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REVIEW ARTICLE

Education of Law for Forensic Medical and Medical Science Students

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ABSTRACT

Now a day, the term legal medicine is being used synonymously with various other terms, namely forensic medicine, forensic pathology, medical jurisprudence and state medicine. Forensic medicine education has been significantly altered over the decades and this paper reviews the history, current state and progress of forensic medicine education for medical students all over the world. This review also answers how a physician who is well aware and informed about forensic medicine contributes to tackling the various types of problems.

Keywords: *Forensic education, Forensic medicine teaching, Medical students, Medical jurisprudence, Development*

INTRODUCTION

The word "forensics" comes from the Latin forensis, meaning "of or before the forum." In Roman times, the forum was the place where both the accused and the accuser met in front of a group of public individuals to defend themselves. Forensic science refers to a group of scientific disciplines concerned with the application of their particular scientific expertise to law enforcement, criminal, civil, legal and judicial matters. Forensic scientists examine objects, substances (including blood/drug samples), chemicals, tissue traces (hair/skin) or impressions left at the scene of a crime.

Medicine and law are closely related disciplines. Forensic medicine was earlier known as medical jurisprudence (however, today, medical jurisprudence usually refers to the legal aspects of medical practice). A medical practitioner is not only responsible for diagnosis and treatment but also has several legal and ethical responsibilities. This paper aims to review the state of forensic medicine education for medical students all over the world, with a special focus on developing nations. It also aims to answer the question of how medical education in forensic medicine could be useful in combating the different types of problems that still remain a big concern and threat to many nations today. Education of law for forensic medical and medical science students bridges the gap between scientific investigation and the judicial system.

HISTORY OF FORENSIC SCIENCE

The history of forensic science is thousands of years old. Many people believe that Sir Arthur Conan Doyle made forensic science famous through his fictional character Sherlock Holmes. Sir Arthur Conan Doyle, author of the famous Sherlock Holmes novels and stories, was a Scottish physician who has been acknowledged for his significant contribution to the field of forensics through his elaborate use of methods such as fingerprinting, serology, ballistics, trace evidence, handwriting analysis and footprint analysis.

According to historical findings, Archimedes is considered the father of forensic science; after examining the density and buoyancy of a gold crown, he found that it was not made of pure gold.

In the 7th century, an Arabic merchant named Soleman used fingerprints as proof of validity between debtors and lenders.

In 1248, a Chinese book, Hsi Duan Yu, contained a description of how to distinguish drowning from strangulation. This was the first recorded application of medical knowledge to the solution of a crime.

In 1807, Edinburgh, Scotland established the first chair in forensic medicine. London had its first professor of medical jurisprudence by 1834.

In 1909, the first school of forensic science was established by Rudolph Archibald Reiss at the "Institut de Police Scientifique" at the University of Lausanne.

OBJECTIVES

- To understand the importance of law in medical practice.
- To understand the legal duties and responsibilities of a doctor.
- To learn about consent and confidentiality.
- To understand the importance of proper medical documentation.
- To understand the management of medico-legal cases.
- To learn the principles of preservation of medical and physical evidence.
- To understand the role of a doctor as a witness in court.
- To develop awareness of professional ethics and medical negligence.

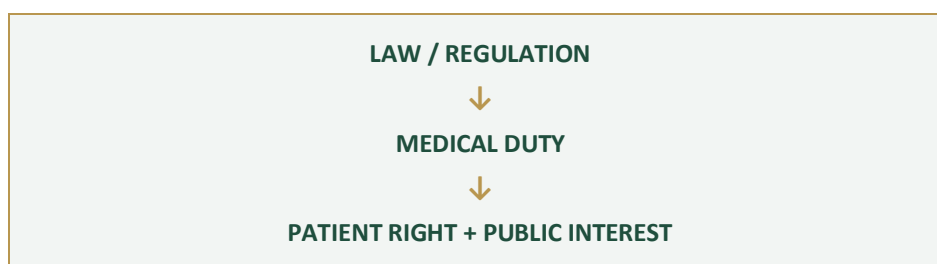
IMPORTANCE OF LEGAL EDUCATION

Legal education protects patient rights and dignity, promotes safe practice, helps doctors manage medico-legal cases (MLCs) correctly, supports evidence preservation and reduces avoidable medico-legal errors. Doctors may encounter legal issues in accidents, injuries, poisoning, sexual violence, suspicious deaths and routine clinical practice.

LEGAL FRAMEWORK IN INDIA

1. Constitutional and statutory law
2. Bharatiya Nyaya Sanhita, 2023 (BNS) — substantive criminal law
3. Bharatiya Nagarik Suraksha Sanhita, 2023 (BNSS) — criminal procedure
4. Bharatiya Sakshya Adhinyam, 2023 (BSA) — law relating to evidence
5. National Medical Commission Act, 2019 and applicable professional regulations
6. Consumer protection and other special health-related laws

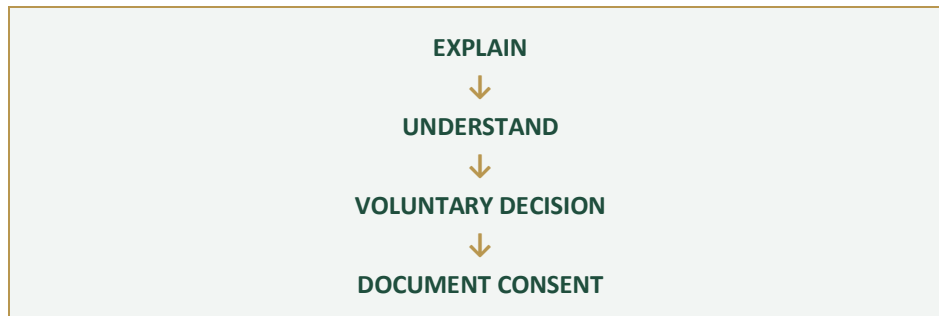
Special laws may apply to MTP, PCPNDT, organ transplantation, mental healthcare and child protection.



CONSENT

Consent should generally be voluntary and appropriately informed. The doctor should explain the proposed examination, investigation or treatment in a manner appropriate to the patient and circumstances. Consent should be properly documented when required.

Special considerations apply to minors and persons lacking decision-making capacity.



CONFIDENTIALITY AND MEDICAL RECORDS

A doctor has a professional duty to protect patient information. Disclosure should occur only with appropriate authorization or where permitted or required by law. Confidentiality is particularly important while handling:

- Medical records
- Photographs
- Laboratory reports
- Digital health information
- Medico-legal reports

Medical records should be:

- Accurate
- Clear
- Objective
- Legible
- Made contemporaneously
- Properly preserved

Records should never be fabricated, concealed or improperly altered.

MEDICO-LEGAL CASES (MLC)

A medico-legal case is one in which medical examination or treatment has a legal implication. Examples include:

- Road traffic accidents
- Assault
- Poisoning
- Burns
- Firearm injuries
- Sexual violence
- Suspected child abuse
- Unnatural or suspicious deaths

Basic Approach



EVIDENCE PRESERVATION AND CHAIN OF CUSTODY

In medico-legal cases, evidence may be important for investigation and court proceedings. The doctor should:

- Collect appropriate specimens according to authorized protocols
- Label specimens correctly
- Seal and preserve them appropriately
- Document collection and transfer
- Maintain the chain of custody
- Avoid contamination or unnecessary handling

MEDICAL NEGLIGENCE

Medical negligence is a legal concept concerning failure to meet the applicable standard of care with legally recognized consequences. Important concepts include:

- Duty of care
- Breach of duty
- Causation
- Damage or harm

Prevention includes maintaining competence, following accepted standards, appropriate referral, informed communication and proper documentation.

DEATH CERTIFICATION AND MEDICO-LEGAL DEATHS

Doctors should distinguish routine medical certification from medico-legal investigation. Unnatural, suspicious or unexplained deaths may require police and medico-legal procedures. Doctors should provide accurate clinical information and follow applicable certification, post-mortem and institutional procedures.

DOCTOR AS A WITNESS

A doctor may be required to appear before court as a medical or expert witness. A medical witness should:

- Tell the truth

- Remain impartial
- State facts accurately
- Clearly distinguish facts from opinions
- Avoid speculation
- Review relevant medical records
- Explain medical terminology when necessary

ETHICAL PRINCIPLES IN MEDICAL PRACTICE

Autonomy: Respect the patient's right to make informed decisions.

Beneficence: Act in the patient's best interests.

Non-maleficence: Avoid causing preventable harm.

Justice: Provide fair and non-discriminatory healthcare.

Confidentiality: Protect private patient information.

Professional integrity: Honesty, accountability and respect.

RESPONSIBILITIES OF A MEDICAL STUDENT

A medical student should:

- Learn the basic laws relevant to medical practice.
- Respect patients and their privacy.
- Never disclose confidential information unnecessarily.
- Maintain accurate documentation during clinical training.
- Report medico-legal situations to the appropriate senior/authority.
- Never fabricate or alter medical records.
- Handle specimens and evidence carefully.
- Seek guidance from senior doctors when unsure about legal procedures.

FORENSIC SCIENCE DEVELOPMENT IN INDIA

Year	Development
1849	Chemical examiner laboratory set up in Chennai
1853	Second chemical examination laboratory established in Kolkata
1864	Third chemical examination laboratory established in Agra
1870	Fourth chemical examination laboratory established in Mumbai
1892	Anthropometry Bureau first established in Kolkata
1898	First explosive examination laboratory developed in Nagpur
1905	First Central Finger Print Bureau in India established at Shimla
1890s	Serology department established by Dr Hankins in Kolkata
1915	Footprint section established under the CID, Government of Bengal
1930	Arms expert appointed and small ballistic laboratory set up under Calcutta Police
1956	Central Detective Training School established at Calcutta

1957	Fingerprint Bureau established in Kolkata by Khan Bahadur Azizul Haque and Rai Bahadur Hem Chandra Bose
1957	First Central Forensic Science Laboratory established at Calcutta
1960	Indian Academy of Forensic Sciences (IAFS) established
1998	BPR&D established the Forensic DNA Typing facility at CFSL, Calcutta

HOW TO IMPROVE FORENSIC MEDICINE EDUCATION

While the shortcomings in forensic medicine education are clear, the solutions to them are fairly straightforward. The importance of the subject should be highlighted at the beginning and throughout the course. Using case studies and a clinical application section at the end of each chapter would help medical students realize the importance of forensic medicine in their daily practice.

More practical, hands-on training in medico-legal cases within clinical subjects should be emphasized. Students should be shown all types of clinical medico-legal cases and should participate in post-mortem examination work as well as dissection, becoming familiar with the normal appearance of organs. Examinations should be more clinically and case-oriented, with emphasis placed on medical ethics, especially in controversial areas of medical science.

Regular journal club meetings and seminars should be held for faculty, who should be motivated to enjoy teaching and encouraged to continuously update their knowledge by reading new books and journals. They should be encouraged to attend conferences and continuing medical education (CME) programmes. Incentives for outstanding teaching should be made available to teaching assistants and lecturers.

CONCLUSION

Forensic medicine arises from a long tradition of links between law and medicine and now embraces a wide variety of needs and skills, intertwining medicine, pathology, science, law and ethics. Each practitioner, whether clinical, pathological, or both, should be aware of their responsibilities, not only to their patient or the deceased, but to society as a whole, and should be able to utilize their medical expertise in the pursuit of fairness and justice within the framework of legal requirements and ethical values.

Legal education is an essential component of medical education. A doctor must understand both the scientific and legal aspects of healthcare. Proper consent, confidentiality, documentation, evidence preservation and professional conduct are fundamental to safe medical practice. Knowledge of forensic medicine and medical law enables medical professionals to protect patients' rights, fulfil their legal responsibilities and provide reliable assistance to the justice system.

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