



**REVIEW ARTICLE**

**FORENSIC ODONTOLOGY SUSTAINABLE GOALS**

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**ABSTRACT**

The Importance of promoting Human Rights in the Recovery and Identification of Missing and Unidentified persons was presented at 9th International Dental Ethics and Law Society (IDEALS) congress in 2012 and was first introduced in May 2013 at the annual meeting of the Disaster Victim Identification (DVI) conference organized by Interpol in Lyon. Dr. Emilio Nuzzolese, participating odontologist of the Interpol Forensic Odontology working group, highlighted the need to apply the highest identification standards and Interpol guidelines to all unidentified human remains, equally in a DVI scenario as well as in a single missing and unidentified person. In 2015 these concepts also inspired the creation of an international group of odontologists from twelve Countries called 'Forensic Odontology for Human Rights'. The group began promoting the need to protect the human rights of the dead to have a name and an identity by participating in conferences and meetings, and through publications and training at most international forensic events. The mentoring of colleagues with the goal of promoting an authentic involvement of forensic odontology in the identification process was also instigated. The continuous growth of the group, along with the need to involve forensic experts from other disciplines, led to the constitution of the *Association Forensic Odontology for Human Rights (AFOHR)* and the inauguration of humanitarian forensic odontology. Having become a recognized voluntary organization in the context of humanitarian forensics, in 2019 AFOHR board members discussed the steps needed to achieve the rights of having a date of birth and an identity for every deceased individual. Eight forensic odontology sustainable goals were approved: human rights of the dead; human identification action; international partnership; human forensic odontology; strong forensic odontology; human identification kit; quality age determination; dental evidence in crimes against vulnerable persons. Under the auspices of AFOHR that aim is to inspire colleagues and forensic associations to the best administration of Justice for best practices in human identification and age estimation.

**Keywords:** Forensic Odontology, Humanitarian Forensic Odontology, Human Rights, Humanitarian Forensics, Forensic Science

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## INTRODUCTION

At the 9th International Dental Ethics And Law Society (IDEALS) Congress 2012, Leuven, Belgium, Forensic Odontologist E. Nuzzolese presented the first paper addressing the importance of promoting human rights in the recovery and identification of missing and unidentified persons.<sup>[1,2]</sup> On the 5th of May 2015, During the Interpol DVI meeting in Lyon, France, his concepts for human rights of the dead were presented to forensic odontologists, and the group FO4HR-identifyme was inaugurated.<sup>[3,4]</sup> This international group<sup>[5]</sup> evolved into an association with the new acronym AFOHR (Association Forensic Odontology For Human Rights)<sup>[5]</sup> adopting bylaws and electing a board.<sup>[6]</sup>

AFOHR now numbers over 100 members from 40 countries and is the first association promoting best practice in human identification and age estimation through humanitarian forensic odontology for the purpose of preventing human rights violations. Human remains can be identified through visual recognition (relatives or next-of-kin viewing the remains or by the possession of identity documents or tags); circumstantial evidence (matching of ante mortem data with information gathered during examination of the remains); scientific methods (using dental records, fingerprints or DNA).<sup>[7-12]</sup>

An incomplete post-mortem assessment can lead to a delay or even to misidentification or non-identification<sup>[13]</sup> and represents a violation of human rights and international humanitarian law.<sup>[13]</sup> Dental evidence and a correct multidisciplinary approach are important in criminal investigations for the best outcome of the forensic analysis. Teeth and jaws can provide a tremendous amount of information in many fields: disaster victim identification, missing and unidentified persons, victims of child abuse and neglect, victims of domestic violence and sexual abuse, also in homicide and torture, age estimation of unaccompanied minors, border control, human trafficking of minors' cases. In the field of human identification, a dental autopsy of human remains offers the preliminary biological profile which allows us to narrow the initial search of missing persons (Fig. 1). For this purpose, the association AFOHR offers volunteers expert in forensic odontology as well as in other areas of forensics. Members of AFOHR strive to promote forensic odontology and forensic science principles to caseworks with the purpose of preventing human rights violations in human identification, age estimation, disaster victim identification and the analysis of dental evidence in criminal investigations. Forensic odontology as a humanitarian tool is the use of the knowledge of tooth structure and dental disease to alleviate human suffering and protect the dignity of all victims of conflict and catastrophes in a neutral, impartial and independent manner, free of charge and framed under international humanitarian law.<sup>[6, 14]</sup> All the activities of forensic odontologists can be regarded as a humanitarian act, from the identification of deceased in mass graves to the collection and assessment of injuries in cases of torture,<sup>[15]</sup> and the protection of minors from child abuse<sup>[16]</sup> and in the age assessment of unaccompanied minor migrants.<sup>[17,18]</sup>

The main objectives of the association include promoting research and training pathways through universities and other scholarly activities, thereby increasing the available resources in these disciplines and promoting the development of public and international policies that advocate for human rights applied to forensic sciences where dental evidence is involved. The additional goal of a recognized specialty within dentistry is also foreseen.<sup>[19]</sup>

For the purpose of fulfilling these objectives in a timely manner, 8 sustainable forensic odontology goals (FOSGs) were proposed (Fig. 2). These are

1. Human Rights of the dead: Restore human rights of unidentified human remains, protect the right of the dead to have a name and identity, to promote best practice in age estimation and human identification
2. Human Identification Action: Take actions to improve the human identification process, always perform a complete dental autopsy on site or remotely, combat the disparity in the human ID postmortem process in disaster victim identification and cases of unidentified and missing person identifications
3. International Partnership: Promote and circulate our goals with other nonprofit organizations such as NGOs, Law enforcement agencies, civil protection, humanitarian associations for sustainable developments in humanitarian forensics.
4. Humanitarian Forensic Odontology: Offering pro bono forensic dental services, use our international network of like-minded experts to sustain multinational support in missing and unidentified person data collection, best practice and justice for all, at all levels
5. Strong Forensic Odontology: Provide and facilitate access to training, mentoring and education in forensics. Exchange programs, research, training, fostering innovation and best practice for the benefit of society
6. Human Identification Kit: Create awareness about the human identification process, informative campaigns for all stakeholders, and free ID cards for children
7. Quality Age Determination: Provide a definitive age assessment and adulthood determination method using teeth in different populations around the world.
8. Dental Evidence in Crimes against vulnerable persons: Create awareness and offer pro bono assistance in the analysis of dental evidence in cases of child abuse and of the abuse of those who are vulnerable or victims of torture, domestic violence, sexual abuse or THB (Trafficking of Human Beings).

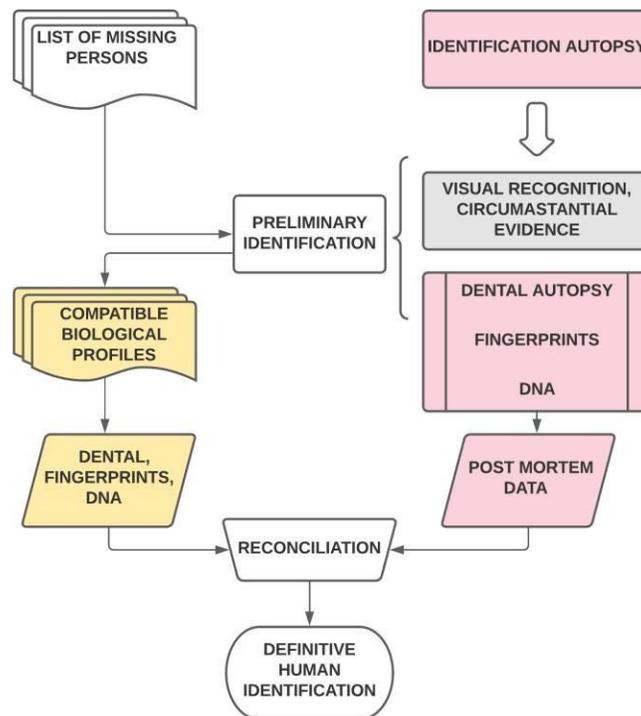


Fig.1 – Flowchart of the human identification process.

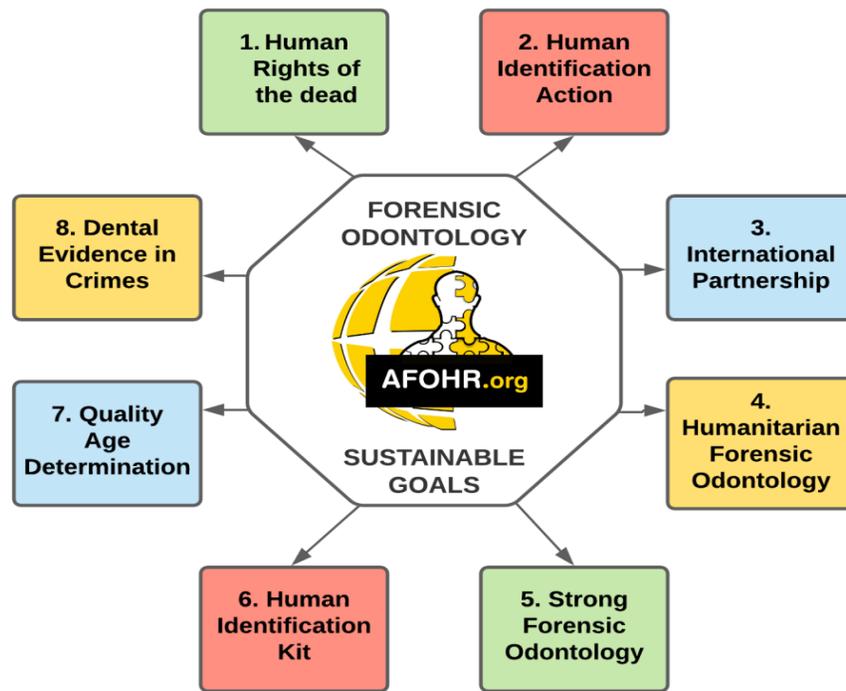


Fig. 2 – AFOHR Forensic Odontology Sustainable Goals 2019-2023

The association can proudly declare that progress was made towards achieving these goals during the 2019-2021 term. The first biennial symposium of the Association Forensic Odontology for Human Rights was organized in collaboration with the International Committee of Red Cross (ICRC), the International Centre for Humanitarian Forensics and National Forensic Science University (India), and more than 10 workshops on DVI were conducted pro bono by senior experts of the association to further disseminate knowledge and create awareness among stakeholders. A number of AFOHR members published innovative and landmark articles towards humanitarian forensic action on the topics of dental databases, virtual dental autopsy, dental autopsy recommendations during the covid-19 pandemic, 3D Research on reconstructing dental evidence, dental age estimation to assess majority status, case reports on dental evidence in crimes against vulnerable persons. The board has further renewed its oath to work towards achieving these sustainable goals in the 2021-2023 term.

## DISCUSSION AND CONCLUSIONS

There are several national and international organizations in forensic odontology, which have contributed to the development of guidelines, training and updates in forensic assessments and the exchange of scientific results and achievements for the benefit of the forensic odontology community worldwide. The inauguration of an international group of experts in forensic odontology in 2015 (*Forensic Odontology for Human Rights – Dentify.me*) gave rise to a novel vision in the application of forensic competences and skills. It is the humanitarian vision of using forensic odontology as a tool to protect the human rights of the dead and of minors.

A clearer idea of organizational goals through the approval of the “forensic odontology sustainable goals’ has also helped AFOHR members to determine their course of action, filtering experts inspired by different goals, thus progressively building a space for the exchange and harmonization of ideas.

Given that forensic odontologists are not yet officially established figures in some countries, the idea of having strategic goals has the consequence of setting specific development measures and has an impact on the efficiency of both the association and members by giving authentic involvement in criminal investigations where dental evidence is collected or found. Useless to stress the value and significance of teeth in the age estimation and human identification. [20-22]

The forensic odontology sustainable goals can also allow AFOHR in the evaluation of members’ activities, offering to members realistic goals which can inspire or support individual *pro bono* work as well as synergies with other scientific and humanitarian organizations. Among the FOSGs there are some which are official, such as the promotion of human rights in forensic caseworks, and others which are necessary to be achieved to promote forensic odontology such as international partnerships and quality in training and teaching.

AFOHR’s intention is to inspire colleagues and forensic associations in the best administration of Justice and to enable co-operation and form synergies between forensic experts and law enforcement agencies, both at the national and international levels. The history of forensic odontology, and the work done by forensic odontologists in the last thirty years, and the importance of forensic odontology in humanitarian forensics allows authors to reasonably conclude that forensic odontology is a well-recognized specialty within dentistry.

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**Conflicts of interest** - There are no conflicts of interest

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