

Position Description

Ministry of Health

Position Title:	Senior Data Warehouse Administrator	Positions Number(s):	91990
Division:	Health Sector IM/IT		
Branch:	Strategic Policy, Information Management and Data Stewardship (SPIMDS)	Location:	Victoria
Supervisor's Title:	Director, Informatics	Position Number:	29334
Supervisor's Classif:	Business Leadership	Phone Number:	952-1244
For Agency Use Only		NOC Code:	
Approved Classif:		Class Code:	
Entered By:		Phone number:	

PROGRAM (OPTIONAL)

The **Health Sector IM/IT (HSIMT) Division** consolidates technology and information management systems into one portfolio to ensure a coordinated and innovative approach for the provision of accurate, relevant and timely health information. The program area aligns stakeholder information and data requirements to existing technologies and to identify new and improved applications and best practices for the delivery of system-wide health information management. The HSIMT Division is accountable for the overall consolidation, restructuring and maintenance of information technologies to enable health service providers (HSP) and managers to construct and implement evidence-based business decisions for planning, research, resource allocation and administration. The HSIMT Division oversees and leads the development of provincial and national standards, while ensuring the integration of these activities, addressing the information management requirements of the health system and ensuring access, confidentiality and accountability to the general public. **SPIMDS** manages a variety of legacy systems and two complex metadata based data warehouse environments as a service provider within HSIMT.

PURPOSE OF THE POSITION

The **Senior Data Warehouse Administrator**, acting in a true knowledge-based role, leads physical design, implementation, and application development support activities in the deployment and use of the SPIMDS managed data warehouse and database technologies within the **HSIMT Division** of Health. This involves ensuring;

- adherence to appropriate Ministry and Government standards for the use of data warehouse and database technology and that the physical database designs are traceable to documented data models;
- proper security and audit structures are maintained;
- technical leadership in change and release management by migrating releases through the various development, UAT and production environments
- technical leadership in performance tuning of ETL and application processes, end-user queries and information products knowledgeable consultation, advice and guidance to contracted designers and developers, for quality assurance on deliverables;
- business knowledge consultative capacity to project teams concerned with the design, development and implementation of health data warehouse and database technologies; and
- project team leadership to subject matter experts from various business areas and contractors for a variety of business centric information management and information product development projects.

NATURE OF WORK AND POSITION LINKS

The **Senior Data Warehouse Administrator** maintains, upgrades, troubleshoots and configures the database software and supports mission critical applications founded on the health data warehouse architecture layer. The position participates in technical process discussions and decision-making activities necessary to the design/enhancement and support of all SPIMDS managed client health data warehouses and databases. The **Senior Data Warehouse Administrator** supports the repository/configuration management function and participates in cross-Government functional working groups and meetings. The position's links include:

- **HSIMT Division Staff:** Oversees and manages health database information and systems priorities, changes and outcomes in conjunction with other ministry and HSIMT Division staff.
- **Project Teams:** Provides overall technical and business data management and data structure design leadership, guidance and advice on project requirements, priorities, alternatives and options, and organize resources.
- **Ministry Directors/Managers** – Provides advice to management on the coordination of a wide-variety of health database issues related to the resources, operations, priorities and issues management both within HSIMT and with various business divisions.
- **Consultants and Contractors:** Builds and maintains effective partnerships and ensures contract deliverables are verified and successfully completed, and standards are achieved with subject matter experts in all divisions of the ministry and their identified external contracted resources.
- **Internal and External Program Users and Others** - Coordinates, assesses, determines and addresses database performance, data development, business intelligence and technical issues within the overall provincial Health technology and systems framework.

- **Health Authority Managers and Staff** - Serves as the team lead and provides solutions to complex health sector-wide data management problems related to the coordination, integration, escalation and delivery of information and analyses across the Health Sector.

SPECIFIC ACCOUNTABILITIES/DELIVERABLES

1. Leads overall database design and implementation services for various SPIMDS managed health data warehouses and database technologies. Implements plans and technical strategies necessary to accommodate database technology enhancements associated with expanded information management and data warehousing requirements.
2. Develops documentation and standards-related material necessary to facilitate multiple complex health data warehouse and database development, implementation and operational processes. Participates in processes associated with the acquisition and management of externally contracted services.
3. Oversees and advises contracted resources assigned to health database implementation or support tasks. Recommends and/or develops work plans, schedules and assignments.
4. Provides business process support and technical assistance to program areas and external agencies supplying source data to the SPIMDS managed health data warehouse. Supports quality assurance processes and checks on the source data files submitted by these agencies by reviewing for errors and inconsistencies.
5. With the in-depth health business knowledge inherent in this position, discusses data issues with these agencies and strives to resolve data quality problems. Supports and/or operates the data transformation and conversion (ETL) tools and processes to load data from the sources provided by these agencies into the SPIMDS managed health data warehouse. The position ensures the data integrity of the data warehouse is maintained through these load processes.
6. Provides technical advice and expertise in regard to health database design, development and implementation recommendations for meeting business requirements. This would include providing expertise in dimensional / star schema modeling, partitioning strategies and the implementation of Oracle materialized views where applicable.
7. Configures and maintains the multiple database instances used by HSIMT to develop, control and manage database and application versions through their lifecycle. Performs quality assurance reviews of deliverables and conducts test procedures necessary to ensure that database designs meet end-user business needs, HSIMT and Ministry IT technical standards and best practices.
8. Ensures appropriate database security and audit structures have been put in place consistent with business data privacy and integrity requirements. Manages and administers the database design and deployment tool sets and liaises with the software vendors on problems and deficiencies. Administers database security and access permissions.
9. Conducts application acceptance, change control and software promotion processes to place delivered applications into production. Provides senior level data management services and technical assistance to data warehouse and application support teams utilizing database technologies.
10. Monitors and diagnoses database performance, usage and throughput statistics and provides technical solutions, or carries out performance tuning activities for application and query response improvements. Identifies opportunities for efficiencies and effectiveness as they pertain to the management of health data and information to reduce inconsistencies and improve service levels and performance.
11. Provides pre-scheduled on call 24-hour support during peak periods for data loads application business cycles, or on request from project teams. Participates in change control meetings and decision processes for allocating work to scheduled change control windows.
12. Plans, configures and tests new health database software versions and assists in the migration of operational applications to the new environments. Installs and tests upgrades, patches and fixes provided by the database software vendor.
13. Devises database back-up strategies and schedules, and ensure effective operational execution by the service provider.
14. Creates, configures, copies, moves and restores database schemas and files in response to project and business area demands. Troubleshoots database errors or problems referred by support teams, researchers or end-users and provides or recommends solutions or corrective action.
15. Acts in a consulting and advisory capacity to management and program area staff responsible for the business operation and reporting processes supported by the data warehouse.
16. Liaises and assists with business intelligence and query tool users during the development and deployment of information products and reports that run against the data warehouse. Supports the operation of the information and data analysis tools used by health program area researchers to extract and report on the data loaded to the SPIMDS managed health data warehouse. Provides analytical support to end-users and researchers as required.
17. Provides mentoring and training to staff and contractors about the technical and business complexities of the health data warehouse.
18. Supports the entire health data warehouse architecture by working with other senior staff and management to ensure the currency and viability of the technical infrastructure is supported and maintained.

FINANCIAL RESPONSIBILITIES

- Certifies the completion of contract work involving the analysis of data and systems containing a wide-variety of provincial health care information from service providers, patients and a diverse group of organizations.
- Identifies and assesses business risk of projects and systems changes and developments.

DIRECT SUPERVISION (i.e. responsibility for signing the employee appraisal form)

Role	# of Regular FTE's	# of Auxiliary FTE's
Directly supervises staff (this position will lead and advise different sized teams with staff and contractor members in a matrix and project environment therefore)	1	0
Supervises Staff through subordinate supervisors	0	0

PROJECT/TEAM LEADERSHIP OR TRAINING (Check the appropriate boxes)

Role	# of FTE's	Role	# of FTE's
Supervises Contractors	1-5	Provides formal training to other staff	1-5
Leads project teams (staff and contractors)	1-5	Assigns, monitors and examines work of staff and contractors	1-5

SPECIAL REQUIREMENTS

- Must possess a valid BC driver's license to drive to meetings with Health Authorities and other stakeholders.

TOOLS/EQUIPMENT

- Personal computer or laptop.
- Standard office software in Word, Adobe Acrobat, Excel, and PowerPoint.
- Standard office equipment.
- Specialized software (Oracle Real Application Cluster [RAC] technology, Generic Application Meta-Data Environment [GAME] etc.).

WORKING CONDITIONS

- Typically works in a normal office environment. The position requires excellent time management and decision-making around priorities in project management. Flexibility is needed, and the ability to work in a team environment is critical.

WORK EXAMPLES

- **Data Architecture:** SPIMDS manages a complex health data warehouse environment with multiple major databases and applications being supported and involving multiple public/private sector stakeholders. The position is accountable for developing provincial architecture standards, strategies and policies affecting all SPIMDS managed databases. This position advises business areas on ways to maximize the value in the data through appropriate architecture and data development.
- **Data Warehouse Design –** This position is responsible for providing senior-level database design services, including dimensional, star and snowflake schema designs, defining of partitioning strategies and the design and implementation of materialized views as required.
- **Data Warehouse Administration:** The position is responsible for installing, configuring, monitoring, tuning, backup and recovery and capacity planning for all databases managed by SPIMDS, including the multi-terabyte Health*ideas* data warehouse.
- **Application Support Services:** The Senior Data Warehouse Administrator will at times be required to develop, maintain and execute complex programs and processes that populate the system data and application code stores.

COMMENTS

Due to Shared Service BC change windows and operational requirements flexibility in work scheduling may be initiated.

PREPARED BY

Name: Hai Nguyen	Date: February 02, 2006	Phone #: 952-1460
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AMENDED BY

Name: Gord Stodola and Phil Jennings	Date: March 21, 2011	Phone #: 952-1301 and 952-1265
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EXCLUDED MANAGER AUTHORIZATION

I confirm that:

1. The accountabilities/deliverables were assigned to this position effective 26 December 2004.
2. The information in this position description reflects the actual work performed.
3. A copy has/will be provided to the incumbent(s).
4. This position was formally referred to as a Senior Database Analyst but the change in title in March 2011 better reflects the complex variety of databases and data warehouse environments for which this position is accountable.

Name:

Signature:

Date:

ORGANIZATION CHART

- Deputy Minister
 - Assistant Deputy Minister
 - Executive Director, Strategic Policy, Information Management and Data Stewardship Branch (SL)
 - Director, Informatics (BL)
 - **Senior Data Warehouse Administrator (ISL30)**
 - Middle Tier Analyst

SELECTION CRITERIA

Education:

- Degree in Computer Science or Information Technology, or a Degree in Health Sciences (e.g., Health Information Science, Health Informatics, and Bioinformatics) and 6 years of directly relevant and related data base or data warehouse administration experience OR an acceptable combination of formal post-secondary education, e.g. a college diploma in Computer Systems Technology (e.g. BCIT) and 8 years directly related experience.

Experience:

- Health industry experience is required, as this is a knowledge-base position supporting the corporate information repository (Health*ideas* data warehouse).
- Minimum four years working experience with Oracle relational database technology in development support, and administration, including at least two years with Oracle 10g or Oracle 11g.
- Minimum two years experience working with data warehouse (DW) technical architectural infrastructures, including PL/SQL, meta-data management and ETL tools.
- Considerable practical senior level experience working in a multi-tier systems architecture environment in the following database administration areas:
 - Performance monitoring including database tuning, problem debugging and capacity planning
 - Release management, migration and promotion in a code managed environment
 - Quality assurance of deliverables and provision of directed feedback and improvements
 - Role based security architectures and access control
 - Backup management
- Experience supporting business intelligence, query and reporting tools.
- Experience with Oracle partitioning for efficiency of data retrieval and query performance.
- Experience providing leadership and direction to IT staff, contractors and cross-program working teams.
- Experience interacting with Oracle and other vendor support sites and resources, documenting problems, jointly determining solutions, and implementing patches and updates.
- Experience with a Unix operating system (Linux preferred.)
- Middle-tier experience, especially with Oracle Application Server, would be an asset.

Knowledge:

- Knowledge of metadata management concepts.
- Knowledge of Very Large Database (VLDB) concepts.
- Demonstrated knowledge of writing and testing complex SQL queries to produce aggregated, derived and calculated statistical measures.
- Demonstrated knowledge of advanced analytical functions.
- Knowledge of data warehousing technologies such as OLAP (including ROLAP, MOLAP, and HOLAP)
- Demonstrated knowledge of Oracle Enterprise Manager or data management tools available from third parties.
- Considerable knowledge of relational database design principles including normalization, database constraints, referential integrity and join conditions.
- Knowledge of data modeling techniques including entity relationship, dimensional and star schema design.
- Knowledge of database security including role level and VPD implementations.
- Knowledge of Oracle materialized views.
- Knowledge of the Generic Application Meta-driven Environment (GAME) would be an asset.
- Understanding of SAN architecture, RAID implementations, and I/O load balancing.
- Knowledge of business intelligence, data reporting and analysis tools and of mathematical and statistical formulas, analyses, procedures and concepts.
- Knowledge of principles and processes for providing excellence in service delivery. This includes meeting quality standards for services, and responding to customer needs and requests.

Skills and Abilities:

- Demonstrated ability to work independently, to organize and prioritize work to meet deadlines, to take initiative, to anticipate potential problems/conflicts and take appropriate actions.
- Ability to determine a course of action by breaking tasks into smaller steps and by planning and resourcing each of these.
- Ability to communicate orally by presenting and explaining concepts and other information to individuals with varying degrees of technical expertise or sophistication; responding appropriately to questions while maintaining credibility and integrity.
- Ability to supervise staff and lead project team members, and enhance output effectively in a team environment through the encouragement of co-operation and interaction, active and full contribution, and by acknowledging diverse opinions.
- Ability to multitask and manage fluctuating workloads and work toward multiple priorities and goals on tight deadlines.
- A strong sense of ownership, strong interpersonal and communication skills are required.
- Ability to communicate in writing and to document processes, architectures and operational standards in a clear manner.

COMPETENCIES

- Leadership
- Problem Solving and Analytical Thinking
- Flexible and Adaptable to Changes
- Teamwork & Cooperation
- Service Orientation
- Results Orientation