

Job Class Profile: Nuclear Medicine Technician**Pay Level: LX-23 Point Band: 562-586**

Factor	Knowledge	Interpersonal Skills	Physical Effort	Concentration	Complexity	Accountability & Decision Making	Impact	Development and Leadership	Environmental Working Conditions	Total Points
Rating	4	4	4	6	2	2	3	2	6	
Points	187	67	25	29	60	43	62	43	64	580

JOB SUMMARY

The Nuclear Medicine Technician performs technical work near the technologist level for a variety of standardized diagnostic and therapeutic Nuclear Medicine procedures. This includes performing routine procedures and scans, maintaining and operating a variety of technical equipment, performing quality assurance on radiopharmaceuticals, as well as preparing, calculating, dispensing, and administering same to patients, and presenting the information collected through computer analysis of data.

Key and Periodic Activities

- Prepares, calculates, dispenses, and administers radiopharmaceuticals; performs quality assurance testing and control as per radiation safety practices; and documents practices in accordance with the Canadian Nuclear Safety Council (CNSC) guidelines.
- Performs quality control testing on equipment (i.e. gamma cameras, bone densitometer, dose calibrator, and radiation detector instruments); evaluates results; trouble shoots; calibrates if necessary; and documents or reports equipment failure as appropriate.
- Interviews patients for exams; obtains in-depth history; and explains procedures/test(s) and any safety concerns patients should be aware of during exam.
- Prepares patient for procedures; sets up equipment/supplies; monitors patient care and safety during procedures; and performs diagnostic scan(s).
- Performs all computer processing/analysis of data; labels all images collected during imaging procedures; sends studies to Picture Archiving and Communication System (PACS) computer system; and evaluates image quality with peers or physicians.
- Documents and stores radioactive packages as they are delivered. Monitors work areas for radiation spillage, decontaminates areas, if necessary, and labels and disposes of radioactive material according to the CNSC guidelines.
- Based on the availability of radioactive materials from suppliers, adjusts patient schedules as required.

SKILL**Knowledge****General and Specific Knowledge:**

- Nuclear Medicine equipment, techniques, and procedures.

- Patient care, including administering and processing tests.
- Human anatomy and physiology.
- Current knowledge of trends, technology and developments within field.
- Nuclear Medicine and Diagnostic Imaging Computer technology.
- Procedure protocols and radiopharmaceuticals.

Formal Education and/or Certification(s):

Minimum:

- Graduation from high school supplemented by course work in Nuclear Medicine Technology or Completion of a 3 year (full-time) advanced specialized diploma in Nuclear Medicine Technology or a Bachelor of Science Degree (Nuclear Medicine).

Years of Experience:

- Minimum: No experience required.

Competencies:

- Ability to perform patient and technical preparation and clinical procedures, and analysis of data.
- Ability to apply and follow Radiation Protection and Safety Protocols.
- Ability to use equipment, tools and relevant technologies.

Interpersonal Skills

- A range of interpersonal skills are used to: listen to information; ask questions to obtain patient history; provide routine and complex information; provide care and comfort to upset or nervous patients during procedures; and gain the cooperation of others to complete the work such as coordinating patient schedules.
- Communications occur with patients, manager, other healthcare providers, radiologists, public, and professional advisors (i.e. radiologists, referring physicians, other healthcare staff, lead technologist), and from time to time with suppliers or sales representatives.
- The most important interpersonal skills are used to communicate with patients, co-workers, and physicians.

EFFORT

Physical Effort

- The demands of the job at times result in considerable fatigue requiring period of rest.
- Regularly lifts or moves objects or patients, (i.e. supplies, equipment, cameras, lead vests, radioactive generator, and children), up to 50 lbs., and occasionally is required to reposition, push, pull or slide patients over 50 lbs.
- Regularly stands or walks when performing procedures or scanning patients. Occasionally, works in awkward or cramped positions where maintaining balance is required while operating heavy machinery or equipment (i.e. cameras, lenses, lead apron, etc.) to perform scans. Scanning patients requires controlled movements while physically handling cameras. Occasionally, required to sit to review images and use fine finger/precision movements to work on the computer, walk, and bend to give injections using fine motor skills.

Concentration

- **Visual** concentration is required when reading physicians' orders, positioning patients, drawing up radiation into syringes and measuring dosages, inserting venipuncture and intravenous (IV) lines, giving injections, examining detailed computer images, computer processing, and monitoring patients during procedures.
- **Auditory** concentration is required to listen to patients/other healthcare providers during testing/procedures, to listen to ensure equipment is working properly, and to listen to other staff, managers and radiologists for feedback and direction.
- Other sensory demands such as **touch** are regularly required to give injections and to feel for injuries.
- Some tasks are **repetitive and require alertness** and include computer processing, administering radiopharmaceuticals, and scanning to provide a quality image.
- There is a **higher level of attentiveness or alertness** to properly store and dispose of isotopes for the health and safety of patients and staff, and when performing activities such as radiopharmaceutical preparation, dispensing, and administration for sterility, and when working with children to ensure their safety.
- Work is subject to **time pressures** and **deadlines** when there are time constraints with completion of patient procedures (i.e. excessive patients booked), and delays from other healthcare providers.
- There is a **lack of control over their work pace** when there are delays or lack of radioisotopes, emergencies, equipment failure, and when working in conjunction with other healthcare professionals to perform tests.
- **Exact results and precision** and **eye/hand coordination** are required for positioning of patients, radiopharmaceutical dispensation, and computer scanning and processing of exams.

Complexity

- Work tasks and activities are different but related, and require the use of similar skills and knowledge.
- Tasks tend to be regularly repetitive, well defined, and problems can be addressed using guidelines and procedures. In most cases there are simple problems with obvious solutions such as when equipment malfunctions. Rarely, there may be a need to determine a solution to the problem when performing exams.
- Typical problems include developing solutions for testing of patients who arrive and are unprepared for procedures, for scheduled appointments when radioactive material is not available, or when equipment malfunctions.
- When addressing problems and solutions there are procedures/guidelines to follow, or can consult with manager, physicians, technical personnel for equipment malfunctions, and other staff.

RESPONSIBILITY

Accountability and Decision-Making

- Work is highly monitored and controlled and is structured such that review for standard compliance.

- Without formal approval can make decisions related to scheduling or procedures for patients (i.e. adding urgent patient exams, procedure modification, rescheduling patients who are unprepped for procedures as per guidelines), and restocking or ordering supplies.
- Approval is required for purchases of pharmaceuticals, and to cancel/reschedule patients (which do not fit into standard cancellation protocol or guidelines).
- There is limited discretion to exercise within predetermined limits to decide whether family members can stay during the scanning procedure, and rescheduling of some patient appointments. There is also limited discretion and judgment to interpret directions and apply guidelines to reschedule those patients who are unprepared for procedures.
- A high degree of discretion and judgment can be exercised when working alone or on call to use judgment within guidelines to deal with complications or irregularities.
- Work includes providing information to patients regarding preparation and positioning during procedures.

Impact

- Impacts generally affect: the immediate work area; the department; patients; and the public.
- Work activities impact resources such as: equipment (i.e. cameras and computers); processes and systems; information; facilities; material resources (i.e. radioactive material); corporate image; and health and safety.
- The work could either negatively or positively impact the health and safety of patients when conducting procedures. The most significant impact would be on patients, as a result of the procedures performed or exposure to radiation.
- The type of errors that could occur include radioactive spills, administering incorrect radiopharmaceuticals, performing an incorrect exam on a patient, or flawed computer processing and analysis. These errors are mitigated as the work tasks are highly monitored and controlled and are generally detected within hours of identification. All scans are reviewed by the test performer prior to the patient leaving the division and then is reviewed by the radiologist before the final report is submitted to the attending physician.

Development and Leadership of Others

- Does not provide bargaining level supervision of staff.
- Provides development and leadership responsibilities such as on the job advice and guidance, orientation, and on-the-job training to new employees and acts as a technical mentor, reviews/checks, and assigns tasks to students.
- Does not provide a team lead or a project leader role.

WORKING CONDITIONS

Environmental Working Conditions

- Required to wear dosimeters for measuring radiation exposure, lead vests/shields, gloves, gowns, goggles, x-ray shields, and to use or practice safety by using sharp containers, ALARA (As Low As Reasonably Achievable) principals to reduce radiation, and a mechanical lift or slider board to transport patients.
- There is some likelihood of receiving minor cuts, bruises or minor illnesses and receiving injury or occupational illness resulting in partial or total disability even when following normal

precautions.

- Constantly exposed to radiation, hazardous chemicals, lifting heavy machinery (i.e. gamma cameras), and sharp objects (i.e. needles to give injections). Regularly there is exposure to bodily fluids and waste, and glare from a computer or camera when processing scans. Occasionally there is exposure to unusual/distracting noise, dirt/dust/filth, toxic or poisonous substances (i.e. radiopharmaceuticals), infectious diseases (i.e. Tuberculosis, H1N1, and Severe Acute Respiratory Syndrome (SARS), etc.), odours, wet/slippery surfaces, and awkward or confining workspaces.