Group:
Kyle Boyer, Karl Justice, Christopher Storey, Erik Sturcke

1. Question and Task
Question: How has disease progressed? what encounter is followed by what? how frequently? how recently? what is the most / least frequent encounters?

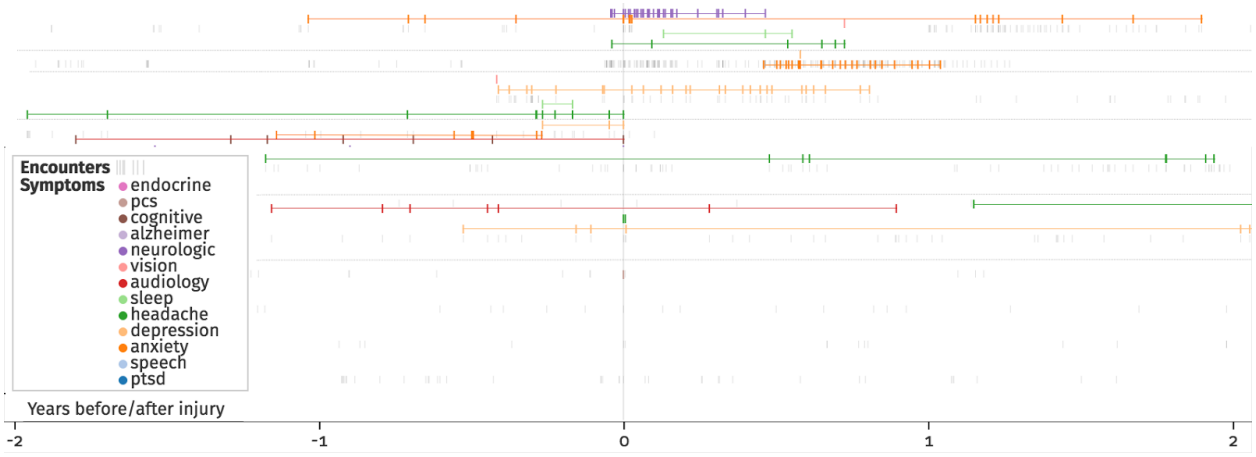
Domain task: Find the sequences of symptoms after first injury as well as duration.

Abstract task: Find start and end times of symptoms relative to injury.

2. Data Abstraction:
Items (patients) with temporal data (encounters) taken relative to the time of first injury and using attributes:

- Relative time of encounter (quantitative)
- Flag for each symptom (categorical)

3. Design:
Time series visualization for each patient showing colored vertical bars for each encounter symptom. A vertical line drawn from first encounter with a given symptom to the last encounter showing the extent of a given symptom. This is similar to the box and whisker plots from assignment 3, but showing each individual encounter rather than percentiles. Bushing will allow the user to see single symptoms only with details of encounters and the clicking on a symptom in the legend toggles visibility of each symptom.



3.A
A possible refinement on this implementation: The onset and end date of symptoms is not especially meaningful in cases where that date coincides with the first or last entry in the data. In other words, if this was the first time a patient has a record in the system, and has that

symptom, then they may have had it before. Similarly, if an event is the last time that patient shows up in the system, then they may NOT have stopped experiencing that symptom, they may just have moved away, or died. To make more visually clear the events that imply the start or ending of a symptom, the ends of the horizontal lines can be modified with a meaningful shape. For example, a solid circle could indicate a “true” onset/end, and a greater/lesser-than sign could indicate questionable begin/endpoints (those that coincide with initial or final entries in the system).