

(Revised 2/24)

## USE OF DIAGNOSTIC X-RAY EQUIPMENT IN THE HEALING ARTS

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This Safe Operating Procedure (SOP) summarizes regulatory and UNL policy requirements to possess and operate diagnostic x-ray equipment in the healing arts. The healing arts include human medicine and associated research, dentistry and veterinary medicine.

### Definitions

Definitions to assist in the implementation of this SOP are provided below.

**Dental installation** means a facility that uses dental diagnostic x-ray equipment.

**Human medicine installation** means a facility that uses non-dental, diagnostic x-ray equipment.

**Licensed practitioner** means an individual licensed in Nebraska to practice human medicine, dentistry, or veterinary medicine.

**Radiographic service provider** means an individual operating diagnostic x-ray equipment under the supervision of the Licensed Practitioner.

**Veterinary installation** means a facility that uses veterinary diagnostic x-ray equipment.

### Credentials for Diagnostic X-Ray Equipment Use

#### Human Medicine Installation

Use of x-ray equipment for intentional exposure of humans for diagnosis or treatment must be by or under the supervision of an individual currently licensed to practice the healing arts in Nebraska. All exposures for diagnosis or treatment shall be ordered by the Licensed Practitioner.

Individuals acting as a medical radiographic service provider must be currently licensed in Nebraska as a Medical Radiographer or Limited Radiographer (for the areas being radiographed).

#### Dental Installation

Use of x-ray equipment for the intentional exposure of humans for dental diagnosis or treatment must be by or under the supervision of an individual currently licensed to practice dentistry in Nebraska. All exposures for diagnosis or treatment shall be ordered by the



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Licensed Practitioner.

Individuals acting as a dental radiographic service provider must be currently licensed in Nebraska as a Dentist, Dental Hygienist, or Dental Assistant. Additionally, individuals that have successfully completed a State approved course in Dental Radiography approved by the State of Nebraska or passed the national Dental Assisting National Board Certified Dental Assistant (CDA) exam may act as a dental radiographic service provider.

### **Veterinary Installation**

Use of x-ray equipment in the practice of veterinary medicine must be by or under the supervision of an individual currently licensed to practice veterinary medicine in Nebraska.

Individuals acting as a veterinary radiographic service provider must be currently licensed as a Veterinarian or Veterinary Technician. Additionally, individuals who have successfully graduated from an accredited veterinary technician's program or have veterinary assistant x-ray training approved by the State of Nebraska, may act as a veterinary radiographic service provider.

## **Research Use of Diagnostic X-Ray Equipment**

### **Human Medicine Installation**

Radiation exposure to an individual for research is prohibited, except when the research has been approved by an Institutional Review Board and is conducted under federal regulations for the protection of human subjects in research. Contact Research Compliance Services (<https://research.unl.edu/researchcompliance/>) for specific instructions regarding human subject research.

### **Veterinary Installation**

Radiation exposure to animals requires registration and approval from the Institutional Animal Care and Use Committee. Contact the Institutional Animal Care Program (<https://research.unl.edu/researchresponsibility/iacp/>) for specific instructions regarding animal research.

## **Approval to Possess or Operate Diagnostic X-Ray Equipment in the Healing Arts**

The Department employing the use of x-ray equipment for the purposes described in this SOP must identify a Supervising Practitioner who is a Licensed Practitioner. If the Licensed Practitioner or radiographic service provider is staffed through contracted services or a rotation of UNL staff, then the Department shall identify a UNL faculty member or UNL administrator to assume overall responsibility for the installation.

All x-ray equipment installations must be approved by the UNL Radiation Safety Officer (RSO). To achieve RSC approval:



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- Complete an application. Applications require Department Head/Chair concurrence. This information must include:
  - Supervising Licensed Practitioner(s) and radiographic service provider(s), including copies of current license(s) or certificate(s), as appropriate
  - UNL faculty member or UNL administrator responsible for the installation.
  - Point of Contact for Radiation Safety Office inspections.
  - Model and serial number of x-ray equipment.
  - To scale drawing of the room where a stationary x-ray system is located for Human Medicine and Veterinary installations.
- The diagnostic x-ray equipment and operation location must be commissioned through inspection by the Radiation Safety Office.

The responsible individual for the installation shall notify the Radiation Safety Office of changes of individuals that supervise or operate the x-ray equipment. The responsible individual for the installation shall also notify the Radiation Safety Office of any proposed new installations or modifications to existing installations prior to implementation.

### Registration

All x-ray equipment must be registered with the Nebraska Department of Health and Human Services within 30 days of receipt, relocation, or disposal. The Radiation Safety Office maintains this registration. The responsible individual for the installation shall promptly notify the Radiation Safety Office of any such changes.

### Training

Initial radiation safety training is demonstrated either by state licensure or certification. Annual radiation safety refresher training is recommended for Licensed Practitioners and radiographic service providers. This optional training is provided by EHS and does not replace state licensure or certification requirements.

### Radiation Surveys and Inspections

At a minimum, Radiation Safety Office staff will survey/inspect x-ray equipment installations annually to evaluate compliance with regulatory requirements. X-ray operation by the Licensed Practitioner or radiographic service provider will be required during the inspection.

### Equipment Performance Evaluations

Equipment performance evaluations are not required for bone densitometer and veterinary installations. Equipment performance evaluations are required for all other installations and scheduled by the responsible individual. Equipment performance evaluations are required every 3 years for human medicine installations and every 5 years for dental installations. Contract vendors currently perform these evaluations.



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### Procedures and Charts

Written operating and safety procedures are to be made available to the radiographic service providers, including patient holding, auxiliary equipment, and any restrictions for the safe operation of the particular x-ray system.

A technique chart must be posted in the vicinity of the x-ray system's control panel for all exams performed.

Additionally, human medicine and veterinary installations must maintain an x-ray log or chart containing the patient's identification, the type of examinations, the dates the examinations were performed, and the x-ray equipment operator's name. This can be maintained electronically.

### Dosimetry Requirements

Detailed instruction for the proper use of dosimetry is provided in the EHS SOP, *Dosimetry Program*.

### Records

Each installation shall maintain records of equipment calibration, maintenance, performance tests when required, and x-ray utilization logs or charts. The responsible individual shall ensure such records are maintained and readily available.

State record retention requirements vary greatly depending on the type of record. It is recommended that records required herein are retained for the duration of the state registration for the installation. EHS can assist in the storage and archival of records older than 5 years.