

ABSTRACT

The dental exams are the most frequent X-ray procedures. The associated risk of radiation exposure depends on the doses patients get. To reduce those risks, we must lower the doses and avoid unnecessary exposures, using appropriate measures and procedures that optimize the radiologic exposure.

The goal of this study was to evaluate radiologic security and protection conditions in dental intraoral radiology in Vila do Conde's area. A total of 43 dental clinics were inspected, using an evaluation form. All visits were integrated in Health Authority routine inspections. The questions referred to security conditions in the premises, radiological protection of workers and patients, equipments characteristics related with dose reduction and the different image display techniques.

None of the dental clinics had been previously inspected. The results showed that in 95% of dental clinics, the radiology equipments weren't legalized and none had nor an inventory of radiologic equipment, neither an equipment quality control plan.

Dose reduction strategies for patients, such as the use of rectangular collimation, beam aiming devices used for alignment of X-ray beam with image receptor, the use of a more sensitive film, the time-temperature method in manual revelation and the common use of lead aprons and thyroid shielding weren't usually adopted by dentists. The result is the lack of achievement of fundamental principles in radiologic protection – the optimization principle (ALARA). Manual revelation procedures were inadequate for quality image improvement, leading to a considerable amount of radiation dose administrated to patient. Use of individual dosimeters and the frequency of a formation course in radiological protection were verified only in 1.8 % of exposed workers.

We concluded that security conditions, radiological protection and the accomplishment of national laws are not satisfactory, which may be related to the lack of supervision, maladjustment and complexity of legal requirements, as well as lack of interest and of adequate formation by professionals. Supervision in security and radiological protection should be a priority of competent authorities. On the other hand, the organization of educational campaigns and conferences, for clarifying radiological protection rules, may contribute to actualization of professionals' knowledge and skills.