Data Science Internship

Mayo Clinic

Introduction

Mayo Clinic, the largest integrated, not-for-profit medical group, transforms healthcare with accessible, innovative, and compassionate care. They pioneer research for early diagnoses and cures, inspiring hope worldwide. Mayo Clinic Platform drives technology advancements. U.S. News & World Report ranks them No. 1 overall and in 14 specialties. They address health disparities, promote diversity, and ensure equitable access to care. Mayo Clinic's commitment to excellence and patient-centeredness shapes a healthier world.

Objectives

- ❑ Develop a data mapping solution
- ❑ Effective communication and teamwork
- ❑ Enhance cohort creation for startup companies
- ❑ Develop an algorithm using Python and SQL to enhance healthcare data platforms

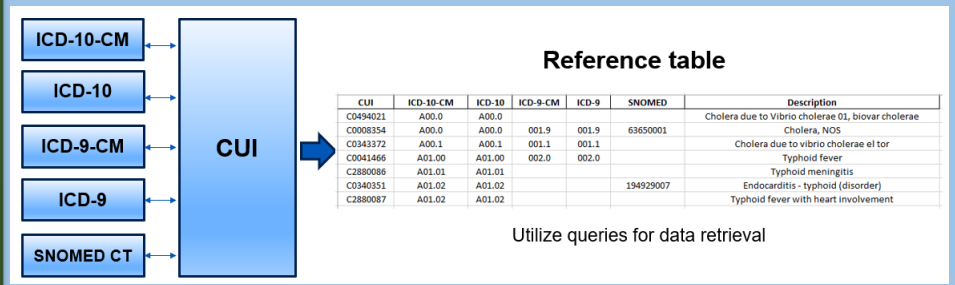
Responsibility

- ❑ As a Data Science intern, I was responsible for creating a comprehensive table mapping disease codes to bridge the gap between disease names and standardized codes
- ❑ Create comprehensive mapping system; streamline the process of identifying accurate and standardized codes
- ❑ Preparation of bi-weekly presentations to Mayo Clinic's leadership
- ❑ End-of-internship presentation to Mayo Clinic's leadership

My Role

- ❑ Conducted research on diagnosis codes and mapping processes to enhance data analysis
- ❑ Utilized Python to perform mapping tasks, improving data integration and understanding
- ❑ Presented research findings to Mayo Clinic's leadership, effectively communicating complex information.
- ❑ Created a comprehensive reference table to streamline the relationship between different medical codes and concepts.
- ❑ Collaborated closely with a mentor, gaining valuable guidance and insights during the internship.
- ❑ Developed and delivered presentations on my work, contributing to knowledge sharing within the organization.

Overview of Diagnosis Code Conversion Process

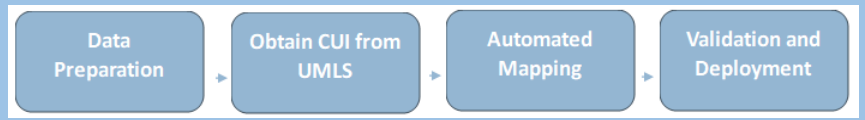


CUI	ICD-10-CM	ICD-10	ICD-9-CM	ICD-9	SNOMED	Description
C0494021	A00.0	A00.0				Cholera due to Vibrio cholerae 01, biovar cholerae
C0008354	A00.0	A00.0	001.9	001.9	63650001	Cholera, NOS
C0343372	A00.1	A00.1	001.1	001.1		Cholera due to vibrio cholerae el tor
C0041466	A01.00	A01.00	002.0	002.0		Typhoid fever
C2880086	A01.01	A01.01				Typhoid meningitis
C0340351	A01.02	A01.02			194929007	Endocarditis - typhoid (disorder)
C2880087	A01.02	A01.02				Typhoid fever with heart involvement

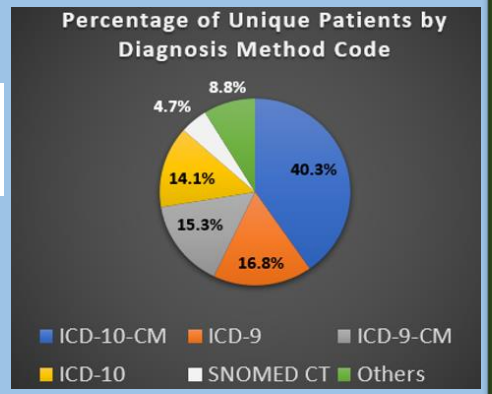
- ❑ From this reference table, search by description to obtain a list of all related diagnosis codes

The Mapping Process + Mayo Clinic Platform's Patient Data Analysis

Overview of the Mapping Process



- ❑ Obtain the disease codes (ICD-10-CM, ICD-10, ICD-9, ICD-9-CM, SNOMED) from various healthcare data sources.
- ❑ These codes will serve as the basis for the subsequent mapping process.
- ❑ Leverage the Unified Medical Language System (UMLS) to obtain Concept Unique Identifiers (CUIs) for the disease codes acquired in the data preparation step.



- ❑ Analysis of Mayo Clinic Platform's patient data

Learning

- ❑ Acquired technical skills in data science tools like Python and gained proficiency in data visualization and analysis.
- ❑ Developed a strong understanding of healthcare and medical data, including diagnosis codes and the mapping process between ICD codes and SNOMED CT concepts.

Conclusion

Working at Mayo Clinic was a fantastic opportunity. The summer internship provided me with invaluable experience, allowing me to acquire practical data science skills, including:

- ❑ Python querying
- ❑ Data analysis
- ❑ Research on project
- ❑ Creating reports and presentations
- ❑ Working with large datasets
- ❑ Excel based reporting
- ❑ Working with mentor