

# Rapid Antigen Testing During Respiratory Season In Urgent Care

January 11, 2024

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# A Changing Landscape

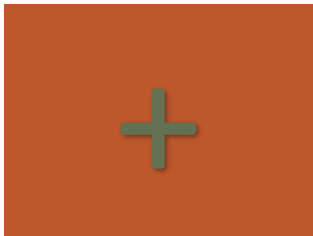


70-year-old woman presents for acute visit:

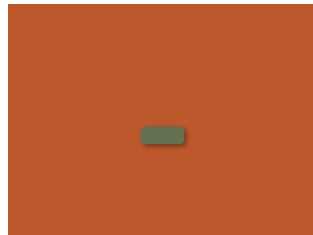
- <1 week of new URI symptoms
- + Runny nose, cough, fatigue, PND, hoarse voice
- Previously well controlled now albuterol nebs
- **NO** fevers, chills, sore throat, chest pain, abdominal or skin issues
- **NO** known sick contacts
- Recent domestic travel and volunteers in the community
- Gets rapid COVID testing weekly, recently negative

# Establishing the Diagnosis

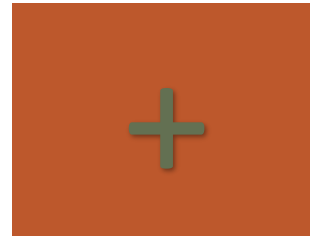
COVID



Influenza



RSV



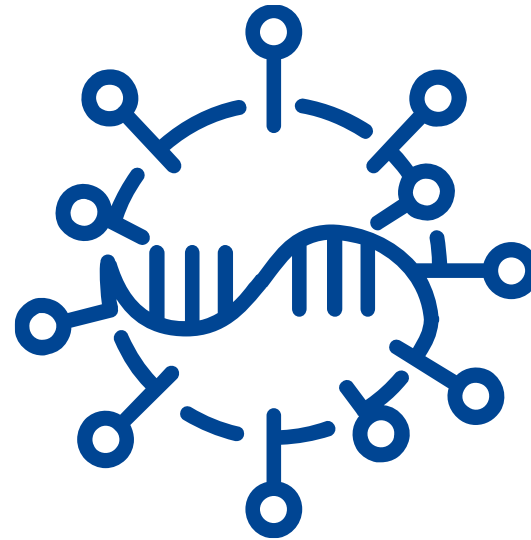
Rhinovirus



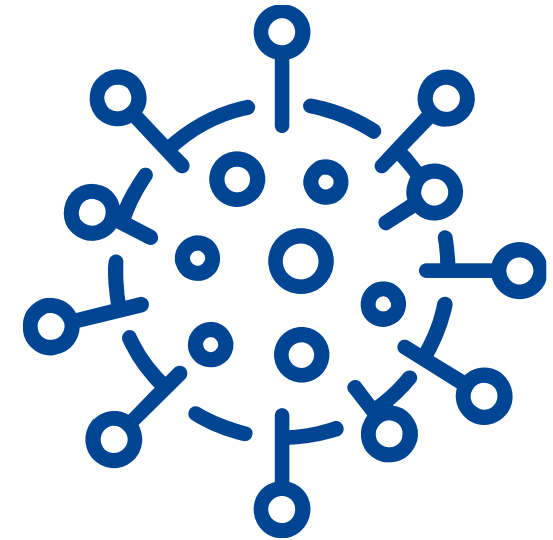
# Testing is Critical

SO IS CHOOSING THE RIGHT TESTING MODALITY

Molecular and Antigen tests are now commonly used to diagnose patients with active upper respiratory infections.<sup>1</sup>



Molecular Test



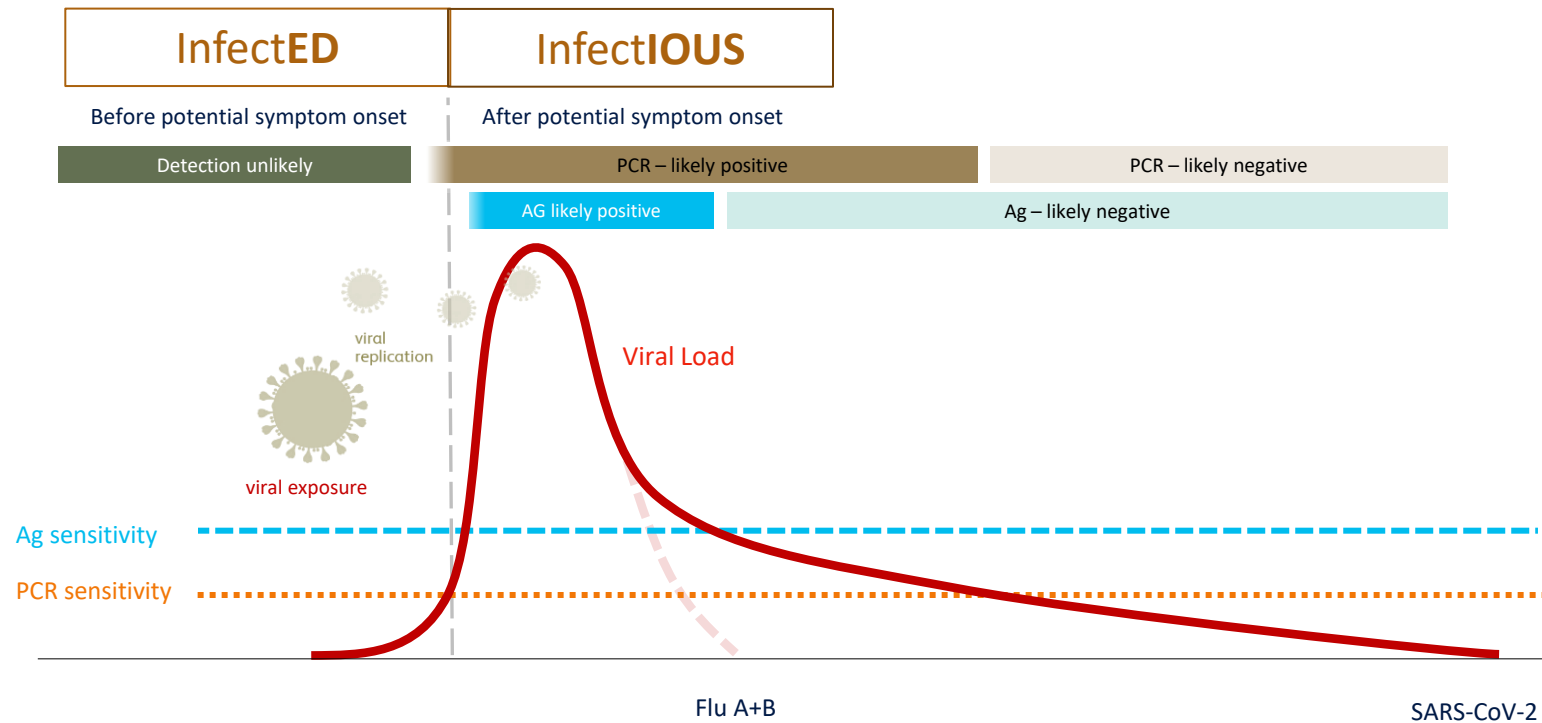
Antigen Test

# Overview: Molecular vs. Antigen Testing

	Molecular (Laboratory)	Antigen (POC, At-Home)
Other Names	PCR, NAAT	Rapid test
Tests for	Viral genetic material (RNA)	Specific proteins of the virus
Sample Type	Usually collected from nose or throat	Usually collected from nose or throat
Personnel Required	Samples can be self or provider-collected, but lab personnel required to perform testing	Collection and testing can be performed independently or by HCPs (e.g. SCV2 at-home tests)
Processing Time	~2-3 hours	~15-30 minutes
Result Communication Time	~24-48 hours plus transport time	Immediately
Accuracy (sensitivity)	Highly sensitive, gold standard	Less sensitive than molecular, especially in those without symptoms
Window of Detection	Up to 90 days post-symptom onset	Usually 5-7 days post-symptom onset (usually when most infectious)
Confirmatory Test Required?	No	Serial testing and/or follow-up PCR confirmatory testing required if negative

# When to test symptomatic patients for COVID-19 and Influenza

## PROGRESSION OF VIRAL INFECTION<sup>2,3,4</sup>



Different tests are appropriate at different times and for different objectives. Selecting the appropriate test depends on several criteria:<sup>2,3,4</sup>

- ✓ **What's the testing objective?**
- ✓ **What's the patient's condition and potential exposure?**
- ✓ **What's the patient care setting and access to a lab?**
- ✓ **How quickly do you need an answer?**

# Rapid Antigen Testing

## BUILT FOR THE DEMANDS OF TODAY

With its shorter turnaround time, ability to accurately detect active infection, ease-of-use, and results delivered at the point-of-care, antigen testing is well-suited for early diagnosis and intervention:<sup>6</sup>



### Rapid results

support immediate diagnosis and patient management<sup>1,6</sup>

Same day convenience reduces patient and care wait times and loss to follow up<sup>6</sup>



**Clinically validated** and trusted<sup>6</sup>



**Cost-effective** to support frequent testing scenarios such as serial testing<sup>6</sup>



**Expands access** to testing<sup>1,6</sup>



Condition	Time of year	Treatment(s)	U.S. disease burden
<b>COVID-19</b>	<ul style="list-style-type: none"> <li>• Still being understood<sup>1</sup></li> <li>• Expected to become seasonal, like influenza<sup>22</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Antivirals (Remdesivir, Paxlovid, Molnupiravir)<sup>18</sup></li> <li>• Immune Modulators (Olumiant &amp; Actemra)<sup>18</sup></li> </ul>	<ul style="list-style-type: none"> <li>• 104M+ confirmed cases<sup>16</sup></li> <li>• 6.1M+ admissions<sup>16</sup></li> <li>• 1.1M+ deaths<sup>16</sup></li> </ul>
<b>Influenza A &amp; Influenza B</b>	<ul style="list-style-type: none"> <li>• Flu activity typically peaks between Dec and Feb<sup>12</sup></li> <li>• Atypical flu transmission has been reported all over the world after the COVID-19 pandemic<sup>20</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Antivirals (Tamiflu, Relenza, Peramivir, &amp; Baloxavir marboxil)<sup>9</sup></li> </ul>	<ul style="list-style-type: none"> <li>• 9M-41M cases per year<sup>12</sup></li> <li>• 140k-710k hospitalizations per year<sup>12</sup></li> <li>• 12k-52k deaths per year<sup>12</sup></li> </ul>
<b>Respiratory Syncytial Virus (RSV)</b>	<ul style="list-style-type: none"> <li>• Peaks late-December to mid-February<sup>14</sup></li> </ul>	<ul style="list-style-type: none"> <li>• No disease target treatment in most cases, typically self-limiting<sup>13</sup></li> </ul>	<ul style="list-style-type: none"> <li>• 2.1M outpatient visits per year in children &lt;5<sup>14</sup></li> <li>• 235k hospitalizations per year<sup>14</sup></li> <li>• 6k-10k deaths in adults 65+ per year<sup>14</sup></li> </ul>
<b>Group A Strep</b>	<ul style="list-style-type: none"> <li>• Cases occur year-round, but more commonly in winter and spring<sup>15</sup></li> </ul>	<ul style="list-style-type: none"> <li>• First Line abx's: Penicillin V &amp; Amoxicillin<sup>15</sup></li> <li>• If PCN allergic: Erythromycin &amp; Cephalixin<sup>15</sup></li> </ul>	<ul style="list-style-type: none"> <li>• 5.2M+ outpatient visits annually<sup>15</sup></li> <li>• &gt;2.8 million antibiotic Rx's annually for persons aged 0-64 years<sup>15</sup></li> </ul>

## Key Takeaways:

- ✓ **Several highly contagious respiratory infections co-circulate during fall/winter months.**
- ✓ **Each have different approved treatments and plans of care.**
- ✓ **Rapid and accurate diagnosis at the POC allows quicker and more effective treatment intervention.**

# Why test? Similar Presentation & Symptoms

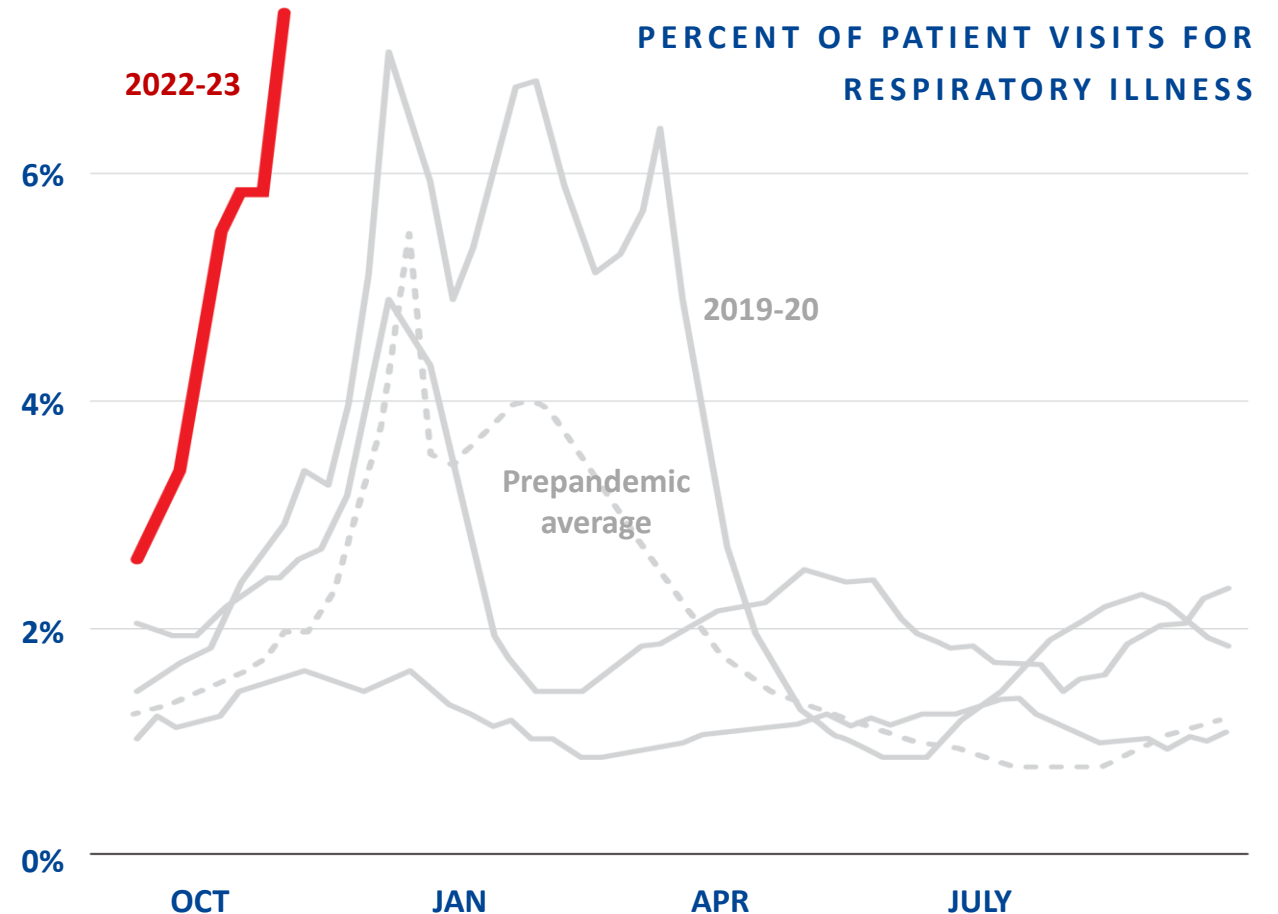
Condition	Molecular (Laboratory)
COVID-19 <sup>10</sup>	Fever/chills, cough, shortness of breath or difficulty breathing, muscle or body aches, headache, <b>new loss of taste or smell</b> , sore throat, congestion or runny nose, nausea or vomiting, and diarrhea
Influenza A & Influenza B <sup>10</sup>	Fever/chills, cough, sore throat, runny or stuffy nose, muscle or body aches, headaches, fatigue, vomiting, and diarrhea
Respiratory Syncytial Virus (RSV) <sup>13</sup>	Fever, runny nose, decreased appetite, coughing, sneezing, and shortness of breath
Streptococcal Pharyngitis <sup>15</sup>	Fever/chills, sore throat, headache, nausea, <b>scarlatiniform rash</b> and vomiting
Allergic Rhinitis <sup>7</sup>	Sneezing, runny nose, congestion, <b>itchy and watery eyes</b> , headache, post-nasal drip, and scratchy throat
Common Cold <sup>8</sup>	Sneezing, runny nose, congestion, sore throat, coughing, fever, and post-nasal drip

● Overlapping symptom

● Condition-specific symptom

# 2022-2023 US Tripledemic

- The 2022-2023 “Tripledemic” (SARS-CoV-2, Flu, RSV) overwhelmed the US healthcare system much earlier than expected last year<sup>27</sup>
- ~40% of US adults reported someone in their household became infected with one of the 3 viruses<sup>25</sup>
- Co-infections are possible and evidence suggests they can lead to more severe disease in hospitalized patients<sup>26</sup>



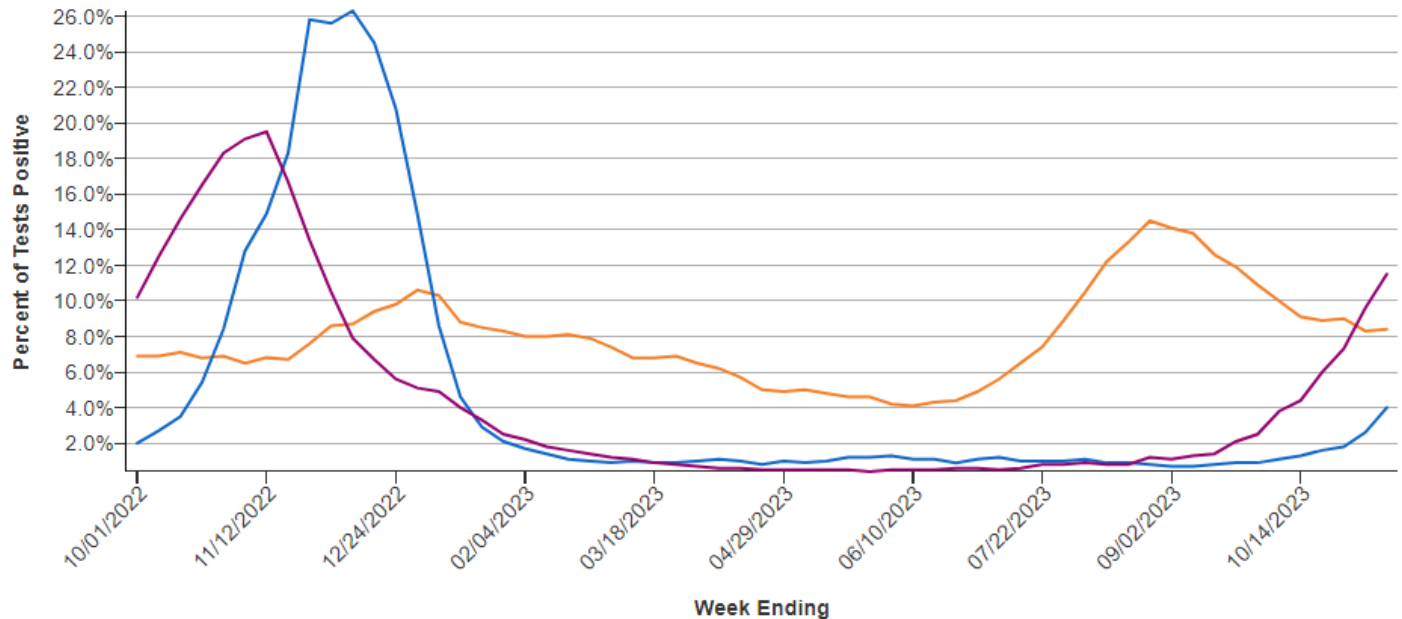
# 2023-2024 CDC US Respiratory Season Update

As of 11/17/23:

- COVID-19 activity remains elevated, a group of Omicron variants (XBB and its sublineages) are the predominant lineages
- Influenza test positivity, ER visits, and hospitalizations are continuing to increase.
- All parts of the country are experiencing elevated RSV activity.
- CDC anticipates this respiratory season will likely result in a similar number of hospitalizations as last season.

## Percent of Tests Positive for Respiratory Viruses

Weekly percent of tests positive for the viruses that cause COVID-19, influenza, and RSV at the national level.



● COVID-19 ● Influenza ● RSV

Source: Centers for Disease Control and Prevention. (2023, September 13). *Respiratory virus activity levels*. Centers for Disease Control and Prevention. <https://www.cdc.gov/respiratory-viruses/data-research/dashboard/activity-levels.html>

# Multi-Analyte Respiratory Testing

## POTENTIAL BENEFITS OF COMBO ANTIGEN TESTING <sup>17,19,21</sup>

- More efficient and convenient provider and patient workflows (1 sample, 1 test, 3 results)
- Increased diagnostic confidence
- More targeted treatment (decreased risk of inappropriate abx use)
- Ability to detect co-infections
- Increase patient satisfaction (faster TTR, more confidence behind provider diagnosis)
- Conservation of healthcare resources and supplies

# HCP Guidance & CDC Recommendations

## What role can *you* play during this respiratory season?

1. Encourage & Promote Vaccination:
  - For the first time ever, immunizations are available for all three major fall and winter respiratory diseases – flu, COVID-19, and RSV (for groups eligible for RSV immunization).
2. Offer Rapid Testing at the POC:
  - Rapid detection reduces delays to treatment and other actions that can protect family, friends, and coworkers.
3. Prescribe antiviral treatment (when indicated):
  - Treatments are available for flu and COVID-19 and can reduce severe illness, hospitalization, and death (Paxlovid & Tamiflu).
4. Encourage Prevention & Provide Wellness Education:
  - Masking, physical distancing, washing hands, and improving airflow in the places where people live and work can provide an additional layer of protection.

# Summary & Key Takeaways

## BENEFITS OF POC RAPID ANTIGEN TESTING

- Increased diagnostic confidence given significant symptom overlap between infections (multi-analyte testing capabilities)<sup>19, 21</sup>
- Decreases risks of unnecessary and/or inappropriate prescribing (antibiotics & antivirals)<sup>23</sup>
- Increased patient convenience (receive evaluation, testing, and treatment in one visit)<sup>1, 19, 21</sup>
- Helps to further mitigate community transmission<sup>1,19,21,24</sup>
- Can promote faster initiation of antiviral therapies (e.g. Tamiflu, Paxlovid)<sup>24</sup>
- Easy to use and low training requirements<sup>24</sup>

# Questions?



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Thank you!

