# Epidemiology and Biostatistics

The Epidemiology and Biostatistics concentration prepares you for public health careers in which the collection, analysis, and interpretation of data are critical components. Although emphasis is placed on the application of epidemiologic and biostatistical methodology to public health policy and practice, students develop a solid foundation in the underlying theory.



## Required Courses

- Intermediate Biostatistics: Regression Methods
- Survey Research Methods
- Intermediate Epidemiology or Public Health Practice Epidemiology
- Introduction to SAS

## You will learn to...

- Develop a causal framework using epidemiologic tools to conceptualize and describe the occurrence and determinants of a public health problem.
- Demonstrate the reproducibility of work when engaged in any phase of the life cycle of data from conceptualization to dissemination.
- Apply appropriate epidemiologic design and statistical analysis techniques to minimize bias and confounding in public health studies.
- Apply best methodologies in designing instruments and procedures for the collection of public health data.
- Critique and summarize epidemiologic evidence and available data in the context of a public health problem.

## Sample Concentration Electives

- Analysis of Clustered Data
- Cancer Epidemiology & Prevention
- Cardiovascular Epidemiology
- Environmental Epidemiology
- GIS for Public Health
- Infectious Disease Epidemiology
- Nutritional Epidemiology
- Nutrition Data Analysis
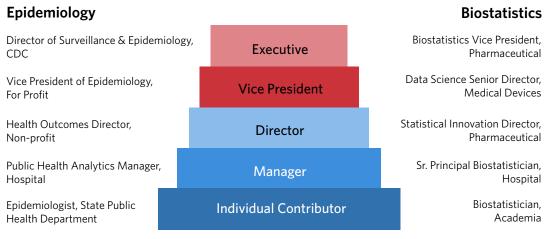- Qualitative Tools for Public Health Research & Programs

- Rhode Island Department of Health, "Populations Disproportionately Affected by COVID-19 and Implications for Health Equity in Rhode Island; A Geospatial Analysis"
- Tufts University, Alcohol and Health Education Department, "Predictors of Alcohol Use During the First Year of College: Implications for Prevention and Guidelines for Reporting"
- Dana Farber Cancer Institute, "Evaluation of Dana-Farber's Mammography Van Program Using a Mixed Methods Approach"
- Namibia Ministry of Health & Social Services, "Assessing the Knowledge and Barriers to Care for Men with Hypertension in Khomas Region, Namibia"
- Massachusetts Department of Health, "Applying Methods for Analyzing and Reporting Trends in Massachusetts Occupational Health Indicator Data"
- Rhode Island Public Health Institute, "Data Management for a Healthy Food Initiative Among Low-Income, Older Adults with Type II Diabetes in Providence, Rhode Island"
- Northbound Ventures, LLC, "Understanding the Boston Public School Student Population to Increase School Meal Participation"

## Career Path Examples

Career Services in the Tufts Public Health programs is here to support you for more than just your first post-graduate job. We understand that a public health career can take many paths, and our comprehensive career advising focuses on your long-term development, helping you to expand experience and build credentials for future promotions, career changes, and leadership roles. The following chart gives sample job titles and employers at different stages of a prospective career in Epidemiology and Biostatistics.

**Epidemiology**

| | | **Biostatistics** |
|---|---|---|
| Director of Surveillance & Epidemiology, CDC | Executive | Biostatistics Vice President, Pharmaceutical |
| Vice President of Epidemiology, For Profit | Vice President | Data Science Senior Director, Medical Devices |
| Health Outcomes Director, Non-profit | Director | Statistical Innovation Director, Pharmaceutical |
| Public Health Analytics Manager, Hospital | Manager | Sr. Principal Biostatistician, Hospital |
| Epidemiologist, State Public Health Department | Individual Contributor | Biostatistician, Academia |

## Hierarchy of Job Titles