

The Need to Strengthen Medicolegal System of Nepal : A Forensic Medicine Perspective

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ABSTRACT

Forensic medicine offers important medical evidence for the purpose of criminal justice through examinations of victims, accused, and deceased. However, Nepal faces severe deficiencies in forensic services due to lack of trained specialists, which hampers justice delivery. Most medico-legal autopsies are performed by untrained doctors without forensic pathology expertise, who fail to recognize evidence. Facilities lack basic autopsy equipment, cold storage, and hygiene. Shortage of experts causes heavy workloads, which further affects the quality. There are also no guidelines for clinical forensic examinations. The poor state of mortuaries and flawed autopsies allow perpetrators to escape sentences. Urgent reforms like recruiting specialists, upgrading infrastructure, implementing forensic protocols, monitoring standards, and budget allocations are needed to strengthen Nepal's medico-legal framework. The medico-legal system must leverage the expertise of local forensic experts by providing training, and career opportunities. Emphasis on forensics will be in the interests of justice, human rights and law. The time to act is now.

Keywords: Autopsy; forensic medicine; medico-legal; Nepal.

IMPORTANCE OF FORENSIC MEDICINE FOR CRIMINAL JUSTICE

Forensic medicine is a branch of science that aids the criminal justice system by providing medical evidence. It is done through examinations of victims, accused and deceased. Branches of forensic medicine include clinical forensic medicine, forensic pathology and forensic anthropology, and forensic toxicology among others.

Clinical forensic medicine involves the thorough examination and documentation of findings in living individuals related. This includes in-depth examination of victims of physical assault, sexual assault, child abuse, torture, custodial violence; and perpetrators of such crimes for any visible or occult injuries, intoxication or other relevant findings that may aid investigations. Careful collection of clinical forensic evidence like biological fluids or DNA from victims/accused is done using prescribed kits and techniques, while ensuring the human rights and consent procedures. Timely and ethical collection of clinical forensic evidence ensures justice for victims and accused by providing impartial medical facts for effective prosecution.

Forensic pathology evaluates cause and manner of death in cases of individuals who have died under circumstances which are suspicious or where the cause of death is uncertain via autopsy. The autopsy findings have critical legal implications in determining guilt or innocence in crimes causing death and provide closure to families regarding the exact cause and circumstances of death. Hence, autopsy must be performed in a meticulous manner using systematic protocols, techniques and sampling to extract all possible medical evidence from the deceased's body.

Forensic anthropology analyses skeletal remains and fragmented bodies to determine the identity of the deceased, time since death, cause and manner of death. It aids resolve crimes by examination of skeletal remains or decomposed, incinerated, mutilated or skeletonized bodies. Analysis of skeletal age also helps determine if remains belong to a minor, which has legal implications.

Thus, the diverse expertise of forensic medicine specialists is indispensable for the entire criminal justice machinery including law enforcement, courts and human rights agencies. Their impartial scientific evidence provides the factual basis for establishing

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truth and justice in crimes involving loss of life and bodily integrity. Reliable forensic medical evidence allows objective understanding of how victims sustained injuries or died and prevents miscarriage of justice by basing conclusions on scientific facts rather than assumptions. It provides a voice to the deceased and trauma victims.

THE GRIM REALITY OF NEPAL'S MEDICO-LEGAL SERVICES

Nepal faces severe deficiencies in forensic medicine services due to lack of trained specialists, leading to travesty of justice in many cases. As per latest data, nearly 80% of around 19,000 annual medico-legal autopsies are performed by medical officers without specific training or expertise in forensic pathology.¹ While their services under difficult conditions is admirable, such autopsies often compromise quality of evidence and justice.

Untrained doctors simply go through the motions of dissection during autopsy, without systematically extracting all possible evidence from the body using recommended protocols, photography techniques, proper instruments and tissue sampling. Complex tasks like determining cause of death in bodies with advanced decomposition, obscure trauma, poisoning, electrocution, paediatric cases etc. become challenging without forensic expertise. Crucial evidence often gets damaged or overlooked without appropriate training and experience.

For instance, important evidence like occult fractures or natural disease processes can be missed in blunt trauma, often mistaken as simple injuries. Toxicological analysis may be omitted in poisoning cases. Sexual assault evidence can be lost if genital examination and sampling is not done properly. Such oversights allow perpetrators to create misleading narratives and evade justice.

The state of mortuaries in rural district hospitals epitomizes the utter neglect of forensic services in Nepal. Autopsies are performed in dingy rooms with peeling paint and no ventilation. There is no running water supply or drainage. Bodies are dissected on dilapidated cement slabs stained with old blood and body fluids. There are no dissection instruments like dissection knives, brain knives, enterotome, forceps, scissors, cutters, electric saw, autopsy hammer, retractors or needle holders. The lone technician simply cuts open the torso with a hacked kitchen knife and

removes viscera with bare hands. Plastic ropes are used to close the body as there are no suture materials or needles. The single blunt scalpel is wiped and reused for numerous cases. The collection of forensic evidence is also not standard, and much vital evidence is easily lost.

This amounts to crudely hacking bodies rather than respectful scientific autopsies. The technicians are untrained and merely continue outdated practices. They remain because no one else will perform the unclean task of dissecting the dead. The stench of decomposed bodies piles up as there is no cold storage, or if available, it is non-functioning.

Most government hospital mortuaries lack even basic autopsy equipment like standard dissection sets, weighing scales, thermometers, digital cameras, x-ray facilities or personal protective equipment for infection control. Unscientific autopsy environments with a lack of resources disrespect the deceased's dignity as well as compromise evidence collection.¹

Shortage of forensic medicine workforce further overburdens existing doctors who have to conduct back-to-back autopsies, severely compromising the quality of examinations.¹ There are situations where 2-3 bodies are dissected simultaneously by a single doctor to clear workload, compromising all standards. This defeats the very purpose of an autopsy.

Such imprecise autopsies amount to simply mutilating bodies rather than scientific evidence collection. Findings rarely withstand legal scrutiny. Flawed autopsies allow perpetrators to escape justice while families remain uncertain about the causes of death. It amounts to disrespecting the deceased. Such unhygienic and non-forensic autopsies disrespect the deceased and allow injustice through loss of evidence. It is appalling that essential resources like water, electricity, instruments, and technicians are not made available even for the dead. Urgent systemic reforms are needed to upgrade mortuary facilities to conduct ethical and evidence-based autopsies using forensic medicine protocols. The dead pleading for justice through their mute remains can no longer be ignored.

Proper forensic autopsies require methodical dissection, in situ examination, evisceration and dissection of internal organs, photography, microscopic analysis, and ancillary lab tests. Experts are trained to extract maximum evidence from the body systematically using established protocols. Their interpretations of autopsy findings and detailed reports with scientific analysis

provide authoritative evidence for establishing causes of death and fair trials.

Similarly, clinical forensic examinations are frequently conducted by doctors unaware of proper protocols, consent procedures, examination techniques, and evidence collection methods. They are unable to prepare legal documentation or testify convincingly in court. This fails victims of assault, sexual crimes, and custodial torture who need ethical, sensitive handling to minimize trauma. Improper clinical evidence collection also hampers effective prosecution.

The lack of competent forensic expertise across Nepali government hospitals, which handle most of the cases, impairs the criminal justice system and human rights protections. It allows many perpetrators to escape sentences due to a lack of convincing medical evidence. Medico-legal services thus urgently require specialists to scientifically investigate crimes and deliver justice.

It is concerning that dedicated forensic medicine experts in Nepal struggle for recognition and opportunities despite their enthusiasm and skills. Many specialists opt for this subject out of genuine interest but find limited openings in government services or private hospitals compared to other clinical branches. They remain underutilized and ignored by the system even as an acute shortage persists. The government has failed to create a clear career pathway, permanent positions, and incentivize retention of this crucial cadre. Neither has their tremendous potential been harnessed by private medical colleges beyond cursory requirements. If timely actions are not taken to recognize their worth, provide adequate career options, and stop 'brain drain', the country risks losing talented forensic medicine experts to foreign shores. Their exodus for lack of vision would be a monumental loss of homegrown talent and a systemic failure. Concrete steps are urgently warranted to identify, nurture, and empower forensic medicine specialists to strengthen the country's medicolegal framework.

A RAY OF HOPE: EMERGING REFORMS IN MEDICO-LEGAL SERVICES IN NEPAL

When compared to the past decade, the medico-legal services of Nepal have gradually but significantly improved. In the past, the system was tainted by inadequate autopsy settings, inexperienced staff, and antiquated procedures that jeopardized the gathering of evidence and the results of court cases. However, the importance of forensic medicine in enforcing the law

is now increasingly acknowledged. The Medico-Legal Society of Nepal is continuously working in collaboration with the stakeholders and its members to upgrade the capacity of members and standardize services. The development of standard operating protocol, guidelines, and training manual, collaborating with the National Health Training Centre, is a leading example. Standardized autopsy procedures, the creation of specialized forensic units in a few hospitals, and the incorporation of digital documentation systems that improve the preservation and accuracy of evidence are examples of recent reforms. Furthermore, initiatives to find and educate qualified forensic specialists have started to alleviate the system's long-standing scarcity. These small improvements represent a positive change, even though there are still obstacles to overcome.

RECOMMENDATIONS FOR REFORM

The following steps should be implemented to strengthen Nepal's medico-legal system through forensic medicine experts:

RECRUITMENT OF FORENSIC MEDICINE EXPERTS IN GOVERNMENT HOSPITALS

There is an acute shortage of trained forensic pathologists in Nepal, with only around 50 serving a population of 30 million.² The government must urgently recruit specialists through the Public Service Commission. Recruitment of specialists for government hospitals and medical college faculty positions should be expedited through centralized policies. Currently, a very few vacancies have been announced for forensic medicine experts through the Public Service Commission's Lok Sewa civil service exams since many years. This recruitment should be prioritized centrally rather than relying on provincial contract hiring, which lacks job security.

Similarly, the Medical Education Commission must ensure rational allocation of undergraduate and postgraduate seats only to colleges with adequate permanent forensic medicine faculties, infrastructure, and clinical material. Several medical colleges have non-functional departments existing only on paper, lacking real faculties, workforce, or workload. This compromises the quality of forensic medicine education. Rather than appointing retired foreign faculties, dedicated Nepali forensic experts must be recruited, as they understand the local context and laws better. Their passion for teaching Nepali students and involvement in national medico-legal services will be greater. Public-private

partnerships and collaborative teaching models between medical schools should also be explored to strengthen forensic manpower. Forensic Medicine Units manned by at least 2-3 experts should be established in all district and zonal hospitals that perform medico-legal autopsies. This will ensure the availability of scientific autopsy services adhering to protocols.

Experts from medical colleges could be given additional charge on an honorarium basis to support government hospitals until adequate recruitment is done through the Lok Sewa (civil service). The government could also provide scholarships and stipends to produce more MD forensic medicine graduates locally to address the shortage.

UPGRADING FACILITIES AND EQUIPMENT FOR AUTOPSIES

Most government mortuaries lack even basic autopsy equipment like standard dissection sets, scales, photography equipment, x-rays, cold storage and personal protective gear. The infrastructure must be upgraded to global standards to allow forensic experts to perform scientific autopsies. Proper cold storage, trolleys, dissection tables, ventilator exhausts, changing rooms, etc. should be mandated.

Basic microscopy, toxicology, histopathology, serology, and microbiology services should be made available region-wise for ancillary forensic tests. Chemicals, cold boxes, ice, and refrigerated transport must be ensured to preserve samples and bodies. Service contracts should be signed with companies to maintain equipment. Standard autopsy worksheets should be used to ensure systematic data collection. Police must assist in evidence collection.

MONITORING AND QUALITY ASSURANCE OF AUTOPSY SERVICES

A National Forensic Medicine Board should be constituted under the Ministry of Health to monitor mortuary facilities, verify post-mortem reports, and audit a sample of autopsies done by non-experts. Standardized reporting formats must be created and implemented. Reports not meeting expected forensic standards should be referred to an expert panel for review to avoid a miscarriage of justice.

Video recording could help verify autopsy findings and techniques. Second autopsies by experts may be required in some cases. Facilities for storing organ samples for re-examination should be created. Experts

should regularly inspect, train, and certify other physicians in maintaining standards. The board can organize continued medical education to enhance the skills of its members.

UTILIZING FORENSIC EXPERTS FROM MEDICAL COLLEGES

The Health Ministry must formally empanel all forensic medicine departments in medical colleges as authorized centres for medicolegal services. They should be integrated into the national framework to better utilize their expertise. The colleges could be designated regional centres where complex autopsies can be referred from adjoining districts. Private medical colleges, too, can support public hospitals through Memoranda of Understanding. Telemedicine facilities could enable experts to guide difficult autopsies remotely.

RECRUITING FORENSIC MEDICINE EXPERTS IN MEDICAL COLLEGES

Some medical colleges have non-functional forensic medicine departments lacking faculty, infrastructure, or workload. The Medical Education Commission must ensure colleges have adequate faculty and facilities as mandated before recognizing or allocating seats. At least 2 to 3 dedicated forensic experts should be recruited per 50 and 100 undergraduate seats, respectively on a permanent basis, not just visiting lecturers. PG seats for MD forensic medicine should be allocated only to colleges with adequate faculty and clinical material to ensure quality training.

CONTINUED PROFESSIONAL DEVELOPMENT OF EXPERTS

Opportunities must be provided for continued skills enhancement of forensic experts through short courses, conferences, and international fellowships focused on advances in forensic pathology, anthropology, odontology, histopathology, forensic nursing etc. This will help raise the overall standards of forensic investigations. Dedicated training centers should be established. A peer-reviewed journal should be launched to disseminate knowledge and research.

IMPROVEMENTS IN CLINICAL FORENSIC SERVICES

The enhancement of clinical forensic services in Nepal requires the setup of specialized clinical forensic units within major hospitals and employing forensic medical officers along with set protocols for examination of

survivors of violence, sexual assault, age estimation, drunkenness examination, and other clinical forensic cases. The existing national protocols should be effectively implemented. It is also equally important to strengthen intersectoral cooperation between health care services, the police, and judicial authorities so that reporting and documentation are done in a quick, appropriate, and legal manner. Service delivery can also be improved through regular training of healthcare professionals in medico-legal responsibilities and preservation of evidence. Furthermore, the standardization and policy support, as well as the integration of digital documentation systems, will allow the clinical forensic services to be implemented and maintained across the region.

STRENGTHENING THE MEDICO-LEGAL FRAMEWORK

A fundamental issue is that the national health budget in Nepal is primarily allocated towards curative services for treating the living patients. There is negligible allocation for strengthening medico-legal services that aid the deceased and trauma victims who are unable to speak for themselves. Establishing forensic infrastructure and recruiting specialists does not garner votes and is overlooked. This apathy towards the deceased and victims is concerning and demonstrates skewed priorities. The dead also deserve justice and scientific analysis. The government must recognize that forensic services are essential pillar of healthcare and allocate an adequate budget for extensive reforms. Justice for the dead is justice for the living. The deceased and victims plea for reforms through their silent evidence.

A separate department for Legal and Forensic Medicine under the Health Ministry is required to formulate national policies, standardize procedures through guidelines, and regulate the medicolegal sector. Forensic advisory bodies comprising police, lawyers, judges, and forensic experts should be created. Proper budgetary allocation is required to run the medico-legal machinery smoothly. Fast-track courts for crimes with forensic evidence will improve conviction rates.

CONCLUSIONS

There is a need for extensive reform of Nepal's medico-legal system to guarantee that forensic medicine is a strong foundation of criminal justice. Justice for the dead and the living is ultimately threatened by the present flaws. A multifaceted strategy is required to strengthen the system, including hiring and keeping

skilled forensic experts, modernizing facilities and equipment, and encouraging closer cooperation between judicial, law enforcement, and healthcare organizations. Nepal can restore public trust, protect human rights, and guarantee that every case gets the scientific examination required for just legal outcomes by giving forensic medicine funding top priority and enacting methodical reforms.

Nepal can develop world-class medico-legal services only by recognizing forensic medicine's importance in justice delivery. Investing extensively in training forensic manpower, upgrading infrastructure, ensuring the use of protocols, and monitoring standards is essential to strengthen the medico-legal framework. The time to act is now to uphold rule of law and human rights.

CONFLICT OF INTEREST

None.

REFERENCES

1. Atreya A, Shrestha S, Bhusal M, Menezes RG. The medico-legal death investigation system in Nepal. *Med Leg J.* 2025 Mar;93(1_suppl):86-90. <https://doi.org/10.1177/00258172231178411>
2. Atreya A, Menezes RG, Subedi N, Shakya A. Forensic medicine in Nepal: Past, present, and future. *J Forensic Leg Med.* 2022 Feb;86:102304. <https://doi.org/10.1016/j.jflm.2022.102304>