A Visual Analytics Framework for Emergency Room Clinical Encounters

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System Overview

The 5-W Scheme

WHO: the patient and the history

WHAT: the various information categories and items: Symptoms, Tests and Results, Diagnosis, Treatments and Medications, etc.

WHERE: locations (when appropriate) of the WHAT on the human body

WHEN: time and duration of the WHAT

WHY: cause and effect of the various WHAT constituents

Visualizing Who, What, and Where

Visualizing When

Each entry is classified into one of four tracks
- Symptoms: Blue;
- Tests: Orange
- Diagnosis: Green;
- Treatments: Purple

Visualizing Why

- There is a directed edge between two nodes n1 and n2 if n1 causes n2.
- Symptom→Test/Data→Diagnosis→Treatment/Medication
- All Symptoms of one visit have incoming edges from a node representing the visit.
- A modified version of the force-directed layout
- A convex hull is drawn for each incident, showing a clearer delineation between different visits.
- Explain the node when it’s tapped.