Core Competencies

Five Core Areas of Public Health:

**Biostatistics**
1. Explain the fundamental concepts of biostatistics.
2. Utilize common statistical methods (i.e., calculate, analyze, interpret, report) in the examination of public health problems or programs.
3. Demonstrate ability to use standard statistical software used to analyze public health data.
4. Identify preferred methodological alternatives in situations where commonly used statistical methods are not appropriate.
5. Discuss the basis for probability, estimation, and hypothesis testing used in statistical methods.

**Environmental Health Sciences**
1. Explain the fundamental concepts of environmental health sciences.
2. Apply the fundamental concepts of environmental health sciences for assessing, preventing, and controlling environmental and occupational hazards.

**Epidemiology**
1. Explain the fundamental concepts of epidemiology.
2. Utilize basic epidemiological methods (i.e., design, calculate, analyze, interpret, report) in the examination of public health problems or programs.

**Health Services Administration**
1. Describe essential elements of the structure of the U.S. healthcare system.
2. Describe the basic function of the U.S healthcare system.
3. Outline a plan for the delivery of health services for a targeted population.

**Social and Behavioral Sciences**
1. Explain the fundamental concepts of the social and behavioral sciences.
2. Apply health behavior theories to the design of public health interventions.
3. Utilize the determinants of human behavior and health in the design of public health interventions.
4. Apply the social ecological model to the design of public health interventions.
5. Utilize methods to gather and analyze primary and secondary data in the design of public health interventions.
6. Apply evidence-based practice to the design of public health interventions.
Cross-Cutting Areas of Public Health:

**Communication**
1. Communicate public health information and issues effectively to diverse audiences through multiple communication channels.
2. Use information technology resources to access and/or analyze public health data.

**Systems Thinking**
1. Describe regulatory programs, guidelines, and authorities that relate to the practice of public health.
2. Explain the infrastructure of the U.S. public health system.
3. Apply the fundamental concepts of disease causation and transmission to public health practice.

**Professionalism**
1. Discuss the ethical choices, values and professional practices implicit in public health decisions, considering the effect of those choices on social justice and accountability.
2. Demonstrate leadership in public health.
3. Discuss the commitment to lifelong learning and professional service including active participation in professional organizations.
4. Explain the importance of the contexts of gender, race, poverty, history, migration, and culture in public health theory and practice.
**Track-Specific Competencies**

**TRACK: Community & Behavioral Health**

1. Identify critical stakeholders for the planning, implementation, and evaluation of public health programs, policies, and interventions.
2. Utilize community assessments identifying needs, assets, capacity, and priorities.
3. Write mission statements, goals, and objectives.
4. Apply the principles of program planning, implementation, and evaluation to public health programs, policies, and interventions.
5. Prepare evidence-based public health interventions to influence health outcomes.
6. Prepare health communication campaigns and information for diverse priority populations.
7. Demonstrate ability to conduct process, impact, and outcome evaluations of health public health programs, policies, and interventions.
8. Critically review and modify health behavior change programs and policies.
9. Identify factors that influence the sustainability of public health programs, policies, and interventions.
10. Apply ethical principles to public health program planning, implementation, and evaluation.
TRACK: Epidemiology & Biostatistics

1. Demonstrate proficiency in the methods most frequently used in epidemiological studies, including study design, focus on case-control study.
2. Describe the strengths and limitations of observational studies.
3. Describe the concept of biases, confounding, and effect modification in epidemiological studies and be able to apply these concepts in the conduct and interpretation of epidemiological studies.
4. Apply various multivariable analysis methods to epidemiological study data.
5. Interpret and communicate study results to various audiences.
6. Identify and apply appropriate descriptive and inferential methodologies to the type of study design for answering a particular research question.
7. Communicate inferential results to collaborating and other non-statistician scientists.
8. Apply multivariable regression modeling for continuous, categorical, and time-to-event outcomes.
9. Apply multivariate analytic methods, including longitudinal analysis, for estimation, hypothesis testing, and exploratory data analysis.
10. Apply a comprehensive statistical software program for advanced statistical analysis and interpretation of public health datasets.
11. Describe the study design and analytic methods used for interventional research and interpret the results.
12. Review published public health research, and assess the validity of the design and inference.
13. Develop a data management plan for the collection, processing, maintenance, and archiving of public health data.
TRACK: Health Systems Organization and Policy

1. Describe U.S. health policymaking history and processes for improving population health, including policy formulation, implementation, and evaluation.
2. Identify new or emerging models and trends in health care financing and delivery and their implications for access, cost, and quality of care.
3. Describe links between quality measurement and quality improvement in health systems.
4. Apply various evaluation methods, including decision-analysis models, to systematically evaluate public health programs and policies.
5. Describe key health data and policy information to lay and professional audiences.