

PEDIATRIC RESPIRATORY SYNCYTIAL VIRUS (RSV)

“ALL THAT WHEEZES IS NOT ASTHMA”

Season changes here in Ohio can send the census numbers in our local P.I.C.U.’s, N.I.C.U.’s and Emergency Rooms through the roof. From an environmental standpoint, acuity does change with our given location. Air pollution, poor living conditions and lack of health care can all add to the equation. Now add to the mix our climate change this time of year... Cold weather and viruses go hand in hand. Ponder this scenario...Doors and windows all buttoned up for the winter, warm moist air in this environment with little exchange of fresh air...Sounds like a great breeding ground for viruses and bacteria now doesn’t it? It’s no small wonder that sometimes they must shut down entire schools and daycare centers due to the rapid spread of viral and bacterial infection.

This continuing education module will cover the pediatric patient and some of the potential respiratory emergencies that you may encounter as first responders. Remember, sometimes what you don’t do for your patient is just as important as what you do perform for your patients. By the end of this reading you’ll know exactly what this means.

Respiratory Syncytial Virus

RSV

(Pronounced: **SIN-SIS-SHAL**)

- Respiratory syncytial virus (RSV) infection is a viral disease of the lungs. It is one of the most prominent causes of lower respiratory tract illness in infants and young children.
- RSV is spread by contact with droplets from the nose or throat of an infected person. (Mask up, Glove up)

- Persons with mild RSV infection usually get better without treatment. Severely ill children often need to be hospitalized.
- The best ways to prevent the spread of RSV are to cover coughs and sneezes and to wash hands often and well. There is currently no universal vaccine to prevent RSV infection, however premature infants and infants that have congenital heart disease do receive a vaccine, Synagis, which helps prevent serious lung infection from RSV. This vaccine does not completely block the virus like the other vaccines. Also, intravenous immune globulin treatment has recently been approved for use in high-risk infants.

RSV Q & A

What is respiratory syncytial virus infection?

Respiratory syncytial virus (RSV) infection is one of the most important causes of lower respiratory illness in infants and young children. It also causes both mild and serious respiratory diseases in older children and adults.

What is the infectious agent that causes RSV infection?

RSV infection is caused by the respiratory syncytial virus.

Where is RSV infection found?

RSV infections occur worldwide. Most children are infected at least once by age 2 and continue to be re-infected throughout life. In cold temperate climates such as those found in the Midwest, RSV infections usually occur in the winter. Peaks typically occur in January and February in the United States. The RSV season is usually from October to April. This is confirmed here locally in the Ohio Valley region.

How do people get RSV infection?

The virus is found in discharges from the nose and throat of an infected person. People can get RSV infection by:

- Breathing in droplets after an infected person has coughed.
- Hand-to-mouth contact after touching an infected person .
- Hand-to-mouth contact with a surface that an infected person has touched or coughed on.

How can we protect ourselves as responders?

- Universal precautions should be taken including gloves, respiratory and eye protection.
- Wash your hands after every call.
- Clean and disinfect any equipment used such as BP cuffs, cot, etc.
- Clean and disinfect any surfaces as applicable.

What are the signs and symptoms of RSV infection?

Symptoms of RSV infection can range from very mild illness to serious lower respiratory tract infections, including pneumonia, that occur mostly in the very young, the very old, and those with weakened immune systems. Symptoms can last for a few days to several weeks.

Signs and symptoms in young children are usually mild and similar to a cold. They include stuffy nose, cough, and sometimes ear infection. In older children and adults, RSV causes upper respiratory infection involving the nose, throat, or sinuses. Children who develop a lower respiratory tract infection often have low-grade fever for several days, a cough that sometimes lasts more than 2 weeks, and respiratory symptoms including difficult or rapid breathing, wheezing, and deep coughing. Symptoms in newborns and young infants may include irritability, listlessness, and poor feeding.

What complications can result from RSV infection?

A person with a first RSV infection can develop severe breathing problems that need to be managed in the hospital. RSV infections in premature babies less than 6 months old and in infants with chronic lung, heart, or immune problems are most likely to be severe and can lead to death. A large portion of these children need airway management including endotracheal intubation.

How soon after exposure do symptoms appear?

Illness usually starts within 3 to 5 days of infection.

How is RSV infection diagnosed?

There are tests for RSV infection, but the diagnosis is usually based on symptoms and time of year. Seasonal acuity is QUITE high.

Who is at risk for RSV infection?

People of any age can be infected. Very young infants, premature infants, and children with underlying lung, heart, or immune system problems are at high risk for severe RSV disease. The virus can also cause serious illness in elderly persons and in adults with lung disease or weakened immune systems.

What complications can result from RSV infection?

Infants and young children with a first RSV infection can develop a severe infection in the lower respiratory tract. Approximately 80,000 children are hospitalized with these infections each year. Most children needing hospitalization are newborns and infants and those with weak immune systems, congenital heart or lung disease, or pre-maturity.

What is the treatment for RSV infection?

Most people with mild RSV infections usually get better without treatment. Care of patients with mild illness centers on relieving symptoms and easing breathing. Those with more serious infections are sometimes treated in the hospital with the anti-viral drug ribavirin. Some hospitalized patients need intensive care and mechanical ventilation (respirator).

How common is RSV infection?

RSV is the **leading cause** of lower respiratory tract illness in infants and young children. In the United States, approximately 50% of infants and young children become infected with RSV each winter season. RSV causes about 90,000 hospitalizations and 4,500 deaths per year in children under age 5 years.

Is RSV infection an infectious disease?

YES!!!!!!

How can RSV infection be prevented?

There is currently no RSV vaccine. The best ways to prevent the spread of RSV are to cover coughs and sneezes, wash hands often and thoroughly, and dispose of

used supplies properly. De-con on scene and fully wash up upon return to the firehouse.

First responder care

When assessing the pediatric patient common sense must take priority. ABC'S must be done as step one. A good secondary exam would be next **IF** the patient is well tolerant of that exam. Earlier we said that sometimes what you do is as important as what you don't do for your patient. Try to not exacerbate the situation by compromising the airway through a physical exam that the patient is not tolerating well. Think about it this way. Your pediatric patient is febrile, full of mucus, not breathing very well and his upper airway is swollen...Now if you press on and agitate the patient by performing a secondary exam you could potentially turn the tide on the patient's outcome. Common sense should prevail. Calm the child and help them attain the most comfortable positions (many times this will be in the arms of a parent).

ABC'S. This may include suctioning, rescue breathing, CPR

Oxygen management. High flow O2 via non-rebreather mask. Utilize blow-by delivery if needed.

Vitals including SPO2

Proper positioning.

Attention to body temperature. Hyperthermic v. Hypothermic

Attempt to obtain a good Hx from the parent or guardian while doing a physical exam of your patient. Do not upset the child of a respiratory illness. Sometimes less is more.

Ready your patient for transport. Contact med command and/or the ED when indicated by protocol.