Taif University Dental Hospital RADIATION PROTECTION GUIDELINES	Section: Radiology – Diagnostic Imaging
Policy title: Radiation Safety Policy	**Policy number: 01**
Effective date:	**Review date:**

ADMINISTRATIVE ORGANISATION

1. **INTRODUCTION**

1.1 Operation of the radiation safety program is delegated to the Radiation Safety Committee (RSC), who's function is to provide radiation protection program oversight, review, policy development, and radiation machines use. This comprises interrelated personnel that function to provide radiation protection program: The Radiation Safety Officer (RSO) and Radiation Safety Staff (RSS). If the committee any time is not satisfied with the adequacy of safety practices employed by any user, cessation of use may be required until satisfactory procedures have been adopted**.**

2. **POLICY STATEMENT:**

2.1. This applies to all healthcare provider who are exposed to radiation. This policy must be also applied to patients who are about to undergo **Ionizing** and **Non-Ionizing** radiation procedures.

3. **PURPOSE:**

3.1. To provide radiation protection program oversight, review, policy development, and radiation machines use, enforce, and direct University personnel regarding radiation equipment regulations, license conditions, and University radiation safety policies.

4. **DEFINITION / ABBREVATION:**

4.4. Ionizing Radiation

4.4.1. Is short wavelength / high frequency higher energy whereas has sufficient energy to produce ions in matter at molecular level.

4.5 Non-Ionizing Radiation

4.4.2. Is longer wavelength / low frequency lower energy which does not carry enough energy per quantum to ionize atoms or molecules.

5. **ROLES AND RESPONSIBILITIES:**

5.4. Radiation Safety Officer (RSO)

5.4.1. Authorized to terminate the use of any licensed radiation equipment.

5.4.1.1. Responsible for the day-to-day implementation of radiation safety program as outlined by the Radiation Safety Committees (RSC).

5.5. Radiation Safety Staff (RSS)

5.5.1. Responsible for promoting radiation safety for the protection of employees, general public, and institution property, also responsible for conducting surveys, audits and reviews to help ensure that all radiation producing equipment is used safely and in accordance with applicable policies and regulations.

6. **REFERENCES:**

6.1. Environmental Health and Safety (EHS); University of Iowa's Hospital Radiation Safety Review Group.

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AUTHORIZATION TO USE RADIATION

1. POLICY STATEMENT/DEFINITION:

1.1. Dental use of radiation is defined as the intentional external administration of non-ionizing radiation to human being's oral cavity for diagnostic and/or medical research purposes. All dental use of non-ionizing radiation at University Dental Hospital (UDH) must conform to current regulations, license conditions, and radiation protection policies.

2. ROLES:

2.1. Authorized User

2.1.1. Requests for approval as an authorized user must be made in writing. The request shall include a description of the use(s) for which authorization is being requested and a recommendation from the Head of the radiology service in which the approval is sought. The written request for authorization should be sent to the University's Radiation Safety Committee (RSC).

2.2. Licensed Practioner

2.2.1. Individuals licensed or otherwise authorized by law to practice medicine, osteopathy, chiropractic, podiatry, dentistry, or registered x-ray/radiologic technologists or advanced registered nurse practitioner requesting permission to use/prescribe diagnostic X-rays for medical use must meet the requirements specified by the RSC By-Laws.

3. RESPONSIBILITIES:

3.1. Authorized users are ultimately responsible for the safe use of radiation-producing machines under their control. This includes responsibility for ensuring that:

3.1.1. Personnel receive applicable radiation safety training as required and adhere to radiation safety policies and regulations.

3.1.2. An auditable record of radiation equipment in their possession is maintained from the time of acquisition through use, storage, and final disposition. Inventory records are required to be maintained for three years and available for inspection.

3.1.3. Radiation surveys of use and storage areas are performed and documented as required by regulation.

4. REFERENCES:

4.1. Environmental Health and Safety (EHS); University of Iowa's Hospital Radiation Safety Review Group.

ALARA PROGRAM

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1. POLICY STATEMENT:

1.1 The maximum permissible occupational dose limits established by regulation are based on limiting individual radiation dose to what is considered to be an acceptable level of occupational risk. Although radiation doses below the regulatory limits are presumed to pose little health risk, it is assumed that any radiation exposure may carry some risk. Therefore, regulation requires that the University provide a program designed to reduce exposures to "As Low As Reasonably Achievable" (ALARA) to the extent practical, utilizing procedural and engineering controls.

2. DEFINITION:

2.2 DOSIMETER

2.2.1 Used to record occupational radiation exposures are supplied and processed through a commercial dosimeter service. The administration and management of the personnel monitoring program is provided by the Nuclear Medicine Department. Personal dosimeters are available upon request and are assigned to individuals based upon regulatory requirements and their potential for occupational exposure to penetrating radiation. Dosimeters are normally exchanged on a monthly basis. Copies of dosimetry reports are provided for each dosimeter account and are maintained on file at Nuclear Medicine Department. Temporary dosimeters are available for interim issue until a permanent dosimeter assignment is established, or in the case of a lost or damaged dosimeter.

2.2.1.1. **Types of Dosimeters**

A. **Whole Body Dosimeters**

A.1. Provide measurement of penetrating and non-penetrating radiation exposure. Penetrating radiation is designated on reports as "DDE" for deep dose equivalent and includes exposure to the whole body (head, trunk, active blood-forming organs, and reproductive organs). Non-penetrating radiation is designated as "SDE" for shallow dose equivalent, and includes exposure to the skin and extremities. Lens of the eye dose equivalent is designated as "LDE."

Whole body dosimeters are to be worn on the torso in the region likely to receive the highest radiation exposure. If a protective lead apron is worn, wear the whole body dosimeter underneath your lead apron.

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2. (CONTINUATION) DEFINITION:

B. **Collar Dosimeters**

B.1. Are to be worn at the collar and external to a thyroid shield or lead apron.

C. **Ring Dosimeter**

C.1. provide measurement of radiation exposure to the extremities (hands and forearms). The ring dosimeter is to be worn under your disposable glove and on the hand most likely to receive the highest radiation dose. The label side of the dosimeter should face the side of the highest potential exposure.

2.3. Personal Protective Equipment (PPE)

Minimize skin exposure at all times. A laboratory coat and disposable gloves are recommended when manipulating radiation produced equipment. Use other PPE as needed or required, including leaded-safety glasses, leaded-safety gloves and appropriate lead aprons.

2.4. **Facility Maintenance and Renovation**

All facilities in which radiation produced equipment have been used need to be surveyed prior to maintenance or renovation activities. A minimum of 1 week prior to scheduled work so that required surveys can be performed.