

Digital Transformation of Healthcare

Study Design and Data Collection

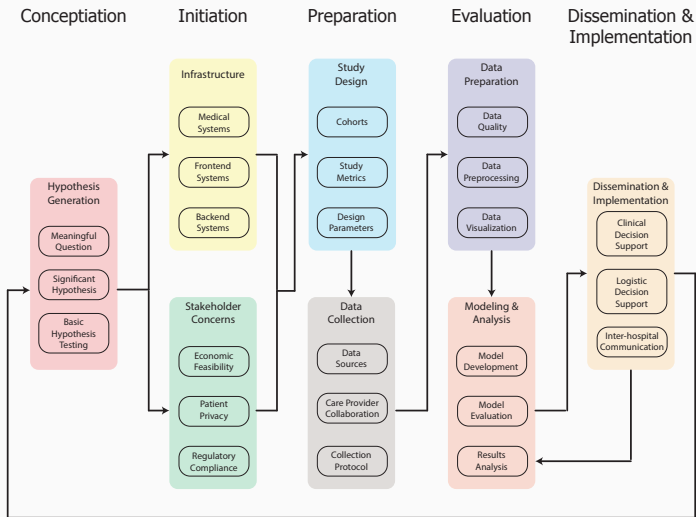
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Center for Health Data Innovations

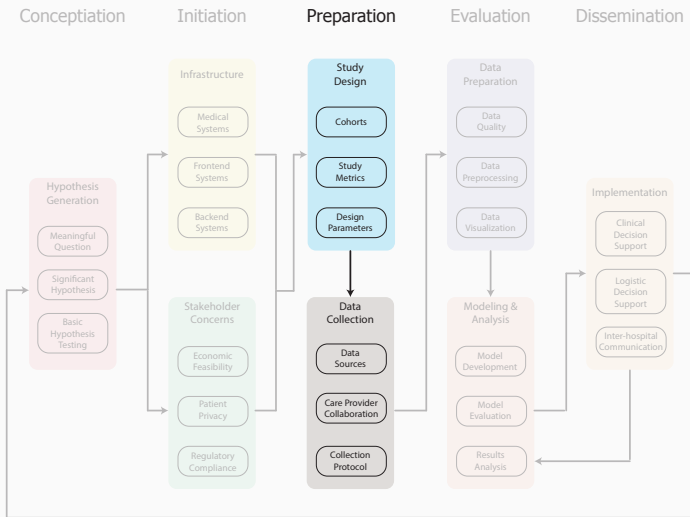
After this lecture students will be able to

- Assess the quality of data
- Trace the steps where data quality can be affected
- Define measures to ensure quality assurance and quality control of data
- Describe the components of an ETL pipeline
- Examine data for problems and discuss possible causes
- Design a process for imputation of missing data

Bioinformatics Pipeline



Study Design and Data Collection



- What other kinds of data can be useful to a study (in addition to those generated by the hospital)?

Ancillary Data Sources

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- What are the different ways to get that data?

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2018-09-06

Ancillary Data Sources

- What other kinds of data can be useful to a study (in addition to those generated by the hospital)?
- What are the different ways to get that data?

- Other Data - Weather data, public health records
- Try to find that data live (csv, api, scraping), can you trust the data source?
 - Weather - download data, weather underground, wunderweather
 - Twitter - api
 - football - scraping (ethics of scraping)
 - Other - ilinet (flu view) pdfs (new york state influenza surveillance)

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└ Mobile Health Overview

- What devices can we use?
- What information can we get from patients, using these devices?
- What information should we get from a moral standpoint?
- What information do we want and how often do we want it?

- Phones, computers/internet, alexa/google home, smart watches
- passive vs active data collections

- What elements do you have to consider when designing mHealth applications?
- What are the technical (backend) issues?

└ mHealth Usability

- What elements do you have to consider when designing mHealth applications?
- What are the technical (backend) issues?

- Some of the main components of usability are - learnability, efficiency/speed, memorability, low error rate, satisfaction
- interoperability, data security, confidentiality, integration with current health care systems