



# Rapid Testing for Respiratory Illness: COVID-19, Influenza & RSV



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**Benjamin Barlow, MD**  
Chief Medical Officer

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# Objectives

- Provide an update on the urgent care industry and our response to COVID-19
- Share details about our testing program and experiences during the pandemic
- Describe what we are continuing to do today and in preparation for respiratory season



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# COVID Early Days

- Jan 20<sup>th</sup> 2020 first confirmed case of COVID-19 in US
- March 2020 - a bad month
  - 500,000 cases by the end of March 2020
  - Urgent care volume drops 50% by the end of March
  - March 28<sup>th</sup> EUA for rapid COVID testing
  - Stay at home orders issued in 30 states
  - 6.6 million file for unemployment

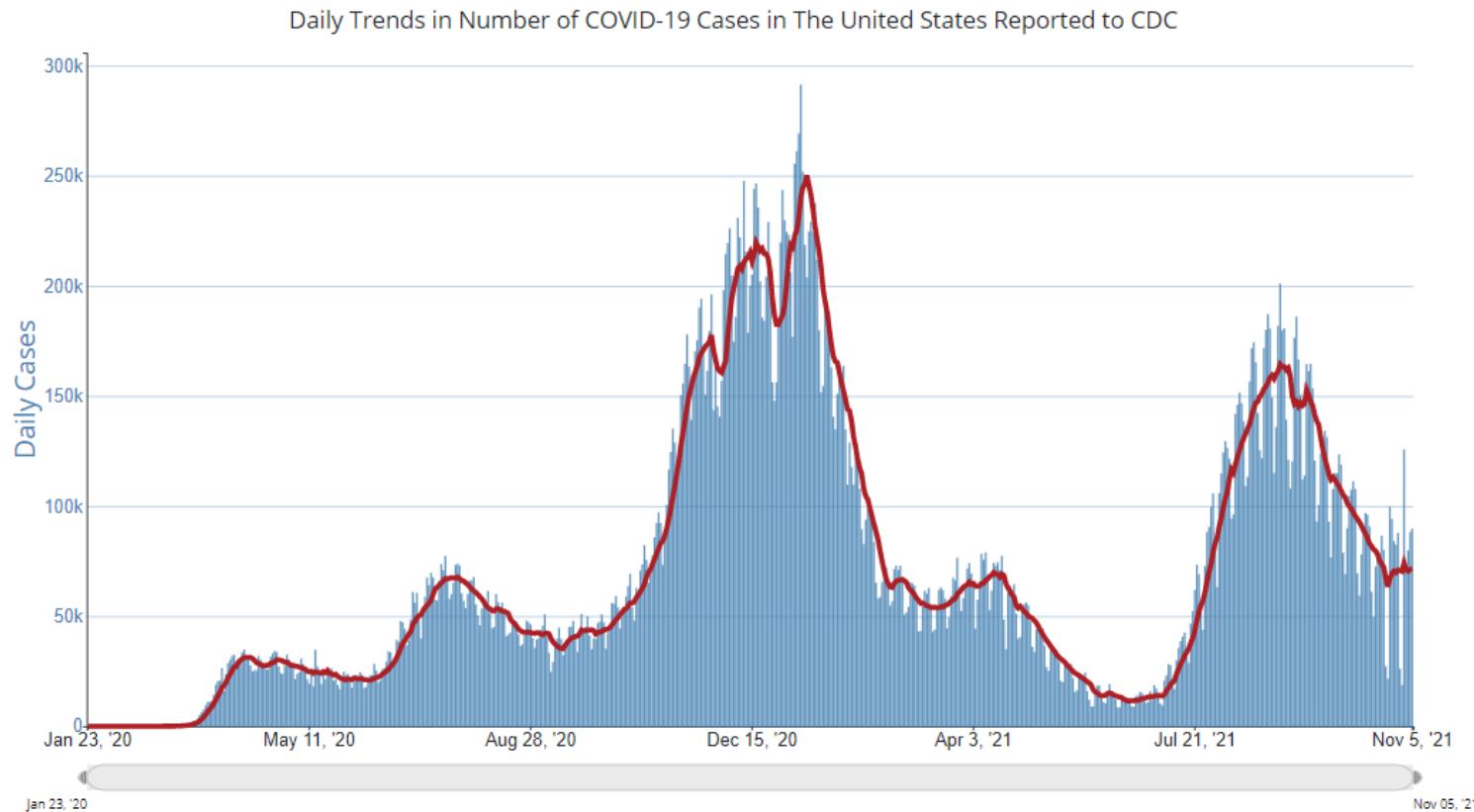


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# Urgent Care Returns

May 2020 COVID testing adopted by Urgent Care

- Supply initially a huge issue along with PPE
- Volume surges by June producing record volumes



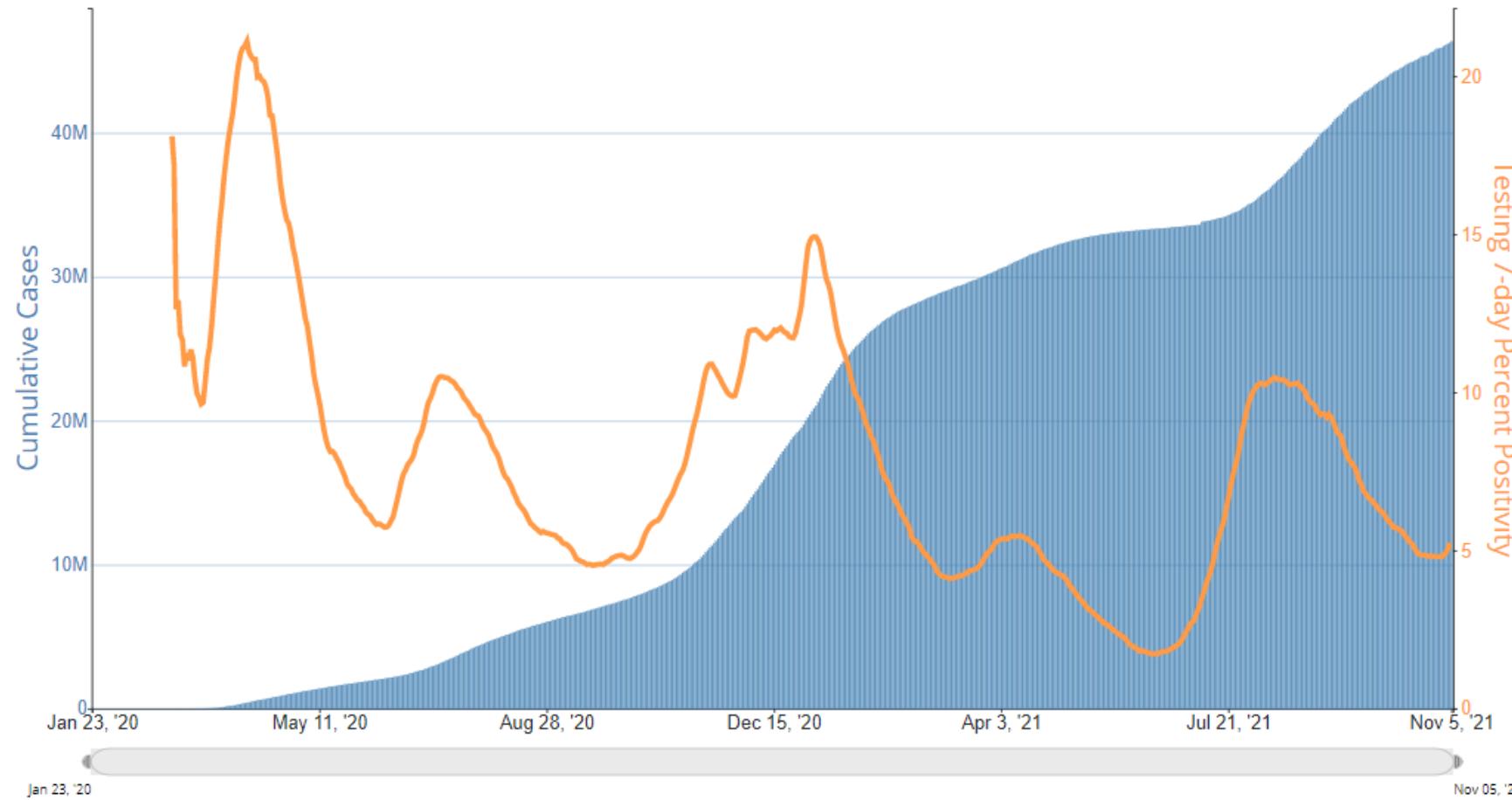
CDC. [COVID Data Tracker](https://covid.cdc.gov/covid-data-tracker/#trends_dailycases). [https://covid.cdc.gov/covid-data-tracker/#trends\\_dailycases](https://covid.cdc.gov/covid-data-tracker/#trends_dailycases), accessed November 8, 2021.



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# Testing and More Testing

Trends in Total Cases and COVID-19 Nucleic Acid Amplification Tests (NAATs) 7-day Percent Positivity in The United States Reported to CDC



CDC. [COVID Data Tracker](https://covid.cdc.gov/covid-data-tracker/#trends_totalcases_7daytestingpositive|tot_cases|percent_positive_7_day). [https://covid.cdc.gov/covid-data-tracker/#trends\\_totalcases\\_7daytestingpositive|tot\\_cases|percent\\_positive\\_7\\_day](https://covid.cdc.gov/covid-data-tracker/#trends_totalcases_7daytestingpositive|tot_cases|percent_positive_7_day), accessed November 8, 2021.



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# Clinics That Did Well

- Adapted quickly with strategic plans to provide services during the pandemic
- Secured PPE and rapid COVID tests
- Increased social media and press coverage
- Banners in front of clinics
- Outreach to employers
- Ramped up telemedicine



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# Urgent Care Volume

- Busiest time of day opening until 11am
- Those with rapid testing have the largest increase in volume
- Patients expect immediate answers now that rapid testing is the standard in urgent care centers

BUSINESS / CORONAVIRUS

OC TRACKING THE CORONAVIRUS

## Crowds jam urgent care centers equipped with rapid COVID-19 tests



A red sign on a grassy field reads "COVID-19 RAPID TEST SITE. RESULTS IN 13 MINUTES." Next to the sign is a white van with the AFC logo. The sign is supported by four wooden posts.

# AFC and Our Immediate Response

- 250+ clinics, 38 states
- Immediately offering send off tests, but we knew we needed this in house
- First clinic in U.S. to offer rapid molecular COVID-19 testing
- Existing POC system for Flu, Group A Strep, and RSV across locations; rapid deployment for pandemic testing
- Coordinated effort with the manufacturer for allocation and logistics



AFC rapid molecular testing announced with Governor Lee (TN), Apr 2020

*“an amazing game changer  
to get tests results instantly”*

- Bruce Irwin, MD, CEO, AFC

During COVID-19 briefing, Tennessee governor evokes Passover story. [https://www.wpsdlocal6.com/news/during-covid-19-briefing-tennessee-governor-evokes-passover-story/article\\_e3e41968-79dc-11ea-bdc8-53f035a3ec7b.html](https://www.wpsdlocal6.com/news/during-covid-19-briefing-tennessee-governor-evokes-passover-story/article_e3e41968-79dc-11ea-bdc8-53f035a3ec7b.html), April 8, 2020.



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# POC Molecular Respiratory Testing

- Well planned flow inside the clinic
- Protocols for PPE and cleaning
- 10 machines per clinic (varied by clinic size)
- Also performing rapid molecular Flu, Strep and RSV
- Cross trained all staff
- If symptomatic and negative for COVID workup continued
- Preprinted discharge sheets with direct state reporting



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# Workflow Efficiencies

## POC Molecular Respiratory Testing

### ≤ 13-MINUTE TEST TURNAROUND TIMES

-  Less room time; more patients seen, less time infecting others
-  Immediate treatment conversations with patient/parent (for/against)
-  Patient satisfaction associated with length of office visit
-  Shorten symptom duration, transmission window/infection rates
-  Reduce time away from school/work
-  Test for other potential causes; not always COVID



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# COVID and Protocols

After rapid COVID-19 testing put in place:

**4X** increase

“overnight” patient volume

In 2021, AFC has seen:

**6 million**  
patients

**2.3 million**  
rapid tests completed



**PROVIDERS DID NOT SEE PATIENTS UNTIL COVID RESULTS RETURNED,  
SAVING EXPOSURE OF STAFF, PPE AND CLEANING MATERIALS.**



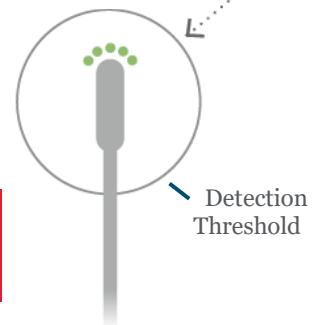
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# Antigen vs Molecular/Amplification

## POSITIVE PATIENT SAMPLE

### ANTIGEN/LATERAL FLOW “RAPIDS”

**Antigen tests** can have suboptimal limits of detection. Samples with low viral or bacterial load may not meet the detection threshold and could result in a false negative.



### MOLECULAR/NAAT “PCR”

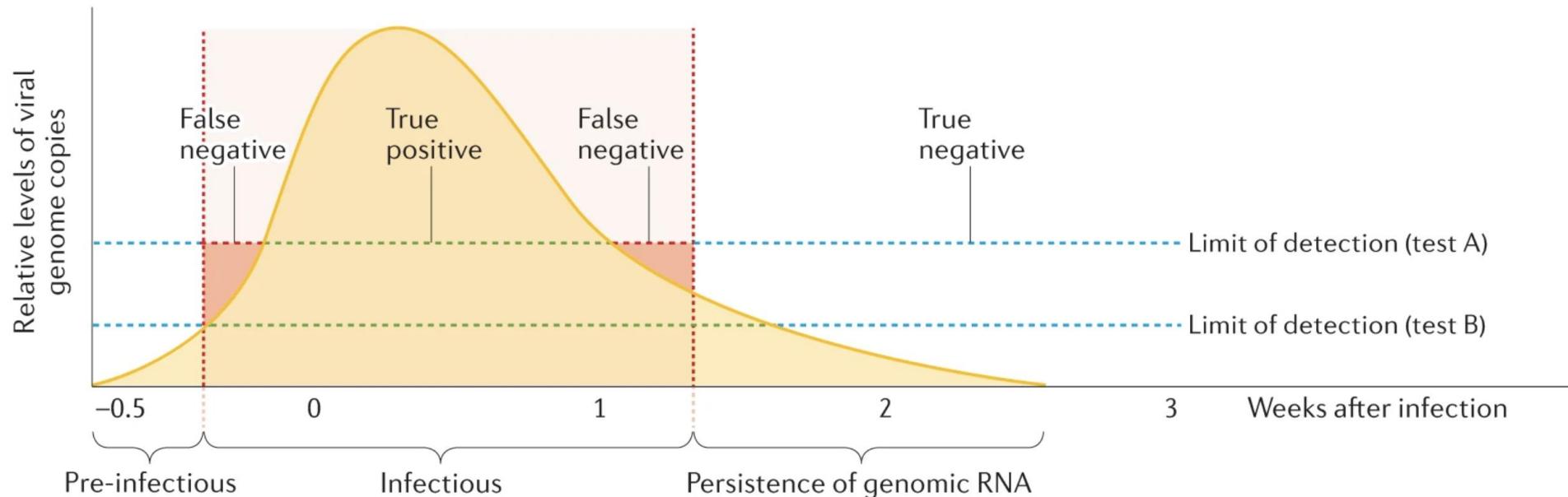
With **molecular**, even a few hundred infectious particles can be amplified billions of times. **Amplification** increases likelihood of detection and may compensate for suboptimal sample collection.



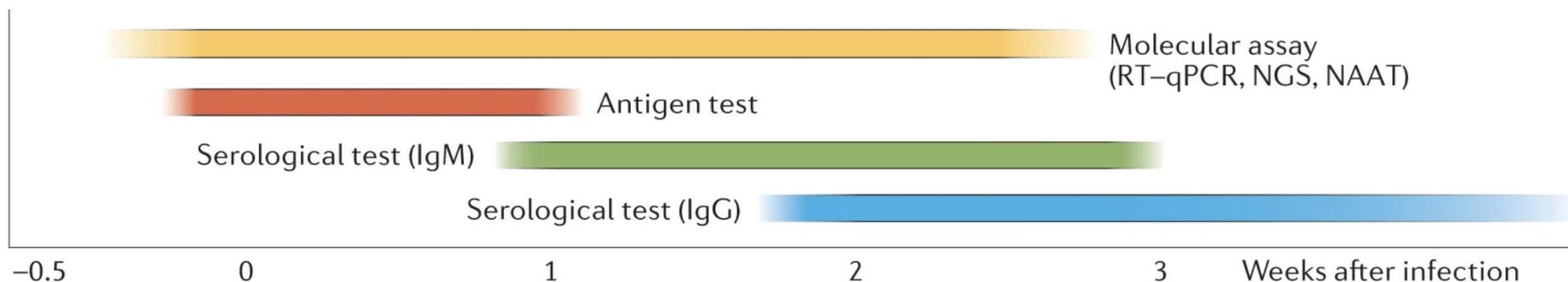
“NAAT” tests include “PCR” and multiple other molecular test technologies

# Timing of Testing

ANALYTICAL SENSITIVITY IS DEPENDENT ON TEST PERFORMANCE AND VIRAL DYNAMICS



## APPLICABLE TEST MODALITIES



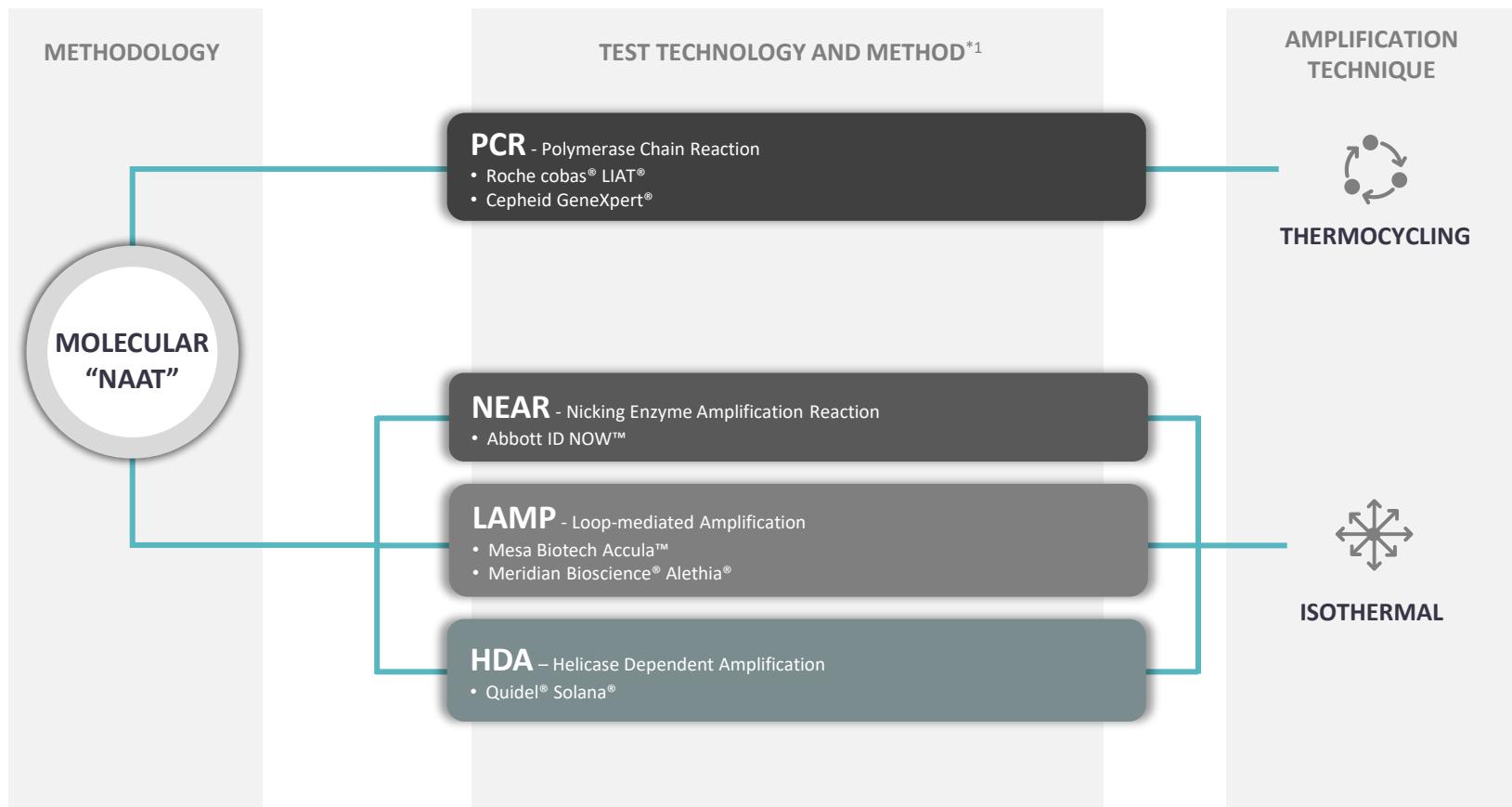
RNA, ribonucleic acid; PCR, polymerase chain reaction; NGS, next generation sequencing; NAAT, nucleic acid amplification test.

Mercer, T.R., Salit, M. Testing at scale during the COVID-19 pandemic. *Nat Rev Genet* 22, 415–426 (2021). <https://doi.org/10.1038/s41576-021-00360-w>



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# Rapid Molecular Test Technologies for COVID-19



ALL MOLECULAR TESTS AMPLIFY THE SAMPLE TO RELIABLY DETECT SMALL AMOUNTS OF VIRUS  
AND ARE UNLIKELY TO RETURN A FALSE NEGATIVE RESULT FOR SARS-CoV-2<sup>1</sup>

NAAT, nucleic acid amplification test.

\*Multiple NAATs amplify nucleic acids; a full list of technologies is available at CDC.gov. Diagram includes multiple POC platforms but may not be a comprehensive list. For a full list of available [In Vitro Diagnostics EUAs - Molecular Diagnostic Tests for SARS-CoV-2](#) and respective authorization documents, visit the [FDA.gov](#) for more details.

<sup>1</sup>CDC, [Nucleic Acid Amplification Tests \(NAATs\)](#), updated June 16, 2021. Accessed July 21, 2021.



# 2021 Fall/Winter

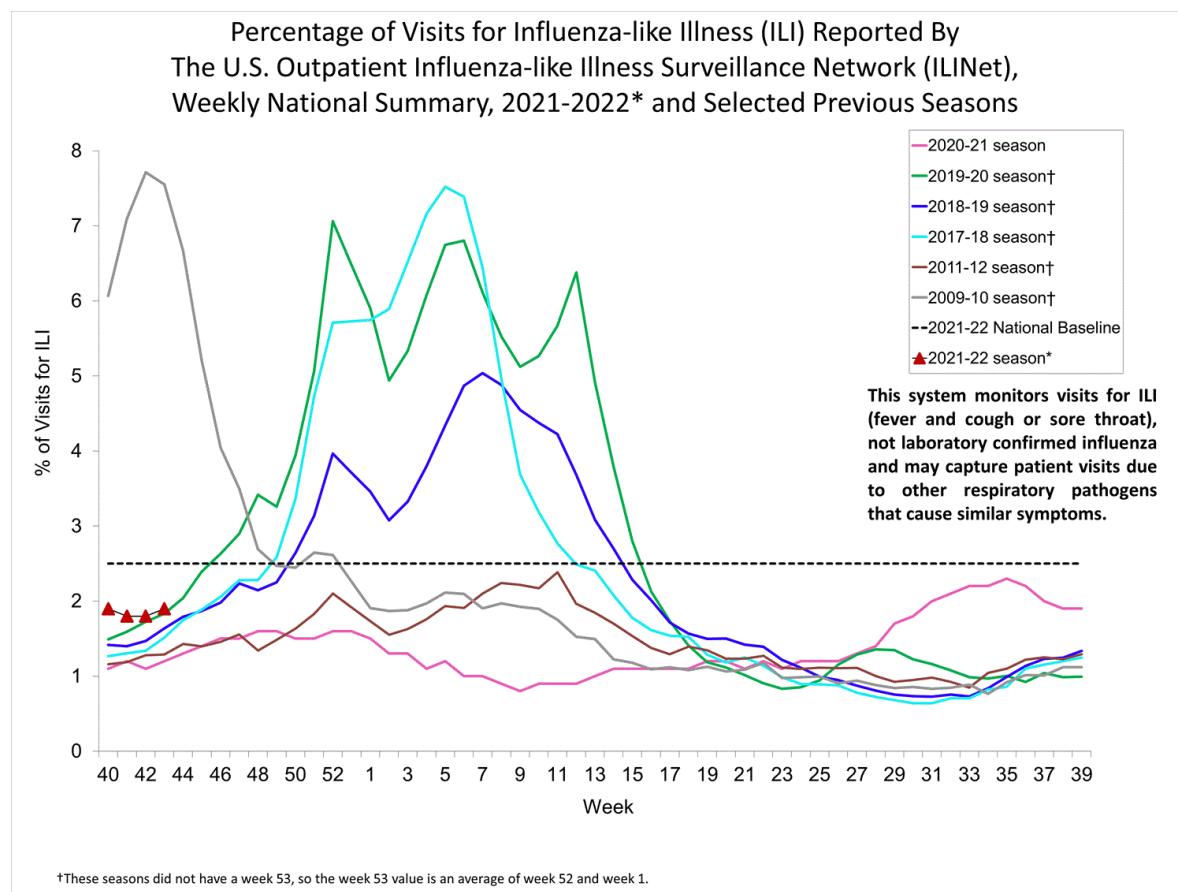
- Visits trending down slightly but still at high volumes
  - Rapid testing 30% of volume in October
- Preparing for flu season
  - Stocking up on tests
  - Maintain high inventory of PPE
- Developing protocols for efficient patient flow
  - Testing symptomatic patients for Flu and COVID
  - Testing for RSV and Strep depending on patient and symptoms



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# CDC ILI Activity

- Urgent care centers volume track with ILI activity
- Rapid tests used the most during this time



# Differential Diagnosis

- With the easing of precautions flu most likely will be more prevalent this season than last
- Symptoms are very similar except for loss of smell/taste
- Symptomatic patients should be considered for both Flu and COVID testing
- In kids RSV may also be on the differential
  - Usually occurs November to May
  - Most children have been infected by age 2



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# Flu vs COVID vs RSV

## ACCURATE DIFFERENTIAL DIAGNOSIS AT TIME OF VISIT

- Diagnosis – high confidence in clinical decisions
- Treatment – rapid, appropriate antiviral prescribing on initial visit
- Discharge instructions – appropriate isolation and care plans

## DOWNSTREAM BENEFITS

- Quarantine – recommend appropriate duration and PPE use
- Follow up – assess improvement vs. changing treatment plan
- Patient satisfaction – high confidence in quality test results, accurate diagnosis and symptom improvement after visit



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# Improved Antiviral Prescribing

## Rapid Molecular vs Rapid Antigen Testing For Influenza

### RAPID MOLECULAR ASSOCIATED WITH IMPROVED ANTIVIRAL USE WHEN FLU POSITIVE

#### ANTIVIRALS PRESCRIBED IN POS FLU<sup>1</sup>

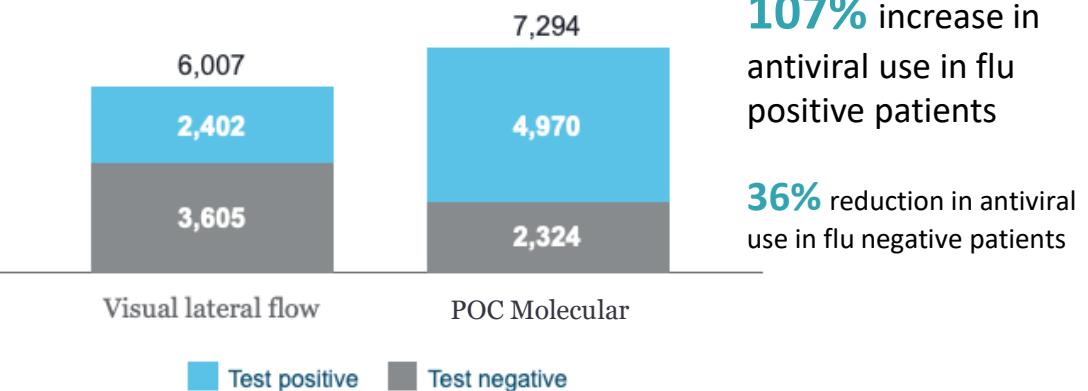
69.9%	82.4%
RIDT/reflex PCR	POC molecular

More confident diagnosis

Shorter duration of symptoms

Minimized potential sequelae  
(Pn, sinusitis, ENT infections)

#### PROJECTED ANTIVIRAL PRESCRIPTION USE<sup>2-4</sup>



**107%** increase in antiviral use in flu positive patients

**36%** reduction in antiviral use in flu negative patients

Projections based on 30,000 annual influenza tests, 21% prevalence rate for Flu A, 9% prevalence rate for Flu B. Projections determined using "Value of rapid and accurate influenza testing in the ED" Basecase. Rapids test performance per Chartrand, et al. Projected POC Molecular based on performance of the ID NOW™ Influenza A & B 2 Test Product Insert. Projected antiviral use impact per Blaschke, et al.

<sup>1</sup>Benirschke RC, et al. Clinical Impact of Rapid Point-of-Care PCR Influenza Testing in an Urgent Care Setting: a Single-Center Study. J Clin Microbiol. 2019 Feb 27;57(3):e01281-18. <sup>2</sup>Chartrand C, et al. Accuracy of rapid influenza diagnostic tests: a meta-analysis. Annals of Internal Medicine 2012; 156(7): 500-511.2, Table 2. <sup>3</sup>ID NOW™ Influenza A & B 2 Product Insert. <sup>4</sup>Blaschke, et al. A National Study of the Impact of Rapid Influenza Testing on Clinical Care in the Emergency Department. JPed Inf Dis Soc, Vol. 3 , No. 2, pp. 112–8, 2014.

# Isolation of Individuals with RSV

## POC Molecular RSV Testing

**POC MOLECULAR ENABLES RAPID ISOLATION TO HELP PREVENT FURTHER TRANSMISSION**

- Infection of the lungs and breathing passages
  - Spreads rapidly from droplets when someone coughs or sneezes
  - Symptoms can be similar to COVID
  - Potentially very serious/can lead to more severe illness in children, especially premature babies, and elderly
- Seasonal...usually late fall through early spring
- Spreads quickly through schools, childcare centers, congregate care ctrs
  - Usually contagious for 3-8 days

**Respiratory Syncytial Virus (RSV) is an annual occurrence**



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# Summary

- Urgent Care operations have changed drastically because of COVID-19
- Rapid testing solidified as a standard in Urgent Care
- Molecular amplification increases virus detection to minimize false negatives
- Urgent care centers continue to see record volumes and are gearing up for the winter months
- Rapid, accurate differential diagnosis of COVID-19 with influenza and/or RSV testing is essential in Urgent Care to expedite appropriate diagnosis, treatment, and follow-up



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Thank you



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**Benjamin Barlow, MD**  
Chief Medical Officer

[bbarlow@americanfamilycare.com](mailto:bbarlow@americanfamilycare.com)

