

# CONTAGIOUS COMMENTS

## Department of Epidemiology

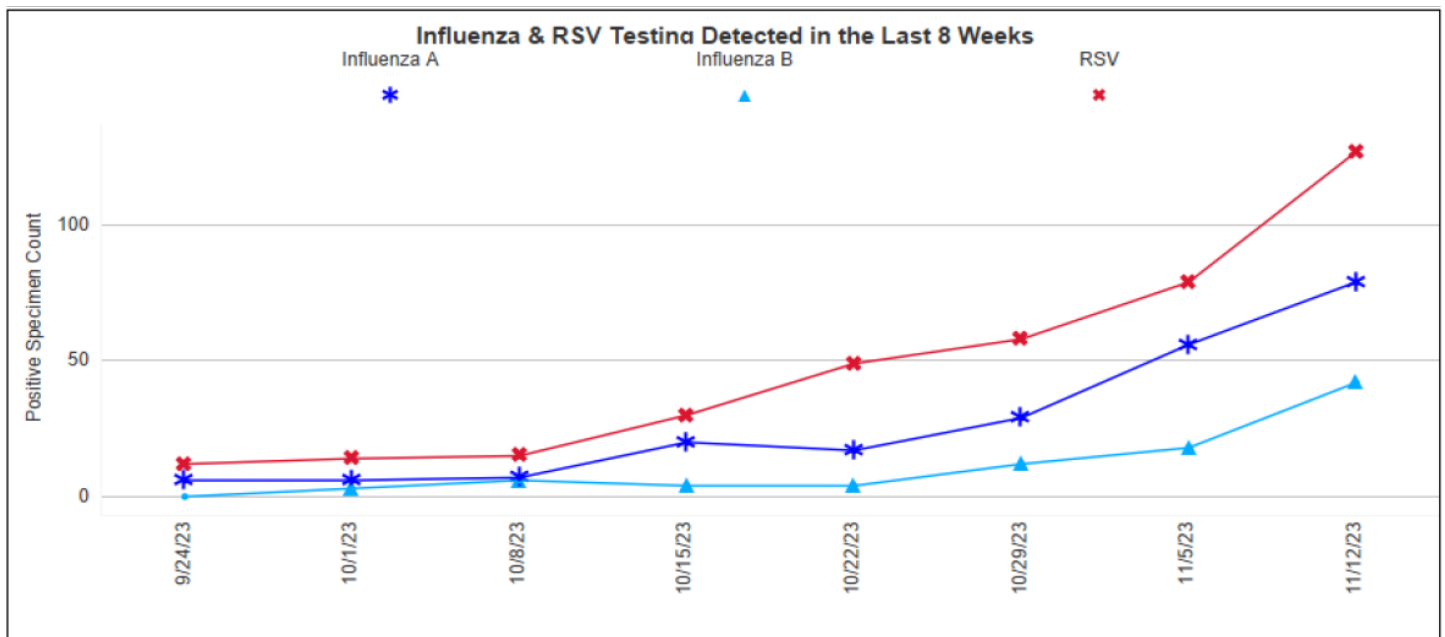
### Respiratory Season 2023-24

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#### What are we seeing now? What should we expect this season?

Respiratory season is here. We have already started seeing increases in numbers of COVID-19, RSV, and influenza A and B. Based on national and local forecasting, we anticipate that we will have a slightly earlier respiratory season than pre-pandemic respiratory seasons. To keep track of community levels of these viruses, please subscribe to Bug Watch by contacting [Maggie Bay](#). During respiratory season, this publication is distributed weekly, and provides positive specimen counts for respiratory and gastrointestinal pathogens detected in our microbiology lab each week (Figure 1).

Figure 1. Bug Watch data demonstrating influenza and RSV test positive counts



#### Infection Control Practices for Respiratory Season

##### Transmission of respiratory agents

The primary mode of transmission of influenza, RSV, and several other viruses we see during respiratory season is typically by large droplets during direct or close contact with secretions (e.g., close face to face contact). Other modes of transmission are smaller droplets/aerosols in certain situations as well as touching contaminated objects in the environment and inoculating self or others (e.g. hand-to-eye, hand-to-mouth).

The SARS-CoV-2 virus is typically also transmitted in large droplets via the mechanisms noted above. In certain situations, however, it may be transmitted in aerosol form, usually during aerosol-generating procedures.

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

### Hand Hygiene

Regardless of whether it is respiratory season, hand hygiene is imperative for decreasing transmission of infectious organisms. Alcohol-based hand sanitizer is preferred for use in healthcare settings when hands are not visibly soiled due to its ability to kill more infectious organisms, ease of use, and overall is gentler on hands than detergents and soaps so more likely to be used consistently. Glove use is recommended as part of contact and standard precautions; however, glove use is not a substitute for hand hygiene. Alcohol-based hand sanitizer should be used on non-soiled hands after removal of gloves. Hands should always be washed with soap and water for at least 20 seconds if visibly soiled.

### Standard and Transmission-based precautions

Standard precautions should be utilized with all patients. This means performing hand hygiene, using personal protective equipment (PPE) when there is potential for exposure to infectious organisms (e.g., if doing a nasal swab, include mask and eye protection), and proper disinfection and handling of patient care devices.

Any patient with symptoms of upper respiratory illness should be properly isolated and/or be asked to wear a mask. At a minimum, droplet precautions should be implemented for these patients regardless of whether a respiratory virus is detected by testing. For suspected or confirmed SARS-CoV-2, the CDC [recommends](#) use of a NIOSH-approved N95 respiratory or PAPR during any aerosol-generating procedure, surgical procedures that may be more likely to transmit virus (e.g., surgery on areas that may have higher viral loads such as the respiratory tract), or if the area is poorly ventilated and the patient is unable to use source control (e.g., wearing a mask).

### **Healthcare Worker Illness**

Many respiratory illnesses present in adults as a slight cold or persistent cough; however, organisms can often be transmitted by sneezing/coughing, etc. When transmitted, these organisms have the potential to cause severe disease in our pediatric patients. Guidance should be in place within a practice or facility for reporting illness to best determine whether it is safe for team members to report to work. Individuals experiencing minimal symptoms should wear a mask and ensure heightened awareness of hand hygiene practices.

At CHCO, team members experiencing illness should complete the [team member screening survey](#) and follow instructions provided. Team members experiencing illness should wear a mask for 10 days after onset of symptoms for any respiratory illness and may return to work if fever-free and symptoms are improving.

### **Diagnosis**

#### Available tests

The 3 types of respiratory testing available at the CHCO Microbiology Lab are SARS-CoV-2 PCR, SARS-CoV-2/influenza/RSV PCR (FLUVID) and Respiratory pathogen panel (RPP). At CHCO-Colorado Springs, SARS-CoV-2 PCR only testing is not available with the exception of testing at Briargate. There are no stand-alone influenza tests this season. Combined SARS-CoV-

2/influenza/RSV PCR and the respiratory pathogen panel will be the tests available for influenza testing.

Testing at the CHCO Microbiology Laboratory and at the Memorial North Laboratory (for CHCO-Colorado Springs) is performed 24 hours a day, 7 days a week. Sample collection for these tests will be available at all CHCO locations. The turnaround time for these tests is 6 hours.

### Who to test

At CHCO, patients being admitted to the hospital with a compatible illness are tested with SARS-CoV-2/influenza/RSV PCR. For children evaluated in the ED/UC and outpatient setting, SARS-CoV-2/influenza/RSV PCR should be reserved for those situations when it will impact clinical care (e.g. help with decisions about starting an antiviral, avoid antibiotic use, or other diagnostic evaluation) and in general does not need to be ordered for children who are being sent home without risk factors outlined in Table 1.

Respiratory pathogen testing (which includes SARS-CoV-2) is not routinely recommended but may be considered for clinically complex scenarios (such as evaluation for FUI, evaluation for Kawasaki disease), in immunocompromised children, patients with CF exacerbations, or those who are critically ill. Test platforms are summarized in Table 2.

Testing Considerations for Children presenting to Children's Hospital Colorado (ED/UC/ambulatory/inpatient setting) during the 2023-24 season are shown in Figure 2.

### Specimens

Mid-turbinate or nasopharyngeal swabs are acceptable for any of the respiratory virus testing listed. At CHCO-Anschutz, nasal wash or tracheal aspirate may be accepted in certain clinical scenarios, but a swab is the preferred method of testing. At CSH, NP swabs are the preferred specimen type; other sample types will be re-directed to Anschutz for testing, which will lengthen turnaround time.

## **Protecting our patients and ourselves**

### Influenza Immunization

All individuals  $\geq 6$  months of age are recommended to receive an annual influenza vaccine to protect against serious disease associated with influenza infection and other complications. This includes healthcare workers, our patients, and the families of our patients. This is particularly important for our patients with risk factors for severe disease. Beginning in the 2023-24 season, there is no longer a recommendation for additional safety measures for patients with egg allergy receiving influenza vaccines. The only contraindication to the inactivated influenza vaccine is life-threatening allergy to any component of the vaccine or people who have had severe allergic reaction to a dose of influenza vaccine.

### COVID-19 Immunization

As of April 2023, CDC began recommending a single dose of bivalent mRNA COVID-19 vaccine for patients  $\geq 6$  years of age without moderate or severe immunocompromise. If monovalent vaccine has already been given, there should be at least 2 months between that vaccine and the dose of bivalent vaccine.

For children 6 months old through 5 years old, either mRNA vaccine can be used; however, all doses should be from the same manufacturer. In this age group, children should complete a multidose initial series with at least one dose of the bivalent vaccine. All doses should be from the same manufacturer.

Patients who are moderately or severely immunocompromised should also complete a three-dose initial series with at least one dose of the bivalent vaccine.

### RSV prophylaxis

The following three categories of infants eligible for palivizumab (Synagis®) are as follows:

- All infants born before 29 weeks, 0 days' gestation who are younger than 12 months at the start of RSV season
- Infants born before 32 weeks, 0 days' gestation who have chronic lung disease (CLD) of prematurity who are younger than 12 months at the start of RSV season (or who are younger than 24 months at the start of RSV season and have required medical support within 6 months of the start of RSV season)
- Infants who have hemodynamically significant congenital heart disease (CHD) who are younger than 12 months at the start of RSV season

Nirsevimab is a new monoclonal antibody product for providing passive RSV immunity to prevent RSV-associated lower respiratory tract disease in infants. Unfortunately, due to nationwide shortages, only high-risk infants as outlined by the CDC will be eligible to receive it this year. Please see the [CDC HAN](#) from October 23, 2023 for full details on groups of patients eligible for this product. At CHCO, criteria for eligibility have been approved by Pharmacy. Team members can contact them if you have a question regarding your particular patient.

### **Communication with Families**

The messages to emphasize to parents are to:

1. Get themselves and their children vaccinated against influenza and COVID-19. If a child is too young to receive the vaccine, getting older family members vaccinated can provide cocooning and protect that younger child.
2. Try to minimize the spread of influenza, RSV and COVID by frequent handwashing, staying home from work, school, or daycare if sick, wearing a mask in indoor, crowded spaces, and getting tested for COVID and flu. CDPHE advises that children or staff at childcare centers who are ill with RSV or other acute respiratory illness remain home for at least 72 hours from symptoms onset and until they are fever free for 24 hours without the use of fever-reducing medications and other symptoms have been improving for 24 hours.
3. If your child does get sick, know what some of the warning signs are that they need emergency care. These signs are if a child is breathing faster than usual, looks like they are having trouble getting air in, or are using accessory muscles to help them breathe. And if a child is not able to drink enough fluids to stay properly hydrated or appears excessively fatigued or drowsy.

### **Treatment**

#### Influenza

There are 4 antiviral medications currently available for the treatment of influenza. These include oseltamivir, peramivir, baloxavir and zanamivir. Antiviral treatment is recommended for all hospitalized children and should be considered for those outpatients with high-risk medical conditions, outlined in Table 1. Of these medications, oseltamivir is the only antiviral currently on formulary at CHCO.

#### COVID-19

The current antiviral agents approved for outpatient use in children are ritonavir-boosted nirmatrelvir (Paxlovid™; for patients ≥12 years old and ≥ 88lb) and remdesivir (3-day course). A 5-day course of remdesivir and up to 10-day course of steroids (dexamethasone) are recommended for certain

inpatients. The care of patients with SARS-CoV-2 including treatment considerations is available on the CHCO [COVID-19 Resources](#) page. The latest information regarding SARS-CoV-2 antivirals is available on the IDSA website: <https://www.idsociety.org/practice-guideline/covid-19-guideline-treatment-and-management/>

### Final Notes

Avoid inappropriate use of antibiotics for viral illness and continue vaccination for influenza and COVID-19. With some knowledge about the management of patients with viral bronchiolitis, you can help dispel the many 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 and using appropriate PPE will help protect our colleagues, patients, and their caregivers.

Bug Watch: 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 intranet and [childrenscolorado.org](http://childrenscolorado.org)

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.

**Table 1. Risk factors associated with complications or more severe disease from influenza**

- Children aged <2 years
- Individuals <19 years receiving long-term aspirin
- Adults aged >65 years
- Persons of all ages with chronic pulmonary (including asthma), cardiovascular, renal, hepatic, metabolic (including diabetes) hematologic, neurologic and neurodevelopment conditions (including seizure disorders, developmental delay, muscular dystrophy, or spinal cord injury)
- Persons with immunosuppression
- Pregnant or recently post-partum women
- American Indians/Alaska Natives
- Persons who are morbidly obese (BMI >40)

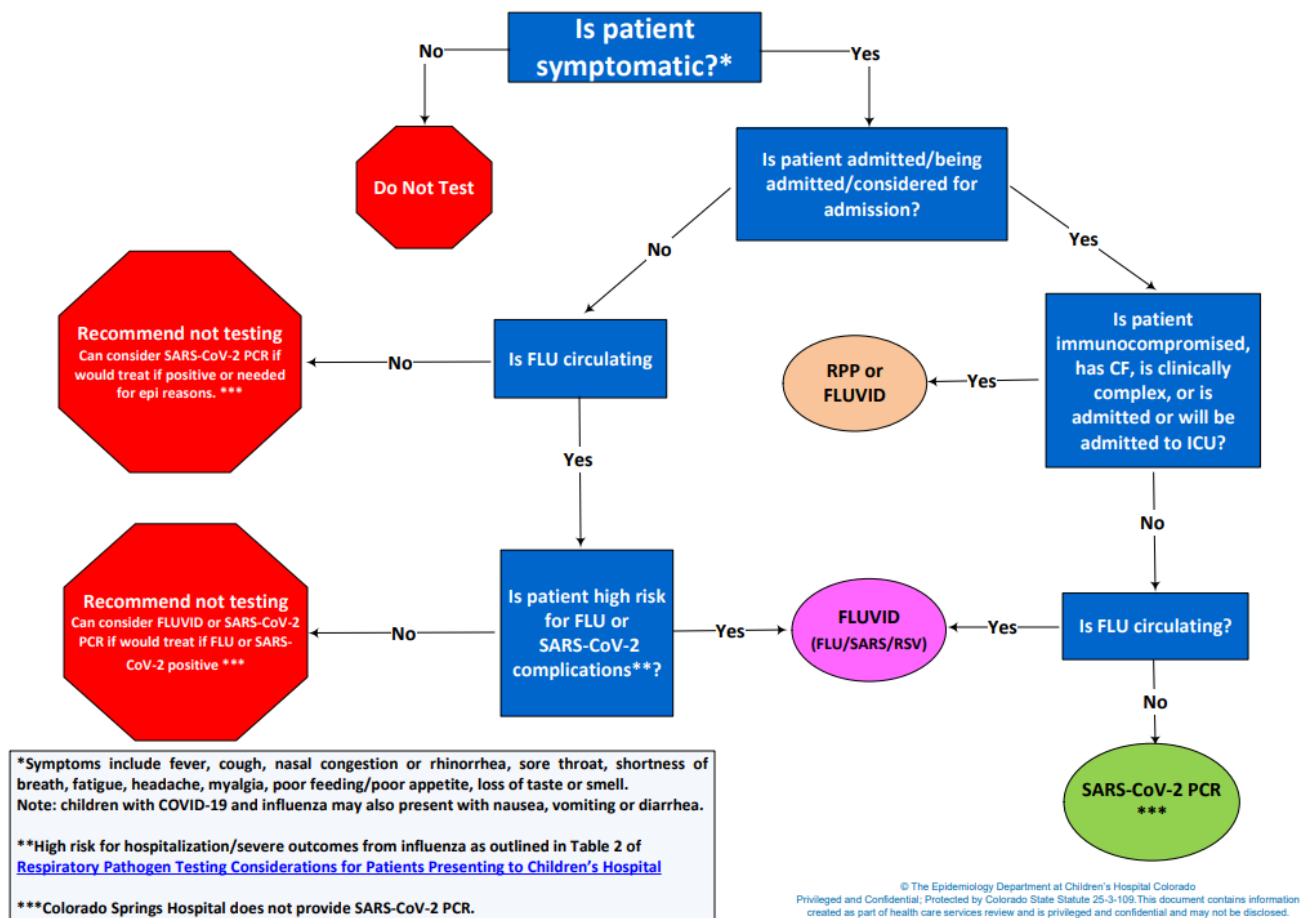
**Table 2. Respiratory Pathogen Testing Information**

	<b>SARS-CoV-2 PCR</b>	<b>SARS-CoV- 2/Flu/RSV PCR</b>	<b>Respiratory pathogen panel</b>
<b>Tests for</b>	SARS-CoV-2	SARS-CoV-2, influenza A, influenza B, RSV	SARS-CoV-2, adenovirus, coronaviruses HKU1, NL63, 229E and OC43, human metapneumovirus, rhinovirus/enterovirus, RSV, influenza A, A/H1-2009, A/H3, B, parainfluenza virus 1, 2, 3, and 4, <i>Bordetella pertussis</i> , <i>B. parapertussis</i> , <i>Chlamydophila pneumoniae</i> and <i>Mycoplasma pneumoniae</i>
<b>Charge for 2023-24</b>	\$318	\$355	\$645
<b>Procedure code</b>	LAB 9100	LAB 9373	LAB 5595
<b>Turnaround time for inpatients and ED patients from specimen arrival in the Microbiology Laboratory at Anschutz campus</b>	6 hours	6 hours	6 hours
<b>Sample types</b>	Mid-turbinate swabs, NP swabs, NP washes, tracheal aspirates, bronchoalveolar lavages	Mid-turbinate swabs, NP swabs NP washes, tracheal aspirates, bronchoalveolar lavages Note: At CSH, swabs are highly recommended; non-swab samples will be re-directed to Anschutz for testing	Mid-turbinate swabs, NP swabs, NP washes, tracheal aspirates, bronchoalveolar lavages Note: At CSH, swab samples are highly recommended; non-swab samples will be re-directed to Anschutz for testing
<b>Other considerations</b>		Will only report flu A or B, does not provide subtype information	Note, panel includes SARS-CoV-2

**Figure 2. Respiratory testing recommendations at CHCO during the 2023-24 respiratory season**

## Respiratory Pathogen Testing Algorithm

4/3/2023



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Please return your e-mail address to: Maggie Bay, Children's Hospital Colorado, Epidemiology – Box B276, 13123 E. 16th Avenue, Aurora, CO 80045 or e-mail address: [maggie.bay@childrenscolorado.org](mailto:maggie.bay@childrenscolorado.org)

Thank you for your interest in our publication.