Policies & Procedures - Operational - Regional

C.32. Mini C-Arm

Policy:

The Mini C-Arm is a fluoroscopy device designed to be used intraoperatively in the main operating room or in the minor procedure room by a surgeon who is a Qualified Operator of the Mini C-Arm, without the assistance of a medical radiation technologist. The use of this device will assist the physician, the operating room team and the Diagnostic Imaging Department to provide fluoroscopy services to patients in the operating room in a more efficient manner, with less exposure to radiation. This device may be used for fluoroscopy when managing patients with distal extremity trauma particularly of the upper limb in an ambulatory care setting.

The Mini C-Arm, while providing many advantages to patient care, remains a fluoroscopy device that falls under the Alberta Radiation Protection Act and requires knowledge and skill in order to assure patient and staff safety.

1. Surgeons in the Divisions of Plastic Surgery and Orthopedics and members of the Division of Podiatry may become a Qualified Operator of the Mini C-Arm by successfully completing a Course in Radiation Protection and Principles of Fluoroscopy. This shall include Fellows and Senior Residents (R4,5) in these Divisions.

2. The physician who is a Qualified Operator of the Mini C-Arm may use this device in the operating room and minor surgery procedure room. The Qualified Operator is responsible for the safety and use of the Mini C-Arm intraoperatively.

3. The Qualified Operator may use only the Mini C-Arm for fluoroscopy, not the C-Arm, which requires a radiology technologist to operate.

4. The Diagnostic Imaging Department will provide quality assurance checks on appropriate use of the Mini C-Arm by Qualified Operators and quality assurance monitoring of the Mini C-Arm equipment.

5. Registration and ownership of the Mini C-Arm equipment acquired by the Calgary Health Region must be the responsibility of the Diagnostic Imaging Department.

6. A record of the fluoroscopy time must be placed as a permanent record in the patient’s chart.

Process:

1. In order to become a Qualified Operator of the Mini C-Arm, the physician shall:

- Provide proof of successful completion of a Course in Radiation Protection and Principles of Fluoroscopy to the Chief of Surgery, and the Radiation Safety Officer.
- Provide proof of successful completion of a hands-on training session by the Calgary Health Region Radiation Safety Officer or their designate on the use of the Mini C-Arm. This session will include:
    - achieving high quality images while exposing the patient to minimal fluoroscopy,
    - capturing, retrieving and printing images,
    - demonstrating appropriate radiation protection and ALARA (as low as reasonably achievable) principles,
    - positioning the patient,
    - recording fluoroscopy exposure times and dose summary if available for each patient.

2. Upon receiving the proof of the Radiation Protection and Principles of Fluoroscopy Course, and the Hands on Training Session, the Chief of Surgery and Regional Clinical Department Head of Diagnostic Imaging will send a recommendation of privilege to the Medical Advisory Board. A privilege will then be granted to the physician to use the Mini C-Arm intraoperatively.

3. A copy of this privilege will be sent to the Director, Surgical Suites and Director of Diagnostic Imaging. The Director, Surgical Suites, will forward a copy of privilege to the appropriate Patient Care Manager(s), Operating Room. The Manager will communicate these privileges to the appropriate operating room personnel and keep a list of Qualified Operators of the Mini C-Arm in the operating room for OR personnel reference. Diagnostic Imaging will also use this list when they perform the Quality Assurance audits on the utilization of the units.

4. All physicians and other personnel caring for the patient undergoing fluoroscopy using a Mini C-Arm must wear protective radiation aprons. Failure to wear the protective aprons, or to ensure that the staff involved in the Mini C-Arm fluoroscopy procedure are wearing aprons, will result in suspension of the privilege to use the Mini C-Arm. Female patients of child bearing age must be asked if they are pregnant and appropriate radiation protection provided if they are pregnant.

5. Quality Assurance random audits will be conducted on the utilization of the units checking for image quality, dose reports, equipment condition, user qualifications and radiation output. These audits will be conducted by the Diagnostic Imaging Quality Assurance technologists and reports will be submitted to the Director of Surgical Suites and Director of Diagnostic Imaging.

6. The physician, in the dictated operative notes and on the intraoperative record, will record the length of fluoroscopy exposure time and patient dose summary if available.

7. If new Mini C-Arm equipment is purchased, the Qualified users will receive applications training by the vendor and Diagnostic Imaging prior to using the unit to provide patient care.

References:

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