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## Editorial

### Avenues in Forensic Medicine

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#### 1. Introduction

*“Medicine is a science of uncertainty and an art of probability. Absolute diagnoses are unsafe and are made at expense of conscience.”*

- **William Osler.**

Forensic Medicine is a medical speciality deals with application of medical and paramedical knowledge to aid in administration of justice. Sometimes it is called as Legal medicine. It broad term used to describe the group of medical specialists dealing with cases of injury, poisoning, sexual crimes, assaults, murder, suicide, accidents, and other forms of deaths related to sudden or unnatural causes. They provides their important information and expert opinion to legal authorities to solve legal problems and deals with the legal aspects of law.<sup>1</sup>

Forensic Medicine is a multi-disciplinary branch deals with various medicolegal services including ante-mortem and post-mortem services. It includes the practices of forensic pathology, forensic toxicology, clinical toxicology<sup>2</sup>, clinical forensic medicine<sup>3</sup>, forensic psychiatry, forensic radiology, forensic histopathology, forensic entomology, forensic dentistry, etc. At present the forensic medicine services are majorly divided in two main categories such as Clinical Forensic Medicine and Forensic Pathology based on patient's condition. In Clinical forensic medicine, the medicolegal services are provided to the living

subjects, whereas Forensic pathology deals with post-mortem medicolegal services and related legal work.<sup>4</sup>

#### 2. Scope of Forensic Medicine

Every medical institutions needs to have a department of Forensic Medicine and Toxicology abiding the norms of National Medical Commission. The faculty attached to the medical institution in this department is having dual responsibilities i.e. responsibilities as a teacher to teach undergraduate & postgraduate students and to execute the necessary medicolegal work of the department/institution. Abiding the competency based medical education (CBME) undergraduate curriculum, Forensic Medicine and Toxicology subject is being taught in second and third phase of MBBS.<sup>5</sup>

Besides medical institution and tertiary care centres attached to such institutions, there are various Government secondary care institutions/hospitals including Civil hospitals at district places and Rural healthcare centres/ Taluka-level hospitals providing medicolegal services. The antemortem and postmortem medicolegal services are provided by medical officers in such hospitals.

Also, there are many Multispeciality private healthcare institutions and trust hospitals providing medicolegal services. These services are being provided by Forensic experts, speciality experts or medical officers posted in that hospitals/ healthcare institutions.

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### 3. Avenues in Forensic Medicine

Considering the wide scope in Forensic Medicine towards executing academic, administrative, medicolegal work and research opportunities, the avenues are categorised under various levels as follows-

#### a. For students

- i. CBME curriculum- Abiding CBME curriculum at present Forensic Medicine & Toxicology is being taught in phase II & phase III of MBBS.
- ii. Antemortem Forensics – There is special emphasis given on clinical forensic medicine teaching with hands on experience in practical aspects. Undergraduates need to acquire necessary competence to handle the antemortem medicolegal cases.
- iii. Postmortem Forensics – Undergraduate students need to gain appropriate knowledge, skills and competency in conducting a medicolegal autopsy.
- iv. Responsibilities during internship- There is compulsory one week posting during internship to get enough hands on experience in practical medicolegal aspects in Forensic Medicine at hospital.

#### b. For Postgraduate students

- i. Postgraduate curriculum- Those who takes admission for post-graduation in Forensic Medicine need to complete the training for three years abiding the NMC and concerned affiliated university guidelines. The postgraduate need to submit a dissertation at the end of course which provide great opportunities to him/her in research field.
- ii. Rotary postings – The postgraduate need to complete certain period of rotatory postings in various other speciality departments including a district residency programme (DRP)<sup>6</sup>. It provide great opportunity to acquire interdisciplinary skills.

#### c. After Post-graduation in Forensic Medicine-

- i. Work opportunities – Any postgraduate in Forensic medicine can join senior residency at medical institution abiding availability or join as Forensic expert/ officer/ consultant in various government or private hospitals as needed. After completing one year of senior residency, he/she can join as assistant professor in department of Forensic Medicine in any medical institutions abiding availability

of vacancies and may further promoted to Associate professor, Professor, etc.

- ii. Academic Opportunities- Postgraduate in Forensic Medicine can further opt for Super-speciality courses like DM Forensic Pathology, DM Forensic Radiology, DM Medical/ Forensic Toxicology. There are various foreign academic opportunities, certificate courses, fellowships or PhD programmes provided by many universities, too.

#### d. For faculty in Forensic Medicine -

- i. Faculty can be further become research guide, PG Guide, PhD guide abiding standard norms of affiliated university.
- ii. There are various foreign academic opportunities, certificate, diploma courses, fellowships or PhD programmes provided by many universities.
- iii. Various courses related Medical Education Technology such as Basic Course in Medical Education, Curriculum Implementation Support Programme (CISP), Good Clinical Practice (GCP), Biomedical Research Methodology Course,
- iv. Advance Course in Medical Education (ACME), FAIMER (Foundation for Advancement of International Medical Education and Research).
- v. Other Opportunities like Faculty development programme, Continued Medical Education (CME), webinars, Conferences of state & national level associations/ medicolegal societies. Career development opportunities, medicolegal expertise services.
- vi. Faculty can be a member/ part of various Medicolegal Associations, Journals, Scientific forums.
- vii. There are various administrative opportunities like Dean of medical institution, police surgeon, District/ state medicolegal advisor and at medical university position's as Controller of Examinations, Registrar, Pro-Vice- Chancellor or Vice Chancellor, etc.
- viii. Research and Publications- At institute level various qualitative, quantitative or mixed research can be conducted. Further the result of such studies with conclusive remarks can be published and copyright or patent can be

registered for concerned intellectual property.

#### 4. Forensic Medicine Services

Currently various different types of medicolegal services are provided at various medical institutions, Government and private hospitals and various centres of excellence for specialised services. These services are as follows-

- i. Postmortem Examination of deceased at various Postmortem centres.
- ii. Antemortem services under Clinical Forensic Medicine unit.
- iii. Giving expert opinion in medicolegal matters to investigating authorities and court of law.
- iv. Forensic Histopathological Laboratory Services.
- v. Death Audit, Clinical Meet.
- vi. Active part in various institutional and other committees like Institutional Ethics Committee, Committee on Adverse Event Following Immunisation, Committee on Prevention of Sexual Harassment at workplace, etc.
- vii. Crime Scene investigation.
- viii. Poison information centre.
- ix. One stop help centres.
- x. Cadaver Organ Retrieval Services.
- xi. Tele- evidence (E-evidence).
- xii. Medicolegal Consultancy- Legal Cell Consultant Firm.
- xiii. Disaster Victim Management.
- xiv. Dead body preservation- Cold storage services, Embalming, Transportation related certification, Taxidermy, etc.
- xv. Humanitarian Forensics- Custodial deaths, Covid 19 Pandemic- dead body disposal, Disaster management, etc.
- xvi. Advanced Histopathological Services.

#### 5. Future scope of improvement in Medicolegal Services

Certain other services can be further started and improved at various institutions. These are as follows-

- i. Forensic Radiology and Virtual autopsy.<sup>7</sup>
- ii. Forensic Psychiatry.
- iii. Forensic Anthropology and Forensic Odontology.
- iv. Forensic Human Identification Laboratory.
- v. Forensic Entomology.

- vi. One window system for police and hospital medicolegal documentation services after death.
- vii. Forensic Digitalization services.
- viii. Mini-Forensic Laboratory attached to Clinical Forensic Medicine unit in Government tertiary care centres.
- ix. DNA Laboratory.
- x. Forensic Ballistics.
- xi. Forensic Document examination services.
- xii. Research on recent technological advancement in Forensics.
- xiii. Three tier Forensic Services with a special central cadre under Ministry of Family and Health Welfare, Government of India.

There is a great scope in Forensic Medicine. There is need of progressive and innovative upgradations of all such special sectors or divisions of Forensic Medicine and medicolegal services.

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