



### F10 A Statistical Analysis of the Dental Radiographs Submitted as Antemortem Records

Henry J. Dondero, DDS\*, 2 Emerald Drive, Glen Cove, NY 11542; Jennifer G. Dondero, BS, Apartment 63, 265 Convent Avenue, New York, NY 10031

After attending this presentation, forensic dentists will forever bemoan the lack of complete antemortem x-rays as one of the most frustrating facets of the profession. This report will give some insight into the incident rate of missing x-rays from the World Trade Center Disaster.

When one considers the gathering of family records for a mass disaster several factors enter into the equation. In an airline disaster investigators rely on the accuracy of the manifest as well as the possibility of on ground personnel. Other disasters such as the World Trade Center rely on the reporting of missing persons by family or coworkers. Even the best system can be compromised by the duplication of reporting of missing persons by various relatives of the same individual. Early reports from the World Trade Center started with a number in the five thousand to ten thousand fatality range. As time went on it was realized that the more realistic number was closer to three thousand victims. Once the WinID system was up and running a need developed to be able to ascertain how many records were received and, perhaps more importantly, what was the level of completeness of the dental records.

In February, 2002, the Dental Team began re-checking the completeness of every family record filed in the Ante-Mortem Unit. Among those items checked were the number, type and diagnostic quality of the x-rays, the Doctor's pedigree, the scanning of x-rays into the WinID database, and finally the accuracy of the ante-mortem charting. This tedious process continued for several months. While it was being determined that the records were as accurate and as complete as possible, it was then decided to analyze what x-rays were missing or incomplete and to what extent did the number of missing films inhibit the investigators from performing thorough searches utilizing WinID.

It is impossible to search WinID to determine what x-rays aren't present because that expression is entered as a "no data" entry which is globally ignored by WinID. It was determined that in order to gather that kind of information a query would have to be made through Microsoft's Access software which is the type of database used by WinID. Several queries were developed; no x-ray entries at all, entries on posterior teeth only, anterior teeth only, maxillary only, mandibular only, right quadrants, left quadrants, and finally each quadrant individually. These queries were run on a weekly basis to track the completeness of the database. On June 2, 2002, the day before the Dental Investigation Unit went from an active status to an on call mode, the queries were run one last time. At this time it was found that there were 1,743 active records. As one might suspect the most common area for missing x-rays was the anterior teeth at nearly 8%. Most of the other areas ranged between 0.5% and 2.0%.

This presentation will discuss each of the eleven queries as both a raw number and as a percentage of the whole active victim database. Final percentages will also be given with correction factors for the "no x-rays at all" which would skew all the expected result to another level. The possibility of disseminating this information to the entire dental profession is encouraged with the modest expectation that in the event of another mass disaster the records received from the family dentists would be as complete and as up to date as possible.

#### Computer Program, Odontology, Incomplete Records Statistics