# Appendix

All relevant figures are included here. These plots are very high resolution (300 dpi), much higher resolution than ones in the Jupyter Notebook file (Midterm_Project.ipynb).

Some chart not formatted correctly. Can be found on https://github.com/WilliamShih9/STA160-2021/tree/main/PlotsFinalProject

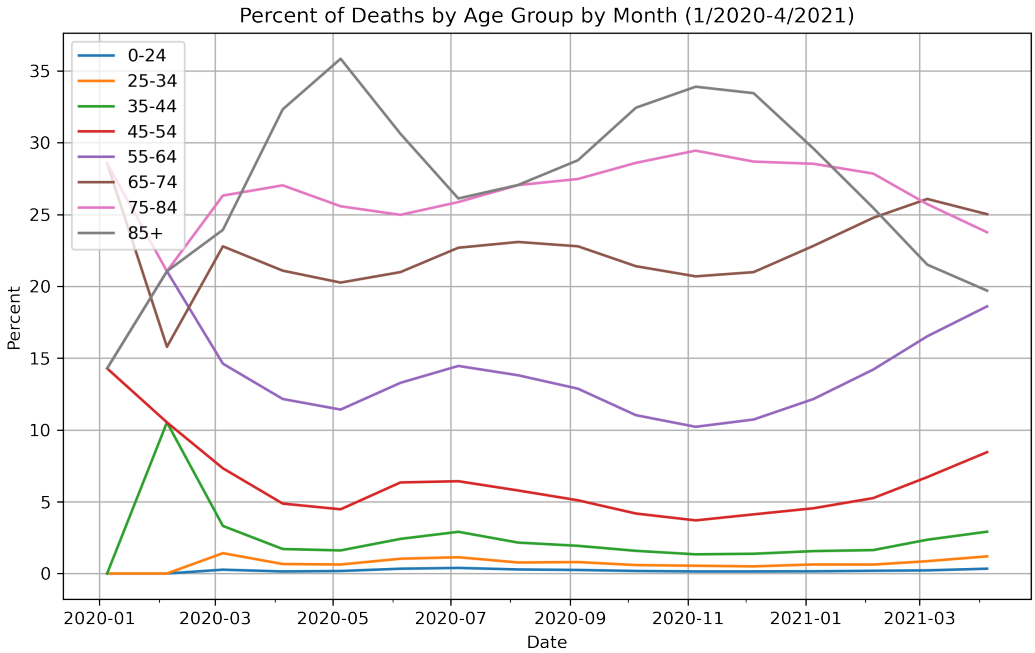


Figure 1: AgeGroupByMonth

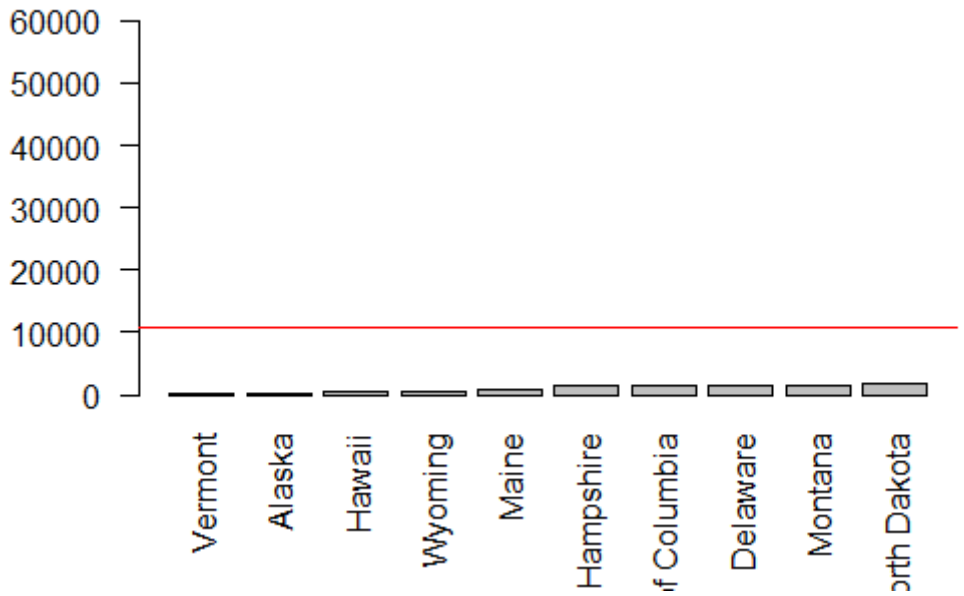


Figure 2: bottom 10 states

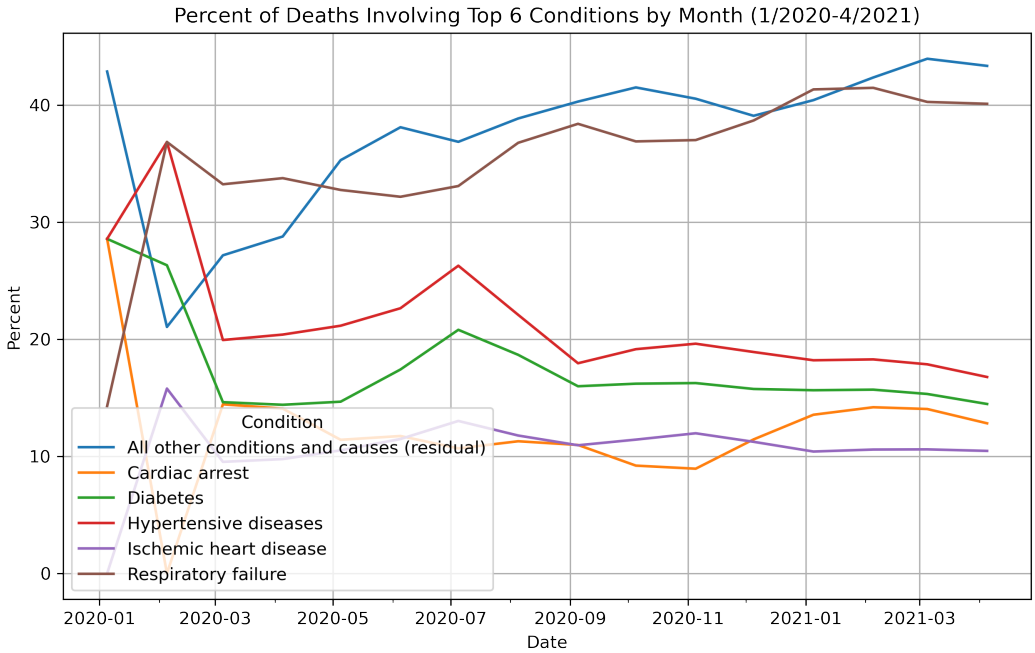


Figure 3: ConditionsByMonth

Figure 4: CumulativeVariance (First Wave)

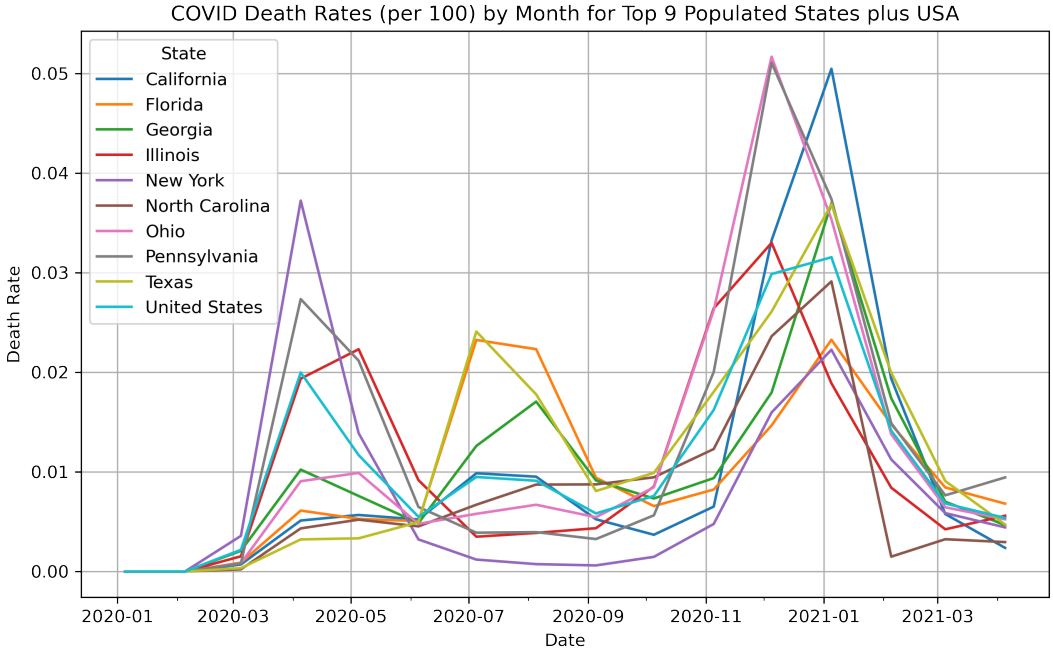


Figure 5: DeathRateTop10

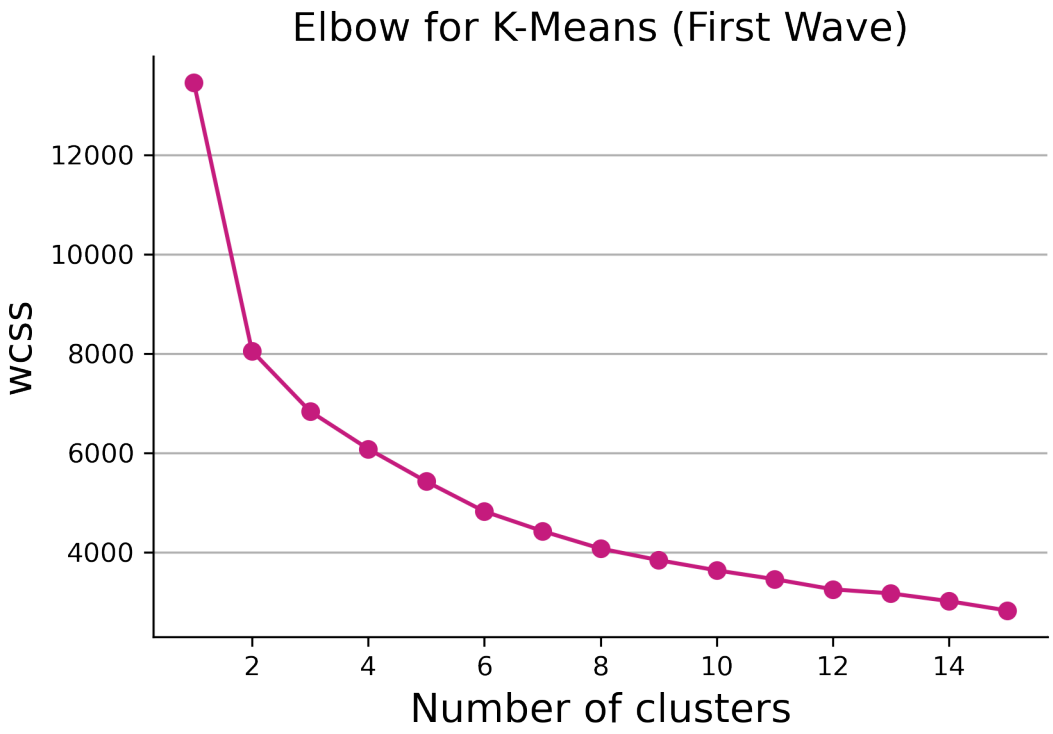


Figure 6: ElbowOne

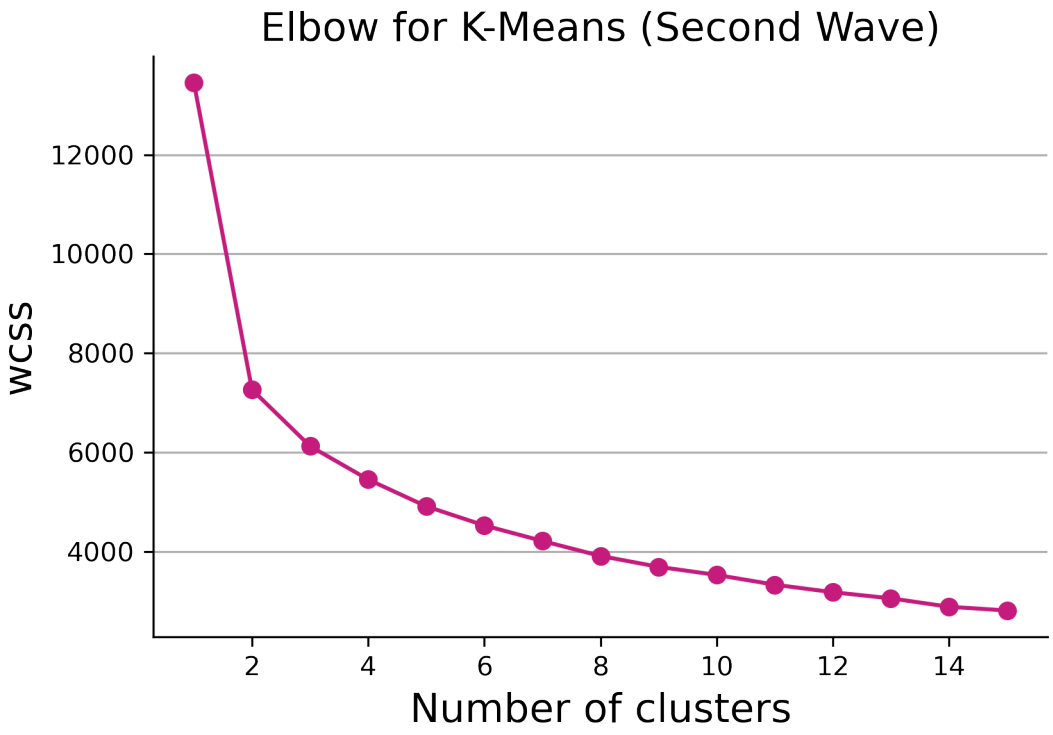


Figure 7: ElbowTwo

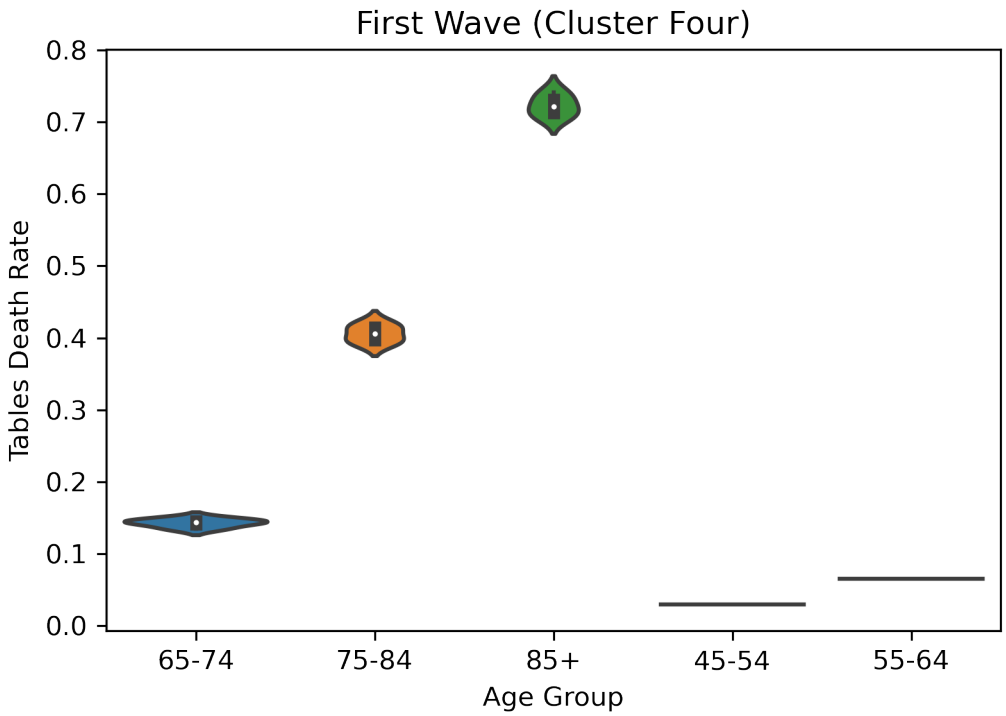


Figure 8: First Wave (Cluster Four)

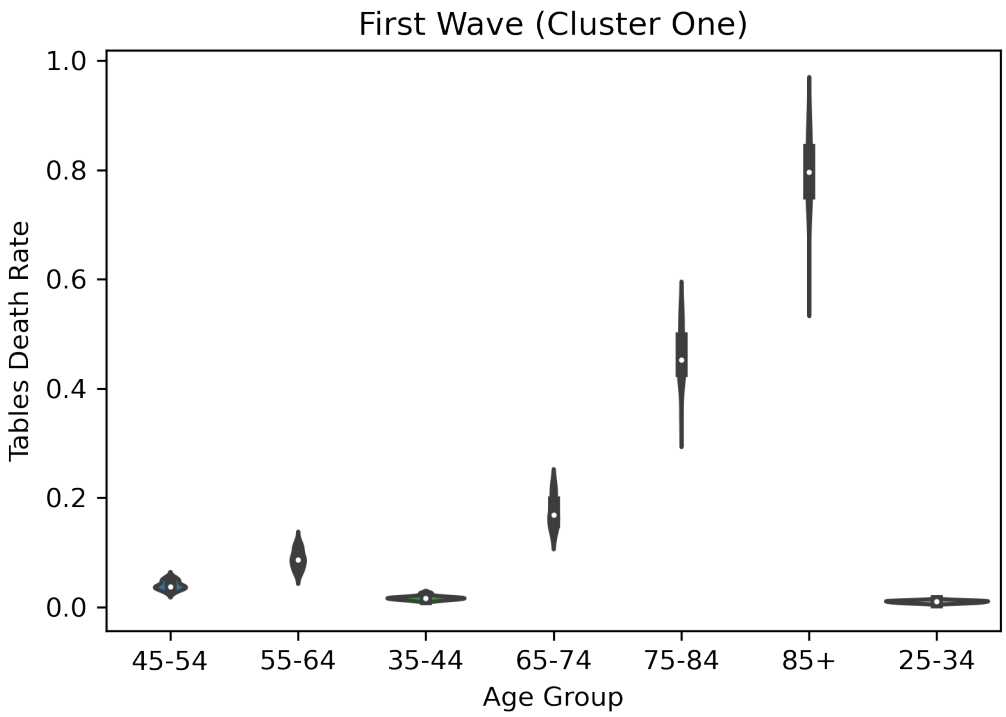


Figure 9: First Wave (Cluster One)

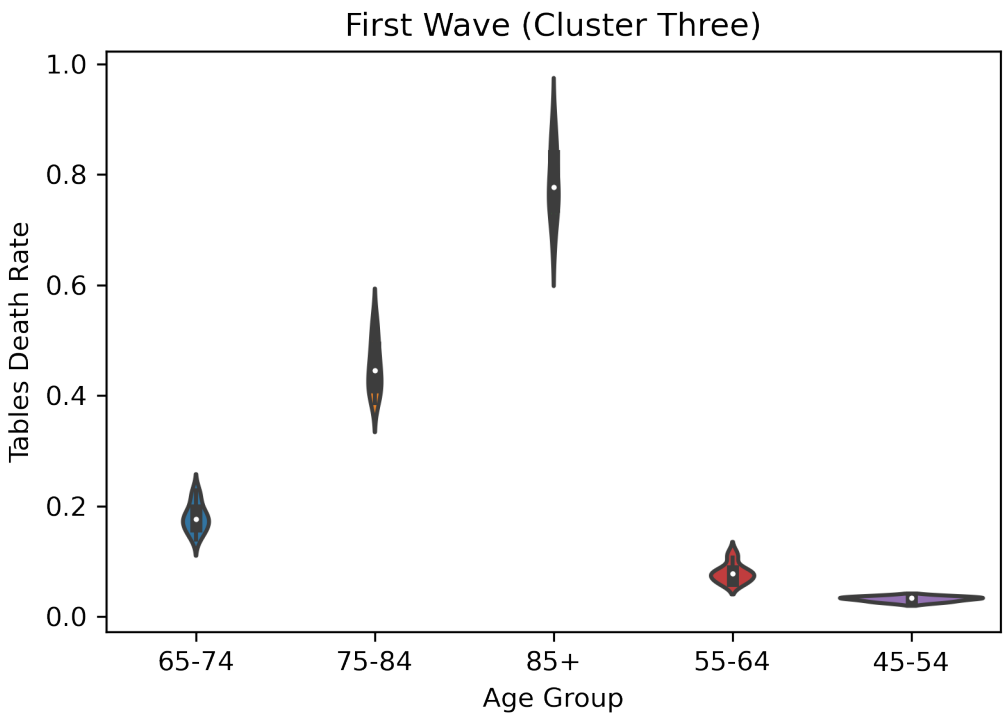


Figure 10: First Wave (Cluster Three)

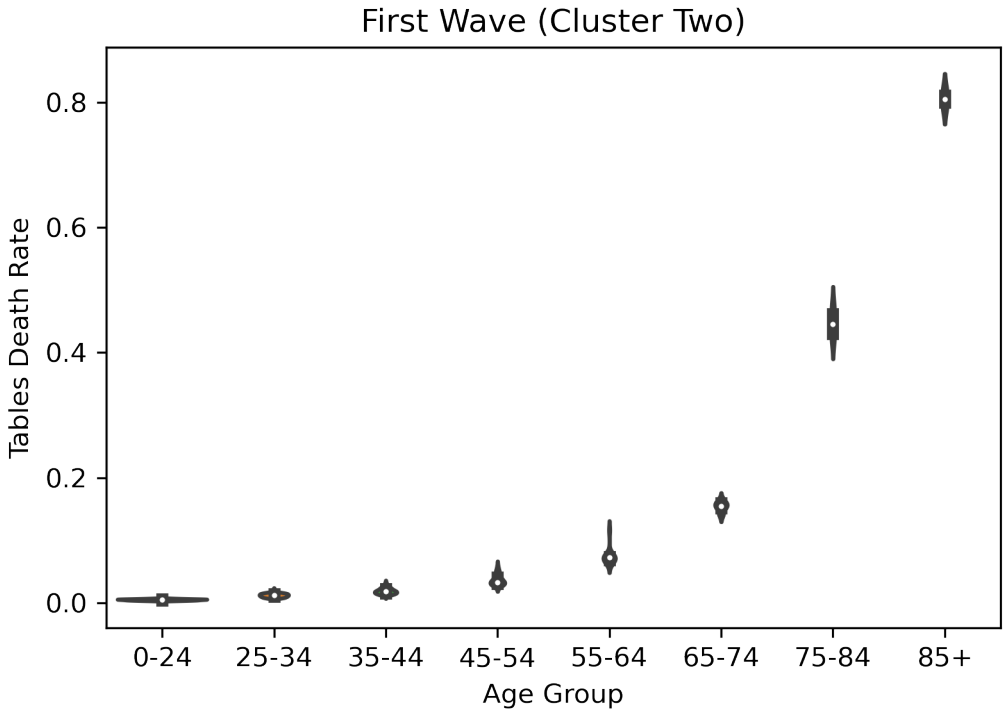


Figure 11: First Wave (Cluster Two)

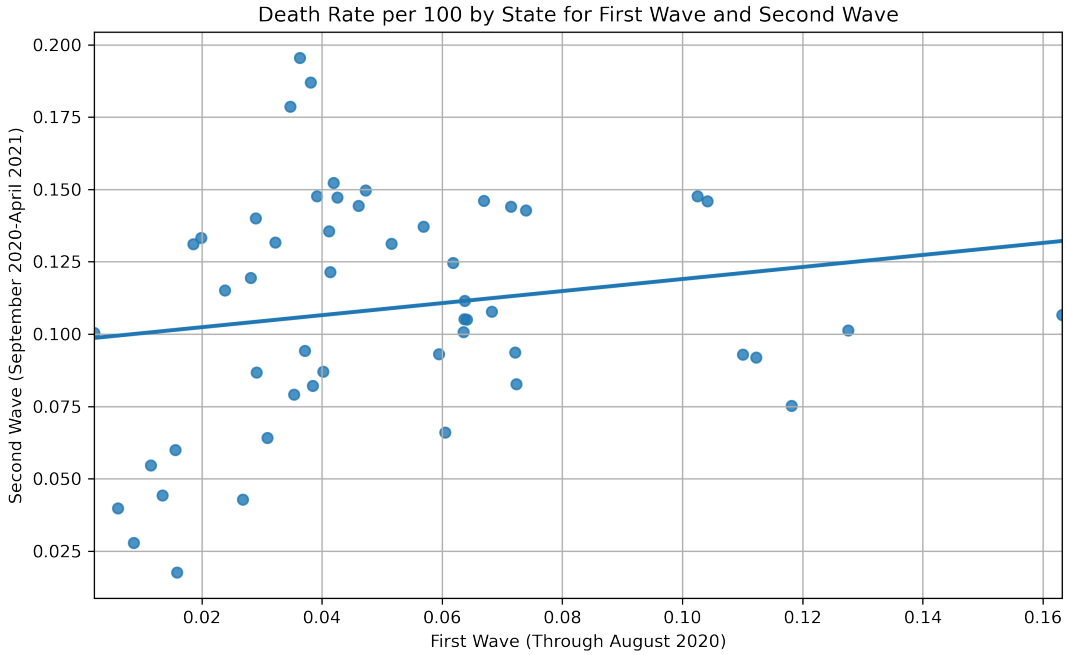


Figure 12: FirstSecondWave

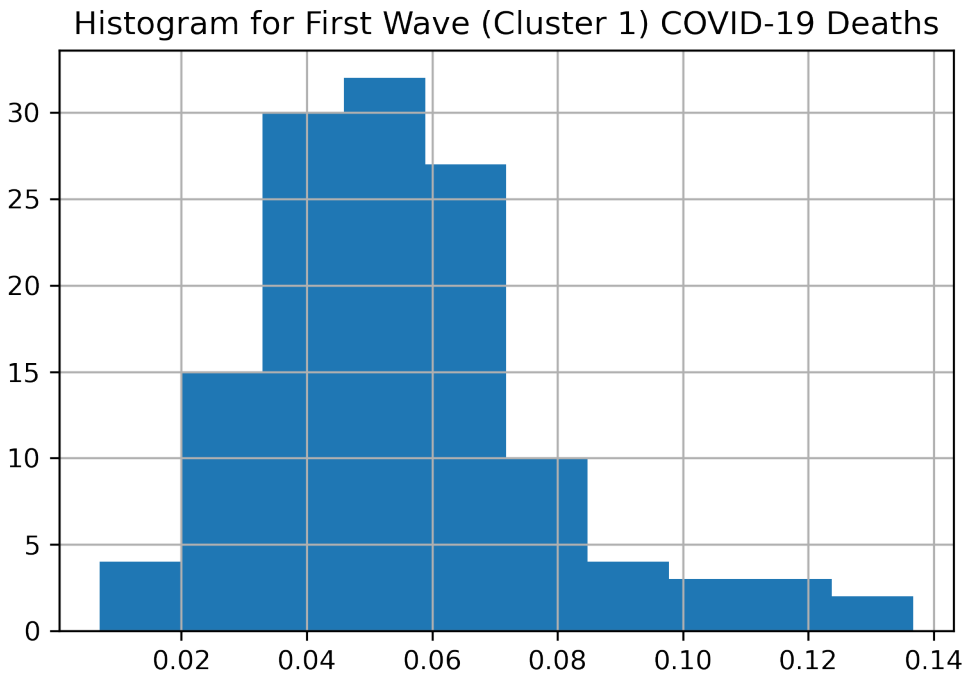


Figure 13: Histogram for First Wave (Cluster 1) COVID-19 Deaths

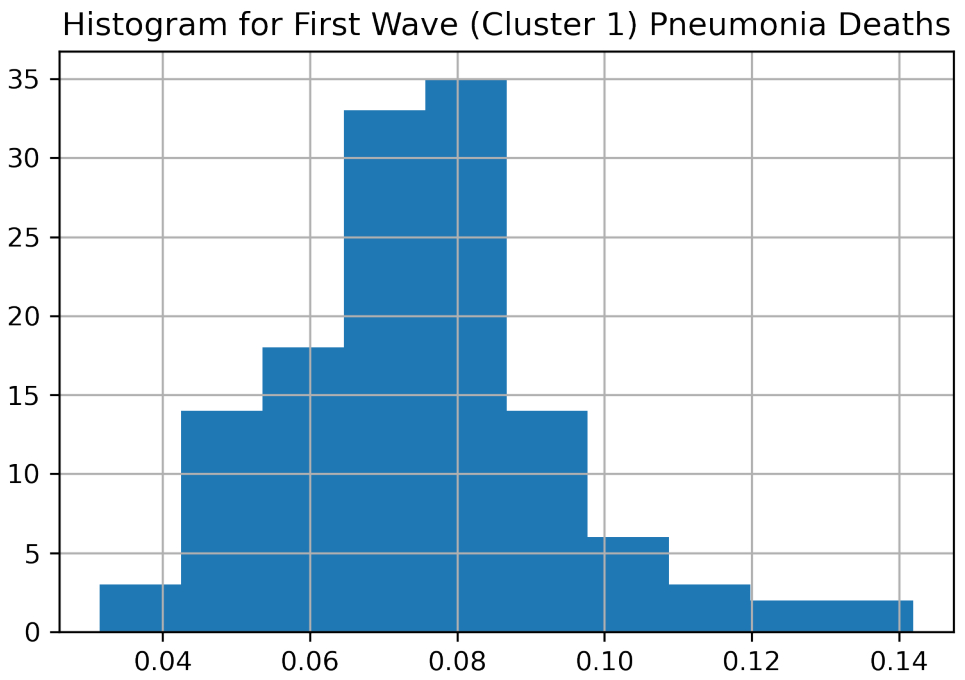


Figure 14: Histogram for First Wave (Cluster 1) Pneumonia Deaths

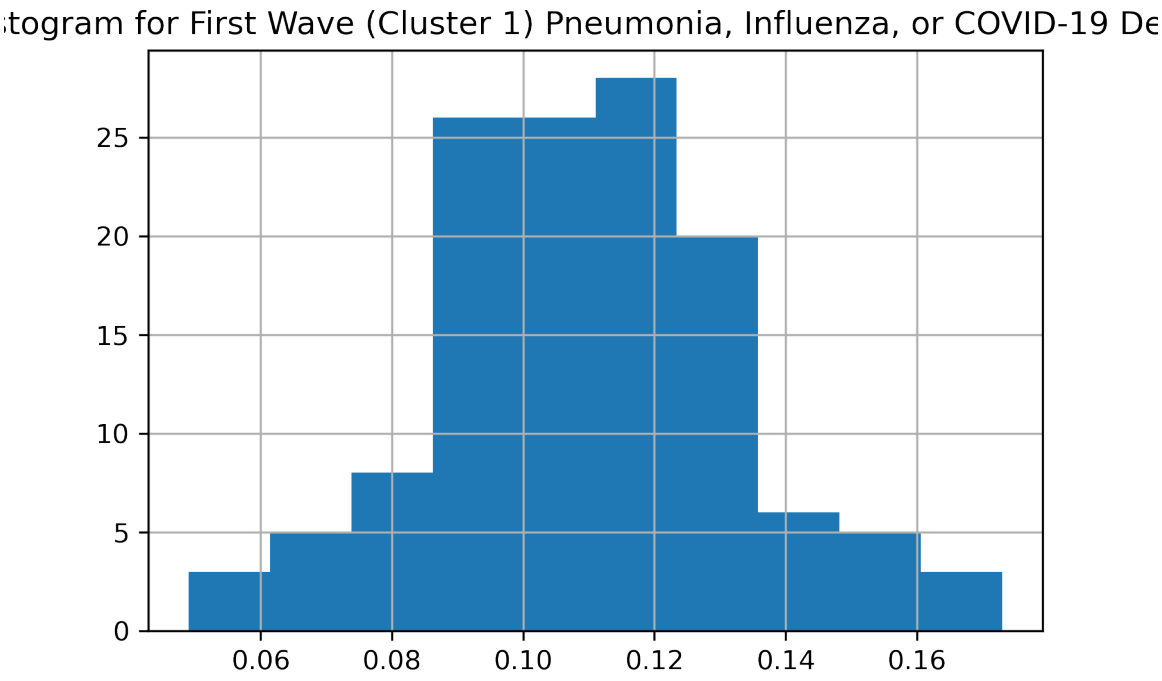


Figure 15: Histogram for First Wave (Cluster 1) Pneumonia, Influenza, or COVID-19 Deaths

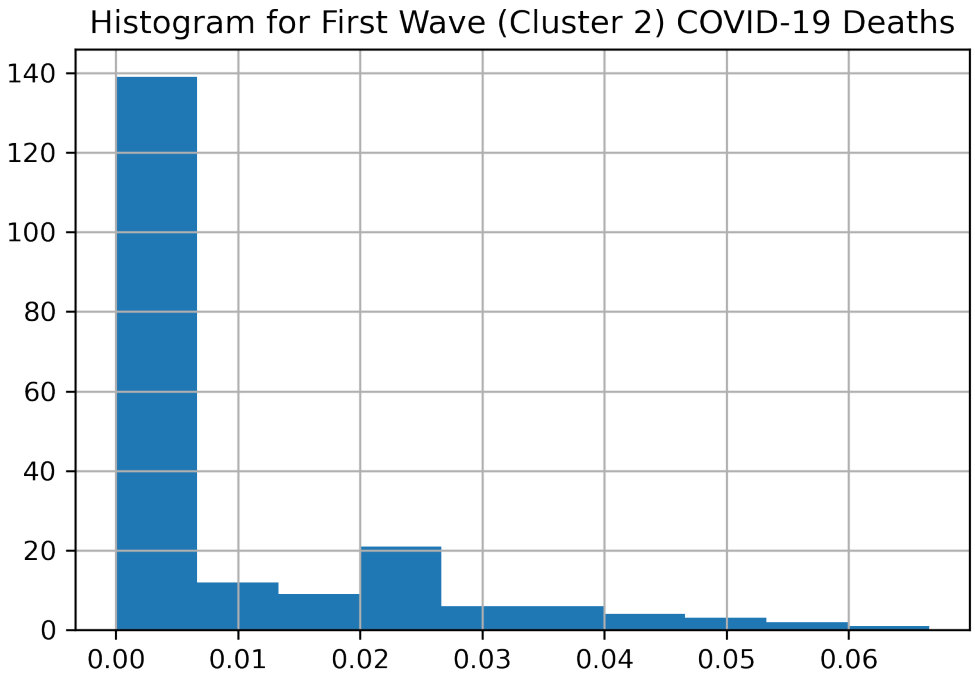


Figure 16: Histogram for First Wave (Cluster 2) COVID-19 Deaths

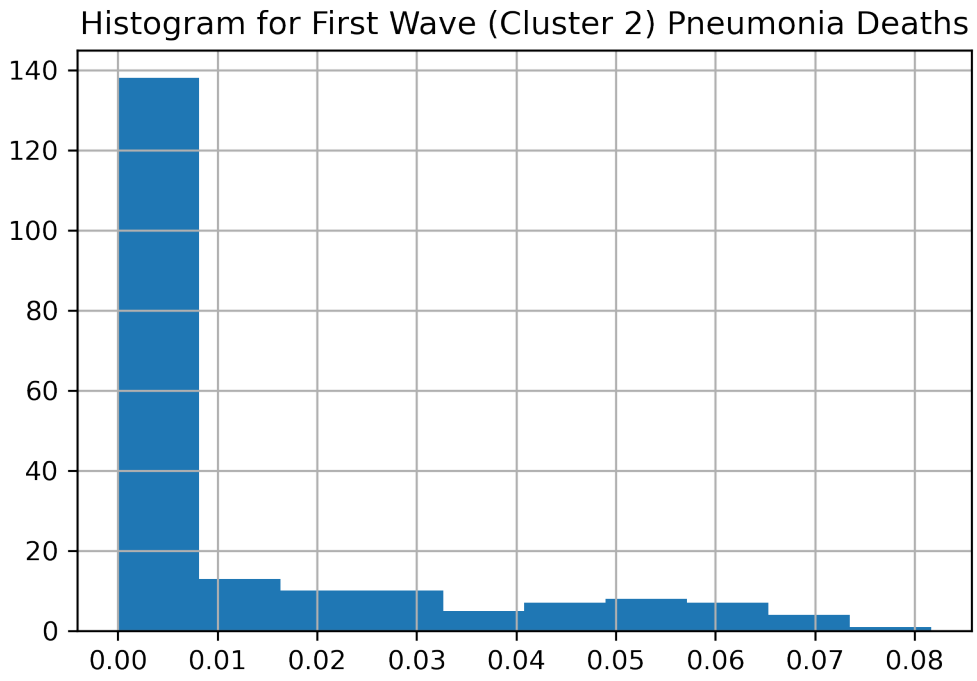


Figure 17: Histogram for First Wave (Cluster 2) Pneumonia Deaths

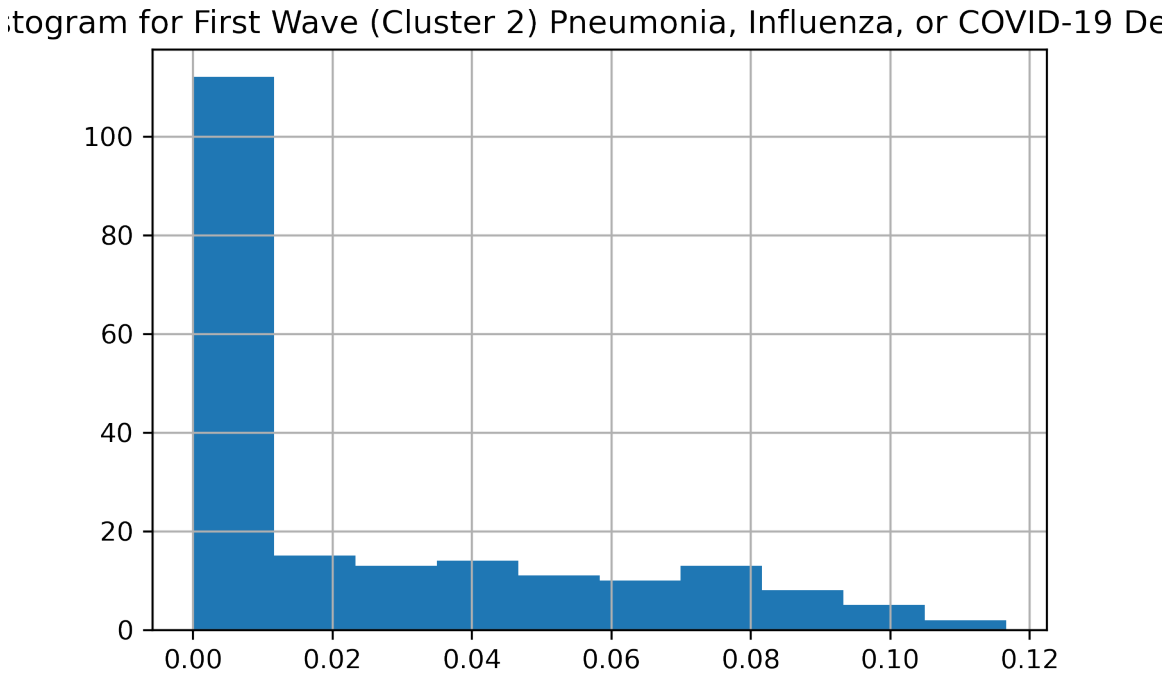


Figure 18: Histogram for First Wave (Cluster 2) Pneumonia, Influenza, or COVID-19 Deaths

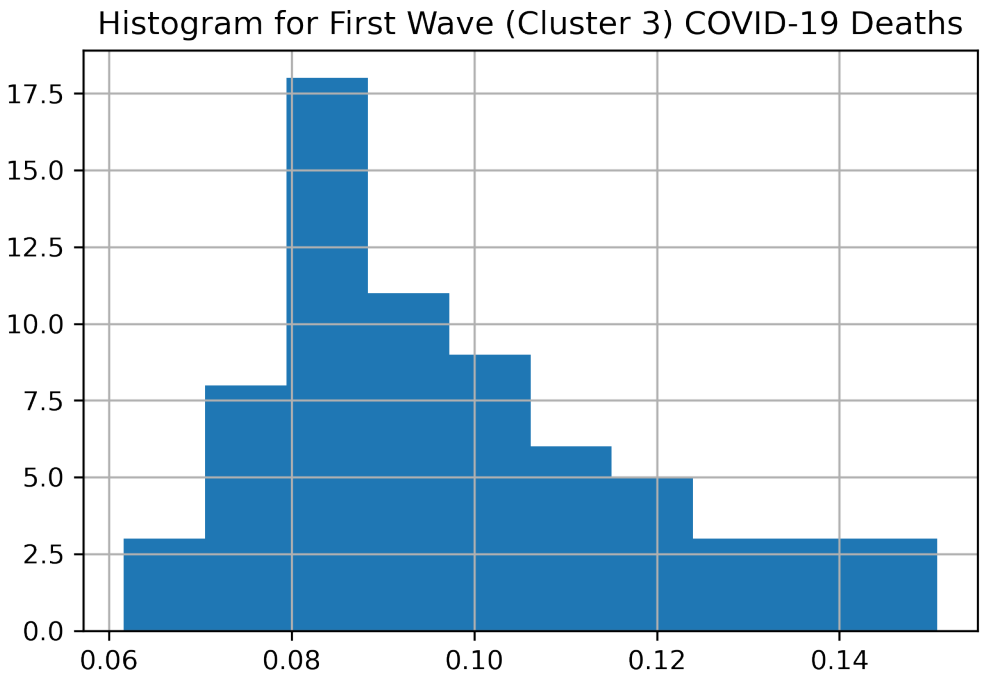


Figure 19: Histogram for First Wave (Cluster 3) COVID-19 Deaths

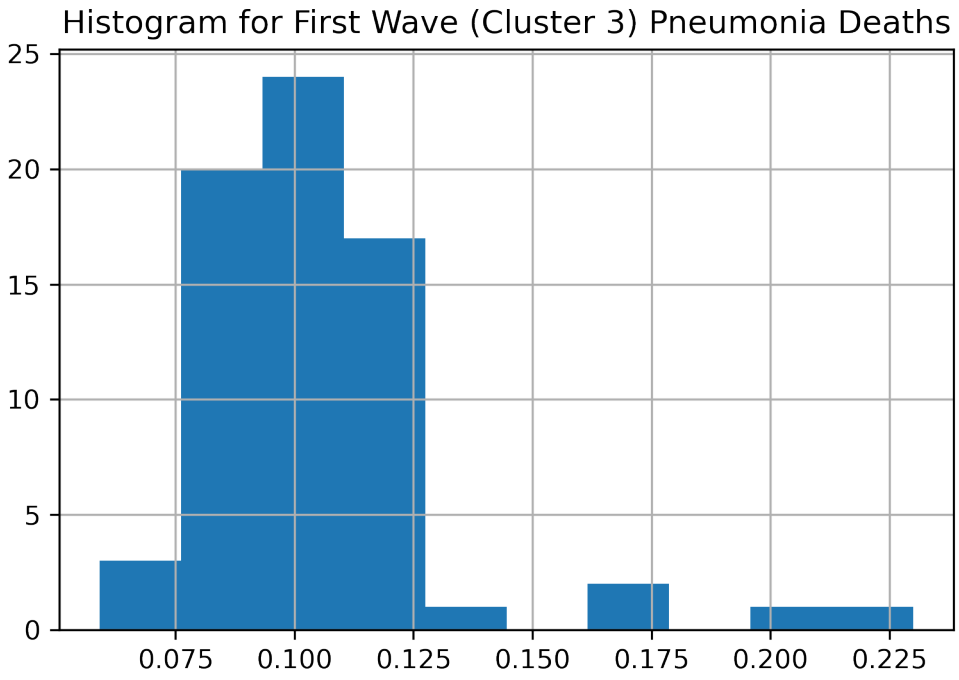


Figure 20: Histogram for First Wave (Cluster 3) Pneumonia Deaths

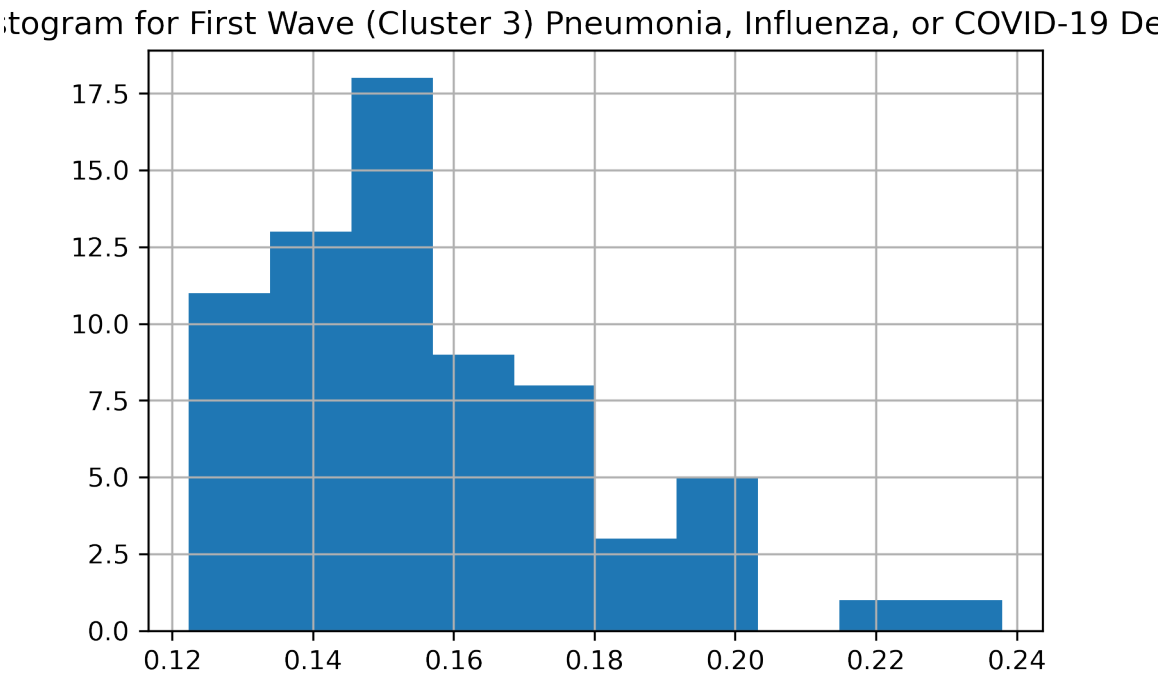


Figure 21: Histogram for First Wave (Cluster 3) Pneumonia, Influenza, or COVID-19 Deaths

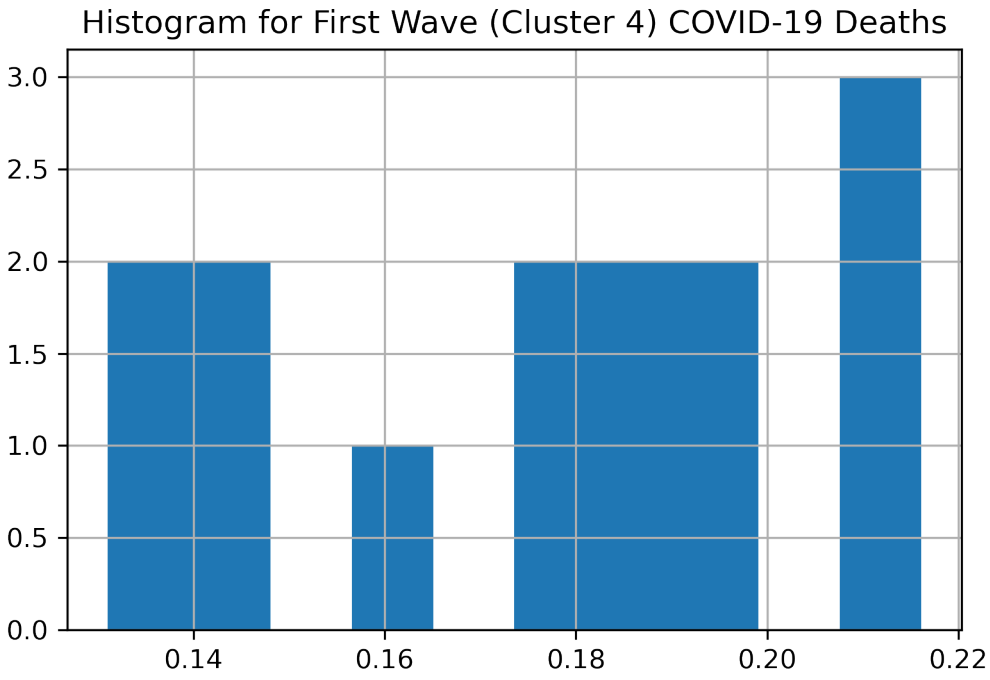


Figure 22: Histogram for First Wave (Cluster 4) COVID-19 Deaths

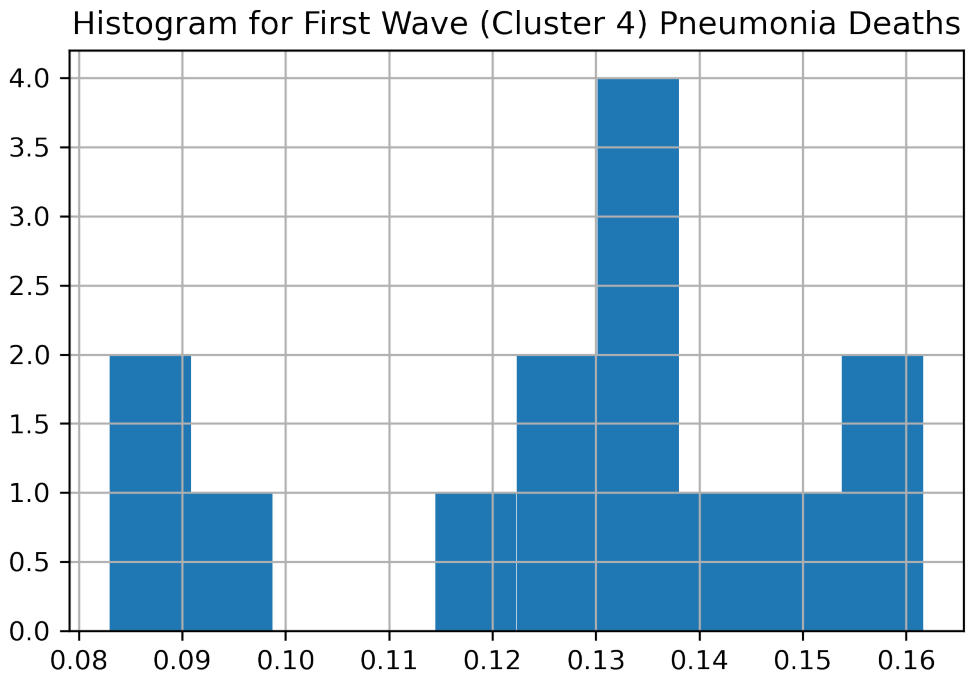


Figure 23: Histogram for First Wave (Cluster 4) Pneumonia Deaths

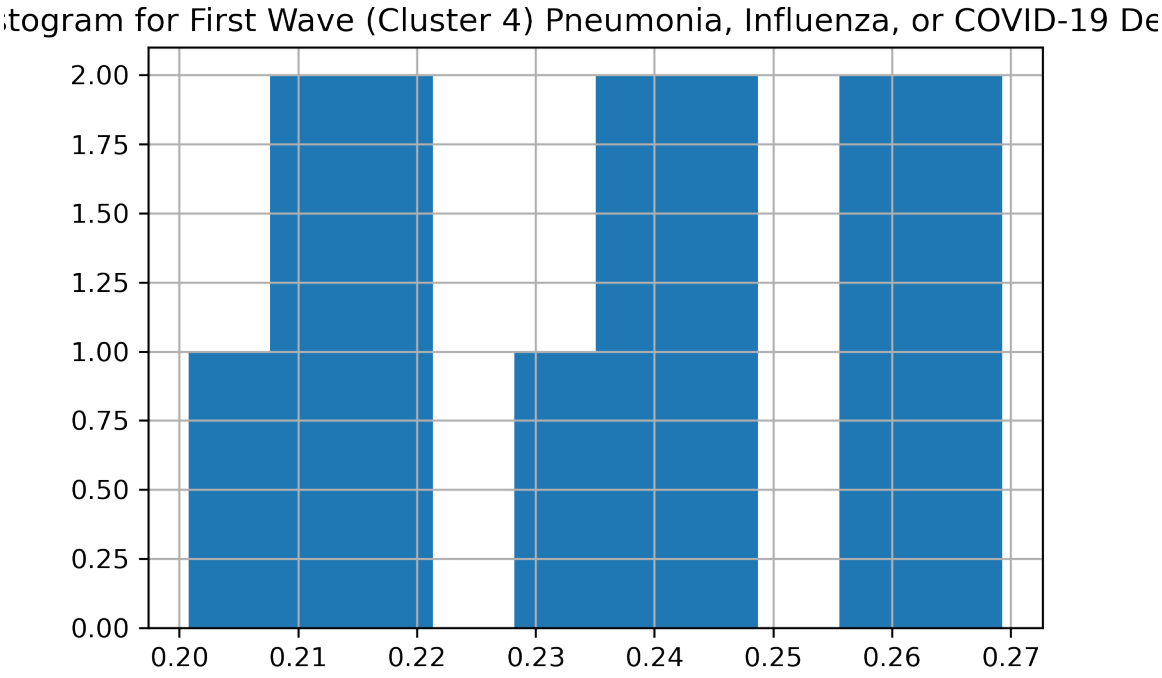


Figure 24: Histogram for First Wave (Cluster 4) Pneumonia, Influenza, or COVID-19 Deaths

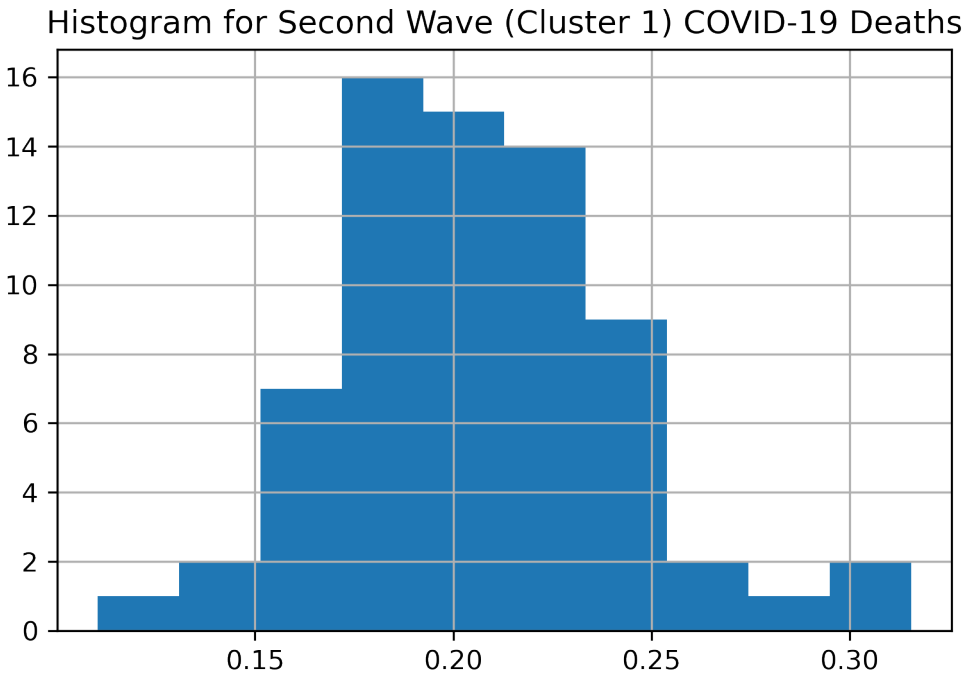


Figure 25: Histogram for Second Wave (Cluster 1) COVID-19 Deaths

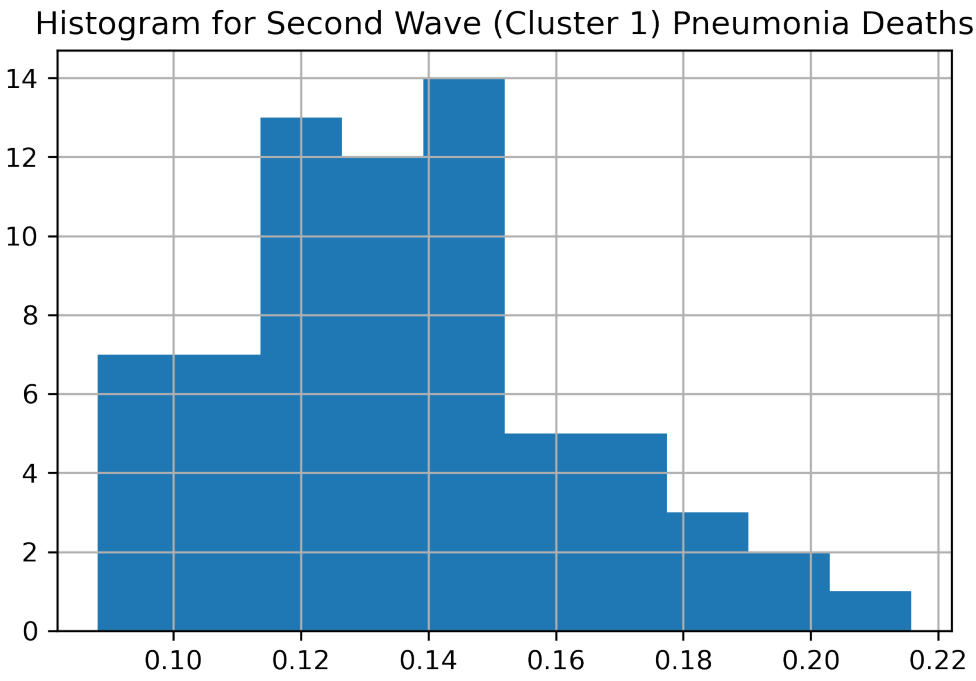


Figure 26: Histogram for Second Wave (Cluster 1) Pneumonia Deaths

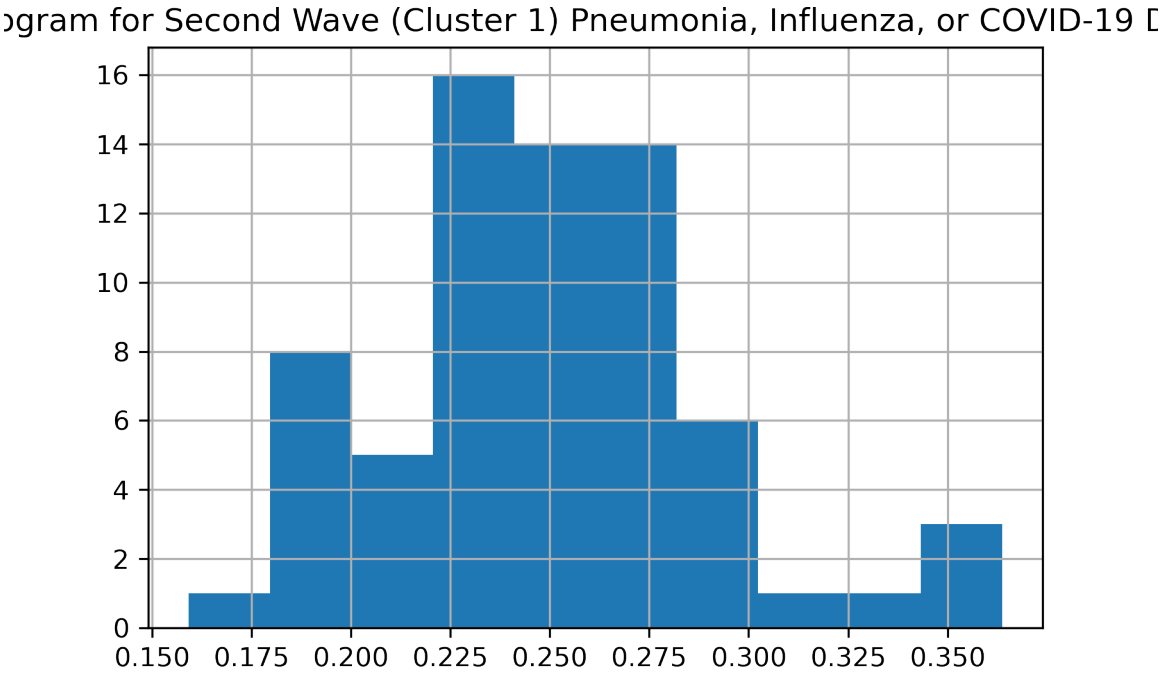


Figure 27: Histogram for Second Wave (Cluster 1) Pneumonia, Influenza, or COVID-19 Deaths

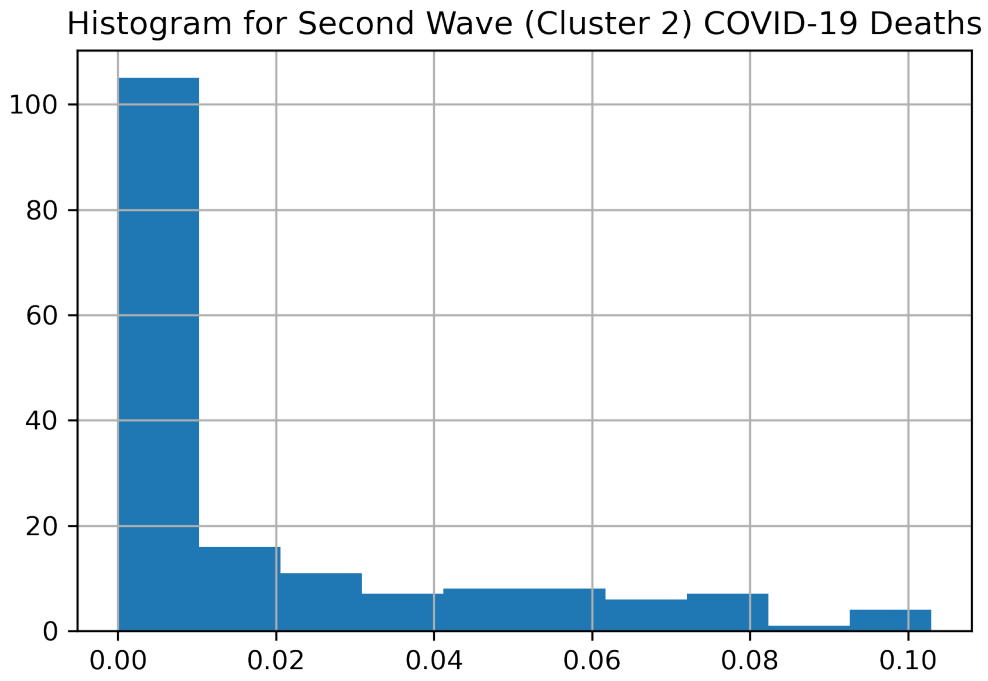


Figure 28: Histogram for Second Wave (Cluster 2) COVID-19 Deaths

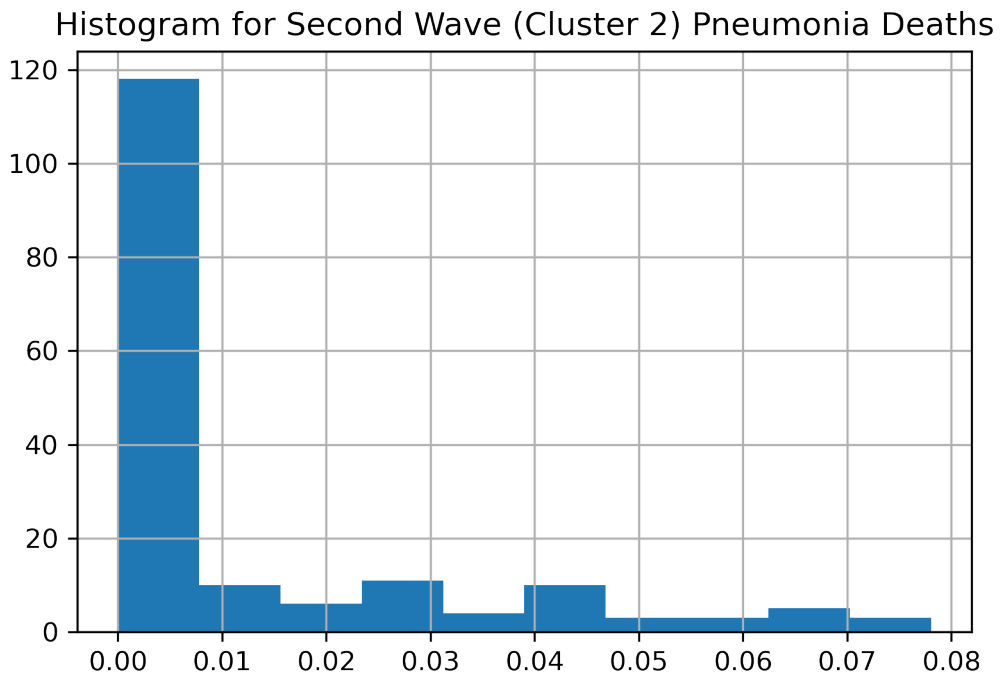


Figure 29: Histogram for Second Wave (Cluster 2) Pneumonia Deaths

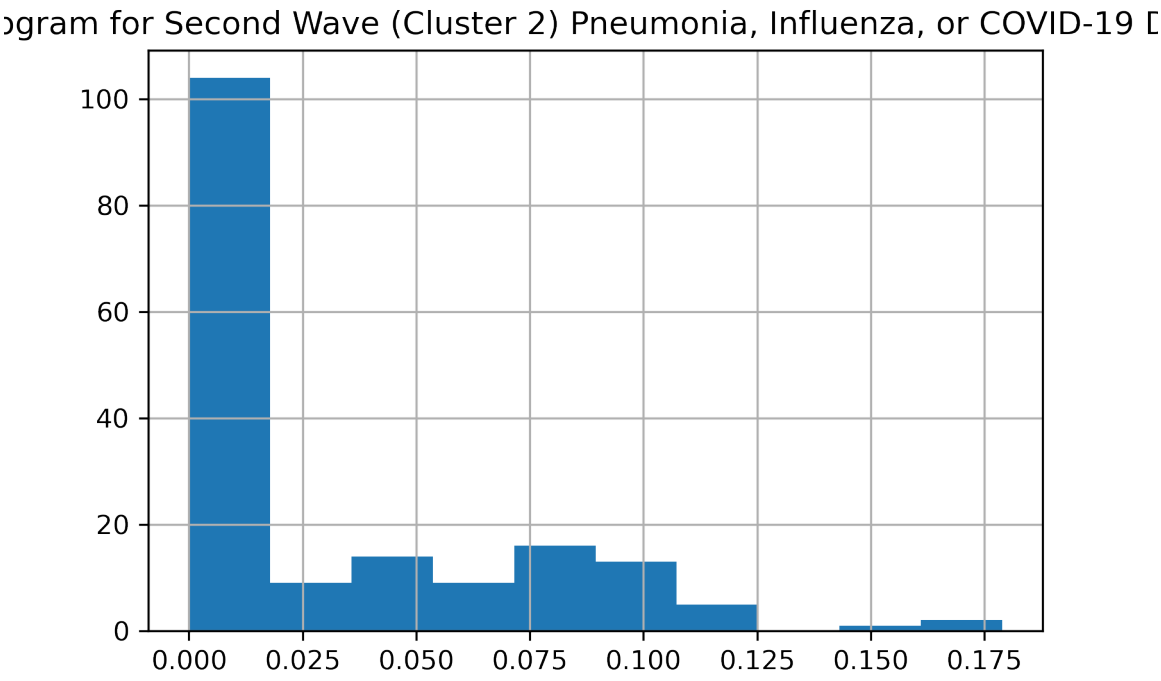


Figure 30: Histogram for Second Wave (Cluster 2) Pneumonia, Influenza, or COVID-19 Deaths

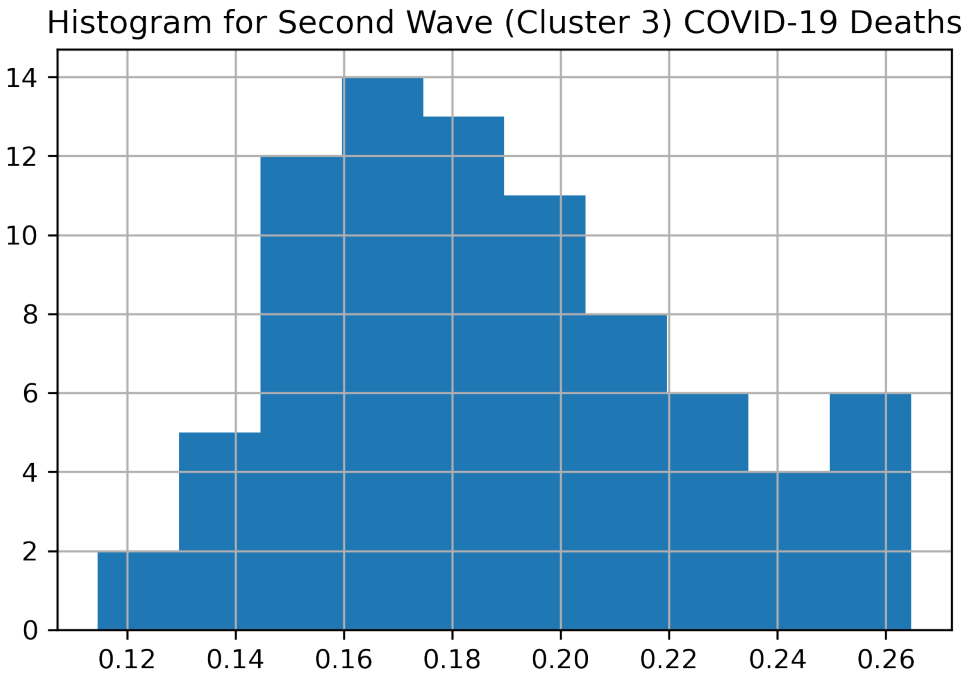


Figure 31: Histogram for Second Wave (Cluster 3) COVID-19 Deaths

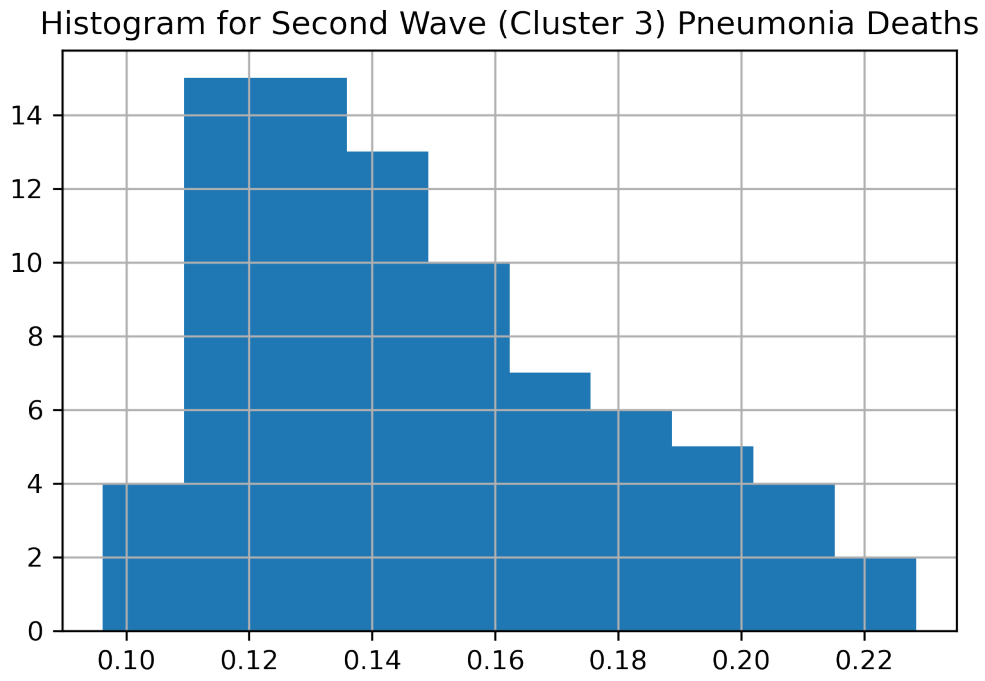


Figure 32: Histogram for Second Wave (Cluster 3) Pneumonia Deaths

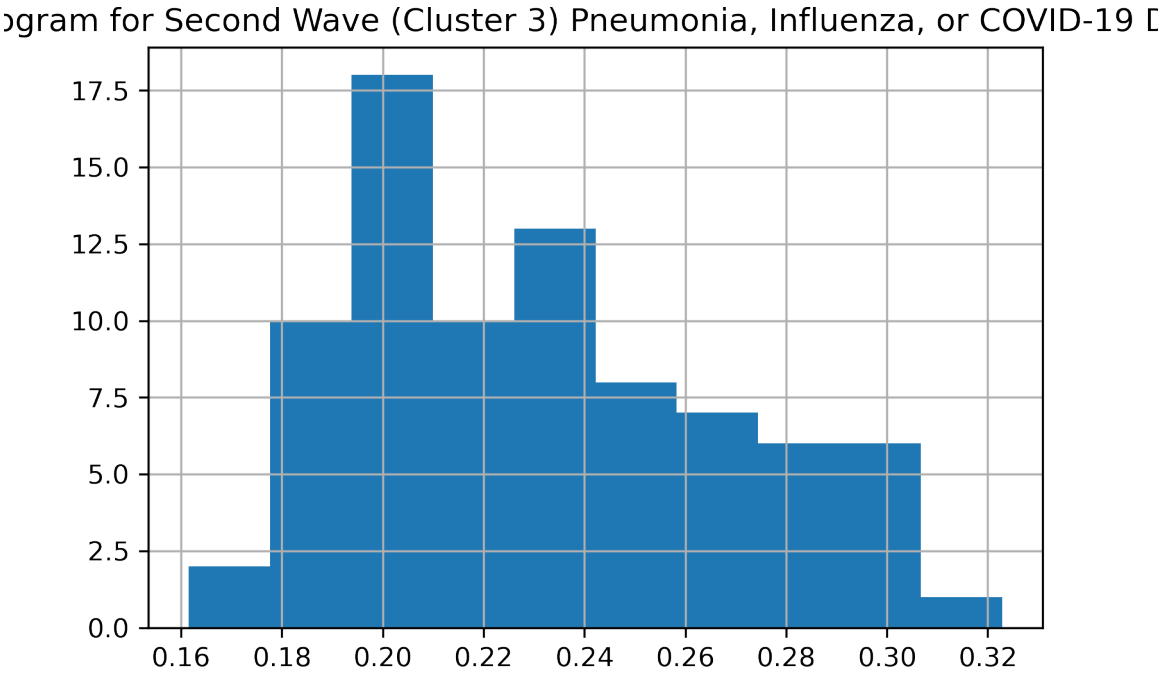


Figure 33: Histogram for Second Wave (Cluster 3) Pneumonia, Influenza, or COVID-19 Deaths

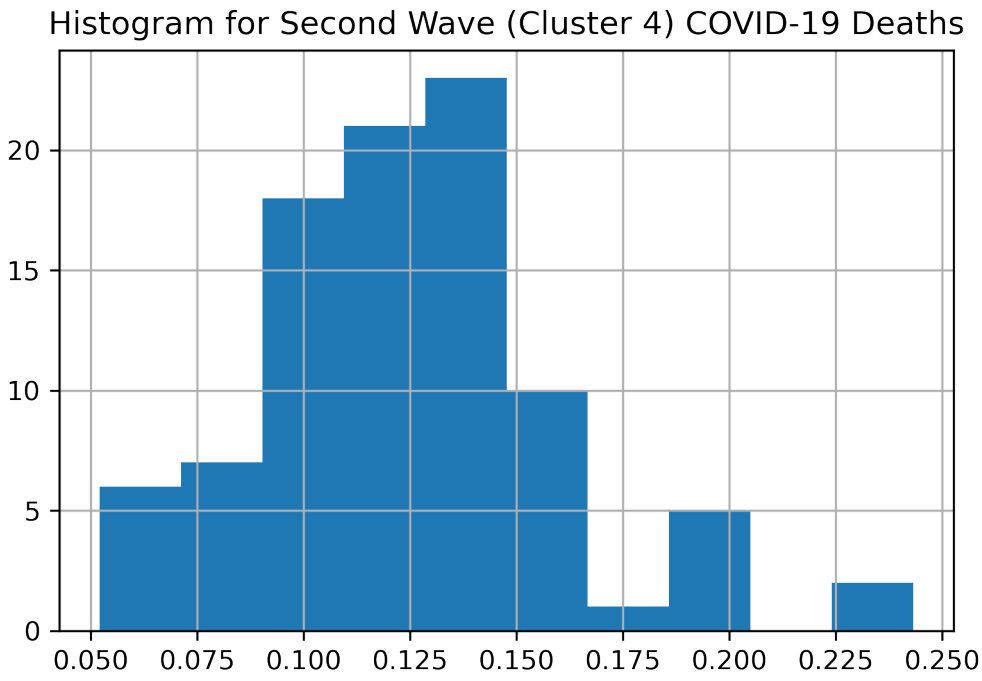


Figure 34: Histogram for Second Wave (Cluster 4) COVID-19 Deaths

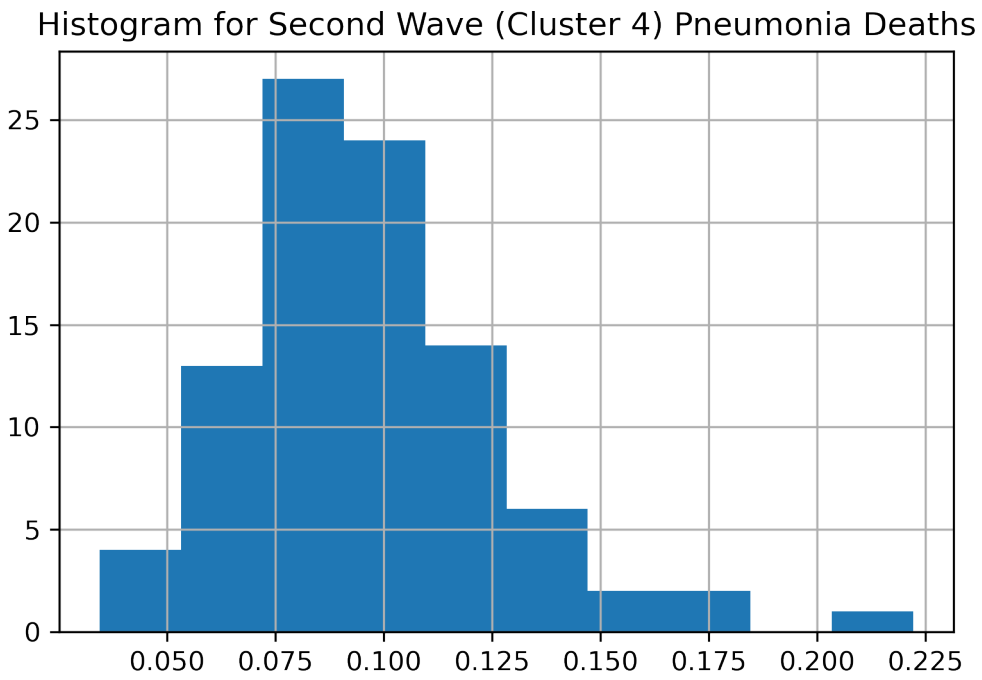


Figure 35: Histogram for Second Wave (Cluster 4) Pneumonia Deaths

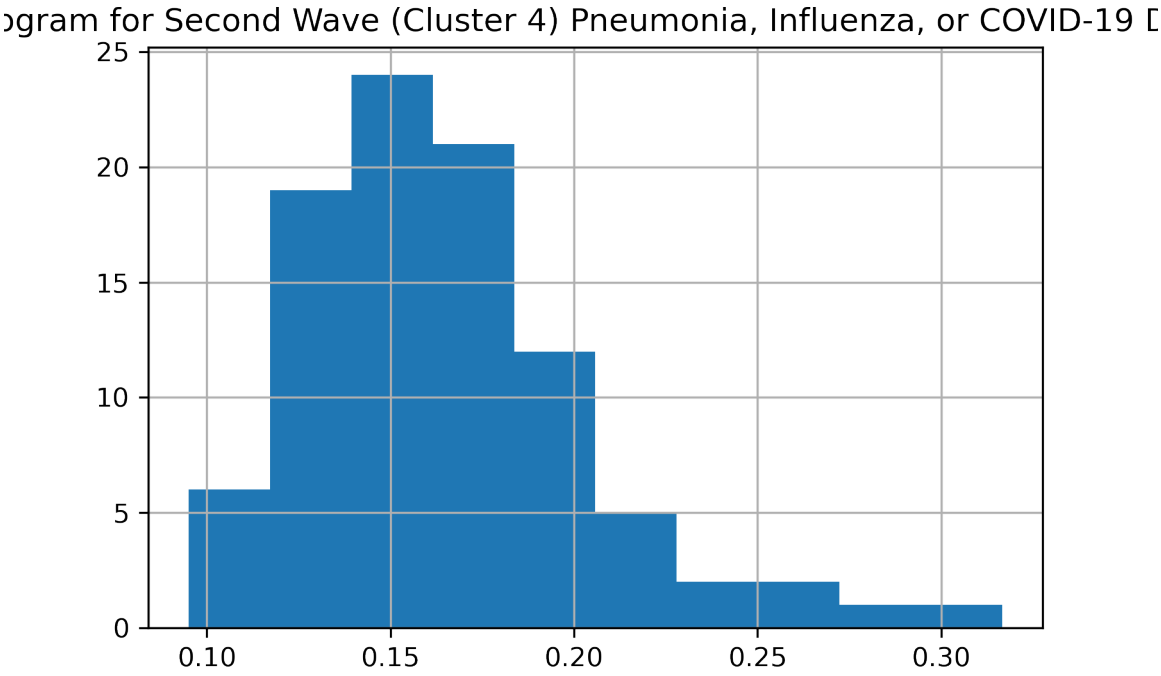


Figure 36: Histogram for Second Wave (Cluster 4) Pneumonia, Influenza, or COVID-19 Deaths

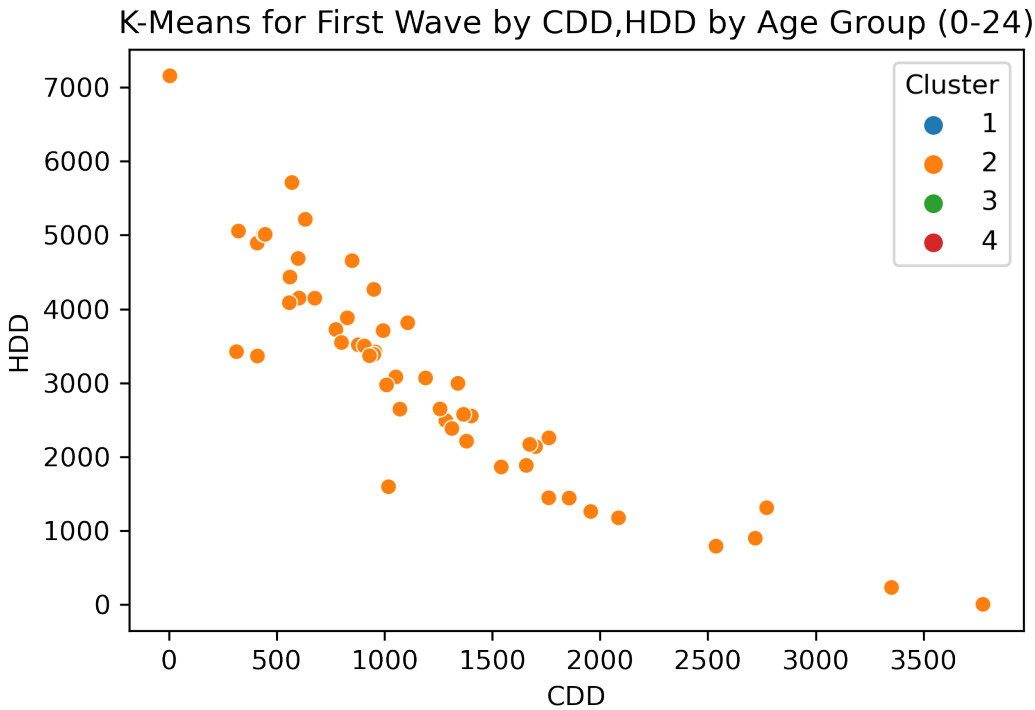


Figure 37: K-Means for First Wave by CDD,HDD by Age Group (0-24)

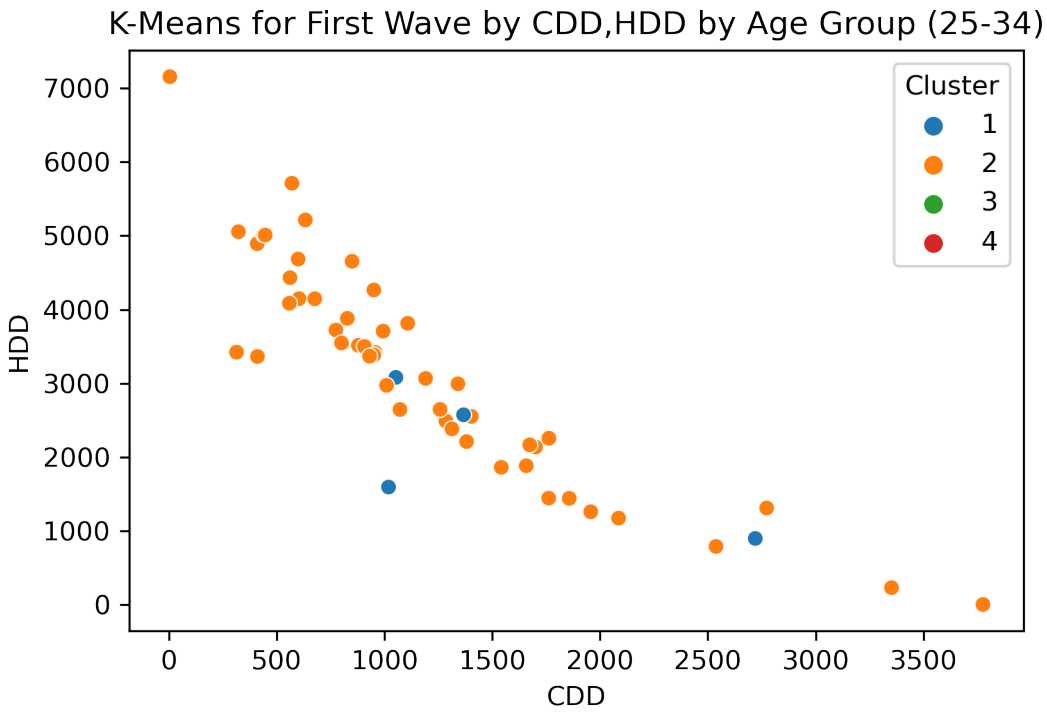


Figure 38: K-Means for First Wave by CDD,HDD by Age Group (25-34)

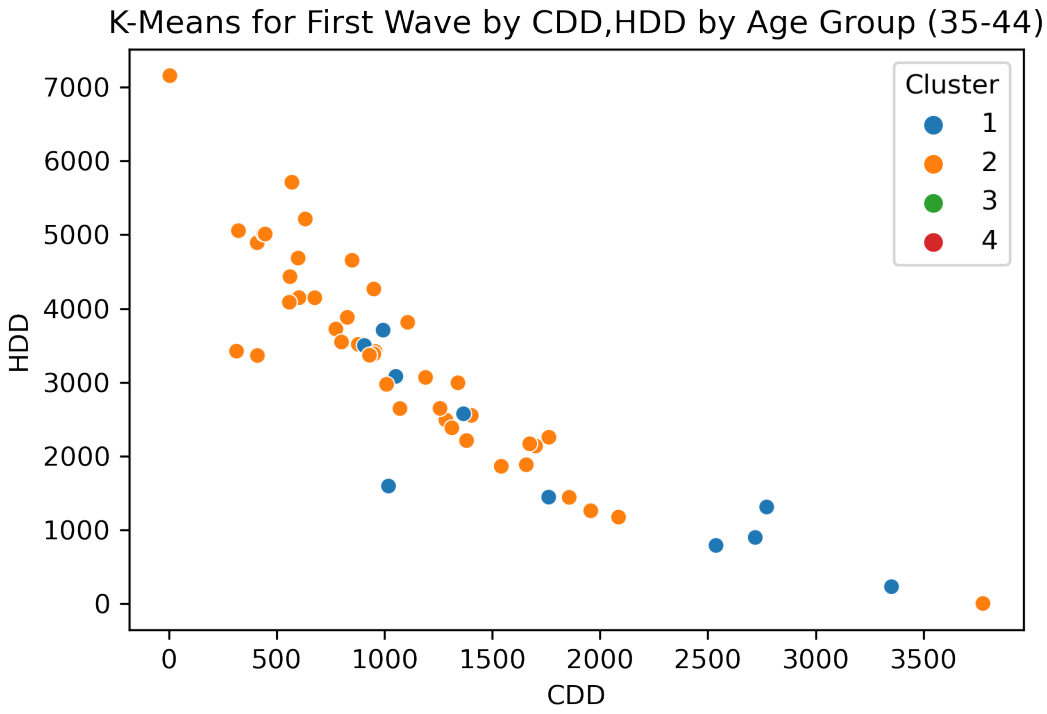


Figure 39: K-Means for First Wave by CDD,HDD by Age Group (35-44)

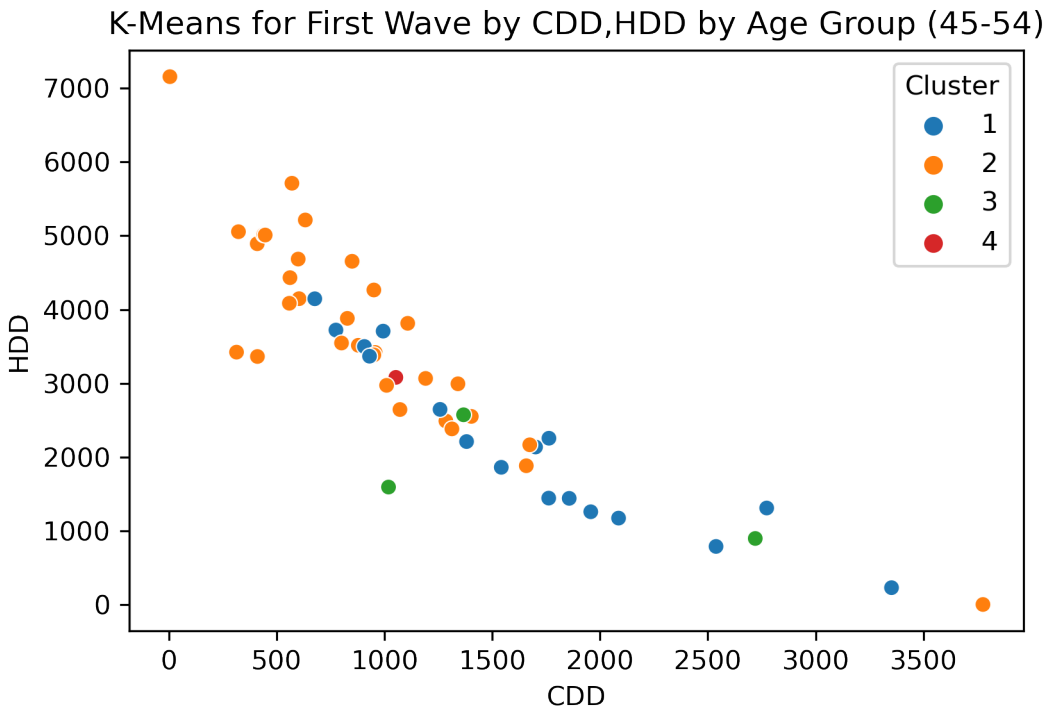


Figure 40: K-Means for First Wave by CDD,HDD by Age Group (45-54)

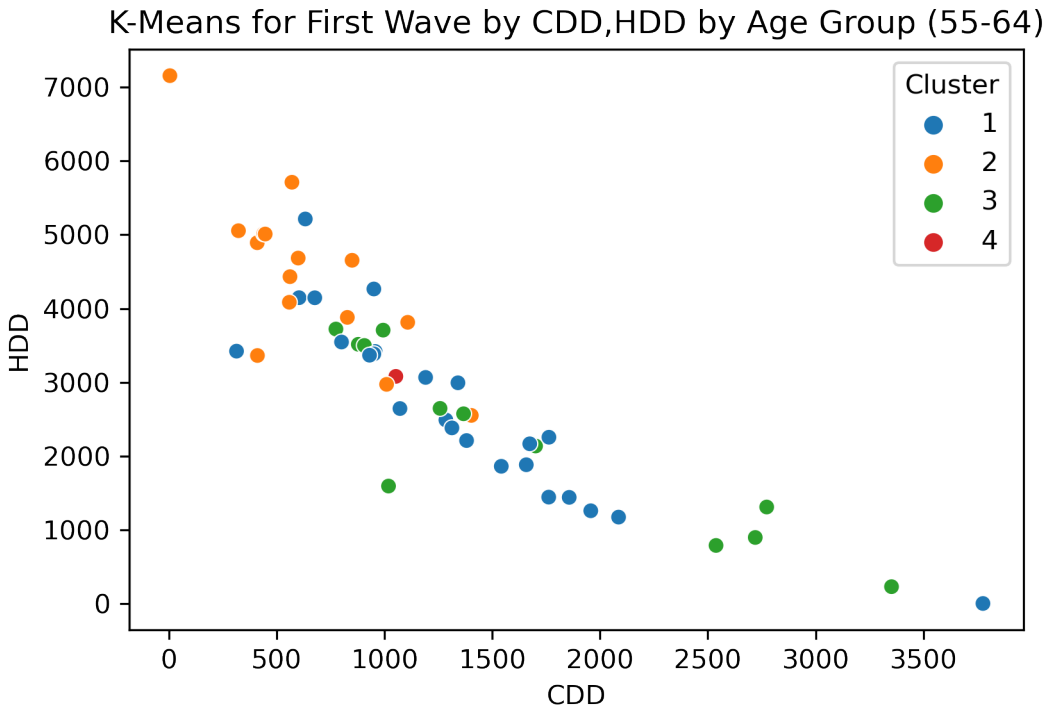


Figure 41: K-Means for First Wave by CDD,HDD by Age Group (55-64)

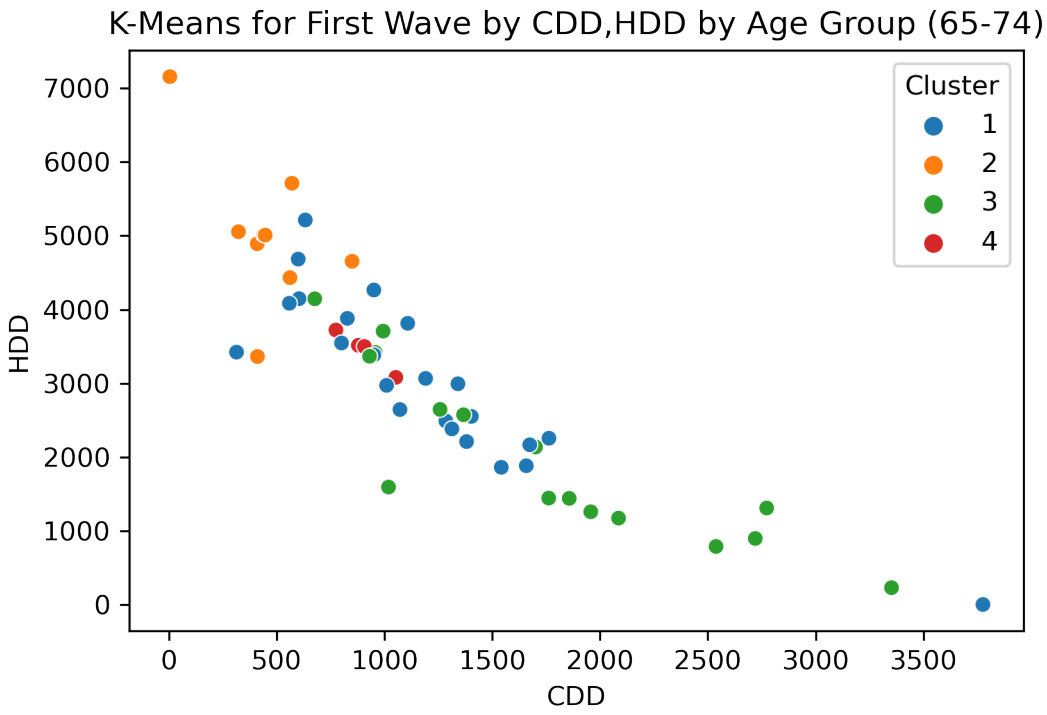


Figure 42: K-Means for First Wave by CDD,HDD by Age Group (65-74)

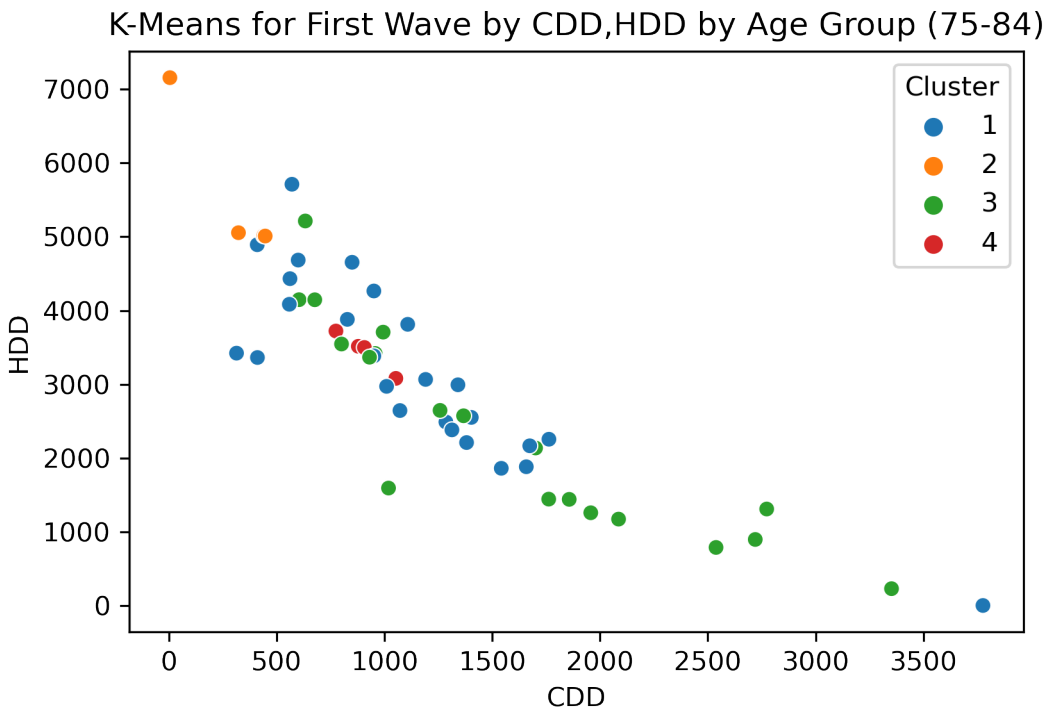


Figure 43: K-Means for First Wave by CDD,HDD by Age Group (75-84)

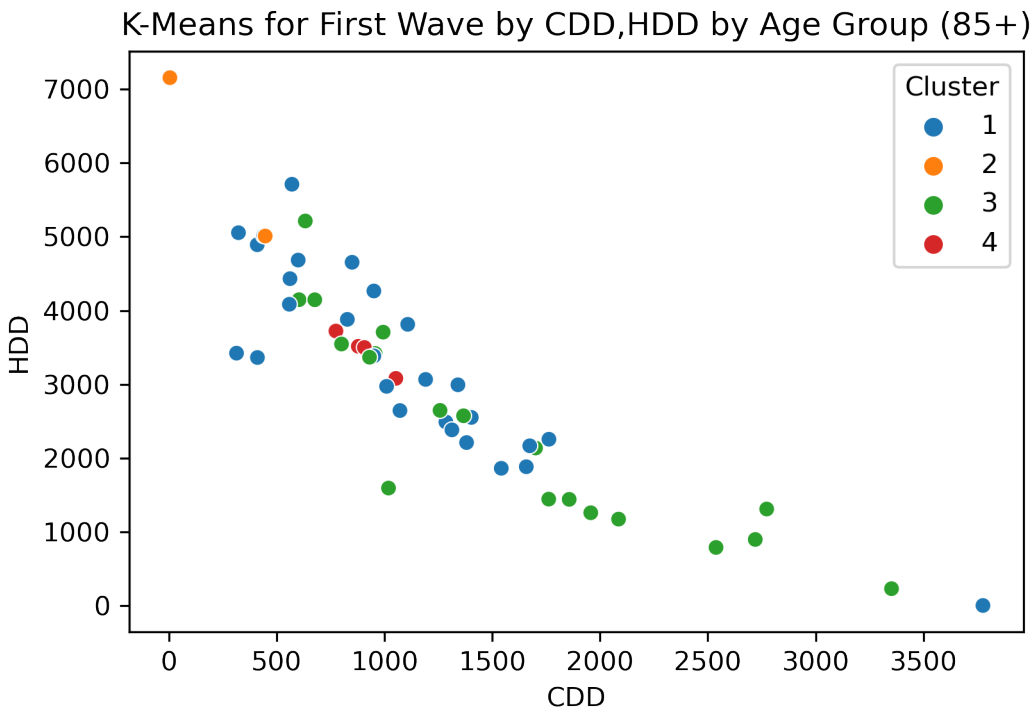


Figure 44: K-Means for First Wave by CDD,HDD by Age Group (85+)

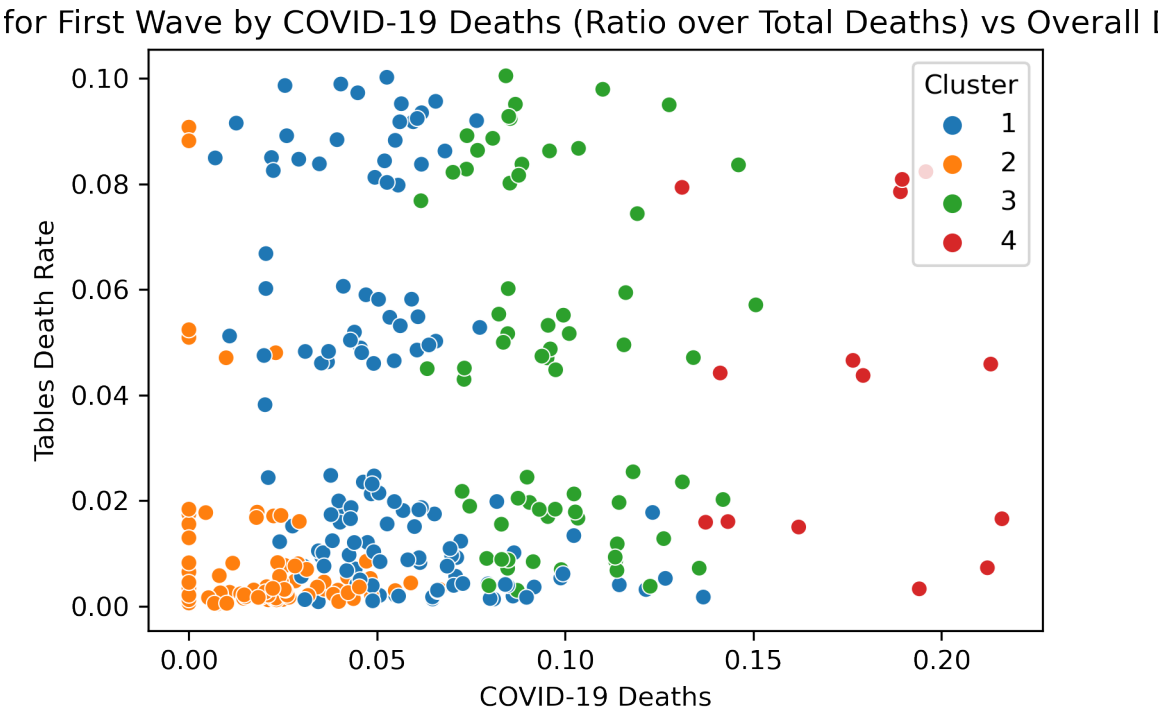


Figure 45: K-Means for First Wave by COVID-19 Deaths (Ratio over Total Deaths) vs Overall Death Rate

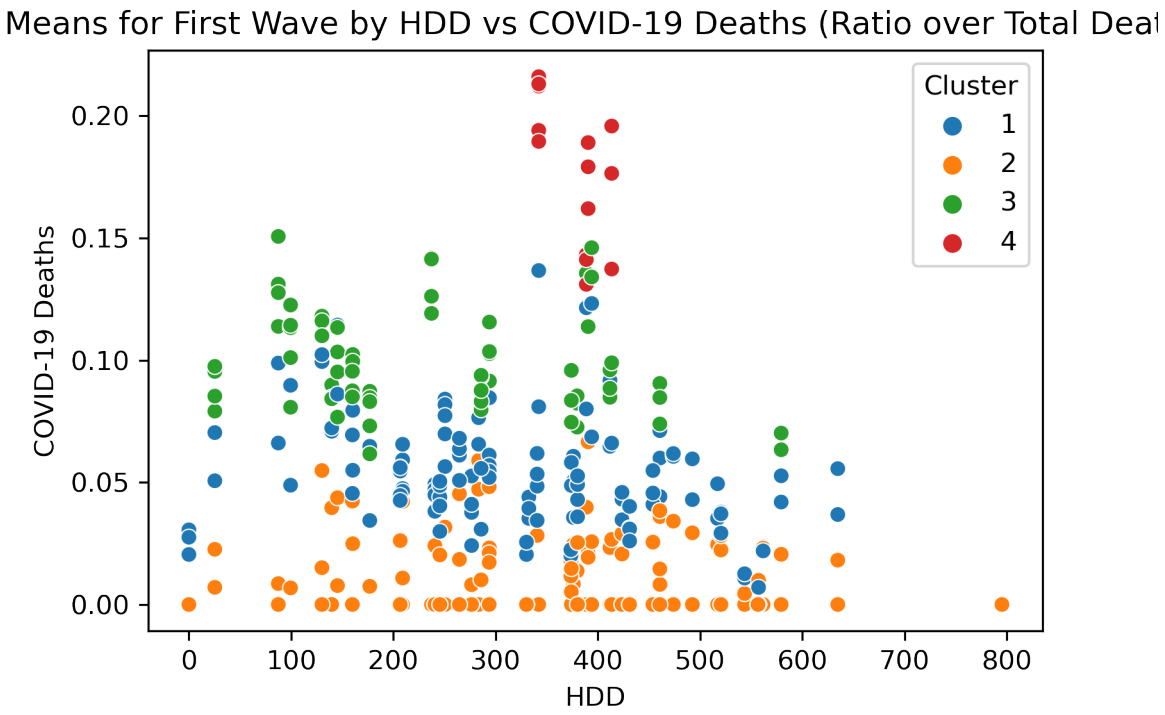


Figure 46: K-Means for First Wave by HDD vs COVID-19 Deaths (Ratio over Total Deaths)

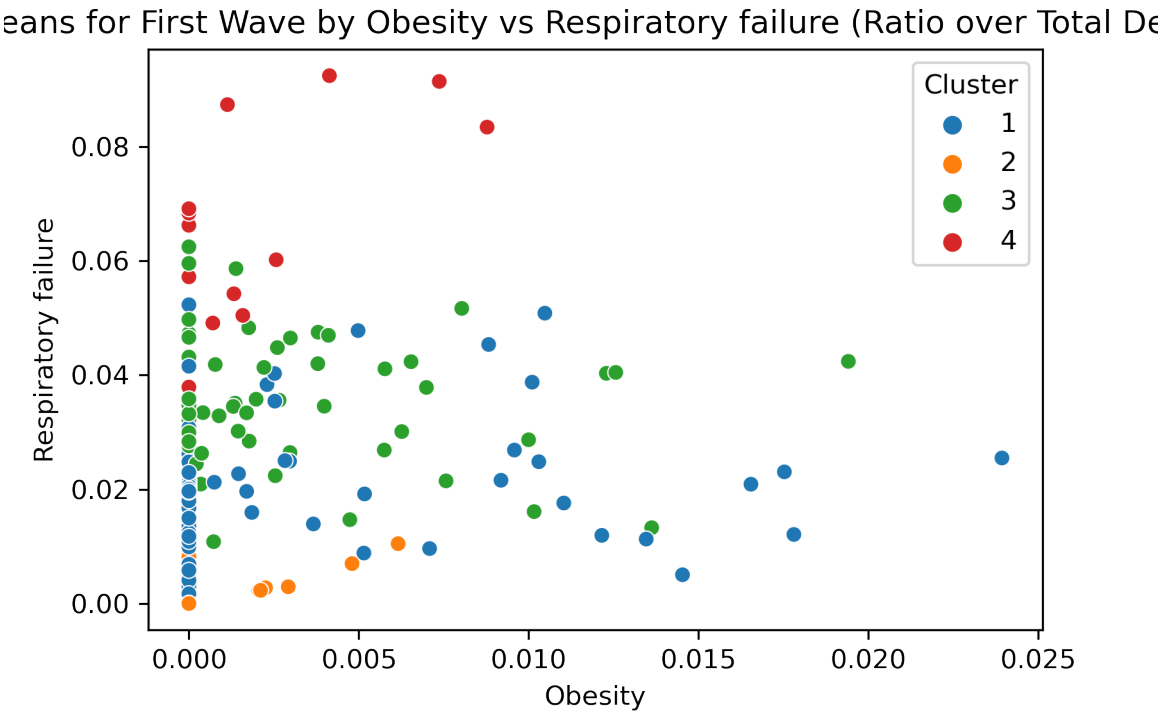


Figure 47: K-Means for First Wave by Obesity vs Respiratory failure (Ratio over Total Deaths)

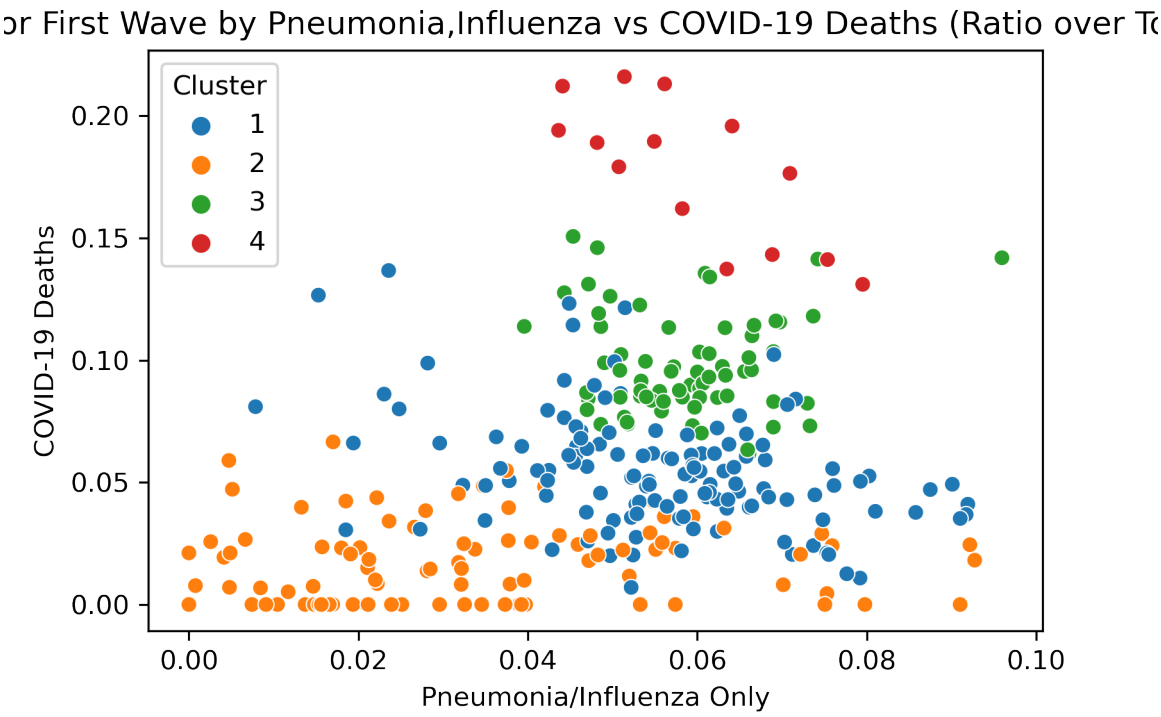


Figure 48: K-Means for First Wave by Pneumonia,Influenza vs COVID-19 Deaths (Ratio over Total Deaths)

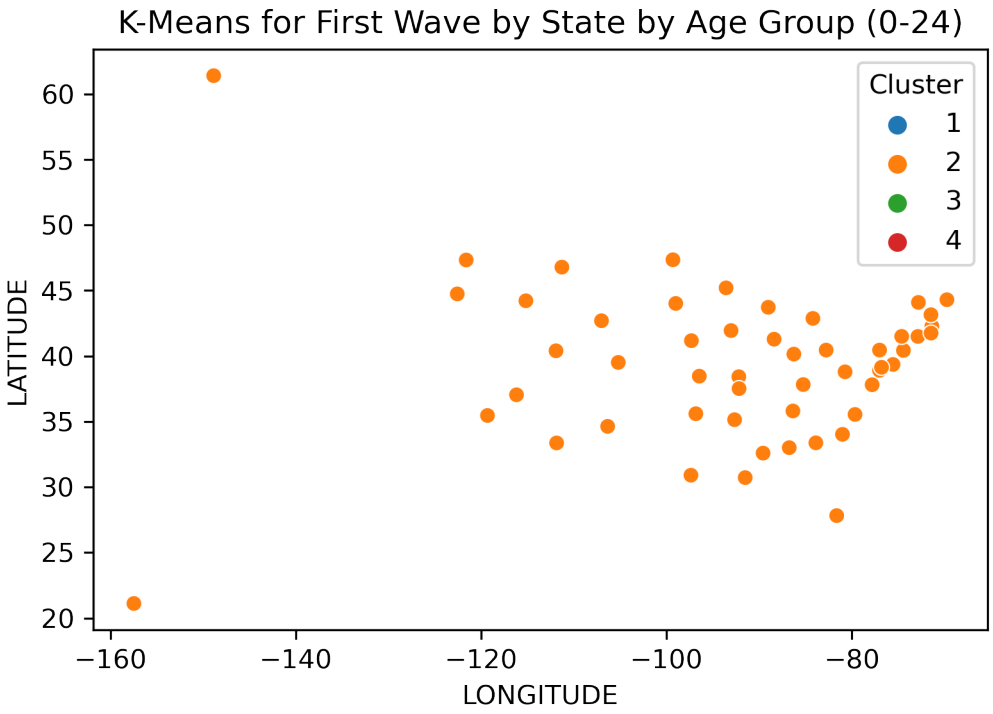


Figure 49: K-Means for First Wave by State by Age Group (0-24)

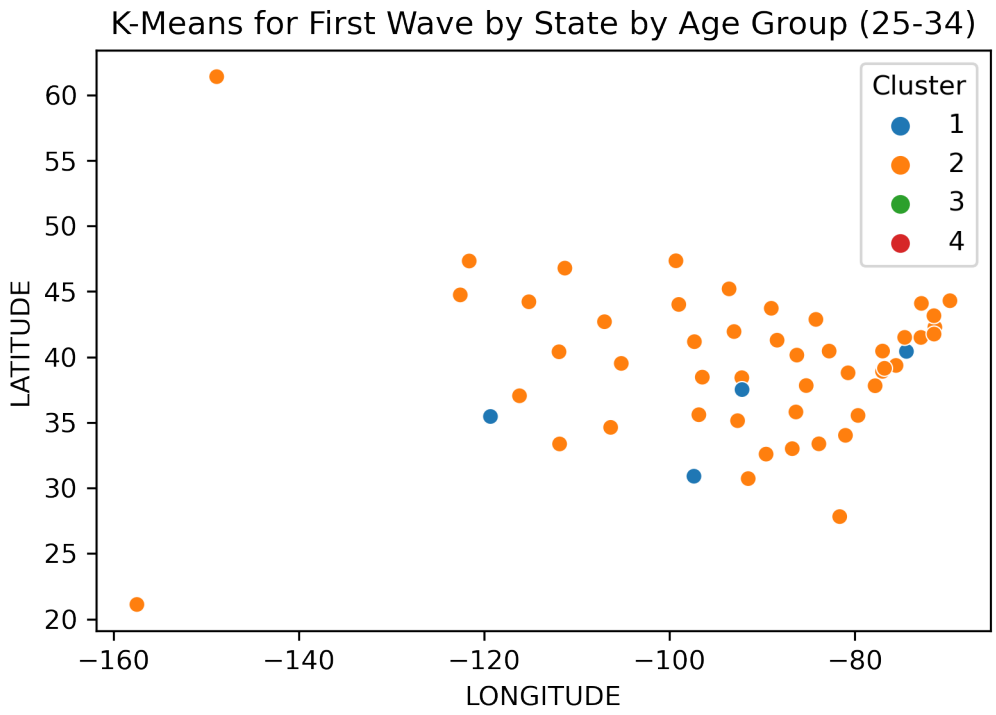


Figure 50: K-Means for First Wave by State by Age Group (25-34)

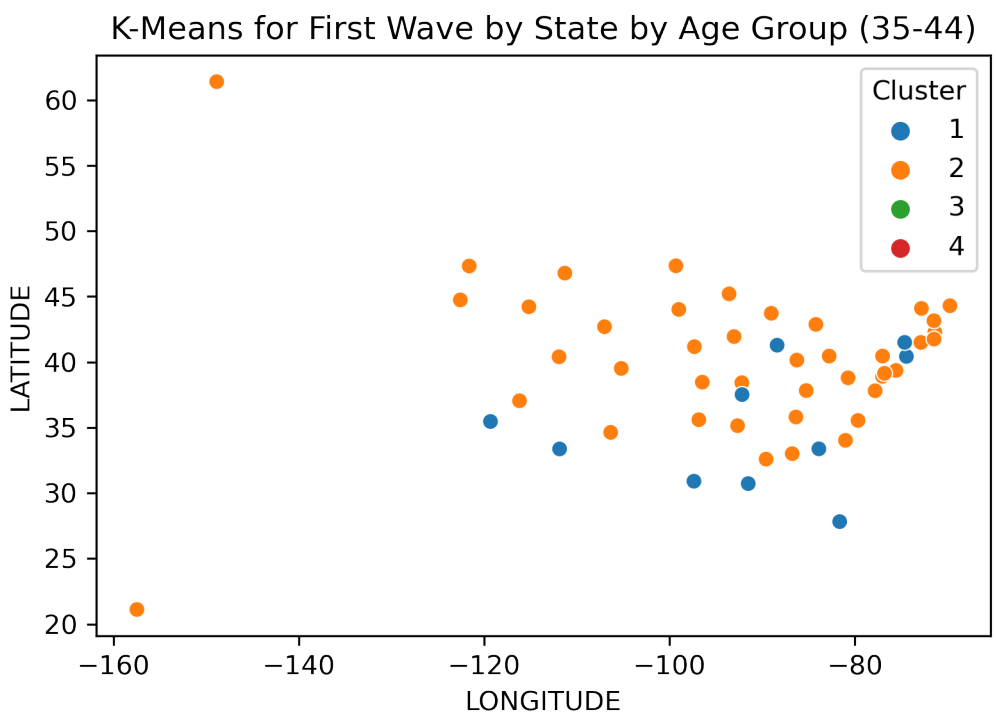


Figure 51: K-Means for First Wave by State by Age Group (35-44)

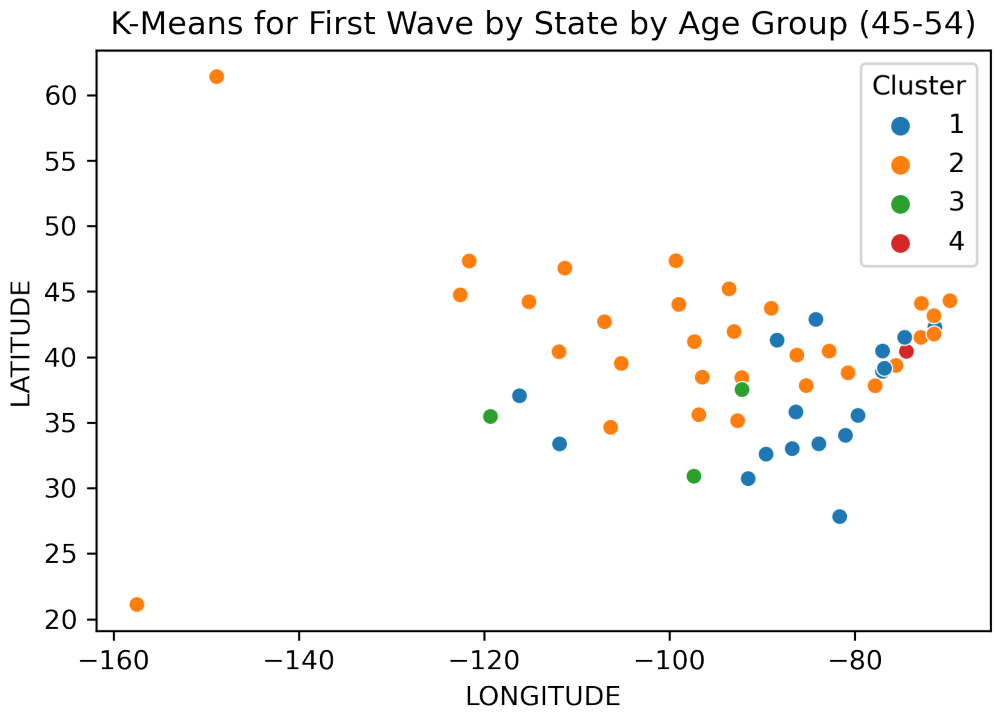


Figure 52: K-Means for First Wave by State by Age Group (45-54)

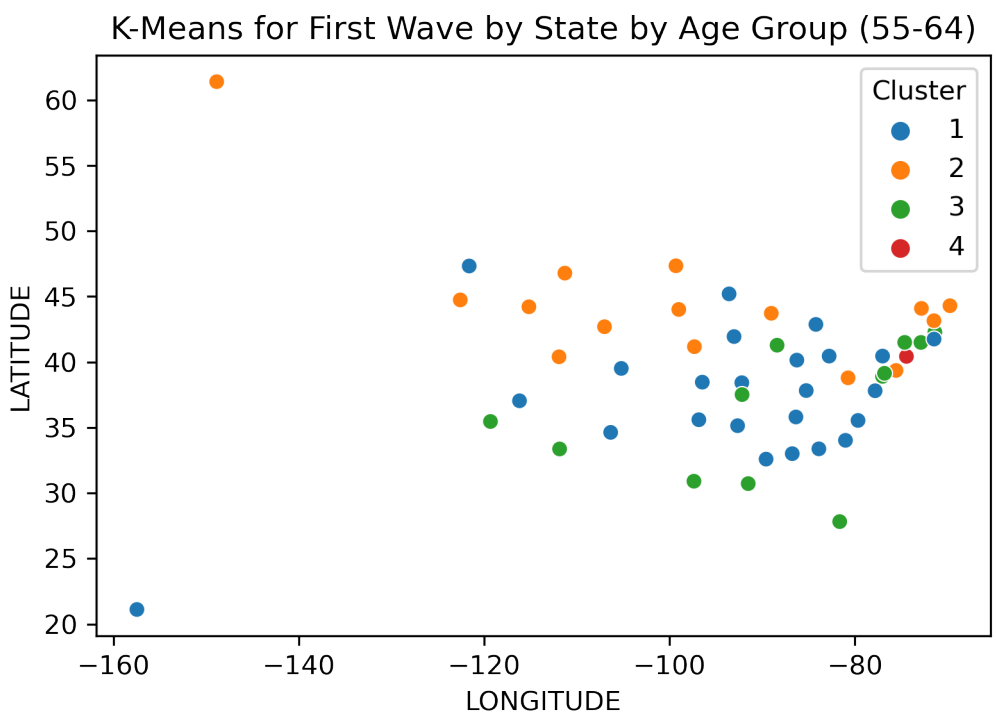


Figure 53: K-Means for First Wave by State by Age Group (55-64)

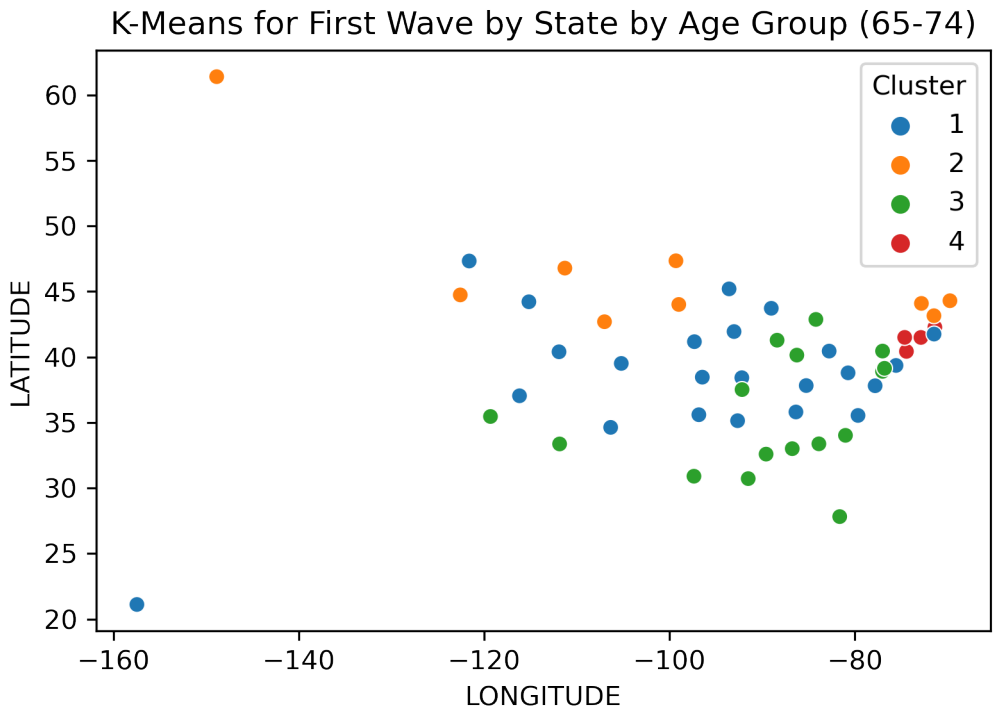


Figure 54: K-Means for First Wave by State by Age Group (65-74)

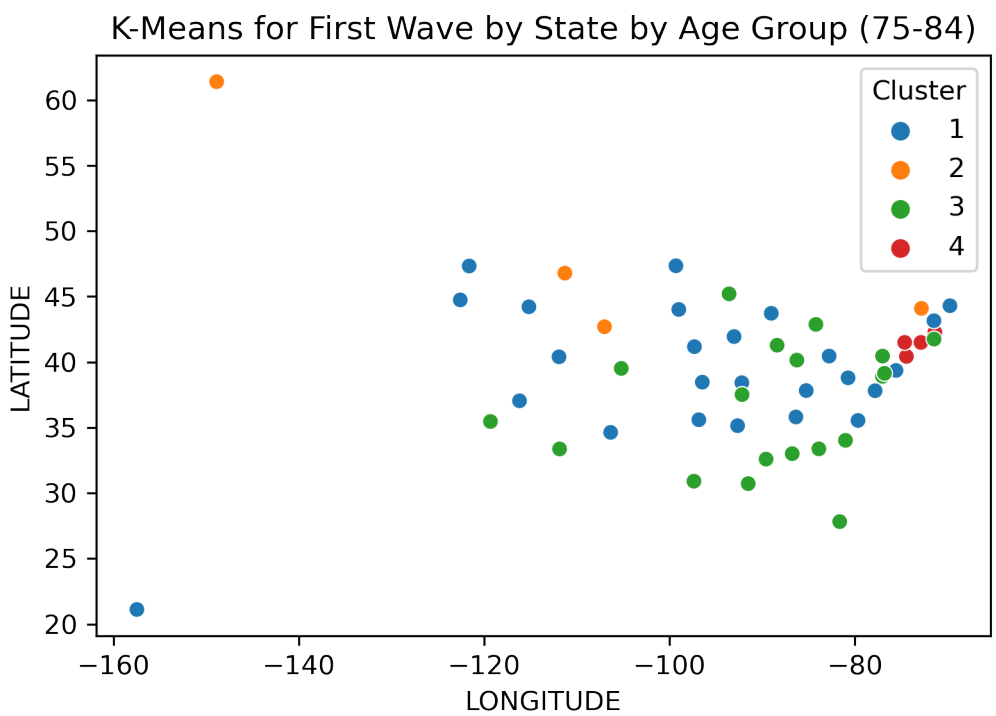


Figure 55: K-Means for First Wave by State by Age Group (75-84)

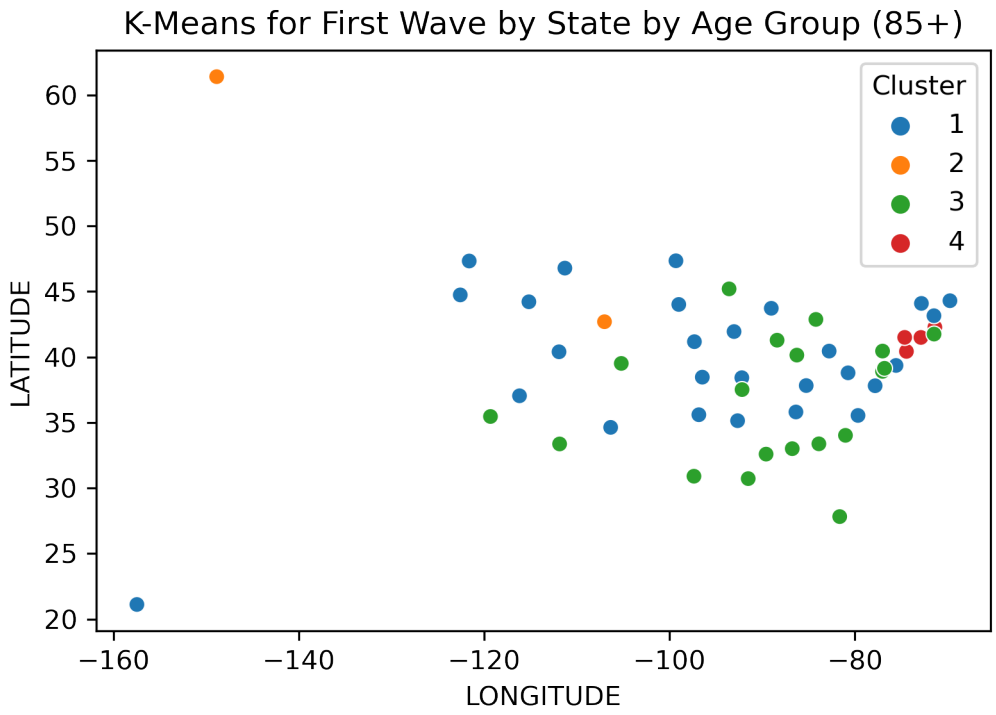


Figure 56: K-Means for First Wave by State by Age Group (85+)

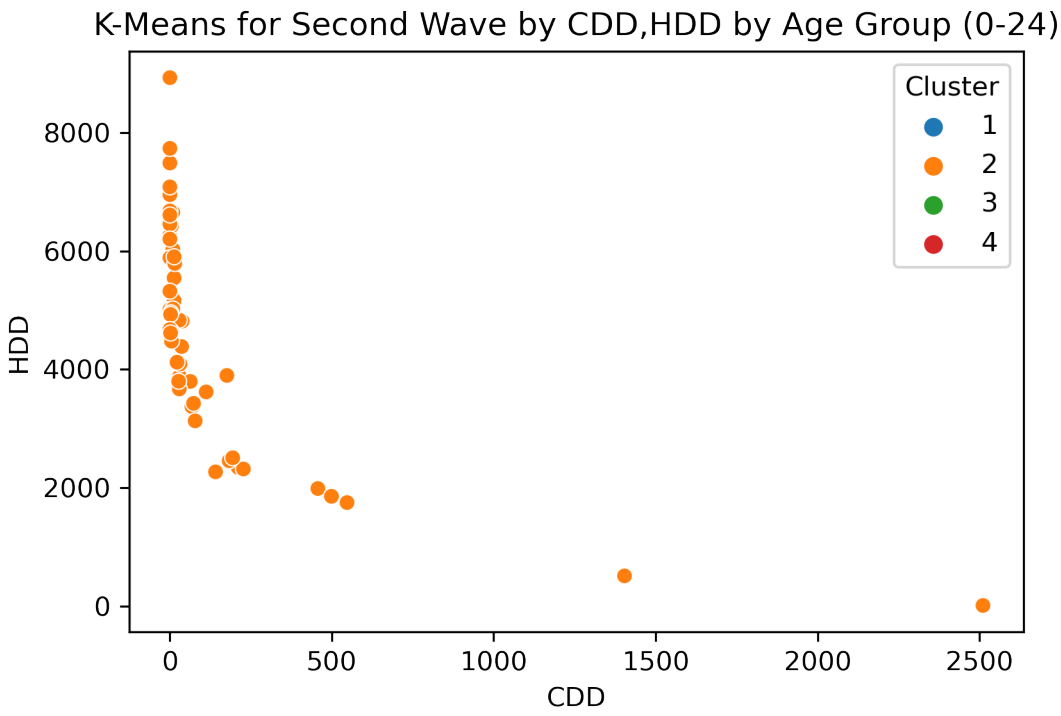


Figure 57: K-Means for Second Wave by CDD,HDD by Age Group (0-24)

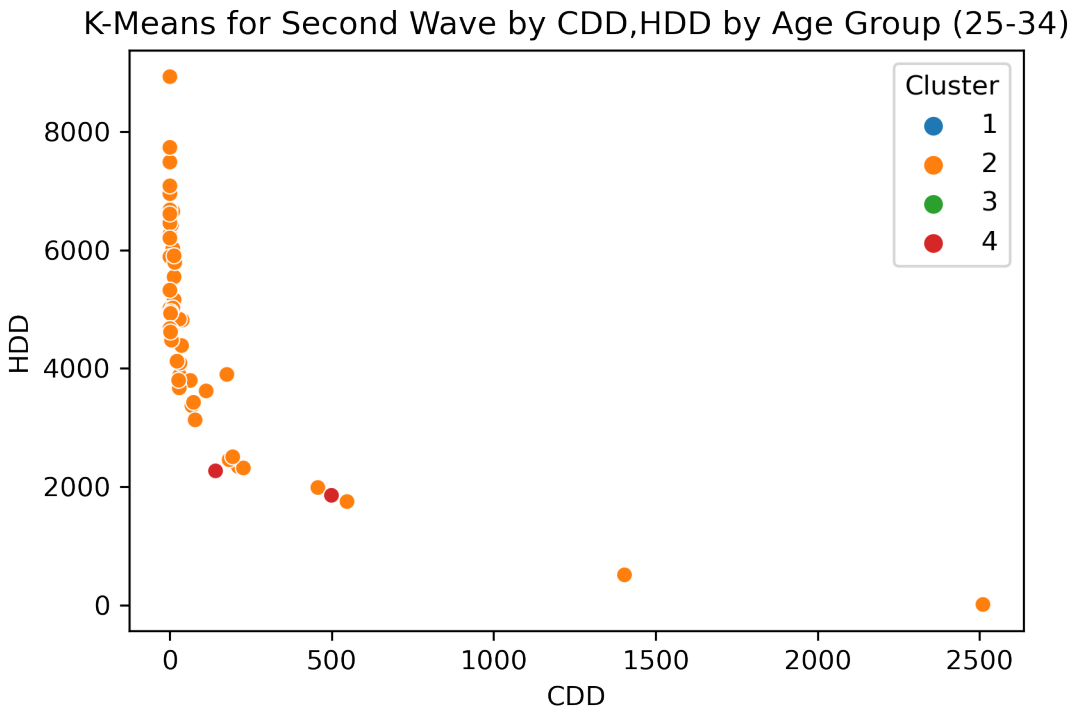


Figure 58: K-Means for Second Wave by CDD,HDD by Age Group (25-34)

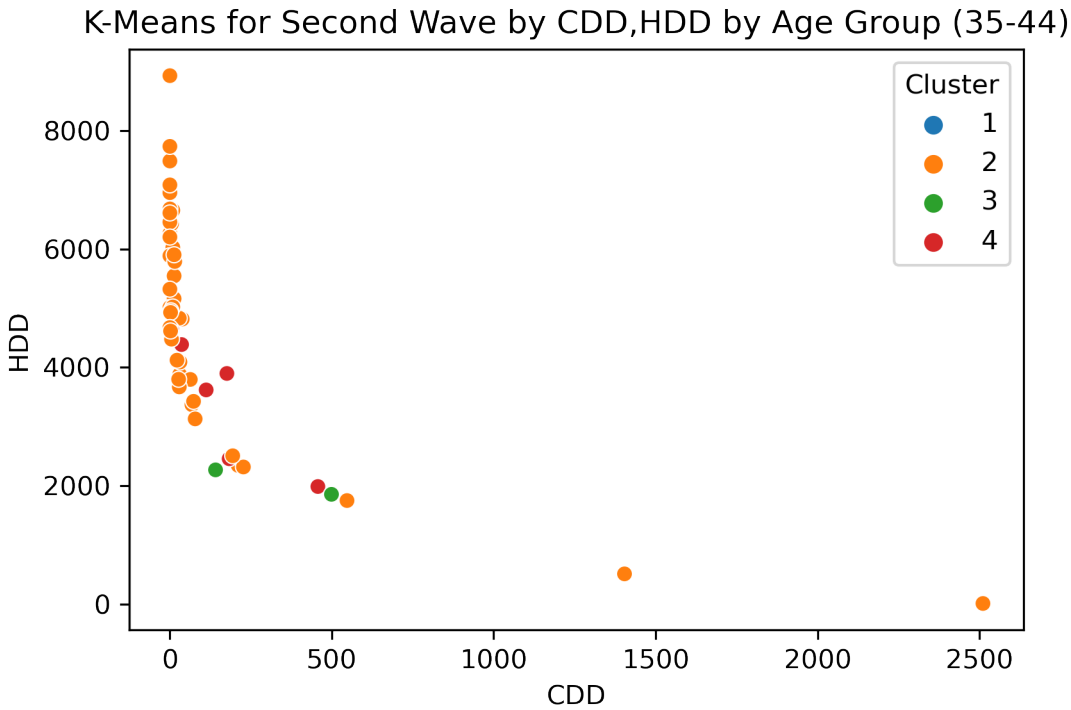


Figure 59: K-Means for Second Wave by CDD,HDD by Age Group (35-44)

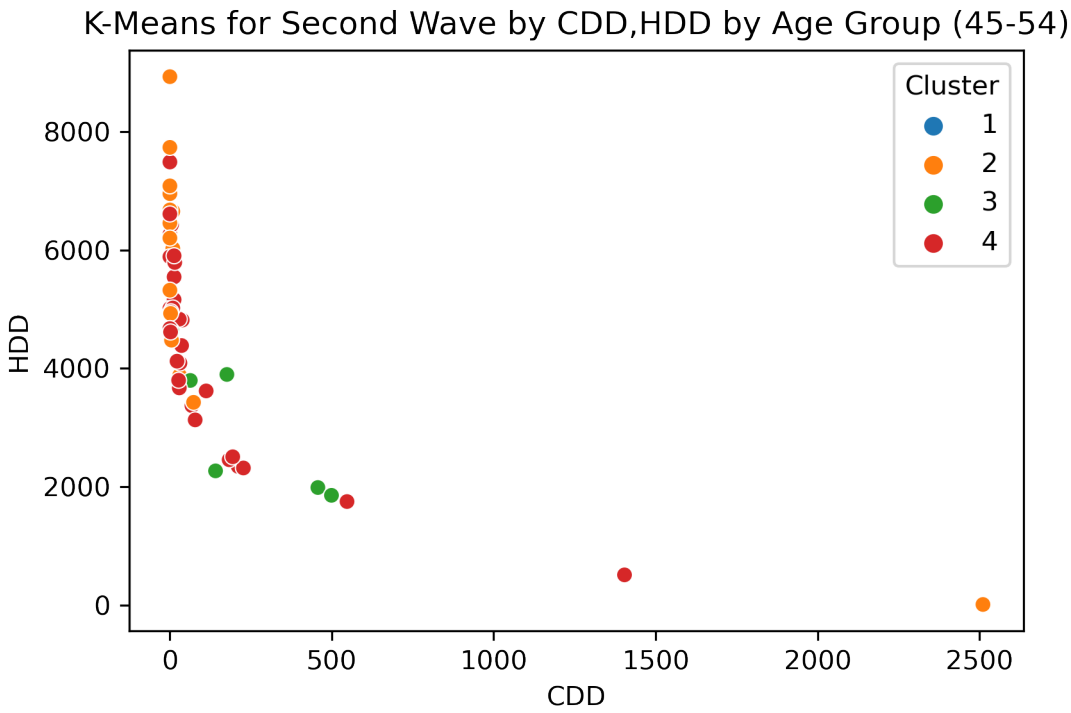


Figure 60: K-Means for Second Wave by CDD,HDD by Age Group (45-54)

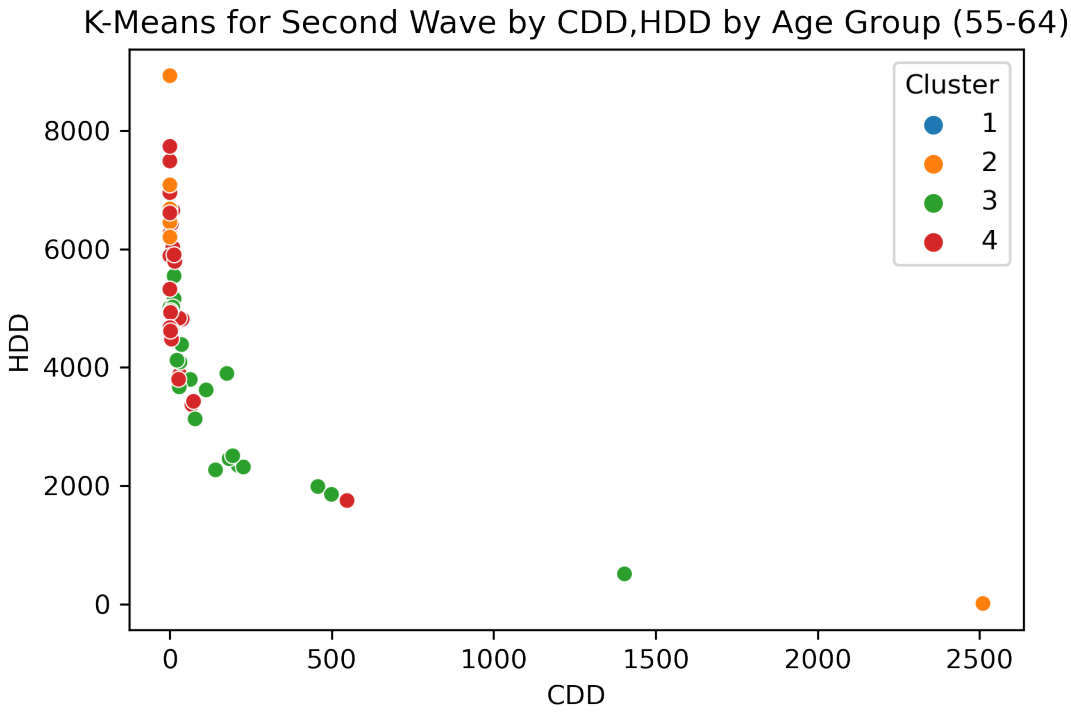


Figure 61: K-Means for Second Wave by CDD,HDD by Age Group (55-64)

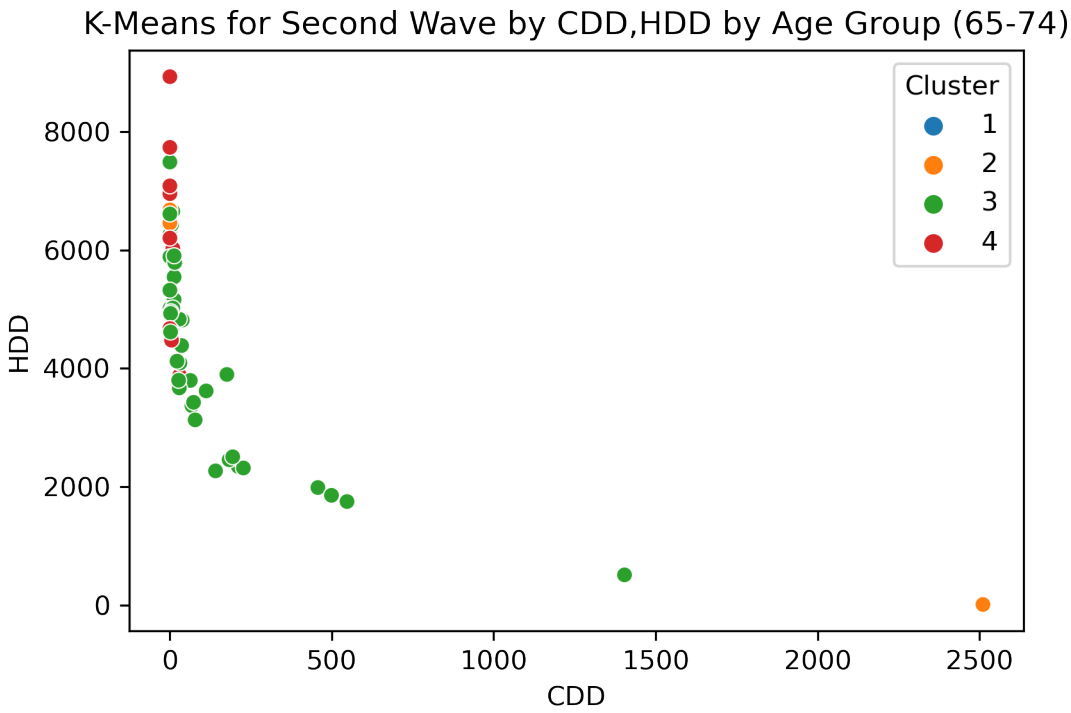


Figure 62: K-Means for Second Wave by CDD,HDD by Age Group (65-74)

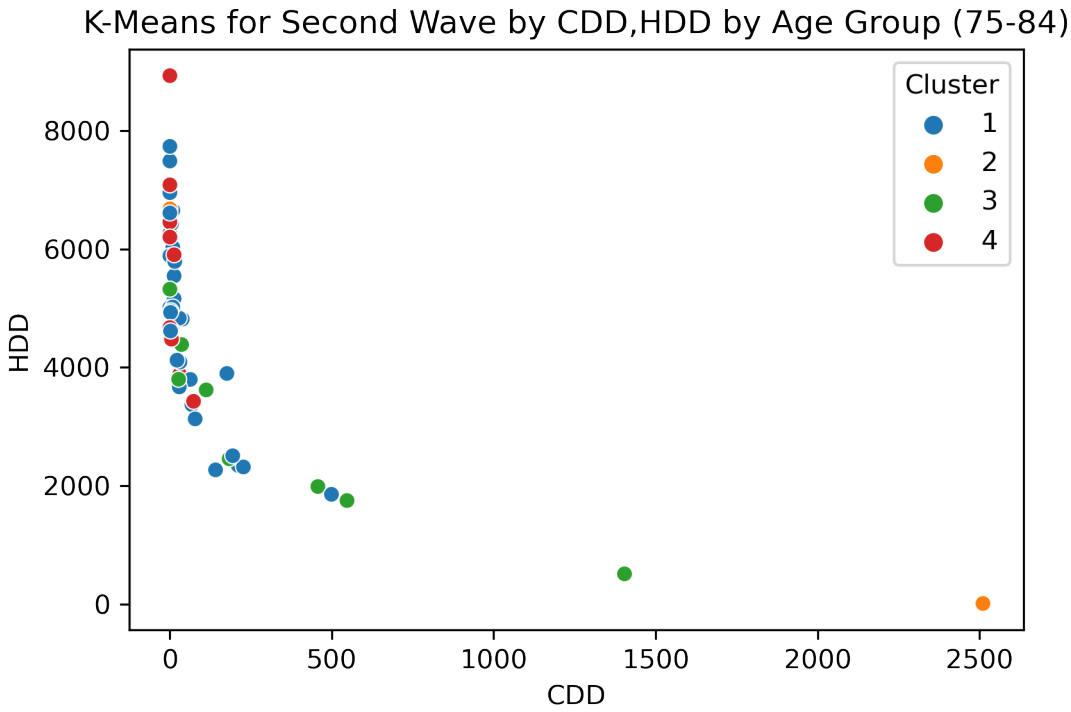


Figure 63: K-Means for Second Wave by CDD,HDD by Age Group (75-84)

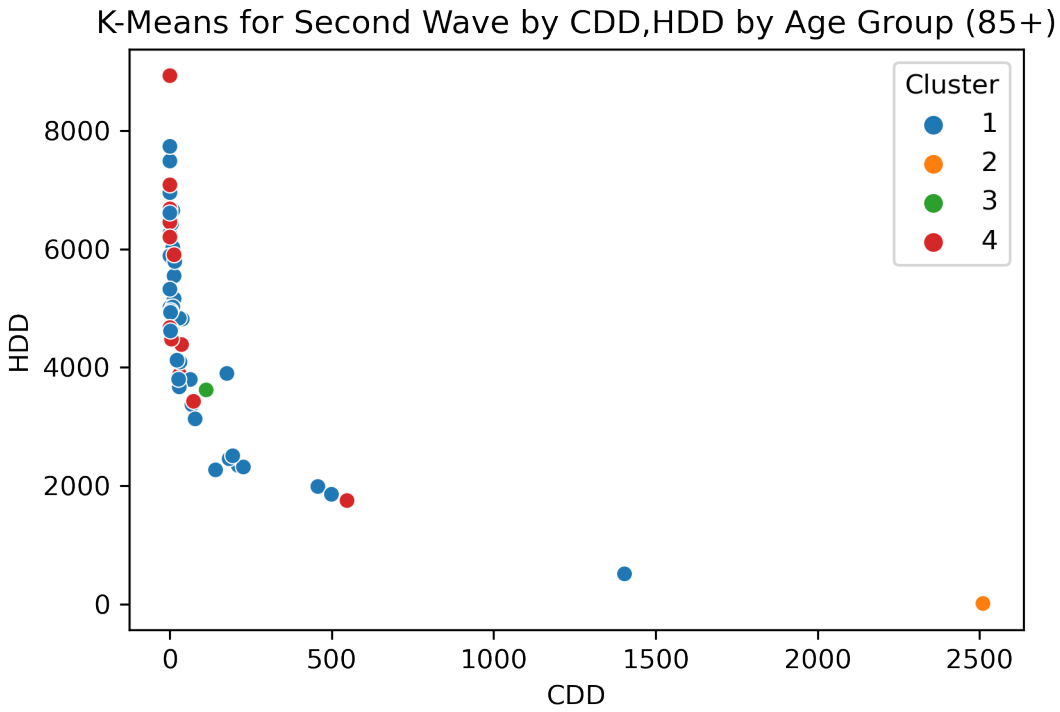


Figure 64: K-Means for Second Wave by CDD,HDD by Age Group (85+)

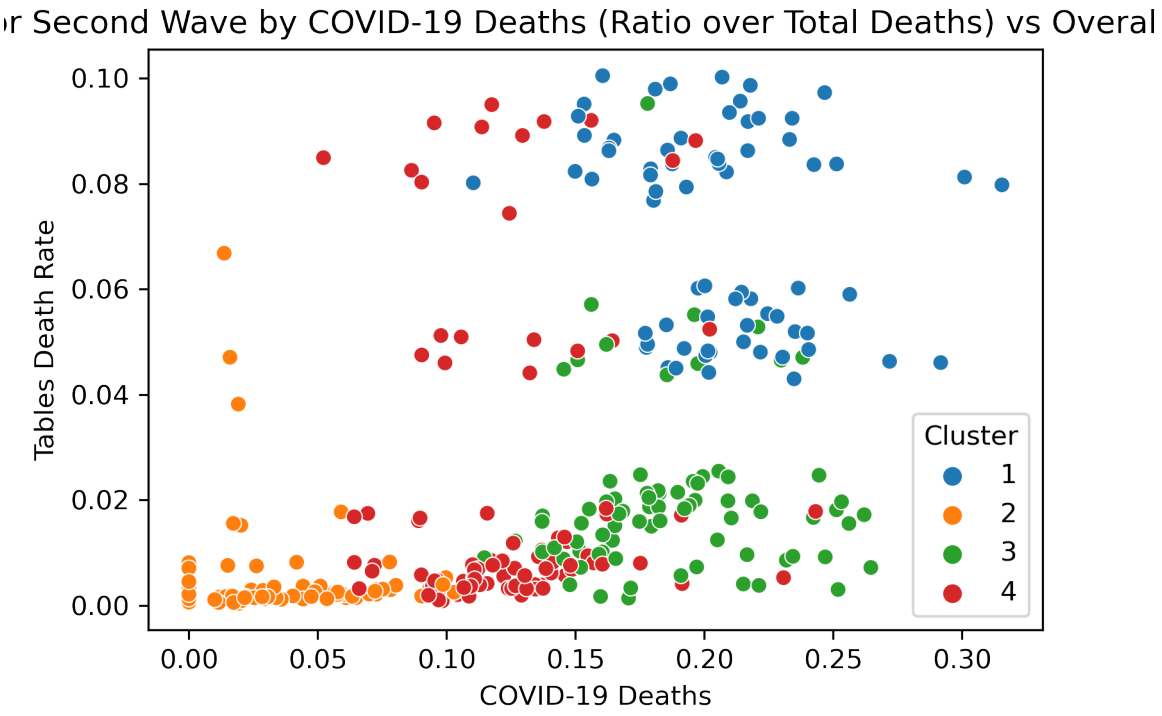


Figure 65: K-Means for Second Wave by COVID-19 Deaths (Ratio over Total Deaths) vs Overall Death Rate

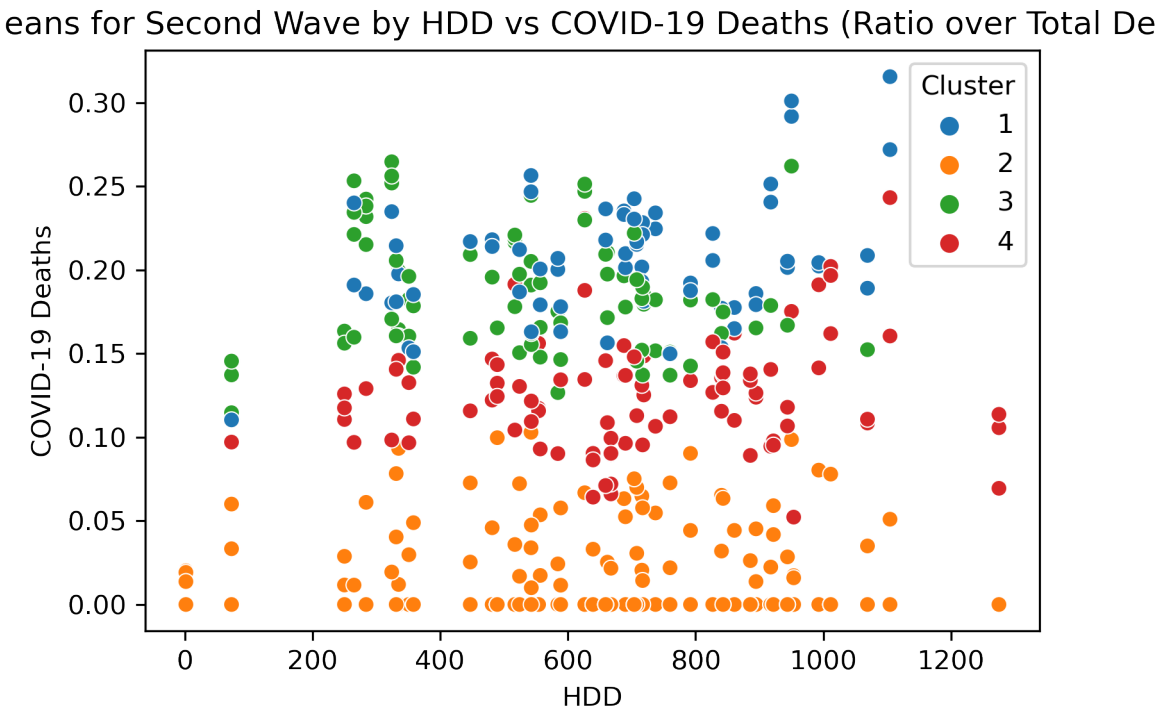


Figure 66: K-Means for Second Wave by HDD vs COVID-19 Deaths (Ratio over Total Deaths)

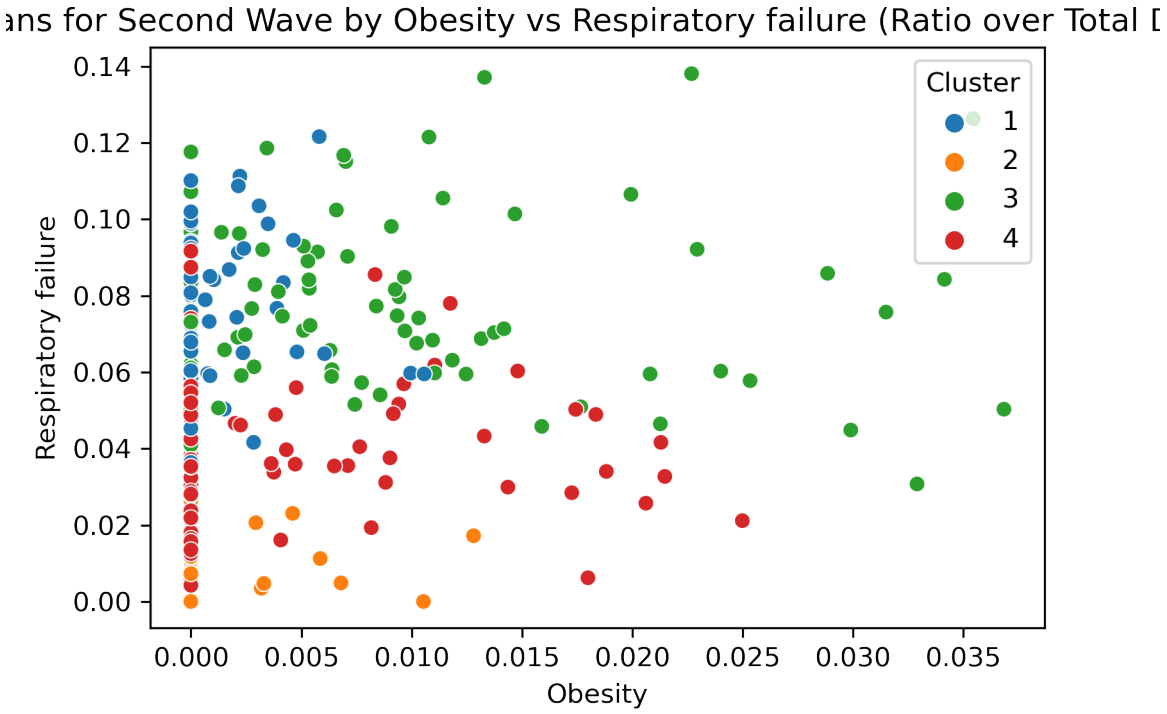


Figure 67: K-Means for Second Wave by Obesity vs Respiratory failure (Ratio over Total Deaths)

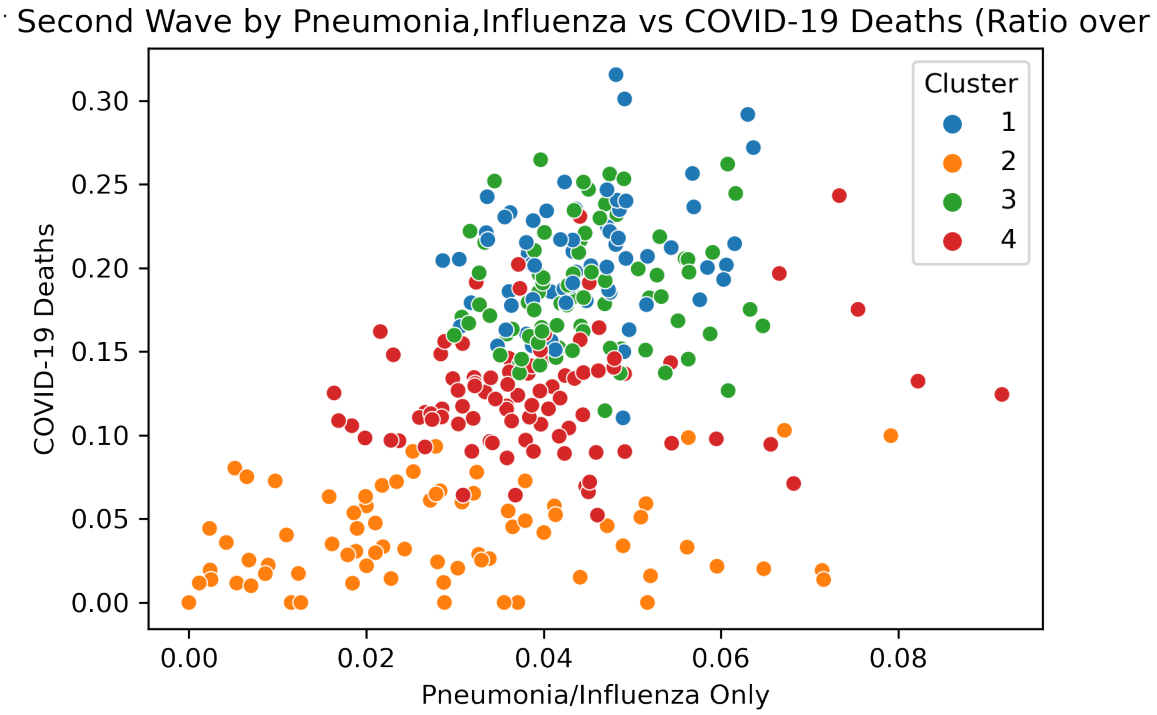


Figure 68: K-Means for Second Wave by Pneumonia,Influenza vs COVID-19 Deaths (Ratio over Total Deaths)

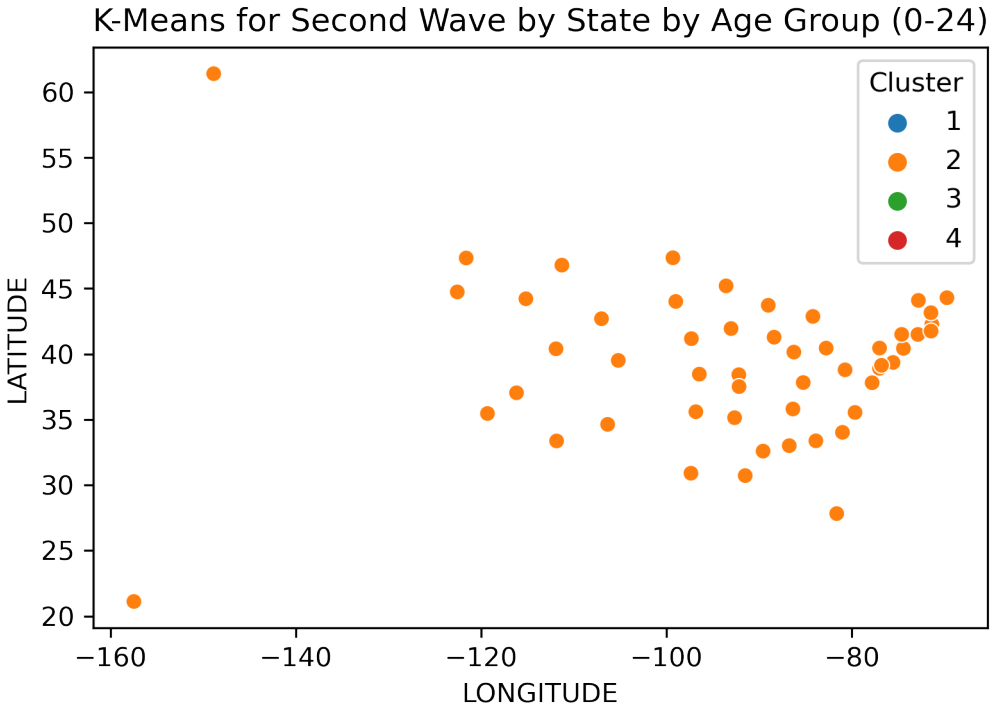


Figure 69: K-Means for Second Wave by State by Age Group (0-24)

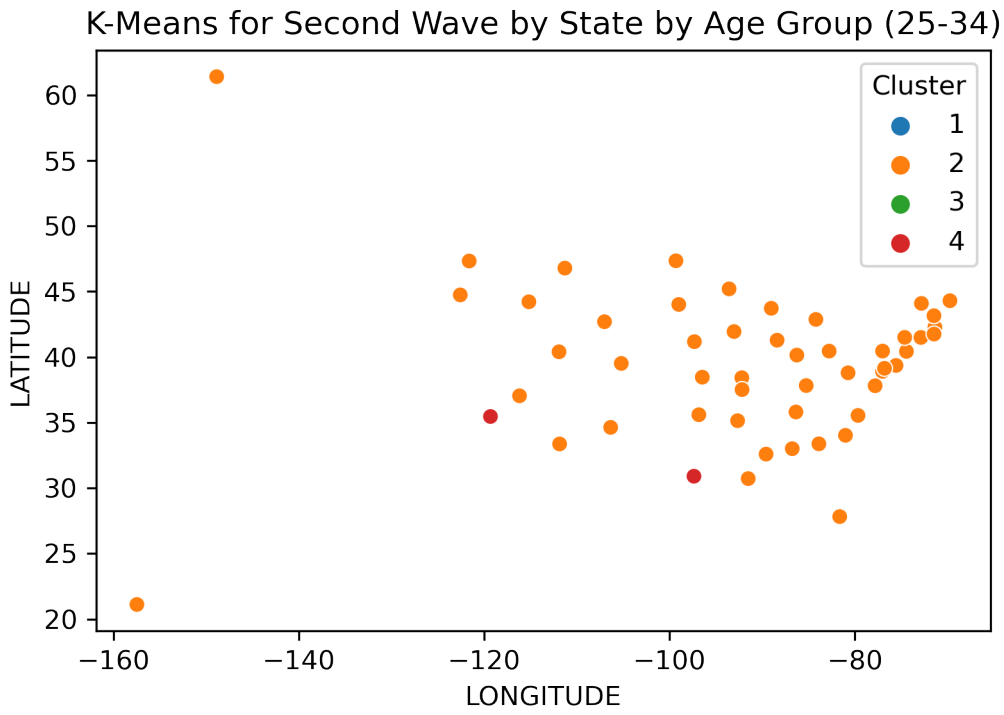


Figure 70: K-Means for Second Wave by State by Age Group (25-34)

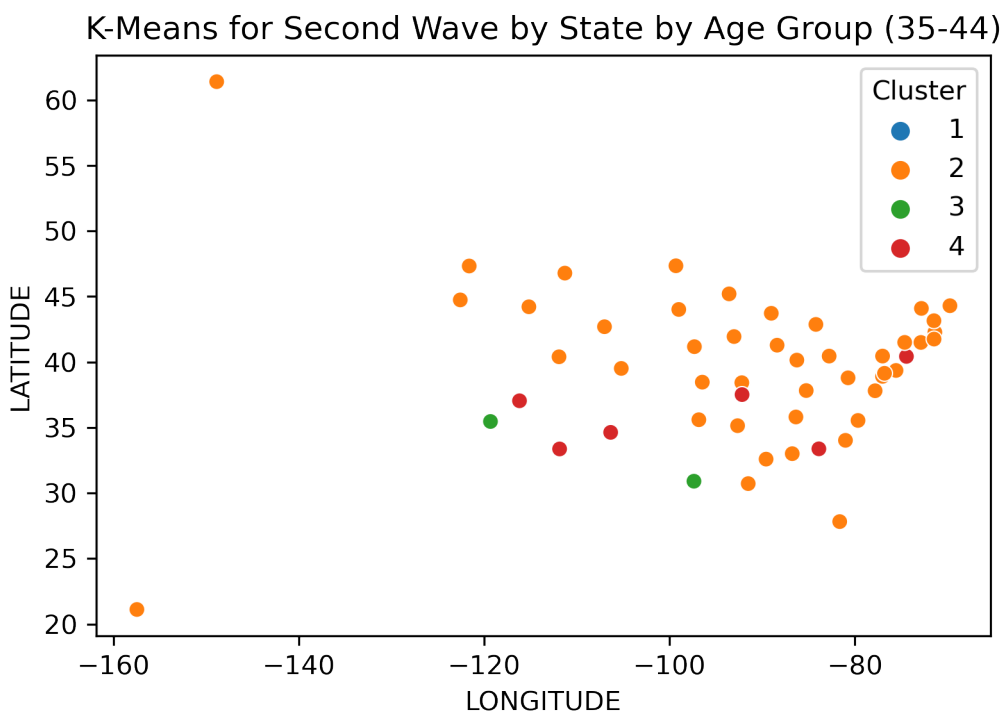


Figure 71: K-Means for Second Wave by State by Age Group (35-44)

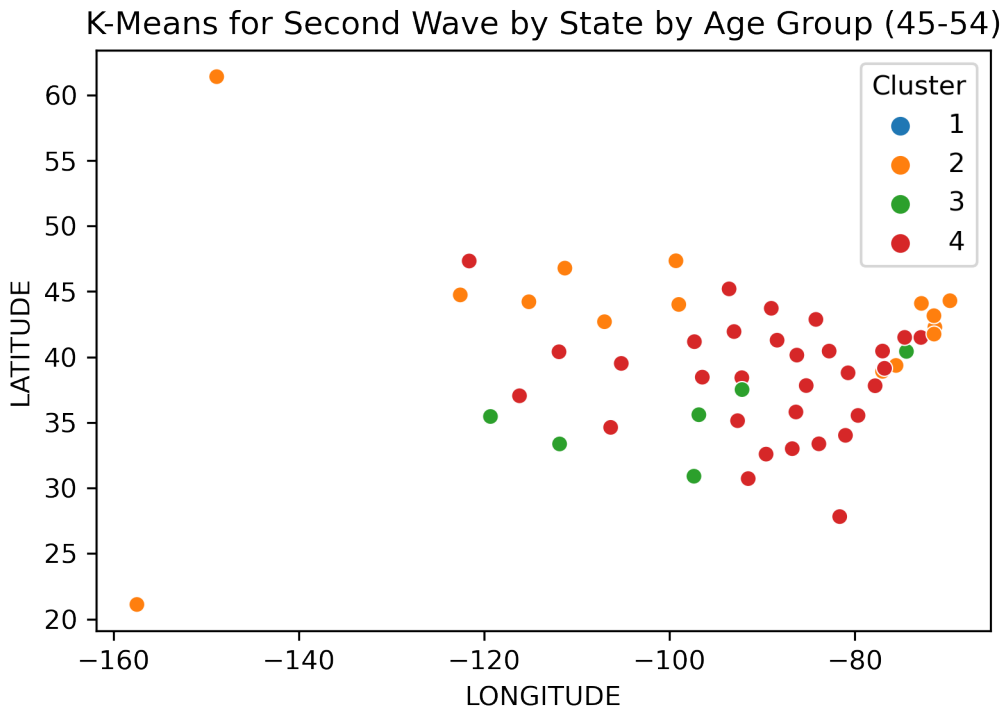


Figure 72: K-Means for Second Wave by State by Age Group (45-54)

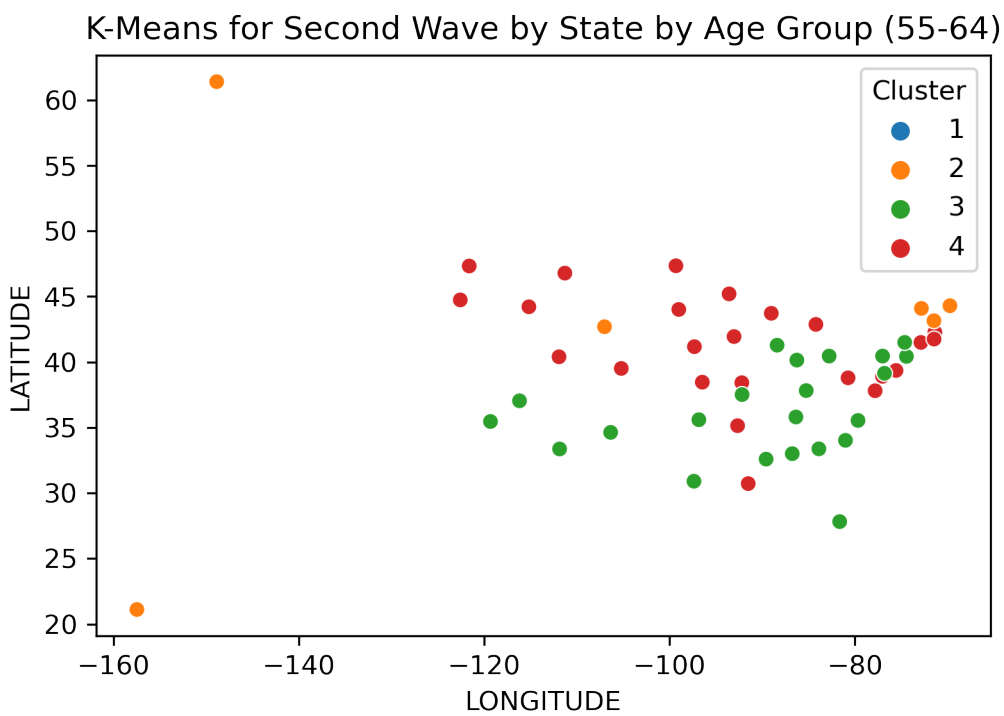


Figure 73: K-Means for Second Wave by State by Age Group (55-64)

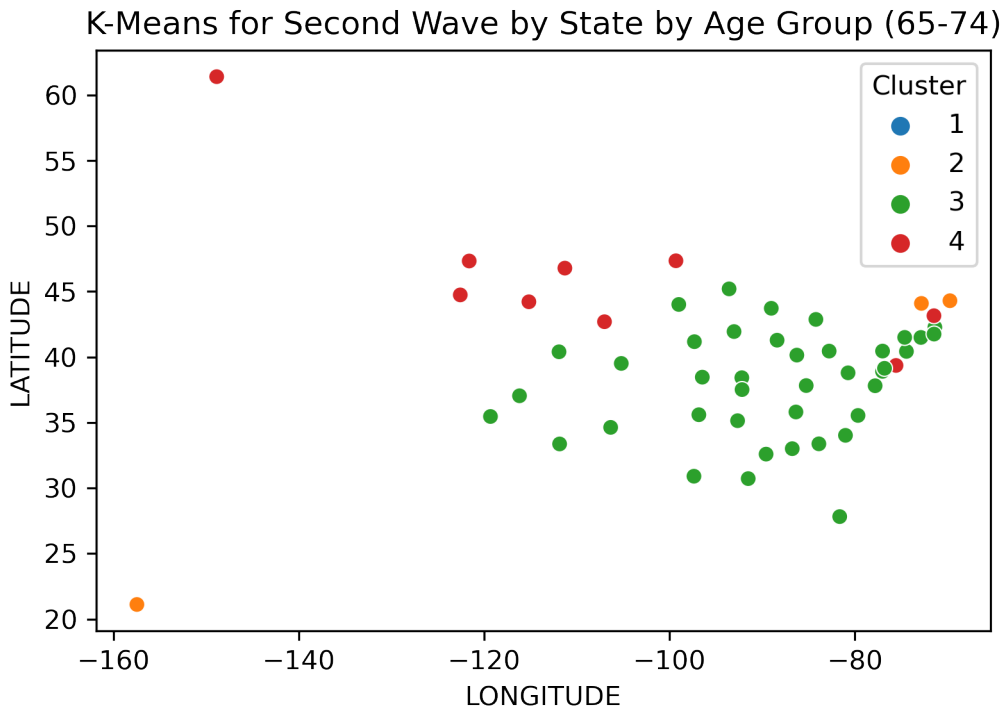


Figure 74: K-Means for Second Wave by State by Age Group (65-74)

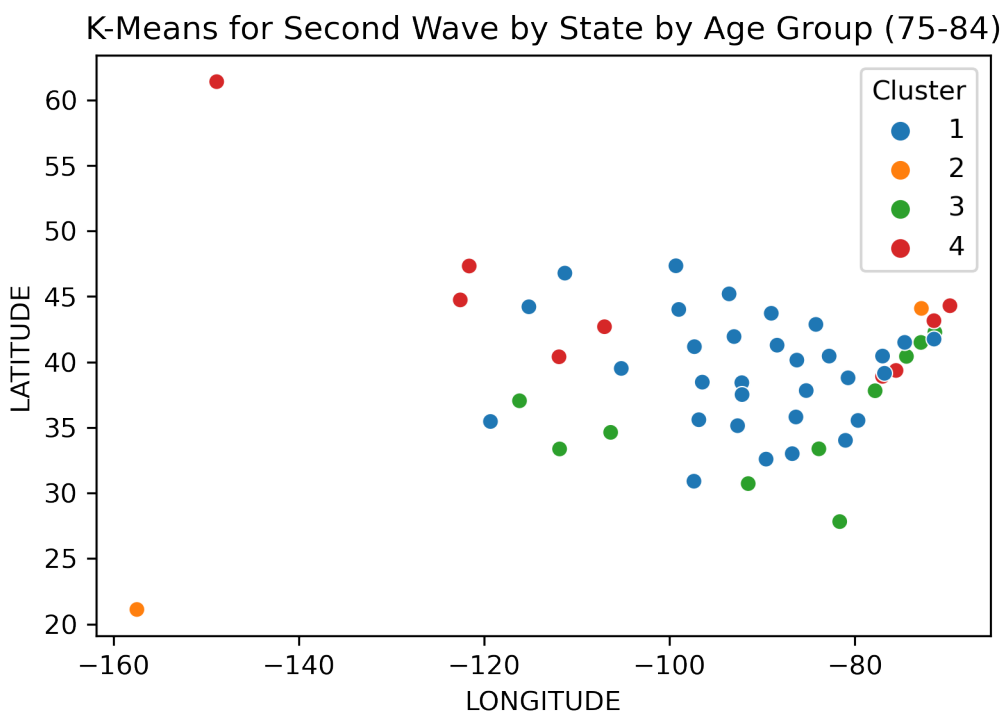


Figure 75: K-Means for Second Wave by State by Age Group (75-84)

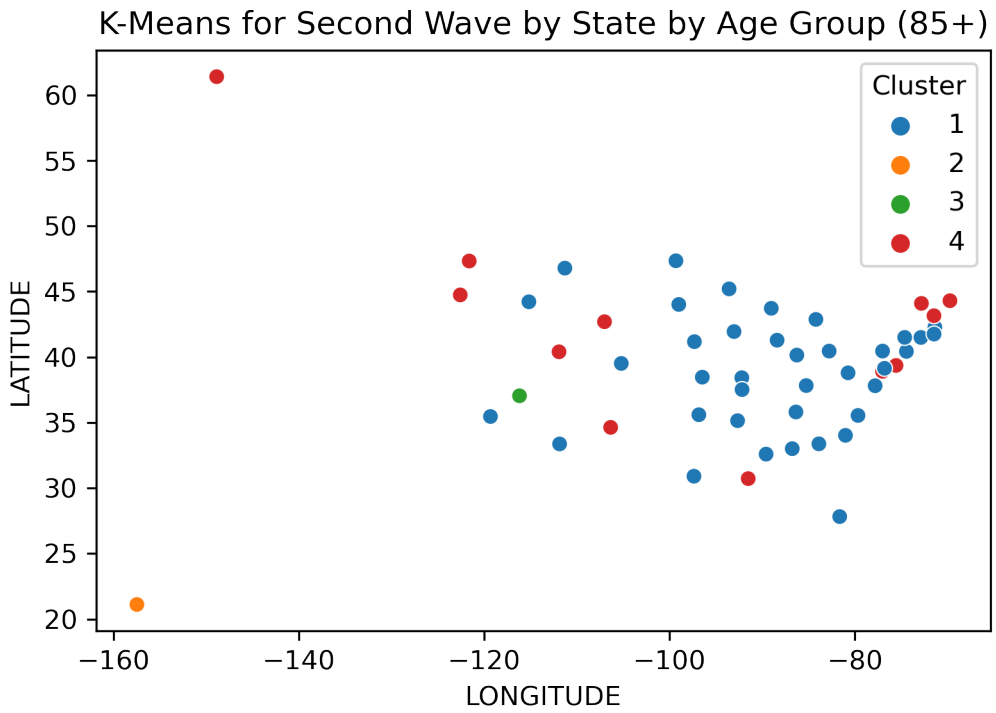


Figure 76: K-Means for Second Wave by State by Age Group (85+)

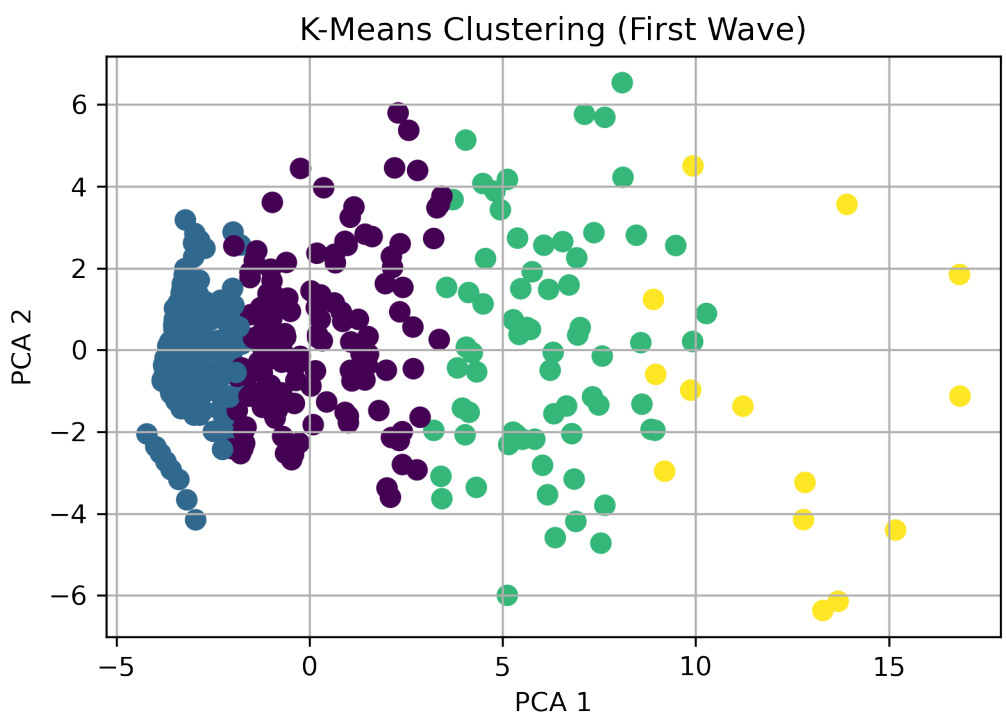


Figure 77: KmeansOne

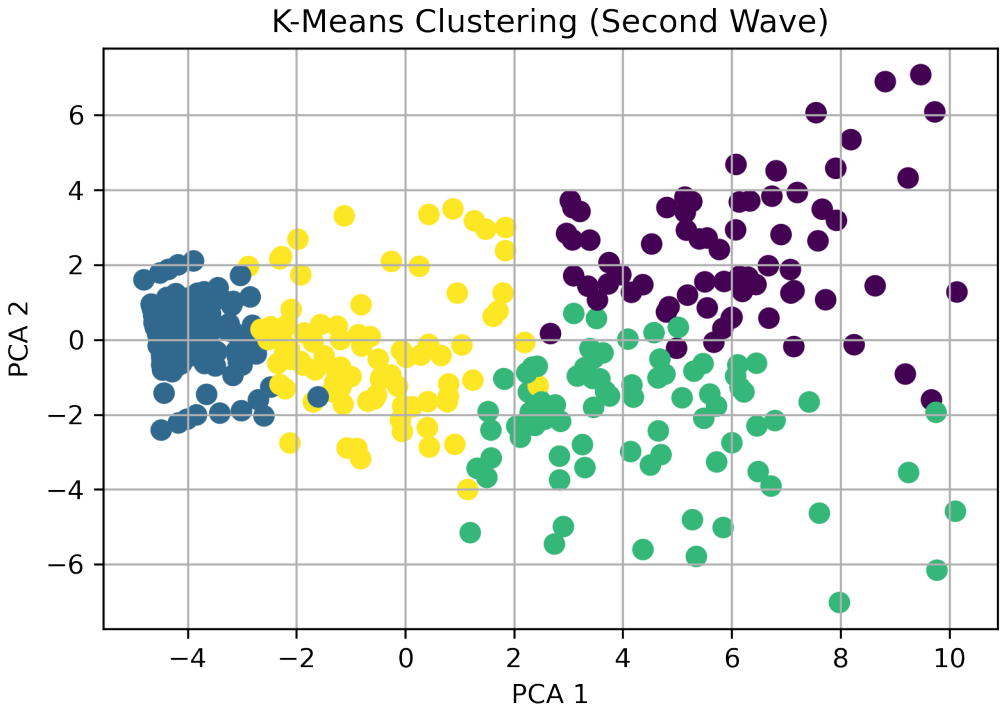


Figure 78: KmeansTwo

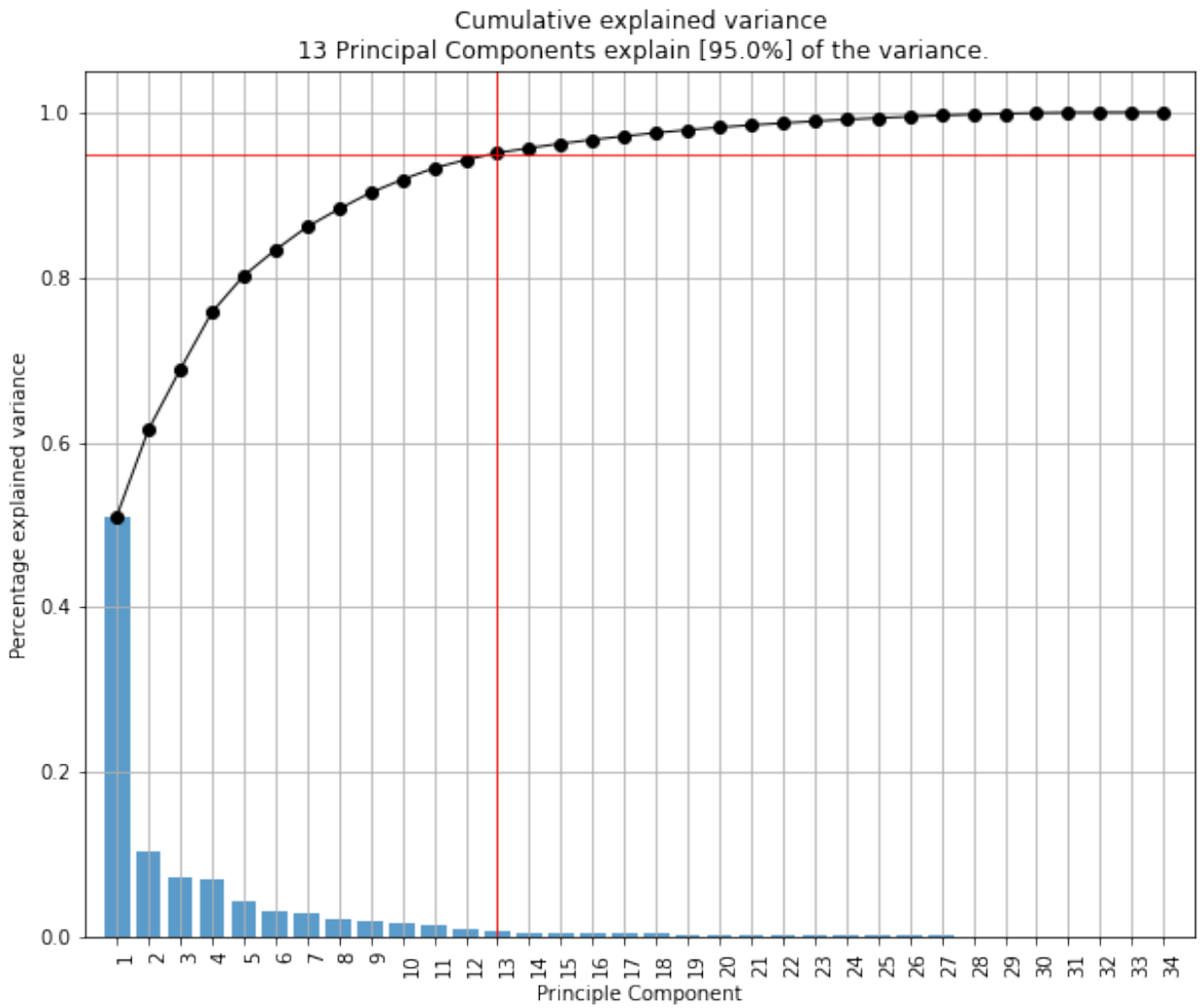


Figure 79: PCA1

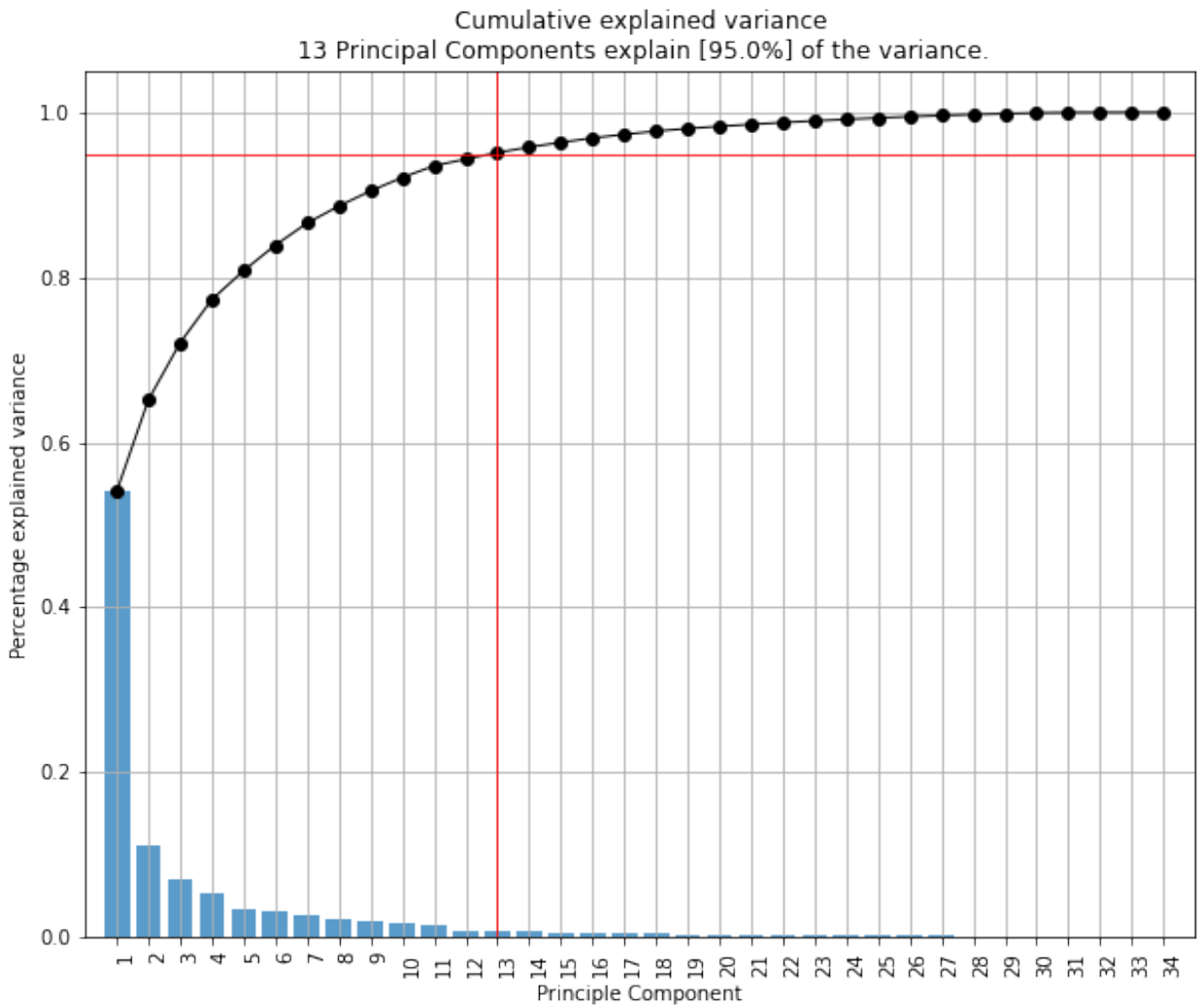


Figure 80: PCA2

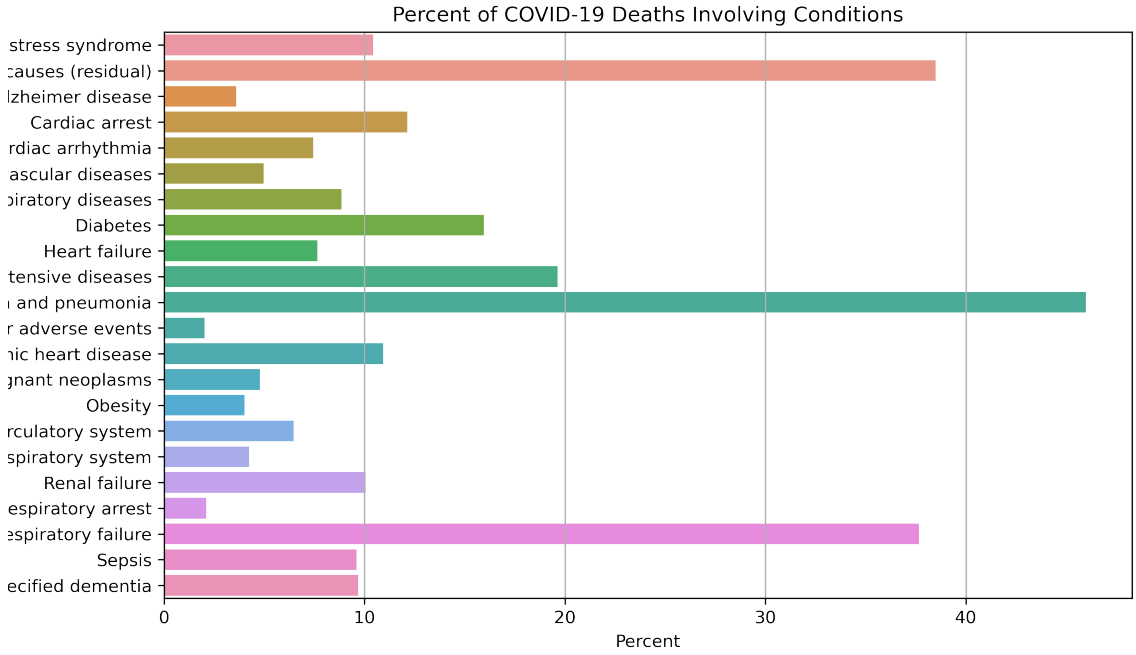


Figure 81: PercentConditions

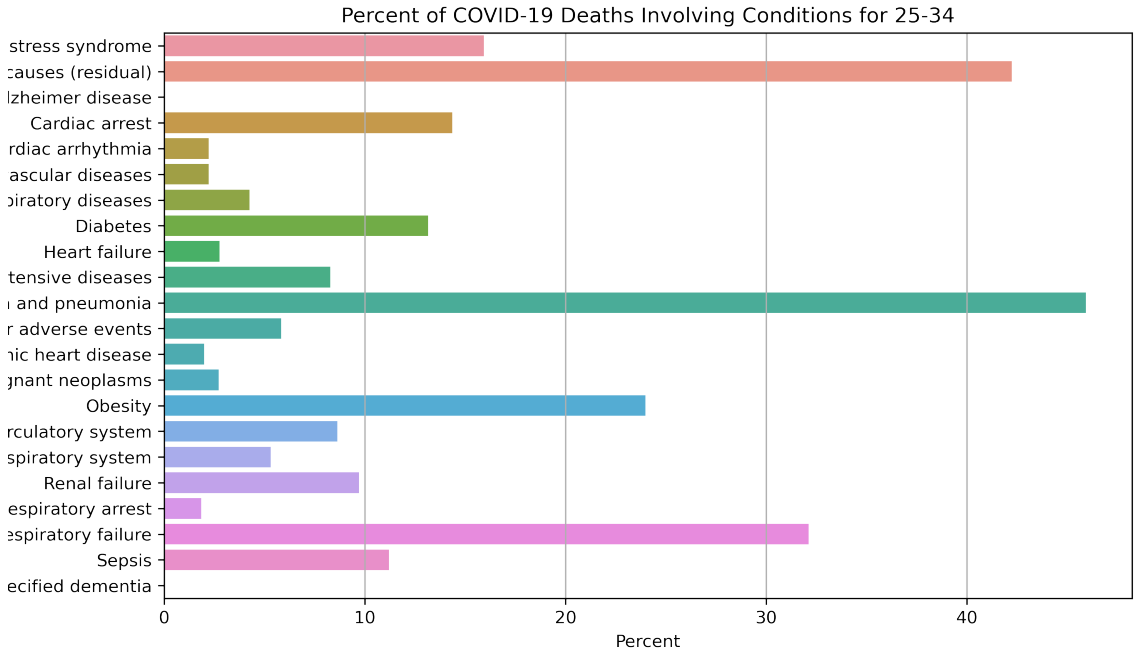


Figure 82: PercentConditions25-34

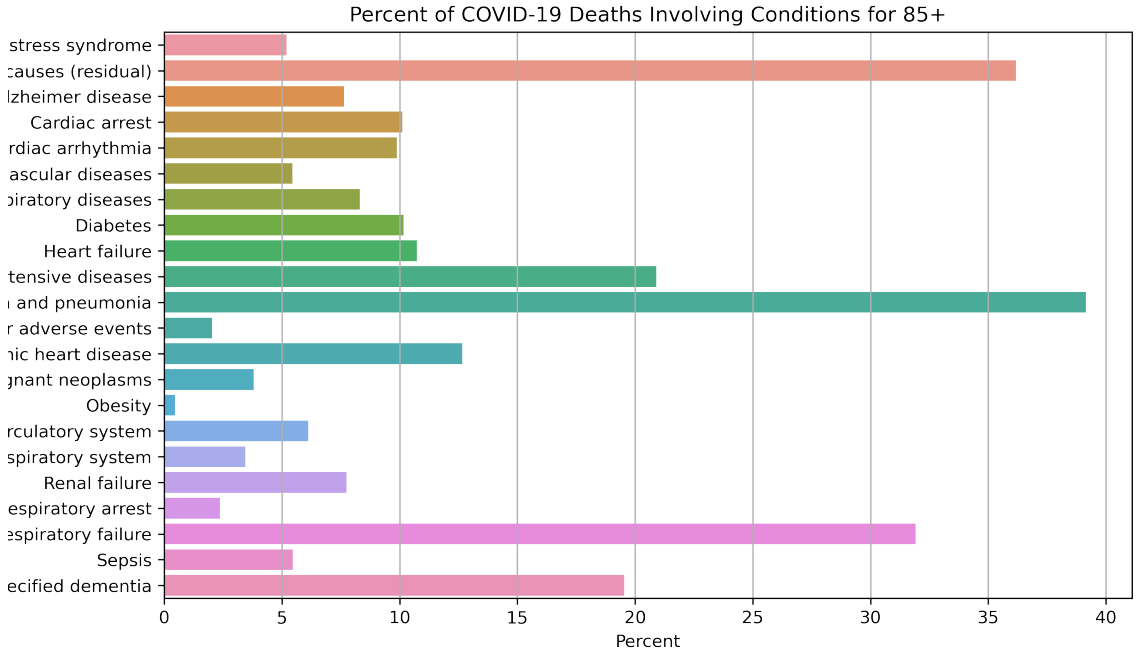


Figure 83: PercentConditions85+

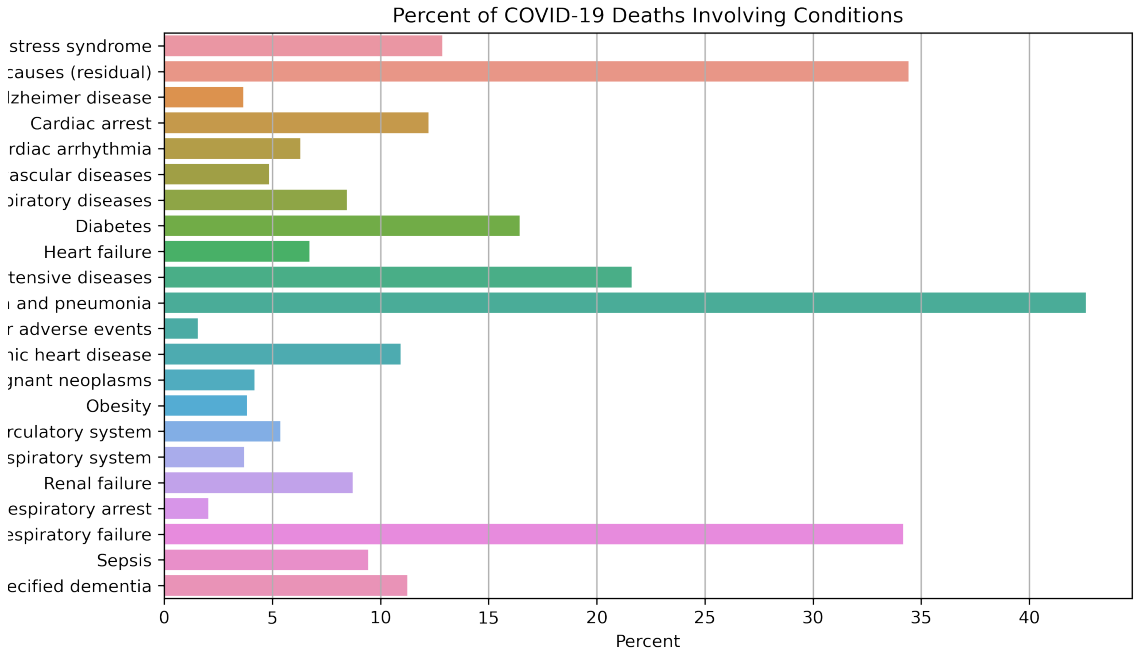


Figure 84: PercentConditionsFirstPeak

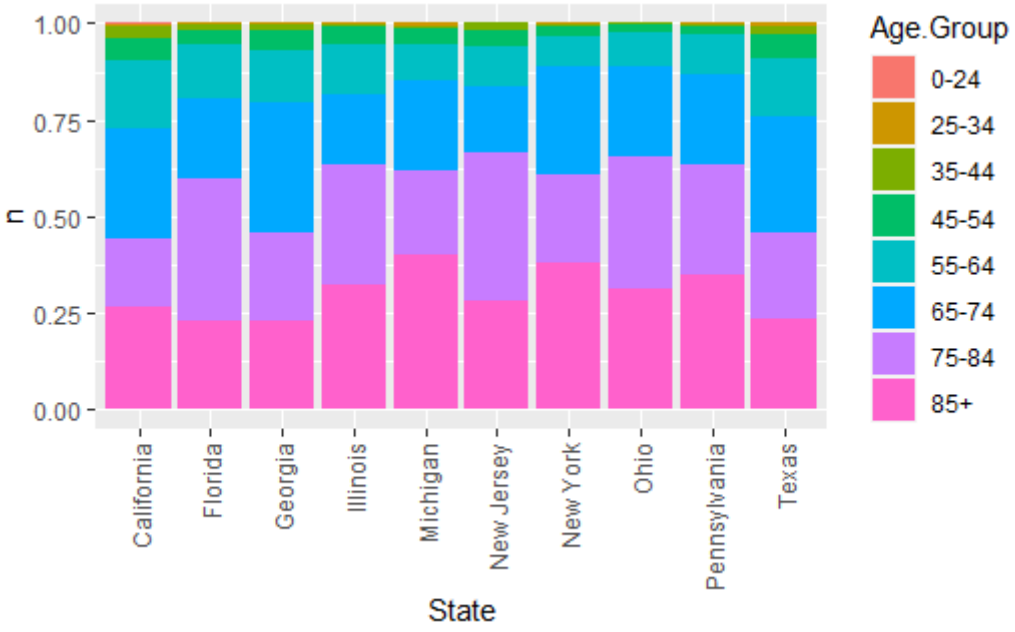


Figure 85: proportion of age in top 10 states

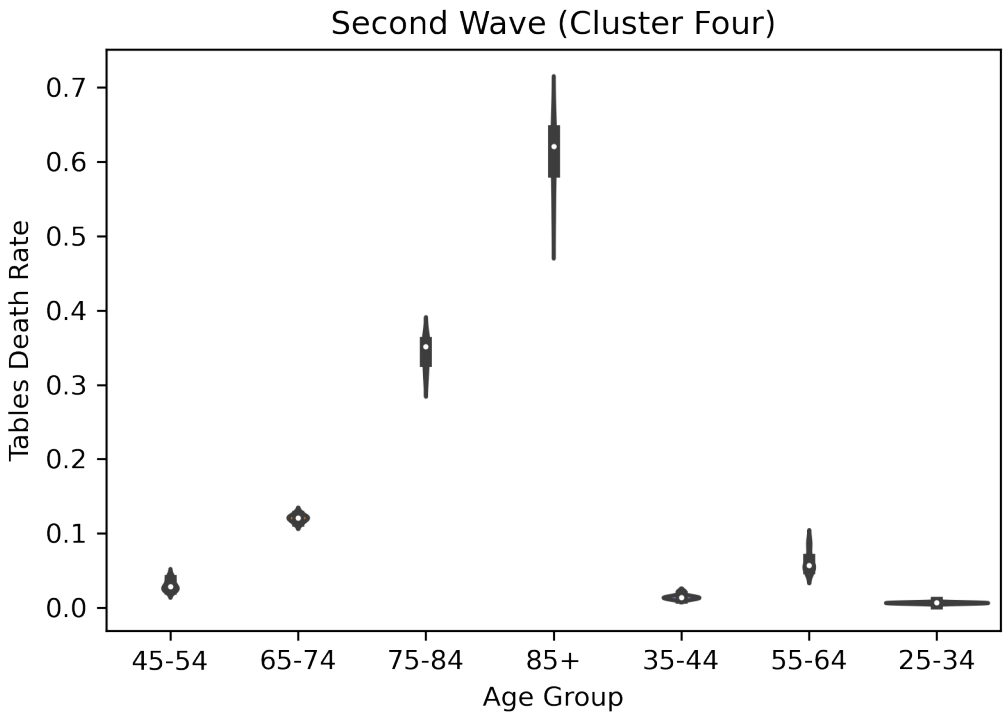


Figure 86: Second Wave (Cluster Four)

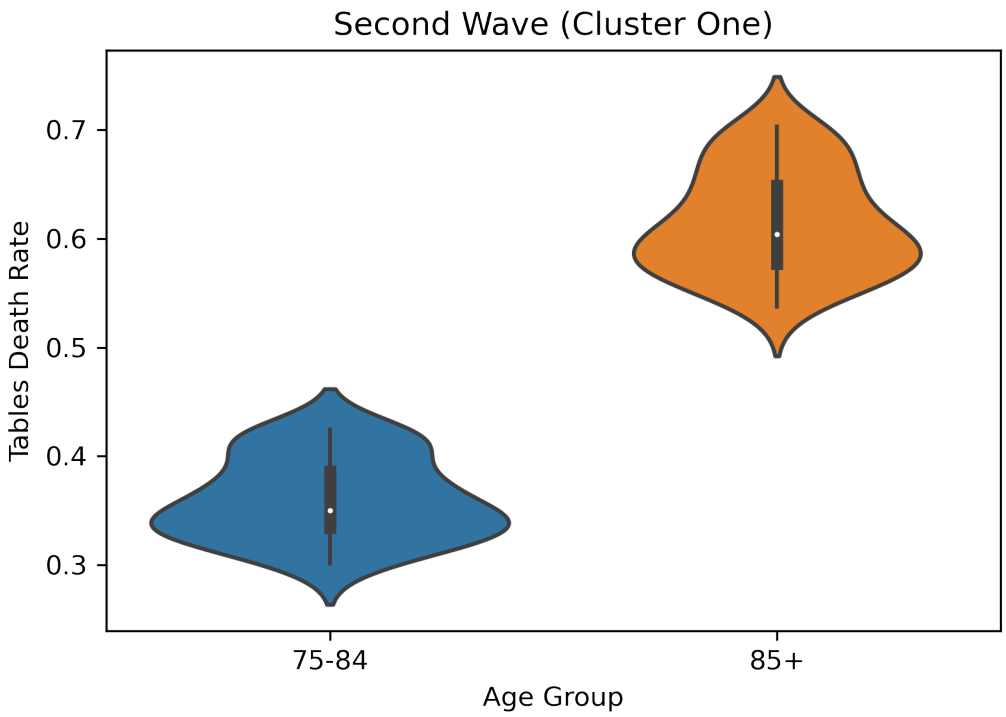


Figure 87: Second Wave (Cluster One)

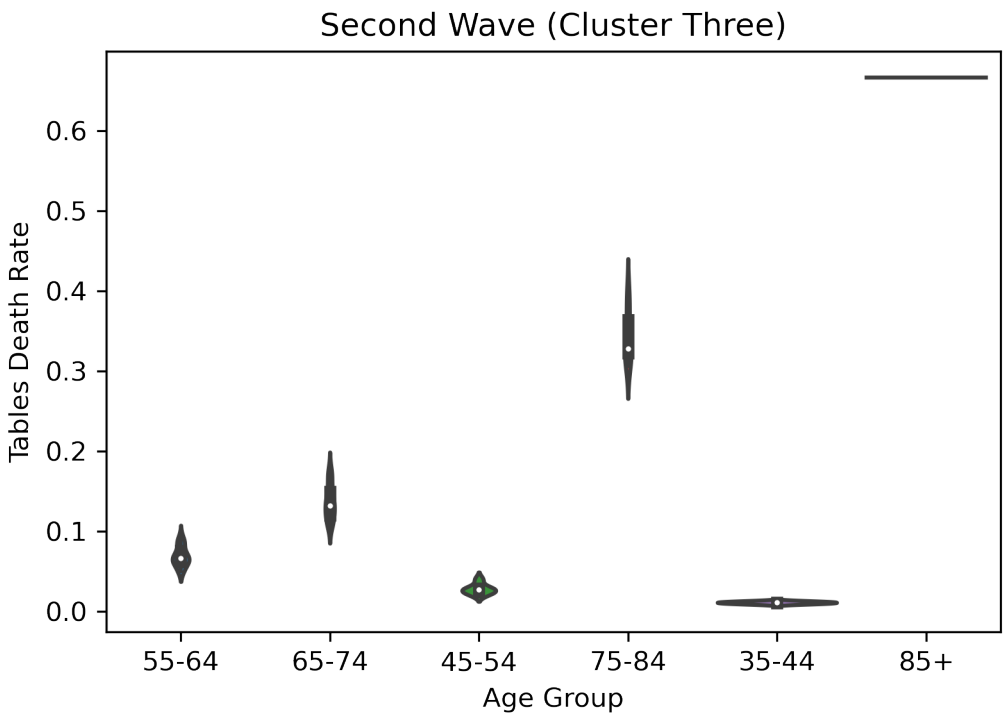


Figure 88: Second Wave (Cluster Three)

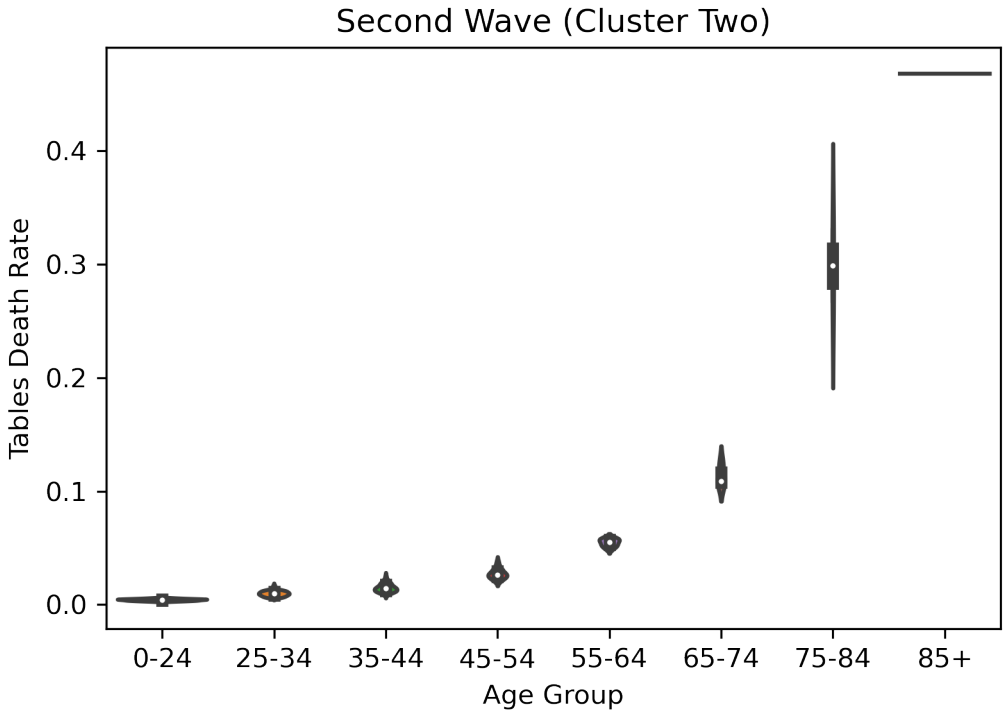


Figure 89: Second Wave (Cluster Two)

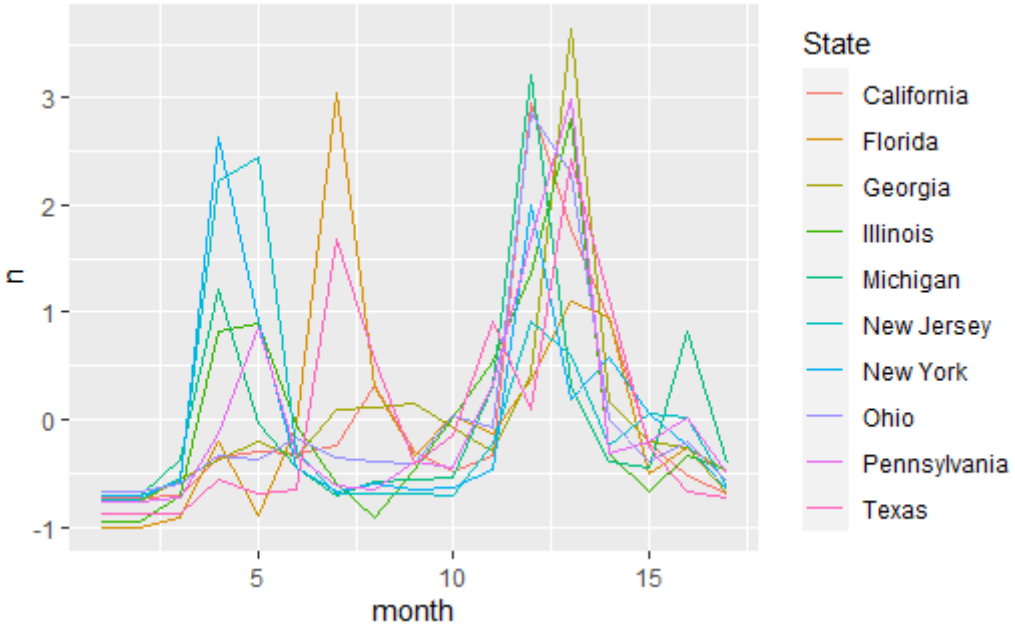


Figure 90: state death trend against time

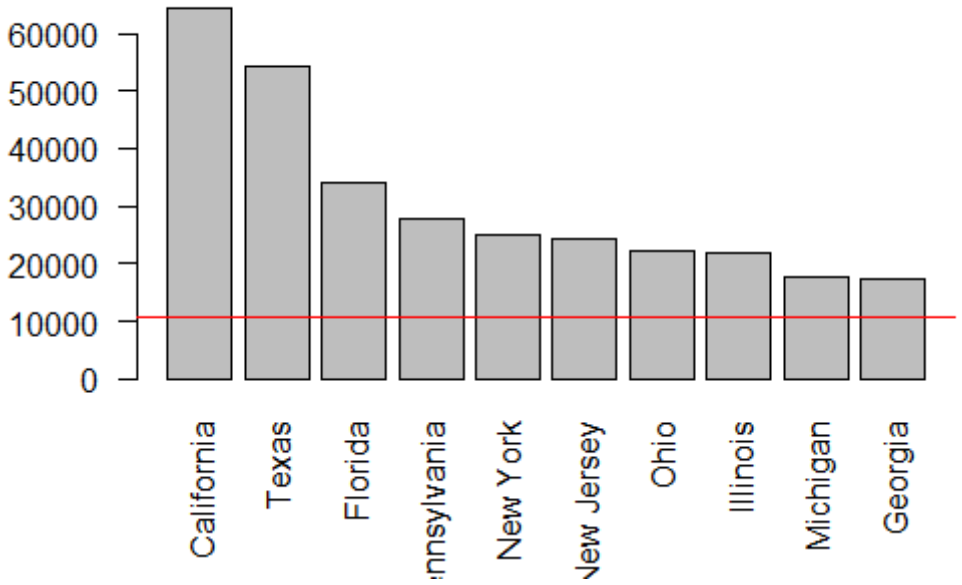


Figure 91: top 10 states

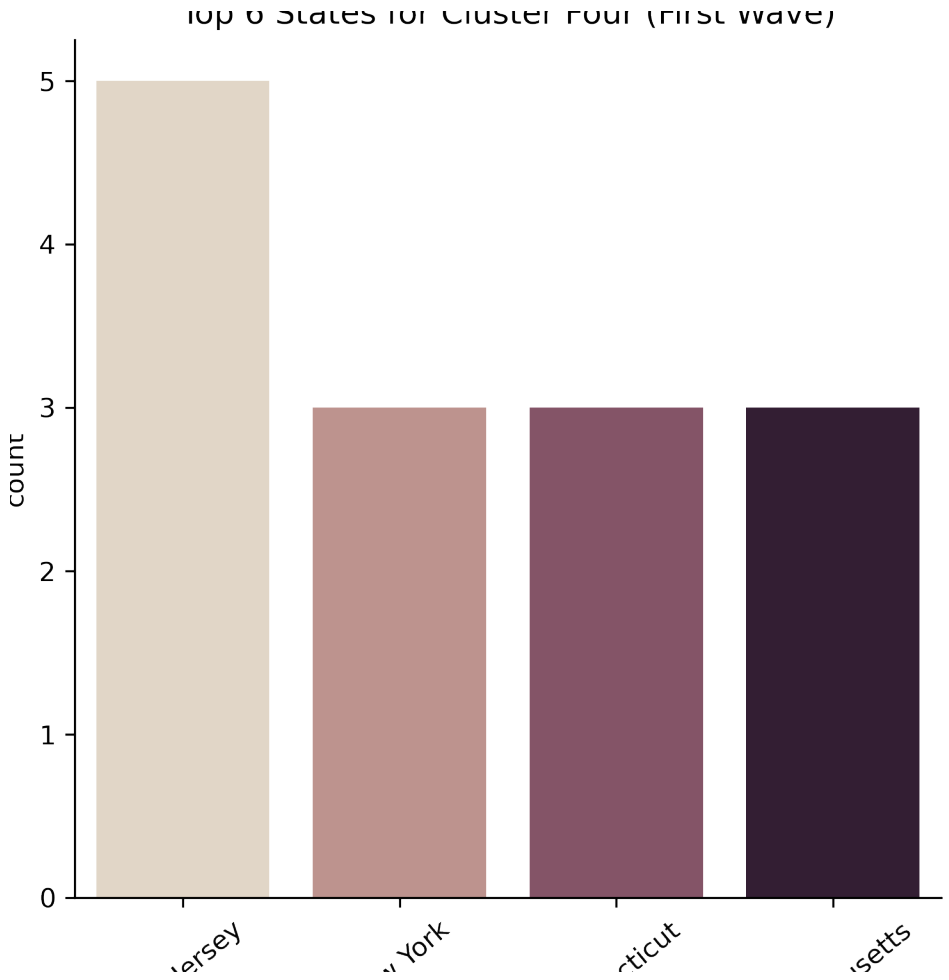


Figure 92: Top 6 States for Cluster Four (First Wave)

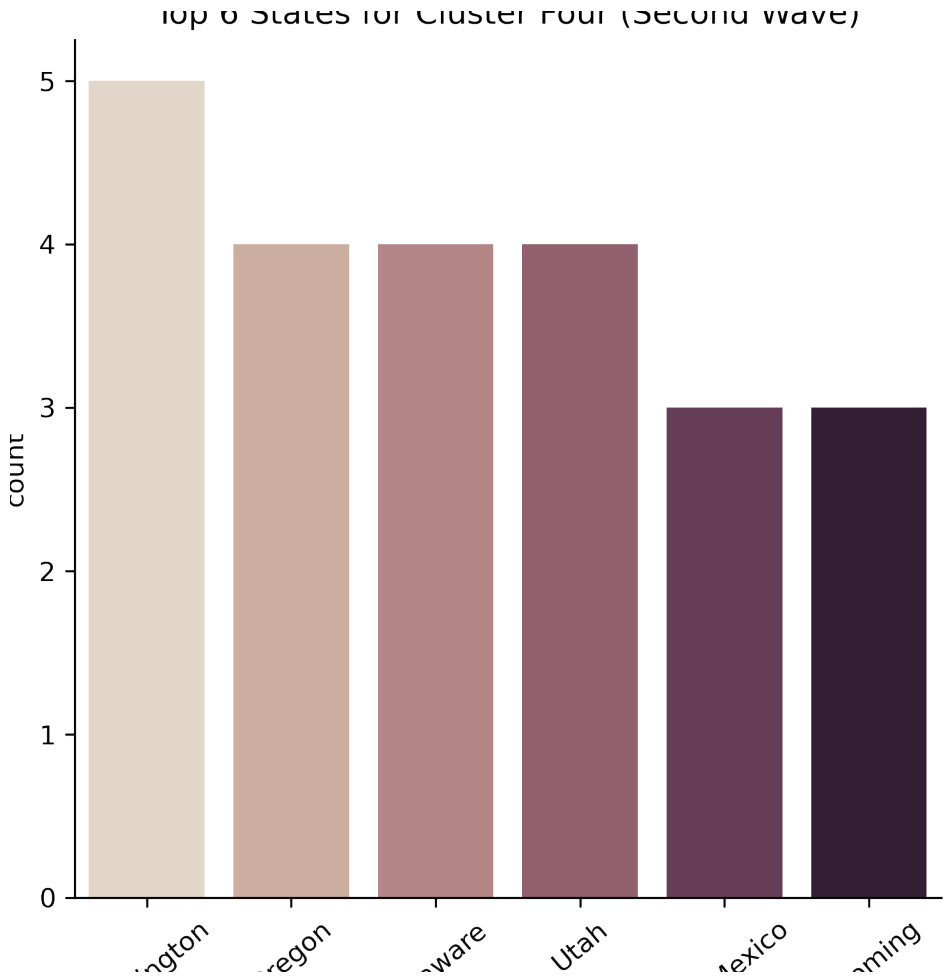


Figure 93: Top 6 States for Cluster Four (Second Wave)

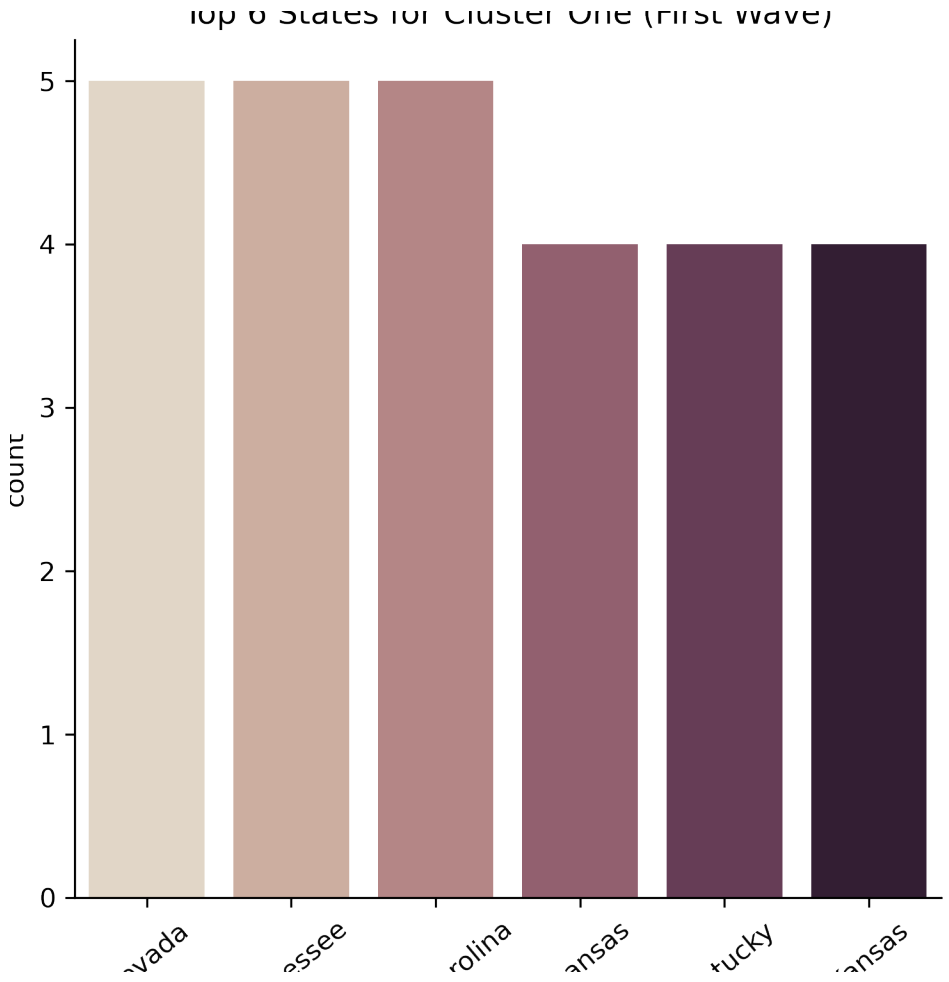


Figure 94: Top 6 States for Cluster One (First Wave)

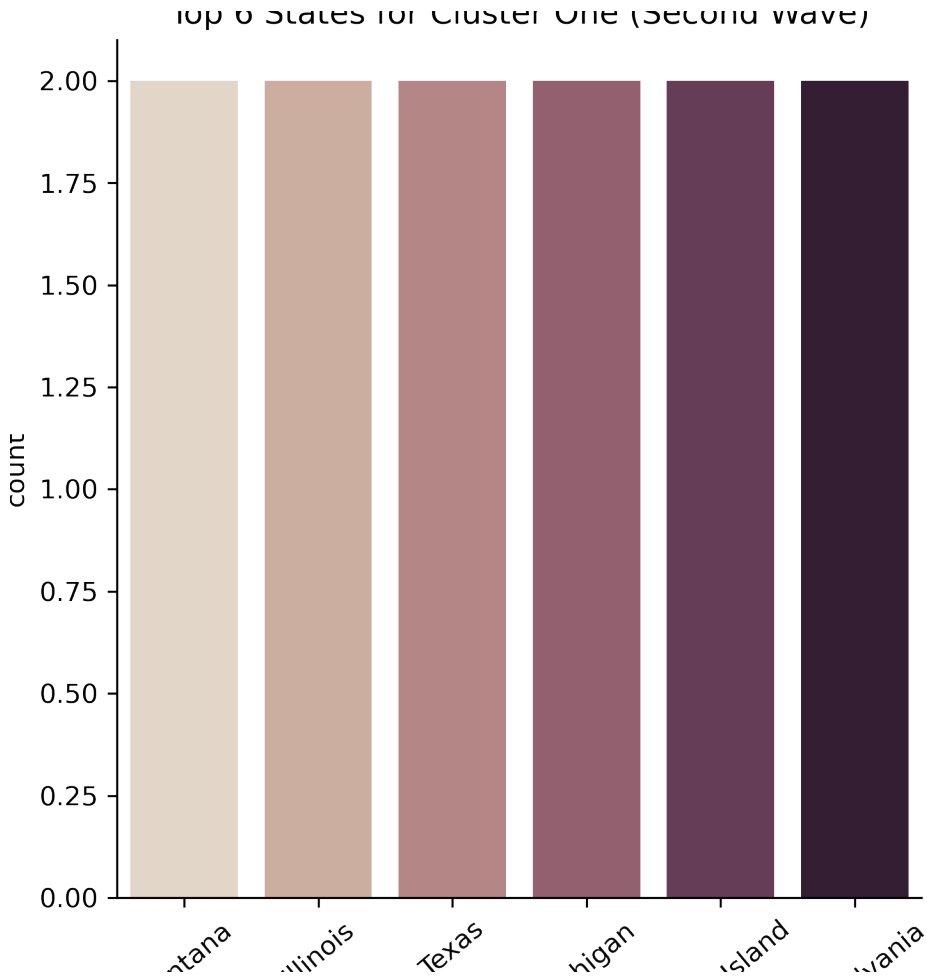


Figure 95: Top 6 States for Cluster One (Second Wave)

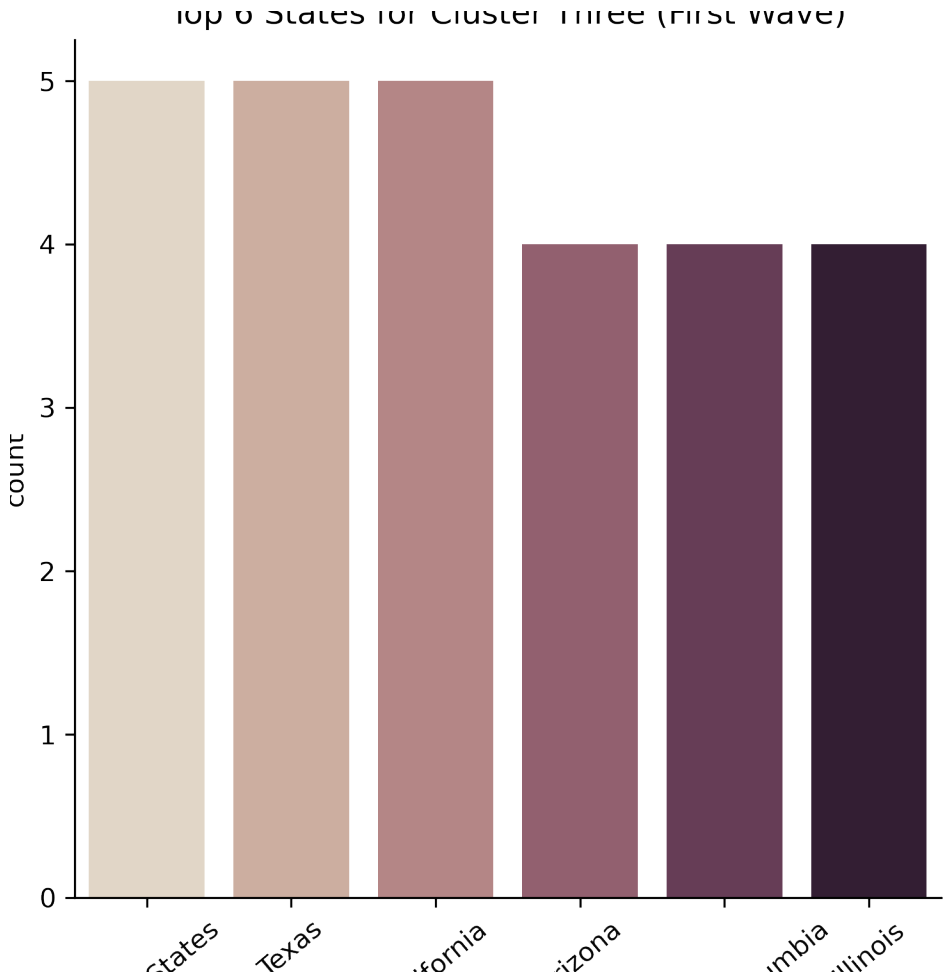


Figure 96: Top 6 States for Cluster Three (First Wave)

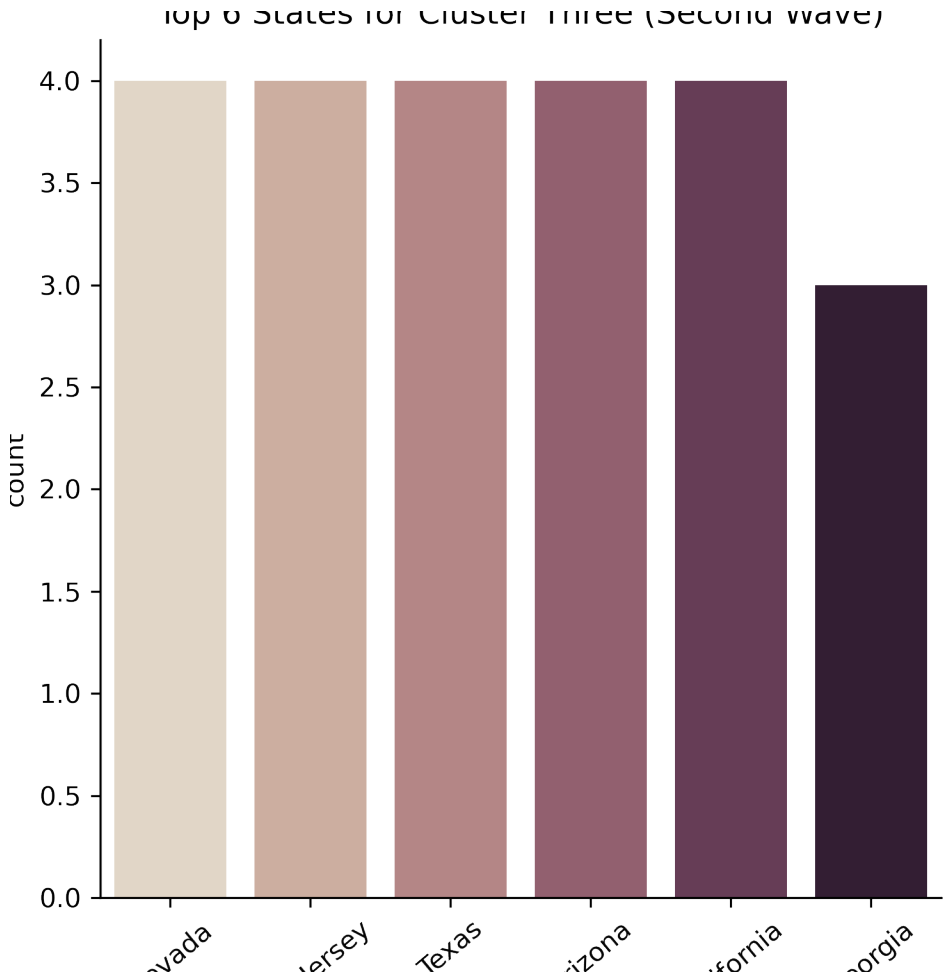


Figure 97: Top 6 States for Cluster Three (Second Wave)

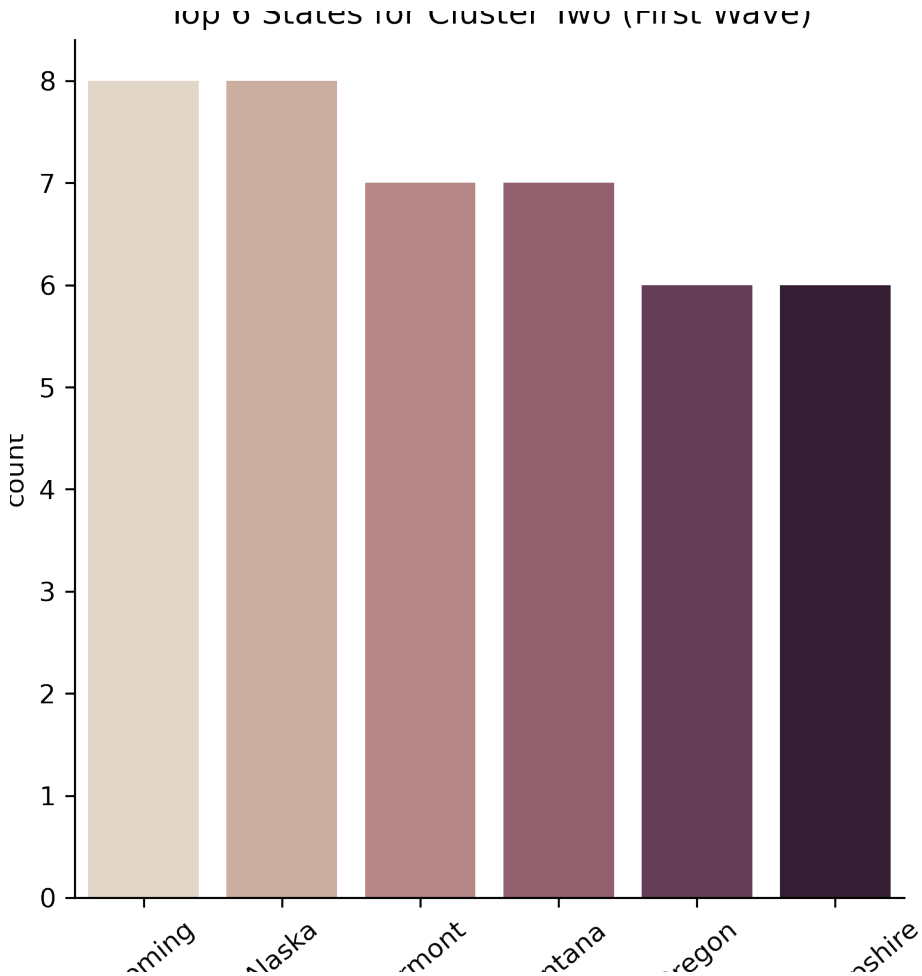


Figure 98: Top 6 States for Cluster Two (First Wave)

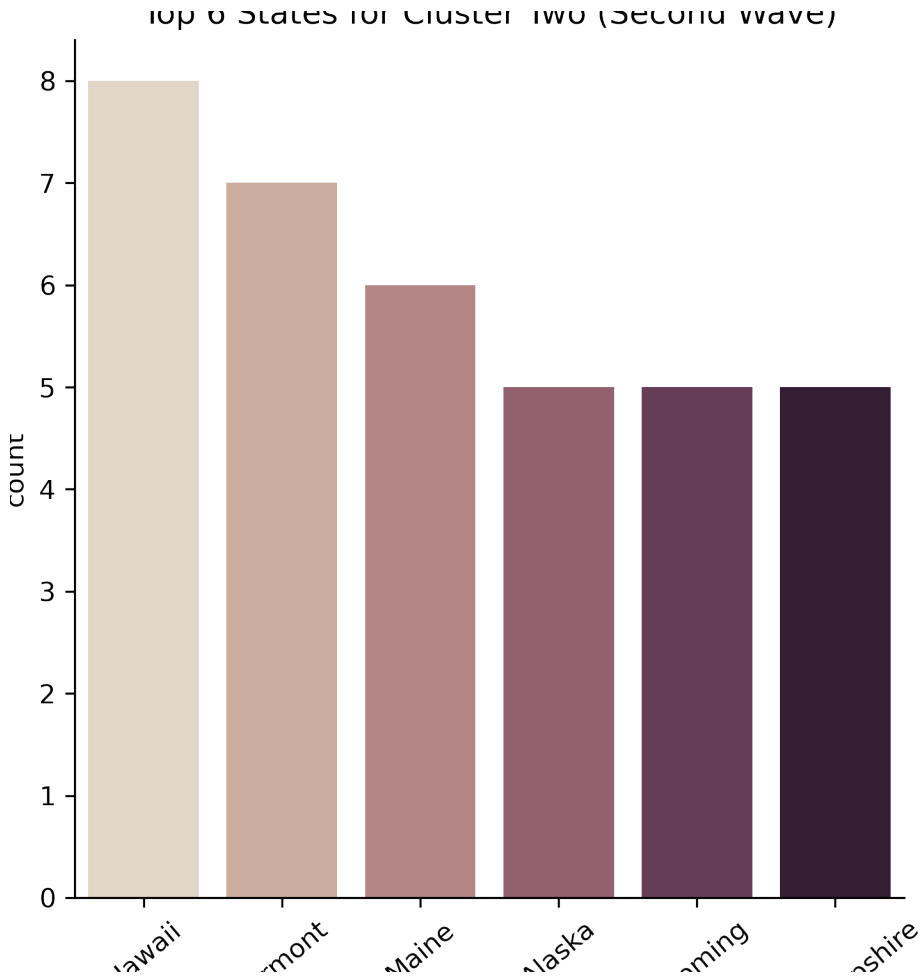


Figure 99: Top 6 States for Cluster Two (Second Wave)

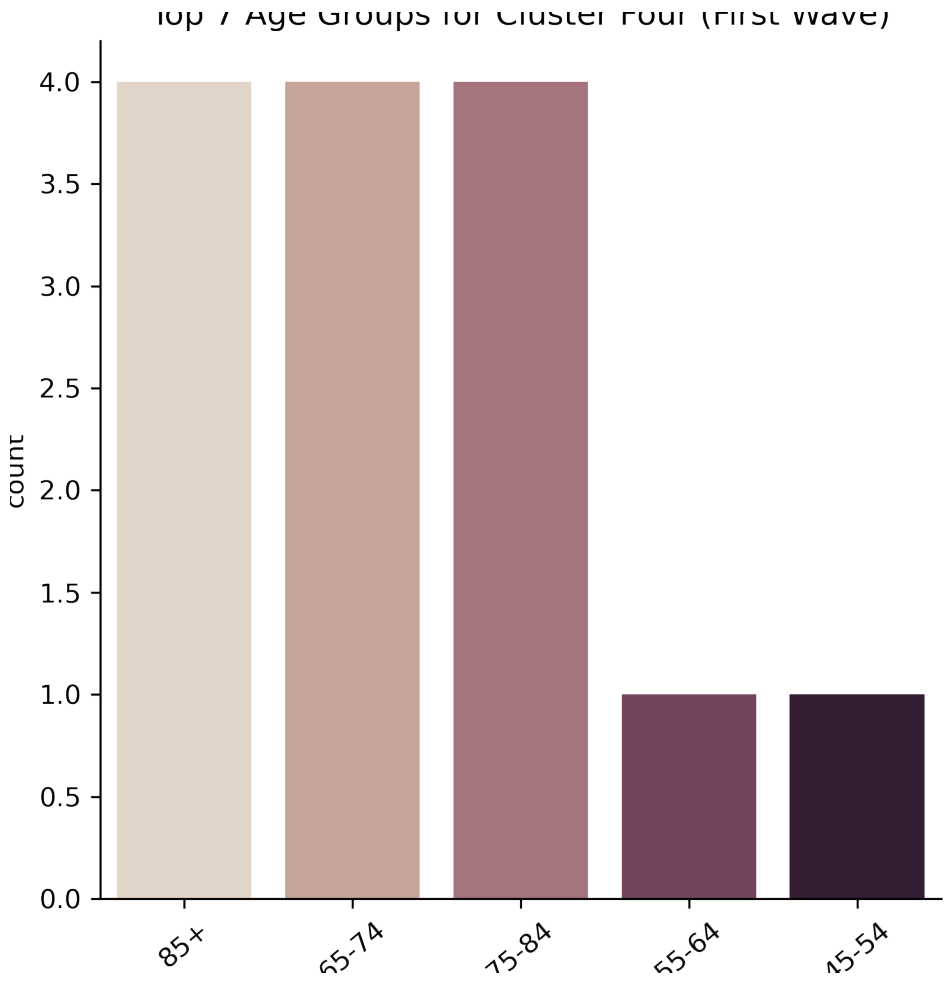


Figure 100: Top 7 Age Groups for Cluster Four (First Wave)

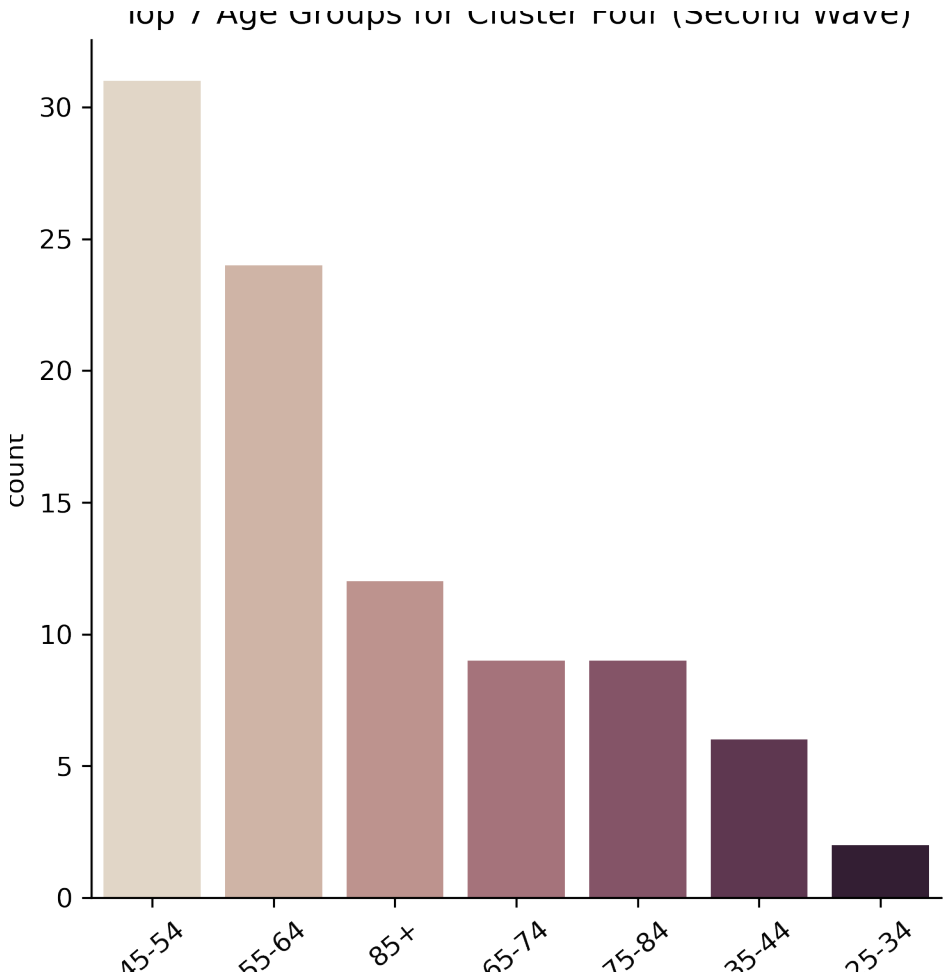


Figure 101: Top 7 Age Groups for Cluster Four (Second Wave)

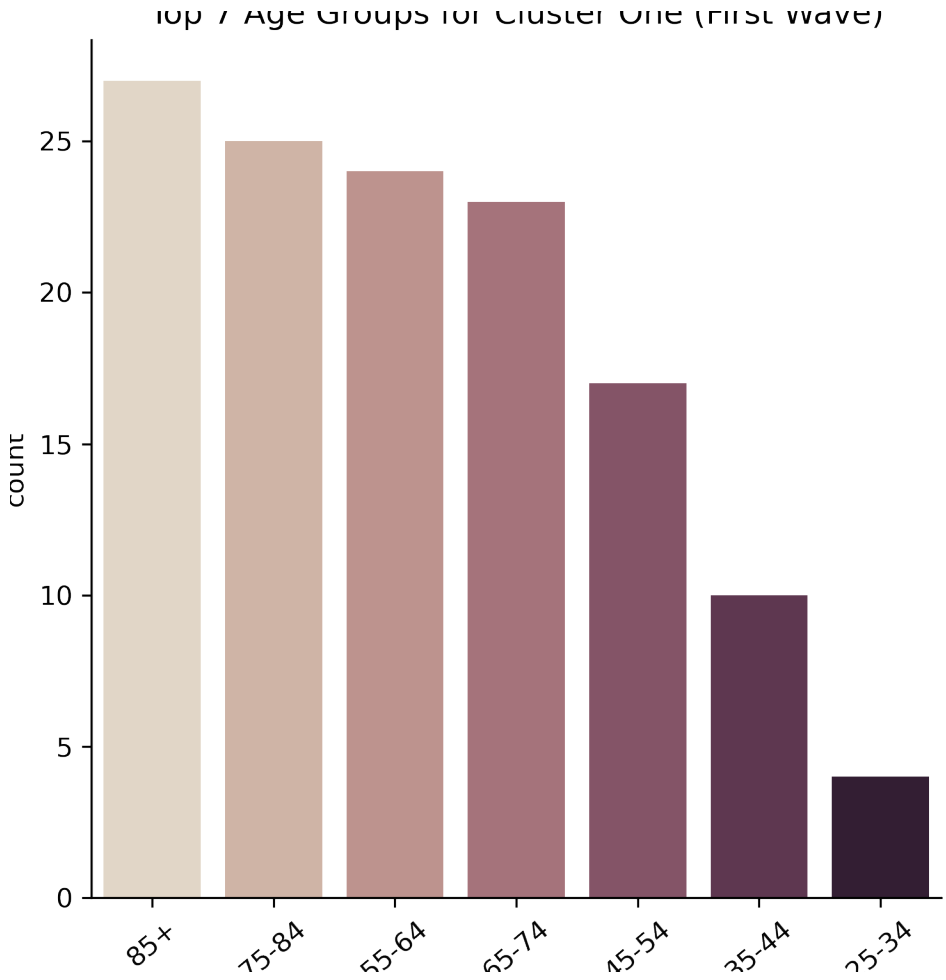


Figure 102: Top 7 Age Groups for Cluster One (First Wave)

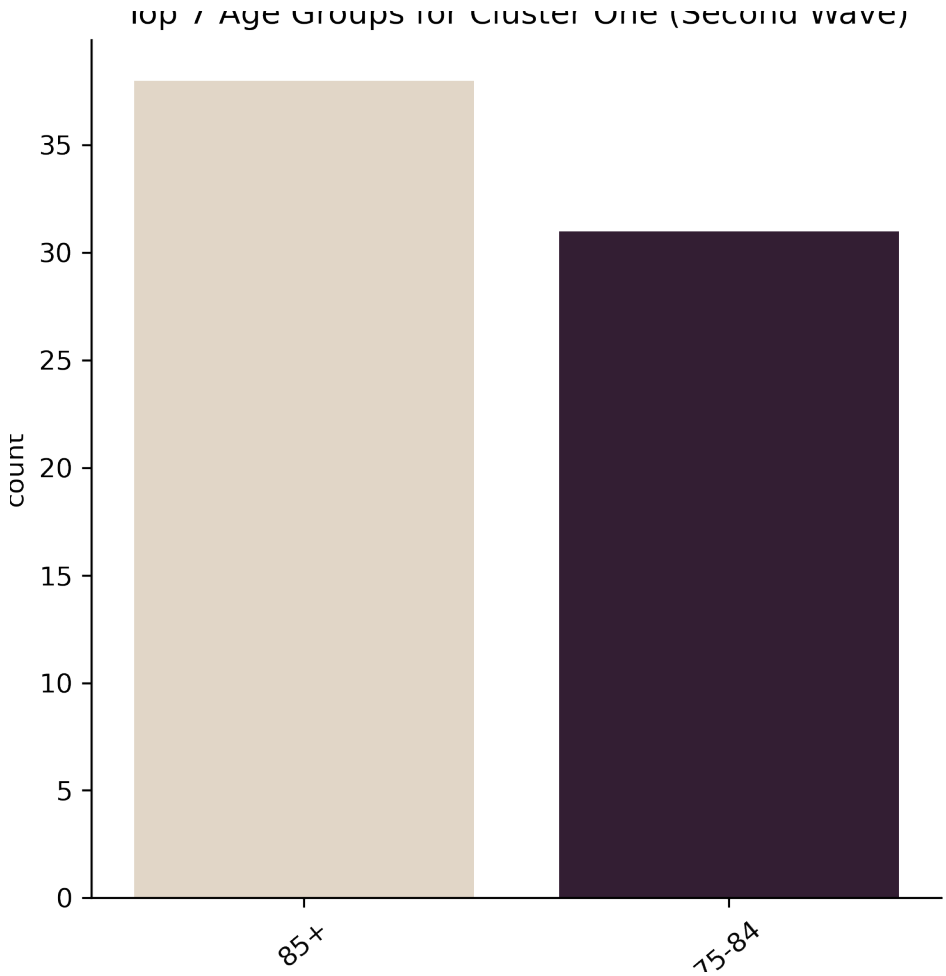


Figure 103: Top 7 Age Groups for Cluster One (Second Wave)

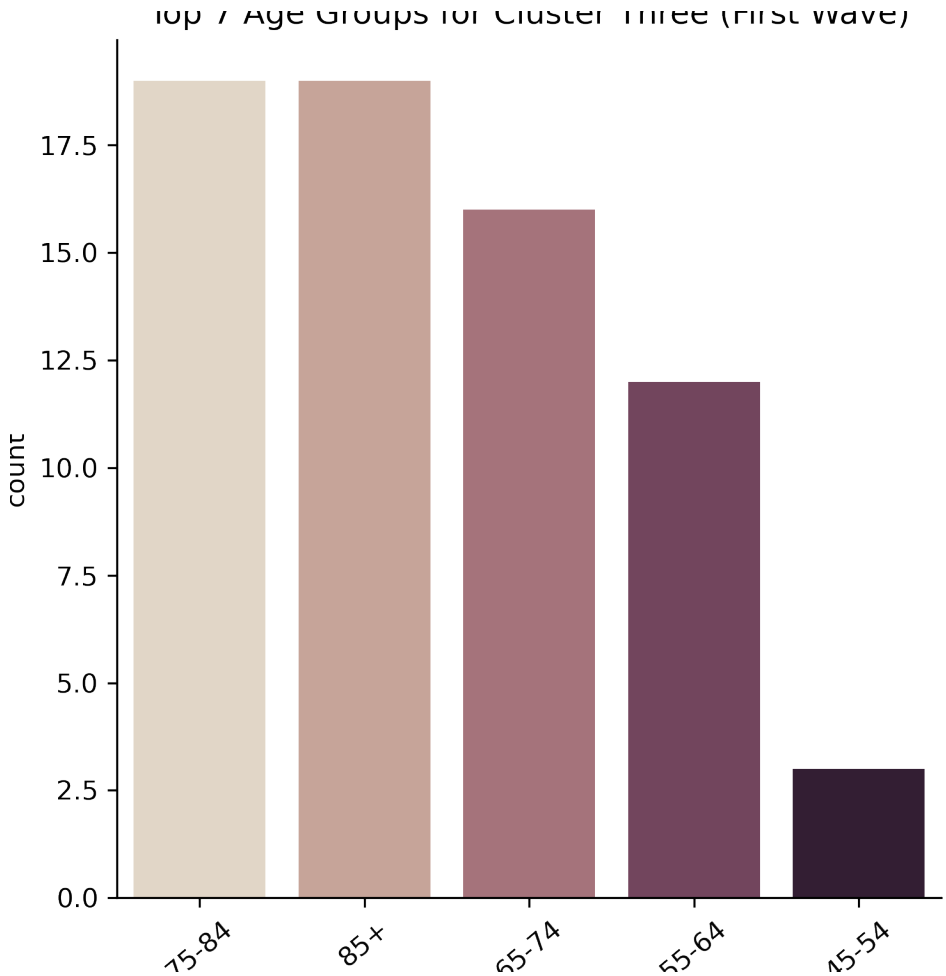


Figure 104: Top 7 Age Groups for Cluster Three (First Wave)

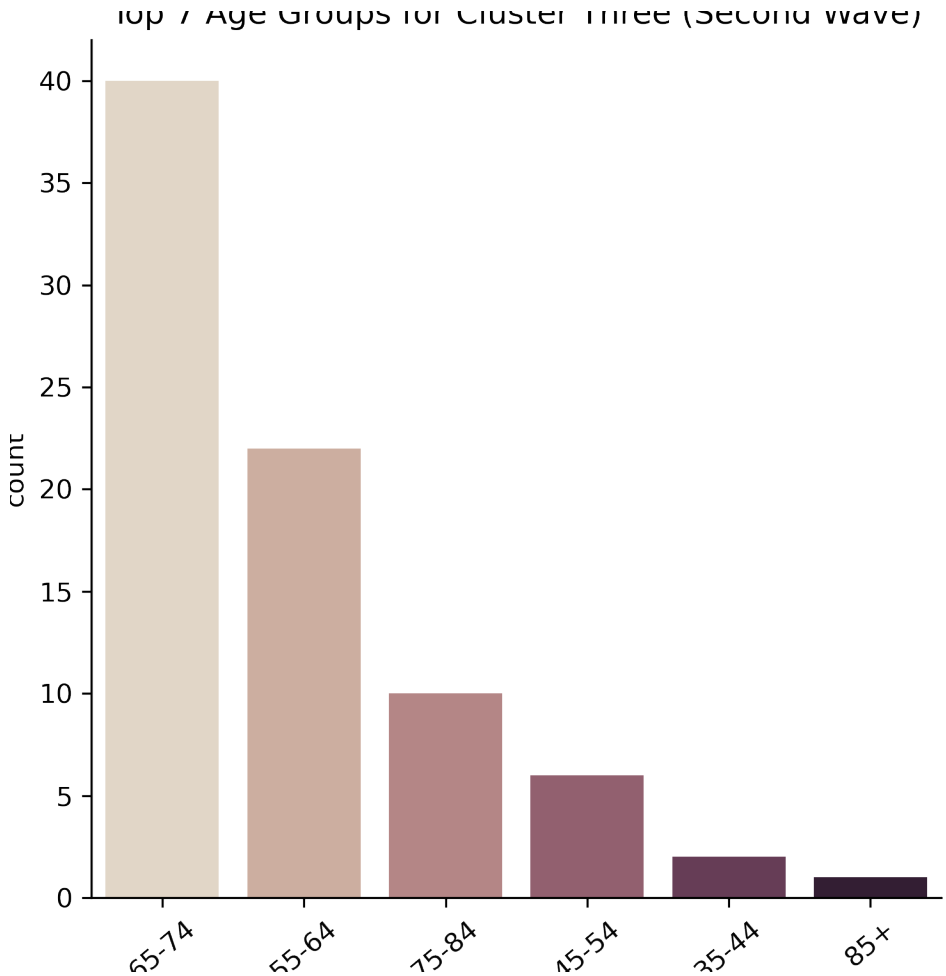


Figure 105: Top 7 Age Groups for Cluster Three (Second Wave)

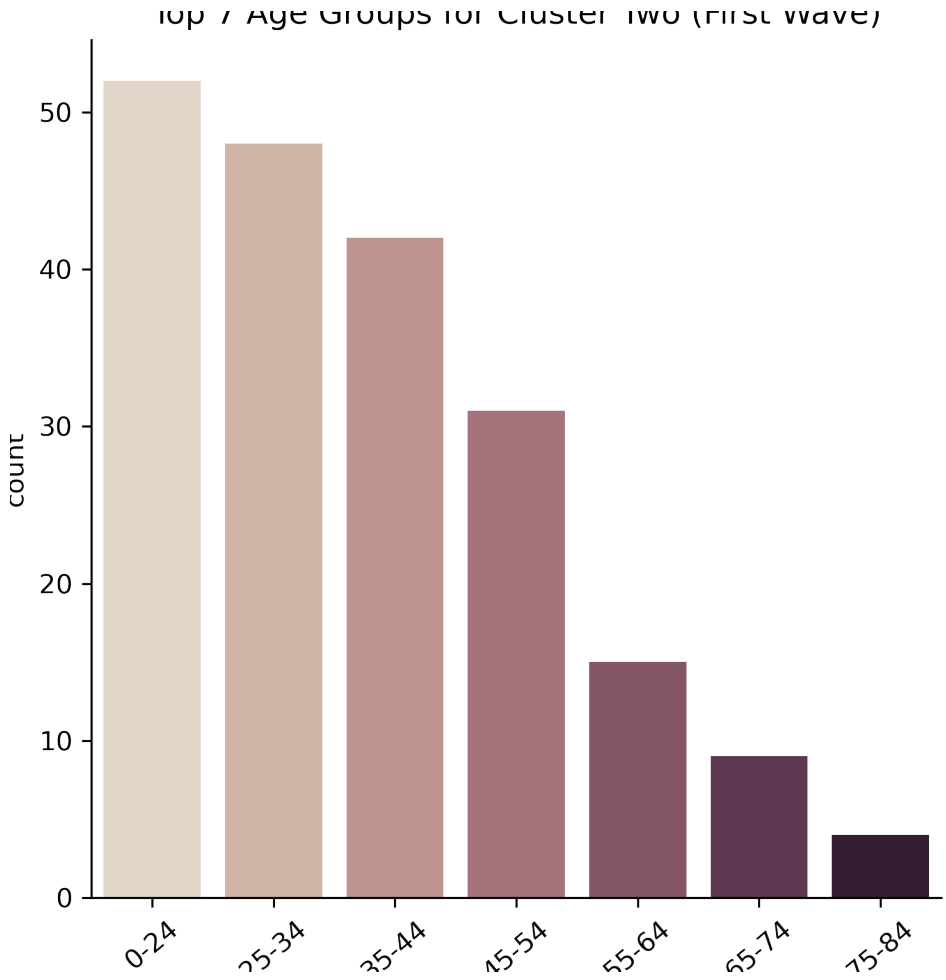


Figure 106: Top 7 Age Groups for Cluster Two (First Wave)

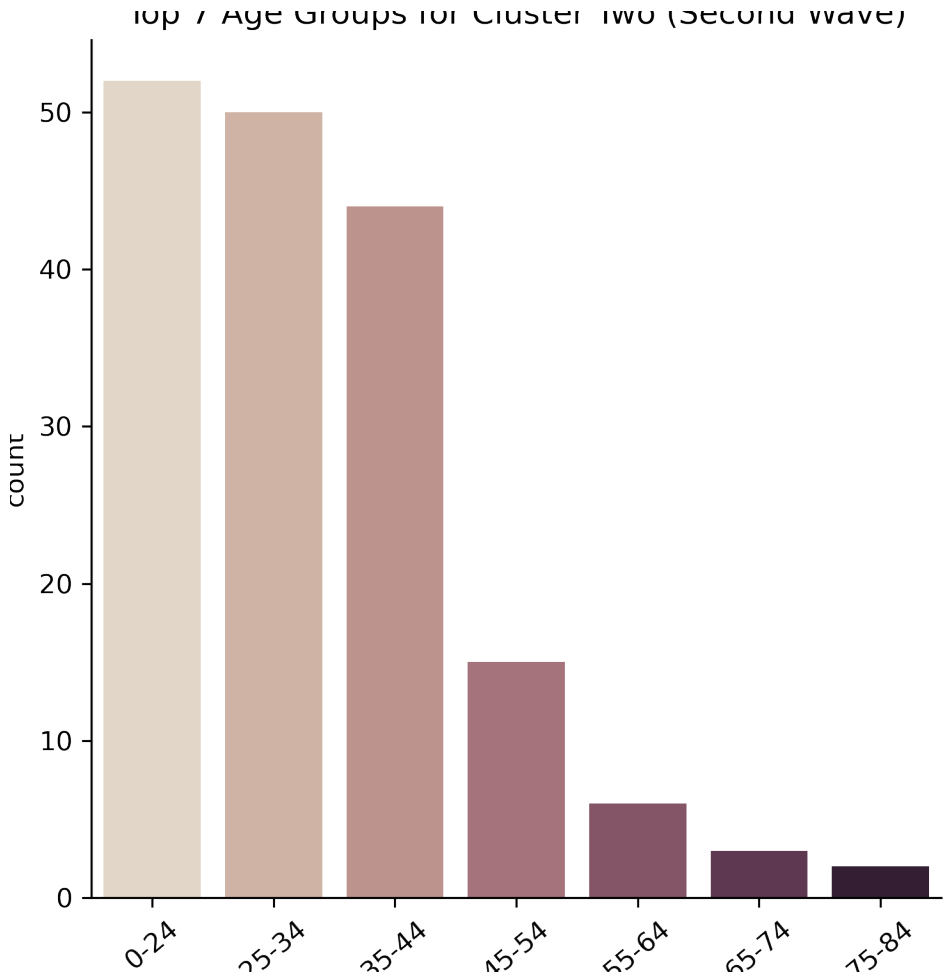


Figure 107: Top 7 Age Groups for Cluster Two (Second Wave)