



# Computed Tomography and Contrast Media

Enhanced practice authorization program for nuclear medicine technologists





## This guide is designed to provide the nuclear medicine technologist with information about the Computed Tomography and Contrast Media enhanced practice authorization program approved by the Alberta College of Medical Diagnostic and Therapeutic Technologists (ACMDTT).

The *Health Professions Act* (HPA) identifies the practice of nuclear medicine technology to be uniquely distinct from the practice of radiological technology. As such, technologists registered on the nuclear medicine register are not authorized to apply ionizing radiation in conjunction with medical radiography. In addition, the registrants on the nuclear medicine register are not authorized to prepare and/or administer diagnostic imaging contrast agents for the purpose of conducting diagnostic scans and imaging of body tissue.

Under the provision of the HPA and s.19(1) of the *Medical Diagnostic and Therapeutic Technologists Profession Regulation*, a regulated nuclear medicine technologist who has completed advanced training, approved by ACMDTT Council, may be authorized by the Registrar to both apply ionizing radiation in conjunction with medical radiography and prepare and/or administer contrast media.

The objective of the College in authorizing a program in Computed Tomography and Contrast Media is to prepare technologists to safely and competently perform computed tomography (CT) scans and/or prepare and/or administer contrast media within the clinical setting. The information contained in this guide describes the expectations and goals, both academically and experientially, that the technologist must achieve in order to be successful in this program.

The ACMDTT Computed Tomography and Contrast Media enhanced practice authorization program consists of both academic and clinical components. These components are outlined, and further broken down, in the next column.

A technologist must have completed, or be in the process of completing, the courses of the academic component of the program prior to completing the clinical component.

### **Maintenance of enhanced practice authorization**

Each year, during renewal, the technologist with the Computed Tomography and Contrast Media enhanced practice authorization will be required to apply for renewal of this authorization. In addition to the online renewal of his/her practice permit, the technologist will be required to submit a *Renewal of Additional and Enhanced Practice Authorization* form.

### **Program components**

Through this program to achieve enhanced practice authorization, the College is standardizing the additional education required for a nuclear medicine technologist to perform CT and/or prepare and/or administer contrast media safely and competently. In addition, due to differing demographics and experience among our nuclear medicine registrants, the following table strives to address the learning and experiences of both new graduates and practiced technologists. As such, this modular approach to the program has been instituted.

In order to successfully complete the program, the technologist must complete the appropriate didactic and clinical requirements for the program.

## Program requirements

All technologists must apply to the College for enhanced practice, in addition to providing a completed Application for Additional and Enhanced Practice, please provide evidence of completion of the following:

	Didactic Requirements	Clinical Requirements
SAIT <sup>1</sup> graduate (2018 – present)	provide evidence of NMT program graduation	
SAIT graduate (2011-2017)	CAMRT <sup>2</sup> CT Imaging 1 or CAMRT Contrast Media QSS  and  provide evidence of NMT program graduation	ACMDTT Clinical Manual
NM graduate (2010 and previous)	CAMRT CT Imaging 1 CAMRT CT Imaging 2 CAMRT CT Imaging 3	

<sup>1</sup> SAIT – Southern Alberta Institute of Technology

<sup>2</sup> CAMRT – Canadian Association of Medical Radiation Technologists

It is required that the technologist complete foundation didactic teachings in CT and contrast media theory prior to commencing the clinical component:

- SAIT NMT graduates from 2011 – 2017, must complete the CAMRT CT Imaging 1 course and/or the CAMRT Contrast Media quick self study course prior to starting the clinical component of this program
- NM graduates from 2010 and prior must complete the CAMRT CT Imaging 1 course prior to starting the clinical component of this program

### Note:

If you are graduate of a nuclear medicine technology school in Canada, other than SAIT, please contact the College for more information on program requirements.

## Final Submission

All of the applicable items must be submitted to the Registrar, for review, prior to the receiving the authorization to apply ionizing radiation in conjunction with medical radiography and prepare and/or administer contrast media.

Submit the full package including the following completed documents:

- completed Additional and Enhanced Practice Authorization Application
- proof of successful completion of the academic component
- proof of successful completion of clinical component

### Submit to:

Registrar  
Alberta College of Medical Diagnostic and  
Therapeutic Technologists  
Suite 800, 4445 Calgary Trail  
Edmonton AB T6H 5R7

F| 780.432.9106  
E| info@acmdtt.com



# Computed Tomography and Contrast Media

ACMDTT Clinical Manual



## Applicant Information

Name: \_\_\_\_\_

ACMDTT #: \_\_\_\_\_

Address: \_\_\_\_\_

email: \_\_\_\_\_

\_\_\_\_\_

Phone #: \_\_\_\_\_

\_\_\_\_\_

## Practicum Information

Facility: \_\_\_\_\_

Department(s): \_\_\_\_\_

Primary Clinical Supervisor: \_\_\_\_\_

email: \_\_\_\_\_

Phone #: \_\_\_\_\_

Start Date: \_\_\_\_\_

End Date: \_\_\_\_\_

## Competency Assessment

### Performance expectations

The applicant who is placed in the clinical environment will be assessed according to the following performance expectations:

5. protects the patient's confidentiality and takes measures to ensure patient privacy
6. demonstrates sensitivity when dealing with diverse patient populations
7. provides accurate information and checks for understanding

### Application of theoretical knowledge

1. accurately interprets the requisition
2. accurately and independently produces images
3. provides for accurate patient exams/studies in an orderly progression of tasks
4. adheres to high standards of radiation safety while performing procedures
5. ensures operational readiness of equipment for a procedure/study
6. determines and selects optimal factors based on individual case variables
7. accurately critiques the computed tomography (CT) images which are produced
8. correctly performs quality control procedures according to manufacturers' operational standards
9. exemplifies a strong understanding of professional and regulatory standards of practice

### Work team relationships

1. supports the work of the team and shares the workload equitably
2. demonstrates a willingness to learn from various members of the team
3. showcases efforts which are clearly focused and on task
4. exemplifies communication that is meaningful and relevant to the work
5. demonstrates flexibility to changing routines
6. seeks and responds appropriately to feedback

### Patient relationships

1. identifies self and explains the provider's role
2. confirms the identity of the patient
3. demonstrates respect for patients' rights to make choices and to be fully informed
4. responds appropriately, and in a timely manner, to all patient inquiries

### **Program sequencing**

It is required that the technologist complete foundation didactic teachings in CT and contrast media theory prior to commencing the clinical component:

- SAIT NMT graduates from 2011 – 2017, must complete the CAMRT CT Imaging 1 course and/or the CAMRT Contrast Media quick self study course prior to starting the clinical component of this program
- NM graduates from 2010 and prior must complete the CAMRT CT Imaging 1 course prior to starting the clinical component of this program

### **Criteria for competence**

By having verifiable competence in these documented procedures of the clinical component, it is imperative that the nuclear medicine technologist has demonstrated, through independent actions, the ability to perform CT scans and/or prepare and/or administer contrast media within a reasonable standard of time regardless of the particular patient presentation.

### **Competency substitutions**

In acknowledgement of differences in practice, both regionally and from site-to-site, limited flexibility in the attainment of competence will be allowed in the 'CT Procedures' category. In this category, non-enhanced protocols may be substituted with enhanced protocols to a maximum of 10 repetitions in total.

### **Clinical timeframe**

In completion of this program, it is expected that the technologist spend a minimum of 150 clinical hours in a CT environment. This may be in a dedicated CT suite or in a nuclear medicine department. Technologists will record the hours worked in these areas on the *Clinical Time Log* that can be found in this manual.

## Clinical Competencies

For the competencies listed below, the applicant is to be evaluated according to the Performance Expectations outlined on Page 1 of this manual. In order to achieve competence assured for each examination below, it is expected that the technologist will have performed the examination protocol more than once and will maintain competence in the examination procedure post competence assurance.

### I. Patient Care and Contrast Media Procedures

Procedure	Examination Date	Signature of Verifier
Assess examination indications/protocol		
Evaluate patient's lab values		
Select appropriate contrast media for patient/exam		
Prepare contrast media		
Prepare and load power injector		
Perform proper IV connectivity pre and post contrast administration		
Utilize power injector to administer contrast media		
Monitor and assess patient for adverse reactions		

### II. CT Procedures

For each examination, aside from performing the scanning protocol, the technologist is expected to perform any image reconstruction and archiving required of the imaging facility.

Examination	Examination Date	Signature of Verifier
Enhanced head		
Unenhanced head		
Enhanced neck		
Unenhanced neck		
Enhanced chest		



CT Procedures (continued)		
Examination	Examination Date	Signature of Verifier
Unenhanced chest		
Enhanced abdomen		
Unenhanced abdomen		
Enhanced pelvis		
Unenhanced pelvis		
Spine		
Extremity		

### III. Quality Assurance Procedures

Procedure	Date	Signature of Verifier
Quality assurance procedures *		

- \* Please comply with site protocols regarding quality assurance of the CT scanner. Observe (and participate in, if possible) the standard quality assurance that is performed.



## Signing Authority for Verification of Achievement

A technologist, with a minimum of six months full time equivalent experience in a CT environment, can attest to the clinical competencies achieved by the applicant. Patient Care competencies may be verified by a registered nurse. Questions regarding appropriateness of supervision should be directed to the College.

Name of Verifier	Current Position	email	Signature

### Verification of Successful Completion

#### Technologist Verification

I verify that I have successfully completed all aspects of the clinical learning experience outlined in the Computed Tomography and Contrast Media enhanced practice authorization program.

\_\_\_\_\_  
Applicant Signature

\_\_\_\_\_  
Date

#### Clinical Practicum Site Verification

I verify that all aspects of the clinical learning experience have been successfully achieved by the applicant.

\_\_\_\_\_  
Signature of Primary Clinical Supervisor

\_\_\_\_\_  
Date



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