Epidemiology & Biostatistics Certificate: Career Snapshots by Sector

GOVERNMENT AGENCIES	SAMPLE RESPONSIBILITIES AND TASKS
• Massachusetts Department of Public Health and other local & state health departments • Centers for Disease Control & Prevention (CDC) • USAID (global) • United States Public Health Officer Programs (military) and Federal Govt. Fellowships • Veterans' Health Administration	• Manage projects, programs and staff, and represent agency such as the CDC in non-U.S. locations. Evaluate data collection, quality control and data utilization methods used to study epidemiological problems and issues. Oversee contracts, grants and cooperative agreements. Monitor and manage epidemiological work. Design, plan and initiate epidemiologic studies, surveys and investigations. Comply with all ethical guidelines for scientific and human subjects research. • Conduct epidemiological surveillance and investigations of reportable diseases including healthcare-associated infections in order to identify risk factors and to limit and prevent such morbidity. Serve as an educational resource for professional and public groups regarding laws and regulations regarding communicable disease epidemiology. Develop policies and activities dealing with communicable disease control. Help formulate disease prevention policies with intra-departmental working groups. Prepare and deliver educational materials and lectures to professional and public groups in order to maintain awareness and understanding of the epidemiology and control of infectious diseases including healthcare-associated infections. • Develop resources and documentation for researchers, such as Veterans' Administration researchers, and support research related to the use of data and information systems. Manage and analyze data, organize data collection processes, data management, and analysis for research projects. Interpret and present data, and utilize knowledge of health services research field and information sources. Utilize knowledge of all study phases including design, sampling, data analysis, and interpretation of results. Assist in writing proposals and manuscripts for publication and presentation. Disseminate information on internet and intranet web sites that is accurate and complete.
HOSPITALS	**SAMPLE RESPONSIBILITIES & TASKS**
• Mass General Brigham • Boston Children's Hospital • Johns Hopkins Medicine (JHM) • NYU Langone Medical Center	• Coordinate project and community partner meetings, and develop strong relationships with community partners. Develop IRB applications and maintain IRB documentation. Support development of project strategy, logic models and evaluation plans. Collect data, including implementing surveys, conducting interviews and moderating focus groups. Provide oversight to data management and complete data entry and data abstraction. Participate in the analysis and interpretation of both qualitative data and quantitative data, and write reports and other dissemination materials for community partners and funders. Present project related work at local, state and national meetings and other venues.

• Boston Medical Center • Beth Israel Lahey	• Review pertinent data entry points and patient charts, acquire and enter data focused on specific hospital practice or patient population, such as general surgery and vascular surgery patients. Help inform, as well as participate in, data ascertainment/abstraction and performance improvement activities focused on surgical quality and safety. Serve as a resource on data management and provide advanced-level perspective and support on project development, data initiatives and outcomes research. Conduct and publish research independently and in collaboration with clinical leadership. Lead and participate in performance improvement initiatives across the Department of Surgery. • Generate and develop Quality Improvement (QI) metric reports for various levels within a hospital's QI Program, Institutional Review Board (IRB), and senior leadership. Lead QI discussions of systematic improvements based on data analysis. Maintain and develop educational material, QI workshops and lectures for the research community based on QI program metrics. Collaborate on the development of QI initiated projects and/or other human subjects research management projects. For example, based on observed noncompliance at the Investigator site, develop tools or program services to proactively assist Investigators. Maintain QI Program website to accurately reflect QI Program activities. Manage QI Program database including maintenance, enhancements, trouble shooting, and communication with developer. Maintain, update and develop QI Program procedural manuals. Participate in routine on-site reviews and directed study site audits.
PHARMACEUTICAL, CRO's	**SAMPLE RESPONSIBILITIES & TASKS**
• Parexel • ICON • Pfizer • Avania • Clinical Trials Data Services	• Implement and monitor clinical trial endpoint training as well as management/analysis of incoming clinical trial data. Communicate with sponsors, CROs and study personnel in the execution of training and data quality assessment associated with clinical trials. Prepare educational materials for investigators and support staff for clinical endpoint training. Construct and maintain databases to monitor real-time clinical trial endpoint data. Interact with clinical study sites regarding data accuracy and collection, prepare reports for sponsors, and assist in preparing and writing study reports. Conduct literature reviews to assure up-to-date clinical standards of care and endpoint expectations. • Coordinate the conduct of Phase II-IV clinical, observational, and device trials. Serve as the primary contact for study subjects and sponsors. Review study protocols and brochures; create study document binder (sponsor, site, CRO, IRB/IEC correspondence), and prepare source documents including study and subject information folders. Complete study start-up through close-out procedures including recruitment and patient enrollment, informed consent process, pre-screening, screening, and study visits in conjunction with Physician/Investigator (may include blood draws, vital signs, performing ECG's, processing specimens), documentation of patient progress in response to investigative agents, coordination of monitor visits, completion of source documents and case report forms. Oversee preparation of physician

	orders to ensure protocol compliance, maintain communication with physicians regarding study requirements, dose modifications, and adverse events. ● Provide technical expertise for the conduct of clinical trials, and support various programming activities related to the analysis and reporting of clinical study data. Import/export programming specification development, test data creation and test data entry, import/export programming functional testing, as well as map specifications to support relevant data standards. Ensure quality control (QC) on all process and technical activities related to derived dataset, table, listing, and figure programming in accordance with corporate quality standards, WSOPs/Guidelines (*Worldwide Standard Operating Procedures*), ICH-GCP and/or other international regulatory requirements are performed. Assist in the coordination of project start-up activities, creation of global programs and tracking spreadsheets.
COMMUNITY ORGANIZATIONS (DOMESTIC AND GLOBAL)	**SAMPLE RESPONSIBILITIES & TASKS**
● Project Hope ● American Diabetes Foundation ● Cambridge Health Alliance - Institute for Community Health ● International Center on Research for Women (ICRW) ● NY Academy of Medicine - Institute for Urban Health ● Cardiovascular Research Foundation	● Support the design, implementation, and evaluation of regional and country-level Quality Improvement (QI) global health projects. Facilitate communication and collaboration between donors, Ministries of Health, and other project stakeholders in order to achieve country level QI project objectives. Develop and update QI-related training and technical assistance activities. Contribute to project protocol development and coordinate Institutional Review Board (IRB) and ethical review at research center, local IRBs, and donor institutions. Coordinate and participate with Monitoring & Evaluation staff for indicator development, data collection activities, Standard Operating Procedures (SOP) development, data quality assurance policies and procedures, and data review and analysis. ● Manage, analyze, and report on primary and secondary source quantitative data for multiple projects, including managing medium and large size datasets for multiple projects, including data import, data review and cleaning for quality control, data management (e.g., merging and updating), and deriving variables for analytic purposes. Perform descriptive, univariate and multivariable analyses. Generate results in necessary formats for presentations and publications, including graphs, figures and tables. Ensure accuracy of all statistical analyses and interpretation of results in manuscripts, reports, conference submissions and grants. Interact with research and evaluation collaborators regarding data collection, transmission, management, and interpretation for research and evaluation projects. Participate in the development of proposals, reports, presentations, and manuscripts. ● Lead multiple, concurrent research projects to develop consumer insights and understand market trends. Conducts, analyzes, and communicates findings of program and event evaluation research projects.

	Conducts and supports comprehensive secondary research and analysis. Writes reports based on primary and secondary data sources. Interact with internal and external clients to scope and lead research project.
CONSULTING, RESEARCH FIRMS, & ACADEMIA	**SAMPLE RESPONSIBILITIES & TASKS**
● Mathematica Policy Research ● Evidera ● ICF International ● American Institutes for Research ● University of California at San Francisco (UCSF)	● Support data management, statistical analysis and reporting activities for a government agency client, for example, a client such as the Division of Global HIV and TB at the Centers for Disease Control and Prevention (CDC). Perform data management and statistical analysis of basic and complex datasets, including questionnaire development and data monitoring and use. Oversee study design, sample design and sample size estimation. Synthesize quantitative information from a variety of sources. Contribute to scientific reports and manuscript writing. ● Support USAID-funded project such as the Sustaining Health Outcomes through the Private Sector Plus (SHOPS Plus) project, a global project that catalyzes public-private engagement to increase access to and use of priority health services. Design, implement, and manage multiple research studies at a time. Prepare research protocols and write study concept notes. Develop research instruments, and develop scopes of work for data collection firms. Analyze data using statistical analysis software, write research reports, journal articles, and research summary briefs. Present research results to both research and non-research audiences, including USAID clients and local country stakeholders. Ensure compliance with internal IRB, local IRB, and USAID policies and requirements related to research studies. ● As part of a Real World Evidence (RWE) team, help clients develop economic and epidemiological evidence to demonstrate and support product value across their entire lifecycle, including early pre-launch planning, launch, and post-marketing management. Identify the relationships between patient, drug, clinical, and disease factors in order to assist clients in identifying and navigating potential drug-event causal relationships, as well as building and refining evidence-based value messages. Analyze various sources or real-world data (e.g., medical claims, electronic health records, registries), to generate key insights and information in several areas, including treatment patterns, cost of medications, utilization and cost of healthcare services, Incidence and prevalence of diseases, pharmacovigilance, prevalence and impact of various risk factors, burden of disease, comparative effectiveness, and productivity and work loss.