

Digital Health and Data Science Competencies

Topic Area	Competency/Learning Outcome
Healthcare Delivery Science	Evaluate digital health tools and data science services to identify their impact on healthcare delivery in terms of efficiency, cost, quality and patient experience.
Health Data Ecosystem	Describe the data ecosystem in healthcare which include electronic health records, picture archiving and communication systems, device-generated data, personal health records, and 'omics (genomics, proteomics, metabolomics).
Health IT Regulatory Environment	Describe the current health IT regulatory environment including the origin, purpose and consequences of mandates. Discuss the expanding impact of information access and data interoperability for patient care, innovation, and research.
Data Science Methods and Research	Describe machine learning/artificial intelligence (AI) methods . Identify their application to health outcome prediction, disease discovery, diagnosis, precision medicine, and advances in the field of DH/DS.
Digital Health Decision Support	Outline the principles of good clinical decision support (CDS) systems for implementation of informatics tools at the bedside .
Modeling Explanations and Applications	Apply predictive models to clinical problems. Explain predictive model features and outputs to clinicians and to patients incorporating their derivation, value, evidence basis and fit for “n of 1” at the bedside.
Bias, Ethics, and Health Equity	Describe the concepts of bias in datasets and outcomes, ethical implications of algorithm usage, and the impact of underrepresentation .
Sociotechnical Context for Digital Health and Data Science	Apply implementation science principles within the context of a sociotechnical framework for digital health and data science .