

Public (when completed)

Common Government

[Guide](#) [Benchmarks](#) [Competencies](#) [?](#)

## Update

 Ministry  


### Describe: Basic Job Details

#### Position

 Position ID  Position Name (30 characters)  


 Current Class  


 Job Focus  [?](#) Supervisory Level  


 Agency (ministry) code  [?](#) Cost Centre  [?](#) Program Code: (enter if required)  [?](#)

#### Employee

 Employee Name (or Vacant)  


#### Organizational Structure

 Division, Branch/Unit  
  Current organizational chart attached?

 Supervisor's Position ID  Supervisor's Position Name (30 characters)  Supervisor's Current Class  


### Design: Identify Job Duties and Value

#### Job Purpose and Organizational Context [?](#)

Why the job exists:

Under the general direction of the Manager, Epidemiology, the Health Data Scientist serves as a strategic health analytics expert who transforms complex health data into actionable intelligence to inform policy, planning, and decision-making for Primary and Preventive Health Services (PPHS) and the broader Government of Alberta. Leveraging advanced analytic methodologies, deep experience with large and complex datasets, and strong expertise in population health and health system operations, the Health Data Scientist enables evidence-based improvements across the health system.

The role advances the effective use of health data by generating insights that inform system assessment, identify gaps and opportunities for improvement, forecast future health system demands, and strengthen analytics infrastructure and capacity across the branch. Through leadership, mentorship, and clear communication of analytical findings, the Health Data Scientist ensures high-quality, standardized, and decision-focused analytics that support sustainable and equitable health system outcomes.

In this capacity, the Health Data Scientist:

- Applies advanced analytical methods** to generate meaningful insights into health system use, performance, and gaps; identify priorities for targeted system improvement; and predict future health system needs to support proactive policy and planning decisions.

2. **Strengthens data management and analytics infrastructure** by supporting data governance, standardization, and best practices, enabling consistent, reliable, and scalable analytics across the branch.
3. **Produces and disseminates high-quality analytical products** that translate complex data into clear, timely, and decision-relevant insights tailored to the needs of diverse end users, including senior leadership and policy stakeholders.
4. **Provides health data science leadership** through mentorship, guidance, and collaboration with junior staff and stakeholders, building analytic capacity, advancing data literacy, and promoting effective use of health data across PPHS and partner organizations.

## Responsibilities

Job outcomes (4-6 core results), and for each outcome, 4-6 corresponding activities:

### Applies Advanced Analytical Methods

Within a complex and interconnected health system context including health system inputs, population health status and preferences (demand), health care delivery, and health system outcomes, the Health Data Scientist applies advanced analytical and data science methods to generate deep, system-level insights. Activities include:

**1.1 Advanced exploratory and inferential analysis.** Applies advanced analytical techniques to move beyond basic indicators, examining underlying drivers, interactions, and causal pathways across multiple variables, populations, and system components to better understand complex health system dynamics.

**1.2 Data preparation and feature engineering.** Identifies, acquires, integrates, and prepares relevant data for analytical use, including data cleaning, transformation, linkage, and feature engineering, ensuring analytic datasets are accurate, fit-for-purpose, and aligned with analytical objectives.

**1.3 System monitoring and pattern detection.** Uses a range of analytical tools and approaches to monitor the health system over time, detecting patterns, trends, anomalies, and emerging issues related to service utilization, access, equity, outcomes, and system performance.

**1.4 Statistical modeling and data science methods.** Conducts advanced statistical analyses and data science applications, including machine learning and predictive modeling, working with structured and unstructured datasets to support forecasting, segmentation, risk identification, and decision support.

**1.5 Research design and analytical innovation.** Applies current data science methods and tools to design, plan, and conduct applied research using health data, ensuring methodological rigor, reproducibility, and alignment with policy, planning, and system improvement priorities.

### Strengthens Data Management and Analytics Infrastructure

The Health Data Scientist strengthens the foundation that enables reliable, scalable, and high quality analytics across the branch and ministry by contributing to data governance, standards, and analytics enablement. Activities include:

**2.1 Analytics methods documentation and knowledge sharing.** Prepares internal reports, presentations, and guidance related to health analytics and data science methods, supporting shared understanding of analytical approaches, assumptions, and limitations.

**2.2 Data standards and best practices.** Defines, promotes, and implements best practices for data management, analysis, documentation, version control, and reporting to improve consistency, transparency, and reproducibility of analytics outputs.

**2.3 Data quality assessment and curation.** Analyzes administrative health datasets, survey data, and other data sources to assess data quality, completeness, and informational value; cleans, curates, and maintains high-value datasets (e.g., curated analytic files, disease registries) to support broader and repeatable analytics use.

## Produces and Disseminates High Quality Analytical Products

The Health Data Scientist translates complex analyses into clear, timely, and decision-ready products that support evidence based policy and operational decision making. Activities include:

**3.1 Dashboard and performance reporting development.** Designs and develops reporting dashboards and analytical products that track key health system indicators, monitor performance, and surface actionable insights for diverse end users.

**3.2 Advanced data visualization.** Applies best practices in data visualization to clearly communicate patterns, results, uncertainty, and key messages, ensuring accessibility and interpretability for technical and non-technical audiences.

**3.3 Knowledge translation and storytelling.** Explains analytical results, methods, and implications in clear and straightforward language, translating technical findings into policy- and business-relevant insights aligned with audience needs.

**3.4 Analytics and reporting automation.** Develops and maintains automated analytics and reporting processes to improve timeliness, efficiency, consistency, and scalability of recurring analytical outputs.

**3.5 Cross functional collaboration.** Coordinates and collaborates with multidisciplinary teams (e.g., policy, operations, IT, design, and product teams) to co develop analytical products that are user-centred, operationally relevant, and aligned with organizational priorities.

## Provides Health Data Science Leadership

The Health Data Scientist provides leadership that advances analytical maturity, builds capacity, and strengthens evidence based decision making across PPHS and partner organizations. Activities include:

**4.1 Analytical leadership and strategic direction.** Sets analytical direction by identifying priority questions, appropriate methods, and standards of evidence, creating clarity and alignment for analytical work across teams.

**4.2 Standards, reproducibility, and operational support.** Plays a leadership role on operational support teams by developing and promoting standards for reproducible workflows, code practices, documentation, and quality assurance.

**4.3 Subject matter expertise and advisory support.** Acts as an expert health data science resource for other branches, ministries, and external stakeholders, providing technical guidance, methodological advice, and thought leadership on the use of health data and analytics.

**4.4 Coaching and mentorship.** Coaches and mentors junior staff and analysts, building individual capability, strengthening analytical skills, and fostering a culture of continuous learning and high-quality analytics.

## Problem Solving

Typical problems solved:

The Health Data Scientist is routinely required to address novel, complex, and high-impact problems for which no established solutions exist. These problems are often time-sensitive, politically and socially sensitive, and system-wide in nature, such as those related to the COVID-19 pandemic. Addressing these challenges requires advanced analytical judgment, creativity, and the ability to operate effectively amidst ambiguity, incomplete data, and competing priorities. In this context, the Health Data Scientist:

**1. Problem decomposition and framing.** Analyzes complex and ill-defined problems to clearly frame the analytical question and decompose the issue into meaningful and manageable sub-problems, ensuring alignment with policy, operational, and system-level objectives.

2. **Analytical prioritization and sequencing.** Determines the optimal set, scope, and sequencing of sub-problems to be addressed, balancing analytical value, feasibility, timeliness, and decision making needs to effectively solve the overall problem.
3. **Methodological selection and innovation.** Selects, adapts, and applies appropriate, established, and innovative analytical methods to address each sub-problem, exercising professional judgment where optimal approaches are not obvious and where methodological trade-offs must be considered.
4. **Data sourcing and adaptation.** Identifies, accesses, and integrates relevant data resources to address the problem, often working with data that are incomplete, fragmented, or not originally designed for the intended analytical purpose, and developing creative solutions to data limitations.
5. **Collaboration and expertise mobilization.** Determines how to effectively leverage internal and external expertise, coordinating with subject matter experts, analysts, and partners who may have competing mandates, priorities, or perspectives to advance the analytical solution.
6. **Integration and synthesis of findings.** Integrates results from multiple analytical streams into a coherent and defensible solution that addresses the original problem and acknowledges uncertainty, limitations, and potential implications.
7. **Critical evaluation and validation.** Critically evaluates whether the integrated solution adequately addresses the problem, including assessing assumptions, robustness, limitations, unintended consequences, and relevance to policy and operational decision making.
8. **Executive-level communication and influence.** Communicates findings, recommendations, and implications clearly and effectively to Government of Alberta colleagues and executive leadership, translating complex analysis into actionable insights that support informed, evidence\_based decisions.

Types of guidance available for problem solving:

The Manager, Epidemiology, and branch colleagues are available for general guidance but the Health Data Scientist is largely responsible for problem solving.

Direct or indirect impacts of decisions:

The analytic outputs created by this position inform broader health system recommendations. The position provides highly technical and senior-level support for the purpose of improving outcomes and effectiveness and ensuring a high-quality health system.

## Key Relationships

Major stakeholders and purpose of interactions:

### Internal

- Branch staff (ongoing) - provide expertise and guidance; information sharing; collaboration
- Branch Managers and Directors (weekly) - collaborate, provide expertise and recommendations
- Staff across Ministry (varies) - provide expertise, share information, influence and support cross-department analytics initiatives
- CMOH, ADMO, DMO, MO, PO (as required) - respond to queries for advice/information

### External

- Health service delivery agencies or organizations (e.g. Acute Care Alberta, Health Shared Services, AHS) (daily) - lead, collaborate, provide expertise and recommendations
- GOA Departments (weekly) - lead, collaborate, consult, provide expertise, share information, influence and support cross-ministry analytics initiatives
- Universities/research bodies, including Alberta Innovates (weekly to monthly) - lead, collaborate, consult, share

information and expertise

- Federal/Provincial/Territorial counterparts (weekly to monthly) - lead, collaborate, consult, share information and expertise, influence, synthesize ideas and knowledge
- Non-governmental organizations - (monthly or as required) - lead, collaborate, consult, share information and expertise
- Public (monthly) - inform and consult

## Required Education, Experience and Technical Competencies

Education Level	Focus/Major	2nd Major/Minor if applicable	Designation
Bachelor's Degree (4 year)	Science		

If other, specify:

Data Science, Epidemiology, Mathematics, Biostatistics, Economics, Statistics, Social Science

Job-specific experience, technical competencies, certification and/or training:

### Education and Experience

- Minimum of two (2) years of directly related experience.
- Post-secondary degree in public health, epidemiology, social sciences, economics, statistics, or a related field; equivalent combinations of education and experience may be considered.

### Technical and Analytical Expertise

- Expert understanding of data science principles and practices.
- Expert knowledge of advanced analytics, including anomaly detection and clustering methods.
- Expert understanding of data management principles, practices, and data governance.
- Ability to work effectively with internal and external data sources and analytical resources.
- Expert ability to research diseases using health and population data.
- Expert ability to critically evaluate and synthesize academic and applied research literature.
- Strong capacity to assess analytical limitations, uncertainty, and alternative approaches.

### Conceptual, Strategic, and Problem-Solving Skills

- Excellent conceptual and analytical thinking skills.
- Excellent ability to identify key issues, assess alternatives, and develop evidence based recommendations.
- Excellent ability to think strategically and critically across complex, system-level issues.
- Ability to define a course of action that achieves meaningful and measurable results.
- Ability to develop innovative, feasible, and strategic solutions to complex and sensitive problems.
- Excellent ability to summarize and synthesize complex and technical material into clear insights.

### Communication and Knowledge Translation

- Excellent written and verbal communication skills.
- Ability to clearly convey complex ideas through presentations and public speaking.
- Ability to translate technical and analytical findings into business, policy, and decision relevant language.
- Strong interpersonal communication skills, including the ability to resolve disputes and facilitate productive discussions.

### Leadership, Collaboration, and Relationship Management

- Excellent leadership and coordination skills.
- Ability to develop, lead, and contribute effectively within multidisciplinary teams.
- Ability to mentor and support colleagues to build analytical and professional capacity.
- Strong ability to build and sustain effective working relationships with colleagues and executive leadership.
- Ability to function effectively in high-pressure, highly charged, or sensitive environments.

### Project Management and Self-Management

- Ability to apply project management principles and practices.
- Excellent self-management, accountability, and results orientation.
- Ability to multi-task and deliver high-quality work with limited direction in uncertain or rapidly evolving contexts.

### Government, Policy, and Organizational Acumen

- Excellent understanding of the role, structure, and operations of government.
- Strong knowledge of government policies, procedures, and accountability frameworks.
- Excellent understanding of policy development, legislative processes, regulatory reform, and planning.
- Strong awareness of political environments and their implications for decision making.
- Understanding of stakeholder interests and perspectives, including those of other government departments.
- Understanding of organizational dynamics, change management, and effective navigation of complex public-sector environments.

### Behavioral Competencies ?

Pick 4-5 representative behavioral competencies and their level.

Competency	Level					Level Definition	Examples of how this level best represents the job
	A	B	C	D	E		
Creative Problem Solving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Creates the environment for innovative problem solving: <ul style="list-style-type: none"> <li>• Generates new ways of thinking; ensures right questions are being asked about a problem</li> <li>• Eliminates barriers to creativity and innovation</li> <li>• Encourages a culture of innovation</li> </ul>	
Systems Thinking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Integrates broader context into planning: <ul style="list-style-type: none"> <li>• Plans for how current situation is affected by broader trends</li> <li>• Integrates issues, political environment and risks when considering possible actions</li> <li>• Supports organization vision and goals through strategy</li> <li>• Addresses behaviours that challenge progress</li> </ul>	
Drive for Results	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Works to remove barriers to outcomes, sticking to principles: <ul style="list-style-type: none"> <li>• Forecasts and proactively addresses project challenges</li> <li>• Removes barriers to collaboration and achievement of outcomes</li> <li>• Upholds principles and confronts problems directly</li> </ul>	

		<ul style="list-style-type: none"> <li>• Considers complex factors and aligns solutions with broader organization mission</li> </ul>	
Develop Networks	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	<p>Makes working with a wide range of parties an imperative:</p> <ul style="list-style-type: none"> <li>• Creates impactful relationships with the right people</li> <li>• Ensures needs of varying groups are represented <ul style="list-style-type: none"> <li>• Goes beyond to meet stakeholder needs</li> <li>• Ensures all needs are heard and understood</li> </ul> </li> </ul>	
Agility	<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/>	<p>Creates an adaptable environment:</p> <ul style="list-style-type: none"> <li>• Fosters agility, proactive and flexible practices</li> <li>• Leads and creates momentum for change</li> <li>• Champions plan of action and overcomes barriers through proactive anticipation</li> <li>• Quickly understands and reacts to environment, establishing flexible culture</li> </ul>	







**Benchmarks** 

List 1-2 potential comparable Government of Alberta: [Benchmark](#)

025PS53 Senior Policy Advisor

## Assign

The signatures below indicate that all parties have read and agree that the job description accurately reflects the work assigned and required in the organization.

_____	_____	_____
	Date yyyy-mm-dd	
Supervisor / Manager Name	Date yyyy-mm-dd	Supervisor / Manager Signature
		 
Director / Executive Director Name	Date yyyy-mm-dd	Director / Executive Director Signature
		 
ADM Name	Date yyyy-mm-dd	ADM Signature
		