



**NYU GROSSMAN SCHOOL OF MEDICINE
Certificate in Healthcare Delivery Science
Course Descriptions**

Healthcare Delivery Science

This course provides a comprehensive introduction to healthcare delivery in the United States and to principles of care redesign to enable students to develop core competencies in healthcare delivery science. By the end of the course, students have a clear understanding of fundamentals of healthcare policy and organization, and are able to apply quality improvement, engineering, and implementation science principles to care delivery problems. Lectures provide a foundation of knowledge on each concept, supported by supplementary readings and individual development of a plan for an implementation project.

Course Director: [Leora Horwitz, MD](#)

Credits: 3

Analytic Techniques for Healthcare Delivery Science

This course introduces students to quantitative and qualitative analytical techniques most often used in healthcare delivery science (HDS). By the end of the course, participants have a clear understanding of the role these methods can play in HDS research, an understanding of a variety of approaches to collection and analysis of both quantitative and qualitative data, and their application to research questions of varying kinds and stages in a project. Lectures provide a foundation of knowledge on each concept supported by supplementary readings and a study design plan incorporating both quantitative and qualitative components. The course features exposure to a variety of real-world projects both research and operational that incorporate these analytic techniques. Emphasis is placed on mixing methods (such as how to effectively, efficiently incorporate both quantitative and qualitative data into collection and reporting), and thinking critically about approaching data collection and analysis in challenging real-world healthcare environments.

Course Directors: [Simon A. Jones, PhD](#) and [Allison P. Squires, PhD](#)

Credits: 3

Advanced Biostatistical Analysis

Students in this course gain expertise in performing and interpreting multiple regression analysis and applying these methods to their own research data. The course focuses on analytic methods, assumptions, diagnostics, modeling options, tests of significance, and interpretation in multiple linear and logistic regression analysis.

Course Directors: [Alan L. Mendelsohn, MD](#) and [Michael G. Tunik, MD](#)

Credits: 3

Advanced Epidemiology

The objective of this course is to develop an understanding of, and familiarity with, epidemiologic concepts and methods. The lecture session presents additional epidemiologic methods and concepts beyond the basic epidemiology, and review relevant statistical methods and their applications in epidemiologic studies. The following lectures are taught: causality, disease frequency, different types of descriptive, observational and experimental study designs, association, bias, confounding, interaction, multivariate analysis, and error measurement. In addition to lectures, lab sessions include data analyses using Statistical Package for the Social Sciences (SPSS) to answer research questions and discussions of methodological issues. The lab session prepares students with practical skills in conducting and analyzing epidemiologic studies.

Course Director: [Keng-Yen Huang, MPH, PhD](#)

Credits: 3

Health Services Research

The goals of this course are threefold: first, to provide students with an overview of the conceptual models, study designs, methods, and key concepts commonly used in health services research; second, to train students in use of Stata statistical software (Version 15, StataCorp, College Station, Texas); and third, to provide hands-on experience with conduct of a secondary data analysis to address a health services research question. Using national and/or local survey data, students gain experience in data management, cleaning and conditioning, and conduct of preliminary analyses.

Course Director: [Maria R. Khan, PhD, MPH](#)

Credits: 3

Introduction to Dissemination and Implementation Science

This course provides a comprehensive introduction to dissemination and implementation (D&I) science research to enable students to develop core competencies in D&I science. The course enhances students' ability to conceptualize and think through D&I research problems, apply

theory, and employ approaches to improve implementation outcomes with increasing independence. Students complete outside readings throughout the course and are expected to successfully apply an implementation science framework to a prepared research question by the end of the course.

Course Directors: [Erin Rogers, DrPH, MPH](#) and [Mathew Lee, MPH, PhD](#)

Credits: 3