

## **Analysis of the Medical Staff Individual Doses of the Services of Hemodinamic and Proposition of Actions for Warranty of Acceptable Levels of Occupational Exposure**

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### **Introduction**

The interventionist radiology carried out through hemodinamic studies had a great growth in its application compared with other types of radiological procedures in the last years. The radiological risk for the medical staff of cardiac catheterism laboratories of the hemodinamic services is a subject of great concern in the occupational radioprotection of a hospital. The occupational individual exposure in procedures of cardiac catheterism is considered high when compared with the occupational exposure to the radiation originated from the other type of radiological procedure. The medical staff that performs this procedure can receive doses close to the limits suggested by International Commission on Radiological Protection (ICRP-1991)[1]. Usually, among the staff components, the physician's doses is the highest because he or she is the professional that stays closer to the patient and of the source of ray-X for a long period of time during the procedure.

The purpose of this study is the analysis of the doses received by the professionals that perform procedures of cardiac catheterism, to alert them about the inherent risks of their activities. To propose actions that maintain satisfactory work conditions in the hemodinamic services, in a way to guarantee acceptable levels of the occupational exposure of the involved professionals.

### **Method**

The development of this study was based on the analysis and statistics of the individual equivalent doses of the medical staff of the hemodinamic services of two great hospitals of the State of São Paulo. The doses of 106 professionals of hospital A were analysed in the period from 1991 to 2000, and doses of 161 professionals of hospital B in the period from 1992 to 2001. The statistics and interpretation of the data were considered in terms of profession, sex, monitoring time and mainly the individual equivalent doses accumulated in the period.

### **Conclusion**

The results indicate that unlike the international scientific studies, the physicians monitored in the hemodinamic services of hospital A practically receive annual equivalent doses below 10mSv. But, on the other hand, the resident physicians and the high level trainees that are professional that are acquiring practice and experience in the area received annual equivalent doses higher than the physicians. In the hospital B, physicians received annual equivalent doses close to the limits suggested by ICRP-1991. In practice, the implementation of preventive measures like to use individual protection equipments, pulsed progressive fluoroscopy and additional copper filters, to increase the distance between patient and physician, to reduce the time of each exam and the number of exams performed per day can contribute significantly to the reduction of the equivalent doses on the whole body.

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### **References**

[1] International Commission on Radiological Protection. CIPR nº 60: 1990.

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