

RADIATION SAFETY POLICY

Responsible Officer	The Dean, PIDC		
Contact Officer	Deputy Dean (Clinics & Administration)		
Associated Documents	<ul style="list-style-type: none"> • Guidelines On Radiation Safety – Malaysian Dental Council, November 2010. • Atomic Energy Licensing Act 1984 (Act 304). • Private Healthcare Facilities and Services Act 1998 (PHFSA '98) • Guidelines on the use of CBCT in government facilities. Oral Health Division, MOH, Malaysia 		
Version	Authorization	Approval Date	Effective Date
1.1	Authorized by the CEO of PIDC	Dec 2023	Jan 2024

Purpose and Scope of this document

This documents governs the rule and regulation pertaining to the use of ionizing radiation for diagnostic purposes. This document is also a guideline for staff, radiographer and faculty regarding dental radiation.

GENERAL GUIDELINES:

1. The frequency of a radiological examination is a matter of clinical judgment, and the selection of equipment and techniques used is the decision of the Faculty.
2. Compliance with the Malaysian dental council’s guidelines on radiation safety and the **ALARA** (As Low as Reasonably Achievable) principle is compulsory. The amount of patient radiation exposure must be kept as low as possible given current accepted radiological practice.
3. Radiographs cannot be exposed without approval from a faculty in this institution. This document recognizes that in PIDC, students receive training in taking and interpreting radiographs.

4. The faculty who is prescribing the radiographs is professionally responsible/accountable for everything in the field of view. A specialist referral must be made if the dentist / student notices an abnormality beyond his/her competence or ability to interpret regardless of where in the field of view it appears, or if the field of view exceeds their ability to properly interpret.
5. Registrants are referred to the following documents for the guidelines and standards and expects its registrants to follow when utilizing dental radiography:
 - Guidelines On Radiation Safety – Malaysian Dental Council, November 2010.
 - Atomic Energy Licensing Act 1984 (Act 304).
 - Private Healthcare Facilities and Services Act 1998 (PHFSA '98).

GENERAL ACCOUNTABILITIES

1. Quality control - Maintenance and associated checks for intra-oral, panoramic and cephalometric x-ray apparatus shall be done once every two years.
2. Rules and procedures promulgated for use within PIDC shall comply with the regulations of Kementarian Kesihatan Malaysia (KKM). Issuing of license and Renewal every year are done by the same.
3. The ALARA (As Low as Reasonably Achievable) principle is compulsory.
4. The faculty are ultimately responsible for radiation safety within the dental facility. Handling of the equipment, however, may be delegated to other personnel who are trained and students under supervised training to undertake such procedures.
5. Operators (faculty/ Radiographer/ student) must be reminded to select a technique or method that will permit the production of radiographs or images of an acceptable diagnostic quality with minimum exposure of the patient to radiation.
6. All operators must recognize the radiation hazards associated with their work and take measures to minimize them.

7. Appropriate shielding must always be used by the operator/ patient and patient's assistant when exposing a patient to radiation.

Following protection guidelines are mandatory:

- Protection for the Operator - The use of protective panels with glass (1 mm Pb eq) for staff to stand behind, or a protective apron for staff to wear is recommended. Appropriate personal protective equipment should be worn in cases where an operator has to stand less than 2-3 meters from the radiation source.
 - Protection for the Patient/Patient assistant - The patient must at all times be provided with a lead apron with a lead equivalence of not less than 0.25 mm for reproductive organ protection. The use of a thyroid shield for children is important, especially during occlusal radiographic examination. Assistance to patient during exposure should be avoided at all cost except exceptions when justified. In addition, protective aprons should be provided for any adult who provides assistance in supporting a patient. Thyroid collars should be provided in those few cases where the thyroid may be in the primary beam.
 - Personal Radiation-Monitoring Devices for Personnel - If some personnel are likely to be exposed to a radiation dose exceeding 1 mSv in any one year, or the equivalent of a weekly workload that exceeds 100 intra-oral or 50 panoramic films¹², it is recommended that he/she be provided with personal radiation monitoring devices, such as a film badge dosimeter or optically stimulated luminescence badge
 - Radiography of pregnant patients/ Female patients of child bearing age - As the dose, and therefore the risk to the developing fetus is low, there is no contraindication to radiography of women who are or may be pregnant providing that it is clinically justified. The use of protection/ shielding is compulsory for patients in this category. Digital radiograph may be used as preferred choice.
8. Renewal for license should be applied at least three months prior the date of expiry and the calibration and renewal is mandatory once in two years as specified by Ketua Pengarah. Performance Test (Quality Control) and safety of the apparatus must be undertaken by an accredited Class H Consultant (medical physicist) for both intra-oral and OPG machines. An

accredited Class H consultant shall possess Class H (certification) license issued by the Director General of Health Malaysia.

9. It is mandatory for all operators to have a thorough medical examination once in three years and chest x-ray once in every five years as per the regulations of Kementerian Kesihatan Malaysia (KKM).
10. The radiographer is responsible for
 - Appropriate disposal of radiology waste including recycling of lead foils.
 - Timely change/ Replenishment of solutions.
 - Maintenance of equipment and reporting of any repair or service.

GUIDING PRINCIPLES

a) General guidelines

- Radiographs should be specific to the needs and requirements of each particular patient.
- After confirming there are no recent/adequate radiographs available, a dentist may prescribe radiographs based on a clinical examination to develop a diagnosis and form a treatment plan.
- The justification for taking dental radiographs must be determined by a need to obtain specific information not available from other sources.
- Consent in radiography – The consulting dentist/ student usually seeks either verbal or implied consent.
- The faculty are responsible for Quality assurance of the radiographs provided within the facility.
- All operators must eliminate unnecessary radiographic procedures.
- All persons, except for the patient and those whose presence are required, must leave the room when a radiographic examination is in progress.
- Operators must keep as far away from the primary radiation beam as possible.
- The operation of the x-ray equipment should be controlled from outside the controlled area

- The dental film/sensor should be kept in position with a holding device whenever possible. If unavailable, the film/sensor should be held in place by the patient himself/herself. The dental personnel must not hold the film in place for the patient during the procedure.
- All x-ray tube housing must not be held by hand during operation.

A fast speed film (speed group E or faster)/ digital sensor should be used.

b) Guidelines for Faculty members:

All faculty of PIDC possessing a dental degree are authorized to prescribe radiographic examinations.

c) Guidelines for Radiographer:

- The x-ray operator shall have adequate training in radiographic techniques.
- The x-ray exposure shall be made as evidenced by the faculty member's signature on the patient record.
- A OMR faculty member shall approve the quality of the radiograph as evidenced by the faculty member's signature on the record.

d) Guidelines for Students:

- The students' responsibilities include
 - Complying with radiation safety standards, codes of practices and PIDC radiation safety guidelines and complying with the conditions.
 - Follow the directions from the faculty supervising their work
 - The students are allowed to repeat radiographs only once after acquiring approval from a faculty member. The second repeat can be done only under supervision of radiographer / faculty.
 - A OMR faculty member shall approve the quality of the radiograph as evidenced by the faculty member's signature on the record.

BREACH OF POLICY

Any breach in the implementation of this policy will be grounds for disciplinary action.

REVIEW OF POLICY

This policy shall be reviewed periodically and revised as necessary.

APPROVAL

History

Version	Authorization by	Approval Date	Effective Date	Sections Modified
1.0	The CEO, PIDC	March 2018	April 2018	--
1.1	The CEO, PIDC	30 th Dec 2021	1 st Jan 2022	Contact officer changed to Deputy Dean
1.1		Dec 23	Jan 24	--