

**Strengthening Medico-Legal Evidence and Administrative Accountability in Rajasthan: The Role of MedLEaPR**Dipender Singh<sup>1</sup>, Yashika Saini<sup>2</sup>, Anupam Johry<sup>3</sup>, Surya Bhan Kushwaha<sup>4</sup><sup>1</sup>Assistant Professor, Department of Forensic Medicine and Toxicology, Govt. Medical College, Sawai Madhopur, Rajasthan, 322001.<sup>2</sup>Ph.D. Scholar, School of Life and Basic Sciences, Jaipur National University, Jaipur, Rajasthan, India, 302017<sup>3</sup>Professor, Forensic Medicine and Toxicology, RUHS College of Medical Science, Jaipur, Rajasthan, 302033<sup>4</sup>Postgraduate Resident, Sawai Man Singh Medical College and Attached Hospitals, Jaipur, Rajasthan, India, 302004

Received: 01-10-2025 / Revised: 15-11-2025 / Accepted: 21-12-2025

Corresponding author: Yashika Saini

Conflict of interest: Nil

**Abstract:**

The Medico-Legal Examination and Post-Mortem Reporting System (MedLEaPR) represents a major digital transformation in medico-legal infrastructure of Rajasthan following the enforcement of the new criminal codes the Bharatiya Sakshya Adhinyam (BSA), Bharatiya Nagarik Suraksha Sanhita (BNSS) and Bharatiya Nyaya Sanhita, 2023. Historically, medico-legal documentation in the state relied on paper-based reports that were often handwritten, non-standardized & vulnerable to loss, manipulation and chain-of-custody breaches. These limitations frequently resulted in procedural delays and impaired judicial efficiency. MedLEaPR, developed by the National Informatics Centre (NIC), provides a secure, centralized and standardized digital platform for generating, authenticating and transmitting medico-legal case reports (MLCs) and post-mortem reports (PMRs). Its technical architecture incorporates digital signatures, structured templates, graphical tools and real-time integration with police systems through the Crime and Criminal Tracking Network & Systems (CCTNS) and the Inter-operable Criminal Justice System (ICJS). Rajasthan's government mandated daily uploading of all MLCs and PMRs from May 2025, ensuring statewide compliance and enhancing accountability. Early outcomes indicate improved evidence integrity, reduced documentation errors, faster interdepartmental communication and greater transparency in the medico-legal workflow. While infrastructural limitations and training needs persist, MedLEaPR establishes a foundational digital framework critical for timely, reliable and legally defensible medico-legal evidence under India's reformed criminal justice system.

**DOI:** 10.25258/ijcpr.18.1.31

This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

**Introduction****Background: The Imperative for Digital Transformation in Criminal Justice**

Medico-legal examinations play a central role in the criminal justice system because it provides scientific evidence in cases of assault, accidental injuries, poisoning and deaths requiring judicial scrutiny.

Historically, these examinations depended entirely on handwritten, paper-based reports, a system that was vulnerable to illegible entries, misplaced documents and compromised chain of custody.

These weaknesses often resulted in procedural delays, frequent requests for clarification and reduced evidentiary value in court proceedings.

To eliminate these systemic deficiencies, the National Informatics Centre (NIC) developed the Medico Legal Examination and Post-Mortem Reporting System (MedLEaPR), a unified digital platform designed to standardize and digitize medico-legal documentation across India [3]. NIC-Haryana originally designed the system in response to directions issued by the Hon'ble Punjab and Haryana High Court, which mandated that only computer-generated medico-legal reports should be submitted in judicial proceedings [19]. The successful implementation in Haryana later became a model for national expansion [17,18].

The demand for such a digital system intensified following the nationwide criminal law reforms,

which came into force in 2025. In Rajasthan, MedLEaPR is no longer viewed as a mere administrative convenience but as a mandatory technological infrastructure essential for compliance with updated criminal justice legislation [1]. The system ensures that medico-legal evidence generated by the Health Department adheres to the stricter evidentiary standards introduced by the central government through the new criminal codes [2,6,8].

### **Legislative Catalyst: The New Criminal Codes (2023) and Digital Evidence Mandates**

The rapid and mandatory adoption of MedLEaPR in Rajasthan is directly linked to the introduction of the New Criminal Codes in 2023, which brought major procedural changes in the way evidence is produced, stored, transmitted and evaluated during trials.

The Bharatiya Sakshya Adhinyam (BSA), 2023 redefines the term “document” to include electronic and digital records, thereby granting such records full admissibility in court [2]. To comply with this requirement, MedLEaPR incorporates secure digital signatures (eSign) and encrypted electronic storage systems so that medico-legal reports qualify as authenticated digital evidence [3,4]. The new law also removes earlier doubts about the admissibility of electronic records by eliminating the concept that digital evidence is secondary in nature [5].

Similarly, the Bharatiya Nagarik Suraksha Sanhita (BNSS), 2023 allows investigations, inquiries and trials to be conducted electronically [6]. It also mandates forensic examination in all serious offences that carry imprisonment of seven years or more [7,8]. MedLEaPR makes this legally required forensic workflow possible by enabling doctors to prepare, sign and digitally transmit reports directly to investigating agencies [3,11].

In addition, MedLEaPR functions as a technological bridge that connects health institutions with the Inter-operable Criminal Justice System (ICJS) (10). Through integration with the Crime and Criminal Tracking Network & Systems (CCTNS), medical evidence becomes immediately available to police and prosecution units, thereby accelerating investigations and ensuring the availability of verified medical data within the national digital ecosystem [11,12]. The structural links between MedLEaPR, ICJS, and CCTNS are crucial for successful implementation of the 2023 legal reforms [6,7].

### **Medico-Legal Deficit: The Pre-MedLEaPR Scenario in Rajasthan**

Before MedLEaPR became mandatory, Rajasthan’s medico-legal system faced several administrative

and evidentiary challenges. Paper-based documentation often contained inconsistent formats, incomplete details, and illegible handwriting, especially across district and sub-district hospitals. These inconsistencies made judicial comparison difficult and delayed court proceedings. Manual handling posed another major risk. Reports frequently moved between multiple departments, from the hospital to the police station and later to the court. This made them highly susceptible to physical loss, damage, or unauthorized alterations, as noted in state-level administrative reviews [1,14]. Limited physical storage space further complicated long-term record preservation.

Judicial delays were inevitable because insufficient, incomplete, or unreadable medico-legal reports required repeated clarifications from medical officers, pulling them away from clinical duties and contributing to case pendency [15,16]. The manual transmission of documents and lack of immediate verification options created avoidable delays in investigation and trial processes.

### **MedLEaPR: Architecture, Implementation, and Mandate in Rajasthan**

The rollout of MedLEaPR in Rajasthan was characterized by a rapid and top-down implementation strategy following high-level administrative decisions. The state government issued official orders mandating the daily digital uploading of all medico-legal cases and post-mortem reports from 1 May 2025 onwards [1,14].

### **System Overview and Standardization**

MedLEaPR offers a centralized and secure digital environment for generating medico-legal documents. It replaces varied handwritten formats with standardized templates to ensure uniformity across all districts [3,10]. The platform includes graphical tools that allow doctors to draw injuries or anatomical diagrams digitally, making findings clearer for judicial officers [3]. Once a report is completed, the system automatically sends notifications to investigating officers through SMS, email, and Sandes alerts to ensure real-time communication [11].

### **Policy Directive and High-Stakes Compliance**

Strict administrative orders served as the foundation for widespread enforcement. These orders held Chief Medical Officers and Medical Jurists personally accountable for ensuring complete digital compliance. Non-compliance could result in disciplinary action, which provided strong motivation for rapid institutional adoption [1]. Simultaneously, hospitals were instructed to ensure availability of computers, printers, scanners, high-speed internet, and trained data entry

operators, forming the minimum infrastructure required for implementation [14].

**Technological Foundations for Evidential Integrity**

MedLEaPR ensures evidentiary reliability through multi-layered authentication. Doctor onboarding requires identity verification, uploading of official ID cards, and OTP authentication of both email and mobile numbers [3,11].

Administrative officers at the institution, district, or state level must approve registrations, creating a verifiable chain of responsibility [1]. Digital signatures ensure non-repudiation, and secure audit trails record every step taken on a report, enhancing legal defensibility [3,4].

**Infrastructure and Transitional Strategy**

Because CCTNS integration is still ongoing in some districts, Rajasthan adopted a temporary hybrid approach. Doctors generate a digital report, print and manually sign it, retain one copy, and send the second to the police station until the digital mapping of all police stations is complete [1,12]. This method preserves legal continuity while full digital integration proceeds.

**Impact Analysis: MedLEaPR Benefits for Judiciary and Justice Delivery**

MedLEaPR has transformed the medico-legal evidence supply chain, improving the speed, accuracy, and accessibility of medical documentation used in courts.

**Enhanced Judicial Efficiency**

Courts now have immediate access to authenticated medico-legal and post-mortem reports, which significantly reduces the delays associated with manual document transfer [1,2].

Encrypted digital storage prevents tampering, misplacement, or unauthorized changes. Standardized digital reports allow judges to interpret findings quickly and consistently. This promotes faster case resolution and reduces administrative burdens.

**Integration with ICJS and CCTNS**

The integration of MedLEaPR with CCTNS enables real-time availability of medico-legal reports to police officers as soon as doctors digitally sign them [11].

Through ICJS, the system supports seamless coordination among police departments, forensic laboratories, courts, and prisons. This ensures that every agency has access to consistent, authenticated medical data necessary for prosecution [10,12].

**Table 1: Comparative Analysis of Medico-Legal Workflow in Rajasthan (Pre- and Post-MedLEaPR)**

Aspect	Pre-MedLEaPR Scenario (Paper-Based)	Post-MedLEaPR Scenario (Digital)	Impact on Judiciary
Data Capture	Fragmented, handwritten, illegible; divergent standards	Template-driven, structured data input, graphical representation	Eliminates ambiguity; speeds up judicial interpretation.
Authentication	Physical signatures; high risk of forgery allegations/disputes	Digital signatures (eSign); verified Doctor Onboarding (OTP/ID Card)	Mitigates judicial burden of scrutinizing authenticity; enhances evidence integrity.
Document Transfer	Manual, interdepartmental physical transfer; high latency and loss risk	Secure, centralized, real-time digital transfer to CCTNS/ICJS	Drastic reduction in judicial delays; ensures evidence availability.
Accountability	Limited visibility; difficult to track report status	Role-based access; Digital Audit Trails; Mandatory daily upload	Enables efficient case follow-up; establishes non-repudiation and accountability for delays.

**Scientific Substantiation, Challenges, and Future Directions**

**Validation from Haryana and Madhya Pradesh Implementations**

Haryana demonstrated as early as 2012 that MedLEaPR could be successfully implemented at scale when NIC-Haryana launched the system under judicial directives [17,18,19]. The state later enforced mandatory submission of digital medico-

legal reports within 24 hours, a practice monitored by police and judicial authorities [21,22].

Madhya Pradesh further adapted the system by developing a mobile application for generating digital injury and post-mortem reports, updated in 2025 [23,24]. This mobile version showcases system flexibility and supports field-based medical documentation.

**Evidence from National-Level Operational Data**

NIC data from October 2025 shows that MedLEaPR is operational in 33 states and union territories, covering 15,254 medical facilities and involving 55,857 registered doctors [25]. More than 3.1 million medico-legal documents have been generated digitally, reflecting strong nationwide trust in the system's reliability [25]. This wide adoption indicates that digital workflows significantly reduce manual errors and improve interdepartmental coordination.

### Transition Challenges and Mitigation Strategies

The temporary hybrid workflow presents risks of duplicated data entry and requires careful oversight to maintain data consistency [1,12]. Many medical officers lack IT skills, and the state supported them by appointing technical advisors such as district-level NIC coordinators [1]. Ensuring continuous internet connectivity, data entry support, and updated hardware remains critical for long-term sustainability [13,14].

### Conclusion

The mandated adoption of MedLEaPR in Rajasthan represents a decisive shift toward modernizing medico-legal documentation in alignment with the Bharatiya Nyaya Sanhita, Bharatiya Nagarik Suraksha Sanhita, and Bharatiya Sakshya Adhinyam 2023 [2,6,8]. The system replaces fragmented paper processes with a secure, integrated, and fully authenticated digital framework connected to ICJS and CCTNS. This transformation enhances evidentiary accuracy, reduces judicial delays, and strengthens legal defensibility of medico-legal reports. However, the successful functioning of MedLEaPR depends on continuous administrative support, adequate infrastructure, and ongoing training for medico-legal personnel. With sustained commitment, the system is positioned to become a national benchmark for digital medico-legal documentation.

### References

1. Government of Rajasthan, Directorate of Medical and Health Services. Order regarding online MLC and post-mortem report preparation on MedLEaPR portal. Jaipur: DoMHS Rajasthan; 2025 May 1. Ref No: F(16)/HA/MEDLEAPR/1-PHASE/2025/-05813-7383827/.
2. Government of India. The Bharatiya Sakshya Adhinyam, 2023. New Delhi: Ministry of Law and Justice; 2023.
3. National Informatics Centre. Medico Legal Examination and Postmortem Reporting System (MedLEaPR) [Internet]. New Delhi: NIC; c2023 [cited 2025 Jan 15]. Available from: <https://medleapr.nic.in/>
4. National Informatics Centre. MedLEaPR project overview: benefits and impacts. New Delhi: NIC; n.d.
5. Vidhi Legal Policy. The evolving enigma. New Delhi: Vidhi Centre for Legal Policy; n.d.
6. Press Information Bureau. Key provisions of Bharatiya Nagarik Suraksha Sanhita, 2023. New Delhi: PIB India; 2023.
7. Press Information Bureau. Mandatory forensic evidence and electronic proceedings under new laws. New Delhi: PIB India; 2024.
8. PRS Legislative Research. The Bharatiya Nagarik Suraksha Sanhita, 2023. New Delhi: PRS India; 2023.
9. Press Information Bureau. Mandatory forensic evidence and electronic proceedings under new laws. New Delhi: PIB India; 2024.
10. National Informatics Centre. MedLEaPR project overview [Internet]. New Delhi: NIC; n.d. Available from: <https://www.nic.gov.in/project/medleapr/>
11. National Informatics Centre. MedLEaPR integration with law and order in the district. New Delhi: NIC; 2023.
12. Government of Rajasthan. Useful portal for police personnel. Jaipur: Home Department Rajasthan; n.d.
13. National Informatics Centre. MedLEaPR project overview: benefits and impacts. New Delhi: NIC; n.d.
14. Government of Rajasthan, Directorate of Medical and Health Services. Order regarding MedLEaPR software upload of MLC and post-mortem reports. Jaipur: DoMHS Rajasthan; 2025 Mar 5.
15. Lawcutor. Rajasthan High Court: judicial scrutiny essential in medico-legal cases alleging forgery. New Delhi: Lawcutor; 2025 Jan 7.
16. Medical Dialogues. Courts must refrain from applying general presumption in medico-legal cases: HC relief to doctors accused of forging lab reports. New Delhi: Medical Dialogues; 2025 Jan 7.
17. National Informatics Centre. Medico legal examination and post-mortem reports system (MedLEaPR). Developed by NIC-Haryana. Chandigarh: NIC Haryana; n.d.
18. NIC-Haryana. MedLEaPR project implementation history. Chandigarh: NIC Haryana; 2012.
19. High Court of Punjab and Haryana. Directive on computer-generated medico-legal reports. Chandigarh: High Court; n.d.
20. NIC-Haryana. MedLEaPR system presentation to police, judicial, and FSL officials. Chandigarh: NIC Haryana; n.d.
21. Times of India. File medicolegal info online in a day, hospitals told: Haryana. Mumbai: Times Group; 2023 Nov 3.

22. Directorate of Health Services, Haryana. Mandate for online MLR submission within 24 hours. Chandigarh: Haryana DHS; n.d.
23. NIC Bhopal. MedLEaPR mobile application– for medico-legal and postmortem reporting (Madhya Pradesh). Bhopal: NIC MP; 2025 Mar 5.
24. National Informatics Centre. MedLEaPR mobile application update. New Delhi: NIC; 2025 Mar 5.
25. National Informatics Centre. MedLEaPR pan-India summary data. New Delhi: NIC; 2025 Oct 10.