

# Respiratory hospitalizations in Alaska Native/American Indian children before and during the coronavirus disease 2019 (COVID-19) pandemic

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## Introduction

Historically, Alaska Native/American Indian (AN/AI) children in Alaska and Southwest have experienced among the highest rates of acute respiratory infection (ARI) hospitalization in the U.S., up to half of which are caused by respiratory syncytial virus (RSV). The burden of pediatric respiratory disease in Native American children is monitored by this surveillance platform to inform future use of interventions for RSV prevention.

## Methods

We conducted active surveillance for respiratory hospitalizations in AN/AI children < 5 years in Alaska (Yukon Kuskokwim (YK) Delta and Anchorage) and Arizona (Navajo Nation and White Mountain Apache (WMA) tribes beginning in November 2019. Following parental permission, mid-turbinate nasal swabs (or salvaged clinical specimens) were collected, questionnaires were administered, and medical record review of the hospitalization was conducted. In September 2020, the platform was expanded to all ages to capture information critical to the COVID-19 pandemic.

## Results

From November 2019-April 2020, Alaska experienced a surge of RSV infections peaking among infants in late February 2020. In YK Delta, 18.5% of AN/AI infants <12 months of age were hospitalized with a respiratory infection, compared to 5.7% in Anchorage, 11% in WMA, and 8.5% in Navajo. In YK Delta more than half of the hospitalizations were due to RSV. Overall, 11.5% of YK Delta infants were hospitalized with RSV compared with 0.2% in Anchorage, 6.1% in Navajo and 6.4% in WMA. Most infections in infants occurred among those <6 months.

Figure 3: Study recruiting flyer, YKHC



After Alaska's social distancing mandates were implemented March 28, 2020, respiratory hospitalizations in children <5 years plummeted to nearly zero and have remained extremely low through March 2021 (Figure 1), while adult ARI hospitalizations due to COVID-19 increased from September through December 2020 in all sites (Figure 2).

Figure 1: YK & Anchorage <5 year olds with respiratory hosp. and virus results by week Nov 2019-present

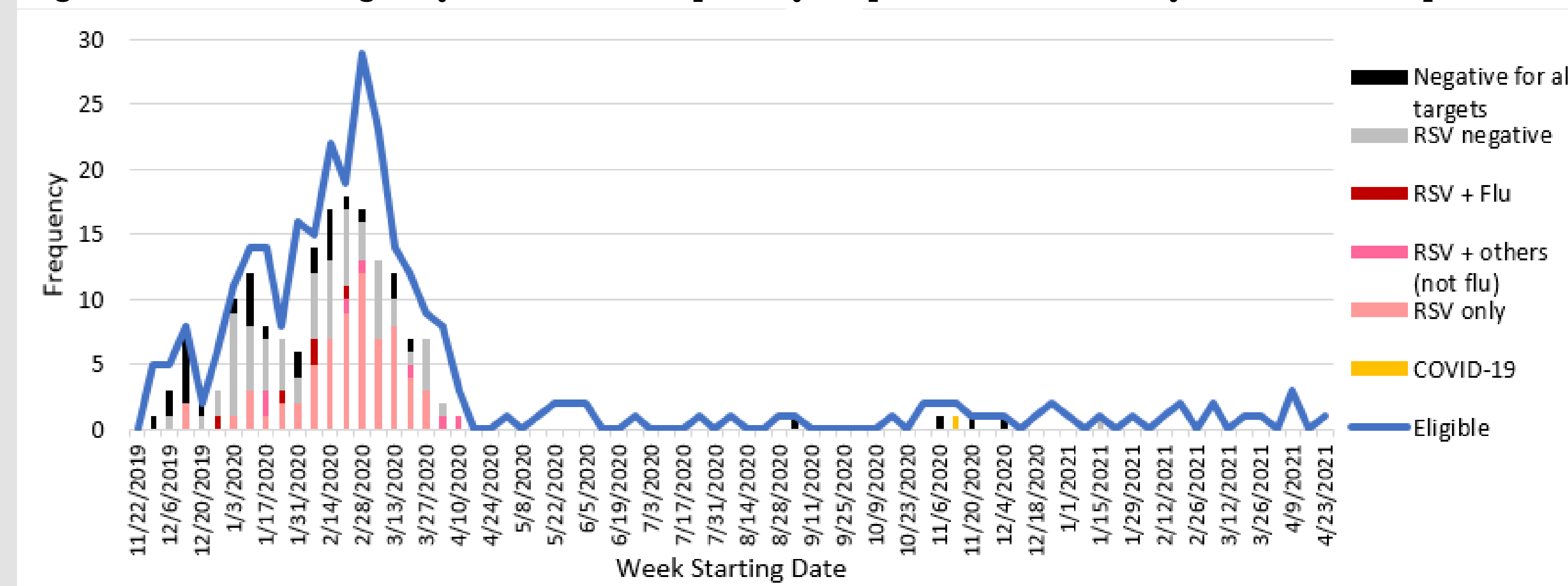
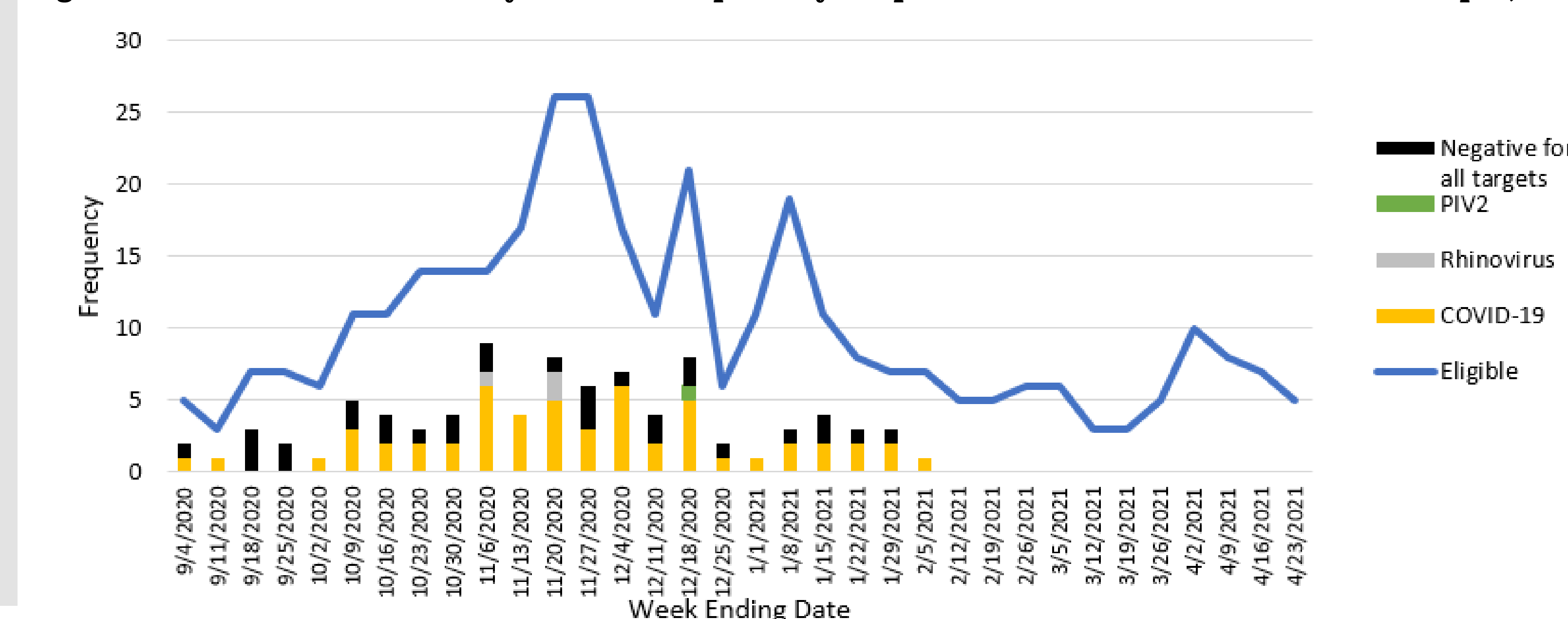


Figure 2: Adults and children >5 years with respiratory hospitalizations and virus results since Sept 1, 2020



\*Includes viral test data through 2/5/2021

## Conclusion

In the winter prior to COVID-19 health care mandates (2019-2020), YK Delta, Navajo and WMA infants experienced very high respiratory hospitalization rates due to RSV, at least 5-fold higher than the general U.S. infant population. Respiratory hospitalization rates plummeted to nearly zero after COVID-19 social distancing measures and remained low through March 2021. Future interventions for prevention of RSV in young infants, could significantly decrease pediatric respiratory hospitalizations.

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