**IDENTIFICATION**

| Department | Position Title | |
|---|---|---|
| Northwest Territories Health and Social Services | Senior Biomedical Engineering Technologist | |
| **Position Number** | **Community** | **Division/Region** |
| 48-15274 | Yellowknife | Stanton P3 & Facility Operations/Territorial Operations |

## PURPOSE OF THE POSITION

The Senior Biomedical Engineering Technologist position provides highly skilled and specialized health technology maintenance and repair services to the Northwest Territories Health and Social Services Authority's (NTHSSA), Hay River Health and Social Services Authority (HRHSSA), Tlicho Community Service Agency (TCSA), the Government of Nunavut's Kitikmeot, and Kivalliq Regions and other individually contracted governmental, non-governmental and private organizations. This position repairs and maintains highly specialized and life critical health technology to ensure the safe, timely and effective delivery of healthcare services.

## SCOPE

The Senior Biomedical Engineering Technologist (Senior BMET) is located in Yellowknife at the Stanton Territorial Hospital and reports to the Territorial Manager Biomedical Engineering (Territorial Manager). The Senior BMET is responsible to provide expert and specialized maintenance services to health technology devices for two (2) hospitals, six (6) in-patient health center facilities, thirty-five (35) health centers and over twenty (20) long term care facilities, clinics, health stations and other government clients in the Northwest Territories and Nunavut.

The Northwest Territories Health and Social Services Authority (NTHSSA) is the single provider of all health and social services in the Northwest Territories (NWT), with the exception of Hay River and Tlicho regions, covering 1.2 million square kilometers and serving approximately 43,000 people, including First Nations, Inuit, Metis, and non-indigenous peoples. Health and social services includes the full range of primary, secondary, and tertiary health services and social services including family services, protection services, care placements, mental health, addictions, and developmental activities, delivered by more than 1,600 health and social services staff.

While the Biomedical Engineering program and Senior BMET are located within the NTHSSA, the position is responsible to ensure Health Technology maintenance services are equally prioritized and provided to the HRHSSA and TCSA, as well as to the Government of Nunavut in Kivalliq and Kitikmeot Regions and other governmental and non-governmental contracted entities.

The position is seen as a specialized NWT health technology technical service expert and provides expert technical service advice on health technology to NTHSSA, HRHSSA, TCSA and contracted partners. Due to the territorial and inter-territorial role, this position will interact with Managers and on occasion Directors in health care and other government departments. The Senior BMET is responsible to communicate effectively in all aspects of health technology service and maintenance to meet their needs.

The position has a direct impact on the timely service, cost of service and continued availability of over 10,000 health technology assets with a capital replacement value of over $88,000,000. Many of these health technologies are mission and life critical to the delivery of health services and the service maintenance under this position's responsibility must be done at the highest level. This service can have a direct impact on the delivery of care, safety and comfort of patients and staff.

On an annual basis Senior BMETs are assigned lead responsibility over a specific specialized and complex technology area. Specifically, technologies in environments include but are not limited to: Anesthesia and Operating Room environments; diagnostic imaging technology; laboratory technology; respiratory technology; physiological monitoring systems; and dialysis technology. The designated lead Senior BMET will be expected to prioritize work and become a specialist on the technology in their designated area. Senior BMETs are expected to be or rapidly become proficient in at least two specialized areas and be able to provide first call and general support in all complex/high risk areas.

The broad scope of health technology being serviced under NTHSSA Biomedical Engineering's responsibility along with the overall size of geographic area supported and the non-standard health technology environment (i.e., extreme temperatures, humidity, power, etc.) combine together to create a unique service maintenance support model in the Canadian Healthcare system. Specifically, other jurisdictions in Canada only train BMETs to support single specialized areas and do not train BMETs to maintain multiple specialized areas (i.e., anesthesia and operating room environments; diagnostic imaging and laboratory environments; respiratory technology; physiological monitoring systems; and dialysis technology). Consequently, the level and scope of technical understanding required of this allied health care professional means there can be regularly limited available maintenance expertise and precedence to guide a Senior BMET when providing technical service support in a specialized technology modality.

The position is not on call but can be called back to support life and mission critical health technology needs in the NWT.

The position has day to day supervisory responsibility for any funded and assigned Assistant BMETs and Intern BMET positions. The position will provide day-to-day mentoring and expert advice to BMET positions. The position will provide specialized knowledge and support to any funded Health Technology Management Officer and Practicum Health Technology Management Officer positions (i.e., specifically when they are assigned projects with technical maintenance elements).

**RESPONSIBILITIES**

1. **Incoming Inspection, Inventory and Retirement.**
   - Responsible for ensuring the incoming inspection of new health technology introduced in the NWT.
     - Ability to perform incoming inspections on all general health technologies and all specialized health technologies for which they are assigned lead.
     - Responsible to ensure any incoming inspections provided by service vendors are verified and documented.
     - Accountable and responsible to ensure all information from incoming inspections is entered in the Health Technology database.
   - Responsible to train/mentor other BMET staff on the incoming inspection of all new Biomedical Engineering supported technologies.
   - Responsible to inventory and assess health technology periodically and update the health technology database appropriately.
   - Responsible to ensure health technology being removed from service is retired in a safe and correct fashion.

2. **Preventative Maintenance**
   - Responsible to assess and build preventive maintenance procedures for new health technology and, where necessary, customize those procedures to the NWT environment.
   - Responsible to ensure all assigned preventive maintenance work orders are performed within defined metrics.
   - Responsible and able to perform preventive maintenance on all general health technology and on all specialized health technology assigned as lead.
   - As required, responsible to train/mentor other BMET staff on assigned preventive maintenance for which they are not familiar.
   - Accountable and responsible to lead, supervise, train, and assign preventive maintenance work to Intern and Assistant BMETs.

- Accountable and responsible to ensure specialized health technology's test equipment is validated and/or calibrated annually for all specialized health technology assigned as lead.
- Accountable to ensure all preventive maintenance and resulting service repairs are documented in the health technology database.

**3. General Maintenance and Emergency Repairs**

- Responsible for ensuring assigned general maintenance and emergency repair work is performed as per defined metrics as well as clinical priorities and needs.
- Responsible and accountable to lead the technical coordination, assignment and reprioritization of day-to-day general maintenance and emergency repair work on assigned specialized health technologies.
- Must provide expert support on complex maintenance issues, where other BMETs need assistance.
- Responsible and accountable for ensuring all clinical staff, clinical leadership, and Territorial Manager are made aware of any delayed general maintenance and emergency repairs on assigned mission critical and life critical technologies.
  - Responsible to provide and advise on alternative technical options to clinical managers and Territorial Manager to optimize continuation of clinical services.
- Accountable and responsible to ensure the restocking of repair part inventories when noted and for all assigned specialized health technologies.
  - Responsible for advising the Chief BMET where service parts are delayed and advise on the impact on both general maintenance and repairs.
- Accountable and responsible to ensure all Intern and assistant BMET staff under their supervision follow proper standard infection control procedures and NTHSSA site specific procedures when entering sterile or special environments to provide general maintenance support and emergency repairs.
- Accountable and responsible to ensure all general maintenance and emergency repairs are documented in the health technology database.

**4. Community Health Technology Service Duty Travel**

- Accountable and responsible to coordinate all duty travel with Chief BMET and other Biomedical Engineering team members to maximize service provision and minimize travel costs.
  - Note: there are over 40 separate scheduled community trips shared between the Biomedical Engineering team annually based on the scope of services provided by Biomedical Engineering, these trips can range from one day to two weeks in duration.
- Ability to perform all duty travel responsibilities and, when required, be responsible to train/mentor BMET, Intern BMET and assistant BMET staff on duty travel expectations and responsibilities.

  - Note: Community Travel Service Trips include incoming inspection, inventory and assessment, preventive maintenance, general maintenance, emergency repairs, and retirement of health technology.
- Accountable to ensure all duty travel and resulting service work is documented in the health technology database.
  - Accountable and responsible to ensure all billable duty travel work is invoiced in a timely fashion.

**5. Day to Day Supervision Assistant BMET and/or Intern BMET Resources**

- Responsible to support the Chief BMET in the recruitment of all approved and funded BMET, Assistant BMET and Intern BMET positions.
- Accountable and responsible for day to day supervision, guidance, and mentorship of Assistant BMET and Intern BMET positions.
- Responsible to support the Chief BMET in providing ongoing staff development feedback and in complete Assistant BMET and Intern BMET staff annual performance reviews.

**6. Additional Responsibilities**

- If required, be capable of instructing users on proper operational procedures of medical devices for the safety of patients and staff.
- When requested, provide technical expertise to NTHSSA and DHSS committees and working groups on health technologies.
- When assigned, support DHSS Infrastructure Planning Division's Health Technology Planning team on any Health Technology Planning necessary to ensure ongoing evergreening of health technology.
  - Note: this can include being reassigned to perform all Health Technology Planner roles at the request of the Territorial Manager.
- When assigned, support the NTHSSA Health Technology Management Officer and Practicum Health Technology Management Officer on their projects.
- When requested, support Chief BMETs in the recruitment of BMET positions.
  - When requested, support the Chief BMET in the annual performance review of BMET staff.
- Responsible to provide technical expertise on health technology incident investigations.
- Provide health technology technical support during hospital emergency codes and system wide disasters and provide technical leadership in assigned specialized areas.
- Perform other duties as assigned by Territorial Manager or Director of Informatics and Health Technology for the purposes of ensuring the smooth and efficient operation of the NTHSSA's, HRHSSA and TCSAs health technologies.
- Responsible to act as Chief Biomedical Engineering Technologist or Territorial Manager role when requested.

## WORKING CONDITIONS

### Physical Demands

There are frequent times when heavy lifting or substantial movement is required.

### Environmental Conditions

This position works on technology with standard device safety interlocks overridden and shields removed for the purposes of servicing and consequently is exposed to substantial biological, electrical, chemical, mechanical, thermal and/or radiation hazards.

### Sensory Demands

Operational condition checks, repairs, and maintenance services of complex biomedical equipment and systems require high levels of attention.

### Mental Demands

Travel to northern communities to provide health technology service is required.

## KNOWLEDGE, SKILLS, AND ABILITIES

- Interpersonal training, collaboration, and communication skills, including mentoring skills, building and maintaining service support relationships, and ability to manage conflict.
- Writing and oral presentation skills.
- Leadership skills to coordinate health technology vendors and contractors.
- Financial analysis skills to minimize repair costs.
- Ability to work in life critical patient situations and provide steady support and solutions to manage and resolve technology challenges.
- Knowledge on the operation and support of health technology used in hospitals, health centers, clinics, and long-term care facilities.
- Research skills to ensure an adequate understanding of the technical and client issues that are routinely experienced.
- Ability to operate information technology and information systems applications to a high degree both for service purposes and overall health technology management purposes.
- Knowledge of human physiology in order to clearly understand the operation of medical technology and its interaction with human anatomy.
- Knowledge of health facility infrastructure and systems (e.g., medical gas, medical electrical distribution systems, etc.) to understand, trouble shoot and correct facility interfacing health technology management problems.
- Project management skills to ensure the coordination of new/replacement health technology installs.

- Ability to acquire additional specialized technical service certification the factory service training and/or self-directed education.
- Skills in health technology incident investigation and risk management.
- Ability to work under pressure with compressed deadlines and multiple deliverables.
- Aware of the geographical and cultural diversity of the Northwest Territories.
- Ability to commit to actively upholding and consistently practicing personal diversity, inclusion, and cultural awareness, as well as safety and sensitivity approaches in the workplace.

**Typically, the above qualifications would be attained by:**
A Biomedical, Electronics, Instrumentation or Mechanical Technology Diploma and three years of relevant experience in an area of complex health technology.

Equivalent combinations of education and experience will be considered.

## ADDITIONAL REQUIREMENTS

Must maintain a valid class 5 driver's license.

For Mechanical Electronics or Instrumentation Technology Diploma graduates: a Certified Biomedical Engineering Technologist (CBET) certification will be required or demonstrated ability to qualify for it within 1 year.

**Position Security** (check one)

☐ No criminal records check required
☒ Position of Trust – criminal records check required
☐ Highly sensitive position – requires verification of identity and a criminal records check

**French language** (check one if applicable)

☐ French required (must identify required level below)
Level required for this Designated Position is:
ORAL EXPRESSION AND COMPREHENSION
Basic (B) ☐ Intermediate (I) ☐ Advanced (A) ☐
READING COMPREHENSION:
Basic (B) ☐ Intermediate (I) ☐ Advanced (A) ☐
WRITING SKILLS:
Basic (B) ☐ Intermediate (I) ☐ Advanced (A) ☐
☐ French preferred

**Indigenous language:** Select language

☐ Required
☐ Preferred