

July 27, 2016

Radiographic Equipment Ownership Guide for CCBC Registrants

1. In order to assist registrants that own or operate a radiographic facility, while ensuring facility safety and safe operation of the x-ray equipment, the College of Chiropractors of BC (the *CCBC*) has developed this Radiographic Equipment Ownership Guide.
2. All registrants that own radiographic equipment must comply with the Bylaws regarding radiation safety by:
 - a) registering the x-ray equipment with the *CCBC* and the BC Center for Disease Control (the *BCCDC*)
 - b) de-registering the equipment with both the *CCBC* and the *BCCDC* when no longer in use
 - NOTE: only *BCCDC* listed Radiation Protection Surveyors can register and de-register x-ray equipment with the *BCCDC*. The Registrant must then input the forms to the *CCBC* .
 - c) maintaining a current Certificate of Radiation Safety (the *Certificate*)
 - d) annually or as updated, provide the *CCBC* with:
 - the issue date and expiry date of the *Certificate*
 - a copy of the *Certificate* (upload)
 - e) displaying the *Certificate* within 3 meters of the x-ray equipment, in a manner that is easily seen by patients receiving x-rays. The most recent certificate issued, *if expired*, must continue to be posted until replaced with a current certificate. X-rays must not be taken with an expired certificate posted in the facility.
 - f) display x-ray warning signs (<http://www.bccdc.ca/health-info/health-your-environment/radiation/radiation-in-medicine/diagnostic-x-ray-facility-protection>)
 - g) complying with any *CCBC* Quality Assurance Committee programs for radiographic equipment.
3. All *CCBC* registrants who own, whether individually or in a partnership, any radiographic equipment must provide the *BCCDC* x-ray registration information and the *Certificate* to the *CCBC*.
4. Other registrants such as clinic associate doctors and locum, student or temporary registrants do not need to provide x-ray registration information or the *Certificate* to the *CCBC*, since the facility owner is ultimately responsible for the radiation safety of a diagnostic x-ray facility. However, these registrants must ensure the equipment has a valid *Certificate* before operating it themselves.
5. If any *CCBC* registrant is operating radiographic equipment owned by a person or company other than a chiropractor, they should contact the College office,

6. Members can register & deregister the x-ray equipment in the radiographic facility, verify the x-ray equipment and upload a copy of the Certificate by logging into the Registrant area on the CCBC website.
7. It remains the responsibility of the registrant to ensure their Certificate is valid at all times.
 - a) **Note:** operation of radiographic equipment that does not have a valid Certificate is a breach of the Bylaws and WorkSafeBC Occupational Health and Safety Regulations. This could result in an investigation and penalties under the Health Professions Act (the *HPA*) s. 33 and an order to cease use of the equipment under *HPA* s. 35, as well as WorkSafeBC assessments, penalties and fines.
8. Only a BCCDC listed Shielding Consultant can assist in planning your radiographic facility.
Note: the services of a Shielding Consultant is required if any of the 'Criteria' mentioned in the BCCDC document 'Guideline for Determining the X-ray Shielding Requirements for a Chiropractic Radiographic Facility' (the *Guideline*) do not apply.
9. The facility owner can self-assess the shielding requirements for a radiographic facility provided all of the 'Criteria' in the *Guideline* apply. The facility owner must complete and sign the assessment as per instructions in the *Guideline* and keep a copy of the signed *Guideline* on record in the radiographic facility for future reference/inspection.
10. A list of detailed and helpful documents is included in the last section of this package.

Checklist for Chiropractic owners of radiographic equipment

11. New and used radiographic equipment - installation, modifications, changes, replacing or moving:
 - b) Installed by qualified persons
 - c) Adequate shielding installed
 - d) Equipment registered with the BCCDC
 - e) Equipment registered with the CCBC
 - f) Certificate of Radiation Safety uploaded to CCBC
12. At least every 3 years:
 - Survey of equipment by a BCCDC listed Radiation Protection Surveyor
 - Certificate of Radiation Safety uploaded to CCBC
13. Key points:
 - radiographic equipment that does not have a current and valid Certificate must NOT be operated
 - It is the responsibility of the chiropractor to ensure they possess a valid Certificate
 - A proper and complete exposure log must be maintained (see section 14(k)).

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14. Preamble

The Chiropractic Regulation permits chiropractors to “apply X-rays for diagnostic or imaging purposes, excluding X-rays for the purpose of computerized axial tomography”. Along with this privilege comes many responsibilities including the assurance that the radiographic equipment is safe and operating correctly to best protect the public, patients, equipment operators and staff.

The CCBC Bylaws state:

Radiation safety and procedure

NOTE: replace with the new revised Bylaws s. 83 which requires registration of equipment with CCBC and delivery of a *Certificate of Radiation Safety* to the CCBC.

83. (1) All registrants who operate a radiographic installation must obtain and at all times maintain a valid *Certificate of Radiation Safety* issued by a Radiation Protection Surveyor approved by the Radiation Protection Services of the Environmental Health Division, BC Centre for Disease Control.

15. Regulation and Authority

- a) The authority for Radiation Guidelines is under Work Safe BC Occupational Health and Safety (OHS) Regulations Part 7 - Noise, Vibration, Radiation and Temperature
 - o Division 3 - Radiation Exposure
- b) The BC Center for Disease Control (BCCDC) – Radiation Protection Services branch provides the Overview of Diagnostic X-Ray Protection, oversees issuing of the Certificate of Radiation Safety, maintains lists of Radiation Surveyors, Shielding Consultants and provides shielding guidelines.
- c) Health Canada has issued Safety Codes for x-ray equipment:
 - o Safety Code 20A - X-Ray Equipment in Medical Diagnosis Part A: Recommended Safety Procedures for Installation and Use
 - Typically for facilities with one standard x-ray unit.
 - NOTE: This Safety Code is being revised but can continue to be used until a revised version is published by Health Canada.
 - o Safety Code 35: Safety Procedures for the Installation, Use and Control of X-ray Equipment in Large Medical Radiological Facilities

There are many factors and variable that determine the requirement and applicability of Health Canada Safety Code 20A or 35. The CCBC is unable to provide a determination, therefore registrants that wish to operate any form of radiographic equipment should consult with a Radiation Surveyor prior to shielding and installation of the unit.

16. Responsibilities

- a) The owner of the radiographic facility is responsible for ensuring the safety standards are met, including:
 - calibration and proper functioning of the x-ray unit
 - patient safety - typical acceptable radiation dose per view, gonadal shielding available, etc.
 - safety of workers and the general public (both inside and outside of the facility)
- b) A Certificate of Radiation Safety (the *Certificate*) is required at all times under CCBC Bylaws s. 83
 - The Certificate is valid for up to 3 years, excepting a 'Conditional' certificate issued for a 90-day period.
 - Without a current and valid *Certificate*, properly posted in the radiographic facility, a registrant must NOT operate the X-ray unit.
- c) New radiographic equipment installation must be performed by the manufacturer or their authorized installer. The new equipment must be registered with the CCBC and the BCCDC and a *Certificate* must be uploaded to the CCBC.
- d) Installation of used radiographic equipment should be performed by a qualified surveyor. The used radiographic equipment must be registered with the CCBC and the BCCDC and a new *Certificate* must be uploaded to the CCBC.
- e) A Radiation Protection Survey is required when:
 - The tube is replaced
 - The equipment has been damaged or modified
 - You move the radiographic equipment to a new office or within the existing office.
 - There is an indication of an unusually high exposure of a worker to ionizing radiation
 - Specified in the radiographic equipment manufacturer's instruction
 - Used radiographic equipment is installed.
 - The Surveyor will determine the need for issuance of a new Certificate of Radiation Safety.
- f) Shielding and installation plans are not submitted to the BCCDC or the CCBC. A Shielding Consultant can advise on your specific requirements.
- g) An owner must keep all plans and drawings for future reference by a Radiation Surveyor and provide the plans to the CCBC, the BCCDC or WorkSafe BC upon request.
 - In planning your x-ray radiographic equipment facility, allowances should be made for possible future changes in any one or all of the parameters such as increased operating kVp and workload, additional equipment and an increase in the degree of occupancy of the surrounding areas.

- h) Records of Radiation Surveys must be retained by the registrant for a minimum of 10 years (WorkSafeBC 7.25(a)(i)) and made available to WorkSafeBC and workers.
- i) All radiographic equipment must be registered by the owner(s) with the BCCDC and the CCBC when installed and also de-registered when sold or otherwise disposed of.
- j) Any worker(s) involved with taking of x-rays (located anywhere inside the x-ray room for any reason when the x-ray equipment's exposure switch is pressed) must be provided with a PERSONAL dosimeter that is properly monitored. The dosimetry records must be maintained by the employer for the period that the worker is employed plus 10 years. The records must be made available to WorkSafeBC and the worker(s).
- k) An accurate manual (non- digital/non-computerized) exposure log must be maintained. Sufficient detail must include Date, Patient Name, Views, Calipered Thickness, X-ray Technical Factors (kVp, mA, mAs/time), # of Exposures Taken including Rejects/Repeats, Comments, Dr.'s Initials. The exposure log is key information for the Surveyor, used in determining an estimate of potential exposures to workers and the general public both inside and outside the radiographic facility as applicable (refer to Safety Code 20A 5.2.8).
- l) The x-ray equipment (new or used) is properly labelled and bears electrical safety certification marks issued by a recognized testing laboratory. The marks are recognized by the BC Safety Authority.
- m) New x-ray equipment components are recognized by Health Canada for human medical diagnosis use under the Medical Devices Active License Listing (MDALL).
- n) New x-ray equipment is sold either by a manufacturer or supplier holding a current Health Canada Medical Device Establishment License (MDEL).

17. Detailed and Helpful Documents (hyperlinked)

Work Safe BC

[Occupational Health and Safety \(OHS\) Regulations Part 7 - Noise, Vibration, Radiation and Temperature, Division 3 - Radiation Exposure](#)

Health Canada

[Safety Code 32 – Safety Requirements And Guidance For Analytical X-ray Equipment](#)

[Safety Code 20A - X-Ray Equipment in Medical Diagnosis Part A: Recommended Safety Procedures for Installation and Use](#)

[Safety Code 35: Safety Procedures for the Installation, Use and Control of X-ray Equipment in Large Medical Radiological Facilities](#)

BCCDC

[Radiation in Medicine](#)

[Diagnostic X-ray Facility Protection](#)

[Protection of Workers and Patients in Radiology](#)

[Radiological Health Prevention and Promotion](#)

[Registration of Diagnostic X-ray Equipment](#)

[Diagnostic X-ray Equipment De-Registration Form](#)

[X-ray Shielding Guidelines Explanatory Notes](#)

[Guideline and Checklist for Installation of Lead Shielding in a Diagnostic X-ray Facility](#)

[Guideline for Determining the X-ray Shielding Requirements for a Chiropractic Radiographic Facility](#)

[Guideline for Determining the X-ray Shielding Requirements for a General Duty/Trauma Radiographic Facility](#)

[Shielding Consultants](#)

[Surveyors List](#)

[Radiation Exposure and your Developer](#)

[ADVISORY ON PERSONAL RADIATION DOSIMETRY SERVICES](#)

[GUIDELINE FOR WEARING RADIATION MONITORING DEVICES \[PERSONAL DOSIMETERS\]](#)