Conference of Radiation Control Program Directors, Inc.

Office of Executive Director ❖ 112 E Main Street ❖ Frankfort, KY 40601
Phone: 502/227-4543 ❖ Fax: 502/227-7862 ❖ Web Site: www.crcpd.org

COVID-19 Response Guidance to State and Local Radiation Control Programs

Topic: Registration and Use of X-Ray Machines

There is currently an outbreak of respiratory disease caused by a novel coronavirus. The virus has been named "SARS-CoV-2" and the disease it causes has been named "Coronavirus Disease 2019" (COVID-19). On January 31, 2020, HHS issued a declaration of a public health emergency related to COVID-19 and mobilized the Operating Divisions of HHS. On March 13, 2020, the President declared a national emergency in response to COVID-19. State emergency/public health emergency declarations have been issued for every state and U.S. territory, as well as the District of Columbia

SARS-CoV-2 has demonstrated the capability to spread rapidly, leading to significant impacts on healthcare systems and causing societal disruption. The potential public health threat posed by COVID-19 is high, both globally and to the United States. To respond effectively to the COVID-19 outbreak, appropriate clinical management and infection control in conjunction with implementation of community mitigation efforts are critical.

The Conference of Radiation Control Program Directors (CRCPD) recognizes that some of the requirements in our Suggested State Regulations may present both significant infectious disease risk as well as an administrative burden to the regulated community, many of whom are actively engaged in the COVID-19 public health response. In order to avoid further overwhelming medical facilities at the frontlines of this pandemic attack, CRCPD provides the **attached guidance** for state Radiation Control Programs to consider in their response. CRCPD promotes and fosters uniformity of radiation control laws and regulations by publishing a set of suggested state regulations upon which state regulations are based. However, these are voluntary recommendations and allow for state-specific modifications.

CRCPD also recognizes that each state has different authorities, laws and interests to consider in determining which, if any, regulatory action should be implemented in their response to the COVID-19 pandemic. Moreover, during the state emergency/public health emergency, specific executive actions may have been executed by the appropriate statutory authority. Careful consideration should be applied to the implementation of this guidance to ensure actions are consistent with legal authority as modified by emergency actions in accordance with state law.

Jeffrey D. Semancik
Chairperson

This document provides guidance to states on the registration and use of x-ray machines, primarily portable x-ray machines and CT units, at temporary facilities during the COVID-19 pandemic.

Registration of units:

1. Device used in an extension of an existing registered facility

   It is considered the same facility when existing units are used in tents or other buildings in the vicinity of the registered facility. New units need to be registered according to the state requirements within 90 days of the first use. Existing units (portable) could be used in these areas without any additional notification.

2. Device used in a new location by an existing registrant

   A portable unit already registered to the facility could be moved and used at the new facility as long as the ownership is the same. For any units that would be installed for use in a single room/location, the facility would need to notify and register such unit with the state within 90 days of the first use.

3. Device used in a previously closed facility (ex. Closed hospital)

   A portable unit already registered at an existing facility, could be moved and used at the previously closed facility as long as the ownership is the same. For any units that would be installed for use in a single room/location, the facility would need to notify and register such unit with the state within 90 days. If the unit is installed in a room that previously had shielding approved, no new shielding review would need to be completed. If the facility is in use longer than 90 days, the shielding should be verified. If the facility is opened and run by the federal government (ex. FEMA), state registration would not be required.

4. Device used in a non-traditional medical setting (ex. Convention Center)

   If the non-traditional setting is being run by an existing facility, a portable unit already registered to the facility could be moved and used. For any units that would be installed for use in a single room/location, the facility would need to notify and register such unit/facility with the state within 90 days of the first use.

   If the non-traditional setting is run by a state government entity or private entity not previously registered with the state, all units would need to be registered within 90 days of the first use.

   If the non-traditional setting is run by the federal government (ex. FEMA), state registration would not be required.

Shielding requirements:

1. Portable x-ray equipment

   Portable x-ray equipment is designed to move from one location to another and does not require a shielding evaluation to be completed. No one should be within six feet of the patient and the radiation source when exposures are made.

2. Fixed radiography unit

   For a unit installed for use in a single room/location, the registrant should provide an initial radiation protection survey with at least four points indicated, one on side of the location (with appropriate scatter readings) including a general layout of the location with primary barrier and boundaries indicated. The boundaries should not exceed the public exposure limit. No one should be within six feet of the patient or radiation source when exposures are made unless a portable shield is used. For any unit in use for more than 90 days, a complete shielding review would need to be completed.

3. CT unit on a coach brought to the facility

   The coach should be parked in an area with low occupancy and boundary controls should be used. The registrant should provide a radiation protection survey with at least four points indicated, one on each side of the location (with appropriate scatter readings) including a general layout of location with boundaries indicated. The boundaries should not exceed the public exposure limit.

4. CT unit installed in a "permanent" room at a temporary facility

   For a unit installed for use in a single room/location, the registrant should provide an initial four radiation protection survey with at least four points indicated, one on each side of the room/locations (with appropriate scatter readings) including a general layout of the locations with primary barrier and boundaries indicated. The boundaries should not exceed the public exposure limit. For any unit in use for more than 90 days, a complete shielding review would need to be completed.

X-ray use in a temporary location

Operator:

1. Personal monitoring badge should be used.
2. The operator must stand 6 feet from the primary beam and use an apron or mobile shield during exposure. The operator must also be able to control access to the controlled area during exposure.

X-ray performance on gurney patients;

When the beam is directed toward the image receptor placed behind the patient (AP) no additional shielding should be required posterior to the receptor if the beam is appropriately collimated to minimize scatter radiation and ALARA technique is used.

All gurney patients;

Should be placed 6 feet apart or incorporate the use of a mobile shield to decrease the likelihood of receiving scatter radiation from other patients (receiving X-rays).

X-ray performance on the standing patient

To reduce the need for additional posterior shielding when the beam is directed toward an image receptor placed in front of the patient (PA), the image receptor must be placed adjacent to a location with low occupancy or with a wall having high natural shielding such as brick or concrete.

Ideally, the image receptor should not be held by a person. If possible, a cassette holder should be used. If this is not an option, the patient should be imaged on a gurney. In the event that neither of these is possible, no one individual should be designated to hold the image receptor.

All Patients

The image receptor/X-ray beam must be located at least 6 feet away from side walls unless the walls are constructed of natural shielding such as brick or concrete.

Waiting patients

All patients should be located away from the X-ray area with boundaries placed to ensure compliance with the public dose limit.

Signage

Place the appropriate warning signs as required by (insert state regulations).

Imaging through a physical barrier

To minimize contamination of the portable equipment various barriers could be used such as plastic or glass. If imaging is done though a glass, the glass should not have additional lead equivalent added. If there is a structural component to the glass which could interfere with the image, the radiologist should evaluate prior to imaging.

Maintaining Control of the Radiation Source

When not in use, the unit should be secured from unauthorized use.

Personal Shielding

Adequate lead aprons, gloves, and thyroid shields should be available.