

## **Applied Epidemiology Competencies 2022**

### **Description:**

The first four—Data Analytics and Assessment Skills, Public Health Sciences Skills, Communication Skills, and Community Partnership Skills—are considered core to the practice of applied epidemiology. The last three—Management and Finance Skills, Leadership and Systems Thinking Skills, and Policy Development and Program Planning Skills—are still important in certain roles, but not necessarily for all applied epidemiology roles. These are referred to as “professional” domains, to distinguish them from the “core” domains.

### **Brief:**

#### **1. Data Analytics and Assessment Skills**

- 1.1. Identify the diversity of individuals and populations (e.g., language, culture, values, socioeconomic status, geography, education, race, gender identity, age, ethnicity, sexual orientation, profession, religious affiliation, mental and physical abilities, historical experiences)
- 1.2. Describe and investigate factors that affect the health of a community (e.g., income, education, laws, environment, climate change, resilience, homelessness, food security, access to healthcare, racial equity, distribution of resources and power, social and community engagement, changing demographics) to guide epidemiological activities
- 1.3. Design surveillance systems using the principles of ethics, DEIA, and justice
- 1.4. Conduct surveillance activities (e.g., reviews surveillance data needs, assesses existing surveillance data and systems, collects, analyzes, evaluates, and communicates surveillance data)
- 1.5. Manage data (e.g., surveillance, investigations, studies, programs, and other data) for clean record-keeping and analysis
- 1.6. Analyze data (e.g., surveillance, investigations, studies, programs, and other data)
- 1.7. Interpret results from data analysis
- 1.8. Apply evidence-based interventions and control measures (e.g., considering DEIA and specific community needs)

#### **2. Public Health Sciences Skills**

- 2.1. Collaborate with others (e.g., infectious diseases, biostatistics, environmental health, genetics, informatics, behavioral and community health, health policy and management experts) to support public health activities
- 2.2. Apply public health informatics in using epidemiologic data, information, and knowledge (e.g., including data collection, processing, analysis, and dissemination)
- 2.3. Manage information systems to enhance data privacy and security

#### **3. Communication Skills**

- 3.1. Determine communication strategies (e.g., considering literacy, needs, and preferences of audiences, selecting methods and format of information presented and data visualization)
- 3.2. Apply principles of risk communication
- 3.3. Facilitate accessible communication among individuals, groups, and organizations
- 3.4. Disseminate messages to internal and external audiences
- 3.5. Conduct investigations and interviews accommodating the needs of the population

#### **4. Community Partnership Skills**

- 4.1. Describe epidemiologic conditions, systems, programs, and policies affecting community health and resilience
- 4.2. Maintain bidirectional relationships that improve community health and resilience
- 4.3. Participate in emergency management for public health emergencies

#### **5. Management and Finance Skills**

- 5.1. Describe factors that affect the financial and operational health of the organization (e.g., equitable and fair treatment of staff, support from the governing body and community, sustainability of funding, training of managers)
- 5.2. Engage in epidemiologic activities within the organization's budget, operational plan, and financial rules
- 5.3. Manage operational and financial resources for epidemiologic activities
- 5.4. Secures extramural funding (e.g., preparing proposals, grant applications, vendor contracts, and requests for proposals)
- 5.5. Manage human capital (including recruitment, retention, and professional development of staff)

## **6. Leadership and Systems Thinking Skills**

- 6.1. Apply the organization's vision and program goals in all epidemiologic activities
- 6.2. Engage in change management
- 6.3. Engage in performance management of self and other team members
- 6.4. Manage workforce development

## **7. Policy Development and Program Planning Skills**

- 7.1. Apply epidemiology to the development of public health policies, programs, services, and laws
- 7.2. Evaluate programs, policies, services, laws, and organizational performance
- 7.3. Engage in organizational strategic planning (e.g., strategic prioritization, research agenda, and action plans)
- 7.4. Apply principles of ethical and legal practice to epidemiologic activities, data analysis, assessment, and dissemination
- 7.5. Advocate for policies and public health actions that improve community health and resilience