



## Pediatric Respiratory Viruses



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Respiratory viral infections are one of the more common causes for admission of young infants and toddlers to hospital. While many viruses, including adenovirus and the various enteroviruses, may cause severe respiratory diseases among vulnerable infants, it is the winter epidemics of respiratory syncytial virus (RSV), influenza and parainfluenza viruses that yearly exert significant pressures on the capacity of the healthcare system to meet the needs of affected patients.

### Meet Jayden

Jayden is an eight-month-old boy whose parents both smoke.

He attends a daycare center and has two older siblings who are also in a daycare center.

He develops a cough, runny nose and fever which progress to respiratory distress, requiring admission to hospital for ventilatory support.

Respiratory syncytial virus is recovered from the respiratory secretions.

### Mode of transmission

Infected children can excrete respiratory viruses in large quantities and so they are easily spread by droplet contamination, both in the community and in the hospital. Numerous children become ill over a very short time period as a result; many requiring hospitalization. In addition, the spread of some viruses from infected children, particularly influenza, can lead to epidemics of severe illness among the elderly, also leading to significant increases in hospitalizations. This can, on occasion, overwhelm the healthcare system and result in the cancellation of elective hospital admissions and surgeries for several weeks.

patient along with the use of gowns, gloves and masks may also play a role.

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### Breaking the chain of transmission

Hand hygiene on the part of care providers is the cornerstone of prevention of transmission of these respiratory infections. In certain situations within the hospital environment, isolation of the

### Is there a role for prophylaxis?

With the use of palivizumab prophylaxis among premature infants, other infants and children with significant underlying respiratory and cardiovascular diseases, the morbidity and mortality as a result of RSV has decreased significantly in recent years. Despite that



progress, RSV still remains the most common respiratory viral pathogen responsible for admission of children to hospital. Influenza is the second most common reason for young children to be admitted for viral respiratory disease. As the influenza vaccination is not effective for children less than six-months-of-age, the utilization of influenza immunization by their care providers and for other family and household members is a means by which to reduce the risk of exposure of young infants to these viruses.

### *Advice to parents*

Advice that physicians can provide to parents of young infants during the respiratory viral winter season includes information on appropriate handwashing by all family members using soap and water when available and with the alcohol-based hand hygiene products on other occasions. Anti-bacterial soaps do not provide any additional protection against viral illnesses. Appropriate handwashing requires that the individual use sufficient soap to produce copious amounts of suds and vigorously rub their hands under running water for at least 15 seconds. The water taps should then be shut off with the aid of paper or cloth towels. When the alcohol-based hand hygiene solutions are used, sufficient product should be used to adequately coat all of the hand surfaces.

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### *When the viruses are in town...*

When RSV and influenza viruses are present and active within the community, parents can reduce the risk that their young infant will be exposed by limiting time spent in locations with large numbers of people, such as shopping malls and by asking friends and family members to refrain from visiting their homes when they are ill with upper respiratory tract illnesses. In family situations, when one member becomes ill, reducing the time spent in the physical presence of the young infant, along with frequent handwashing, may help reduce the risk that the infant will become infected.

### *Additional thoughts*

Finally, smoking in the home will increase the severity of respiratory illnesses among infants and children. Parents and family members who smoke should refrain from doing so in the presence of the infant and young child. For their own health, they should seek help in quitting if they are having difficulty doing so.

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