Lab-Reported Cases Methods

- The traditional flu data reporting season runs from October-May but Alaska has unique patterns of respiratory virus activity with year-to-year variations. Further, there are other pathogens in addition to COVID-19, influenza, and RSV which are present and can cause notable community illness. We plan on publishing this report on a weekly basis from October-May, and on an intermittent basis over the summer.
- Cases are summarized by week (Sunday-Saturday) and labeled by the last day of the period (Saturday). This is in alignment with national standards for tracking and reporting health outcomes.
- The criteria to distinguish a new case/infection of disease from an existing case is 3 months for COVID-19, 30 days for influenza, and 14 days for RSV from the last known specimen with a positive lab finding.
- Each case has several associated dates (ex. specimen collection date, lab result date, the date the case is reported to the Division of Public Health). However, not every case has all date fields completed so we compare the available date fields to identify the first known date when the case arose. We are interested in monitoring community disease levels and want to track how these changes over time. This means that that case counts are subject to change as cases from earlier in the season are reported.
- Cases are geographically associated with the patient city of residence that is reported with the lab test result. When patient city is outside of Alaska or when there is no patient city information available, the case is geographically associated with the location of the provider reporting the lab test result.
- Case rates are calculated by dividing the number of cases by the 2022 Department of Labor and Workforce Development Alaska Population Estimates. Some cases may be reported in non-residents who are not counted in the populations estimates resulting in an over-estimate of case rates. However, we feel it is important to include all cases, not just those among Alaska residents, in order to assess the current disease incidence and risk to community members regardless of residency status.

Influenza Characterization

The Alaska State Virology Laboratory (ASVL) conducts yearly influenza surveillance testing to aid in monitoring and understanding influenza viruses. Any healthcare provider may submit specimens for testing, free of charge. Specimens are screened for influenza using polymerase chain reaction (PCR). The testing is designed to detect various subtypes of influenza A, including variant, novel, and avian strains. The testing also includes the primary genotypes of influenza B viruses.

A subset of specimens, selected randomly and made anonymous, may be sent to a Centers for Disease Control and Prevention (CDC) reference laboratory. This collaboration helps monitor antiviral resistance and provides further characterization of the viruses. Data from the CDC reference laboratory will not be reported for individual specimens. However, this collective information will aid national surveillance in identifying the most effective vaccine candidates for the upcoming influenza season. It also enhances understanding of the genetic, antigenic, and antiviral resistance aspects of circulating influenza viruses.

Syndromic Surveillance

Interpretation:

Data presented are the proportion of visits that meet inclusion criteria for each syndrome out of all emergency department visits captured by the system, expressed as a percent. Data are presented by week.

Multiple respiratory virus indicators are included in this graph. The table below describes each indicator. For the All Acute Respiratory, CLI, and ILI indicators, baselines describing normal non-epidemic levels are included. Baseline activity for RSV is near zero, so no line is included.

Name	Interpretation
Acute Respiratory	This query is designed to identify visits with diagnostic codes associated with a broad range of acute respiratory illnesses. This includes codes associated with specific respiratory infections (e.g. influenza, RSV, or coronavirus), as well as codes associated with general respiratory illness such as cough or pneumonia.
RSV	This query includes RSV diagnosis codes and chief complaint terms referencing the disease RSV; it doesn't include symptoms.
COVID-Like Illness (CLI)	This query includes COVID and coronavirus diagnosis codes, and relevant symptoms. It excludes visits with diagnosis codes for influenza
Influenza-like Illness (ILI)	This query looks for diagnosis codes associated with influenza infection and relevant symptom set- specifically, reference to both a fever and either cough or sore throat. It excludes visits with COVID diagnosis codes.

The specific inclusion and exclusion terms for each query are available on request.

Baseline calculations:

We calculated baselines using historical data from past seasons, where we applied the moving epidemic method (MEM) to identify “epidemic weeks” using the memapp package in R. Baselines were calculated as the average percent of visits for all non-epidemic weeks. Included seasons were 2016-2017, 2017-2018, 2018-2019, 2019-2020, 2021-2022, and 2022-2023. The 2020-2021 season was not included in baseline calculations due to the complex effects of the COVID-19 pandemic, as is being done by other data sources such as CDC’s ILINet.

Syndromic Surveillance Background:

Syndromic surveillance data are collected by automated processes within hospital electronic health records, which abstract a summary of demographic information and basic statements about what brought that patient to the emergency department that day. These data are then processed and analyzed for key terms and codes. Not all emergency departments participate in syndromic surveillance. Because syndromic data is created and processed very fast by computer algorithms, it is best to consider each individual value an approximation and primarily rely on syndromic data for trend analysis.