



CONTAGIOUS COMMENTS

Department of Epidemiology

Respiratory Season 2020-21

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During the winter months we see a variety of respiratory viruses causing coughs and colds, as well as lower respiratory tract disease. This year, we will be navigating respiratory season in the context of the SARS-CoV-2 pandemic.

This edition provides reminders about basic principles as well as information on testing, patient management, visitation practices and prevention of respiratory virus infections. Throughout the season, be sure to monitor "[Bug Watch](#)" so you can see what pathogens the CHCO lab is detecting from the pediatric patient population. We plan to release another Contagious Comments next month with more details regarding testing and treatment strategies for the respiratory season in the context of SARS-CoV-2 and influenza circulating together.

The most important aspect of these visitation restrictions and screening practices is to emphasize to patients and caregivers that these efforts are being utilized to decrease exposure risks to our patients, our team members, and patient caregivers.

Outpatient Clinic /Therapy & Surgery/Procedure Visits:

Two adult caregivers are permitted to accompany your child to their scheduled visits to these areas, but siblings and other visitors are not permitted. Please make other childcare arrangements for sibling children. Breastfeeding siblings are permitted.

Please remember, these practices are utilized to protect our patients by preventing transmission of illness to them while they are in our care!

Important information for this season

Visitation Restrictions



Inpatient Visitor Screening and Restrictions

To protect our patients, caregivers, and team members, since the start of the SARS-CoV-2 pandemic, we are screening all patients and visitors for illness upon entering our facilities and are limiting the individuals allowed to visit our patients. While respiratory season typically means implementing these restrictions from December through April, the SARS-CoV-2 pandemic is driving implementation of these restrictions, so there are currently no discrete dates for ending these restrictions. Please refer to the [COVID-19 policy](#) or the [COVID-19 resource page](#) for the most up to date information on current visitation policies.

In general, patients and caregivers will be screened for illness daily at any CHCO facility. Caregivers and patients must adhere to the universal masking policy. Hand hygiene should be encouraged. Caregivers must adhere to isolation precautions noted under the "Parents" section of the patient room isolation sign.

If a caregiver reports illness at screening, a secondary screener will assess the individual and follow up-to-date visitor guidelines for illness. If a caregiver is ill and cleared to visit their child on an inpatient unit, they will be provided a yellow apple sticker. They should be counseled on whether they may go to other parts of the hospital or must remain in the room (see [visitor table](#)).

Respiratory Infection Tips & Tools

Mode of Transmission of Most Respiratory Agents



Transmitted in large droplets by:

- Direct or close contact with secretions (e.g., close face to face contact), or
- Touching contaminated objects in the environment and inoculating self or others (e.g. hand-to-eye, hand-to-mouth)

Did you know?

Respiratory viruses can remain on surfaces (e.g. hands, countertops, tissues) for several minutes to hours.

Isolation Infection Control



Special Respiratory Precautions should be implemented for any new admission who has not yet been tested for or who has a pending test for SARS-CoV-2. A conditional Special Respiratory Precautions order may be placed, which allows nursing to change isolation precautions from Special Respiratory Precautions as necessary when the SARS-CoV-2 PCR is resulted without the provider needing to enter another order. For example, for a patient with cough and rhinorrhea, the conditional order initiates use of Special Respiratory Precautions, but then directs starting Droplet Precautions if the SARS-CoV-2 PCR is negative.

As a reminder, Droplet Precautions should be implemented for any patient with symptoms of a "suspected" or a

Epidemiology



Organism	Illnesses	Season
Adenovirus	<ul style="list-style-type: none"> Pharyngitis Tonsillitis Croup Bronchiolitis Pneumonia Conjunctivitis/ "pink eye" Common cold 	Year-round peak late winter-spring
<i>Bordetella pertussis</i> , <i>B. parapertussis</i>	<ul style="list-style-type: none"> Whooping cough "Pertussis" Milder form caused by <i>B. parapertussis</i> 	No clear seasonality
Coronavirus	<ul style="list-style-type: none"> Common cold Croup Pneumonia 	Fall-winter
Enterovirus	<ul style="list-style-type: none"> Asthma exacerbations Pneumonia Acute flaccid myelitis 	Spring-Fall
Human meta-pneumovirus (HMPV)	<ul style="list-style-type: none"> Bronchiolitis Croup Pneumonia 	Year round; mostly late winter - spring.
Influenza virus (seasonal)	<ul style="list-style-type: none"> Flu Bronchitis Croup Pneumonia Secondary bacterial infections 	Usually Dec -Feb (longer if new strains appear)
Parainfluenza	<ul style="list-style-type: none"> Croup Bronchiolitis Bronchitis Pneumonia Common cold 	Type 1,2 - fall Type 3 – spring Type 4 – year-round; peak in fall
RSV	<ul style="list-style-type: none"> Bronchiolitis Pneumonia Croup 	December - April
Rhinovirus	<ul style="list-style-type: none"> Common cold 	Year- round, peaks in fall and spring
SARS-CoV-2	<ul style="list-style-type: none"> COVID-19 	2020 pandemic

"proven" respiratory illness other than SARS-CoV-2. A negative respiratory pathogen PCR is not an indication for removal of isolation if the patient is otherwise symptomatic for a respiratory illness.

Isolation may be able to be discontinued for patients with viral respiratory illness. Please refer to the algorithms referencing discontinuing [Droplet Precautions](#) or [Special Respiratory Precautions](#) on mychildrenscolorado.org. These can be found via the Policies & Procedures section of the site.

Ill Staff



Many respiratory illnesses present in adults as a slight cold or persistent cough; however, organisms can often be shed by sneezing/coughing, etc. When transmitted, these organisms have the potential to cause severe disease in our patients.

All team members experiencing illness should report illness via the Occupational Health RedCap illness survey AND call the Occupational Health sick line (720-775ICK1 (74251)) in addition to notifying their supervisor. When calling the sick line, please note the department in which you work, the time your symptoms started, and a list of your symptoms

Diagnosis



Specimens: Flocked swabs or nasal washes are preferred to collect nasopharyngeal (NP) specimens for respiratory pathogen detection. For best results, swabs should reach the posterior NP and rotated for 10-15 seconds before placing into transport medium. See the CHCO [Nasopharyngeal Specimen Collection Policy](#), an educational video on the Respiratory Care webpage, or our "NP Swab Clinical Micro-brief" available from Microbiology (720-777-6703) for more information. Swabs of the anterior nares are not acceptable because recovery rates for most pathogen are poor. NP washes/aspirates, however, can still be sent. They may have slightly increased sensitivity to NP swabs from immunocompromised children. For children with lower respiratory tract disease, a tracheal aspirate or bronchoalveolar lavage may be the most informative.

Testing: For the upcoming respiratory season CHCO will be offering 3 respiratory viral and 1 bacterial PCR assay:

1. SARS-CoV-2 PCR
2. SARS-CoV-2/Influenza/RSV PCR
3. Respiratory Pathogen Panel (RPP) PCR 2.1
4. *Bordetella pertussis/parapertussis* PCR

The Respiratory Pathogen PCR (RPP) detects the 17 viruses/types and 3 "atypical" bacteria outlined in the following table. If there is only concern for "whooping cough" please order the *Bordetella pertussis/parapertussis* PCR instead of the full RPP. A PCR to type a positive enterovirus/rhinovirus sample as EV-D68 is available at the CHCO Anschutz microbiology lab and can be ordered on samples positive for RV/EV on the RPP.

Sensitivity and specificity of influenza virus detection by RPP and SARS-CoV-2/Influenza/RSV PCR are comparable, but the charge for SARS-CoV-2/influenza/RSV PCR is much lower.

Testing for the Middle-Eastern Respiratory Syndrome coronavirus (MERS) is available only through the State Health

Department. If MERS or a novel influenza virus is suspected, contact Epidemiology and Infectious Diseases for guidance for isolation and appropriate testing

ORGANISM DETECTED	TESTS AND RELATIVE VALUE		
	Resp. Pathogen PCR RPP2.1 (Biofire FilmArray)	SARS-CoV-2/Influenza/RSV	<i>B. pertussis</i> / <i>B. parapertussis</i> PCR
SARS-CoV-2	Yes	Yes	No
Influenza A, B	yes	yes	no
Influenza A Subtypes	Reported	Detected but not reported	0
RSV	yes	yes	no
Parainfluenza Virus	yes Reports all 4 types	no	no
HMPV	yes	no	no
Adenovirus	yes Resp. types only	no	no
Rhinovirus/ Enterovirus	yes Detects but does not report EV-D68	no	no
Coronavirus	detects 229E, HKU1, NL63, and OC43 Doesn't detect MERS or SARS-Cov-1	no	no
<i>B. pertussis</i>	yes, but <i>B. pertussis</i> /para- <i>pertussis</i> PCR preferred	no	yes
<i>B. parapertussis</i>	yes	no	yes
<i>C. pneumoniae</i> <i>M. pneumoniae</i>	yes	no	no
Acceptable Specimens	NP swab (NP aspirate) BAL, tissue	NP swab (NP aspirate)	NP swab (NP aspirate)
Mean Inpatient Turnaround Time	3 hours (from receipt in micro lab)	6 hrs (from receipt in micro lab)	24-72 hrs
Mean Outpatient Turnaround Time	24 hours (from receipt in micro lab)	24 hours (from receipt in micro lab)	24 – 72 hrs

Bronchiolitis



Remember to refer to the [Bronchiolitis Clinical Care Guideline](#) for recommendations on evaluation for, diagnosis of, and treatment of bronchiolitis, as well as steps recommended for escalation of care when necessary.

Supportive Therapy: Adequate hydration, upper airway suctioning, and oxygenation are the mainstays of treatment for most infants with viral pneumonia and bronchiolitis. Current AAP guidelines suggest that clinicians may consider a trial of nebulized hypertonic saline to infants and children who are hospitalized with bronchiolitis. Though commonly utilized, routine chest physiotherapy is also not supported in the current guidelines.

Bronchodilators: Guidelines from the AAP clearly state that children with bronchiolitis should not routinely receive bronchodilators (including racemic epinephrine and albuterol). Consider a trial of albuterol in patients who do not improve as expected or who progress from moderate to severe respiratory function. Any such trial should be evaluated using objective clinical severity criteria.

Supportive Care - Routinely Indicated: Oxygen is probably the most effective therapy in infants and children with bronchiolitis and/or viral pneumonia.

- Oxygen to achieve SaO₂ at or above 90%
- P.O. / I.V. fluids as needed
- Suction upper airway (use saline PRN):
 - Prior to feeding
 - Prior to clinical assessment
 - PRN evidence of upper airway obstruction

Evaluating Clinical Status and Response to Treatment:

1. On initial assessment, determine Severity Classification
2. Decide on intervention (based on Care Algorithm Fig. 3)
3. Repeat severity classification to determine if intervention was helpful

RSV Prophylaxis



The 2015 AAP guidelines for bronchiolitis include revised recommendations for the use of palivizumab (Synagis®). Children who are otherwise healthy and with a gestational age of at least 29 weeks and 0 days should not receive palivizumab. Those for whom 5 doses of palivizumab are recommended include infants during the first year of life with hemodynamically significant heart disease or chronic lung disease of prematurity defined as preterm infants <32 weeks 0 days' gestation who require >21% oxygen for at least the first 28 days of life.

Some Final Thoughts



Finally, remember to adhere to infection prevention practices and isolation procedures. Avoid inappropriate use of antibiotics for viral illness, continue vaccination for influenza, and with some knowledge about the management of patients with viral bronchiolitis, you can help to dispel the many widely prevalent myths regarding ineffective therapies and patient management. Please also remember that upholding basic infection prevention principles of using good hand hygiene throughout the day, continuing to socially distance when possible, and using appropriate face covering/face mask wearing per our policies will help protect our colleagues, patients, and their caregivers.

Bug Watch: Classic and 2.0: Up-to-date information about currently circulating respiratory and enteric viruses detected by the CHCO Microbiology/Virology Laboratory is available in our Bug Watch publication, which is emailed weekly during

the winter or twice per month from spring through fall. Bug Watch is also available on MyChildrensColorado. If you are interested in receiving it by email, please contact Gail Vittitoe by email gail.vittitoe@childrenscolorado.org or phone (720-777-6412) to begin receiving your personal copy.

In addition, interactive Bug Watch dashboards “Bug Watch 2.0” are now available for CHCO-based personnel only. Staff can access this feature on the “Infection Prevention and Control” home page via QuickLinks on MyChildrens Colorado. Individual dashboards enable users to visualize the number and types of respiratory, gastrointestinal, or meningitis-encephalitis viruses and bacteria identified by PCR in a stacked graph with user-selected axes to display data for pathogens detected during specific time periods and by individual pathogen. Please contact Gail Vittitoe as noted above if you would like more information.

If you wish to receive this publication, please provide us with your E-mail address below.

Name: _____
(Print clearly please)

E-mail Address: _____
(Print clearly please)

Both the Contagious Comments and Bug Watch publications are always posted on Children’s Hospital Colorado website at:
<http://www.childrenscolorado.org/health-professionals/publications/bug-watch>

Please return your E-mail address to: Gail Vittitoe Children’s Hospital Colorado, Epidemiology – Box B276, 13123 E. 16th Avenue, Aurora, CO 80045 or E-mail address: gail.vittitoe@childrenscolorado.org.

Thank you for your interest in our publication.

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