



The Decline of Respiratory Viruses During the SARS-CoV-2 Pandemic

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Background

- With the spread of the SARS-CoV-2 pandemic in 2020, data indicated decline in rates of influenza and other respiratory viruses
- Hypotheses included the impact of nonpharmaceutical interventions (NPI) such as masking and social distancing versus suppression of respiratory viruses by SARS-CoV-2 secondary to resource competition

Methods

- Used EPIC Slicer Dicer analytics tool and the Yale Internal Medicine COVID-19 Database to retrieve SARS-CoV-2 and respiratory virus PCR panel data from 09/2018 to 04/2022
- Plotted epidemic curves over the study time period
- Calculated test positivity rates using the total number of positive tests and total tests ordered
- Tracked public health interventions by date (mandatory masking, closure of public spaces, etc.)

Results

- Pre-pandemic data from 09/2018-02/2020 revealed seasonal spikes in influenza A and B
 - Positivity rate (PR) 7.97% and 10.57% in 2019 and 2020 winter seasons
- Significant reduction in positive tests for influenza over subsequent winter seasons (PR 0.05% in 2021 season and 1.44% in 2022)
- Reduction in the influenza test positivity rate during the Omicron surge from 12/2021-01/2022 with subsequent increase
 - Increasing SARS-CoV-2 test PR coinciding with increasing influenza test PR from 02/2022-04/2022
- Increased rhinovirus rates after relaxation of public health interventions in July 2020
- Increased RSV rates from 06/2021-01/2022

Conclusions

- Since the start of the SARS-CoV-2 pandemic, the number of positive tests for influenza A/B and seasonal respiratory viruses have not reached pre-pandemic levels across the Yale-New Haven Health System
- Increasing rates of influenza and other respiratory viruses since relaxation of NPIs
 - Rising rates coinciding with ongoing SARS-CoV-2 transmission suggests suppression was more related to public health interventions

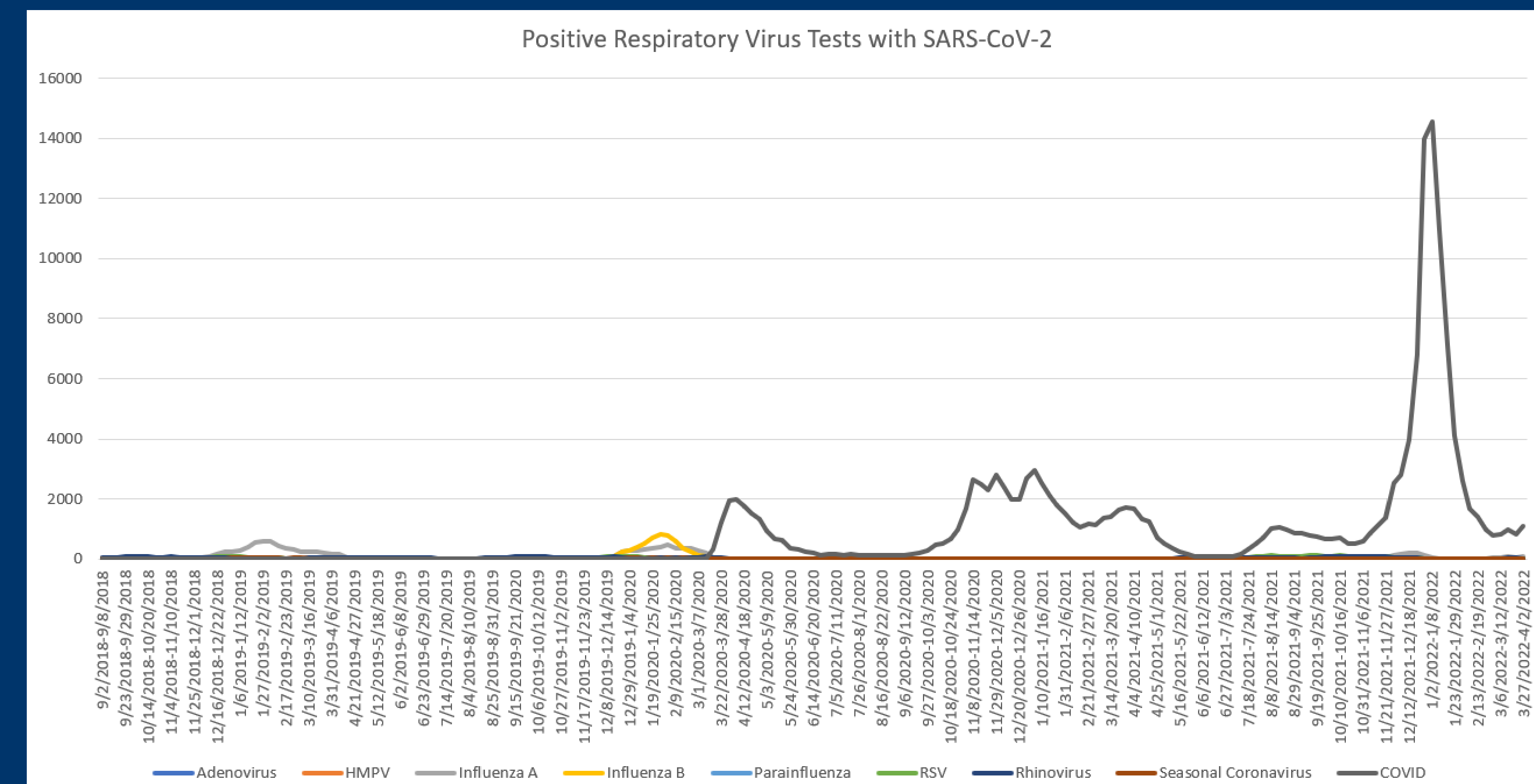


Figure 1: Positive Respiratory Virus Tests with SARS-CoV-2 from 09/2018-04/2022

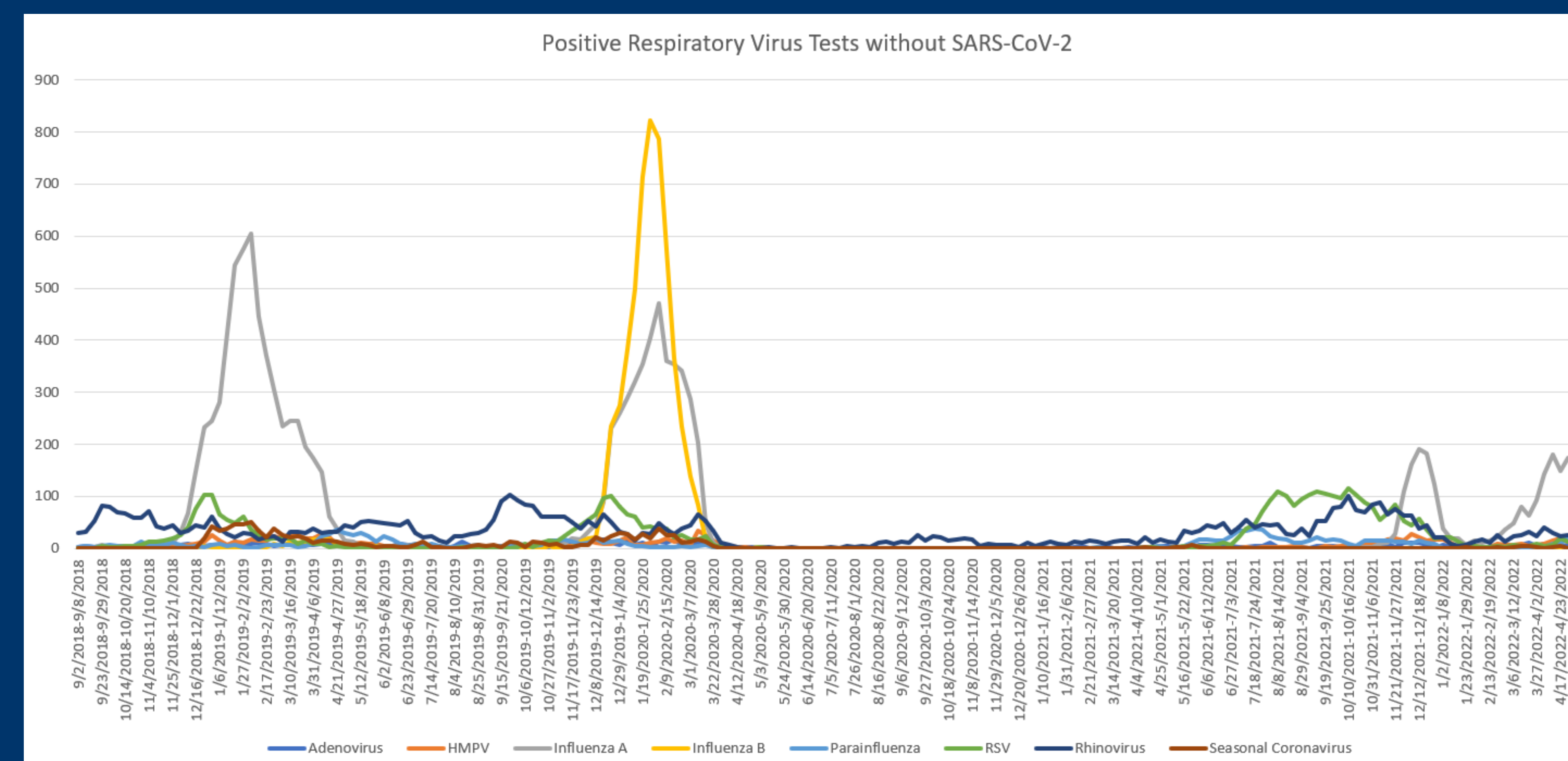


Figure 2: Positive Respiratory Virus Tests without SARS-CoV-2 from 09/2018-04/2022

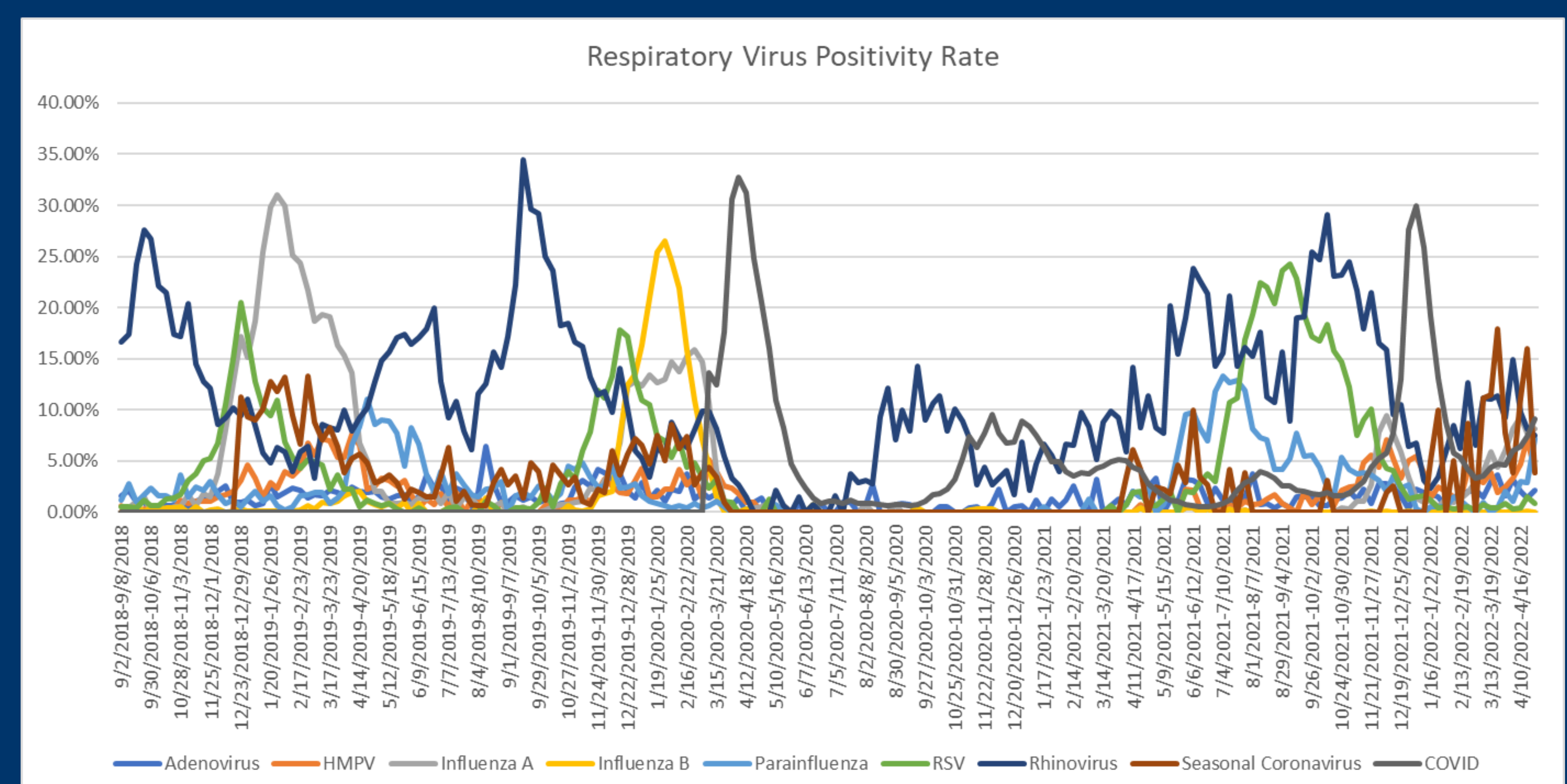


Figure 3: Respiratory Virus Positivity Rate Per Week from 09/2018-04/2022