



IDENTIFICATION

Department	Position Title	
Northwest Territories Health and Social Services Authority	Biomedical Engineering Technologist	
Position Number	Community	Division/Region
17-15274	Yellowknife	Informatics and Health Technology/HQ

PURPOSE OF THE POSITION

The Biomedical Engineering Technologist will ensure that all biomedical assets are maintained and operated in a safe and optimal condition for the safe and accurate application and interpretation of patient care. This position repairs and maintains all Northwest Territories Health and Social Services Authority (NTHSSA) and other contracted health entities' biomedical assets, which include diagnostic, lifesaving/sustaining and therapeutic electronic patient care equipment. This position provides client support to meet operational needs such as user guidance, medical alerts, equipment management and emergency responses. This position works in accordance with standards and processes established by the Authority, Canadian Standards Association, ECRI, manufacturers, Health Canada Accreditation, as well as with self-imposed standards of practice based on national Biomedical Engineering association's recommendations.

SCOPE

Stanton Territorial Hospital (STH), an accredited facility, located in Yellowknife, Northwest Territories (NWT), provides health care services to adults and children on an inpatient/outpatient and outreach bases in order to restore health with dignity. Stanton recognizes the health hazards associated with tobacco in the workplace, both to smokers and non-smokers alike. Therefore, Stanton maintains a tobacco free environment within the building and throughout the property.

Located in Yellowknife at STH, and reporting to the Manager, Territorial Biomedical Engineer, the Biomedical Engineering Technologist (BMET) provides primary support on 2500+ biomedical patient care devices for three (3) hospitals and 26 health centers in the NWT and Nunavut Services including;

- performing equipment preventative maintenance, repairs, incoming inspections and retirement,
- responding to Hospital emergency response codes,
- providing support and guidance for capital equipment selection and replacement, and
- providing operational support for client operations.

Within the scope of services this position has authority to determine the most effective means to achieve approved end results to meet the clients' needs within predetermined budgets, standards, and processes. The overall value of the assets within this scope of services is approximately \$15,000,000.00. This position is directly responsible and accountable for maintaining patient care biomedical equipment in a safe and optimal condition, which has direct impact on the safety and comfort of patients, staff and visitors. Biomedical equipment that is not maintained in a safe condition, or presents inaccurate patient data, can be life threatening.

This position is required to provide the full scope of responsibilities on medical equipment such as, but not limited to dialysis, anesthesia, ventilation, defibrillation, infant warming, physiotherapy, infusion technology, physiological and vital signs monitoring, electrosurgical technology, single phase x-ray, small scale steam sterilizers, small scale lab analyzers and general minor medical (i.e. thermometers, pulse oximetry, oto/ophthalmoscopes, aspirators, laryngoscopes). This position is required to do first-call and inspection services on equipment such as, but not limited to, endoscopy systems, laparoscopy systems, audiology and ultrasound. Due to the nature of biomedical devices and their application this position is expected to work in urgent situations on a frequent basis.

Due to the complex and specific nature of several devices additional certified training is often required. Travel for some of this training occurs at manufacturer's training facilities located throughout Canada and out-of-country.

RESPONSIBILITIES

1. Ensures the proper operation of all biomedical devices by understanding a medical device's expected end results and through system condition checks and parameter calibration.

- Instructs users on proper operational procedures for the safety of patients and staff, and ensures accuracy of biomedical device applications.
- Operations include a coordination role on services that require a coordinated response from both internal and external service providers. This includes the planning and coordination of the regional service travel along with coordinating all non-scheduled services such as equipment repairs.
- Commits to substantial and continuous learning requirements. This position coordinates the distribution of information and corrective actions pertaining to all medical alerts, which identify unsafe conditions and recommended corrective actions for biomedical devices.

- 2. Coordinates and performs all repairs on biomedical devices to ensure an effective and quick return to operational status for all repairs on biomedical devices.**
 - Evaluates failures, determines cause, and coordinates resources for corrective actions.
 - Confirms biomedical equipment functionality prior to returning to service.
 - Documents all general maintenance services in the NTHSSA Health Technology Management database brought to Biomedical Engineering for service
 - The complexity and scope of technologies and devices that this position must work on requires skill development on a continual basis.
- 3. Coordinates and performs the Preventive Maintenance services on biomedical assets to ensure effective operation and longevity of the NTHSSA on contracted health entities biomedical assets.**
 - Performs preventive maintenance services on complex electronic and mechanical biomedical patient care devices and systems through scheduled tasks and service standards.
 - Ensures familiarity of the operation and service requirements of each separate device.
 - Modifies, adapts and adds to preventive maintenance procedures to meet unique environments.
- 4. Provides incoming Inspections/Retirements Services on biomedical equipment assets.**
 - Prior to any biomedical device being used for patient care it must undergo several condition checks and acceptance tests.
 - Performs electrical leakage checks and confirmation that the device is operating within acceptable parameters.
 - Ensures that equipment being removed from service is safely disabled and positioned for disposal.
 - Ensures the inventory database up to date with and changes in the inventory.
- 5. Provides guidance and advice for the selection and purchase of new biomedical devices as well as the replacement of existing biomedical devices.**
 - Identifies all service requirements for new devices along with any specialized training requirements.
 - Ensures the device is inspected and approved for patient use once it is received along with organizing all the required operational and service documentation.
- 6. Provides Emergency Health Technology Service Response.**
 - Responds to emergency healthcare technology service events such as missing patient, missing infant and mass casualty situations.
 - Supports clinical professionals in managing the risk to patient and themselves while resolving technical service issues.
- 7. Process Supports**
 - Coordinate and use several supporting processes for the effective provision of biomedical services such as purchasing, billing, inventory control, staff development, scheduling, contract management, interdepartmental communications and equipment

databases along with the development and implementation of departmental goals and objectives. These processes are critical supports for the effective delivery of biomedical services and require constant quality management improvements.

8. Community Travel

- Perform scheduled preventative maintenance work, incoming inspections and repairs in NWT and Nunavut communities.
- There are over 30 scheduled trips annually ranging from one (1) day to two (2) weeks in duration. Emergency repair and off-cycle incoming inspection travel is done on an as and when basis. Each of the four (4) technologists is responsible for traveling for a quarter of the travel.

WORKING CONDITIONS

Physical Demands

There are frequent times when heavy lifting is required. The Hospital's physical size requires a substantial amount of movement on a frequent basis.

Environmental Conditions

This position is exposed to substantial electrical, chemical, mechanical, thermal and biomedical hazards on a frequent basis.

Sensory Demands

This position routinely works with very complex biomedical equipment and systems. Operational condition checks, repairs, and maintenance services require concentrated levels of attention in order to discern conditional discrepancies, and safely conduct corrective actions.

Mental Demands

This position plays the primary coordinating role in maintaining biomedical device operations; the responsibility and accountability for technology that affects critical situations involving patient life contributes to mental demands.

Incumbent is required to travel approximately 4 weeks per year using various modes of travel including small aircraft.

KNOWLEDGE, SKILLS AND ABILITIES

- Knowledge and skills with a range of health technology platforms.
- Knowledge relating to human physiology and the interaction of technology with the delivery of care.
- Information seeking skills to ensure an adequate understanding of the technical and client issues that are routinely experienced so that effective actions can be carried out.

- Ability to understand very complex technical issues by breaking them apart into smaller pieces, or tracing the situation in a step-by-step manner to ensure that proper corrective actions occur with an understanding of the impacts on the biomedical equipment, and clients.
- Skilled in the application of maintenance processes, specialized tools, software and materials.
- Ability to self-train and develop the skills to respond to new, developing and changing technology, systems, equipment, and emergency responses.
- Organization, logistics, planning and time management skills to manage the diverse workload and travel requirements.
- Ability to work within a service oriented department in order to focus effort on discovering and meeting client's needs, and to match supports for the client needs to the services and resources available.
- Communication skills and the ability to accurately listen, understand and respond appropriately and effectively with individuals and groups.
- Skilled in the use of computers, software, diagnostic equipment, and hand/ power tools,
- Skilled in the application of maintenance materials and maintenance processes to effectively carry out technical repairs and services on complex electronic, electrical, and mechanical biomedical devices and systems.
- Ability to acquire knowledge of the environmental facility systems such as medical gas and electrical distribution systems in order to understand and correct problems effectively.
- Ability to multi task and work accurately within deadlines.
- Knowledge of productivity software programs including Microsoft Office Word, Excel, Outlook, and Publisher.
- Ability to be sensitive to the geographical and cultural diversity of the Northwest Territories.
- Ability to acquire knowledge and the skills to ensure patient confidentiality requirements in healthcare environments.
- Ability to maintain a high degree of tact, discretion, and diplomacy in a fast paced, changing environment.

Typically, the above qualifications would be attained by:

A two (2) year Biomedical Technology program through a recognized technical institute, supplemented with a minimum two (2) years of experience in an acute care hospital/or successful completion of one (1) year of supervised Northwest Territories biomedical experience.

ADDITIONAL REQUIREMENTS

Position Security

- ☐ 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