Public Health Informatics Newborn Screening
POSITION DESCRIPTION TOOLKIT

The APHL Newborn Screening (NBS) Health Information Technology Workgroup identified the need for NBS programs to be able to successfully recruit qualified public health informatics candidates. Workgroup activities included collating NBS program staffing structures and informatics needs, as well as reviewing the workforce development documents developed by the Public Health Informatics Institute.

As a result, the workgroup developed four templates that are intended to provide NBS programs with examples of relevant knowledge, skills and abilities, duties and responsibilities, for recruiting potential candidates to work as data analysts, epidemiologists and health informaticists within a NBS program.

There are four example position descriptions within this toolkit (click on the name to jump to its page):

- **Newborn Screening Data Analyst**
- **Newborn Screening Epidemiologist**
- **Newborn Screening Health Informaticist — Entry Level**
- **Newborn Screening Health Informaticist — Senior Level**

EDITABLE POSITION DESCRIPTIONS

To customize these position descriptions for your laboratory, follow the links below to download an editable word version. Please note that you will be prompted to log in to APHL.org before the download will complete. If you do not already have an APHL.org account, follow the "Create an Account" link in the upper right corner of the page.

- **Newborn Screening Data Analyst**
- **Newborn Screening Epidemiologist**
- **Newborn Screening Health Informaticist — Entry Level**
- **Newborn Screening Health Informaticist — Senior Level**

NEWBORN SCREENING DATA ANALYST

POSITION OVERVIEW

The Newborn Screening (NBS) Data Analyst provides analysis of NBS laboratory and follow-up data including descriptive statistics and application of inferential statistical methods such as adjustment for confounding, and logistic regression modeling. The Analyst works with the NBS Epidemiologist as well as the NBS Senior Informaticist. This position interacts with the larger NBS program department, as well as the larger public health department for providing data and interpretation of findings. This position also communicates findings to management using data visualization and detailed reports.

SUPERVISION

Received

The NBS Data Analyst receives direct supervision from the NBS Epidemiologist and/or NBS Senior Informaticist.

Exercised
None

QUALIFICATIONS

Minimum Required
- Bachelor's degree in public health, statistics, statistical analysis, mathematics, or closely related degree; AND
- Two (2) years of professional statistical analysis experience with healthcare or public health related data.

Preferred
- A master's or doctoral degree in public health, biostatistics, epidemiology, mathematics, or closely related degree may substitute for the experience on a year-for-year basis.

KNOWLEDGE, SKILLS AND ABILITIES

- Knowledge of quantitative descriptive and inferential statistical methods including multivariate modeling.
- Knowledge of qualitative statistical methods for analyzing the effectiveness, efficiency, and productivity of the newborn screening program.
- Proficiency in utilizing software tools in support of public health data acquisition, management, analysis, and reporting.
- Proficiency using SAS analytic software.
- Proficiency using R analytic software.
- Experience with data visualization software such as Tableau.
- Proficiency in database programming languages such as SQL.
- Experience managing large datasets.
- Familiarity with a variety of database management and reporting applications relevant to the newborn screening program.
- Preparing detailed reports of statistical findings.
- Analytical mindset with good problem-solving skills.
- Proficient verbal and written communication skills.

DUTIES AND RESPONSIBILITIES

- Identify and extract appropriate subsets of data.
- Optimize data queries for performance.
- Assist in identifying issues related to data, data sources, and data processing.

- Operationalize data table maintenance for common data extraction requests.
- Develop and deploy data reports to internal leadership.
- Create accessible reports utilizing newborn screening data for state and local stakeholders and partners.
- Update existing reports.
- Review and document data analysis methodology.
- Conduct quantitative and qualitative analyses to measure the effectiveness, efficiency, and productivity of the newborn screening program and confirm results.
- Interpret and summarize results by developing clear and concise reports.
- Document and communicate findings and insights to newborn screening program leadership.
- Assist in the development of recommendations, communications, process improvements, and other action items based on your findings and insights.

NEWBORN SCREENING EPIDEMIOLOGIST

POSITION OVERVIEW

The Newborn Screening (NBS) Epidemiologist serves as a maternal and child health epidemiologic expert to the newborn screening program. The NBS Epidemiologist provides and coordinates data analysis of reported newborn dried blood spot, EHDI, and CCHD screening results in order to implement prevention and control measures, and to improve outcomes for infants affected by a disorder tested on the state newborn screening panel. The NBS Epidemiologist also plays a key role in coordinating and performing NBS programmatic evaluations.

SUPERVISION

Received
The NBS Epidemiologist receives direct supervision from the NBS Program Director.

Exercised
The NBS Epidemiologist provides direct supervision to the NBS Data Analyst.

QUALIFICATIONS

Minimum Required
- Master's degree in epidemiology, biostatistics, maternal and child health, or related degree; AND
- Three (3) to five (5) years of professional leadership experience in epidemiologic methods, management, and implementation.

Preferred
- A doctoral degree in epidemiology, biostatistics, maternal and child health, or related degree may substitute for experience.

KNOWLEDGE, SKILLS AND ABILITIES

- Proficient in programming in Statistical Analysis System (SAS) or Statistical Package for the So-cial Sciences (SPSS), or R analytic software.
- Ability to manipulate and analyze large, complex data sets.
- Knowledge of complex inferential statistical methods.
- Ability to develop, coordinate, and implement studies and statistical analysis plans for the pur-pose of epidemiologic surveillance and program evaluation.
- Ability to identify relationships and trends in data as well as factors that could affect the results of research and impact health outcomes of infants.
- Ability to identify programmatic problems and to develop and implement solutions.
- Strong oral and written communication skills, including experience in writing technical reports, and grant and manuscript preparation.
- Proficient in epidemiologic project management.
- Ability to plan, organize, and prioritize projects, time, and workload assignments for epidemio-logic projects.
- Ability to engage with diverse audiences and multiple stakeholders, including public speaking.
- Ability to communicate verbally and in writing complex information effectively to inform, per-suade, and influence a wide range of audiences.
- Ability to evaluate the impact of new or modified processes on shared NBS program goals and outcomes.
- Ability to collaborate across agencies and programs to meet shared goals.

DUTIES AND RESPONSIBILITIES

- Coordinates and implements analysis on data such as health indicators, risk factors and disease surveillance information relevant to disorders tested on the state newborn screening panel.

- Coordinates and implements analysis on programmatic and service-related data such as Maternal and Child Health data.

- Manages newborn screening program epidemiologic projects.

- Develops protocols to respond to investigations of emergent NBS health situations.

- Develops and conducts various trainings related to epidemiological and program evaluation is-sues.

- Provides expertise in the design, management and evaluation of study protocols and health sta-tus questionnaires, sample selection and analysis.

- Conduct research to develop methodologies and improve processes to ensure the best possible outcomes for infants affected by newborn screening disorder.

- Plan, administer and evaluate infant health safety standards and programs to improve public health, conferring with health department, industry personnel, physicians and others.

- Consult with and advise physicians, educators, researchers, government health officials and others regarding best NBS practices based on analysis findings.

- Identify and analyze public health issues related to newborn screening and their impact on public policies or scientific studies or surveys.

- Monitors and evaluates program operations for quality and effectiveness and makes recommendations for improvement.

- Manages resources and contracts.

- Prepares presentations, communications materials, press releases, and other media-related materials.

- Identifies areas of collaboration with partners to achieve newborn screening program objectives.

- Prepares grant submissions, manuscripts, and epidemiologic reports.

NEWBORN SCREENING
HEALTH INFORMATICIST—ENTRY LEVEL

POSITION OVERVIEW

The Newborn Screening (NBS) Health Informaticist serves as a newborn screening informatics subject matter expert. Under the direction of the newborn screening Senior Health Informaticist, the NBS Health Informaticist assists in the planning, development, training, implementation, evaluation, and maintenance of Information Systems across the program as it relates to optimizing the testing of NBS specimens, reporting results, and the follow-up of infants with a positive screen.

SUPERVISION

Received

The NBS Health Informaticist receives direct supervision from the NBS Senior Health Informaticist.

Exercised

None.

QUALIFICATIONS

Minimum Required
- Bachelor's degree in public health informatics, health informatics, health information management, or related degree; AND
- Two (2) years of professional experience in health informatics implementation.

Preferred
- A master's degree in public health informatics, health informatics, health information management, or related degree may substitute for experience.

KNOWLEDGE, SKILLS AND ABILITIES

- Proficiency in utilizing software tools in support of public health data acquisition, management, analysis, and reporting.
- Familiarity with a variety of database management and reporting applications relevant to the newborn screening program
- Ability to perform various analytic functions which may include business, workflow, and/or statistical analysis.
- Proficient in statistical and business analysis.
- Understanding of workflow engineering.
- Knowledge of Information Technology Lifecycle and information system design.
- Knowledge of automated software applications.
- Understanding of computer hardware and system development.
- Knowledge of applicable healthcare and public health standards, message formats, and transport mechanisms.
- Ability to support implementation of information system development, procurement, and deployment activities under the direction of newborn screening program leadership.
- Ability to implement solutions that ensure confidentiality, security, and data integrity while maximizing availability of information for public health and community access.
- Ability to evaluate user experience, adoption, and software using appropriate methodology and techniques.
- Ability to provide technical assistance to achieve statewide program goals and objectives, health information exchange, data linking and system integration, and methods for linking performance measurement and program evaluation.

DUTIES AND RESPONSIBILITIES

- Uses information system(s) and other data sources in collaboration with public health programs and other state agency program staff to evaluate newborn screening program and population-based performance, evaluations, and outcome measures.

- Participates in ongoing information system application testing, implementation, and evaluation within the newborn screening program.

- Designs workflows and processes for data management within the newborn screening program.

- Evaluates complex organizational and informational systems for the purpose of program monitoring and evaluation, functionality, and reliability to meet goals and objectives of the newborn screening program.

- Evaluates necessary changes in existing information resources to 1) ensure that comprehensive, valid, and reliable data are available for newborn screening program research and evaluation, 2) comply with nationally-recognized data standards, and 3) assess IT solutions.

- Evaluates the IT system(s) used by the newborn screening program, birth hospitals, clinics, etc. to identify system requirements and to implement health information exchange data standards.

- Participates in newborn screening program implementations of interoperable information systems.

- Tests information system usability and evaluates usage, identifies barriers, and proposes solutions.

- Troubleshoots problems reported by information system users.

- Works with users to help them articulate their information needs.

- Provides or arranges for technical assistance and/or training for system users, supervisors, and directors.

- Provides technical assistance and training in the use of data in policy and program development efforts with newborn screening program staff.

- Ensures consistency with national standards and certification initiatives to achieve interoperability.

NEWBORN SCREENING
HEALTH INFORMATICIST—SENIOR LEVEL

POSITION OVERVIEW

The Newborn Screening (NBS) Senior Health Informaticist serves as a newborn screening informatics subject matter expert. Under the direction of the newborn screening program's leadership, the NBS Senior Health Informaticist provides information technology (IT) project management expertise and carries out scientific and information assessments to support the newborn screening program. The NBS Senior Health Informaticist leads the NBS program in the planning, development, training, implementation, evaluation, and maintenance of Information Systems across the program as it relates to optimizing the testing of NBS specimens, reporting results, and the follow-up of infants with a positive screen.

SUPERVISION

Received

The NBS Senior Health Informaticist receives direct supervision from the NBS Program Director.

Exercised

The NBS Senior Health Informaticist provides direct supervision to the NBS Health Informaticist and/or the NBS Data Analyst.

QUALIFICATIONS

Minimum Required

- Master's degree in public health informatics, health informatics, health information management, or related degree; AND
- Three (3) to five (5) years of professional leadership experience in health informatics, management, and implementation.

Preferred

- A doctoral degree in public health informatics, health informatics, health information management, or related degree may substitute for experience.

KNOWLEDGE, SKILLS AND ABILITIES

- Ability to communicate complex technical information to a wide range of non-technical audiences or constituencies.
- Strong oral and written communication skills, including experience in grant and manuscript preparation.
- Knowledge of strategies for achieving effective data acquisition, management, quality, storage, use, and application to address newborn screening program needs.
- Knowledge of public health reporting, information system standards, and newborn screening data.
- Understanding of business operations, methods, and practices.
- Proficient in informatics project management.
- Ability to plan, organize, and prioritize projects, time, and workload assignments for informatics projects.
- Ability to engage with diverse audiences and multiple stakeholders.
- Ability to assess stakeholder and end user information needs.
- Ability to communicate verbally and in writing complex information effectively to inform, persuade, and influence a wide range of audiences.
- Ability to evaluate the impact of new or modified software on existing workforce, standards, and systems.
- Ability to collaborate across agencies and programs to meet shared goals.

DUTIES AND RESPONSIBILITIES

- Provides strategic assistance to the newborn screening program to ensure that information systems support the information needs of the public health agency, statewide public health pro-grams, policy development, research, and evaluation.

- Coordinates ongoing information system application testing, implementation, and evaluation within the newborn screening program.

- Oversees and evaluates the adoption of automated information systems(s) to accommodate special and complex newborn screening program needs.

- Recommends enhancements to newborn screening program information systems to interface with existing systems as needed.

- Works with vendors, IT professionals, and newborn screening program staff to develop system requirements and plan, develop, and maintain health information systems.

- Coordinates newborn screening program implementations of interoperable information systems.

- Monitors and evaluates electronic operation processes and practices for quality and effectiveness and makes recommendations for improvement.

- Anticipates the impact that new or modified software will have on existing standards and systems, workforce, and the newborn screening program, and makes recommendations for solutions.

- Manages resources and contracts.

- Oversees informatics activities, including development of use cases, business cases, and work-flow analysis.

- Functions as a resource to provide information or determines the most effective way of meeting the informatics needs of management, staff, clients, or customers of the newborn screening program.