

**Significance of Dental Record Maintenance in India- The Mirror of the Suspect**

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**Abstract**

Comparative dental identification is one of the primary means of identification along with DNA and fingerprint analysis and also the most common method of identification of human remains. Dental records are available in various forms such as dental notes, dental charts, radiographs, photographs, models, lip prints and tongue prints. Identification of human remains from dental records is mandated by the law in some countries. India is one of the most disaster-prone countries in the world. It has had some of the world's most severe famines, super natural disasters, road accidents, air accidents, rail accidents. But in Indian context, dental records so far has not been maintained by most of the dental practitioners.

This article emphasises the usefulness of dental records maintenance for forensic purposes in India.

**Key words:** Dental records, Human identification, Record management

**Introduction**

Keiser Nielson in 1970 defined forensic odontology as “that branch of forensic medicine in which the interest of justice deals with the proper handling and examination of dental evidence and with the proper evaluation and presentation of the dental findings.”<sup>(1)</sup> Forensic odontology plays a role when the basic means of human identification flops to aid in accurate identification of the victim or the suspect. The resilience of teeth and related structures to various assaults and teeth as a source of

DNA, contributes to successful identification by dental means. In many countries, identification by dental analysis i.e., comparison of ante-mortem and post-mortem data plays a major role similar to finger prints and DNA analysis especially if the victim is skeletonized, decomposed or burnt. In Indian context, this is relatively a budding science and is in its growing phase.<sup>(2)</sup> Identification by dental means can be more easily done if the ante-mortem dental records of the suspect are available. It is the responsibility of the dental professionals to maintain the dental records of their patients.

### **Dental records**

The dental record is the official dental office document that records patient identification details, case history of the patient, clinical examination, investigations done, treatment planning, all of the treatment done, recall visits and referral correspondence. The dental record also includes study casts, radiographs, photographs, digitalised images, records of lip prints and tongue prints. Radiographs include Intra oral periapical radiographs, Orthopantomograph, Computed Tomography and Magnetic Resonance Imaging. Photographs include intra oral photographs and photographs of casts. These photographs provide details about the dentition and rugae patterns of the patients. Radio Visio Graphy and digitalised images can be stored in computers.<sup>(3)</sup> Lip prints and tongue prints which are simple procedures to record can also be taken into consideration hence these has been proved unique for every person. Before recording, it's the duty of the dentist to explain the importance of recording and to get consent from the patient.

### **Importance in India**

Maintaining dental records is important in India because of the following facts. Unfortunately India is one of the most disaster-prone countries of the world. It has had

some of the world's most severe famines, earthquakes and accidents such as road, flight and rail accidents.<sup>(2)</sup> 2001 Bhuj Earthquake at Gujarat, 2004 Indian ocean Tsunami, 2008 Kosi Floods in Bihar, 2011 Thane cyclone affecting Tamil Nadu and Pondicherry were few examples from the past two decades. Many studies has been conducted in different parts of India regarding awareness about dental record keeping among the practicing dentists, showed that the dentists were not at all prepared for any kind of forensic and medico-legal needs because of overall poor quality of dental record keeping.<sup>(4)</sup> In some accidents, such as Mangalore flight crash, in the year 2010, about 12 victims remain without identification due to unavailability of dental records.<sup>(2)</sup>

### **Laws governing collection of dental records**

Laws such as Dentists Act 1948, under section 17A, there are several benefits for those who are good at record maintenance in order to maintain professional respect and dignity for doctors. Under Article 51 A(h) of the Constitution of India, there is a moral obligation on the doctor, and a legal duty, to maintain and preserve medical, medico-legal, and legal documents in the best interests of social and professional justice.<sup>(5)</sup> Dental record maintenance is mandatory in the Western countries. Different countries follow different guidelines regarding the retention of dental records.<sup>(2)</sup> For example, in UK, data protection act was passed which applies to dental records and dental professionals must abide by its principles.

### **Collection of dental records**

The dental records when used for forensic purposes must always fulfil the relevant legal and ethical obligations of all the individuals involved in the particular matter. Mainly, the dentists should maintain a professional confidentiality regarding their patient records. This raises issues about the release and collection of dental records that are required for forensic purposes. Moreover, the

procedures proposed for collecting dental records required for forensic purposes should obey the relevant laws of the nation in which they are kept. The dental records should not be retained for the sole purpose of forensic identification. Indeed, its maintenance should function to chart the teeth present, treatment details and the fee charged in the best interests of their patients. These records should be kept as property of the dentist and not the patient. Hence the forensic odontologist, in force, exploits the presence of dental records as consequence of dental practice.<sup>(6)</sup>

#### **Use of computers and soft wares**

Use of computers in dental office as an accounts receivable device dates back to 1960s. They were first used to record dental archives as an alternative to dental documentation using papers.<sup>(7)</sup> Digital recording systems are currently used worldwide which helps in storing and retrieving data as per the need. It helps in transferring and printing the data stored. Computer-held records saves space and can store a large number of data for a longer time. Many softwares are also available for record keeping which helps in easy networking, transferring and retrieving the records. They are password protected against unauthorized or unlawful access and they are accurate too.<sup>(8)</sup> The use of softwares will allow the dentist to effortlessly link practice management, voice charting, intraoral cameras, CAD-CAM, lasers, electronic digital imaging, video imaging and digital radiography. Hence these softwares link all these records into a single system for comprehensive clinical and practice management.<sup>(7)</sup> Electronic odontograms or dental charts are available for precise recording of the details. Therefore, storing the records digitally and retrieving it without any defect with the use of softwares helps the forensic odontologist to identify the individual at ease.

#### **Roles and responsibilities of dentists in dental record maintenance**

Dentists should take the responsibility to protect, store and release accurate records not only for their clinical comfort but also for the future ethical, legal and forensic purposes. They need technical competence with computer programs which protects the patient records. They should make themselves familiar with the softwares available for record management. Each dental practitioner must be aware of the forensic implications associated with their practice.<sup>(9)</sup> Maintaining legible and legally acceptable records by the dentists aids in recognition of malpractice, negligence, fraud or abuse and identification of human remains by the legal authorities at ease. Practically, if any unfortunate future disasters occur due to terrorism, biological wars, earthquakes and other causes, it is necessary for the dentists in India to be always prepared for an expanded role in forensic proceedings.<sup>(10)</sup>

#### **Merits and Demerits of maintaining dental records**

Merits of dental record maintenance are they provide data for comparative dental analysis for forensic use. The ante-mortem records which were stored can be compared with the post-mortem dental records to identify the deceased individual. Dental records help human identification by dental means in a less time consuming manner.<sup>(11)</sup> By proper maintenance of records, the dentists can be protected against commercial, legal and medico-legal litigations. Computer-held records aids in easy retrieval without any defect and helps in forensic identification by dental means. The demerits are requirement of a large space for keeping manual records. The paper documentation of dental records is more prone for fading and tearing. Radiographic films are more prone for fading hence cannot be stored for a long time. For Electronic dental records more initial investment is needed and the staffs needs technical competence for the same.

## **Conclusion**

Thus dental records serves as a best source of information for forensic purposes and it is important to retain and maintain them. Forensic identification by dental means provide accurate results and reduce other error-prone identifications. To achieve the positive changes in maintaining the standard of keeping records, raise awareness among practicing dentists to use a standard record maintaining protocol and also to use the computers and soft wares gifted by science and technology. In recognition of the inadequacies of many existing dental record systems, a new form of record card should be made uniform and mandatory to inform the practitioners for what should be routinely recorded.

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