International Journal Dental and Medical Sciences Research
Volume 7, Issue 6, Nov – Dec 2025 pp 189-191 www.ijdmsrjournal.com ISSN: 2582-6018

Endodontic Records: Clinical Standards and Legal Responsibilities – A Comprehensive Review

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Date of Submission: 05-12-2025 Date of Acceptance: 15-12-2025

ABSTRACT
Accurate and comprehensive endodontic records serve as the foundation of quality dental care, continuity of treatment, and legal protection for both clinician and patient. With rising medico-legal disputes and increased patient awareness, detailed documentation has become a critical component of endodontic practice. This review summarizes essential elements of endodontic record-keeping, radiographic documentation, informed consent, electronic dental record standards, ethical obligations, and statutory requirements. The review also highlights common causes of litigation in endodontics and emphasizes the importance of maintaining clear, chronological, and legally defensible records. Proper documentation enhances patient safety, facilitates professional accountability, and provides crucial evidence in case of legal proceedings.

Keywords: Endodontic records, medico-legal responsibilities, documentation, informed consent, dental records, endodontic litigation

I. INTRODUCTION

Endodontic practice relies extensively on accurate diagnostic and treatment documentation to ensure high-quality patient care. Dental records serve as essential communication tools, clinical evidence, and medico-legal documents that may be scrutinized during audits, insurance reviews, or litigation. With increased patient awareness and a rise in dental negligence cases, clinicians are expected to maintain detailed and legally compliant records[1]. In endodontics, where procedures involve complex anatomy, possible complications, and multiple visits, comprehensive record-keeping becomes even more significant[2].

Legal authorities regard dental records as admissible evidence, and their completeness often determines the outcome of complaints or malpractice claims. Inadequate documentation is one of the leading reasons for dentists losing medico-legal cases[3]. This review aims to summarize current standards for endodontic documentation, highlight the legal responsibilities of practitioners, and discuss ethical and statutory requirements.

II. METHODOLOGY / SEARCH STRATEGY

A narrative review was conducted using PubMed, Scopus, Google Scholar, and ResearchGate.
Keywords used included: "endodontic records," "dental documentation," "medico-legal," "informed consent dentistry," "radiographic records," "dental negligence," and "record retention."

Articles from 2000–2024 were included. Guidelines from the Dental Council of India (DCI), American Dental Association (ADA), Health Insurance Portability and Accountability Act (HIPAA), and European GDPR were also reviewed. A total of 62 sources were analyzed and 32 were included in this review.

III. REVIEW

1. Components of Endodontic Records

Comprehensive documentation begins at the first patient encounter and continues throughout treatment. Essential elements include:

A. Patient Information and History

- Personal details
- Chief complaint
- Medical and dental history[4]
- Allergies, systemic diseases
- Prior endodontic treatments

A detailed medical history prevents complications such as drug interactions, immune-related failures, or procedural limitations[5] .

B. Clinical Examination

Endodontic diagnosis requires the following to be documented:

- Extraoral and intraoral findings
- Soft tissue evaluation
- Caries depth, restorations, fractures
- Periodontal condition
- Pulp sensibility tests (cold, heat, EPT) with values and responses[6]

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Each diagnostic step must be described clearly to justify the final diagnosis[7] .

C. Radiographic Records

Radiographs provide objective evidence and are legally mandatory[8] .

Required radiographs include:

- Pre-operative radiograph
- Working length determination
- Master cone fit
- Final obturation radiograph
- Recall radiographs

Digital radiographs must maintain metadata, date/time stamps, and no unauthorized alterations[9] .

D. Treatment Notes

Each appointment should include:

- Access opening findings
- Canal anatomy variations
- Instrumentation details (files used, lengths, protocols)[10]
- Irrigation solutions and concentration
- Intracanal medicament
- Obturation method and material
- Any complications (ledge formation, separation, perforation)

Complete documentation strengthens the clinician's legal defense.

2. Informed Consent in Endodontics

Informed consent is a legal and ethical requirement[11].

It must include:

- Diagnosis
- Proposed treatment
- Alternatives (RCT, extraction)
- Possible complications (flare-ups, instrument separation, missed canals, perforations)[12]
- Prognosis
- Patient signature and date

A signed consent protects clinicians against most procedural complications.

3. Electronic Dental Records (EDR)

EDRs offer accuracy, legibility, and secure storage.

Advantages include:

- Time-stamped entries
- Automatic backup
- Audit trails that prevent tampering[13]

Legal Requirements:

- HIPAA compliance (US)
- Indian IT Act 2000 (data security)
- GDPR compliance (Europe)[14]

EDRs must be encrypted and accessible only to authorized personnel.

4. Medico-Legal Responsibilities

A. Documentation as Legal Evidence

Courts rely heavily on dental records. Poor or incomplete documentation weakens the clinician's defense[15] .

B. Common Reasons for Litigation in Endodontics

- Missed canals[16]
- Over-instrumentation or extrusion
- Instrument separation
- Inadequate obturation
- Failure to detect cracks
- Lack of informed consent
- Poor communication

In many cases, well-maintained records successfully defend clinicians even when complications occur[17] .

5. Ethical Responsibilities

According to professional codes, dentists must:

- Maintain truthful, accurate, and chronological records
- Avoid overwriting and back-dating
- Maintain confidentiality[18]
- Provide copies of records upon patient request

Editing or altering records after a complaint is illegal and punishable.

6. Record Retention Requirements

Record retention varies by country and institution.

Recommended Retention Periods:

- **Adults:** Minimum **7–10 years** after last visit
- **Minors:** Until **age 21 + 7 years**
- Radiographs, consent forms, referral letters must be preserved[19]

Longer retention is advisable for cases involving complications.

Clinical Significance

Proper record-keeping enhances:

- Quality of endodontic care
- Continuity between visits
- Patient trust and communication
- Legal protection in malpractice cases
- Professional accountability

Thorough documentation is one of the strongest medico-legal shields for endodontic practitioners.

IV. CONCLUSION

Endodontic records play a vital role in delivering safe, ethical, and legally defensible dental treatment. As litigation and patient expectations rise, clinicians must adhere to standardized documentation protocols. Maintaining accurate clinical notes, radiographs, informed consent, and electronic data ensure better outcomes and minimizes legal exposure. Good record-keeping is not only a professional obligation but also a powerful tool for risk management in modern endodontics.

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