Respiratory Syncytial Virus Hospitalization & Pediatric Deaths

Disease Category: Respiratory

Timeframe to follow-up: N/A

Signs and Symptoms (1) (2)	Symptoms usually appear in stages: • Runny Nose • Congestion • Decrease in appetite • Coughing • Sneezing • Fever • Wheezing In very young infants the only symptoms may be irritability, decreased activity, and breathing difficulties.
Incubation	Usually 4 to 6 days; ranges from 2 to 8 days.
Case Classification (3)	Laboratory Criteria Presumptive: detection of respiratory syncytial virus antigens by immunochromatographic or similar rapid antigen laboratory test. Confirmatory: at least of the following: • Detection of RSV ribonucleic acid (RNA) in a clinical or post-mortem specimen using a diagnostic molecular amplification test. • Detection of RSV RNA in a clinical or post-mortem specimen by genomic sequencing. • Isolation of RSV by tissue cell culture.
	Case Classification Probable: A patient who Is admitted for 24 or more hours to an Inpatient service because of an RSV-compatible Illness and with presumptive laboratory evidence for RSV. Confirmed: A patient who Is admitted for 24 or more hours to an Inpatient service because of an RSV-compatible Illness and with confirmatory laboratory evidence for RSV.
Differential Diagnosis	Influenza, parainfluenza virus, COVID-19.
Treatment	Treatment for RSV Is supportive care. For prevention, RSV vaccines are recommended for adults aged 75 and older, as well as for those 50–74 who are at increased risk for severe RSV. In addition, infants and some young children may be eligible for preventive antibody treatment to help protect them from severe illness.
Duration (4)	Symptoms usually persist for 1-2 weeks, though cough or wheezing may last longer

Exposure (1)	RSV spreads person to person via respiratory droplets, direct contact, or touching contaminated surfaces and then touching eyes and nose or mouth.
Laboratory Testing	Antigen and real-time reverse transcription-polymerase chain reaction (rRT-PCR) an antigen detection tests are both available for diagnosing RSV. Local Health Authority can arrange testing if an outbreak is suspected.
Control of Contacts	There are no recommendations for control of contacts.
Key areas of focus during investigation (1) (2)	Hospitalizations, ventilator status, antiviral treatments, and underlying health conditions
Public Health Actions	Reports of Respiratory Syncytial Virus cases must be made to the Local Health Authority during the regular business hours of the health authority on the first working day following the identification of the case. Local Health Authority to notify Office of State Epidemiology (dpbhepi@health.nv.gov) or call 775-684-5911/775-400-0333 (after hours) if outbreak suspected. For individual confirmed or probable cases: • Review reported cases for hospitalization status and enter key indicators into respiratory workbook. • DIS Supervisor will enter Information into REDCap for the Respiratory Virus Team. • Respiratory Virus Team will report any pediatric deaths to the CDC. To the best of the local health authority's ability, each step of the investigation should be completed within one working day or in alignment with NAC 441A.

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RESPIRATORY SYNCYTIAL VIRUS

I. DISEASE REPORTING

A. Legal Reporting Requirements

A report to the health authority may be made by telephone; telecopy (in the form prescribed by the health authority); or any form of electronic communication identified by the health authority, following the specified format and procedure. (5)

1. Health Care Providers and Health Care Facilities

Health providers and facilities must notify the health authority where provider is located within the first working day after identifying the case. (5) (6) (7)

2. Laboratories

Laboratories must notify the health authority within the first working day after identifying the case. (5) If the lab is located outside of Nevada, notify the Nevada Chief Medical Officer through the Office of State Epidemiology (OSE) within the same timeframe. (5) (8)

3. Local Health Authority (LHA)

LHA's must notify the Office of State Epidemiology (OSE) within 7 days after completing the case investigation. (9)

II. THE DISEASE AND ITS EPIDEMIOLOGY

A. Background

Respiratory syncytial virus (RSV) is a common viral infection that causes acute respiratory illness in people of all ages (1) (2). RSV is a leading cause of bronchiolitis and pneumonia in infants and young children and can also cause severe respiratory disease in older adults and immunocompromised individuals (3). It circulates globally with seasonal peaks in fall, winter, and early spring in temperate climates.

Risk factors for severe disease include:

- Chronic lung conditions
- Chronic heart conditions
- Weakened immune systems
- Diabetes mellitus
- Severe obesity
- Chronic liver disease

Mortality is generally low in healthy children but higher in high-risk populations such as infants and adults with chronic illnesses. (3) (4). RSV contributes significantly to hospitalizations in pediatric and elderly populations worldwide.

B. Etiologic Agent

RSV is an enveloped, single-stranded, negative-sense RNA virus belonging to the family Paramyxoviridae, genus Orthopneumovirus (1). It has two major subtypes, A and B, which circulate during RSV season and may vary in severity and prevalence (4). RSV virus infects the epithelial cells of the respiratory tract, causing inflammation and cell damage (1). Transmission occurs primarily via respiratory droplets and direct contact with contaminated surfaces.

C. Description of Illness

RSV infection usually starts with mild upper respiratory symptoms such as runny nose, nasal congestion, and low-grade fever (2). In infants and young children, it can progress to lower respiratory symptoms including cough, wheezing, and difficulty breathing (2). Severe cases may result in bronchiolitis or pneumonia, particularly in high-risk infants. Adults often have mild cold-like symptoms, but older adults or those with chronic conditions may experience serious illness. Infection is most contagious during the first week, though viral shedding can last longer in infants and immunocompromised patients (1).

D. Disease Burden in Nevada

Nevada experienced an unusually large increase in RSV and other respiratory virus activity in the 2022-2023 season, following the COVID-19 pandemic disruptions.

Respiratory Syncytial Virus infection (RSV) is endemic and shows seasonal peaks, especially in infants and older adults. See the Nevada Office of State Epidemiology Respiratory Surveillance Dashboard for Nevada specific data on RSV.

E. Reservoirs

Humans are the primary reservoir (1).

F. Modes of Transmission

Respiratory droplets, direct contact, or contaminated surfaces (1).

G. Incubation Period

4-6 days (range 2-8 days).

H. Period of Communicability

3-8 days; infants, or immunocompromise people may shed the virus for 3-4 weeks.

I. Testing

PCR or rapid antigen test.

J. Treatment

Recommended treatment Is supportive care. Standard, contact, and droplet precautions are recommended for any Inpatient cases. (1)

K. Immunization

CDC recommends an RSV vaccine for all adults ages 75 years and older and for adults ages 50-74 years who are at Increased risk for severe RSV. There are three RSV vaccines available for use in adults (Arexvy, mResvia, Abrysvo). (2)

CDC recommends that all Infants be protected from RSV by either maternal RSV vaccine (Abrysvo) given to the mother during pregnancy or through an Infant RSV antibody (nirsevimab or clesrovimab). The RSV antibody Is recommended for Infants less than 8 months old and also to children ages 8-9 months who are at risk for severe RSV. (3)

III. EPIDEMIOLOGIC CASE INVESTIGATION

The public health authority should begin investigating the case of Respiratory Syncytial virus, step by step, within one working day of notification or in alignment with NAC 441A.

A. Step 1: Review relevant information about the disease.

1. Review scientific information in Control of Communicable Diseases Manual, most recent edition.

2. Review most recent case definition (2019 CDC).

B. Step 2: Begin investigating the case.

1. Review medical records

Investigation is limited to chart review only for hospitalized cases and pediatric deaths.

Disease Investigators should focus on chart reviews for hospitalized cases. If case Is not hospitalized, close out In EpiTrax.

If case Is hospitalized, the Investigator should do an In-depth chart review for the following Indicators: MMWR week when case tested positive, county of residence, age at time of positive RSV lab test, was the case on a ventilator, did case receive flu vaccine, were antivirals administered during Illness, was the case admitted to ICU, pregnant or up to 2 weeks postpartum, resident of nursing home or long-term acute care facility, does the case have COPD or asthma, Is the case considered obese (BMI>30), is the case diabetic, does the case have a weakened Immune system, any other underlying conditions, and what was the final discharge disposition (i.e., discharged, died). Close out case In EpiTrax once discharged from the hospital.

2. Capture key indicators in the Influenza Severity workbook.

3. Data Is entered Into the REDCap.

Once a week, the disease investigator specialist (DIS) supervisor will enter the information from the Influenza severity workbook Into the REDCap project LHA Respiratory Surveillance Reporting (PID 441).

4. Reporting to CDC.

RSV is not considered a nationally reportable condition. However, the CDC is asking for voluntary reporting of any pediatric death due to RSV. The DIS supervisor will alert the OSE Respiratory Virus Team of any reported death.

C. CONTROL OF CASE

There are no Identified control measures for cases.

D. CONTROL OF CONTACTS

There are no Identified control measures for contacts.

E. CONTROL OF CARRIERS

A carrier state has not been documented for RSV and thus no carrier-specific control measures are needed.

F. MANAGEMENT OF SPECIAL SITUATIONS/OUTBREAK CONTROL

Coordinate with senior epidemiology staff to determine if an outbreak is occurring. If so, notify DPBH Environmental Health, local health authorities, or infection control, as appropriate.

G. PREVENTION

- Vaccination against RSV protect or lessen the severity of disease
- Practice good hand hygiene
- Stay home when sick
- Cover Coughs/sneezes
- Avoid close contact with sick individuals
- Clean shared services

The Nevada OSE website also provides information about Respiratory Syncytial Virus.

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V. ACKNOWLEDGEMENTS

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- Kansas Department of health and environment.
- Oregon Health Authority Investigative Guidelines
- Washington State Department of Health Reporting and Surveillance Guidelines
- Washoe County Health District Epidemiology and Communicable Disease Program Investigation of Communicable Disease Manual

The Nevada Office of State Epidemiology would like to acknowledge the work of these great partners.

VI. UPDATE LOG

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Chief Medical Officer

12/02/2025

Chief Medical Officer Approval Date