London's 1854 Cholera Epidemic

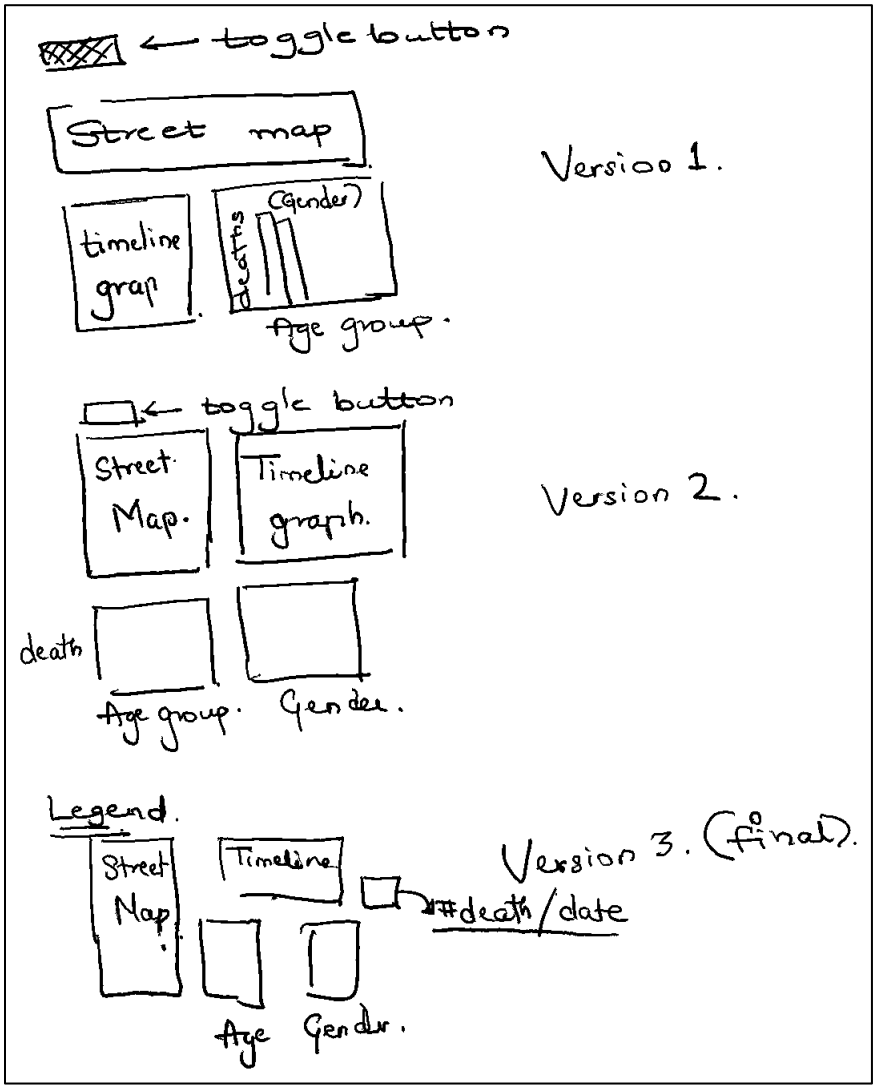
Scope: Re-create John Snow's map presented in 1854 used to plot the deaths on caused during the cholera outbreak.

Questions:

1. Can the Jon Snow's map help future outbreaks / epidermic/ pandemic
2. Findings of Jon Snow finding help treatment options (eg: sex, gender, medium for transmission)
3. Find trend in the spread of death from Aug 19th – Sept 29th
4. Visualize the deaths around pump near Broad Street versus other

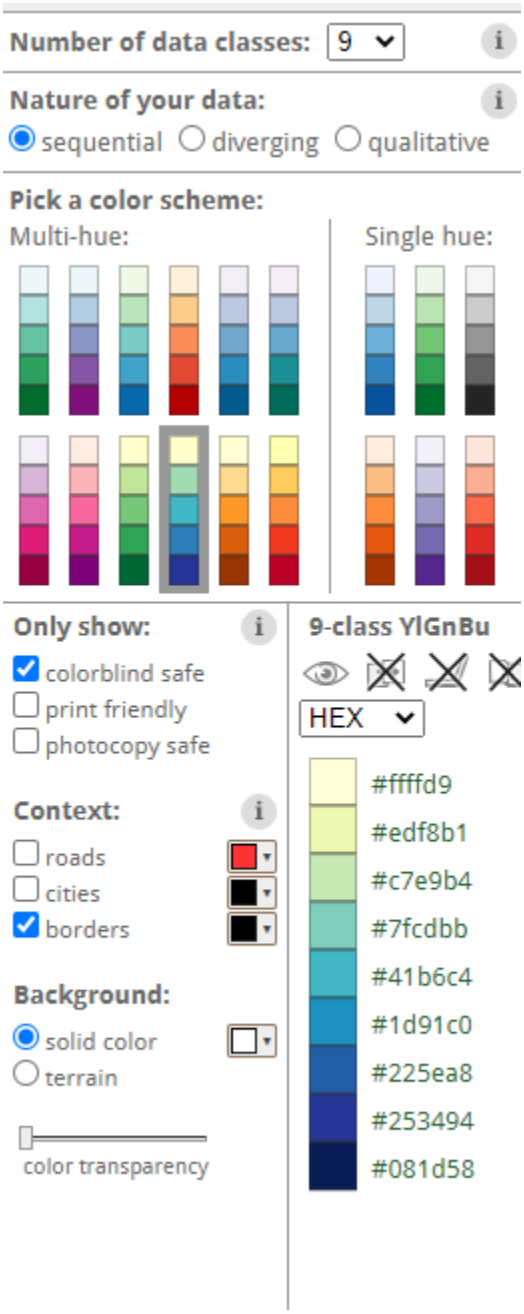
Design

Design decision was inspired by the focus of this project the London map. Looking at the data provided the street.json file provided was difficult to consume and hence I began to plot the pumps followed by deaths. This approach helped me take care of the low hanging fruits and more the project along.



The design document above communicates it was not the first version that made the final version. Most of the changes were made to incorporate my limitation and ability to code efficiently in Java script. This project was created on D3.js version 4 and the graphs and charts and tooltips used were taken inspiration from d3 website charts.

Street Map - The map contains the pumps, deaths and major landmark (eg: Important streets, brewery, work house). Since the tool tip did not make it to the final design the Age and gender is differently colored and bordered respectively. The color used was color blind safe using color brewer (see below the pallet used)



Timeline – The graph was template was used from d3.js website (quoted in references). The graph contains a tooltip to include the information (Date: # of Death (Cumulative death). The cumulative death was calculated and added outside the script to the dataset deathdays.

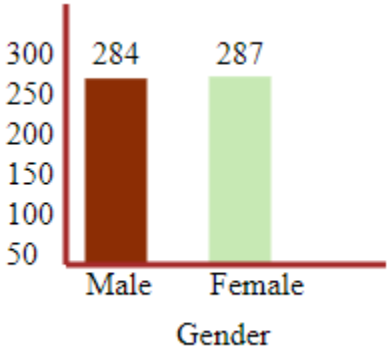
Additional Graphs – The data was difficult to begin as the examples available online only had the data value available to plot as height. The data set provided had frequency of deaths by age and gender. Using 'for loop ' to sum the number of deaths. Since the data was not available as an array – used the class example to plot the graph in the final visualization

Iteration of the design – Include interaction between the map and the timeline graph and a drop down to include the slicing of gender and age group.

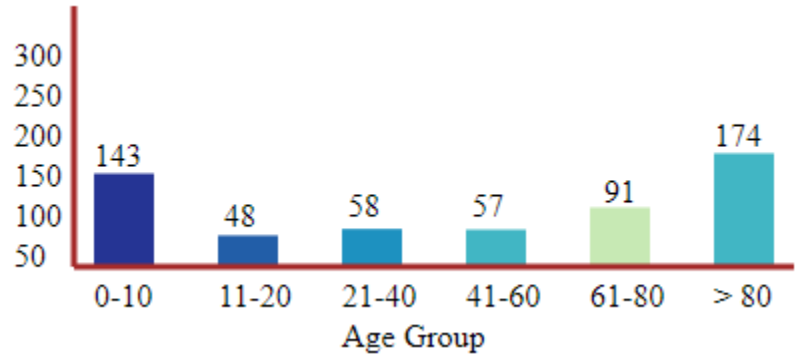
Findings

The visualization can certainly help break down the source of origin for an epidemic, pandemic event. I can relate something can be drawn for Covid 19 to see high populated areas spread faster and large population contracting the virus tying it to air

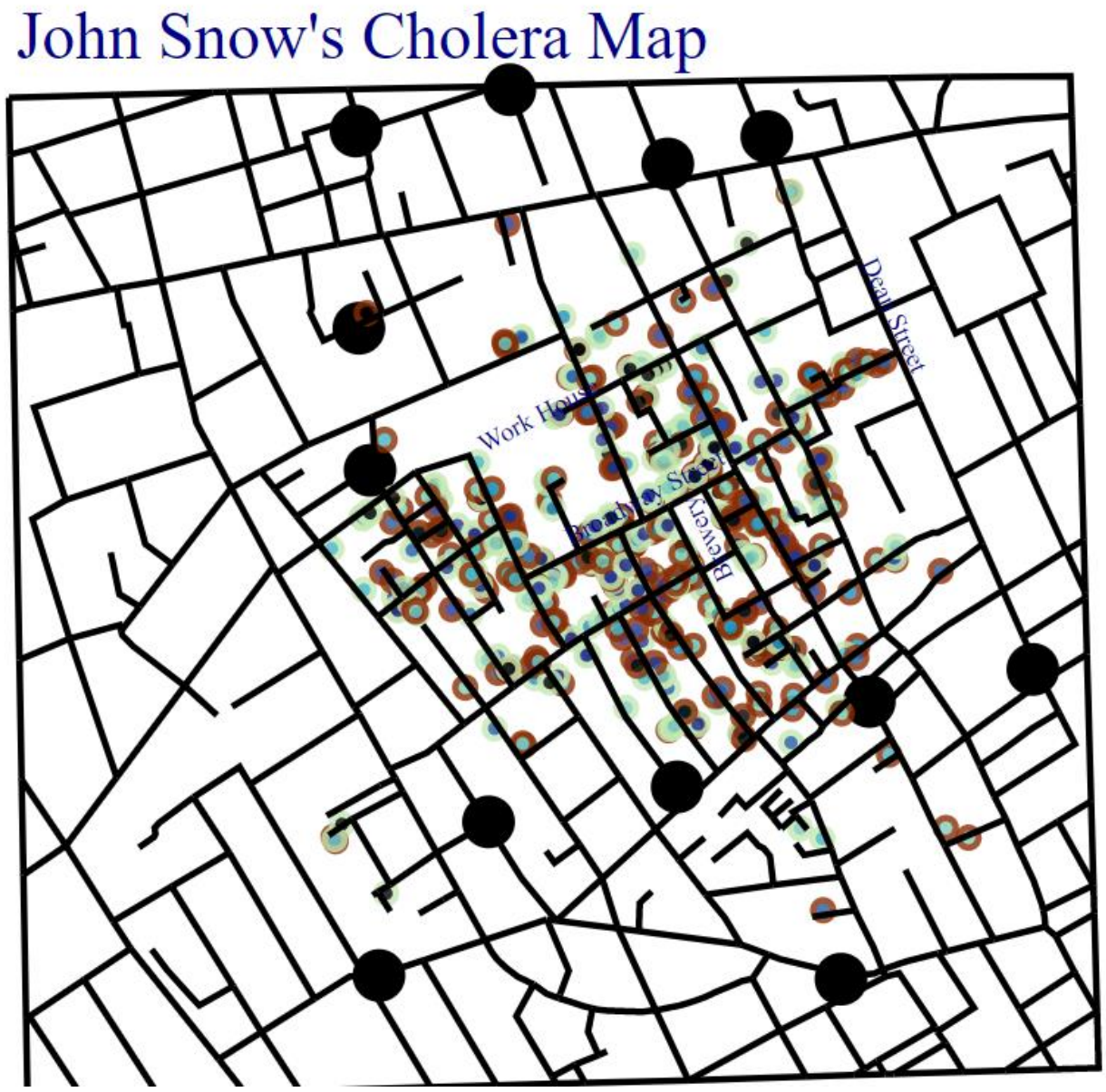
The below visualization shows that the count of deaths for male and female are almost same, telling us the disease is not tied to a specific gender



The census or the percentage of people in each group for the town was not available . But the US census during that time was used to map the below findings. Considering the percentage (1%) of people in the age group >80 is so small and the deaths being high. Definitely cholera effected the older population.



Prior read, tell me the timeline graph peaks at 1st Sept and starts to drop because of the removal of the Pump on Broad street. The Broad street was definitely the problem where the epidemic began – the work house and the Brewery seen fewer deaths because prior reads tells me that they had the water supply of their own.



Limitations:

The data did not contain information on the demographic or housing information for the London map.