

Radiation Safety in Medical Uses of Radiation

1. Which of the following is a location where the use of ionizing radiation may take place?
 - a. Hospital
 - b. Clinic
 - c. Dental practice
 - d. All the above
2. Medical uses of ionizing radiation are a _____ exposure situation.
 - a. Existing
 - b. Planned
 - c. Emergency
 - d. Accidental
3. Which category of radiation exposure applies to those involved in the performance of radiological procedures?
 - a. Occupational exposure
 - b. Medical exposure
 - c. Public exposure
 - d. Environment exposure
4. Which of the following **is not** a general principle of radiation protection?
 - a. Justification
 - b. Optimization of protection and safety
 - c. Application of dose limits
 - d. Authorization
5. In medical exposure only two of the radiation protection principles apply, justification and _____.
 - a. Medical Exposure
 - b. Optimization
 - c. Authorization
 - d. Dose limit
6. The optimization of protection and _____ is a process for ensuring that the magnitude and likelihood of exposure and the number of individuals exposed are as low as reasonably achievable.
 - a. Standards
 - b. Justification
 - c. Safety
 - d. Optimization
7. The _____ exposure should always lead to the required clinical outcome.
 - a. Medical
 - b. Occupational
 - c. Exam
 - d. Test

8. What is used in the planning stage in the optimization of protection and safety?
 - a. Dose charts
 - b. Dose constraints
 - c. Certified equipment
 - d. Trained staff
9. In X-ray medical imaging, image-guided interventional procedures, and diagnostic nuclear medicine, what is a tool used in the optimization of protection and safety?
 - a. Technique charts
 - b. Dose charts
 - c. Diagnostic reference levels (DRLs)
 - d. Measurement charts
10. What applies to occupational exposure and public exposure arising from any use of ionizing radiation?
 - a. Dose limits
 - b. Diagnostic reference levels
 - c. Justification
 - d. Dose charts
11. The risks associated with medical uses of ionizing radiation vary significantly, which of the following procedures is at the high-risk end where radiation injury may occur?
 - a. Dental x-rays
 - b. Nuclear medicine procedure
 - c. Interventional procedures
 - d. B & C
12. For occupational exposure for workers what is the equivalent dose limit for hands and feet in a year?
 - a. 100 mSv
 - b. 250 mSv
 - c. 400 mSv
 - d. 500 mSv
13. What is the public exposure effective dose limit in a year?
 - a. 1 mSv
 - b. 2 mSv
 - c. 3 mSv
 - d. 4 mSv
14. For public exposure, what is the equivalent dose limit to the skin in a year?
 - a. 30 mSv
 - b. 40 mSv
 - c. 50 mSv
 - d. 60 mSv
15. Which of the following **is not** a role and responsibility of the government?
 - a. Establishing legislation that meets specified requirements
 - b. Establishing an independent regulatory body with the necessary legal authority, competence, and resources
 - c. Establishing a staffing model
 - d. Establishing requirements for education and training

16. The _____ has a responsibility to facilitate and ensure that the health authority, the relevant professional bodies, and the radiation protection regulatory body communicate and cooperate in working towards establishing the infrastructure necessary for radiation protection and safety in medical uses of ionizing radiation.
- Government
 - Hospital
 - Clinic
 - Safety officer
17. True or false. In establishing values for DRLs typical (e.g. median or average) doses for patients are obtained from a representative sample of rooms and facilities where these procedures are being performed.
- True
 - False
18. Which of the following are commonly used dose metrics to represent the dose to the patient in radiography?
- Air-kerma – area product
 - Incident air kerma
 - Entrance surface air kerma
 - All the above
19. What term is the commonly used dose metric for CT?
- CT air kerma index
 - CT air kerma-length product
 - Incident air kerma
 - A & B
20. _____ are not dose limits, they are tools for optimization of protection and safety.
- Dose constraints
 - Dose regulation
 - Dose guidelines
 - Dose rules
21. In addition to patients, what other groups of people can incur medical exposure in biomedical research?
- Caregiver (carers) and comforters
 - Volunteers
 - Maintenance staff
 - A & B
22. Which of the following is an example of a professional body?
- Societies
 - Colleges
 - Associations of health professionals
 - All the above

23. What regulatory body has the regulatory function to establish requirements and guidelines authorizing and inspecting facilities and activities, and enforcing legislative and regulatory provisions?
- Radiation protection regulatory body
 - Safety regulatory body
 - Medial regulatory body
 - Protection regulatory body
24. What is the principal means for face-to-face contact with personnel in the medical radiation facility?
- Zoom conference
 - Conference call
 - On-site inspection
 - Off-site meeting
25. Records of occupational exposure should be maintained for not less than _____ after stopping work.
- 25 years
 - 30 years
 - 35 years
 - 40 years
26. In medical radiation facilities the person or organization responsible for the facility is normally referred to as what?
- Registrant
 - Licensee
 - Participant
 - A and B
27. Who is a health professional with special education and training in the concepts and techniques of applying physics in medicine?
- Radiologist
 - Radiologic technologist
 - Medical physicist
 - Medical practitioner
28. Which of the following is an example of a radiation program of biomedical research that would need approval by the ethics committee?
- Trials performed to assess a new radiopharmaceutical
 - Trials being performed to assess a new radiotherapy procedure
 - Trials being performed to compare radiological procedures
 - All the above
29. Which of the following is not a responsibility of suppliers of radiologic equipment?
- Number of staff technologists
 - Users understand the language, terminology, and icons on the control panel
 - Interconnectivity with other relevant systems
 - Specific training in the use of the equipment and software
30. True or false. In the case of radiation protection and safety associated with the radiologic procedure depends greatly on the skills and expertise of the health professional involved.
- True
 - False

31. Which of the following **is not** an example of areas overseen by a radiological medical practitioner?
- Nuclear medicine
 - Radiology
 - Equipment installation
 - Radiation therapy
32. A radiopharmacist is a health professional, usually, a _____, who has received additional specialist education and training.
- Physician
 - Pharmacist
 - Technologist
 - Researcher
33. What does RPO stand for?
- Radiation protection officer
 - Radiology professional officer
 - Registered professional officer
 - Registered protection officer
34. What committee has the function of advising on the safe operation and compliance with radiation protection and safety regulation requirements?
- Regulatory Committee
 - Quality assurance committee
 - Infection control committee
 - Radiation safety committee
35. What committee would determine policy and give direction to the program, ensure proper documentation is being maintained, and review the effectiveness of the program?
- Infection control committee
 - Quality assurance committee
 - Executive committee
 - Leadership committee
36. A _____ means an assessment of all relevant aspects of radiation protection and safety for a medical facility.
- Safety assessment
 - Safety assurance
 - Quality assurance
 - Quality assessment