Visualization of Quality Metrics: An Interactive Dashboard

Developer: Janhavi Chitale | Professor: Dr. Kathy Weaver | Client: Anne Arundel County: Chief James Wilkison

Abstract

• The Emergency Medical Services (EMS) Division at the Anne Arundel County Fire Department provides emergency and non-emergency medical services for more than 500,000 county residents.
• EMS agencies aim to match their performance to national standardized core measures to streamline their processes efficiently.

Project Scope

• Developing an online tool for analysis and visualization of the EMS data.
• Building a dynamic interactive dashboard for visualizations of the core measures to help the department analyze and monitor their performance.

Methodology

• Acquiring eMEDS data in a timely manner from the county as they had to scrub confidential data.
• Interpreting the scrubbed medical data.
• Trying to learn different web development technologies while keeping with suggested timeline.

Technologies Used

XAMPP
03.36 - Data Driven Documents
Crossfilter

Data Access
  • Accessing National EMS Database through eMEDS.
  • Exporting data into CSV form.

Data Processing
  • Data cleaning.
  • Data transformation.

Data Analysis
  • Calculation of performance measures.
  • Analyzing performance trends.

Data Visualization
  • Visualizer results in the form of graphs.
  • Display graphs on webpage.

Successes

• Successfully implemented visualizations of core measures in the form of an interactive dashboard.
• Effectively learned D3.js and its application in data visualization.
• Gained experience in various data manipulation and analysis techniques.

Challenges

• Acquiring eMEDS data in a timely manner from the county as they had to scrub confidential data.
• Interpreting the scrubbed medical data.
• Trying to learn different web development technologies while keeping with suggested timeline.