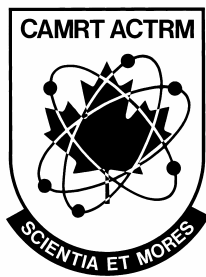


# **Nuclear Medicine**

## **COMPETENCY PROFILE**

**November 2006**  
Revised February 2008



### **Revised Profile** for use with the development of the **September 2011 Certification exams**

Prepared by the Nuclear Medicine Competency Profile Task Group

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## COMPETENCY PROFILE – NUCLEAR MEDICINE

### Competencies for Entry Level Nuclear Medicine Technologists

This document describes the essential competencies required for an entry-level nuclear medicine technologist in Canada to provide best practice as defined by safe, competent and ethical practice of medical radiation technology in a variety of clinical environments. The profile defines competencies reflecting the integration of knowledge, skills, attitudes and judgment necessary to practice in an environment that requires the technologist to use effective organizational skills and critical thinking. This requires the ability to assess, adapt, modify, analyse and evaluate in a variety of situations and environments in the practice of nuclear medicine technology. Critical decision-making is, therefore, inherent to the practice of nuclear medicine technology and is demonstrated in the competencies required of entry-to-practice technologists.

The competency profile defines the standard for certification and registration of entry-level nuclear medicine technologists in Canada.

The document is also used to:

- provide direction to entry-level education programs to assist in developing curriculum
- inform Ministries of Health and Education of the standard expected from entry-level nuclear medicine technologists
- inform the public and employers of the standard expected from entry-level nuclear medicine technologists
- assist CMA Conjoint Committee with accreditation of education programs
- provide guidance by identifying professional development needs for practicing technologists
- develop a blueprint for CAMRT certification examination

Accredited programs must ensure that their certification candidates possess all the competencies listed in the profile. Education programs are encouraged to include additional skills at their discretion.

In the development of the competencies, the following assumptions have been made.

That the nuclear medicine technologist

- has completed an accredited Canadian program, or other recognized program
- has acquired the theoretical knowledge required to achieve a wide range of competencies
- has developed a broad knowledge base that has been assessed prior to the certification examination
- commits to the principle that their primary role and function is to serve the public interest
- is a member of the inter-professional health care team collaborating with other health care professionals to provide appropriate patient care in the delivery of diagnostic and therapeutic imaging services
- is responsible for the safe and effective application of ionizing radiation
- is responsible for the production, assessment, optimization and archiving of images
- is responsible for the performance of diagnostic and therapeutic nuclear medicine procedures
- is responsible for the education of patients, public and other health care providers regarding ionizing radiation for medical use
- performs effectively encompassing physical, psychological, social, economic and cultural factors that interact in predictable and unpredictable ways

- recognizes patients as unique individuals, treating them with dignity and respect
- practices in accordance with legislation, regulatory and professional bodies' standards of practice, scope of practice, codes of ethics and other relevant documents
- performs in a manner consistent with public interest, employment philosophies and practices, current research and advancing technology
- seeks guidance from experienced practitioners, colleagues and employers to enhance the technologist's individual experience and knowledge
- promotes and participates in the advancement of this dynamic profession through active involvement, continuous learning, professional development and research
- adheres to and promotes professional standards

The Nuclear Medicine Technology Competency Profile is divided into fourteen modules:

<b>Module A</b>	<b>Professional Practice</b>
<b>Module B</b>	<b>Patient Management</b>
<b>Module C</b>	<b>Radiation Health &amp; Safety</b>
<b>Module D</b>	<b>Quality Management</b>
<b>Module E</b>	<b>Radiopharmacy and Laboratory Procedures</b>
<b>Module F</b>	<b>Clinical Procedures - Core Competencies</b>
<b>Module G</b>	<b>Clinical Procedures - Cardiovascular (CV)</b>
<b>Module H</b>	<b>Clinical Procedures - Gastrointestinal (GI)</b>
<b>Module I</b>	<b>Clinical Procedures - Genitourinary (GU)</b>
<b>Module J</b>	<b>Clinical Procedures - Skeletal (SK)</b>
<b>Module K</b>	<b>Clinical Procedures - Inflammatory Process/Tumor/Lymph (TU)</b>
<b>Module L</b>	<b>Clinical Procedures - Central Nervous System (CN)</b>
<b>Module M</b>	<b>Clinical Procedures - Endocrine (EN)</b>
<b>Module N</b>	<b>Clinical Procedures - Respiratory System (RE)</b>

## EXAMINABLE COMPETENCIES & COMPETENCY LEVELS

**All competencies listed in the competency profile must be achieved by graduates of an accredited medical radiation technology program.** This will be assessed for compliance during the accreditation survey conducted by the CMA Conjoint Accreditation Services. It is realized that due to regional and institutional differences level of achievement for some competencies may vary based on evolving changes in technology, practice and facility policies.

### **Not all competencies will be tested on the CAMRT certification exam.**

**The EXAMINABLE COMPETENCIES are those competencies that have a competency level indicated in the column to the right of the written competency.**

The EXAMINABLE COMPETENCIES were established by the discipline specific workgroups working both within their disciplines and together as a core group using the feedback received from stakeholders during the competency profile revision process.

There are **three** competency levels (CL)

- **HIGH (H)**
- **MEDIUM (M)**
- **LOW (L)**

Competency levels were determined through a survey done by technologists/therapists and managers of Diagnostic Imaging and Radiation Therapy Departments. The survey requested a rating of the examinable competencies for frequency of application, importance and future significance in the healthcare work environment. The results of the survey were analyzed and the **examinable competencies** rated either **H, M, L** based on the response to frequency, importance and significance for the future.

**The competency levels provide a guide (blue print) for certification exam development.** More weighting will be placed on the development and use of questions associated with a HIGH level competency as opposed to a MEDIUM or LOW rated level competency where emphasis on question development and use on the certification exam will reflect the competency level.

Validation of all competencies, including identification of examinable competencies and their associated competency levels will be conducted at least every five years. Due to rapid changes in technology and practice certain portions of the profile may be validated more frequently to ensure the profiles are reflective of practice and workplace needs.

***Due to regional differences in the practice of nuclear medicine technology it is recognized that candidates may not be clinically competent in 100% of nuclear medicine clinical procedures. However candidates must demonstrate competency in a minimum of eleven (11) clinical procedures with a HIGH competency level plus a minimum of eleven (11) clinical procedures with a MEDIUM competency level.***

## MODULE A PROFESSIONAL PRACTICE

Wherever both national and provincial regulations/codes of ethics are in place, only the national standards will be tested on the CAMRT certification examination.

		CL	
<b>A 1</b>	<b>Demonstrates critical thinking</b>		
A 1.1	Apply critical thinking and problem solving strategies to ensure best practices		
<b>A 2</b>	<b>Practice in accordance with legislation, regulations and ethical guidelines related to the profession</b>		
A 2.1	Practice patient care that protects the patient's legal rights	H	
A 2.2	Demonstrate an understanding of the current and emerging issues in the Canadian Healthcare System		
A 2.3	Perform all duties in compliance with sexual abuse prevention guidelines		
A 2.4	Practice in accordance with national association's/provincial regulatory body codes of ethics		
A 2.5	Practice within scope of practice in accordance with national association and provincial regulatory body's legislation requirements		
A 2.6	Practice in accordance with the national association's and provincial regulatory body's standards of practice		
A 2.7	Practice in accordance with legislation, regulations/by-laws regulating medical radiation technologists		
A 2.8	Provide a diagnostic/therapeutic impression to health care professionals to assist in patient care management	H	
<b>A 3</b>	<b>Demonstrate professional behaviours</b>		
A 3.1	Demonstrate respect and sensitivity in both patient and professional interactions		
A 3.2	Utilize stress management techniques		
A 3.3	Utilize conflict management techniques		
A 3.4	Manage change within the evolving healthcare system		
A 3.5	Exchange knowledge/skills with other members of health care teams to promote collaborative practice		
A 3.6	Provide clinical instructions, guidance and evaluation for students		
A 3.7	Assume a lead role during diagnostic/therapeutic procedure when working with the healthcare team		
A 3.8	Present a professional appearance and manner		
<b>A 4</b>	<b>Participate in professional development</b>		
A 4.1	Engage in reflective practice, self-assessment to identify a learning plan that will promote best practices		
A 4.2	Demonstrate a basic understanding of current and emerging imaging, planning and therapeutic technologies used by interdisciplinary practices	H	
<b>A 5</b>	<b>Participate in research for the purpose of evidence based decision-making</b>		

		CL	
A 5.1	Demonstrate an understanding of: how to review current literature, research methodology, data collection and analysis of statistics in order to promote evidence based practice		
A 5.2	Participate in a research-based project		
A 5.3	Discuss the ethical issues involved with research		
<b>A 6</b>	<b>Understand the application of resource management principles</b>		
A 6.1	Differentiate between capital and operating budgets		
A 6.2	Recognize implications of practice on budgets		
<b>A 7</b>	<b>Participate in resource management</b>		
A 7.1	Prioritize workflow to optimize patient outcomes	H	
A 7.2	Monitor inventory of material and supplies		

## MODULE B PATIENT MANAGEMENT

		CL	
<b>B 1</b>	<b>Provide a safe environment to minimize the risk of adverse events to the patient and to staff</b>		
B 1.1	Provide a safe, clean and comfortable environment		
B 1.2	Transport the patient safely using equipment based on resources and the patient's physical and cognitive status and resources available	H	
B 1.3	Transfer the patient safely using equipment and techniques based on the patient's physical and cognitive status	H	
B 1.4	Employ proper body mechanics to prevent harm to self and patient	H	
B 1.5	Implement immobilization techniques based on age, physical and cognitive status of patient and type of procedure	M	
B 1.6	Adjust patient position to prevent harm, promote comfort and optimize procedure outcomes	H	
B 1.7	Verify patient identity following standardized protocol		
B 1.8	Assess documentation for compliance with legal requirements		
B 1.9	Complete documentation for compliance with legal requirements		
<b>B 2</b>	<b>Interact within the healthcare environment</b>		
B 2.1	Establish patient rapport		
B 2.2	Use various forms of communication to provide relevant, accurate and complete information		
B 2.3	Exchange information regarding details of procedure with patients and their support persons to enable them to make informed decisions		
B 2.4	Assess and respond to cultural, ethnic, linguistic, religious and socio-economic variables affecting communication		
<b>B 3</b>	<b>Perform patient assessments and medical interventions within scope of practice in accordance with provincial regulatory body's legislation requirements</b>		
B 3.1	Perform patient assessment	H	
B 3.2	Assess, monitor and respond to various levels of patient status	H	
B 3.3	Perform diagnostic interventions (i.e. IV line, saline lock)		
B 3.4	Perform delegated diagnostic interventions		
B 3.5	Participate in therapeutic interventions (i.e. suction)		
B 3.6	Perform therapeutic interventions (i.e. CPR, oxygen administration)		
B 3.7	Assess and monitor patient's therapeutic and supportive devices and take necessary action to ensure patient safety and comfort (ie urinary drainage, diagnostic/therapeutic lines and tubes, cardiac monitors)	M	
B 3.8	Ensure that the patient's needs are met prior to release from the technologist's care		

		CL	
<b>B 4</b>	<b>Implement infection control practices</b>		
B 4.1	Understand transmission mode of nosocomial infections (host, agent and environment)	H	
B 4.2	Utilize routine practices for preventing the transmission of infection in health care	H	
B 4.3	Apply principles of asepsis	H	
B 4.4	Follow established protocols when handling and disposing contaminated and biohazardous materials such as sharps and body fluids	H	
B 4.5	Adhere to protective environment protocols with patients who have compromised immunity	M	
B 4.6	Adhere to protocols when caring for patients with antibiotic resistant organisms	H	
B 4.7	Adhere to transmission based precautions for airborne, droplet, and contact transmissions	H	
<b>B 5</b>	<b>Respond to patient hygiene needs</b>		
B 5.1	Assist the patient with personal care		

## MODULE C RADIATION, HEALTH AND SAFETY

The following competency statements relate to the safe handling and application of radioactive substances used for diagnostic and/or therapeutic procedures, including unsealed or sealed sources producing gamma, beta, and/or positron emissions, and including equipment producing x-rays.

		CL	
<b>C 1</b>	<b>Apply radiation safety practices to protect patients, technologists, staff, care givers and general public</b>		
C 1.1	Use protective devices/apparel appropriately		
C 1.2	Verify patient's pregnancy/breastfeeding status		
C 1.3	Apply ALARA principle	H	
<b>C 2</b>	<b>Comply with Canadian Nuclear Safety Commission Regulations (CNSC), Standards and Guidelines</b>		
C 2.1	Comply with CNSC General Nuclear Safety and Control Regulations	H	
C 2.2	Comply with CNSC Radiation Protection Regulations	H	
C 2.3	Comply with CNSC Nuclear Substances and Radiation Devices Regulations	H	
C 2.4	Adhere to CNSC Guidelines for Handling Packages Containing Nuclear Substances	H	
C 2.5	Comply with CNSC Nuclear Substances and Radiation Devices Licence Conditions for diagnostic nuclear medicine procedures	H	
C 2.6	Comply with CNSC Nuclear Substances and Radiation Devices Licence Conditions for therapeutic nuclear medicine procedures	H	
C 2.7	Adhere to CNSC Radiation Safety Data Sheet information for safe handling of radioactive materials that pose special hazards	H	
C 2.8	Adhere to CNSC guidelines for use of personal dosimeters	H	
C 2.9	Adhere to an established radiation protection program	H	
C 2.10	Assess personal radiation exposure dose report with respect to ALARA principles	H	
C 2.11	Adhere to CNSC guidelines for spill procedures	H	
C 2.12	Adhere to storage and disposal guidelines of radioactive waste	H	
C 2.13	Adhere to CNSC guidelines for the safe handling of unsealed nuclear substances	H	
<b>C 3</b>	<b>Advocate radiation safety</b>		
C 3.1	Educate individuals regarding radiation risks		
C 3.2	Discuss protective practices relevant to administered diagnostic radiopharmaceuticals	H	
C 3.3	Discuss protective practices relevant to administered therapeutic radiopharmaceuticals	M	
C 3.4	Discuss radiation dose of nuclear medicine examinations relative to other imaging procedures		

		CL	
<b>C 4</b>	<b>Apply radiation protection practices with respect to radiation emitting devices to protect patients, technologists, staff, care givers and general public</b>		
C 4.1	Apply ALARA principles to minimize radiation exposure to technologists, staff, care givers and general public from radiation emitting devices	H	
C 4.2	Apply ALARA principles to minimize patient exposure dose with regards to PET/CT and SPECT/CT scanning	M	
C 4.3	Apply protective practices according to organ sensitivities		
C 4.4	Operate the CT scanner adhering to the federal and provincial regulations' procedural recommendations for reducing occupational doses	L	
<b>C 5</b>	<b>Comply with Transport Canada's requirements for Transportation of Dangerous Goods with respect to radioactive materials</b>		

## MODULE D QUALITY MANAGEMENT

	CL	
<b>D 1 Participate in a quality assurance program</b>		
D 1.1 Participate in activities that support quality assurance program		
D 1.2 Apply principles of risk management		
D 1.3 Adhere to Workplace Hazardous Materials Information System (WHMIS) regulations and Occupational Health and Safety (OH&S) regulations		
<b>D 2 Perform quality control on ancillary equipment</b>		
D 2.1 Evaluate the performance of the equipment (e.g. ECG machines, BP cuffs, aerosol units)		
D 2.2 Evaluate the integrity of protective apparel and devices (e.g. lead aprons, TLDs, N95 masks)		
D 2.3 Take corrective action when required		
<b>D 3 Perform quality control on scintillation spectrometers (e.g. well detector, probes)</b>		
D 3.1 Perform calibration procedures	H	
D 3.2 Perform quality control procedures	H	
D 3.3 Evaluate equipment performance	H	
D 3.4 Take corrective action when required	H	
<b>D 4 Perform quality control on gamma cameras</b>		
D 4.1 Perform quality control procedures	H	
D 4.2 Evaluate equipment performance	H	
D 4.3 Determine sources of non-uniformity and distortion	H	
D 4.4 Take corrective action when required	H	
<b>D 5 Describe quality control procedures for bone densitometry equipment</b>	H	
<b>D 6 Perform quality control on gas-filled detectors</b>		
D 6.1 Perform quality control procedures on dose calibrator	M	
D 6.2 Evaluate dose calibrator performance	M	
D 6.3 Perform quality control procedures on survey meter	M	
D 6.4 Evaluate survey meter performance	M	
D 6.5 Take corrective action when required	M	
<b>D 7 Describe quality control procedures on positron emission tomography (PET) systems</b>	M	
<b>D 8 Perform quality control on computed tomography (CT) scanners associated with hybrid unit</b>		
D 8.1 Perform quality control procedures	M	
D 8.2 Evaluate equipment performance	M	
D 8.3 Take corrective action when required	M	

## MODULE E RADIOPHARMACY AND LABORATORY PROCEDURES

		CL	
<b>E 1</b>	<b>Store radiopharmaceuticals, non-radioactive supplies and kits according to manufacturers' recommendations</b>	H	
<b>E 2</b>	<b>Perform generator elution procedure</b>		
E 2.1	Set up generator and shield as required		
E 2.2	Elute generator using aseptic technique		
E 2.3	Assay the generator eluate		
E 2.4	Assess the eluate for radionuclide and chemical purity	M	
E 2.5	Calculate generator yield	M	
E 2.6	Identify reasons for elution problems and take appropriate actions to rectify	L	
E 2.7	Document information relevant to generator elution		
<b>E 3</b>	<b>Prepare radiopharmaceuticals for administration</b>		
E 3.1	Prepare radiopharmaceuticals efficaciously and maintain product sterility	M	
E 3.2	Determine, within preparation limitations, the total volume and radioactivity to be added to a radiopharmaceutical kit	M	
E 3.3	Calculate the specific concentration of radioactive preparations		
E 3.4	Label radioactive preparations		
E 3.5	Maintain radiopharmaceutical record forms		
E 3.6	Schedule generator elutions to meet kit requirements and department needs	M	
E 3.7	Prepare radiopharmaceuticals in accordance with work schedule requirements		
E 3.8	Radiolabel autologous cellular components for re-injection	M	
E 3.9	Ensure accurate handling of all labelled blood products	M	
<b>E 4</b>	<b>Perform Radiopharmaceutical Quality Control</b>		
E 4.1	Inspect preparations visually (e.g., colour, clarity)		
E 4.2	Determine the radiochemical purity of radiopharmaceutical preparations	M	
E 4.3	Determine particle size for macroaggregated preparations	M	
E 4.4	Access acceptability of macroaggregated preparations for clinical use	M	
E 4.5	Assess results of testing radiopharmaceuticals for either sterility or apyrogenicity	L	
<b>E 5</b>	<b>Dispense Radiopharmaceuticals</b>		
E 5.1	Calculate the activity and volume of the radiopharmaceutical required for diagnostic or therapeutic procedures	H	
E 5.2	Verify radiopharmaceutical label information is accurate		
E 5.3	Check radiopharmaceutical expiration date and time are within acceptable limits		

		<b>CL</b>	
E 5.4	Dispense the correct volume of the radiopharmaceutical		
E 5.5	Verify the radioactivity to be administered using a dose calibrator		
E 5.6	Document information relevant to dispensing radiopharmaceuticals		
<b>E 6</b>	<b>Perform General Laboratory Procedures</b>		
E 6.1	Calculate and prepare standard/stock solutions for the laboratory	<b>M</b>	
E 6.2	Maintain acceptable levels of reagents and other supplies in the radiopharmacy		

**MODULE F CLINICAL PROCEDURES – CORE COMPETENCIES**

		CL	
<b>F 1</b>	<b>Review patient data relevant to requested procedure</b>		
<b>F 2</b>	<b>Assess requisition for compliance with medico-legal requirements</b>		
<b>F 3</b>	<b>Prioritize examinations according to patient’s medical status and resources available</b>		
<b>F 4</b>	<b>Review data available from images and/or reports of previous studies</b>		
<b>F 5</b>	<b>Verify accuracy of patient information</b>		
<b>F 6</b>	<b>Assess images/quantitative data for diagnostic quality</b>		
F 6.1	Produce hard/soft copy image		
F 6.2	Verify visibility and accuracy of markers and/or annotation		
F 6.3	Identify image artifacts	H	
F 6.4	Take corrective action to eliminate/minimize image artifacts		
F 6.5	Critically analyze the diagnostic quality of the image	H	
F 6.6	Assess quantitative data for accuracy and validity	H	
F 6.7	Verify completeness and accuracy of documentation		
F 6.8	Consult with physician as required prior to dismissal of patient		
<b>F 7</b>	<b>Complete post-procedural tasks</b>		
F 7.1	Release patient from the technologist’s care when safe to do so		
F 7.2	Archive images		
<b>F 8</b>	<b>Understand basic concepts of correlative imaging modalities (PET, CT, MR, Sonography)</b>		
F 8.1	Understand basic technical concepts of image acquisition using correlative imaging modalities	H	
F 8.2	Explain the relevance of common correlative imaging procedures to the diagnostic process	H	

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## MODULE G Clinical Procedures – CARDIOVASCULAR (CV)

		CL	
G 1	Understand pathology and anomalies related to the cardiovascular system in relation to performing a nuclear medicine procedure.	H	
G 2	Recognize patterns consistent with pathology and anomalies related to the cardiovascular system in relation to a nuclear medicine procedure.	H	
G 3	Understand the anatomy and physiology of the cardiovascular system		
G 4	Understand the effects including contraindications, risks and interactions of agents (i.e. pharmacologic, dietary) acting on the cardiovascular system	H	
<b>CV 1 Gated Rest Equilibrium Study</b>		<b>M</b>	
G 5	Evaluate the correlation between clinical information provided and the requested examination	M	
G 6	Modify procedure according to contraindications	M	
G 7	Plan the nuclear medicine imaging procedure	M	
G 8	Perform technical preparation	M	
G 9	Perform patient preparation	M	
G 10	Exchange information with patients and their support persons to enable them to make informed decisions	M	
G 11	Administer required radiopharmaceuticals in accordance with protocol	M	
G 12	Position the patient using anatomical landmarks and knowledge of relational anatomy to best demonstrate anatomical structures/pathologies	M	
G 13	Adjust procedure according to patient conditions and factors	M	
G 14	Select acquisition parameters	M	
G 15	Perform procedure in accordance with protocol	M	
G 16	Operate equipment for image/data acquisition	M	
G 17	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
G 18	Recognize normal results and variants	M	
G 19	Recognize pathologies/abnormal results	M	
G 20	Process to optimize the image	M	
G 21	Perform image/data analysis and manipulation	M	
<b>CV 2 Myocardial Perfusion Non-Gated SPECT (Rest/Stress)</b>		<b>M</b>	
G 22	Evaluate the correlation between clinical information provided and the requested examination	M	
G 23	Modify procedure according to contraindications	M	
G 24	Plan the nuclear medicine imaging procedure	M	
G 25	Perform technical preparation	M	
G 26	Perform patient preparation	M	
G 27	Exchange information with patients and their support persons to enable them to make informed decisions	M	

		CL	
G 28	Administer required radiopharmaceuticals in accordance with protocol	M	
G 29	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	M	
G 30	Adjust procedure according to patient conditions and factors	M	
G 31	Select acquisition parameters	M	
G 32	Perform procedure in accordance with protocol	M	
G 33	Operate equipment for image/data acquisition	M	
G 34	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
G 35	Recognize normal results and variants	M	
G 36	Recognize pathologies/abnormal results	M	
G 37	Process to optimize the image	M	
G 38	Perform image/data analysis and manipulation	M	
<b>CV 3 Myocardial Perfusion Gated SPECT (Rest/Stress)</b>		<b>H</b>	
G 39	Evaluate the correlation between clinical information provided and the requested examination	H	
G 40	Modify procedure according to contraindications	H	
G 41	Plan the nuclear medicine imaging procedure	H	
G 42	Perform technical preparation	H	
G 43	Perform patient preparation	H	
G 44	Exchange information with patients and their support persons to enable them to make informed decisions	H	
G 45	Administer required radiopharmaceuticals in accordance with protocol	H	
G 46	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	H	
G 47	Adjust procedure according to patient conditions and factors	H	
G 48	Select acquisition parameters	H	
G 49	Perform procedure in accordance with protocol	H	
G 50	Operate equipment for image/data acquisition	H	
G 51	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	H	
G 52	Recognize normal results and variants	H	
G 53	Recognize pathologies/abnormal results	H	
G 54	Process to optimize the image	H	
G 55	Perform image/data analysis and manipulation	H	
<b>CV 4 Myocardial Perfusion Pharmacological Stress SPECT</b>		<b>H</b>	
G 56	Evaluate the correlation between clinical information provided and the requested examination	H	
G 57	Modify procedure according to contraindications	H	
G 58	Plan the nuclear medicine imaging procedure	H	

		<b>CL</b>	
G 59	Perform technical preparation	H	
G 60	Perform patient preparation	H	
G 61	Exchange information with patients and their support persons to enable them to make informed decisions	H	
G 62	Administer required radiopharmaceuticals in accordance with protocol	H	
G 63	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	H	
G 64	Adjust procedure according to patient conditions and factors	H	
G 65	Select acquisition parameters	H	
G 66	Perform procedure in accordance with protocol	H	
G 67	Operate equipment for image/data acquisition	H	
G 68	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	H	
G 69	Recognize normal results and variants	H	
G 70	Recognize pathologies/abnormal results	H	
G 71	Process to optimize the image	H	
	<b>CV 5 First Pass Rest</b>	<b>L</b>	
G 72	Evaluate the correlation between clinical information provided and the requested examination	L	
G 73	Modify procedure according to contraindications	L	
G 74	Plan the nuclear medicine imaging procedure	L	
G 75	Perform technical preparation	L	
G 76	Perform patient preparation	L	
G 77	Exchange information with patients and their support persons to enable them to make informed decisions	L	
G 78	Administer required radiopharmaceuticals in accordance with protocol	L	
G 79	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	L	
G 80	Adjust procedure according to patient conditions and factors	L	
G 81	Select acquisition parameters	L	
G 82	Perform procedure in accordance with protocol	L	
G 83	Operate equipment for image/data acquisition	L	
G 84	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	L	
G 85	Recognize normal results and variants	L	
G 86	Recognize pathologies/abnormal results	L	
G 87	Process to optimize the image	L	
G 88	Perform image/data analysis and manipulation	L	
	<b>CV 6 Gated Equilibrium Stress</b>	<b>M</b>	

		<b>CL</b>	
G 89	Evaluate the correlation between clinical information provided and the requested examination	M	
G 90	Modify procedure according to contraindications	M	
G 91	Plan the nuclear medicine imaging procedure	M	
G 92	Perform technical preparation	M	
G 93	Perform patient preparation	M	
G 94	Exchange information with patients and their support persons to enable them to make informed decisions	M	
G 95	Administer required radiopharmaceuticals in accordance with protocol	M	
G 96	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	M	
G 97	Adjust procedure according to patient conditions and factors	M	
G 98	Select acquisition parameters	M	
G 99	Perform procedure in accordance with protocol	M	
G 100	Operate equipment for image/data acquisition	M	
G 101	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
G 102	Recognize normal results and variants	M	
G 103	Recognize pathologies/abnormal results	M	
G 104	Process to optimize the image	M	
G 105	Perform image/data analysis and manipulation	M	
	<b>CV 7 Gated Equilibrium SPECT</b>	<b>M</b>	
G 106	Evaluate the correlation between clinical information provided and the requested examination	M	
G 107	Modify procedure according to contraindications	M	
G 108	Plan the nuclear medicine imaging procedure	M	
G 109	Perform technical preparation	M	
G 110	Perform patient preparation	M	
G 111	Exchange information with patients and their support persons to enable them to make informed decisions	M	
G 112	Administer required radiopharmaceuticals in accordance with protocol	M	
G 113	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	M	
G 114	Adjust procedure according to patient conditions and factors	M	
G 115	Select acquisition parameters	M	
G 116	Perform procedure in accordance with protocol	M	
G 117	Operate equipment for image/data acquisition	M	
G 118	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
G 119	Recognize normal results and variants	M	

		<b>CL</b>	
G 120	Recognize pathologies/abnormal results	M	
G 121	Process to optimize the image	M	
G 122	Perform image/data analysis and manipulation	M	
	<b>CV 8 Myocardial Perfusion SPECT (Rest only)</b>	<b>M</b>	
G 123	Evaluate the correlation between clinical information provided and the requested examination	M	
G 124	Modify procedure according to contraindications	M	
G 125	Plan the nuclear medicine imaging procedure	M	
G 126	Perform technical preparation	M	
G 127	Perform patient preparation	M	
G 128	Exchange information with patients and their support persons to enable them to make informed decisions	M	
G 129	Administer required radiopharmaceuticals in accordance with protocol	M	
G 130	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	M	
G 131	Adjust procedure according to patient conditions and factors	M	
G 132	Select acquisition parameters	M	
G 133	Perform procedure in accordance with protocol	M	
G 134	Operate equipment for image/data acquisition	M	
G 135	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
G 136	Recognize normal results and variants	M	
G 137	Recognize pathologies/abnormal results	M	
G 138	Process to optimize the image	M	
G 139	Perform image/data analysis and manipulation	M	
	<b>CV 9 Myocardial Perfusion Planar</b>	<b>L</b>	
G 140	Evaluate the correlation between clinical information provided and the requested examination	L	
G 141	Modify procedure according to contraindications	L	
G 142	Plan the nuclear medicine imaging procedure	L	
G 143	Perform technical preparation	L	
G 144	Perform patient preparation	L	
G 145	Exchange information with patients and their support persons to enable them to make informed decisions	L	
G 146	Administer required radiopharmaceuticals in accordance with protocol	L	
G 147	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	L	
G 148	Adjust procedure according to patient conditions and factors	L	
G 149	Select acquisition parameters	L	
G 150	Perform procedure in accordance with protocol	L	

		CL	
G 151	Operate equipment for image/data acquisition	L	
G 152	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	L	
G 153	Recognize normal results and variants	L	
G 154	Recognize pathologies/abnormal results	L	
G 155	Process to optimize the image	L	
G 156	Perform image/data analysis and manipulation	L	
<b>CV 10 Set-up and Acquire 12-Lead ECG</b>		<b>M</b>	
G 157	Evaluate the correlation between clinical information provided and the requested examination	M	
G 158	Exchange information with patients and their support persons to enable them to make informed decisions	M	
G 159	Place electrodes using anatomical landmarks structures/pathologies	M	
G 160	Adjust procedure according to patient conditions and factors	M	
G 161	Perform procedure in accordance with protocol	M	
G 162	Operate equipment for data acquisition	M	
G 163	Recognize normal results and variants	M	
G 164	Recognize abnormal results	M	
<b>CV 11 Red Cell Mass/Plasma Volume</b>			
G 165	Evaluate the correlation between clinical information provided and the requested examination		
G 166	Plan the nuclear medicine procedure		
G 167	Exchange information with patients and their support persons to enable them to make informed decisions		
G 168	Administer required radiopharmaceuticals in accordance with protocol		
G 169	Adjust procedure according to patient conditions and factors		
G 170	Perform procedure in accordance with protocol		
G 171	Operate equipment for data acquisition		
G 172	Recognize normal results and variants		
G 173	Recognize pathologies/abnormal results		
G 174	Perform data analysis and manipulation		
<b>CV 12 Red Cell Survival</b>			
G 175	Recognize clinical indications for performing procedure		
G 176	Describe patient preparation		
G 177	Identify contraindications for procedure		
G 178	Identify the radiopharmaceutical		
G 179	Propose procedural modifications		
G 180	Perform data analysis		
G 181	Describe image analysis		

		CL	
G 182	Recognize normal results and variants		
G 183	Recognize pathologies/abnormal results		
<b>CV 13 Gated Equilibrium Pharmacological Intervention</b>		<b>L</b>	
G 184	Recognize clinical indications for performing procedure	L	
G 185	Describe patient preparation	L	
G 186	Identify contraindications for procedure	L	
G 187	Identify the radiopharmaceutical	L	
G 188	Propose procedural modifications	L	
G 189	Perform data analysis	L	
G 190	Describe image analysis	L	
G 191	Recognize normal results and variants	L	
G 192	Recognize pathologies/abnormal results	L	
<b>CV 14 First Pass Stress</b>			
G 193	Recognize clinical indications for performing procedure		
G 194	Describe patient preparation		
G 195	Identify contraindications for procedure		
G 196	Identify the radiopharmaceutical		
G 197	Propose procedural modifications		
G 198	Perform data analysis		
G 199	Describe image analysis		
G 200	Recognize normal results and variants		
G 201	Recognize pathologies/abnormal results		
<b>CV 15 Cardiac Shunt Evaluation</b>		<b>L</b>	
G 202	Recognize clinical indications for performing procedure	L	
G 203	Describe patient preparation	L	
G 204	Identify contraindications for procedure	L	
G 205	Identify the radiopharmaceutical	L	
G 206	Propose procedural modifications	L	
G 207	Perform data analysis	L	
G 208	Describe image analysis	L	
G 209	Recognize normal results and variants	L	
G 210	Recognize pathologies/abnormal results	L	
<b>CV 16 Monoclonal Antibody</b>			
G 211	Recognize clinical indications for performing procedure		
G 212	Describe patient preparation		
G 213	Identify contraindications for procedure		
G 214	Identify the radiopharmaceutical		

		CL	
G 215	Propose procedural modifications		
G 216	Perform data analysis		
G 217	Describe image analysis		
G 218	Recognize normal results and variants		
G 219	Recognize pathologies/abnormal results		
<b>CV 17 Myocardial Infarct (Pyrophosphate)</b>			
G 220	Recognize clinical indications for performing procedure		
G 221	Describe patient preparation		
G 222	Identify contraindications for procedure		
G 223	Identify the radiopharmaceutical		
G 224	Propose procedural modifications		
G 225	Perform data analysis		
G 226	Describe image analysis		
G 227	Recognize normal results and variants		
G 228	Recognize pathologies/abnormal results		
<b>CV 18 Venogram</b>			
G 229	Recognize clinical indications for performing procedure		
G 230	Describe patient preparation		
G 231	Identify contraindications for procedure		
G 232	Identify the radiopharmaceutical		
G 233	Propose procedural modifications		
G 234	Perform data analysis		
G 235	Describe image analysis		
G 236	Recognize normal results and variants		
G 237	Recognize pathologies/abnormal results		
<b>CV 19 PET</b>		<b>L</b>	
G 238	Recognize clinical indications for performing procedure	L	
G 239	Describe patient preparation	L	
G 240	Identify contraindications for procedure	L	
G 241	Identify the radiopharmaceutical	L	
G 242	Propose procedural modifications	L	
G 243	Perform data analysis	L	
G 244	Describe image analysis	L	
G 245	Recognize normal results and variants	L	
G 246	Recognize pathologies/abnormal results	L	

## MODULE H Clinical Procedures – GASTROINTESTINAL (GI)

		CL	
H 1	Understand pathology and anomalies related to the gastrointestinal system in relation to performing a nuclear medicine procedure	H	
H 2	Recognize patterns consistent with pathology and anomalies related to gastrointestinal system in relation to a nuclear medicine procedure	H	
H 3	Understand the anatomy and physiology of the gastrointestinal system		
H 4	Understand the effects including contraindications, risks and interactions of agents (i.e. pharmacologic, dietary) acting on the gastrointestinal system	H	
	<b>GI 1 RBC Liver Scan</b>	<b>M</b>	
H 5	Evaluate the correlation between clinical information provided and the requested examination	M	
H 6	Modify procedure according to contraindications	M	
H 7	Plan the nuclear medicine imaging procedure	M	
H 8	Perform technical preparation	M	
H 9	Perform patient preparation	M	
H 10	Exchange information with patients and their support persons to enable them to make informed decisions	M	
H 11	Administer required radiopharmaceuticals in accordance with protocol	M	
H 12	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	M	
H 13	Adjust procedure according to patient conditions and factors	M	
H 14	Select acquisition parameters	M	
H 15	Perform procedure in accordance with protocol	M	
H 16	Operate equipment for image/data acquisition	M	
H 17	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
H 18	Recognize normal results and variants	M	
H 19	Recognize pathologies/abnormal results	M	
H 20	Process to optimize the image	M	
H 21	Perform image/data analysis and manipulation	M	
	<b>GI 2 Hepatobiliary Scan</b>	<b>H</b>	
H 22	Evaluate the correlation between clinical information provided and the requested examination	H	
H 23	Modify procedure according to contraindications	H	
H 24	Plan the nuclear medicine imaging procedure	H	
H 25	Perform technical preparation	H	
H 26	Perform patient preparation	H	

		CL	
H 27	Exchange information with patients and their support persons to enable them to make informed decisions	H	
H 28	Administer required radiopharmaceuticals in accordance with protocol	H	
H 29	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	H	
H 30	Adjust procedure according to patient conditions and factors	H	
H 31	Select acquisition parameters	H	
H 32	Perform procedure in accordance with protocol	H	
H 33	Operate equipment for image/data acquisition	H	
H 34	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	H	
H 35	Recognize normal results and variants	H	
H 36	Recognize pathologies/abnormal results	H	
H 37	Process to optimize the image	H	
H 38	Perform image/data analysis and manipulation	H	
	<b>GI 3 Hepatobiliary Pharmacological Intervention</b>	<b>M</b>	
H 39	Evaluate the correlation between clinical information provided and the requested examination	M	
H 40	Modify procedure according to contraindications	M	
H 41	Plan the nuclear medicine imaging procedure	M	
H 42	Perform technical preparation	M	
H 43	Perform patient preparation	M	
H 44	Exchange information with patients and their support persons to enable them to make informed decisions	M	
H 45	Administer required radiopharmaceuticals in accordance with protocol	M	
H 46	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	M	
H 47	Adjust procedure according to patient conditions and factors	M	
H 48	Select acquisition parameters	M	
H 49	Perform procedure in accordance with protocol	M	
H 50	Operate equipment for image/data acquisition	M	
H 51	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
H 52	Recognize normal results and variants	M	
H 53	Recognize pathologies/abnormal results	M	
H 54	Process to optimize the image	M	
H 55	Perform image/data analysis and manipulation	M	

		CL	
<b>GI 4 Gastric Emptying (Solid)</b>		<b>M</b>	
H 56	Evaluate the correlation between clinical information provided and the requested examination	M	
H 57	Modify procedure according to contraindications	M	
H 58	Plan the nuclear medicine imaging procedure	M	
H 59	Perform technical preparation	M	
H 60	Perform patient preparation	M	
H 61	Exchange information with patients and their support persons to enable them to make informed decisions	M	
H 62	Administer required radiopharmaceuticals in accordance with protocol	M	
H 63	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	M	
H 64	Adjust procedure according to patient conditions and factors	M	
H 65	Select acquisition parameters	M	
H 66	Perform procedure in accordance with protocol	M	
H 67	Operate equipment for image/data acquisition	M	
H 68	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
H 69	Recognize normal results and variants	M	
H 70	Recognize pathologies/abnormal results	M	
H 71	Process to optimize the image	M	
H 72	Perform image/data analysis and manipulation	M	
<b>GI 5 Schillings Test</b>		<b>L</b>	
H 73	Evaluate the correlation between clinical information provided and the requested examination	L	
H 74	Modify procedure according to contraindications	L	
H 75	Plan the nuclear medicine imaging procedure	L	
H 76	Perform technical preparation	L	
H 77	Perform patient preparation	L	
H 78	Exchange information with patients and their support persons to enable them to make informed decisions	L	
H 79	Administer required radiopharmaceuticals in accordance with protocol	L	
H 80	Adjust procedure according to patient conditions and factors	L	
H 81	Perform procedure in accordance with protocol	L	
H 82	Operate equipment for data acquisition	L	
H 83	Recognize normal results and variants	L	
H 84	Recognize pathologies/abnormal results	L	
H 85	Perform data analysis and manipulation	L	

		<b>CL</b>	
<b>GI 6 Esophageal Transit</b>		<b>L</b>	
H 86	Evaluate the correlation between clinical information provided and the requested examination	L	
H 87	Modify procedure according to contraindications	L	
H 88	Plan the nuclear medicine imaging procedure	L	
H 89	Perform technical preparation	L	
H 90	Perform patient preparation	L	
H 91	Exchange information with patients and their support persons to enable them to make informed decisions	L	
H 92	Administer required radiopharmaceuticals in accordance with protocol	L	
H 93	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	L	
H 94	Adjust procedure according to patient conditions and factors	L	
H 95	Select acquisition parameters	L	
H 96	Perform procedure in accordance with protocol	L	
H 97	Operate equipment for image/data acquisition	L	
H 98	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	L	
H 99	Recognize normal results and variants	L	
H 100	Recognize pathologies/abnormal results	L	
H 101	Process to optimize the image	L	
H 102	Perform image/data analysis and manipulation	L	
<b>GI 7 Gastric Emptying (Liquid)</b>		<b>L</b>	
H 103	Evaluate the correlation between clinical information provided and the requested examination	L	
H 104	Modify procedure according to contraindications	L	
H 105	Plan the nuclear medicine imaging procedure	L	
H 106	Perform technical preparation	L	
H 107	Perform patient preparation	L	
H 108	Exchange information with patients and their support persons to enable them to make informed decisions	L	
H 109	Administer required radiopharmaceuticals in accordance with protocol	L	
H 110	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	L	
H 111	Adjust procedure according to patient conditions and factors	L	
H 112	Select acquisition parameters	L	
H 113	Perform procedure in accordance with protocol	L	
H 114	Operate equipment for image/data acquisition	L	

		<b>CL</b>	
H 115	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	L	
H 116	Recognize normal results and variants	L	
H 117	Recognize pathologies/abnormal results	L	
H 118	Process to optimize the image	L	
H 119	Perform image/data analysis and manipulation	L	
	<b>GI 8 Salivary Scan</b>	<b>L</b>	
H 120	Evaluate the correlation between clinical information provided and the requested examination	L	
H 121	Modify procedure according to contraindications	L	
H 122	Plan the nuclear medicine imaging procedure	L	
H 123	Perform technical preparation	L	
H 124	Perform patient preparation	L	
H 125	Exchange information with patients and their support persons to enable them to make informed decisions	L	
H 126	Administer required radiopharmaceuticals in accordance with protocol	L	
H 127	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	L	
H 128	Adjust procedure according to patient conditions and factors	L	
H 129	Select acquisition parameters	L	
H 130	Perform procedure in accordance with protocol	L	
H 131	Operate equipment for image/data acquisition	L	
H 132	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	L	
H 133	Recognize normal results and variants	L	
H 134	Recognize pathologies/abnormal results	L	
H 135	Process to optimize the image	L	
H 136	Perform image/data analysis and manipulation	L	
	<b>GI 9 Gastroesophageal Reflux</b>	<b>L</b>	
H 137	Evaluate the correlation between clinical information provided and the requested examination	L	
H 138	Modify procedure according to contraindications	L	
H 139	Plan the nuclear medicine imaging procedure	L	
H 140	Perform technical preparation	L	
H 141	Perform patient preparation	L	
H 142	Exchange information with patients and their support persons to enable them to make informed decisions	L	
H 143	Administer required radiopharmaceuticals in accordance with protocol	L	

		<b>CL</b>	
H 144	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	L	
H 145	Adjust procedure according to patient conditions and factors	L	
H 146	Select acquisition parameters	L	
H 147	Perform procedure in accordance with protocol	L	
H 148	Operate equipment for image/data acquisition	L	
H 149	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	L	
H 150	Recognize normal results and variants	L	
H 151	Recognize pathologies/abnormal results	L	
H 152	Process to optimize the image	L	
H 153	Perform image/data analysis and manipulation	L	
<b>GI 10 Gastrointestinal Bleed</b>		<b>M</b>	
H 154	Evaluate the correlation between clinical information provided and the requested examination	M	
H 155	Modify procedure according to contraindications	M	
H 156	Plan the nuclear medicine imaging procedure	M	
H 157	Perform technical preparation	M	
H 158	Perform patient preparation	M	
H 159	Exchange information with patients and their support persons to enable them to make informed decisions	M	
H 160	Administer required radiopharmaceuticals in accordance with protocol	M	
H 161	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	M	
H 162	Adjust procedure according to patient conditions and factors	M	
H 163	Select acquisition parameters	M	
H 164	Perform procedure in accordance with protocol	M	
H 165	Operate equipment for image/data acquisition	M	
H 166	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
H 167	Recognize normal results and variants	M	
H 168	Recognize pathologies/abnormal results	M	
H 169	Process to optimize the image	M	
H 170	Perform image/data analysis and manipulation	M	
<b>GI 11 Meckel's Diverticulum</b>		<b>M</b>	
H 171	Evaluate the correlation between clinical information provided and the requested examination	M	
H 172	Modify procedure according to contraindications	M	

		CL	
H 173	Plan the nuclear medicine imaging procedure	M	
H 174	Perform technical preparation	M	
H 175	Perform patient preparation	M	
H 176	Exchange information with patients and their support persons to enable them to make informed decisions	M	
H 177	Administer required radiopharmaceuticals in accordance with protocol	M	
H 178	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	M	
H 179	Adjust procedure according to patient conditions and factors	M	
H 180	Select acquisition parameters	M	
H 181	Perform procedure in accordance with protocol	M	
H 182	Operate equipment for image/data acquisition	M	
H 183	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
H 184	Recognize normal results and variants	M	
H 185	Recognize pathologies/abnormal results	M	
H 186	Process to optimize the image	M	
H 187	Perform image/data analysis and manipulation	M	
	<b>GI 12 Liver Spleen Scan (Colloid)</b>	<b>L</b>	
H 188	Evaluate the correlation between clinical information provided and the requested examination	L	
H 189	Modify procedure according to contraindications	L	
H 190	Plan the nuclear medicine imaging procedure	L	
H 191	Perform technical preparation	L	
H 192	Perform patient preparation	L	
H 193	Exchange information with patients and their support persons to enable them to make informed decisions	L	
H 194	Administer required radiopharmaceuticals in accordance with protocol	L	
H 195	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	L	
H 196	Adjust procedure according to patient conditions and factors	L	
H 197	Select acquisition parameters	L	
H 198	Perform procedure in accordance with protocol	L	
H 199	Operate equipment for image/data acquisition	L	
H 200	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	L	
H 201	Recognize normal results and variants	L	
H 202	Recognize pathologies/abnormal results	L	

		CL	
H 203	Process to optimize the image	L	
H 204	Perform image/data analysis and manipulation	L	
<b>GI 13 C-14 Urea Breath Test</b>		<b>L</b>	
H 205	Evaluate the correlation between clinical information provided and the requested examination	L	
H 206	Modify procedure according to contraindications	L	
H 207	Plan the nuclear medicine imaging procedure	L	
H 208	Perform technical preparation	L	
H 209	Perform patient preparation	L	
H 210	Exchange information with patients and their support persons to enable them to make informed decisions	L	
H 211	Administer required radiopharmaceuticals in accordance with protocol	L	
H 212	Adjust procedure according to patient conditions and factors	L	
H 213	Perform procedure in accordance with protocol	L	
H 214	Operate equipment for data acquisition	L	
H 215	Recognize normal results and variants	L	
H 216	Recognize pathologies/abnormal	L	
H 217	Perform data analysis and manipulation	L	
<b>GI 14 Gastric Emptying (Dual Isotope)</b>			
H 218	Recognize clinical indications for performing procedure		
H 219	Describe patient preparation		
H 220	Identify contraindications for procedure		
H 221	Identify the radiopharmaceutical		
H 222	Propose procedural modifications		
H 223	Perform data analysis		
H 224	Describe image analysis		
H 225	Recognize normal results and variants		
H 226	Recognize pathologies/abnormal results		
<b>GI 15 Meckel's Pharmacological Intervention</b>			
H 227	Recognize clinical indications for performing procedure		
H 228	Describe patient preparation		
H 229	Identify contraindications for procedure		
H 230	Identify the radiopharmaceutical		
H 231	Propose procedural modifications		
H 232	Perform data analysis		
H 233	Describe image analysis		
H 234	Recognize normal results and variants		

	<b>CL</b>	
H 235 Recognize pathologies/abnormal results		

## MODULE I Clinical Procedures – GENITOURINARY SYSTEM (GU)

		CL	
I 1	Understand pathology and anomalies related to the genitourinary system in relation to performing a nuclear medicine procedure.	H	
I 2	Recognize patterns consistent with pathology and anomalies related to genitourinary system in relation to a nuclear medicine procedure.	H	
I 3	Understand the anatomy and physiology of the genitourinary system		
I 4	Understand the effects including contraindications, risks and interactions of agents (i.e. pharmacologic, dietary) acting on the genitourinary system	H	
<b>GU 1 Renal Function Scan</b>		<b>H</b>	
I 5	Evaluate the correlation between clinical information provided and the requested examination	H	
I 6	Modify procedure according to contraindications	H	
I 7	Plan the nuclear medicine imaging procedure	H	
I 8	Perform technical preparation	H	
I 9	Perform patient preparation	H	
I 10	Exchange information with patients and their support persons to enable them to make informed decisions	H	
I 11	Administer required radiopharmaceuticals in accordance with protocol	H	
I 12	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	H	
I 13	Adjust procedure according to patient conditions and factors	H	
I 14	Select acquisition parameters	H	
I 15	Perform procedure in accordance with protocol	H	
I 16	Operate equipment for image/data acquisition	H	
I 17	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	H	
I 18	Recognize normal results and variants	H	
I 19	Recognize pathologies/abnormal results	H	
I 20	Process to optimize the image	H	
I 21	Perform image/data analysis and manipulation	H	
<b>GU 2 Renal Scan Pharmacological Intervention</b>		<b>H</b>	
I 22	Evaluate the correlation between clinical information provided and the requested examination	H	
I 23	Modify procedure according to contraindications	H	
I 24	Plan the nuclear medicine imaging procedure	H	
I 25	Perform technical preparation	H	
I 26	Perform patient preparation	H	
I 27	Exchange information with patients and their support persons to enable them to make informed decisions	H	

		CL	
I 28	Administer required radiopharmaceuticals in accordance with protocol	H	
I 29	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	H	
I 30	Adjust procedure according to patient conditions and factors	H	
I 31	Select acquisition parameters	H	
I 32	Perform procedure in accordance with protocol	H	
I 33	Operate equipment for image/data acquisition	H	
I 34	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	H	
I 35	Recognize normal results and variants	H	
I 36	Recognize pathologies/abnormal results	H	
I 37	Process to optimize the image	H	
I 38	Perform image/data analysis and manipulation	H	
	<b>GU 3 Renal Cortical Scan</b>	<b>L</b>	
I 39	Evaluate the correlation between clinical information provided and the requested examination	L	
I 40	Modify procedure according to contraindications	L	
I 41	Plan the nuclear medicine imaging procedure	L	
I 42	Perform technical preparation	L	
I 43	Perform patient preparation	L	
I 44	Exchange information with patients and their support persons to enable them to make informed decisions	L	
I 45	Administer required radiopharmaceuticals in accordance with protocol	L	
I 46	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	L	
I 47	Adjust procedure according to patient conditions and factors	L	
I 48	Select acquisition parameters	L	
I 49	Perform procedure in accordance with protocol	L	
I 50	Operate equipment for image/data acquisition	L	
I 51	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	L	
I 52	Recognize normal results and variants	L	
I 53	Recognize pathologies/abnormal results	L	
I 54	Process to optimize the image	L	
I 55	Perform image/data analysis and manipulation	L	
	<b>GU 4 Cystography (Direct)</b>	<b>L</b>	
I 56	Evaluate the correlation between clinical information provided and the requested examination	L	

		<b>CL</b>	
I 57	Modify procedure according to contraindications	L	
I 58	Plan the nuclear medicine imaging procedure	L	
I 59	Perform technical preparation	L	
I 60	Perform patient preparation	L	
I 61	Exchange information with patients and their support persons to enable them to make informed decisions	L	
I 62	Administer required radiopharmaceuticals in accordance with protocol	L	
I 63	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	L	
I 64	Adjust procedure according to patient conditions and factors	L	
I 65	Select acquisition parameters	L	
I 66	Perform procedure in accordance with protocol	L	
I 67	Operate equipment for image/data acquisition	L	
I 68	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	L	
I 69	Recognize normal results and variants	L	
I 70	Recognize pathologies/abnormal results	L	
I 71	Process to optimize the image	L	
I 72	Perform image/data analysis and manipulation	L	
	<b>GU 5 Glomerular Filtration Rate (Blood GFR)</b>	<b>M</b>	
I 73	Evaluate the correlation between clinical information provided and the requested examination	M	
I 74	Modify procedure according to contraindications	M	
I 75	Plan the nuclear medicine imaging procedure	M	
I 76	Perform technical preparation	M	
I 77	Perform patient preparation	M	
I 78	Exchange information with patients and their support persons to enable them to make informed decisions	M	
I 79	Administer required radiopharmaceuticals in accordance with protocol	M	
I 80	Adjust procedure according to patient conditions and factors	M	
I 81	Select acquisition parameters	M	
I 82	Perform procedure in accordance with protocol	M	
I 83	Operate equipment for data acquisition	M	
I 84	Recognize normal results and variants	M	
I 85	Recognize pathologies/abnormal results	M	
I 86	Perform data analysis and manipulation	M	

		CL	
<b>GU 6 Effective Renal Plasma Flow</b>			
I 87	Evaluate the correlation between clinical information provided and the requested examination		
I 88	Modify procedure according to contraindications		
I 89	Plan the nuclear medicine imaging procedure		
I 90	Perform technical preparation		
I 91	Perform patient preparation		
I 92	Exchange information with patients and their support persons to enable them to make informed decisions		
I 93	Administer required radiopharmaceuticals in accordance with protocol		
I 94	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies		
I 95	Adjust procedure according to patient conditions and factors		
I 96	Select acquisition parameters		
I 97	Perform procedure in accordance with protocol		
I 98	Operate equipment for image/data acquisition		
I 99	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required		
I 100	Recognize normal results and variants		
I 101	Recognize pathologies/abnormal results		
I 102	Process to optimize the image		
I 103	Perform image/data analysis and manipulation		
<b>GU 7 Renal Transplant</b>		L	
I 104	Recognize clinical indications for performing procedure	L	
I 105	Describe patient preparation	L	
I 106	Identify contraindications for procedure	L	
I 107	Identify the radiopharmaceutical	L	
I 108	Propose procedural modifications	L	
I 109	Perform data analysis	L	
I 110	Describe image analysis	L	
I 111	Recognize normal results and variants	L	
I 112	Recognize pathologies/abnormal results	L	
<b>GU 8 Testicular Scan</b>			
I 113	Recognize clinical indications for performing procedure		
I 114	Describe patient preparation		
I 115	Identify contraindications for procedure		
I 116	Identify the radiopharmaceutical		
I 117	Propose procedural modifications		

		CL	
I 118	Describe image analysis		
I 119	Recognize normal results and variants		
I 120	Recognize pathologies/abnormal results		

## MODULE J Clinical Procedures – SKELETAL SYSTEM (SK)

		CL	
J 1	Understand pathology and anomalies related to the skeletal system in relation to performing a nuclear medicine procedure	H	
J 2	Recognize patterns consistent with pathology and anomalies related to skeletal system in relation to a nuclear medicine procedure	H	
J 3	Understand the anatomy and physiology of the skeletal system		
J 4	Understand the effects including contraindications, risks and interactions of agents (i.e. pharmacologic, dietary) acting on the skeletal system	H	
	<b>SK 1 Three Phase Local Bone Scan</b>	<b>H</b>	
J 5	Evaluate the correlation between clinical information provided and the requested examination	H	
J 6	Modify procedure according to contraindications	H	
J 7	Plan the nuclear medicine imaging procedure	H	
J 8	Perform technical preparation	H	
J 9	Perform patient preparation	H	
J 10	Exchange information with patients and their support persons to enable them to make informed decisions	H	
J 11	Administer required radiopharmaceuticals in accordance with protocol	H	
J 12	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	H	
J 13	Adjust procedure according to patient conditions and factors	H	
J 14	Select acquisition parameters	H	
J 15	Perform procedure in accordance with protocol	H	
J 16	Operate equipment for image/data acquisition	H	
J 17	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	H	
J 18	Recognize normal results and variants	H	
J 19	Recognize pathologies/abnormal results	H	
J 20	Process to optimize the image	H	
J 21	Perform image/data analysis and manipulation	H	
	<b>SK 2 Whole Body Bone Scan</b>	<b>H</b>	
J 22	Evaluate the correlation between clinical information provided and the requested examination	H	
J 23	Modify procedure according to contraindications	H	
J 24	Plan the nuclear medicine imaging procedure	H	
J 25	Perform technical preparation	H	
J 26	Perform patient preparation	H	
J 27	Exchange information with patients and their support persons to enable them to make informed decisions	H	

		CL	
J 28	Administer required radiopharmaceuticals in accordance with protocol	H	
J 29	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	H	
J 30	Adjust procedure according to patient conditions and factors	H	
J 31	Select acquisition parameters	H	
J 32	Perform procedure in accordance with protocol	H	
J 33	Operate equipment for image/data acquisition	H	
J 34	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	H	
J 35	Recognize normal results and variants	H	
J 36	Recognize pathologies/abnormal results	H	
J 37	Process to optimize the image	H	
J 38	Perform image/data analysis and manipulation	H	
	<b>SK 3 Bone Scan SPECT</b>	<b>H</b>	
J 39	Evaluate the correlation between clinical information provided and the requested examination	H	
J 40	Modify procedure according to contraindications	H	
J 41	Plan the nuclear medicine imaging procedure	H	
J 42	Perform technical preparation	H	
J 43	Perform patient preparation	H	
J 44	Exchange information with patients and their support persons to enable them to make informed decisions	H	
J 45	Administer required radiopharmaceuticals in accordance with protocol	H	
J 46	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	H	
J 47	Adjust procedure according to patient conditions and factors	H	
J 48	Select acquisition parameters	H	
J 49	Perform procedure in accordance with protocol	H	
J 50	Operate equipment for image/data acquisition	H	
J 51	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	H	
J 52	Recognize normal results and variants	H	
J 53	Recognize pathologies/abnormal results	H	
J 54	Process to optimize the image	H	
J 55	Perform image/data analysis and manipulation	H	
	<b>SK 4 Bone Mineral Density</b>	<b>M</b>	
J 56	Evaluate the correlation between clinical information provided and the requested examination	M	

		CL	
J 57	Modify procedure according to contraindications	M	
J 58	Plan the nuclear medicine imaging procedure	M	
J 59	Perform technical preparation	M	
J 60	Perform patient preparation	M	
J 61	Exchange information with patients and their support persons to enable them to make informed decisions	M	
J 62	Position the patient on bone mineral density scanning bed	M	
J 63	Use anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	M	
J 64	Adjust procedure according to patient conditions and factors	M	
J 65	Select acquisition parameters	M	
J 66	Perform procedure in accordance with protocol	M	
J 67	Operate equipment for image/data acquisition	M	
J 68	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
J 69	Recognize normal results and variants	M	
J 70	Recognize pathologies/abnormal results	M	
J 71	Perform image/data analysis and manipulation	M	
	<b>SK 5 Bone Marrow Imaging</b>	<b>L</b>	
J 72	Evaluate the correlation between clinical information provided and the requested examination	L	
J 73	Modify procedure according to contraindications	L	
J 74	Plan the nuclear medicine imaging procedure	L	
J 75	Perform technical preparation	L	
J 76	Perform patient preparation	L	
J 77	Exchange information with patients and their support persons to enable them to make informed decisions	L	
J 78	Administer required radiopharmaceuticals in accordance with protocol	L	
J 79	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	L	
J 80	Adjust procedure according to patient conditions and factors	L	
J 81	Select acquisition parameters	L	
J 82	Perform procedure in accordance with protocol	L	
J 83	Operate equipment for image/data acquisition	L	
J 84	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	L	
J 85	Recognize normal results and variants	L	
J 86	Recognize pathologies/abnormal results	L	

		<b>CL</b>	
J 87	Process to optimize the image	L	
J 88	Perform image/data analysis and manipulation	L	

## MODULE K Clinical Procedures – INFLAMMATORY PROCESS/TUMOR/LYMPH (TU)

		CL	
K 1	Understand pathology and anomalies related to the inflammatory process/tumor, and lymph disorders in relation to performing nuclear medicine procedures	H	
K 2	Recognize patterns consistent with pathology and anomalies related to inflammatory processes, tumors, and lymph disorders in relation to nuclear medicine procedures	H	
K 3	Understand the anatomy and physiology of inflammatory processes, tumor, and lymph disorders		
K 4	Understand the effects including contraindications, risks and interactions of agents (i.e. pharmacologic, dietary) acting on inflammatory processes, tumor, and lymph disorders	H	
	<b>TU 1 Gallium Scan</b>	<b>H</b>	
K 5	Evaluate the correlation between clinical information provided and the requested examination	H	
K 6	Modify procedure according to contraindications	H	
K 7	Plan the nuclear medicine imaging procedure	H	
K 8	Perform technical preparation	H	
K 9	Perform patient preparation	H	
K 10	Exchange information with patients and their support persons to enable them to make informed decisions	H	
K 11	Administer required radiopharmaceuticals in accordance with protocol	H	
K 12	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	H	
K 13	Adjust procedure according to patient conditions and factors	H	
K 14	Select acquisition parameters	H	
K 15	Perform procedure in accordance with protocol	H	
K 16	Operate equipment for image/data acquisition	H	
K 17	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	H	
K 18	Recognize normal results and variants	H	
K 19	Recognize pathologies/abnormal results	H	
K 20	Process to optimize the image	H	
K 21	Perform image/data analysis and manipulation	H	
	<b>TU 2 White Blood Cell Scan</b>	<b>M</b>	
K 22	Evaluate the correlation between clinical information provided and the requested examination	M	
K 23	Modify procedure according to contraindications	M	
K 24	Plan the nuclear medicine imaging procedure	M	

		<b>CL</b>	
K 25	Perform technical preparation	M	
K 26	Perform patient preparation	M	
K 27	Exchange information with patients and their support persons to enable them to make informed decisions	M	
K 28	Perform white cell labelling procedure according to procedure	M	
K 29	Use equipment for white cell labelling	M	
K 30	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	M	
K 31	Adjust procedure according to patient conditions and factors	M	
K 32	Select acquisition parameters	M	
K 33	Perform procedure in accordance with protocol	M	
K 34	Operate equipment for image/data acquisition	M	
K 35	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
K 36	Recognize normal results and variants	M	
K 37	Recognize pathologies/abnormal results	M	
K 38	Process to optimize the image	M	
K 39	Perform image/data analysis and manipulation	M	
	<b>TU 3 Tumor Imaging (Iodine)</b>	<b>M</b>	
K 40	Evaluate the correlation between clinical information provided and the requested examination	M	
K 41	Modify procedure according to contraindications	M	
K 42	Plan the nuclear medicine imaging procedure	M	
K 43	Perform technical preparation	M	
K 44	Perform patient preparation	M	
K 45	Exchange information with patients and their support persons to enable them to make informed decisions	M	
K 46	Administer appropriate radionuclide agent	M	
K 47	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	M	
K 48	Adjust procedure according to patient conditions and factors	M	
K 49	Select acquisition parameters	M	
K 50	Perform procedure in accordance with protocol	M	
K 51	Operate equipment for image/data acquisition	M	
K 52	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
K 53	Recognize normal results and variants	M	
K 54	Recognize pathologies/abnormal results	M	

		<b>CL</b>	
K 55	Process to optimize the image	M	
K 56	Perform image/data analysis and manipulation	M	
<b>TU 4 Gallium SPECT</b>		<b>M</b>	
K 57	Evaluate the correlation between clinical information provided and the requested examination	M	
K 58	Modify procedure according to contraindications	M	
K 59	Plan the nuclear medicine imaging procedure	M	
K 60	Perform technical preparation	M	
K 61	Perform patient preparation	M	
K 62	Exchange information with patients and their support persons to enable them to make informed decisions	M	
K 63	Administer required radiopharmaceuticals in accordance with protocol	M	
K 64	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	M	
K 65	Adjust procedure according to patient conditions and factors	M	
K 66	Select acquisition parameters	M	
K 67	Perform procedure in accordance with protocol	M	
K 68	Operate equipment for image/data acquisition	M	
K 69	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
K 70	Recognize normal results and variants	M	
K 71	Recognize pathologies/abnormal results	M	
K 72	Process to optimize the image	M	
K 73	Perform image/data analysis and manipulation	M	
<b>TU 5 Somatostatin-Receptor Tumor Imaging</b>		<b>L</b>	
K 74	Evaluate the correlation between clinical information provided and the requested examination	L	
K 75	Modify procedure according to contraindications	L	
K 76	Plan the nuclear medicine imaging procedure	L	
K 77	Perform technical preparation	L	
K 78	Perform patient preparation	L	
K 79	Exchange information with patients and their support persons to enable them to make informed decisions	L	
K 80	Administer appropriate radionuclide agent	L	
K 81	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	L	
K 82	Adjust procedure according to patient conditions and factors	L	
K 83	Select acquisition parameters	L	

		<b>CL</b>	
K 84	Perform procedure in accordance with protocol	L	
K 85	Operate equipment for image/data acquisition	L	
K 86	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	L	
K 87	Recognize normal results and variants	L	
K 88	Recognize pathologies/abnormal results	L	
K 89	Process to optimize the image	L	
K 90	Perform image/data analysis and manipulation	L	
	<b>TU 6 Sentinel Node Imaging</b>	<b>M</b>	
K 91	Evaluate the correlation between clinical information provided and the requested examination	M	
K 92	Modify procedure according to contraindications	M	
K 93	Plan the nuclear medicine imaging procedure	M	
K 94	Perform technical preparation	M	
K 95	Perform patient preparation	M	
K 96	Exchange information with patients and their support persons to enable them to make informed decisions	M	
K 97	Administer appropriate radionuclide agent	M	
K 98	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	M	
K 99	Adjust procedure according to patient conditions and factors	M	
K 100	Select acquisition parameters	M	
K 101	Perform procedure in accordance with protocol	M	
K 102	Operate equipment for image/data acquisition	M	
K 103	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
K 104	Recognize normal results and variants	M	
K 105	Recognize pathologies/abnormal results	M	
K 106	Process to optimize the image	M	
K 107	Perform image/data analysis and manipulation	M	
	<b>TU 7 MIBG Tumor Imaging</b>	<b>M</b>	
K 108	Evaluate the correlation between clinical information provided and the requested examination	M	
K 109	Modify procedure according to contraindications	M	
K 110	Plan the nuclear medicine imaging procedure	M	
K 111	Perform technical preparation	M	
K 112	Perform patient preparation	M	

		CL	
K 113	Exchange information with patients and their support persons to enable them to make informed decisions	M	
K 114	Administer appropriate radionuclide agent	M	
K 115	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	M	
K 116	Adjust procedure according to patient conditions and factors	M	
K 117	Select acquisition parameters	M	
K 118	Perform procedure in accordance with protocol	M	
K 119	Operate equipment for image/data acquisition	M	
K 120	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
K 121	Recognize normal results and variants	M	
K 122	Recognize pathologies/abnormal results	M	
K 123	Process to optimize the image	M	
K 124	Perform image/data analysis and manipulation	M	
<b>TU 8 Thallium Tumor SPECT Scan</b>			
K 125	Recognize clinical indications for performing procedure		
K 126	Describe patient preparation		
K 127	Identify contraindications for procedure		
K 128	Identify the radiopharmaceutical		
K 129	Propose procedural modifications		
K 130	Perform data analysis		
K 131	Describe image analysis		
K 132	Recognize normal results and variants		
K 133	Recognize pathologies/abnormal results		
<b>TU 9 Scintimammography</b>			
K 134	Recognize clinical indications for performing procedure		
K 135	Describe patient preparation		
K 136	Identify contraindications for procedure		
K 137	Identify the radiopharmaceutical		
K 138	Propose procedural modifications		
K 139	Describe image analysis		
K 140	Recognize normal results and variants		
K 141	Recognize pathologies/abnormal results		
<b>TU 10 Lymphangiogram (Interdigital Injection)</b>			
K 142	Recognize clinical indications for performing procedure		
K 143	Describe patient preparation		

		CL	
K 144	Identify contraindications for procedure		
K 145	Identify the radiopharmaceutical		
K 146	Propose procedural modifications		
K 147	Describe image analysis		
K 148	Recognize normal results and variants		
K 149	Recognize pathologies/abnormal results		
<b>TU 11 Radiation (Synovium) Therapy</b>			
K 150	Recognize clinical indications for performing procedure		
K 151	Describe patient preparation		
K 152	Identify contraindications for procedure		
K 153	Identify the radiopharmaceutical		
K 154	Propose procedural modifications		
K 155	Recognize normal results and variants		
K 156	Recognize pathologies/abnormal results		
<b>TU 12 Radionuclide Therapy for Metastatic Bone Disease</b>			
K 157	Recognize clinical indications for performing procedure		
K 158	Describe patient preparation		
K 159	Identify contraindications for procedure		
K 160	Identify the radiopharmaceutical		
K 161	Propose procedural modifications		
K 162	Explain post-therapy care		
K 163	Recognize normal results and variants		
K 164	Recognize pathologies/abnormal results		
<b>TU 13 Radionuclide Therapy for Polycythemia Vera</b>			
K 165	Recognize clinical indications for performing procedure		
K 166	Describe patient preparation		
K 167	Identify contraindications for procedure		
K 168	Identify the radiopharmaceutical		
K 169	Propose procedural modifications		
K 170	Explain post-therapy care		
K 171	Recognize normal results and variants		
K 172	Recognize pathologies/abnormal results		
<b>TU 14 Tumor Imaging with FDG Positron Emission Tomography (PET)</b>		L	
K 173	Recognize clinical indications for performing procedure	L	
K 174	Describe patient preparation	L	
K 175	Identify contraindications for procedure	L	

		<b>CL</b>	
K 176	Identify the radiopharmaceutical	L	
K 177	Propose procedural modifications	L	
K 178	Perform data analysis	L	
K 179	Describe image analysis	L	
K 180	Recognize normal results and variants	L	
K 181	Recognize pathologies/abnormal results	L	

## MODULE L Clinical Procedures – CENTRAL NERVOUS SYSTEM (CN)

		CL	
L 1	Understand pathology and anomalies related to the CNS in relation to performing a nuclear medicine procedure	H	
L 2	Recognize patterns consistent with pathology and anomalies related to CNS in relation to a nuclear medicine procedure	H	
L 3	Understand the anatomy and physiology of the CNS		
L 4	Understand the effects including contraindications, risks and interactions of agents (i.e. pharmacologic, dietary) acting on the CNS	H	
	<b>CN 1 Cerebral Perfusion SPECT</b>	<b>M</b>	
L 5	Evaluate the correlation between clinical information provided and the requested examination	M	
L 6	Modify procedure according to contraindications	M	
L 7	Plan the nuclear medicine imaging procedure	M	
L 8	Perform technical preparation	M	
L 9	Perform patient preparation	M	
L 10	Exchange information with patients and their support persons to enable them to make informed decisions	M	
L 11	Administer required radiopharmaceuticals in accordance with protocol	M	
L 12	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	M	
L 13	Adjust procedure according to patient conditions and factors	M	
L 14	Select acquisition parameters	M	
L 15	Perform procedure in accordance with protocol	M	
L 16	Operate equipment for image/data acquisition	M	
L 17	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
L 18	Recognize normal results and variants	M	
L 19	Recognize pathologies/abnormal results	M	
L 20	Process to optimize the image	M	
L 21	Perform image/data analysis and manipulation	M	
	<b>CN 2 Blood Brain Barrier Brain Scan</b>		
L 22	Evaluate the correlation between clinical information provided and the requested examination		
L 23	Modify procedure according to contraindications		
L 24	Plan the nuclear medicine imaging procedure		
L 25	Perform technical preparation		
L 26	Perform patient preparation		

		CL	
L 27	Exchange information with patients and their support persons to enable them to make informed decisions		
L 28	Administer required radiopharmaceuticals in accordance with protocol		
L 29	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies		
L 30	Adjust procedure according to patient conditions and factors		
L 31	Select acquisition parameters		
L 32	Perform procedure in accordance with protocol		
L 33	Operate equipment for image/data acquisition		
L 34	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required		
L 35	Recognize normal results and variants		
L 36	Recognize pathologies/abnormal results		
L 37	Process to optimize the image		
<b>CN 3 Cerebral Perfusion Planar</b>			
L 38	Evaluate the correlation between clinical information provided and the requested examination		
L 39	Modify procedure according to contraindications		
L 40	Plan the nuclear medicine imaging procedure		
L 41	Perform technical preparation		
L 42	Perform patient preparation		
L 43	Exchange information with patients and their support persons to enable them to make informed decisions		
L 44	Administer required radiopharmaceuticals in accordance with protocol		
L 45	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies		
L 46	Adjust procedure according to patient conditions and factors		
L 47	Select acquisition parameters		
L 48	Perform procedure in accordance with protocol		
L 49	Operate equipment for image/data acquisition		
L 50	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required		
L 51	Recognize normal results and variants		
L 52	Recognize pathologies/abnormal results		
L 53	Process to optimize the image		
<b>CN 4 CSF Cisternogram</b>			
L 54	Evaluate the correlation between clinical information provided and the requested examination	L	

		CL	
L 55	Modify procedure according to contraindications	L	
L 56	Plan the nuclear medicine imaging procedure	L	
L 57	Perform technical preparation	L	
L 58	Perform patient preparation	L	
L 59	Exchange information with patients and their support persons to enable them to make informed decisions	L	
L 60	Assist physician to administer required radiopharmaceuticals in accordance with protocol	L	
L 61	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	L	
L 62	Adjust procedure according to patient conditions and factors	L	
L 63	Select acquisition parameters	L	
L 64	Perform procedure in accordance with protocol	L	
L 65	Operate equipment for image/data acquisition	L	
L 66	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	L	
L 67	Recognize normal results and variants	L	
L 68	Recognize pathologies/abnormal results	L	
L 69	Process to optimize the image	L	
	<b>CN 5 CSF Leak</b>		
L 70	Evaluate the correlation between clinical information provided and the requested examination		
L 71	Modify procedure according to contraindications		
L 72	Plan the nuclear medicine imaging procedure		
L 73	Perform technical preparation		
L 74	Perform patient preparation		
L 75	Exchange information with patients and their support persons to enable them to make informed decisions		
L 76	Assist physician to administer required radiopharmaceuticals in accordance with protocol		
L 77	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies		
L 78	Adjust procedure according to patient conditions and factors		
L 79	Select acquisition parameters		
L 80	Perform procedure in accordance with protocol		
L 81	Operate equipment for image/data acquisition		
L 82	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required		
L 83	Recognize normal results and variants		

		CL	
L 84	Recognize pathologies/abnormal results		
L 85	Process to optimize the image		
L 86	Perform image/data analysis and manipulation		
<b>CN 6 CSF Shunt Patency</b>		<b>L</b>	
L 87	Evaluate the correlation between clinical information provided and the requested examination	L	
L 88	Modify procedure according to contraindications	L	
L 89	Plan the nuclear medicine imaging procedure	L	
L 90	Perform technical preparation	L	
L 91	Perform patient preparation	L	
L 92	Exchange information with patients and their support persons to enable them to make informed decisions	L	
L 93	Assist physician to administer required radiopharmaceuticals in accordance with protocol	L	
L 94	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	L	
L 95	Adjust procedure according to patient conditions and factors	L	
L 96	Select acquisition parameters	L	
L 97	Perform procedure in accordance with protocol	L	
L 98	Operate equipment for image/data acquisition	L	
L 99	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	L	
L 100	Recognize normal results and variants	L	
L 101	Recognize pathologies/abnormal results	L	
L 102	Process to optimize the image	L	
<b>CN 7 Dacroscentigraphy (Lacrimal Scan)</b>			
L 103	Evaluate the correlation between clinical information provided and the requested examination		
L 104	Modify procedure according to contraindications		
L 105	Plan the nuclear medicine imaging procedure		
L 106	Perform technical preparation		
L 107	Perform patient preparation		
L 108	Exchange information with patients and their support persons to enable them to make informed decisions		
L 109	Administer required radiopharmaceuticals in accordance with protocol		
L 110	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies		
L 111	Adjust procedure according to patient conditions and factors		

		CL	
L 112	Select acquisition parameters		
L 113	Perform procedure in accordance with protocol		
L 114	Operate equipment for image/data acquisition		
L 115	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required		
L 116	Recognize normal results and variants		
L 117	Recognize pathologies/abnormal results		
L 118	Process to optimize the image		
<b>CN 8 Cerebral Blood Flow (Brain Death)</b>			
L 119	Recognize clinical indications for performing procedure		
L 120	Describe patient preparation		
L 121	Identify contraindications for procedure		
L 122	Identify the radiopharmaceutical		
L 123	Propose procedural modifications		
L 124	Perform data analysis		
L 125	Describe image analysis		
L 126	Recognize normal results and variants		
L 127	Recognize pathologies/abnormal results		

## MODULE M Clinical Procedures – ENDOCRINE SYSTEM (EN)

		CL	
M 1	Understand pathology and anomalies related to the endocrine system in relation to performing a nuclear medicine procedure	H	
M 2	Recognize patterns consistent with pathology and anomalies related to endocrine system in relation to a nuclear medicine procedure	H	
M 3	Understand the anatomy and physiology of the endocrine system		
M 4	Understand the effects including contraindications, risks and interactions of agents (i.e. pharmacologic, dietary) acting on the endocrine system	H	
	<b>EN 1 Thyroid Scan</b>	<b>H</b>	
M 5	Evaluate the correlation between clinical information provided and the requested examination	H	
M 6	Modify procedure according to contraindications	H	
M 7	Plan the nuclear medicine imaging procedure	H	
M 8	Perform technical preparation	H	
M 9	Perform patient preparation	H	
M 10	Exchange information with patients and their support persons to enable them to make informed decisions	H	
M 11	Administer required radiopharmaceuticals in accordance with protocol	H	
M 12	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	H	
M 13	Adjust procedure according to patient conditions and factors	H	
M 14	Select acquisition parameters	H	
M 15	Perform procedure in accordance with protocol	H	
M 16	Operate equipment for image/data acquisition	H	
M 17	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	H	
M 18	Recognize normal results and variants	H	
M 19	Recognize pathologies/abnormal results	H	
M 20	Process to optimize the image	H	
M 21	Perform image/data analysis and manipulation	H	
	<b>EN 2 Thyroid Uptake</b>	<b>H</b>	
M 22	Evaluate the correlation between clinical information provided and the requested examination	H	
M 23	Modify procedure according to contraindications	H	
M 24	Plan the nuclear medicine imaging procedure	H	
M 25	Perform technical preparation	H	
M 26	Perform patient preparation	H	

		<b>CL</b>	
M 27	Exchange information with patients and their support persons to enable them to make informed decisions	H	
M 28	Administer required radiopharmaceuticals in accordance with protocol	H	
M 29	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	H	
M 30	Adjust procedure according to patient conditions and factors	H	
M 31	Select acquisition parameters	H	
M 32	Perform procedure in accordance with protocol	H	
M 33	Operate equipment for image/data acquisition	H	
M 34	Evaluate data to determine if further images/data are required	H	
M 35	Recognize normal results and variants	H	
M 36	Recognize pathologies/abnormal results	H	
M 37	Perform data analysis and manipulation	H	
	<b>EN 3 Thyroid Therapy for Hyperthyroidism</b>	<b>M</b>	
M 38	Evaluate the correlation between clinical information provided and the requested examination	M	
M 39	Modify procedure according to contraindications	M	
M 40	Plan the nuclear medicine imaging procedure	M	
M 41	Perform technical preparation	M	
M 42	Perform patient preparation	M	
M 43	Exchange information with patients and their support persons to enable them to make informed decisions	M	
M 44	Administer required radiopharmaceuticals in accordance with protocol	M	
M 45	Adjust procedure according to patient conditions and factors	M	
M 46	Perform procedure in accordance with protocol	M	
M 47	Operate equipment for performing procedure	M	
M 48	Verify completion of the procedure	M	
M 49	Ensure patient understands post therapy instructions	M	
	<b>EN 4 Parathyroid (MIBI) Scan</b>	<b>M</b>	
M 50	Evaluate the correlation between clinical information provided and the requested examination	M	
M 51	Modify procedure according to contraindications	M	
M 52	Plan the nuclear medicine imaging procedure	M	
M 53	Perform technical preparation	M	
M 54	Perform patient preparation	M	
M 55	Exchange information with patients and their support persons to enable them to make informed decisions	M	
M 56	Administer required radiopharmaceuticals in accordance with protocol	M	

		<b>CL</b>	
M 57	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	M	
M 58	Adjust procedure according to patient conditions and factors	M	
M 59	Select acquisition parameters	M	
M 60	Perform procedure in accordance with protocol	M	
M 61	Operate equipment for image/data acquisition	M	
M 62	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	M	
M 63	Recognize normal results and variants	M	
M 64	Recognize pathologies/abnormal results	M	
M 65	Process to optimize the image	M	
M 66	Perform image/data analysis and manipulation	M	
	<b>EN 5 Adrenal Scan</b>	<b>L</b>	
M 67	Evaluate the correlation between clinical information provided and the requested examination	L	
M 68	Modify procedure according to contraindications	L	
M 69	Plan the nuclear medicine imaging procedure	L	
M 70	Perform technical preparation	L	
M 71	Perform patient preparation	L	
M 72	Exchange information with patients and their support persons to enable them to make informed decisions	L	
M 73	Administer required radiopharmaceuticals in accordance with protocol	L	
M 74	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	L	
M 75	Adjust procedure according to patient conditions and factors	L	
M 76	Select acquisition parameters	L	
M 77	Perform procedure in accordance with protocol	L	
M 78	Operate equipment for image/data acquisition	L	
M 79	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	L	
M 80	Recognize normal results and variants	L	
M 81	Recognize pathologies/abnormal results	L	
M 82	Process to optimize the image	L	
	<b>EN 6 Thyroid Ablation Therapy</b>	<b>M</b>	
M 83	Evaluate the correlation between clinical information provided and the requested examination	M	
M 84	Modify procedure according to contraindications	M	
M 85	Plan the nuclear medicine imaging procedure	M	

		<b>CL</b>	
M 86	Perform technical preparation	M	
M 87	Perform patient preparation	M	
M 88	Exchange information with patients and their support persons to enable them to make informed decisions	M	
M 89	Administer required radiopharmaceuticals in accordance with protocol	M	
M 90	Adjust procedure according to patient conditions and factors	M	
M 91	Perform procedure in accordance with protocol	M	
M 92	Operate equipment for performing procedure	M	
M 93	Verify completion of procedure	M	
M 94	Ensure patient understands post therapy instructions	M	
<b>EN 7 Parathyroid Thallium</b>			
M 95	Recognize clinical indications for performing procedure		
M 96	Describe patient preparation		
M 97	Identify contraindications for procedure		
M 98	Identify the radiopharmaceutical		
M 99	Propose procedural modifications		
M 100	Perform data analysis		
M 101	Describe image analysis		
M 102	Recognize normal results and variants		
M 103	Recognize pathologies/abnormal results		

## MODULE N Clinical Procedures – RESPIRATORY SYSTEM (RE)

		CL	
N 1	Understand pathology and anomalies related to the Respiratory system in relation to performing a nuclear medicine procedure	H	
N 2	Recognize patterns consistent with pathology and anomalies related to the Respiratory system in relation to a nuclear medicine procedure	H	
N 3	Understand the anatomy and physiology of the Respiratory system		
N 4	Understand the effects including contraindications, risks and interactions of agents (i.e. pharmacologic, dietary) acting on the Respiratory system	H	
	<b>RE 1 Perfusion Lung Scan</b>	<b>H</b>	
N 5	Evaluate the correlation between clinical information provided and the requested examination	H	
N 6	Modify procedure according to contraindications	H	
N 7	Plan the nuclear medicine imaging procedure	H	
N 8	Perform technical preparation	H	
N 9	Perform patient preparation	H	
N 10	Exchange information with patients and their support persons to enable them to make informed decisions	H	
N 11	Administer required radiopharmaceuticals in accordance with protocol	H	
N 12	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	H	
N 13	Adjust procedure according to patient conditions and factors	H	
N 14	Select acquisition parameters	H	
N 15	Perform procedure in accordance with protocol	H	
N 16	Operate equipment for image/data acquisition	H	
N 17	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	H	
N 18	Recognize normal results and variants	H	
N 19	Recognize pathologies/abnormal results	H	
N 20	Process to optimize the image	H	
N 21	Perform image/data analysis and manipulation	H	
	<b>RE 2 Ventilation Lung Scan</b>	<b>H</b>	
N 22	Evaluate the correlation between clinical information provided and the requested examination	H	
N 23	Modify procedure according to contraindications	H	
N 24	Plan the nuclear medicine imaging procedure	H	
N 25	Perform technical preparation	H	
N 26	Perform patient preparation	H	

		CL	
N 27	Exchange information with patients and their support persons to enable them to make informed decisions	H	
N 28	Administer required radiopharmaceuticals in accordance with protocol	H	
N 29	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	H	
N 30	Adjust procedure according to patient conditions and factors	H	
N 31	Select acquisition parameters	H	
N 32	Perform procedure in accordance with protocol	H	
N 33	Operate equipment for image/data acquisition	H	
N 34	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	H	
N 35	Recognize normal results and variants	H	
N 36	Recognize pathologies/abnormal results	H	
N 37	Process to optimize the image	H	
N 38	Perform image/data analysis and manipulation	H	
<b>RE 3 Quantitative Ventilation Lung Scan (Xenon)</b>			
N 39	Evaluate the correlation between clinical information provided and the requested examination		
N 40	Modify procedure according to contraindications		
N 41	Plan the nuclear medicine imaging procedure		
N 42	Perform technical preparation		
N 43	Perform patient preparation		
N 44	Exchange information with patients and their support persons to enable them to make informed decisions		
N 45	Administer required radiopharmaceuticals in accordance with protocol		
N 46	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies		
N 47	Adjust procedure according to patient conditions and factors		
N 48	Select acquisition parameters		
N 49	Perform procedure in accordance with protocol		
N 50	Operate equipment for image/data acquisition		
N 51	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required		
N 52	Recognize normal results and variants		
N 53	Recognize pathologies/abnormal results		
N 54	Process to optimize the image		
N 55	Perform image/data analysis and manipulation		

		CL	
<b>RE 4 Quantitative Perfusion Lung Scan</b>		<b>L</b>	
N 56	Evaluate the correlation between clinical information provided and the requested examination	L	
N 57	Modify procedure according to contraindications	L	
N 58	Plan the nuclear medicine imaging procedure	L	
N 59	Perform technical preparation	L	
N 60	Perform patient preparation	L	
N 61	Exchange information with patients and their support persons to enable them to make informed decisions	L	
N 62	Administer required radiopharmaceuticals in accordance with protocol	L	
N 63	Position the patient using anatomical landmarks and relational anatomy to best demonstrate anatomical structures/pathologies	L	
N 64	Adjust procedure according to patient conditions and factors	L	
N 65	Select acquisition parameters	L	
N 66	Perform procedure in accordance with protocol	L	
N 67	Operate equipment for image/data acquisition	L	
N 68	Evaluate anatomy, physiology and patient position on the image to determine if further images/data are required	L	
N 69	Recognize normal results and variants	L	
N 70	Recognize pathologies/abnormal results	L	
N 71	Process to optimize the image	L	
N 72	Perform image/data analysis and manipulation	L	
<b>RE 5 Pulmonary Aspiration Study</b>			
N 73	Recognize clinical indications for performing procedure		
N 74	Describe patient preparation		
N 75	Identify contraindications for procedure		
N 76	Identify the radiopharmaceutical		
N 77	Propose procedural modifications		
N 78	Perform data analysis		
N 79	Describe image analysis		
N 80	Recognize normal results and variants		
N 81	Recognize pathologies/abnormal results		