



Integration and Analytics Engineer Delaware Health Information Network (DHIN)

Organization Background

The Delaware Health Information Network (DHIN) is the nation's first statewide health information exchange. Established by statute as a not-for-profit public instrumentality, DHIN's primary mission is to facilitate the design and implementation of an integrated, statewide health data system to support the information needs of consumers, health plans, policymakers, providers, purchasers and researchers to improve the quality and efficiency of health care services in Delaware. Participation in DHIN by the health care community of Delaware is nearly universal, with expansion beyond state borders as well. DHIN is recognized as a national leader among health information exchange organizations.

Position Overview

The Integration and Analytics Engineer will be an integral part of delivering DHIN's services to the Delaware healthcare community and beyond. Specifically, this position will have a role in DHIN's Service Design, Service Transition and Service Operation processes. This position will also provide feedback into the Continuous Service Improvement process so that DHIN continues to improve in all aspects of its service delivery.

DHIN is very focused on implementing industry best practices as defined by the IT Infrastructure Library (ITIL). After joining DHIN, all staff are required to pass the ITIL Foundations certification exam. In addition, this position will be required to understand and become certified in aspects of the Service Design, Service Transition and Service Operation processes.

In the course of delivering services, all DHIN staff interact with Delaware healthcare community stakeholders. The successful candidate should be able to communicate concepts clearly and concisely to a variety of audiences.

In addition, the successful candidate will have an understanding of clinical healthcare data represented in both HL7 and FHIR formats. This candidate will also work to meet the informational needs of health care providers, payers, Delaware's State agencies, students and researchers working to improve health care for Delaware's residents. This individual will spend 50% of their time working on DHIN's infrastructure for processing transactional HL7 and FHIR data, and 50% working to make that data meaningful as they answer a variety of tactical and strategic questions regarding healthcare in the State of Delaware..

The position is primarily located at the DHIN headquarters in Dover, DE. However, following a period of orientation, a great degree of flexibility in work hours and location are possible. Many of DHIN staff work from home one or more days each week.

The Integration and Analytics Engineer exercises responsibilities at SFIA level 4.

Autonomy	Works under general direction within a clear framework of accountability. Exercises substantial personal responsibility and autonomy. Plans own work to meet given objectives and processes.
Influence	Influences customers, suppliers and partners at account level. May have some responsibility for the work of others and for the allocation of resources. Participates in external activities related to own specialism. Makes decisions which influence the success of projects and team objectives. Collaborates regularly with team members, users and customers. Engages to ensure that user needs are being met throughout.
Complexity	Work includes a broad range of complex technical or professional activities, in a variety of contexts. Investigates, defines and resolves complex issues.
Knowledge	Has a thorough understanding of recognized generic industry bodies of knowledge and specialist bodies of knowledge as necessary. Has gained a thorough knowledge of the domain of the organization. Is able to apply the knowledge effectively in unfamiliar situations and actively maintains own knowledge and contributes to the development of others. Rapidly absorbs new information and applies it effectively. Maintains an awareness of developing practices and their application and takes responsibility for driving own development.
Business skills	Communicates fluently, orally and in writing, and can present complex information to both technical and non- technical audiences. Plans, schedules and monitors work to meet time and quality targets. Facilitates collaboration between stakeholders who share common objectives. Selects appropriately from applicable standards, methods, tools and applications. Fully understands the importance of security to own work and the operation of the organization. Seeks specialist security knowledge or advice when required to support own work or work of immediate colleagues.

Scope of Work:

1. DHIN Infrastructure Engineering (50% of time).
 - a. Service Design:
 - i. Obtain and maintain a deep understanding of the currently applied technologies, data models, application functionality, development processes, and project management tools for all DHIN Services.
 1. HL7 versions 2.x, 3.x and FHIR versions 3 and 4
 2. Python
 3. Java or JavaScript
 4. SQL (RedShift or PostgreSQL)

5. Couchbase
 6. Kafka, Mirth Connect or similar message routing technologies
 7. An understanding of Internet Protocol (IP) networks
 8. A solid understanding of various statistical methods
 9. Cloud Technologies (Primarily AWS, but Google and Azure are also useful)
- ii. Serve as a technical resource for the DHIN Service Design process:
 1. Provide technical impact assessments to the Service Design Process.
 2. Interact with the design team to suggest alternate solutions as needed.
 3. Assist Project managers in the development, maintenance and documentation of project work plans.
- b. Service Transition (Development, Vendor Management, Deployment Coordination)
- i. Execute or manage vendor execution of the tasks in the Project Plan to implement the Service Design Package (SDP).
 1. In many cases, this means being responsible for developing, certifying and coordinating the deployment of results delivery interfaces to ambulatory Electronic Health Record (EHR) systems. This means ensuring that all data types from all data sending organizations are able to be processed across the interface and are stored and displayed correctly in the destination EHR system.
 2. Work with vendors to implement and improve best practices in DevOps, Configuration Management and Release Management to minimize risk to DHIN integrations with key stakeholders, customers and end users.
 - ii. Participate in the testing of all implemented services before deployment to production.
 - iii. As needed, create the appropriate technical documentation (internal and external Release Notes, Deployment Check Lists, etc.) and change management artifacts (Change Control Forms) to deploy the service changes to production.
 - iv. Participate in the production deployment providing technical expertise as needed to insure a smooth transition.
- c. Service Operation:
- i. On a rotating basis, provide Primary support for configuration management and incident management related to DHIN infrastructure including, but not limited to:
 1. DHIN Community Health Record (CHR)
 2. DHIN Personal Health Record (PHR)
 3. Results Delivery systems based on Kafka, Bridge Connector or Mirth Connect
 - ii. Become a Subject Matter Expert (SME) on the DHIN software and network infrastructure and provide Tier 2 customer support. In this role, act as a

primary escalation point for Customer Support Specialist(s) for all data traversing DHIN systems and infrastructure

- d. Continuous Service Improvement:
 - i. Assist the Chief Technology Officer in defining and implementing automated, metrics-focused, and proactive methods for monitoring all aspects of the service lifecycle and service delivery with an initial focus on Service Operations.
 1. Automated Service and Systems monitoring.
 2. Periodic data quality audits for all data received by DHIN.
 3. Incorporate monitoring feeds from all DHIN vendors.
 4. Incident resolution monitoring and metrics.
2. Analytics (50% of time)
 - a. This portion of the role has a matrixed reporting relationship to the Director of Data Analytics.
 - b. Understand and adhere to the legal constraints on DHIN's data
 - c. Adhere to data warehouse and cloud based best practices
 - d. Conduct data research using sound analytic methodologies
 - e. Support other members of the data analytics team as they combine clinical and claims data using the DHIN Master Patient Index (MPI). This is a critical component of this position.
 - f. Work with other members of the data analytics team to meet approved customer requests for data extracts from all sources of DHIN data
 - g. Create and automate reports to meet DHIN's internal and external business needs
3. Other duties:
 - a. Mentor DHIN team members and other healthcare community members to support DHIN and DHIN's services as appropriate.
 - b. Utilize industry best practices as related to security and data protection
 - c. Complete all required and mandatory training within the timeframe required.

Supervision Received

- The position reports to the Chief Technology Officer.

Supervision Exercised

- None

Job Impact

- a. Work performed in this position impacts thousands of users of the DHIN system across the entire state of Delaware and into bordering states.
- b. Timeline of work assigned is usually hours to days, but special projects may be assigned with a timeline of 3-5 months to completion.

- c. Budget impact of this position is small

Key Competencies

The following are the minimal knowledge, skills, and abilities which the Network Operations Systems Analyst must possess:

- a. Understanding of the fundamentals of IT systems, networks and operations is required.
- b. Understanding of project management concepts and practices. Knowledge of ITIL best practices is a plus.
- c. Knowledge of common system development methodologies and lifecycles is required.
- d. Understanding of the intricacies involved in Electronic Data Interchange (EDI) or HL7 and HIT standards.
- e. Demonstrated skill in technical communications to a diverse group of stakeholders.
- f. Effective communication skills to negotiate solutions and alternatives.
- g. Ability to draw conclusions, define problems, and recommend solutions.
- h. Ability to mediate among stakeholder groups and individuals to resolve conflicts and disagreements.
- i. Ability to focus and manage time in a fast-paced and deadline-driven environment
- j. Proven understanding of healthcare workflow dynamics and how they relate to successful implementations of healthcare technology.
- k. The successful candidate must be organized, detail-oriented, flexible and comfortable working in a dynamic environment.

Qualifications

The successful candidate will possess the following experience and credentials:

- At least three years of experience in Information Technology within the healthcare industry or other industries of similar size and complexity.

Education

Bachelor's degree in Computer Science or Information Technology is preferred; Equivalent work experience will be considered.

DHIN employees are expected to be certified in ITIL Foundations, or commit to becoming certified within the first year of employment. This is a condition of employment.

Interested parties should send resume and cover letter to careers@dhin.org or visit www.dhin.org.

