

July 18, 2019

**KANSAS INFORMATION NOTICE: 2019-02 (revised from 2017-01)**

**Use of Mobile X-ray Units**

**ADDRESSEES**

All Kansas X-ray Registrants who have Medical X-ray Equipment (or those planning to purchase X-ray Equipment) and Vendors selling Mobile X-ray units in Kansas

**PURPOSE**

The Kansas Department of Health and Environment (KDHE) is issuing this Information Notice to inform registrants about the use of Mobile X-ray units and the regulations that pertain to this specific equipment. The purpose of this information notice is to identify regulatory requirements and clarify the Department's position on the use of mobile X-ray units. This information notice does not address X-ray units used in mobile coaches or handheld X-ray units.

**DESCRIPTION OF CIRCUMSTANCES**

K.A.R. 28-35-135m(p) "Mobile X-ray equipment" means X-ray equipment mounted on a permanent base with wheels or casters, or both, for moving while completely assembled. This term shall include X-ray equipment mounted in a vehicle.

K.A.R. 28-35-242a(a)(8)(C) Portable or mobile X-ray equipment shall be used only for examinations during which transferring the patient or patients to a stationary X-ray installation is impractical.

KDHE obtained a recent legal interpretation of these regulations. The term "impractical" means not workable or not sensible. Transferring a patient a relatively short distance to a stationary X-ray unit is not impractical unless there is an emergency or it is medically not advised to move the patient. The term impractical applies to the patient and patient's condition, not the medical staff or financial interests of the facility.

**DISCUSSION**

KDHE has experienced a recent trend of small medical facilities or outpatient clinics, urgent care clinics, and stand-alone emergency departments purchasing a mobile X-ray unit to image all patients. A mobile X-ray unit is not acceptable as the primary X-ray unit in a facility. A stationary X-ray unit must be in place before the addition of a mobile X-ray unit. Mobile X-ray equipment is designed to be used on patients that are too ill or injured to be transported to a stationary X-ray unit.

The most common acceptable uses for mobile X-ray equipment includes emergency room patients who are not considered stable, inpatients in intensive care units, surgery or patients in recovery rooms, and patients in inpatient care facilities such as assisted living and senior care or mental and behavioral health care. To ensure that the risk of radiation exposure is associated with the benefit of a high quality radiographic image, the use of mobile X-ray units for human diagnostic procedures is restricted to patients who cannot be transferred to a stationary X-ray unit. If a patient can ambulate or be transported to a stationary X-ray unit for their X-ray exam, it shall be done in that manner.

The primary concerns about the use of mobile X-ray equipment include the potential for exposure to staff, other members of the public or a patient family member in the room from the use of that equipment in areas not evaluated for shielding; and the potential for less than optimal image quality. The X-ray operator is routinely exposed to radiation while performing mobile radiography. Repeated use of a mobile X-ray unit adds to the cumulative dose of the X-ray operator which is not in line with regulations of keeping occupational dose to a minimum.

A stationary X-ray unit is located in a room with approved shielding. A stationary X-ray unit allows for permanent operator protection and a larger range of views for exams in a more consistent manner. This type of X-ray unit has an X-ray tube on a rail that provides a lock into the appropriate distances to obtain the X-ray. Stationary X-ray units have multiple choices in technique factors, such as mA and time, which allow the adjustment to increase the power and lower the time setting for better quality images to prevent motion on the image. A stationary X-ray unit has options of larger mA settings to decrease the time of exposure for shorter exposure times. This also give the capability to image larger patients with more consistency.

Mobile X-rays are intended to get the basic information from an abbreviated study to make a quick determination of the need for a higher level of care. The X-ray operator does not have permanent barrier for protection from X-ray exposure and the operator will obtain a higher occupational dose for the use of this type of equipment. Mobile X-ray units add several extra variables such as distance, angulation, grids, patient body thickness and patient positioning that may negatively affect image quality. Some mobile units may not be capable of the high power required for larger or thicker body parts and may rely on longer exposure times to obtain the appropriate image density for interpretation. The use of a mobile X-ray unit requires education, training and experience of the X-ray operator to ensure that images are of consistent good diagnostic quality.

If a facility is inspected and found to be using a mobile X-ray unit as the primary X-ray equipment, the facility will be cited with a violation of regulations and will be required to make changes to become in compliance with Kansas Regulations.

### **FACILITY ACTIONS NEEDED**

1. If your facility is using a stationary X-ray unit as your primary X-ray equipment, NO ACTION is needed.
2. If your facility is using mobile X-ray unit as stated in regulations, NO ACTION is needed.
3. If your facility is using mobile X-ray unit as your primary X-ray equipment, contact KDHE at the contact information below.

**CONTACT**

If you have any questions about the information in this notice, please do not hesitate to contact this office at (785) 296-1560 or [kdhe.xray@ks.gov](mailto:kdhe.xray@ks.gov).