

# Cholera, Water Sanitation, and Socioeconomic Status in 19<sup>th</sup> Century Rochester, New York

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### Background:

In 19th-century Rochester, New York, the completion of the Erie Canal resulted in a population boom. As the population grew, diseases spread throughout the city, greatly affecting the lower socioeconomic status individuals. There were multiple prominent waterborne diseases during this time, including cholera, typhoid fever, diarrhea, and dysentery. Cholera was the third leading cause of death in early Rochester (Rochester University 1911). They first believed that cholera was caused from the atmosphere (Rosenberg 1960). These diseases were being spread by well water contaminated from cow shed run off, a lack of self-hygiene, and a lack of washing baby bottles. The Rochester Health Department called baby bottles “baby killers” due to the contamination of milk and water. The city's sewer construction was an attempt to bring fresh water to Rochester residents from Hemlock Lake. Well water was used less because of the transition to fresh water. The conditions that people were living in were unsanitary and mostly affected poor people, which made it easier to spread.

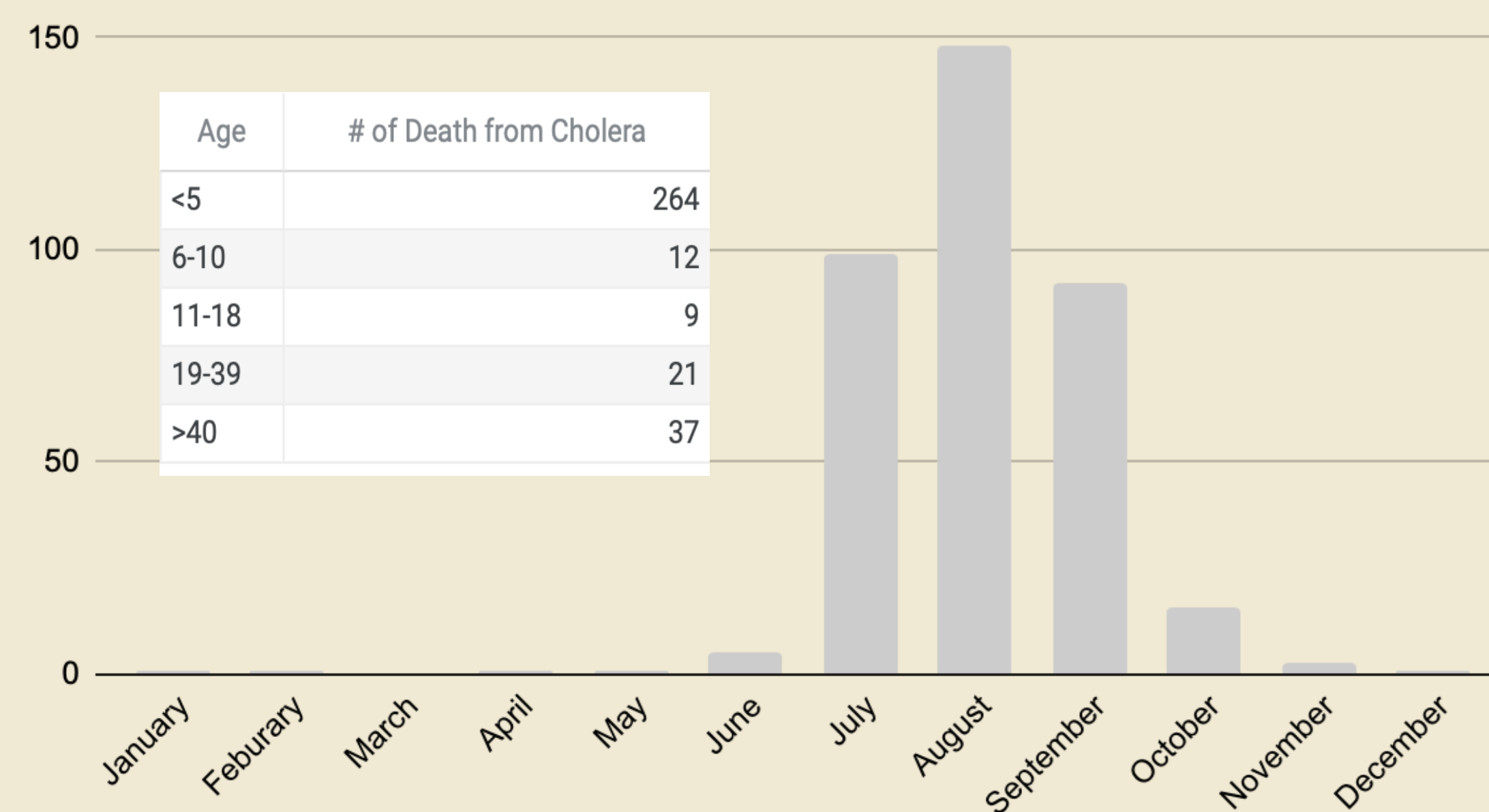
### Data & Methods:

Data used in this analysis included death records from Mt. Hope Cemetery, accessed through the Rush Rhees Library Special Collection and Archives, at the University of Rochester. The hand-written ledger entries were transcribed by SUNY Geneseo students, including the author, into an Excel spreadsheet. The total sample size includes 15,720 individuals. The cause of death, age, residence, and date of death were recorded. A subset of 829 individuals from the dataset was included in the analysis, including 214 individuals who died from diarrhea, 237 individuals who died from dysentery, and 378 individuals who died from cholera. The date of death allowed me to analyze whether there is a pattern of deaths during the summer months in Rochester.

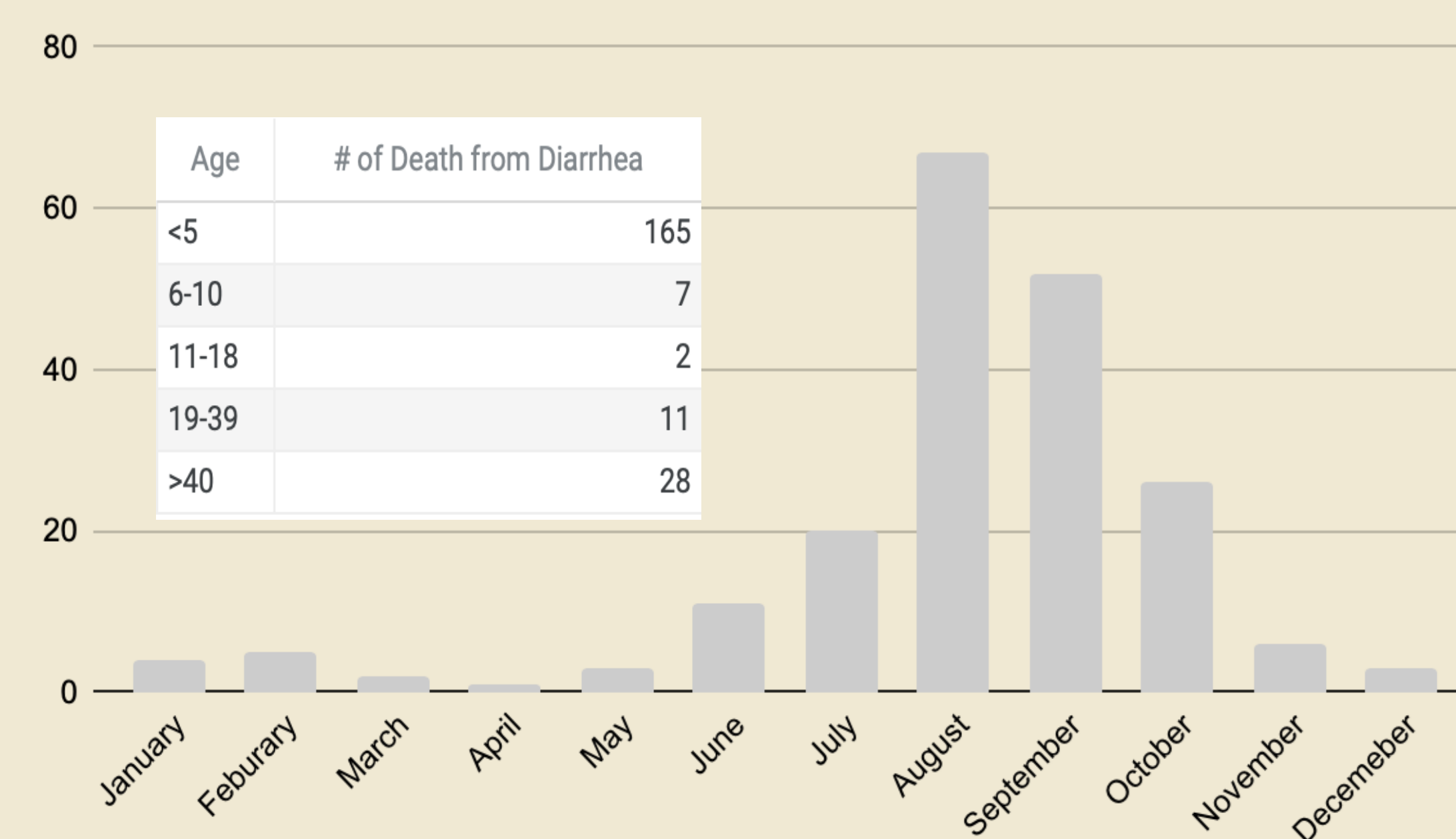
### Results:

The results of this analysis show that cholera, dysentery, and diarrhea all affect individuals greatly during the warmer months of the year. Figure 1 shows that the month of August had 148 deaths from cholera. Figure 2 also shows that the month of August had the most deaths, with 67 deaths from diarrhea. Figure 3 shows that the month of September had the most deaths, with 80 individuals dying from dysentery. The demographics of this sample shows that children under 5 were mostly affected by these waterborne illnesses.

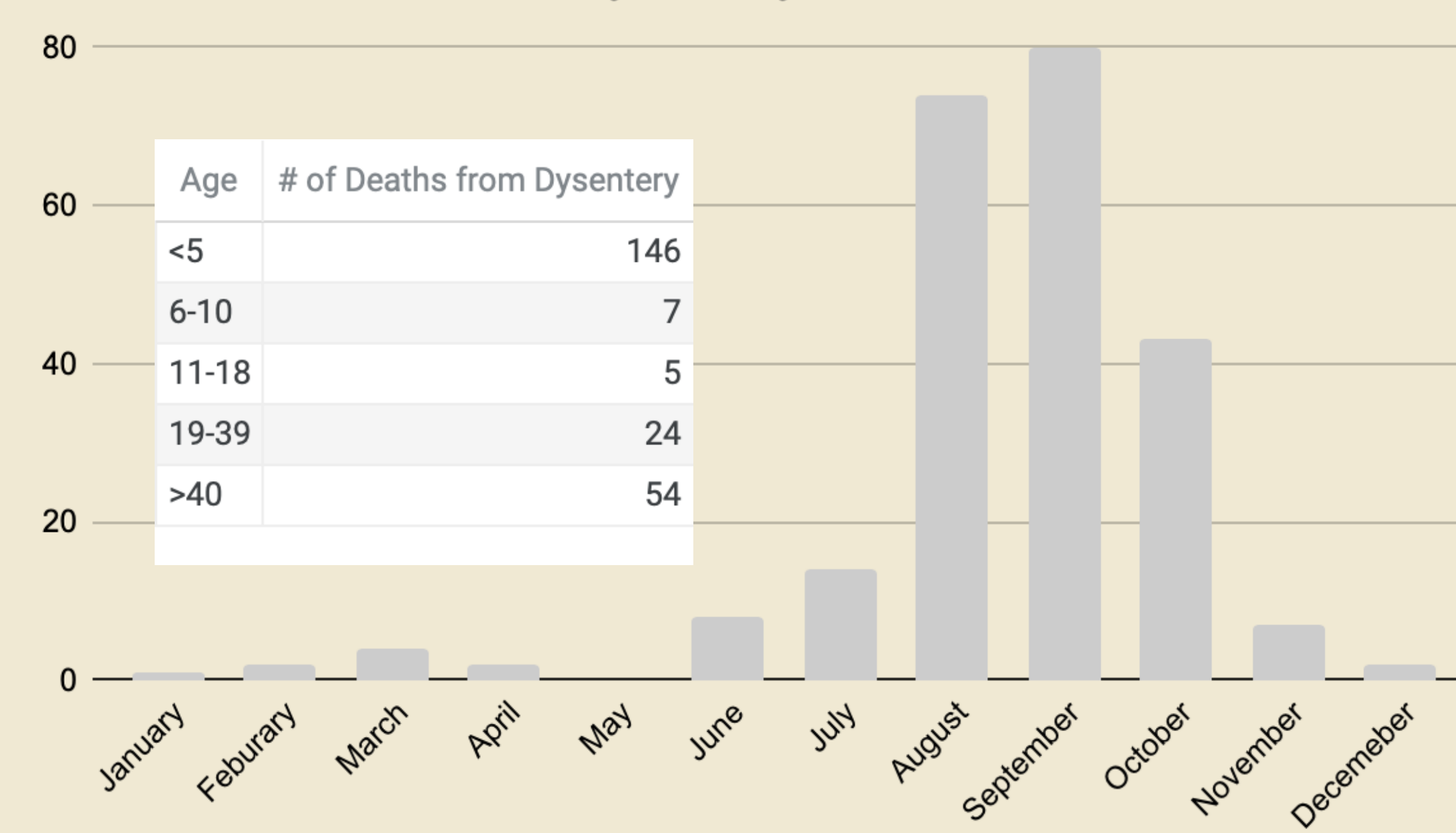
Month of Death from Cholera in Rochester, NY: 1838-1899



Month of Death from Diarrhea in Rochester, NY: 1841-1892



Month of Death from Dysentery in Rochester, NY: 1837-1898



### Discussion & Conclusion:

By 1860 in Rochester children under the age of five were almost half of the deaths (Barnes 1977). Infants were mostly affected by these diseases because their immune systems were not strong enough to fight off these diseases. Poor living conditions, including crowded spaces, made them susceptible to illnesses. Immigrants, who were also susceptible to these diseases, were coming to Rochester during this time. Unfortunately, there was no sanitation infrastructure in the city which led to the spread of infectious diseases. The City of Rochester needed to access a clean water supply in order to prevent these diseases from spreading. Mothers were encouraged to breastfeed their babies because the milk was contaminated and the water they washed the bottles with was contaminated (Rosenberg 1983). The findings from this study supports reports that cholera affected infants more than any other disease during the months of July, August, and September (Rustenburg 1983). It was determined that the milkman carried contagious diseases, as well as the milk that they were delivering. The milk itself contained traces of typhoid and diphtheria or came from cows that had tuberculosis. The milk was also poorly stored and gave infants bacterial disorders. As a result, a system was created for inspecting meat and milk products (Rosenberg 1983). We can see that the contaminated water and milk affected children under five during the summer months.

### References:

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