

Employee Training

Rules For Safe Use of Radiopharmaceuticals

1. Laboratory coats or other suitable over garments will be worn in areas where radioactive materials are used. These items should be buttoned for maximum protection.
2. Disposable gloves will be worn at all times when handling radioactive materials.
3. All personnel working with radioactive materials will wear the appropriate radiation detection badges, as determined by the Radiation Safety Officer (RSO). These devices should be kept on site, in a low background area (i.e. office or locker) while not worn during off duty hours.
4. A finger TLD ring will be worn with label facing the radiation source during the elution of $^{99}\text{Mo}/^{99\text{m}}\text{Tc}$ generators; during the preparation, assay and administration of radioactive materials; and while holding patients injected with radiopharmaceuticals for image positioning purposes.
5. Either after each procedure or before leaving the area (i.e. for lunch / home), hands and clothing should be monitored for contamination in a low background area with a thin window Geiger-Mueller (GM) survey meter.
6. Appropriate syringe shields will be used for the routine preparation of radiopharmaceutical kits and the administration of the same to patients, except in those circumstances in which their use is contraindicated (i.e. recessed veins, infants, etc.). In these exceptional cases, other protective methods will be considered such as a remote delivery of the administered dose via a butterfly setup.
7. Shielded syringe carriers will be used in the transportation of all radiopharmaceuticals from the compounding area to the injection area. Therapy doses will be transported in appropriate shielded containers.
8. Syringes, vials and/or unit dosages must be labeled at least with the radiopharmaceutical name or abbreviation per Part 35.69. Additionally syringe and/or vial shields must be labeled unless the syringe / vial label is visible.
9. Each "unit dosage" should be assayed in the dose calibrator before administration. Decay corrected activity can also be determined from the unit dose label.
10. The use of a dose calibrator to measure "unit dosages" of the following beta-emitters, P-32, Sr-89, Y-90, and Sm-153 is not advised due to inherent detector inaccuracies. Decay corrected activity can be determined from the unit dose label.
11. Any patient dosage other than a "unit dose" or a unit dose that is manipulated in any way must be assayed in a dose calibrator.

RULES FOR SAFE USE OF RADIOPHARMACEUTICALS

12. Radiopharmaceutical dosages must be within either the prescribed dosage range or +/- 20% of the prescribed dose, unless otherwise directed by an authorized user prior to use. Standard of Care for this issue remains +/-10%.
13. Upon assay or disposal, all unshielded radioactive vials should be handled with forceps.
14. When adding either radioactive or non-radioactive material to a vial, which contains either radioactive or non-radioactive material, always withdraw an equal amount of air to equalize pressure within the vial; thereby preventing inadvertent spray of radioactive material.
15. All radioactive waste or waste that is suspected to be radioactive will be so confirmed by monitoring prior to disposal in designated, labeled and properly shielded receptacles. For volume reduction purposes only waste that is confirmed to be radioactive will be placed in these receptacles.
16. Do not eat, drink, smoke or apply cosmetics in a radioactive material preparation, usage, storage or waste areas or any restricted area as defined by the RSO.
17. No food, drink or personal effects will be stored in radioactive material preparation, usage, storage or waste area or any restricted area as defined by the RSO, except those materials for direct patient procedures (i.e., Gastric Emptying, etc.).
18. Never mouth pipette.
19. All areas of radioactive material preparation, storage or dose administration areas will be wipe tested for removable contamination and surveyed for excessive exposure as described in the radiation protection program.
20. Areas where radioactive materials requiring a written directive are routinely prepared for use or administered will be surveyed for contamination at the end of the normal workday with an appropriate survey instrument and the results recorded. Initiate the facility decontamination procedure as appropriate.
21. "Spills" or uncontained radioactive material must be controlled, decontaminated to ALARA levels, wiped, surveyed and documented as described in the radiation protection program. The use of shielding may be used as necessary.
22. Radioactive materials and sealed sources / restricted areas will be either secured or under the direct supervision of authorized personnel at all times to prevent unauthorized removal or entry.
23. Decrease **TIME** in and around radiation sources i.e., injected patients.
24. Increase **DISTANCE** from radiation sources - Doubling the distance between you and the source will lower your dose by a factor of **~4**; tripling your distance will reduce it by a factor of **~9**.

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25. Increase **SHIELDING** between you and radiation source - We usually think of lead at the mention of this dose reduction technique, however the bodies(soft tissue) of others is a well-known attenuator of ionizing radiation !!

Radiation Safety Officer

Date: _____

Administrator

Date: _____