THE SECONDARY USE OF ELECTRONIC HEALTH RECORDS FOR RESEARCH IN EMERGENCY MEDICINE
DISCLOSURES
COURSE OBJECTIVES

1. Describe several unique aspects of EHR research
2. Describe several limitations and issues around quality of EHR data
3. List some key data standards and state why they are beneficial
4. Understand the concepts and steps around data pipelines for EHR research
5. Describe some unique methods for data analysis in EHR research.
BACKGROUND
BACKGROUND
DATA SET
DATA QUALITY IN EHR RESEARCH
DATA QUALITY IN EHR RESEARCH

Completeness
Correctness
Concordance
Plausibility
Currency
*** KENNEDY SECTION ****
EHR DATA SCIENCE TOOLKIT

- Methods, objectives, and nested relationships
EHR DATA SCIENCE TOOLKIT

- Programming languages
PREDICTIVE MODELING
(SUPERVISED MACHINE LEARNING)

• Traditional Statistics versus Machine Learning
  • Explanatory versus predictive methods (ensemble learning)
  • Hypothesis driven versus untethered approaches
UNSUPERVISED MACHINE LEARNING

• Methods and objectives
DATA MINING
(UNSUPERVISED MACHINE LEARNING)

• Methods and objectives
HIGH DIMENSIONAL DATA

• Methods and objectives
TRANSLATION OF EHR DATA SCIENCE TO PRACTICE

• Examples