

Insight from the analysis of the occupational exposure of personnel in the nuclear medicine department

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This study focuses the retrospective analysis of the past 6 years of the occupational exposure at the Nuclear Medicine Department of the University Hospital Center “Mother Tereza” in Tirana (Albania). The effects of the relocation to a new building and the changes in the use of radiopharmaceuticals regarding radiological protection were analyzed. The personnel is monitored using chest badges equipped with TLD dosimeters, resulting in a total of 237 dose measurements. It was noted that the monitoring was not conducted systematically as expected by the legislation with a bimonthly cadence. The technicians and nurses were generally found to be the most exposed group of professionals, while occasionally the sanitary personnel received relatively high annual dose rates. Generally, the physicians received relatively low annual dose rates. The highest dose recorded was 1.32 mSv, reflecting a temporary increase of the use of radiopharmaceuticals due to the management of increased demand. Particular cases of minor incidents and their impact on the recorded dose were examined. There were no cases of an exceeded dose limits, with the highest annual dose found to be 2.2 mSv. Nevertheless, careful focus is essential to optimize workflow and workload allocation and ensure continuous training of the personnel in response to an increase of the procedures and changes in the radiopharmaceuticals utilized.

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