Job Class Profile: Nuclear Medicine Technologist II

Pay Level: LX-28 Point Band: 717-751

Factor	Knowledge	Interpersonal Skills	Physical Effort	Concentration	Complexity	Accountability & Decision Making	Impact	Development and Leadership	Environmental Working Conditions	Total Points
Rating	5	4	4	6	4	3	4	2	6	
Points	233	67	25	29	120	65	83	43	64	729

JOB SUMMARY

The Nuclear Medicine Technologist II performs specialized technical work involving standardized and complex diagnostic and therapeutic Nuclear Medicine procedures. This includes performing all imaging and non-imaging procedures, preparing, dispensing, and administering radiopharmaceuticals to patients through injections, aerosols, or through food/drink. Work involves the operation of a variety of technical equipment, maintenance of equipment, quality control, and presenting the information collected through computer analysis of data.

Key and Periodic Activities

- Performs a variety of a routine and specialized diagnostic procedures (patient imaging) which includes patient preparation, sets up of equipment/supplies, monitors patient care and safety, and carries out procedures.
- Performs all computer processing/analysis of data, and labels all images collected during imaging procedures, sends studies to Picture Archiving and Communication System (PACS) computer system, and evaluates image quality before submitting to radiologist for reporting.
- Prepares/calculates, dispenses, assays, administers radiopharmaceuticals and non-radioactive drugs, and performs quality assurance testing and control, and documents this in accordance with the Canadian Nuclear Safety Council (CNSC), (i.e. inspect preparations).
- Performs all diagnostic radioactive and non-radioactive IV injections and administers diagnostic capsules.
- Assesses patients for exams, obtains relevant history, explains procedures and tests, discusses any safety concerns patients should be aware of during exam, and completes required forms.
- Performs quality control testing on all equipment (i.e. cameras, radiation detectors), evaluates results, trouble shoots, calibrates if necessary, and documents or reports equipment failure as appropriate.
- May assist radiologists with the set up of special procedures.
- Liaises or consults with physicians, nursing staff, and other healthcare professionals regarding patients and procedures.
- Reviews, maintains, records, and orders stock/supplies as needed (i.e. radiopharmaceuticals, reagents, needles, etc).
- Monitors, records, and disposes of decayed radiopharmaceuticals, specimen vials, needles, and containers.

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: 3 year (full-time) advanced specialized Diploma in Nuclear Medicine Technology or a Bachelor of Science Degree (Nuclear Medicine). Successful completion of the Canadian Association of Medical Radiation Technologists (CAMRT) certification exam leading to the designation of a Registered Technologist, Nuclear Medicine (RTNM).

Years of Experience:

— Minimum: 1-2 years of experience.

Competencies:

— Ability to perform patient and technical preparation and clinical procedures, evaluation, 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; to provide routine information; direction; guidance; care and comfort to patients during procedures; gain the cooperation of others; and from time to time instruct/teach/or train new staff or students.
— Communications occur with: patients; supervisors/managers; other healthcare providers; radiologists; students; public; and professional advisors (i.e. radiologists, referring physicians, pharmacists); and from time to time with suppliers.
— The most significant interpersonal skills are used to: communicate with upset or angry people; and to provide advice to other healthcare professionals and patients regarding test procedures and scheduling.

EFFORT

Physical Effort

— The demands of the job at times result in considerable fatigue requiring periods of rest.
— Regularly lifts, moves, repositions, pushes, or pulls objects (i.e. supplies, equipment, cameras, lead vests, and patients), less than 10 lbs., between 10-50 lbs., and 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 will 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, calculating 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 required to give injections and to feel for injuries.

— The tasks that are **repetitive and require alertness** include computer processing, calculating amount of radiation to administer, noting any patient abnormalities, and scanning to provide a quality image.

— There is a **higher level of attentiveness or alertness for the health and safety of patients** during procedures in order to record their reactions, to listen for signs or symptoms of distress, to ensure their safety when calculating, preparing and giving injections, and to avoid radiation exposure.

— There is a **lack of control over work pace** when there are delays or lack of radioisotopes, emergencies, and equipment failure. There are **time pressures and deadlines** when there are time constraints to perform procedures on patients (i.e. excessive patients booked), **interruptions** from uncooperative patients and family members, from deadlines of ordering radiopharmaceuticals, equipment failure, and delays from other healthcare providers. Due to the nature of the work, interruptions are common from staff.

— **Exact results and precision** and **eye/hand coordination** are required for positioning of patients, radiopharmaceutical dispension, and computer scanning and processing of exams.

Complexity

— The tasks and activities are quite different, but allow the use of similar skills and knowledge.

— Problems can be addressed using guidelines and procedures or occasionally in a team setting. At times work involves diverse tasks with a wide variety of responsibilities and situations. In many cases work involves simple problems with obvious solutions such as when equipment malfunctions. From time to time creative problem solving solutions are required when performing exams.

— Typical problems include developing solutions for testing of patients who arrive and are unprepared for procedures, uncooperative, nervous, or are unable to be positioned properly due to discomfort or pain.

— When addressing problems and solutions work requires following procedures, guidelines, consulting with other staff, discussing the problem with the patient and either rebooking the procedure, or supporting and comforting the patient through the procedure(s).

RESPONSIBILITY

Accountability and Decision-Making

— The nature of this work is controlled and structured where lead technologists and supervisors periodically review the work for standard compliance.
— Without formal approval can independently make decisions related to scheduling or procedures on 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 radioactive material, drug preparation kits, and pharmaceuticals. As well, approval is required for large purchases (i.e. furniture and new equipment) and when cancelling/rescheduling patients (which do not fit into standard cancellation protocol or guidelines).
— When giving injections and determining the vein to use, or deciding whether family members can stay during the scanning procedure and there is some discretion to exercise within predetermined limits and procedures. There is also some discretion and judgment to interpret directions and apply guidelines when making decisions after scans are completed and when deciding whether the patient requires additional testing.
— There is a high degree of discretion and judgment exercised when performing scans such as deciding whether images are suitable, determining if data collected is viable, if there is procedural modification required for challenging patients, or when working alone on call (i.e. have to use professional judgment within guidelines).
— Provides information to patients regarding preparation and direction regarding positioning during procedures, and advice regarding any adverse effects of injections or scans.

Impact

— Impacts generally affect: the immediate work area; the department; patients; and the public.
— Work activities impact resources such as: equipment (i.e. as cameras and computer); processes and systems; information; facilities; material resources such as 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 incorrect injections, and images processed incorrectly.
— These errors are mitigated as the work tasks are highly monitored and controlled and are generally detected within hours of identification, as the test performer reviews the final scan images prior to the patient leaving the division, and it is then 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 to new employees, on-the-job training, acts as a technical mentor, reviews/checks and delegates tasks to students.
— May collaborate with physicians on research projects.

WORKING CONDITIONS

Environmental Working Conditions
— Required to practice or use safety equipment such as wearing dosimeters for measuring radiation exposure, lead vests/shields, gloves, gowns, respirator, goggles, x-ray shields, using sharp containers, practicing ALARA (As Low As Reasonably Achievable) principals to reduce radiation, and using a mechanical lift or slider board to transport patients. — There is some likelihood of receiving minor cuts, bruises or minor illnesses and limited likelihood of receiving injury or occupational illness resulting in partial or total disability even when following normal precautions. — Constantly exposed to radiation, lifting heavy machinery (i.e. cameras, lead pots/aprons, generators), and sharp objects (i.e. needles to give injections). Regularly exposed to bodily fluids and waste. Occasionally exposed to glare from a computer or camera when processing scans, fumes, unusual/distracting noise, hazardous chemicals, toxic or poisonous substances (i.e. radiopharmaceuticals), infectious diseases (i.e. Tuberculosis, H1N1, and Severe Acute Respiratory Syndrome (SARS), etc.), odours, wet/slippery surfaces, electric shocks, awkward or confining workspaces, and physical danger or threats.