**Job Class Profile:** 

Nuclear Medicine Technologist III

Pay Level:

LX-34

**Point Band:** 

927-961

						Accountability		Development	Environmental	
		Interpersonal				& Decision		and	Working	Total
Factor	Knowledge	Skills	Physical Effort	Concentration	Complexity	Making	Impact	Leadership	Conditions	Points
Rating	6	5	4	6	5	6	5	4	6	
Points	280	83	25	29	150	130	103	86	64	950

# **JOB SUMMARY**

The Nuclear Medicine Technologist III is responsible for the day-to-day operation of a Nuclear Medicine Division and performs supervisory and specialized technical work involving standardized and complex diagnostic and therapeutic Nuclear Medicine procedures. The work includes performing routine and specialized nuclear medicine testing, administration of radioactive materials, administrative work related to staffing, and development and implementation of quality control guidelines, policies, procedures, and radiation safety standards.

## **Key and Periodic Activities**

- Provides technical leadership and supervision of a full service Nuclear Medicine Division such as guidance, advice, supervision, assignment and delegation of work duties and room rotations to staff. As well, completes staff schedules, approves short term leave, and provides orientation and training to staff and students.
- Assists in preparing budget and resource needs for the division.
- Oversees inventory control processes and ordering of supplies including radioisotopes. Manages and monitors the supply of radioisotopes and ensures schedules of appointments are booked based on their availability and supply.
- Administers radiopharmaceuticals, performs diagnostic radioactive IV injection and administers diagnostic capsules, and performs complex therapies, special procedures, and tests (i.e. radioiodine, strontium, and Zevalin therapies, metaiodobenzylguanidine (MIBG), P-32, blood cell labeling, Schillings tests, H-Pylori, etc). These procedures and tests involve a multidisciplinary approach, including counseling and education for patients, and computer manipulation. In addition, prior to procedures and under the direction of a radiologist, administers a variety of drugs to enhance or alter organ function.
- Monitors the preparation and administration, receipt, disbursement, and disposal of radiopharmaceuticals, and oversees radiation safety procedures including ensuring radiation safety standards are in compliance with the Canadian Nuclear Safety Commission (CNSC) guidelines, maintains record keeping of safety practices, and where evident ensures reduction of radiation exposure. Prepares reports including compliance reports and radiation inspections, as required by the CNSC licensing process.
- Develops and implements quality control programs.
- Performs quality control procedures and testing including preventative maintenance on all equipment (i.e. Gamma cameras and radiation detectors, etc.), evaluates results, trouble shoots

## **Key and Periodic Activities**

- with vendor, calibrates if necessary, and documents or reports equipment failure as appropriate.
- Acts as the division's representative on committees and develops or provides input into policies, procedures, and guidelines.
- Provides in-services to staff within and outside the department regarding radiation protection and safety, fire safety issues, and the transportation of dangerous goods.
- Acts as a technical liaison for research studies (i.e. assesses new radiopharmaceuticals through clinical trials), and is the contact resource person for other departments and agencies.
- Reviews and evaluates existing contracts and renewals for supplies and equipment including new and existing radiopharmaceuticals contracts, makes recommendations for renewals of contracts, and the purchase of new equipment or supplies, and maintains billing and financial records.
- Reviews, analyses, and alters wait list of scheduled patient appointments and trouble shoots with patient schedules as appropriate.
- Acts as a preceptor for Nuclear Medicine students.
- Collaborates with external consultants in implementing new equipment and software.
- Reviews, maintains, records, and orders stock/supplies as needed.

# SKILL

### Knowledge

### General and Specific Knowledge:

- Nuclear Medicine equipment, techniques, and procedures.
- Patient care, including administering and processing tests.
- Human anatomy, physiology, and radiopharmacy.
- Current knowledge of trends, technology and developments within field.
- Nuclear Medicine and Diagnostic Imaging Computer technology.
- Procedure protocols and radiopharmaceuticals.
- Government standards and regulations including radiation safety standards.

### 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) Radiation Safety Officer training and certification.

### Years of Experience:

— Minimum: 5 years of experience.

### **Competencies:**

- Ability to perform patient and technical preparation and clinical procedures, evaluation, and analysis of data.
- Communication and computer skills (i.e. Spreadsheets, Database, Document Production).

- Ability to apply and follow Radiation Protection and Safety Protocols.
- Ability to use equipment, tools, and relevant technologies and perform mechanical calibration.
- Time Management.

#### **Interpersonal Skills**

- A range of interpersonal skills are used to: listen and provide routine and complex information; ask questions to obtain patient history; provide expert advice or counselling, direction, and guidance to health professionals and staff; care and comfort to patients during procedures; gain the cooperation of others to complete work; make formal presentations; deal with upset people; coach or mentor; and instruct, teach or train staff or students regarding nuclear medicine tests and procedures.
- Communications occur with: patients; manager; other healthcare providers; radiologists; students; suppliers; the public; professional advisors (i.e. radiologists, referring physicians, pharmacists); and from time to time with government representatives and sales representatives.

## EFFORT

### **Physical Effort**

- The demands of the job at times result in considerable fatigue requiring periods of rest.
- Regularly lifts, moves, repositions, pushes, and pulls objects (i.e. supplies, equipment, cameras, collimator carts, radioactive generator, lead containers/vests, stretchers, and patients), less than 10 lbs., between 10-50 lbs., and over 50 lbs.
- Regularly stands or walks when performing procedures or other activities in the department. 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 on screens, complete division reports, and use fine finger/precision movements to work on the computer, and when bending to give injections using fine motor skills.

#### Concentration

- Visual concentration is required when drawing up radiation into syringes, calculating and measuring dosages, dispensing radiopharmaceuticals, performing venipuncture and intravenous line insertions, giving injections, and positioning or observing patients during positions. Visual concentration is also required to assess and monitor patient's vital signs, examine detailed computer images, computer processing and data analysis of scans, and to read and/or interpret physician's orders.
- Auditory concentration is required to listen to patients/other healthcare providers/staff during testing/procedures, to listen to ensure equipment is working properly, to listen to managers and radiologists for feedback and direction, and to communicate via telephone with vendors and suppliers.
- Other sensory demands such as **touch** are required to perform venipuncture, IV line insertion, to give injections, feel for injuries, or to locate an injection site.
- Eye/hand coordination is required to perform procedures, position patients, give injections,

and perform venipuncture and computer analysis.

- The tasks that are repetitive and require alertness is batching of certain procedures, computer processing and data analysis, patient positioning, calculating radiation amounts, radiopharmaceutical dose preparation and administration, and observation of patients during procedures.
- A high level of attentiveness or alertness to ensure the health and safety of patients is required during procedures, some of whom may be in critical condition, when calculating radiopharmaceuticals, preparing for and performing procedures, and to ensure proper handling, storage, and disposal of isotopes.
- There is a **lack of control over work pace** due to emergency situations, delays with physicians' schedules as they are required to perform some procedures, and when isotopes are in short supply. There are **time pressures** and **deadlines** due to patients' schedules, and reliance on availability of supplies to coordinate scheduled appointments.
- As there is a supervision and leadership component to work tasks there are constant **interruptions** from staff and other healthcare providers for advice and guidance.
- **Exact results and precision** are required for both radiopharmaceutical dispensing and computer scanning and processing of exams.

## Complexity

- The tasks and activities are quite different, and require the use of a broad range of skills and a diversity of knowledge.
- Tasks tend to be repetitive, well defined, and problems can be addressed using guidelines and procedures. At times, there are diverse tasks or tasks are highly technical, unique, and require creative problem solving.
- Typical problems involve multi-tasking a variety of issues such as staffing, waitlist management, industry regulations (i.e. ensuring division/staff are in compliance with licensing and storage of radiopharmaceuticals), coordination of staff and procedures related to the supply of isotope availability, participation on various meetings/committees, and being available to provide advice and guidance to patients, their families, and staff, and education activities by ensuring staff are CNSC compliant with ongoing education requirements for the handling of radiopharmaceuticals.
- When addressing problems and solutions there are policies, procedures and guidelines to follow, can consult with other staff (i.e. manager, physicians, Pharmacists, etc.), or can review and follow CNSC Regulations and Radioisotope License conditions, Occupational Health and Safety standards, equipment manuals, or contacts suppliers for expertise.

# RESPONSIBILITY

# Accountability and Decision-Making

- Work tasks and activities are moderately prescribed and controlled.
- Without formal approval can independently make decisions related to scheduling staff, approving limited overtime and short term leave requests, scheduling patients, prioritizing types of procedures to be performed and patient studies, scheduling repairs and maintenance of equipment, purchasing and receiving supplies including pharmacy and radioactive products (i.e. kits, and saline) and update procedures manuals as appropriate.

- Approval is required for large purchases (i.e. new furniture and equipment), long-term leave or education requests, most overtime requirements, and education expenses and associated travel.
- There is some discretion to exercise within predetermined limits when scheduling patient procedures, and the priority of procedures being performed. There is some discretion and judgment to interpret directions and apply guidelines when making decisions regarding rescheduling patients who may not be prepped properly for exams.
- There is a high degree of discretion and judgment exercised when modifying procedures on critically ill patients in order to ensure their health and safety. When working alone or on call, professional judgment must be exercised within guidelines to deal with complications or irregularities.
- Work includes providing information to: the manager, physicians, and nursing staff regarding waitlist, procedures, availability of isotopes; patients regarding preparation of procedures, direction regarding positioning during procedures, and advice regarding any adverse effects of injections or scans; and to staff related to schedules, direction, and advice and guidance regarding policies, procedures, and procedures.

## Impact

- Impacts generally affect the immediate work area, the department, patients, and the public.
- Work activities impact resources such as: equipment through the performance of procedures; processes and systems as they must be followed properly to ensure safety of staff and patients; information as it must be accurate to ensure correct diagnosis; finances and human resources to ensure efficient use of resources; corporate image; and health and safety.
- Work could either negatively or positively impact the health and safety of patients when conducting procedures, the organization and department operations if supplies are not available, and staff as a result of the day-to-day activities. The most significant impact would be on patients, department, and the organization.
- The type of clinical errors that could occur are radioactive spills exposing staff, patients, and the public to radiation, incorrect injection of isotope into a patient leading to serious injury, or performing an incorrect procedure. Administrative errors such as incorrect scheduling of staff could result in longer wait times for patients or excessive cost to the organization.
- Errors are mitigated as the work tasks are moderately monitored and controlled and are generally detected within hours by the Nuclear Medicine staff. Clinical errors can also be detected by the radiologist who reviews final reports before submitting to the attending physician. Some administrative errors may take longer to detect.

# **Development and Leadership of Others**

- Typically responsible for direct and ongoing bargaining unit supervisory activities for a small size work group of employees (1 to 4 employees).
- Also provides development and leadership responsibilities such as on the job advice and guidance, orientation to new employees, on-the-job training and formal classroom type training on procedures/equipment, acts as a technical mentor or advisor for the division, and evaluates students.
- Has team lead or project lead responsibilities to ensure staff are trained on various equipment and procedures, in the day-to-day operation of the division, and research projects.

## **WORKING CONDITIONS**

#### **Environmental Working Conditions**

- Required to use safety equipment or to follow safety practices such as wearing lead vests/shields, gloves, gowns, goggles, x-ray shields, using sharp containers to discard used radioactive syringes, wearing dosimeters for measuring radiation exposure, and practicing ALARA (As Low As Reasonably Achievable) principals to reduce radiation.
- 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 with normal precautions being followed.
- Constantly exposed to radiation, lifting heavy machinery (i.e. cameras, lead pots/aprons, generators), and sharp objects (i.e. needles to give injections). Regularly is exposed to bodily fluids and waste, toxic or poisonous substances (i.e. radiopharmaceuticals), and glare from a computer or camera when processing scans. Occasionally is exposed to unusual/distracting noise, dirt/dust/, hazardous chemicals, infectious diseases, odours, wet/slippery surfaces, and awkward or confining workspaces.