

Respiratory Pathogen Molecular Panel Testing

Viral respiratory tract infections are the most common diseases affecting humans worldwide. Respiratory viruses can be associated with both self-limiting upper respiratory tract infections (eg, the common cold) and more severe lower respiratory tract infections (LRTIs) (eg, bronchitis, bronchiolitis, pneumonitis, pneumonia). LRTIs are a major cause of hospitalization, morbidity, and mortality in infants and the elderly and are associated with significant disease burden.

Disease Overview

Incidence

- Viral infections cause ~80% of respiratory tract disease; mixed infections account for ~20 percent infection in adults, 60% in children
- Symptomatic disease varies by viral type and patient age
 - Highest rates occur in young and elderly populations with widely varying outcomes
- Seasonal influenza causes a large proportion of viral respiratory disease
 - Median incidence of ~8% in U.S. 2010 to 2016

Symptoms

Symptoms general occur within 1-3 days of exposure and last 7-14 days.

Location	Symptoms
Upper respiratory infections	Nasal congestion
	Sneezing
	Cough
	Sore throat
	Fever
	Chills
	Fatigue
	Decreased appetite ^a
	Lethargy ^a

^aEspecially in children

^bOverlap with upper infection

^cOlder adults

Tests to Consider

Respiratory Virus Mini Panel by PCR 0060764

Method: Qualitative Reverse Transcription Polymerase Chain Reaction

Preferred test to confirm respiratory syncytial virus (RSV), influenza A, or influenza B in general inpatients and RSV in adults.

Respiratory Viral Panel by PCR 3001479

Method: Qualitative Polymerase Chain Reaction

- Preferred test for evaluating severely immunocompromised (eg, BMT) or critically ill (ICU) patients with respiratory symptoms.
- Test detects influenza A, influenza B, RSV, human metapneumovirus, human rhinovirus, and adenovirus.
- Detects and differentiates parainfluenza 1, 2, 3, and 4.

Related Tests

Influenza A Virus H1/H3 Subtype by PCR 2007469

Method: Qualitative Polymerase Chain Reaction

- Follow-up test for patients with documented influenza A.
- Not a first-line test for the detection of suspected influenza in most clinical situations.
- Detect and subtype the two predominant strains of circulating influenza A (H1N1 and H3N2).

Parainfluenza 1-4 by PCR 2006247

Method: Qualitative Polymerase Chain Reaction

Location	Symptoms
Lower respiratory infections ^b	Worsening cough
	Shortness of breath
	Focal pain
	Dizziness ^c
	Confusion ^c

Detect and differentiate parainfluenza types 1-4.

^aEspecially in children

^bOverlap with upper infection

^cOlder adults

Test Interpretation

Limitations

Negative result

- Does not rule out the presence of polymerase chain reaction (PCR) inhibitors in patient specimen
- Does not detect assay-specific nucleic acid in concentrations below level of detection by assay

References

1. Self WH, Williams DJ, Zhu Y, et al. [Respiratory Viral Detection in Children and Adults: Comparing Asymptomatic Controls and Patients With Community-Acquired Pneumonia](#). J Infect Dis. 2016; 213 (4): 584-91. PubMed
2. Jain S, Williams DJ, Arnold SR, et al. [Community-acquired pneumonia requiring hospitalization among U.S. children](#). N Engl J Med. 2015; 372 (9): 835-45. PubMed
3. Tokars JI, Olsen SJ, Reed C. [Seasonal Incidence of Symptomatic Influenza in the United States](#). Clin Infect Dis. 2018; 66 (10): 1511-1518. PubMed

Related Information

[Respiratory Syncytial Virus - RSV](#) [Respiratory Viruses](#)

ARUP Laboratories is a nonprofit enterprise of the University of Utah and its Department of Pathology. 500 Chipeta Way, Salt Lake City, UT 84108 | (800) 522-2787 | (801) 583-2787 | aruplab.com | arupconsult.com
Content Review May 2019 | Last Update February 2020

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