IDENTIFICATION

Department	Position Title	
Health and Social Services	Data Systems Developer and Analyst	
Position Number	**Community**	**Division/Region**
49-5817	Yellowknife	Epidemiology and Surveillance / HQ

PURPOSE OF THE POSITION

The Data Systems Developer and Analyst is responsible for supporting data systems and data analytics of the Epidemiology and Surveillance Unit to provide accurate, timely and useable public health information to the Office of the Chief Public Health Officer (CPHO) and Federal/Provincial/Territorial (FPT) stakeholders, such as the Public Health Agency of Canada. The position has primary responsibilities for (1) supporting data systems and processes needed to perform public health surveillance; and (2) data management, validation, quality assurance, and preparation for epidemiological analysis and reporting related to public health data and information found in registries, repositories, and information systems, including those defined under the Northwest Territories (NWT) *Public Health Act*. The position supports analysis, reporting and surveillance functions within the Epidemiology and Surveillance Unit that, in turn, provide evidence to clinical and program decision-makers to reduce the burden of mortality and morbidity in the population, and improve the effectiveness and efficiency of health programs.

SCOPE

The Data Systems Developer and Analyst within the Population Health Division provides support to the Epidemiology and Surveillance Unit involved in the analysis and reporting of public health data to decision makers for evidence-based program and services for NWT residents. The position reports to the Territorial Epidemiologist and is located in Yellowknife. The position is appointed a Public Health Officer under the NWT *Public Health Ac*t and has a statutory duty to enforce this *Act* and accompanying regulations as delegated by the CPHO.

The Data Systems Developer supports the Epidemiology and Surveillance Unit by analysing health data systems and available health data sets to develop and implement technical solutions to optimize utilization of health data for epidemiological surveillance, analysis and reporting. A high level of concentration and attention is essential, as work must be of the utmost level of accuracy.

The position works closely with the Epidemiology and Surveillance Unit staff, public health data management and analytics specialists, communicable disease control specialists, as well as information systems specialists on the collection, validation, data entry and analysis of health/disease data. The position also develops and sustains working relationships with the Department's vital statistics specialists, Health and Social Services (HSS) Authority staff, the Government of the Northwest Territories (GNWT) Bureau of Statistics and the Information and Health Technology division, as well as linkages or reporting relationships with national health institutions with a mandate in information data repositories such as Health Canada, Public Health Agency of Canada, Statistics Canada and Canadian Institute for Health Information.

RESPONSIBILITIES

1. **Develop, implement, and maintain tools and systems to support epidemiology and surveillance activities and analysis.**
   - Work with members of the epidemiology and surveillance team to define data tools, systems, or hardware needs to support surveillance and reporting activities.
   - Use development tools to write and test code to support identified unit technical needs.
   - Write supporting technical documentation and standard operating procedures for developed programs and processes and provide relevant training to epidemiology staff as needed.
   - Review data flows within the unit to ensure they are operating and provide any maintenance and adjustments.
   - Analyze information to determine, recommend, and contribute to plans for installation of a new systems or modification of an existing system.
   - Fault finding, diagnosing, and bug fixing with existing and new software.
   - Consult with stakeholders or other departments on project status, proposals, or technical issues, such as software system design or maintenance.
   - Confer with technical departments and experts to obtain information on limitations or capabilities for data processing projects.

2. **Strategically design, develop, test, and implement public health reporting solutions to support the business needs of population health surveillance.**
   - Develop, implement, and automate business and reporting solutions for epidemiology and ensure their design, planning, and implementation needs are being met while ensuring consistency of output.
   - Ensure data reports, visualizations, and/or interactive reports meet established standards.
   - Maintain overall understanding of NWT-wide information systems, data repositories and registries, their relationships to each other and associated protocols to provide data quality management, validation, reporting, quality improvements, and training support.

- Troubleshoot technical reporting issues and provide solutions, and recommendations for improvements.
- Aid in compiling data during identified outbreaks of disease to ensure access to accurate data for outbreak reporting in a timely manner.

3. **Lead data information collection and preparation for analytic efforts by integrating and consolidating data sources ensuring data quality and accuracy.**
   - Utilize data analytical skills and their knowledge of NWT health care data to support the analyses of administrative and clinical data.
   - Manage and organize various data inputs to the Epidemiology Unit including reportable and notifiable diseases, tests, immunizations, and other data from a variety of data sources and systems.
   - Determine appropriate data collection, storage, and management practice improvements that can enhance data usage and support surveillance requirements.
   - Leads process improvements and recommends system changes to enhance overall quality of the data.
   - Review and clean data sets as needed in preparation for analysis.
   - Provide guidance and review of data collection methods and analysis.
   - Lead routine data refresh and update activities.
   - Review the development and/or delivery of tools for electronic data collection.
   - Ensure epidemiology users are trained and supported in the epidemiology data environment.

4. **Map and document current operational and administrative requirements for population health surveillance data and reporting functions.**
   - Develop, coordinate, and implement relationships with working groups and /or subject matter experts within the HSS system and inter-agency as appropriate to properly map and document business processes.
   - Map data and reporting processes, identify procedural, efficiency and accuracy issues, with privacy impact assessments and make recommendations for improvement in a clear and easily communicated format.
   - Document and maintain data quality assurance and auditing practices that meet territorial, national, and international standards.
   - Create system concept maps and data flow diagrams.

5. **Support and recommend data and system improvements to support epidemiology processes and creation of quality reports and other epidemiology products.**
   - Provide business continuity support by training other staff for coverage of information system, registries, and repositories maintenance and reporting functions.
   - Ensure coverage of services during staff absences.
   - Stay current on changes to data collection and management requirements.

- Liaise with information technology and systems staff to provide user feedback on performance of systems and software, and processes.
- Participate in initiatives for improvements to data capture, quality assurance and public health programming, including but not limited to forms, software and technical requirements of information systems.

6. **Employees for the DHSS and Authority are committed to creating and maintaining a safe and respectful workplace for employees, patients and clients. Building a safe and respectful workplace is everyone's responsibility.**
   - All employees have a professional and personal responsibility to perform their duties to health and safety regulations, standards, practices and procedures.
   - All stakeholders need to ensure our Workplace Health and Safety Committee works effectively, with a shared purpose of continuous quality improvement in H&S.
   - All managers play an active role in workplace health and safety through their daily management: identifying prevention opportunities, ensuring staff are trained in Risk Monitor Pro or other incident reporting systems, investigating potential risk and accidents, and applying timely corrective measures.

WORKING CONDITIONS

Physical Demands

No unusual demands.

Environmental Conditions

No unusual conditions.

Sensory Demands

No unusual demands.

Mental Demands

No unusual demands.

KNOWLEDGE, SKILLS AND ABILITIES

- Knowledge of health information systems, databases, and data processing.
- Knowledge of and/or the ability to acquire and apply knowledge of northern health care systems and structure and Indigenous cultures as they relate to HSS issues.
- Knowledge and ability to use several computer systems and programs to investigate and resolve data integrity issues.

- Knowledge of the *Public Health Act* and regulations, and other relevant legislation related to health informatics and health data access and privacy, including the *Health Information Act.*
- Skills relating to using scripting languages for data analytics and statistical analysis (Python, R, SAS, SQL or other programming-based platforms)
- Knowledge and ability to use software version control (e.g. Git)
- Critical thinking and problem-solving skills
- Organization and time management skills with the ability to work within tight deadlines
- Data visualization skills with a variety of applications (MS Office, Power BI, R, Python)
- Skilled in the integration of health information systems where linkages occur with patient information and the public health continuum of care (i.e., medical terminology, International Classification of Diseases, cancer registries, congenital anomalies, communicable and non-communicable diseases, and conditions).
- Analytical thinking skills to discover discrepancies; problem solving skills and judgment to solve problems that everyday users cannot solve on their own.
- Negotiating skills to ensure any changes to business processes are acceptable across NWT.
- Skills in problem solving related to business process issues that create data integrity issues.
- Communication and presentation skills and the ability to work with stakeholders at all levels of the health care system.
- Organizational skills and the ability to work independently.
- Ability to interpret and communicate data findings with strong verbal and written visual communication skills
- Ability to apply knowledge relating to the complexity and interdependencies of the source systems and the business processes regarding data collection.
- Ability to analyze reports to interpret data quality issues.
- Ability to work with highly confidential material and maintain confidentiality with a medical ethics lens.
- 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 degree in a health-related field or in an information management discipline and three (3) years of progressive experience working in data development and quality improvement.

Equivalent combinations of education and experience will be considered.

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