of experts drawn from various fields and experience including social activists, patient's representative, etc.

Consumer Forum

A person can approach the consumer courts to file a medical negligence case. It was in the case of the Indian Medical Association vs. V.P. Shanta and Ors, where the Supreme Court held that the medical profession comes within the ambit of the Consumer Protection Act, 1986 and the medical services rendered by medical practitioners to be treated as services under section 2(1) (o) of the Consumer

Protection Act, 1986. Under the new Consumer Protection Act, 2019 the medical services fall under the ambit of services as mentioned in section 2(42) of the new Act. Any matter of medical negligence on the part of the service provider will be considered as deficiency under section 42(11) of the new Consumer Protection Act, 2019.

CRIMINAL LIABILITY

Under Section 304A of the Indian Penal Code, any person who acts negligently or rashly which results in the death of a person then the person shall be punished with imprisonment of either description for a term which may extend to two years, or with fine, or with both. In cases of medical negligence, it has to be proven that the accused did something or failed to do something which in the given circumstances no other medical professional in their ordinary senses and prudence would have done or failed to do.

The doctrine of Res Judicata

Since the aggrieved party can go to more than one court in these cases, the doctrine of res judicata becomes important. The doctrine of res judicata prevents the trial of a suit which is already pending in a court of competent jurisdiction. In the case of Pravat Kumar Mukherjee vs. Ruby General Hospital, the National Commission held that the Motor Accident Claims Tribunal (MACT) case does not stop the complaint under Consumer Protection Act. The causes are different and required to be decided by separate tribunals. The cause of action before MACT was negligent driving, due to which the accident was caused, the cause of action against doctors and hospitals is medical negligence. Since both causes are separate and distinct, the complaint was held to be maintainable.

QUANTUM OF COMPENSATION

The issue of the quantum of compensation is pressing and pertinent in the modern world. The problem in medical cases is that a little negligence can have catastrophic consequences in the life of the patient. The case of Indian Medical Association vs. V.P. Shanta and Ors, is pertinent to look at as in this case the Hon'ble Supreme Court observed that the loss suffered by the patient may be continuing and what may seem like an unduly large award may be little more than that sum which is required to compensate him for such matters as loss of future earnings and the future cost of medical or nursing care. The court has rightfully said that to deny a legitimate claim or to restrict arbitrarily the size of an award would amount to substantial injustice.

However, such a view on this topic would be biased and unfair to the medical community because usually, if one were to estimate the monetary loss suffered by the patient in terms of future earnings due to the negligence, the costs would go up to crores and even more. It would be impossible for many Indian medical professionals to pay such a huge compensation. The Indian legal system might be able to solve this issue by looking at what other legal systems around the world are doing to deal with this issue. The following are some of the models working around the world.

Britain

The British medical malpractice system relies on insurance from the National Health Service (NHS). Most doctors in England are insured by the NHS which handles all the legal and business aspects of medicine. The NHS employee and doctors are not personally liable for malpractice claims. The Funds for the NHS indemnity come from the government's general fund.

France

France followed a similar model to us but in 2002 they introduced an out-of-court, no-fault system in which patients could bring claims before a regional government-appointed review board. Again, the money to compensate injured patients comes from a national fund that is funded by insurance premiums placed on doctors and hospitals or from general fund revenues.

Scandinavian Countries

Sweden, Finland, Denmark, and Norway also operate out-of-court, no-fault systems for medical malpractice, designed to compensate patients for injuries they suffer from avoidable risk and complications related to medical care. The systems also compensate patients for injury caused by defective equipment, the misuse of equipment, incorrect diagnoses, and infection contracted during treatment.

CONCLUSION

Medical Negligence has been addressed properly in the Indian Legal System and the judicial precedents have protected the rights and interests of the patients. However, medical negligence suffers from underreporting and even if more suits were to be filed it would only lead to more litigation and the costs that come with it. The issue of compensation to the patient is inevitable and there is an urgent need to remodel our system based on the foreign models.

CHAPTER 5

FORENSIC MEDICINE AND ITS APPLICATION

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INTRODUCTION

Forensic Medicine is the interplay of medicine and law. This is necessitated by the need for a medical opinion, investigation, or research in medico-legal cases as well as war crimes, terrorist activities, and drug-related crimes. Forensic medicine has been around for centuries but it was only in the past century that it was regarded as a separate academic discipline. Given the global effect of drug networks and terrorism, it is of paramount importance that the domestic institutions work together to arrive at some standards. Forensic medicine suffers from not only huge variations in definitions and practices from country to country but also lacks a single official international institution to regulate the workings of regional forensic institutions. The paper aims to provide a robust explanation of various existing forensic science principles and practices along with a comparison of the working of various governing institutions in the United States and the European Union. The paper also discusses the reasons behind the contrasting findings of different countries and aims to provide solutions for the pressing problems of the current world concerning the subject of forensic medicine.

MEANING OF FORENSIC MEDICINE

Forensic Medicine has been defined over the past centuries by different people with different ideas, all of which revolve around the idea of the connection between medicine and law. The reasoning behind this has been rightfully portrayed by the words of D. N. Vieira who said the basic mission of forensic medicine is the application of justice. He has stated that the honour and freedom of individuals depend on it. The famous forensic scientist Johann Ludwig Casper defined forensic medicine as a cross-sectional discipline of medicine and natural sciences dealing with all medical evidence that is relevant to law. Again, the emphasis is on the relation of medicine to law. Hence, essentially forensic medicine is the discipline of medicine that involves an interaction between law, judiciary, and police dealing generally with living persons.

HISTORICAL CONTEXT OF FORENSIC MEDICINE

Constitutio Criminalis Carolina

The criminal code of Emperor Charles V, the *Constitutio Criminalis Carolina* of 1532 enacted by the Holy Roman Emperor, is a landmark in the history of legal medicine. R.P. Brittain has called it the true start of legal medicine. It was the first body of criminal law that asked for the presentation of medical personnel in a case in a court of law and that initiated the connection between law and medicine.

Hsi Yüan Lu

This is one of the oldest existing forensic medicine texts written around 1247 CE by Sung Tz'u during the Southern Sung period. Sung Tz'u is considered the Founding father of forensic science in China. The text is a step-by-step guide to avoiding errors during the pre-mortem and post-mortem procedures. It has deliberated on the human skeleton, and decomposition and also used forensic anthropology extensively. Sydney Smith has said, "... there was comprehensiveness in the scope of medico legal procedure in ancient China that was not to be found in mediaeval Europe."

Justinian Enactments

Code of Justinian, known as the *Corpus Juris Civilis* or Body of Civil Law, was a collection of laws and legal interpretations developed by Justinian I of the Byzantine Empire from 529 CE to 565 CE. This code gave guidelines for the regulation of the practice of medicine, surgery, and midwifery; for the proof of competence through examinations; for the classes of physicians that were to be recognised; for the limitation of the number of physicians in each town; and for the penalties to be imposed for malpractice. Sydney Smith considered it to be the highest point of achievement in the ancient world. In this system, there was a medical expert-defined as 'Medici non sunt proprie testes, sed majus est judicium quam testimonium' which means 'physician are not ordinary witnesses, but give judgement rather testimony' and Sydney Smith interprets it as meaning that the medical expert is not used to proper or greatest advantage if he is regarded simply as a witness appearing for one side or the other; his function is rather to assist the judiciary by impartial opinion based on specialized knowledge. So we can see that after the Justinian Enactments the legal and medical spheres actually came together and this helped in the advancement of Forensic Medicine.

PARTS OF FORENSIC MEDICINE

Forensic Medicine includes the following subjects:

1. Forensic Psychiatry
2. Forensic Pathology
3. Traumatology
4. Clinical Forensic Medicine
5. Medical Law
6. Toxicology
7. Medico-Legal Aspects Of Alcohol
8. Traffic Medicine
9. Haemogenetics And Stains

We shall now discuss a few of these topics in detail.

Forensic Psychiatry

Forensic psychiatry is that branch of psychiatry that deals with issues arising between psychiatry and the law. However, the area of Forensic Psychiatry varies greatly from country to country depending on the legal issue. We shall look at a few countries' stances on this concept and its application of the same.

United States of America

In the United States of America, the definition of Forensic Psychiatry is determined by the American Academy of Psychiatry and the Law (AAPL). The AAPL has defined it as follows:

“Forensic Psychiatry is a subspecialty of psychiatry in which scientific and clinical expertise is applied to legal issues in legal contexts embracing civil, criminal, correctional or legislative matters: forensic psychiatry should be practiced in accordance with the guidelines and ethical principles enunciated by the profession of psychiatry.”

It further defined three divisions of forensic psychiatry namely:

1) Civil forensic psychiatry: This division deals with individual rights and capabilities: the legal capacity of a person, the capacity of a parent for the custody of children, testamentary capacity, and compensation for non-material damage.

2) Criminal forensic psychiatry: This division deals with competence to stand trial, competence to enter a plea, capacity of giving testimony, voluntariness of confessions, insanity defence(s), diminished capacity, sentencing considerations, the release of persons who have been acquitted by reason of insanity.

3) Legal regulation of psychiatry: It deals with voluntary hospitalization, confidentiality, right to treatment, right to refuse treatment, informed consent, professional liability, and ethical guidelines.

The United Kingdom and European Union

In countries like the USA and South Africa, there is a major distinction between clinical and forensic psychiatry but in the UK such distinction does not exist.

Difference between Clinical Psychiatry and Forensic Psychiatry:

Clinical Psychiatry involves providing on-going and in-depth mental health care for patients. It is patient focussed. Clinical psychologists integrate theory and clinical knowledge to prevent, diagnose, and treat mental illness. Forensic psychiatry mainly deals with the legal system rather than the patient. It is not as patient-focused and thus the study requires a “psycho-legal” methodology than the conventional one. The conclusions arrived at by the forensic psychiatrist to the courts need to be safe results based on observations, examinations, and theoretical scientific knowledge, despite the fact that they are frequently asked to comment on issues concerning the past or the future. Confidentiality issues are irrelevant to forensic work but in clinical psychiatry, confidentiality is of great importance.

In the UK, a forensic role is expected of clinical psychiatrists who provide treatment for forensic patient populations. So, we can see that even though in the USA both the fields are considered vastly different but, in the UK, both the work is done by one psychiatrist.

We can also draw a parallel here between the differences in the definition of Forensic Psychiatry in Europe and the USA. According to Gunn and Taylor, the essence of forensic psychiatry is the care and treatment of mentally disordered offenders requiring similar services including risk assessment and the prevention of future victimization. The focus in the European regions is on the patient rather than merely helping the courts which is the case in the USA.

Forensic Toxicology

According to the National Institute of Justice, Forensic toxicology is the analysis of biological samples for the presence of toxins, including drugs. This helps in identifying a substance's potential effect on an individual's death, illness, or mental or physical impairment. Forensic Toxicology is applied in cases

ranging from driving under the influence of drugs and alcohol to cases of drug-facilitated and drug-related crime, drug testing programmes, child welfare, correctional facilities, and sports doping control, environmental toxicology, terrorism, and chemical warfare.

International Associations

There isn't just one globally recognized international association for forensic toxicology rather there exist a few associations originating from western nations. Most notably there is The International Association of Forensic Toxicologists (TIAFT), founded in London in 1963, and the Society of Forensic Toxicologists (SOFT), founded in New York in 1970. These rose to prominence in the 60s and 70s when the War on Drugs was officially announced by the then US President Richard Nixon in 1971.

Abused and Controlled Substances

It has been clearly established that this branch of forensic medicine deals extensively with drug-related crimes so the identification of a broad range of exogenous substances in biological samples into Abused and Controlled Substances is of paramount importance and is one of the main objectives of forensic toxicology. The basis of such identification is various conventions on drugs such as the Single Convention on Narcotic Drugs of 1961 and the Convention on Psychotropic Substances of 1971.

Post-mortem Toxicology

Post-mortem has been defined by the National Health Service as the examination of a body after death. The aim of a post-mortem is to determine the cause of death. However, the legal basis for a medico-legal cause of death investigation varies between different countries.

United States of America

In the United States, medico-legal death investigations or post-mortems are typically conducted by either a coroner or a medical examiner assigned by the relevant county, district, or state level depending on the law of the specific state. In the US, there exists the problem of low toxicological investigations. According to the report by the US Department of Transportation, in 2019 only 36.2% of drivers had reported drug tests in the Fatality Analysis Reporting System (FARS). Thus, forensic toxicology researchers and practitioners using national estimates of drug prevalence and positivity from FARS are using a data set where over 60% of the data are missing. The testing varies from state to state in the US. For example, the reported drug testing ranged from nearly 0% in the state of North Carolina to over 95% in the state of Alaska.

Nordic Countries

In contrast to the USA, in Nordic countries such as Sweden and Finland, more than 90% of the drivers killed in traffic accidents were subjected to a medico-legal autopsy with a subsequent full toxicological investigation. In Norway, a medico-legal autopsy was performed only in 47% of the cases however toxicological results were still obtained in 71% of the cases since it was possible to analyse ante-mortem samples taken in hospital or post-mortem samples taken without a medico-legal autopsy.

These statistics are crucial as post-mortem toxicology serves society in a broader sense by contributing to death statistics and scientific studies.

United Nations on Forensic Medicine

The United Nations has the United Nations Office on Drugs and Crime (UNODC) department which deals with the development of forensic science and medicine worldwide. UNODC has stated its objective clearly as follows:

“UNODC will provide technical and quality assurance support, guidance and training (including sensitization to the need for continuous quality improvement), relevant tools, equipment and infrastructure, and support the establishment of new laboratories where appropriate, including the improvement of capacities to recognize and prevent the work of illegal drug production laboratories.”

In the Commission on Human Rights resolution 2002/36, United Nations High Commissioner for Human Rights (OHCHR) was asked to consult with Governments, relevant United Nations bodies, and professional organizations of forensic and related experts to update the list of forensic and related experts with their biographical data, including professional qualifications, indications of availability, and the kind of assistance they could provide.

The OHCHR formulated the following categories to classify experts in the field of Forensic medicine:

- (a) Forensic physician/pathologist/expert in the field of forensic medicine;
- (b) Forensic pathology related to deaths caused by explosions, projectiles or firearms;
- (c) Anatomical dissection and morphology of decomposed bodies;
- (d) Identification of corpses in individual cases; coordination in identification centres with large numbers of corpses;

- (e) Clinical forensic information relating to sexual crimes, personal injury, state of health, domestic violence, etc.
- (f) Assessment of physical injuries and related evidence;
- (g) Investigation of the presence of toxins in bodily and other fluids;
- (h) Analysis of cause of death from projectiles from firearms and other weapons; imprints and marks on the skin and at the crime scene;
- (i) Investigation of traces of biological evidence found at the crime scene or on the body of the victim or suspects in crimes such as homicide or sexual assault;
- (j) Forensic information systems for cross-linking cases;
- (k) Conducting forensic exhumation and autopsy examinations; exhumation and identification of bodies; investigation of mass graves;
- (l) Forensic medical training.

The Commission was able to consolidate a database of 487 experts worldwide. It also provided technical assistance to the Government of Mexico in elaborating a model procedure based on the Istanbul Protocol for the forensic investigation of torture. Furthermore, the UNODC actively launches publications and guides on forensic medicine. In 2020, UNODC launched a publication titled "The role of drug testing laboratories in early warning systems", targeting forensic laboratories that are part of national and regional early warning systems. The publication aimed to establish guidelines for the use and role of laboratories in an early warning system.

Forensic Medicine and Covid-19

During a pandemic like Covid-19, it is easy to consider forensic medicine as of secondary importance however that couldn't be further from the truth as forensic medicine has many roles to play in helping society fight such a deadly pandemic.

Forensic Medicines role in cases of domestic abuse

In times like Covid-19 when the majority of the people are living in their houses for most of the day, it has been seen through the statistics provided by the domestic abuse helplines that the cases of domestic abuse have increased drastically. Other than domestic abuse, the current world has seen a rise in police brutality during these times. Forensic medicine departments in Covid-19 allow health issues of law

enforcement to be taken into account. Forensic physicians perform medical assessments of victims of interpersonal violence and arrestees detained in police cells.

Thus, we can see that healthcare interventions among arrestees and domestically abused people by the forensic assessment of health issues greatly helps in providing justice to them along with providing standard healthcare. The medical examination gives access to healthcare to those who have no adequate medical follow-up, such as adolescents and young adults, patients with addictive disorders, and persons in precarious situations.

Forensic Medicine's role in fighting the Covid-19 virus

The term forensic medicine has such a connotation to it that most people believe they are only required in cases of non-natural or sudden, unexpected natural death, such as homicides, mass disasters, or sudden cardiac arrests. However, it is often forgotten that forensic medicine, forensic pathology to be exact, relates to questions of public health and public safety in scenarios such as the Covid-19 pandemic. An autopsy can generate important information about the characters of an infection, which cannot clinically or otherwise be obtained. Besides the cause of death and pathological characteristics of the disease, key questions in such deaths include the source of transmission.

ANALYSIS

Forensic medicine has a wide implication in medical treatment worldwide. It is not a new concept rather its implication can be found in Ancient India also. Kautilya's Arthashastra is an epic piece of such description. It states that if a death is suspected due to poisoning, the meal left by the deceased was tested by feeding with birds. Ante mortem injuries were looked upon the body of a deceased dead of murder. His clothes had been put for examination. It describes the necessity of an autopsy in establishing the cause of death after smearing the body with oil to bring out bruises, swellings and, other injuries. Atharva Veda talks that people did a dissection of dead animals only for sake of knowledge. Susruta gave an antique draft on Ayurvedic treatment which focuses on toxicology mainly. During the British period, forensic medicine developed quickly. Sir William Herschel in 1858 for the first time used the method of dactylography for identification which later promoted the technique of Fingerprinting. Likewise India, every country developed the use of forensic medicines in the system of treatment quickly.

Forensic anthropology nowadays is converted into virtual mode through radiographic imaging. It started in 20th century while X-ray was discovered to investigate internal bone structure. This technique is as good as it is non-destructive and less time-consuming and labour intensive. It is used in determining the characteristics of fossilized skeletal material also. This technique involves discharging of X-ray over a

bone or skeleton which passes the ray onto a film revealing the image of the object itself. This image is a two-dimensional superimposition of the internal structure of the object. Recently, a transition from film to digital or filmless radiography has been developed recently also. It is less expensive than that of the before system also. Now computerized tomography like CT-scan has a wide implication in radiography. Images have been turned into 3D even 4D from a 2D structure. However, multiple insertions of radio waves may result in secondary cancer in the body of patient. That is why necessary care is taken here. For the safety of the patient, image quality may be reduced or the most appropriate modality and protocols have opted for. This safety includes Sonography, Magnetic Resonance Imaging (MRI), etc. those applications help in detecting the age of the victim in cases of asylum seekers or human trafficking, and Dental radiography provides the framework for the most accurate methods of estimating dental age in living individuals. Those techniques also apply in the process of medial clavicle analysis and hand wrist analysis. In disaster victim identification requires such techniques also. In 2004, 226408 people were killed in South East Asian Tsunami where these techniques had been used and the investigation succeeded accordingly.

“Opioids” have a great connotation in drugs. Certain types of opioids such as; Clonidine, Buprenorphine, Methadone, Codeine, Fentanyl, Morphine, and opium tincture are prescribed for the treatment of opioid use disorder and also treat acute and chronic pain. Currently, Afghanistan is the biggest producer of opium whereas Iran is the biggest in transportation in the world. In 2015, IMS Institute for Health care Informatics published a report on “Global Medicines se in 2020” where it had shown that in 2020 patients would receive around 4.5 trillion doses which were 24% up from 2015. Over 50% of the world’s population would consume more than 1 dose per person per day of medicines which was up from one third of the world in 2005. It further shows that global spending on medicines would reach 1.4 trillion dollars by 2020, an increase of 29-32 % from 2015. They showed that a global increase in medicine supply would be in India, Brazil, Indonesia, and China.

FORENSIC DNA ANALYSIS

DNA is present in almost all the cells of our body, it is resistant to putrefaction, easy to store and preserve for long periods of time. DNA analysis uses only small amounts of biological sample and over the years became cost-effective DNA is present in almost all the cells of our body, it is resistant to putrefaction, easy to store and preserve for long periods of time. DNA analysis uses only small amounts of biological sample and over the years became cost-effective DNA is present in almost all the cells of our body, it is resistant to putrefaction, easy to store and preserve for long periods of time. DNA analysis uses only small amounts of biological sample and over the years

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DNA is present in almost all the cells of our body; it is easy to store and preserve for long periods of time. DNA analysis uses only small amounts of biological samples and over the year has become cost-effective. Forensic DNA analysis focuses on examining specific sections of DNA that are known to be particularly variable between individuals to create a DNA profile. The study of forensics, commonly used by police departments and prosecutors around the world, frequently relies upon these small bits of shed DNA to link criminals to the crimes they commit. Forensic DNA fingerprinting was first used in forensic science in 1986 when police in the UK requested Dr. Alec J. Jeffreys, of the University of Leicester, to verify a suspect's confession that he was responsible for two rape murders. Tests proved that the suspect

had not committed the crimes. DNA has proven to be a powerful tool in the fight against crime. DNA evidence can identify suspects, convict the guilty, and exonerate the innocent. Criminal justice professionals are discovering that advancements in DNA technology are breathing new life into old unsolved criminal cases. Evidence that was previously unsuitable for DNA testing because a biological sample was too small or degraded may now yield a DNA profile. Development of the Combined DNA Index System ('CODIS') at the State and National levels in the US enables law enforcement to aid investigations by effectively and efficiently identifying suspects and linking serial crimes to each other

DNA PHENOTYPING

With our current knowledge of DNA's coding of personal characteristics ("phenotypes"), authorities have been able to analyse crime-scene DNA for the information it contains. Moreover, DNA research can reveal many correlations between genes ("genotypes") and traits ("phenotypes"), both external and internal bodily characteristics and propensities for certain types of behaviour. This information is used in criminal investigations in cases with an unknown suspect and with few clues to lead the investigation forward by narrowing down the circle of potential suspects. This is known as DNA phenotyping.

DNA phenotyping is not a new concept but advancement in the field of medical investigation. In the early times, Non-DNA analysis methods such as taking a blood sample or urine sample were used which used to give away information about blood type, for instance, or diabetes or drug use, which might help in focusing the investigation in a certain direction. However, DNA holds the promise of knowledge about many traits unlikely to be ever derived through other means, such as eye colour, hair shape, and stature. Therefore, DNA phenotyping has become an important tool to provide justice to people.

LEGAL CONSIDERATIONS FOR DNA ANALYSIS

From a survey, it was found that laws are generally confined to traditional DNA forensics that is, making DNA profiles or fingerprints from crime-scene material and comparing these to profiles stored in forensic DNA databases. In some jurisdictions, it is explicitly provided that a DNA profile must not give phenotypical information. The European Council Resolution of June 25, 2001, on the exchange of DNA analysis urges member states to only exchange the results of DNA analysis of non-coding chromosome zones, "i.e. not known to provide information about hereditary characteristics." In Belgian law, the only purpose a forensic DNA investigation may serve is the comparison of DNA profiles to directly or indirectly identify persons involved in criminal behaviour. It is a criminal offense to conduct a DNA investigation for other purposes. In other countries, there is no legal provision on this, but in practice or doctrine, DNA forensics is restricted to non-coding DNA.

DNA PHENOTYPING AND MEDICAL NEGLIGENCE

All those individuals who share the characteristics of a facial composite may be interviewed and required to donate samples for comparison to the crime sample in question. In these cases, it is necessary to raise questions about harassment that certain groups with determined physical characteristics could suffer from the moment a phenotype is obtained from evidence. Therefore, it should be noted if the safety of such groups is being preserved to the detriment of investigation and public safety objectives and if new legal and ethical regulations should be created to preserve the integrity and intimacy of people involved in DNA phenotyping-based investigations.

Without a proper framework for the storage of DNA samples, the risk for medical negligence increases as they are very personal data sets that have far larger consequences on the person and the community they belong to. Therefore, it is of utmost importance that certain legal provisions are established concerning DNA storage and medical negligence of the same.

ISSUES WITH FORENSIC MEDICINE

Forensic evidence has a degree of certainty and credibility unprecedented. However, they are no less likely to be mistaken. Their features, such as technical complexity, the use of databases, the ability to connect databases to one another, can exacerbate the conditions that caused mistakes in classical techniques. In addition, new technologies in forensic medicine have the ability to prove by themselves a suspect's guilt. Under these circumstances it is essential to carefully check and monitor their correctness (Murphy, 2007).

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ISSUE OF INACCURATE RESULTS

While it is understood that forensic medicine produces breakthroughs in criminal investigations and the branch itself is a major scientific breakthrough in the recent decades, it is still prone to producing unreliable data. According to a survey, forensic medicine methods do not produce accurate results consistently. Bite mark evidence is pertinent to discuss here and how adversely it has affected the criminal justice system.

Bite Marks as evidence

As the name implies, bite marks evidences are those evidences where the bite mark found on a victim's body is matched with a suspect's bite marks. The problem with this method concluding is that bite mark evidence has never been proved to be scientifically accurate. It is due to the fact that the way the teeth are arranged in humans is not specific to every individual. Dr. Freeman said that it is very hard to determine the source of marks on a body because what the forensic practitioner is looking at is not a bite mark indentation but the bruise that's left over.

According to The Innocence Project, 26 people have been wrongfully convicted based on this method of evidence extraction. One of the notable cases is of Kennedy Brewer in the case of Kennedy Brewer v. State of Mississippi, where the investigation officer was not willing to consider other contradicting facts of the case but based his charges solely on the bite mark retrieved from victim's body.

Therefore, the lack of validation of many methods used in forensic medicine questions the integrity of the results it provides.

According to a report by the National Academy of Sciences ('NAS') in the United States, imprecise testimony by the expert contributes to the admission of erroneous evidence. It also stated that forensic techniques dealing with comparing patterns or features such as tire tread impressions, bite marks, or hair have not been subjected to sufficient scientific evaluation.

In another report by the President's Council of Advisors on Science and Technology ('PCAST'), it was stated that there was the need for better resources to support judicial training considering the changing landscape in the evaluation of forensic evidence and state of validation of various forensic techniques.

It is pertinent to note that nearly a quarter of the 2,601 people or 1 in 4 people that have been exonerated since 1989 were wrongfully convicted based on false or misleading forensic evidence.

The Indian scenario in this context is also nightmarish as in India until 2015 nearly 318 convicts were released from jail based on DNA tests who were earlier wrongly convicted based on faulty forensic evidence. Most of the investigating officers in these cases are not adequately trained in the collection, preservation, packaging, and forwarding of forensic evidence. Thus, the investigating skills need to be updated for adapting to scientific procedures. Another thing that must be done with regard to police training is scientific auditing at the crime scene.

Financial Burden and Quality v. Cost Problem

Since these technologies are a big scientific breakthrough in the field of medicine, it is not surprising that these technologies are far more expensive than the normal technology used in labs and hospitals. This also includes significant financial investments in sophisticated equipment along with the training of experts with the technical expertise needed. This problem leads to cuts in the quality of the equipment to make forensic medicine affordable to everyone. However, such ventures to make forensic medicine affordable have not been successful in many cases.

Quality v. Cost Problem

In the United Kingdom, the labs that we designed to specifically deal with crimes were largely private over the past two decades. In the hopes of making forensic medicine affordable and available, there was an estimated 60% reduction in spending on forensic testing. According to the House of Lords Science and Technology Committee, the United Kingdom has focused solely on the cost of forensic tests rather than on the quality of analysis or research.

In the United States, the US Congress enacted the Rapid DNA Act, 2017 intending to subsidize the use of rapid DNA testing. Now instead of a full analysis, the rapid DNA testing kits could be used at a crime scene by non-medical people. On paper, this looks like a very good move, but one of the facts overlooked in this act is that the reliability of the rapid DNA testing kit has not been tested and this is a fatal blow to the integrity of a criminal investigation. The Texas Forensic Science Commission has declined to use these rapid DNA tests since this risk the integrity of evidence.

ISSUE OF ACCREDITATION AND STANDARDS

One of the proven methods to ensure quality control is Accreditation. In the context of this discussion, it would mean that the laboratory has adhered to an established set of standards of quality and procedures. It

would have a management system to always keep the operations of the forensic lab in check and any deviation would be prevented which would help in maintaining the integrity of the evidence and results. However, such accreditation needs legislation to enforce it on the forensic labs existing in a country.

In the United States, there is no federal accreditation system but some states require that the labs in that state are to be accredited. However, it is voluntary otherwise. The National Commission on Forensic Science ('NCFS') recommended that all Forensic Science Service Providers ('FSSPs') should have accreditation. Even the American Bar Association had recommended that,

“[c]rime laboratories and medical examiner offices should be accredited, examiners should be certified, and procedures should be standardized and published to ensure the validity, reliability, and timely analysis of forensic evidence.”

In terms of statistics, 88% of the US forensic crime laboratories were accredited with 83% of them having international accreditation which further enhances the acceptance of a universal standard in forensic medicine. Therefore, the situation seems better in the United States however that is not the case with India or other developing nations.

LEGISLATION FOR FORENSIC MEDICINE IN INDIA

There is no legislation in India specifically for Forensic Medicine. Currently, forensic medicine in India is governed through various sections of different acts such as:

- 1. Indian Evidence Act, 1872** – Section 45 where the court has to refer to experts in the relevant field to develop their opinion on such subject.
- 2. Code For Criminal Procedure, 1973** – Section 53(1), Section 53(2), and Section 54 deal with the powers and conduct of a registered medical practitioner.
- 3. Indian Medical Council Act, 1956** – Section 20(A) deals with the professional conduct of the medical practitioner.

We can see that these laws are in no way specific to forensic medicine and such categorisation is useless when the subject itself has become diverse and expansive. It is also pertinent to note that none of the sections mentioned above deal with issues such as accreditation. There is a Forensic Regulatory & Development Authority of India Bill, 2011 bill but it has been more than a decade and still, nothing has happened which further makes the Legal system of India pertaining to Forensic Medicine weak.

There is no accreditation system in India backed by law. India needs to have ISO-certified Forensic Laboratories with modern technology and instruments.

INADEQUATE FORENSIC SCIENTISTS IN INDIA

According to the United Nations, the population of India is estimated to be around 1.4 billion and it has been calculated that there are only 0.33 forensic scientists per 0.1 million populations in India as far as the work of examination of criminal cases and reports preparation is concerned. However, in the countries abroad, forensic scientists' population ratio exists from 20 to 50 scientists per 0.1 million population depending upon the workload of crime cases in different countries. There are about 4,500 forensic science personnel working in Forensic Medicine Laboratories in India and about 3,000 reporting officers such as experts or scientists. This strength of scientists is negligible in contrast to the population of India.

PENDENCY OF CASES

Currently, there are about 0.7 – 0.8 million cases pending in the Forensic Science laboratories in India. It must be noted that not all cases are sent to forensic labs. Approximately only 10-12% of the crimes are sent to forensic labs. When more cases would be sent to the forensic labs then the pending cases would skyrocket to around 8 times the present cases. The DNA and Toxicology reports in forensic labs remain pending from a period of 6 months to over 2 years which adversely affects and delays the decision-making process in the courts of law.

This lackadaisical nature of the legislation on this subject along with an inadequate number of forensic medicine practitioners in India affects the administration of justice in India. We have already seen how the US and European countries benefit from the effective use of Forensic Medicine in preventing crimes and providing justice to people but all of this is denied to Indians due to some fixable issues in the forensic medicine system of India and the Legal system governing it.

CONCLUSION

Forensic Medicine is a beautiful connecting branch of science that links the medical aspect of life with the law to provide justice to people. It has been around for a very long time and though it had many landmark texts written on it, forensic medicine still had to wait a long time before it could be considered an altogether different branch of science. There is an urgent need to realize the importance of Forensic Medicine as it can be seen that it not only helps in unnatural death cases but also in solving the most pressing issues of the current world such as the global pandemic of Covid-19. It has also been established that forensic medicine is used to provide comfort to people that are domestically abused. Global

institutions such as the United Nations have placed great importance on the development of forensic medicine and it can be clearly seen from the case of Nordic Countries that an efficient forensic medicine system leads to huge innovations in solving practical persistent problems of the society we live in. India has to understand the importance of this branch of science and develop an efficient system for the same as it would be rewarding as well as in the best interests of India and her citizens.

LegalWIND

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