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DEPARTMENT OF HEALTH AND HUMAN SERVICES
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Lisa Sherych
Administrator

Ihsan Azzam, Ph.D., M.D.
Chief Medical Officer

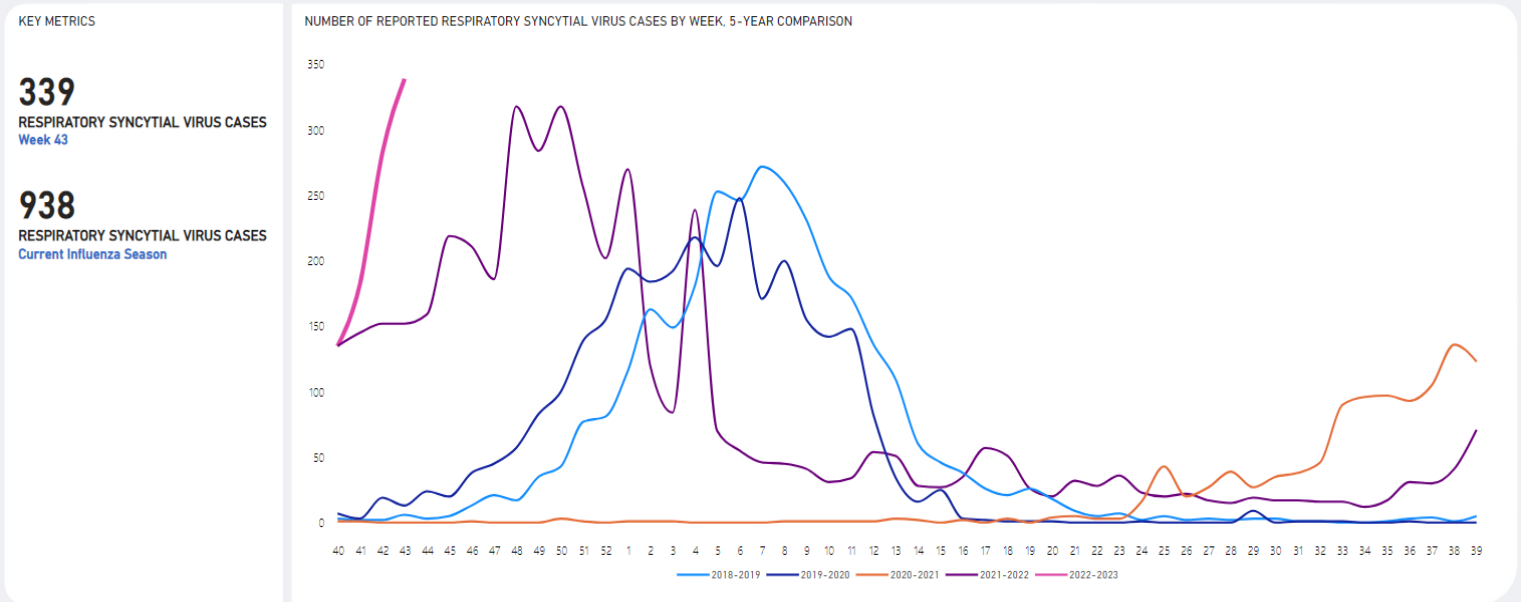
Technical Bulletin

Date: **November 14, 2022**
Topic: **Respiratory Syncytial Virus (RSV) Update**
Contact: **Melissa Peek-Bullock, State Epidemiologist, Office of State Epidemiology**
To: **Hospitals and Health Care Personnel**

Background

There are many respiratory viruses that circulate year-round in Nevada, and typically at higher rates during the fall and winter months. During the past two years, activity of respiratory viruses has been greatly impacted by the COVID-19 pandemic and circulation of these respiratory viruses has been atypically low as a result of the nonpharmaceutical measures implemented to limit the transmission of COVID-19. As the overall COVID-19 activity is decreasing from the previous two years, and most individuals are no longer adhering to the transmission reduction measures, the United States and Nevada are now experiencing a resurgence of other non-COVID respiratory viruses.

Surveillance for respiratory syncytial virus (RSV) is showing unusually high incidence for this time of year, compared to the previous four years in Nevada. These data are updated weekly and can be found online here.



RSV-associated emergency department visits and hospitalizations are also increasing in Nevada and most of the United States. The Centers for Disease Control and Prevention (CDC) reports that preliminary data from October 2022 show that weekly rates of RSV-associated hospitalizations among children younger than 18 years old are higher than rates observed during similar weeks in recent years. [1]

[1] https://emergency.cdc.gov/han/2022/han00479.asp

Symptoms and Clinical Recognition[2]

Health care providers should consider RSV in patients with respiratory illness, particularly during the RSV season. RSV infection can cause a variety of symptoms in both children and adults.

1. Infants and young children: RSV infection most commonly causes a cold-like illness but can also cause a lower respiratory infection, such as bronchiolitis and pneumonia. One to two percent of children younger than 6 months of age with RSV infection may need to be hospitalized. Severe disease most commonly occurs in very young infants especially those 6 months and younger or children with any of the following underlying medical conditions:
    - Premature infants
    - Children younger than 2 years old with chronic lung disease or congenital heart disease
    - Children with suppressed immune systems
    - Children who have neuromuscular disorders, including those who have difficulty swallowing or clearing mucus secretions

    Infants and young children with RSV infection may have rhinorrhea and a decrease in appetite before any other symptoms appear. Cough usually develops one to three days later. Soon after the cough develops, sneezing, fever and wheezing may occur. In very young infants, irritability, decreased activity and/or apnea may be the only symptoms of infection.

    Most otherwise healthy infants and young children who are infected with RSV do not need hospitalization. Those who are hospitalized may require oxygen, intubation and/or mechanical ventilation. Most improve with supportive care and are usually discharged in a few days.

2. Older adults and adults with chronic medical conditions: Adults who get infected with RSV usually have mild or no symptoms. Symptoms are usually consistent with an upper respiratory tract infection, which can include rhinorrhea, pharyngitis, cough, headache, fatigue, and fever. The illness usually lasts less than five days. Some adults, especially those with underlying medical condition, may have more severe symptoms consistent with a lower respiratory tract infection, such as pneumonia. Those at high risk for severe illness from RSV include:
    - Older adults, especially those 65 years and older
    - Adults with chronic lung or heart disease
    - Adults with weakened immune systems

    RSV can sometimes lead to serious exacerbation of preexisting conditions such as:
    - Asthma
    - Chronic obstructive pulmonary disease (COPD)
    - Congestive heart failure (CHF)

Diagnostic Testing[3]

There are currently multiple co-circulating respiratory viruses, such as influenza, RSV, COVID-19 and enteroviruses. Health care providers should consider testing for these viruses to help guide treatment and clinical management and improve outcomes. The most commonly used RSV clinical laboratory tests are:

- Real-time reverse transcriptase-polymerase chain reaction (rRT-PCR), which is more sensitive than culture and antigen testing
- Antigen testing, which is highly sensitive in children but not sensitive in adults

[2] https://www.cdc.gov/rsv/clinical/index.html
[3] https://www.cdc.gov/rsv/clinical/index.html

Both rRT-PCR and antigen detection tests are effective methods for diagnosing RSV infection in infants and young children. The RSV sensitivity of antigen detection tests generally ranges from 80% to 90% in this age group.

Health care providers should only use highly sensitive rRT-PCR assays when testing older children and adults for RSV. The sensitivity of these assays often exceeds the sensitivity of virus isolation and antigen detection methods. Antigen tests are not sensitive for older children and adults because they may have lower viral loads in their respiratory specimens.

Treatment and Prophylaxis[4,5]

There is no specific treatment for RSV infection. However, research is ongoing to develop vaccines and antivirals to prevent and treat RSV infection. Supportive therapy is recommended to manage fever, pain, dehydration, and respiratory functions as needed.

Palivizumab is available as prophylactic therapy for high-risk infants and young children. Palivizumab is a monoclonal antibody recommended by the American Academy of Pediatrics (AAP) to be administered to high-risk infants and young children likely to benefit from immunoprophylaxis based on gestational age and certain underlying medical conditions. It is given in monthly intramuscular injections during the RSV season, which generally starts in the fall and peaks in the winter in most locations in the United States.

For the latest palivizumab guidance, please consult the AAP policy statement. An accompanying AAP technical report provides additional context and rationale for the guidance. Interim guidance addressing the disruption in typical RSV seasonal patterns during the pandemic has also been provided: Updated Guidance: Use of Palivizumab Prophylaxis to Prevent Hospitalization From Severe Respiratory Syncytial Virus Infection During the 2022-2023 RSV Season (aap.org)

Reporting

Laboratories must report positive RSV results to public health authorities within 24 hours. The Nevada Division of Public and Behavioral Health (DPBH), Office of Public Health Investigation and Epidemiology (OPHIE) team will assist in onboarding laboratories and testing entities. Before testing begins, OPHIE should be contacted at dpbhelronboarding@health.nv.gov to start the process. Labs with HL7 capability should plan to report laboratory results through the electronic laboratory reporting (ELR) system. OPHIE will provide instructions on the best alternative mechanism to report for entities without HL7 capability.

Questions

For updated guidance, review the DPBH Technical Bulletin web page. Email stateepi@health.nv.gov for other questions regarding RSV.

Lisa Sherych, Administrator
Division of Public and Behavioral Health

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Chief Medical Officer

[4] https://www.cdc.gov/rsv/about/symptoms.html
[5] https://www.cdc.gov/rsv/clinical/index.html