

## STATE OF SOUTH DAKOTA CLASS SPECIFICATION

**Class Title: Epidemiologist I**

**Class Code: 051050**

**Pay Grade: GK**

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### **A. Purpose:**

Conducts complex epidemiologic investigations used in preventing and controlling specific communicable and chronic diseases, injuries, and other health conditions and in the planning of health programs. Investigations are designed to identify, analyze, and report public health issues and problems, resulting in improved monitoring of health status and its correlates, identification of trends or outbreaks of diseases or other adverse health events, provision of data and information about corrective actions or programs to alleviate adverse health effects, and proposal of practices or policies based on such data and information that will promote and protect public health.

### **B. Distinguishing Feature:**

The Epidemiologist I is responsible for carrying out a broad and complex range of investigative and analytical epidemiologic activities related to the surveillance, detection, and prevention of diseases and injuries. Incumbent works independently or as an experienced team or project member, providing epidemiologic expertise for specific programs or more complex individual epidemiologic analyses.

The Epidemiology Associate is responsible for assisting with a range of investigative and analytical epidemiologic activities related to the surveillance, detection, and prevention of diseases and injuries. Works as a team or project member, and may be responsible for a specific infection, trauma, or chronic condition under guidance.

### **C. Functions:**

*(These are examples only; any one position may not include all of the listed examples nor do the listed examples include all functions which may be found in positions of this class.)*

1. Plans and designs epidemiologic investigations by using established scientific and technical methods and practices to identify and evaluate a wide range of health conditions, to recognize public health problems pertinent to the population, and determine feasibility of and approach to epidemiologic investigations.
  - a. Validates known relevant data and information sources and identifies new data and sources within and outside the public health system.
  - b. Synthesizes data into information about the health outcome in a population, including baseline disease burden or prevalence of risk behaviors.
  - c. Interprets study results in the context of current scientific knowledge.
  - d. Conducts a thorough search of the scientific literature and public health databases to frame a specific problem.
  - e. Use investigation techniques consistent with the public health problem.
  - f. Prepares recommendations for action or intervention using scientific evidence.
  - g. Identifies surveillance and other data for use in tracking program objectives and outcomes.
2. Performs statistical analyses related to complex analytical investigations involving highly specialized scientific data.

- a. Designs, manipulates, and utilizes databases for analysis of health problems and assess the potential public health impact.
  - b. Maintains original data, but transforms data as needed for specific analyses.
  - c. Computes frequencies and descriptive statistics.
  - d. Performs analysis of crude rates and age adjusted rates.
  - e. Uses identified informatics tools in support of epidemiologic practice.
  - f. Uses standard categories when defining special populations.
  - g. Performs merging or spitting of databases.
  - h. Determines methods for linking relational data and sub setting them into analysis-specific flat datasets.
  - i. Computes sensitivity, specificity, prevalence, and attributable fraction as directed.
  - j. Performs and interprets analyses for risk ratios, odds ratios, confidence intervals, and p-values.
  - k. Determines potential biological mechanisms of disease.
3. Designs, manages, and uses surveillance systems for diseases of public health importance to identify surveillance data needs; designs instruments for the collection of surveillance information and data; and implements new or revises existing surveillance systems.
- a. Identifies program surveillance needs and designs instruments for the collection of surveillance information and data.
  - b. Conducts advanced descriptive and comprehensive analyses (e.g., simple regression, stratified analysis to control for confounding, adjusted odd ratios, and relative risks) of surveillance data for multiple audiences.
  - c. Reports key findings and performs evaluations of the surveillance system.
  - d. Communicates epidemiologic work to professional audiences and agency staff through written reports and oral presentations.
  - e. Responds to public queries about epidemiologic data or related issues.
  - f. Recognizes sources and limitations of surveillance data.
  - g. Ensures correct classification according to case definition.
  - h. Monitors data quality.
  - i. Maintains and creates working relationships with reporting entities.
  - j. Instructs and advises community public health agencies and the general public in disease control to enhance knowledge of disease prevention and control.
4. Serves in a lead role in coordinating and developing goals, objectives, budgets for grants and contract management.
- a. Supports the epidemiologic perspective in the agency strategic planning process.
  - b. Uses performance measures to evaluate and improve epidemiologic program effectiveness.
  - c. Participates in program evaluation, conducts literature reviews, designs methods, and analyzes data to evaluate program evaluation and effectiveness.
  - d. Develops and conducts training for local staff in the conduct of investigations and appropriate methods of controlling diseases and preventing injuries.
  - e. Prepares data proposals, requests, and justifications to assist the program administrator in the budgetary process.
  - f. Synthesizes data to guide decision making and provide assistance in setting outcomes for grant performance and evaluation.
5. Performs other work as assigned.

#### **D. Reporting Relationships:**

Reports to the program administrator or division director and works collaboratively with other staff and may serve as a lead worker over other staff.

#### **E. Challenges and Problems:**

Challenges include partnering with other state agencies to collect, analyze and report on a variety of data sources; determining the best method for analysis; keeping up with the wide range of strategies, topics and issues locally and nationally and to be aware of new initiatives; ensuring data is succinct and encompasses all areas of surveillance; coordination with multiple staff to understand and ensure data needs are met for program quality improvement and performance outcomes; and communication and coordination with contracted services and surveys.

Problems include the ensuring data is of high quality standards, staying current with program guidelines, policies, regulations, and public health measures; formulating federal grant requirements into organizational plans and programs; and coordinating programs within and outside the agency.

#### **F. Decision-making Authority:**

Decisions include daily management and prioritization of projects and tasks and setting timelines; determining what data is presented to internal and external partners; determining which coalitions to serve on and in what capacity, meeting attendance; negotiating contracts, monitoring expenditures of contracts; planning, coordinating and carrying out the successive steps in fact-finding and analysis of issues in accordance with accepted program policies, accepted methods, procedures, and practices.

Decisions referred include purchases, attending training, new projects with outside resources; media requests and when to respond; final approval of budgets, grants, contracts, and new programs; controversial or unprecedented issues; and policy decisions that affect overall direction of the division.

#### **G. Contact with Others:**

Daily contact with the other epidemiologist staff and contractors; infection control nurses; weekly contact with state contacts when cases impact human/animal health, reports to Centers for Disease Control weekly on surveillance of specific program area; and monthly contact with the State Epidemiologist.

#### **H. Working Conditions:**

Typical office environment. Occasional travel in-state and out-of-state to attend meetings.

#### **I. Knowledge, Skills, and Abilities:**

Knowledge of:

- Practices and principles of epidemiology;
- Conducting epidemiologic assessments and analysis;
- Statistical tools and software;
- Epidemiological study methodologies and protocols;
- Regulations and policies involving reportable diseases and infections;

- State and local public and individual health problems and programs;
- National and statewide surveillance system structure and systems.

Ability to:

- Conduct investigations of epidemic infections, chronic diseases, and traumatic conditions;
- Manage various program data needs and prioritize work across multiple program areas;
- Coordinate with multiple staff to understand and ensure data needs are met for program quality and performance outcomes;
- Provide consultative services with regard to infections and chronic diseases under the direction of advanced epidemiologic staff to health care professionals;
- Communicate evidence based practice and data driven decision making;
- Analyze complex health data and provide advanced descriptive and comprehensive analyses;
- Prepare studies and reports;
- Organize data from surveillance, investigations, or other sources;
- Integrate community dimensions into epidemiologic practice;
- Participate in development of community partnerships to support epidemiologic investigations;
- Develop recommended evidence-based interventions and control measures in response to epidemiologic findings;
- Evaluate programs;
- Prepare reports and presentations that communicate necessary information to agency staff and external sources.

**J. Qualifications:**

Education and Experience:

- A master's degree in public health (MPH) or a master's of science degree in public health (MSPH) with a focus on epidemiology or analysis and assessment;
- or
- Bachelor's or other non-epidemiology professional degree or certification (e.g., RN, MD/DO, DDS/DMD, DVM, PhD, RS) without formal academic epidemiology training and with greater or equal to two years' experience performing complex epidemiology work under the guidance of a higher level epidemiologist.