

HEALTHCARE ANALYTICS

IMPROVING HEALTH CARE THROUGH ANALYTICS

With the availability of electronic health data comes the opportunity for novel large-scale analytics to improve health care. Propelled by the increasing adoption of clinical information systems, clinical analytics is emerging as a critical competency to help payers and integrated health delivery systems better manage risk and improve patient outcomes. The certificate program in Healthcare Analytics is designed to promote the competencies of analysts in healthcare settings to select, prepare, analyze, interpret, evaluate and present clinical and operational data for the purposes of improving the quality, safety, efficiency and effectiveness of care.

Explore the value proposition for data analytics, how healthcare quality is defined and measured, and the array of data types and sources in health care. Learn to design an analytic strategy, integrate data from multiple sources, conduct statistical analyses for explanatory and predictive modeling, mine large data sets for knowledge discovery, and effectively visualize and communicate findings.

ENGAGE WITH PROFESSIONALS LIKE YOU

A big part of your learning experience is the interaction with faculty as well as professional peers who bring rich experiences and a strong motivation to learn. This program is designed for clinical and business professionals at hospitals, health systems, physician networks, clinics and health plans/payers.

LEARN WHEN AND WHERE YOU WANT

Courses are offered online and utilize audio, visual and interactive technologies to create an engaging online learning experience. Move through weekly lessons as a cohort while retaining the option to log on at the time and place of your choosing.

PREREQUISITES

Prior professional experience in health care, previous background working with data and understanding of relational databases. Prior coursework in statistics (Statistics 1 or equivalent) is strongly recommended.

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ADDITIONAL INFORMATION

Course schedules, fees and enrollment information:

cpe.ucdavis.edu/certificate-program/healthcare-analytics-certificate-program

Program questions?

530-757-8993

Enrollment questions?

(800) 752-0881 or cpeinfo@ucdavis.edu

UCDAVIS

Continuing and Professional Education

REQUIRED

Introduction to Healthcare Analytics

Explore the value proposition for clinical intelligence and the role of analytics in supporting a data-driven learning healthcare system. Consider the attributes of high-performing health systems, how quality and performance are measured (NQF, HEDIS, AHRQ), and infrastructure requirements to effectively leverage data for health improvement. Other topics include emerging business models and clinical care processes, continuous improvement strategies, health analytics and business intelligence in a post-EHR era, and methods for comparing healthcare delivery.

HEALTHCARE DATA ACQUISITION AND MANAGEMENT

Learn to navigate complex data structures and efficiently retrieve the data needed to answer a question or solve a problem. Explore the types and sources of healthcare data; common representations of data (ICD, CPT); healthcare data models; data harmonization; strategies for optimizing data quality; ethics, data ownership and privacy; and new models of data organization and analytics.

Methods I: Applied Healthcare Statistics

Examine epidemiological concepts in healthcare analytics and their application to patient and population outcomes research. Learn techniques to build and refine analytic models to adjust for mortality, morbidity and risk; compare the cost effectiveness of treatments and evaluate population variations.

Recommended Prerequisite: Introduction to Statistics (or equivalent).

Methods II: Quantitative Methods and Decision Analysis

Explore statistical techniques used to address questions concerning the effectiveness and efficiency of healthcare delivery, including forecasting, seasonal variation and geographic-based service assessments. Examine quality control frameworks, measures and tools, along with the use of simulation methods to model decision options. Apply methods learned to investigate common challenges in the healthcare setting, such as optimizing clinical throughputs, deriving staffing models or comparing clinical processes for population health management.

Data Mining for Healthcare Analytics

The proliferation of data in the post-EHR era creates opportunities to leverage large-scale analytics for improving healthcare delivery. Study data mining techniques used for description and visualization, association and clustering, and classification and estimation (prediction), as well as their application to clinical intelligence, population health management and fraud detection. Explore strategies and tools for effectively visualizing and communicating data.



BRN CREDIT

UC Davis Continuing and Professional Education is an approved continuing education provider by the California Board of Registered Nursing (Provider #00046). Applies to selected courses. Please check the Web for details.

ADVANCE YOUR CLINICAL TRAINING PROGRAM

Consider adding a clinical informatics rotation for your residents by leveraging one or more courses from this program.

For information about options, please contact a program representative today at 530-757-8899.

"There is plenty we need to improve in health care. Unless we can measure these things, we have limited capacity to know whether we are positively impacting these processes."

—Dr. Michael Hogarth, program adviser and instructor

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