

# The challenges and effects of globalisation on forensic dentistry

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This paper deals with the challenges faced by forensic dentists in a world in which globalisation has become a reality. People travelling across the globe on a daily basis become victims of violent crime, terrorist attacks, human displacement, natural and man made disasters. This has forced colleagues in the profession to participate in joint operations exposing inadequacies which need urgent attention. Forensic dentists practise in isolation creating their own rules and regulations oblivious to the greater global community. No international protocols exist for the many procedures practised by the profession. Possible solutions to the complex problems are offered. These include co-operation with colleagues around the globe while striving for the highest levels of quality control, standardisation, reliability, impartiality, reproducibility and ethical accountability.

*Key words: Forensic odontology, globalisation, standardisation*

There is no absolute definition of globalisation, but it is agreed that it is a reality. Most definitions are confined to economics and politics alone but they in fact should encompass matters relating to economics, politics, technology and socio-cultural forces<sup>1</sup>. While people continue to cross the globe on a daily basis creating a mix of citizens in most major cities, disasters will occur and will include victims from different countries. We can no longer isolate ourselves and in doing so create our own rules and regulations oblivious to the greater global community. In a world plagued by violent crime, terrorist attacks, human displacement, natural and man made disasters, forensic dentists are facing differing but overlapping challenges<sup>2-5</sup>. Varying degrees of clinical competency within the ranks are posing unique problems within this discipline of dentistry. Joint international operations, e.g. the Thailand tsunami, are bringing together colleagues from different countries, with a range of clinical skills/abilities, creating logistical problems in the execution of their duties<sup>4</sup>. The need for quality control and standardisation of forensic teaching methods has become a critical issue.

Global conflicts are displacing thousands of men, women and children who seek asylum in far off countries. The transit journeys are often fatal, and those who succeed face challenges of acceptance and assimilation. Forensic dentists are regularly consulted regarding the age of these victims. Their diverse origins coupled with

their biological and racial diversities set near insurmountable challenges to the colleagues tasked with their age estimation<sup>6-8</sup>. Most of the routine methods used in estimating the ages of the individuals, have standard deviations from the mean, causing the authorities to question the reliability of our analysis techniques. The more expensive techniques with a correlation co-efficient in excess of 0.90 are expensive, putting them out of reach in most mass examination programmes<sup>9</sup>. Different ethical standards create major problems when working with human tissue. The respective acts governing the procedures to be followed when human autopsies are carried out differ from country to country and in certain cases from state to state. Some of our colleagues find it acceptable to remove human jaws, while others find this practice totally unacceptable. In mass disasters where people from different countries are working together this can create major conflicts.

Dental identification is a cheap and effective means of identifying severely mutilated corpses, whether carbonised or decomposed. This function is being challenged at disaster sites by large multinational companies using more expensive but time consuming techniques such as DNA to achieve the required results. The profit driven approach of these large multi-national companies versus the emotional effects on the next of kin poses many ethical and moral challenges<sup>10</sup>.

The teaching of forensic dentistry is also a matter of great concern<sup>11</sup>. Not being one of the recognised dental specialities, there are no international standards for the training of prospective students<sup>12</sup>. No norms have been set regarding the standard of competency required to practice the discipline. This has led to courts challenging decisions made by incompetent colleagues giving evidence on matters far beyond their capabilities<sup>13</sup>. It has also caused problems at joint international operations where so called forensic odontologists are found to be less than adequately equipped for the task at hand. Some students are trained hands on, others follow a comprehensive programme, while others attend courses and self proclaim themselves forensic odontologists. It is the author's opinion that standardising the educational requirements poses the greatest international challenge for the future.

There are no simple solutions to the above problems. They are complex and need a co-ordinated plan of action, by suitably qualified individuals. Cultural and socio-economic boundaries have to be crossed, ethical issues have to be addressed and solutions acceptable to the global community at large must be found. The forensic dental fraternity is neither assimilated nor unified. There is a degree of individual co-operation but this is purely on a personal level.

### Recognising / identifying the problems.

Problems related to forensic dental practice need to be identified and solutions found. In 2009 we have different dental charting systems, different computer programs for matching ante-mortem and post-mortem records<sup>14,15</sup>, no agreement on the levels of concordance needed to certify a match or declare a miss-match, no universally accepted protocol for the analysis of bite marks<sup>16,17</sup>, no standardised curriculum for forensic dental students and no solution for the above in the foreseeable future<sup>18</sup>. At a conference attended by more than fifty forensic dentists, no consensus could be reached as to the definition of a forensic dentist, or the educational requirements needed to attain an acceptable level of proficiency to perform the required tasks.

Other questions which arise are: do forensic odontologists confine their skills to the oral cavity or do they analyse skull sutures, nasal arches and frontal sinuses as part of their training? Do they need both theoretical and practical training, or is theoretical training sufficient? There are no standardised techniques for identifying corpses, analysing bite marks, determining age, race and gender or writing court reports. If internationally acceptable standards and protocols were agreed to and implemented, it would improve the competence of the operators and protect individuals in legal disputes should they arise.

### Solutions

The solutions to the problems mentioned are as complex as the problems themselves. Historical inadequacies have to be acknowledged and differences based on geographical and social legacies have to be addressed with an impartial approach in order to face the problems head on. Techniques used in forensic dentistry have to be based on universally acceptable standards of reliability, reproducibility, quality control, certification and lack of any form of bias. This however must be accomplished in a manner which makes the procedures affordable to the greater community and not only to a selected few. All procedures must strive for a 'zero error rate' eliminating grey areas of interpretation which have marred our profession over the past few years. With this approach, colleagues will be forced to improve their academic standards of competence, practical skills and most of all accept international standards set down by competent leaders in the field of forensic dentistry.

### Conclusion

We can no longer function as islands of individuals practicing in isolation, oblivious to the global strides made in every facet of science. We need to co-operate with our colleagues around the globe while striving for the highest levels of quality control, standardisation, reliability, impartiality, reproducibility and ethical accountability.

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