

The use of dental records as a tool for the Unique Identification Authority of India in personal identification: A proposal

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Introduction

Keiser-Neilsen defined forensic dentistry as “that branch of forensic dentistry that in interest of justice deals with the proper handling and examination of dental evidence and proper evaluation and presentation of dental finding.”^[1]

Avon broadly classified the modern day forensic odontology into civil, criminal, and research. The civil part is concerned with identification of individuals in case of physical mutilation seen commonly during mass disaster; malpractice, frauds, and neglect where damage may be sought; and age assessment of individuals where birth

Abstract

The Unique Identification Authority of India is a statutory authority established in 2009, which had started a campaign of issuing Aadhaar (unique identification) cards to every citizen of India under the slogan “Mera Aadhaar Meri Pehchaan” (my unique identification my identity). The government is taking all possible initiatives to make Aadhaar card the identity of an individual and is taking all measures of linking all the valid government-issued documents (such as driving license, PAN card, subsidies etc.) with this card. However, it is a matter of great sadness that some antisocial elements of the society forge or misuse the government-issued identity card and create a fake identity. To strengthen this initiative of unique identification, the dental records need to be amalgamated with this campaign. This article evaluates the importance of maintaining dental records and personal identification and also defines a proposal of linking these dental records to Aadhaar card in India.

Key words: Deceased, dental records, disaster victim identification, mass fatality

certificate is not available. The criminal part is concerned with identification of individual from their dental remains such as bite marks and palatal rugae in case of homicide, rape, etc. The research part relates to training in forensic odontology for professionals from the medical and dental fraternity.^[2,3]

Identification of an individual is needed when the body is decomposed/mutilated beyond recognition, resulting from criminal assault, road accident, fire/aviation/naval disaster, natural disasters (floods, hurricanes, tornadoes, volcanic eruptions, earthquakes, tsunamis, and other

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geologic processes), i.e., mass disaster, wars, etc., At this point, the teeth play a vital role in identification of an individual as teeth are the only part of the human body that can survive any extreme destructive condition such as fire.^[4,5]

Interpol in 2009 gave certain guidelines for disaster victim identification (DVI) under which they recognized fingerprints, dental records and DNA analysis as primary methods of identification. It further emphasized that a positive identification is possible by comparing the postmortem and antemortem dental records of the same individual and entrusted dental identification as a stand-alone identifier.^[4,6]

The latest example of DVI by dental records was the Indian Ocean earthquake in 2004, the waves of which were also known as Tsunami waves. More than 92% of non-Thai were identified out of 80% were identified by dental records.^[7] Unfortunately, in India, the apprehension of forensic odontology has hardly been used for DVI. For instance during the tsunami of 2004 in Chennai, the dental fraternity expressed its willingness to help the administration in identification of the victims but nothing materialized. The latest known example is the Air India Express (IX-812) crash that occurred in Mangalore, Karnataka, in the year 2010, where only a couple of bodies were identified with the help of a dentist. For helping the expert, no support whatsoever was provided by the local authorities as well as the kin of the victims.^[8]

Importance of Identification of Individual

It has been mentioned by William Gladstone in 1871 “*Show me the manner in which a nation cares for its dead and I will measure with mathematical exactness, the tender mercies of its people, their respect for the law of the land and their loyalty to high ideals.*”^[9]

The only formal resolution pertaining to identity in a nonwar situation was ratified by the Interpol Standing Committee on DVI (Resolution AGN/65/Res/13-1996). This “recognizes that for legal, religious, cultural, and other reasons, humans have the right not to lose identity after death and that the identification of disaster victims may be a vital importance to police investigation.”^[9,10]

The first and foremost importance of identification of dead is on humanitarian grounds. The grief of a family, a community, or indeed, a nation can be rarely assuaged if the names of the deceased remain unknown. It is a necessary part of human dignity in a civilized society. Second, it has a role in establishing identity which is related to legal requirements which can be related to an issue of probate, culpability, and therefore, prosecution. Furthermore, until identification is confirmed matters pertaining to estates, payment of death benefits and remarrying of surviving spouses is not possible.^[9]

Dental Record Maintenance

The dental record is referred to as the patient chart, which is the official office document that records all diagnostic information, clinical notes, treatment given, and patient-related communications that occur in the dental office including instructions for home care and consent to treatment. These dental records help in supplying the antemortem (before death) records, when needed, to the investigators to help in identification of unidentified individuals. These records are confidential, which encourage open and honest communication, enhance dentist–patient relationship, and encourage respect for patient autonomy and privacy, and also, no financial information is disclosed in these records.^[11]

Dental record is a collection of attributes that are recorded including dental anomalies, tooth eruption stage, tooth impactions, transpositioned tooth, conservative or endodontic treatment, retained or supernumerary teeth, type of occlusion, and the regressive alterations of tooth. It also includes the presence or absence of any defect or pathology in the supporting structures such as jaw bones, condyle, coronoid process, or temporomandibular joint. Furthermore, it includes the presence of any dental implant or prosthesis placed as part of treatment or any fractures of the maxillofacial region treated using metallic plates. Further, it includes the relation of teeth to the surrounding anatomic structures likely the maxillary sinus, mandibular canal, etc.^[4,12,13]

Dental records are easily available in developed countries, especially in the UK where a protocol is being followed under the National Health Service and UK Dentistry to ensure that the records are updated adequately.^[11,14]

In India, there are various associations such as the Indian Association of Forensic Odontology (IAFO) and Indo-Pacific Academy of Forensic Odontology (INPAFO) who are working for the betterment of the subject. In addition, the IAFO has started the National Registry of Forensic Odontology in which the association had urged the dental institutes and dentists practicing across India to update the dental records from time to time so that a database can be maintained pan-India. However, until now, this initiative is getting a very poor response which may partly be due to lack of government involvement.^[15,16]

Measures for Making Dental Record Maintenance in India Feasible

Dental record maintenance is a complicated and precise job which cannot be undertaken single-handedly. The government, the dental institutes, and the dentists (specifically those formally trained in forensic dentistry) all have to work hand in hand to make this possible.

Role of government

The initiative has to be taken by the government by forming a body, i.e., National Dental Record Maintenance Organization (NDRMO) under the Unique Identification Authority of India (UIDAI).

Role of dental institutes

All the dental institutes (government/private) running in India are governed by the rules and regulations laid by the Dental Council of India. Dental institutes should start maintaining and updating dental records (electronic or physical) of the patients who are being treated in their institutes.

Role of dental specialists

The first and foremost responsibility of the dentists is to get their clinics registered under the Clinical Establishments Act 2010. Second, they should maintain the dental records (electronic or physical) of each and every patient they are treating, according to the guidelines laid down by the central/state government from time to time.

Role of national dental record maintenance organization

The NDRMO should be setup under UIDAI. Initially, the responsibility of this organization would be to form a digital National Dental Record Database (NDRD), the updating of which would be made possible by setting up Aadhaar Dental Kendra (ADK). It will also club the dentists and dental institutes of India to work together and maintaining this database.

The ADK can be setup as a separate office along with the already running Aadhaar center. If this process of forming a separate office demands more revenue, then another cost-effective way could be, by setting up these centers in every dental institute (government/private) across India and at every primary health-care center (where dental institute is not available).

The primary function of these ADKs would be to update the dental records of the individuals (according to the antemortem proforma) and link them to their Aadhaar cards. This will initially help in updating and forming antemortem database of dental records of the citizens of India.

Then, the secondary function is to regularly update these dental records in the database, which can be carried out by two modes. The first mode is giving every dental institute and dental clinic special provisions to access NDRD and updating the dental records of the individuals that are being treated daily (this will help in updating the records on a regular basis). The second mode is in the hands of the individuals, where possible, by regularly visiting the ADKs every 6 months and getting their records updated. In either of the case, if an individual is not seeking dental treatment for any reason, it should be mandatory for them to get their records updated every 6 months.

This process of visiting the ADK every 6 months would be a hectic and time-consuming task, and people would take it as a waste of time. Here, the citizens have to understand that this initiative is for them and for their loved ones. This process has its own hidden benefits whenever and wherever the need may arise.

A layout of the dental record maintenance has been explained as a flowchart in Figure 1.

Restrictions of National Dental Record Database

The powers that are to be given to the dentists and the dental institutes to update the dental records on NDRD have to come with certain restrictions, i.e., they should not have the permission to change/update the basic information and personal details of the individual, i.e., name, date of birth, address, etc., They should have the provision to make changes in the dental records only. This measure has to be taken to keep a check on any misuse of this vital information.

Misuse and Security of National Dental Record Database

These dental records can also be misused by the fraudsters and cheaters. As mentioned earlier, the dental records can be used in the case of prosecutions and matters relating to payment of death benefits and health insurance and remarrying.^[9]

If someone has deliberately made changes in the dental records in NDRD of an individual, then in the court of law, any person can be wrongly acquitted or held guilty on basis of dental evidence.

Another main area targeted by fraudsters and cheaters is the false insurance claims and death benefits. First is the

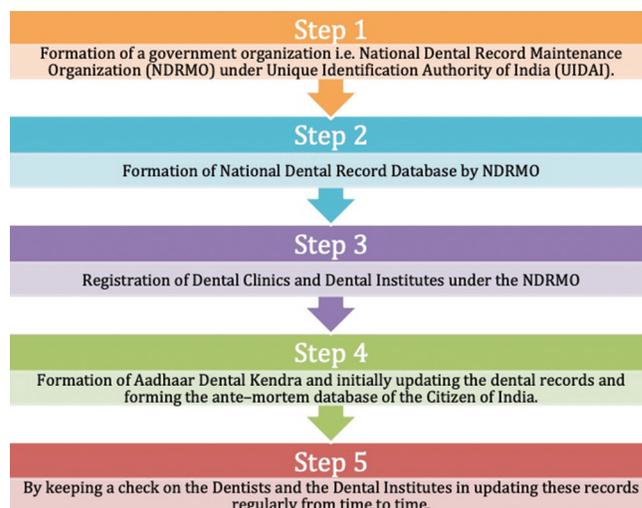


Figure 1: Layout of the dental record maintenance

death benefits and life insurance claim in which the person has to be proved dead and then only his/her legal heirs can claim the insurance amount or any other benefits related to money. Second is the dental health insurance-related claim. Nowadays, the dental health insurance is picking up pace in India in which the insurance companies are offering insurance of the dental treatments undergone by the patients. As the awareness increases, the process of false claims also increases. There is a lack of knowledge about the dental health-related problems and its treatment among the general public and insurance companies. The advantage of which is being taken by certain deceitful opportunists including the insurer and the policy agents.

Sometimes, the policy agents themselves help insurer get false claims from the company. If the dental records are updated in the NDRD, the insurance companies can cross-verify the treatment for which the claim has been received. This would monitor the process of false claims and prevent the insurance companies from damage.

To secure the NDRD, the NDRMO here has to intercept the database by adding a function of "last updated by" which would mention the name and details of the person who had made changes in the records and also maintains the history of changes made by each and every person. Doing this would serve as a warning to the concerned person (who is updating the information, who might be a dentist or doctor from the dental institute) that if they deliberately provide false information for their own benefit, they could be punished in the court of law.

Challenges

The main challenge faced in identification of an individual is when the individual is completely edentulous. In this case, three options are possible; first is the use of denture markers and second is the use of dental implants (implants carry a unique number, the record of which is maintained by every dentist) in these edentulous patients.^[17] The third option is taking a complete mouth orthopantomogram of these patients which would help in identifying certain typical features pertaining to any defect in the jaw bones, condyle, and coronoid and also position or location of the anatomic structures such as maxillary sinus and mandibular canal within the jaw bones.

Another challenge is in maintaining the records of individuals who do not suffer from any dental problem and have a healthy oral cavity, though difficult but possible. In this case, the class characteristics of the bite can be records in the form of study models that are digitally scanned and saved.^[18]

Conclusion

All this process may be a little tedious and time-consuming, but as the Government of India is taking so many initiatives

for making Aadhaar a priority for personal identification, the blending of dental records to Aadhaar would further strengthen the validity of this initiative. This would be just the beginning as further initiatives can be taken by the government for linking of the health records of the individuals to the Aadhaar card.

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Conflicts of interest

There are no conflicts of interest.

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