

# Virtual Reality Applied to Operational Procedures on Nuclear Medicine

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Radiopharmacy is an integral and essential part of the nuclear medicine service [1], presenting as primary responsibility, the preparation and dispensing of radiopharmaceuticals to patients, for radiodiagnostic or radiotherapeutic procedures. The guarantee of excellence in a radiopharmacy service requires a deep qualification from the pharmacist, as it is an activity considered dangerous, with regard to the protection of workers, as well as the external public. One of the main challenges is related to the manipulation, disposal and path of radiopharmaceuticals within the hospital environment, since it implies exposure to ionizing radiation, which in excess, can offer serious risks to human health. In this sense, the training and qualification of professionals is of paramount importance, in accordance with the rules and regulations referring to the Nuclear Medicine Service published by ANVISA [2], CNEN [3] and international recommendations by the IAEA. One of the possible ways to perform these tasks is through the use of virtual reality (VR). Virtual environments have advantages such as, for example, simulating hypothetical situations, foreseen in security protocols and difficult to real training.

For the referred work, the following methodological steps were followed: Detailed analysis of the recommendations and standards related to the Nuclear Medicine service; Details of the environment to be built; Modeling of objects, scenarios and characters that will compose the virtual environment; Implementation of actions and features in the virtual environment; Creation of the virtual

environment (simulator), using VR techniques: integration of models with functionalities; Evaluation and tests with users.

The use of Virtual Reality, by means of simulators, allowed the creation of a graphic environment with a realistic appearance, fig 1 and fig2, in which the user can navigate in this environment and feel and manipulate the virtual world. Therefore, it is hoped that this tool can assist in the planning and training of professionals in a radiopharmacy.



Figure 1 – mono view of part of the radiopharmacy's virtual environment.

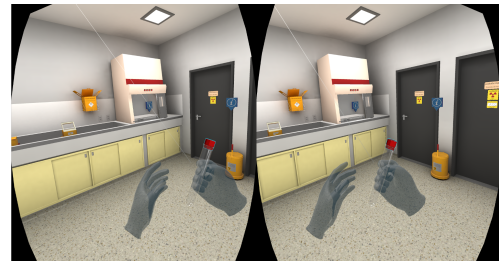


Figure 2 – stereo view of part of the radiopharmacy's virtual environment.

## References

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