

COVID-19: Where are we now?

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Disclosures

- None

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Learning Objectives

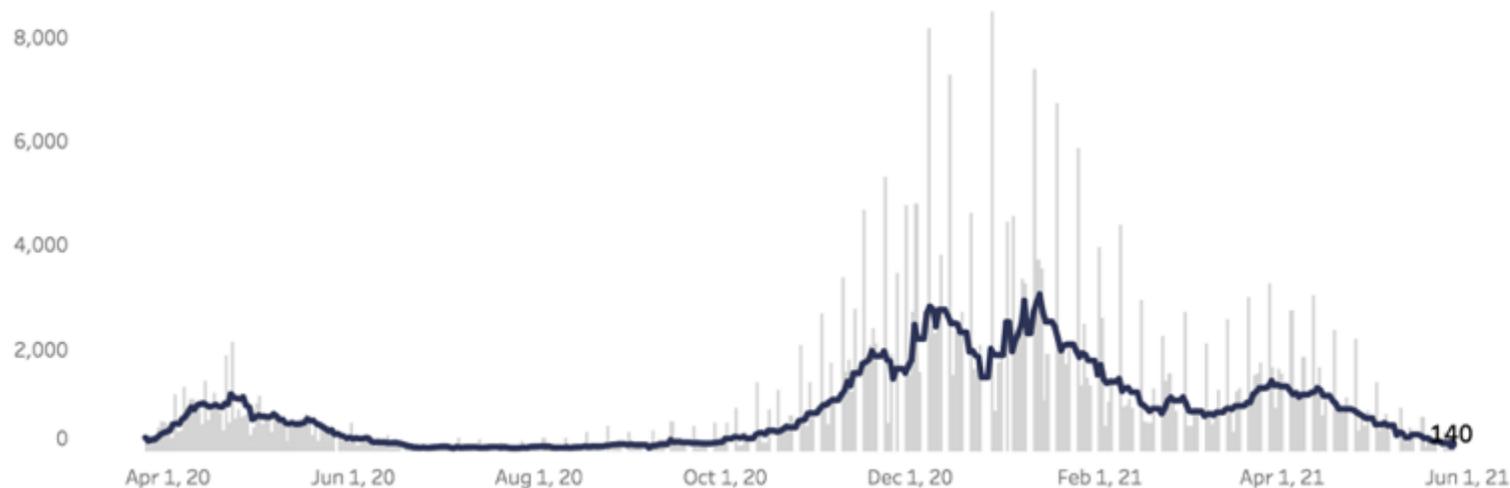
- Describe the pediatric epidemiology of COVID-19 and hospital experience over the last 14 months
- Discuss the current state of COVID-19 as it relates to children
- Review potential challenges and long-term health effects as we emerge from the pandemic
- Leave plenty of time for questions

High level view of CT pandemic- April 2020 through June 1, 2021

347,137 (+157) CONFIRMED CASES	123 (+1) HOSPITALIZATIONS	8,230 (+3) DEATHS
9,190,603 (+14,823) TESTS COMPLETED	1.06% (+0.31%) POSITIVE TEST RATE	0.98 TRANSMISSION RATE
Select an indicator box above		

Daily Confirmed and Probable Cases

This chart shows new [Covid-19 cases](#) reported by CT DPH. The **blue 7-day moving average line** provides the best insight about state trends since daily counts may vary as a result of various reasons. Please focus on the **7-day moving average** rather than daily increases. Fluctuations in daily increases can be a result of many factors, such as errors in data collection, CT DPH not reporting on weekends as of July 2020 (resulting in larger increases on Mondays), and more.*

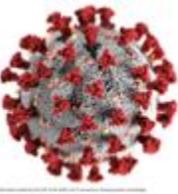


As we have entered the spring of 2021, variants are in the state

SARS-CoV-2 variants in Connecticut

Variant	Country first reported	Category	Cumulative cases reported by the CDPH*	Percent sequenced during previous week by Yale/JAX**	Percent change from previous report
B.1.1.7	UK	Variant of concern	2892	66.7%	-9.0%
B.1.1.7 w/ E484K	UK	Variant of concern	3	0.0%	0.0%
B.1.351	South Africa	Variant of concern	32	0.0%	0.0%
P.1	Brazil	Variant of concern	104	4.6%	2.5%
B.1.429	USA (California)	Variant of concern	149	0.0%	0.0%
B.1.427	USA (California)	Variant of concern	64	0.0%	0.0%

<https://covidtrackerct.com/variant-surveillance/>

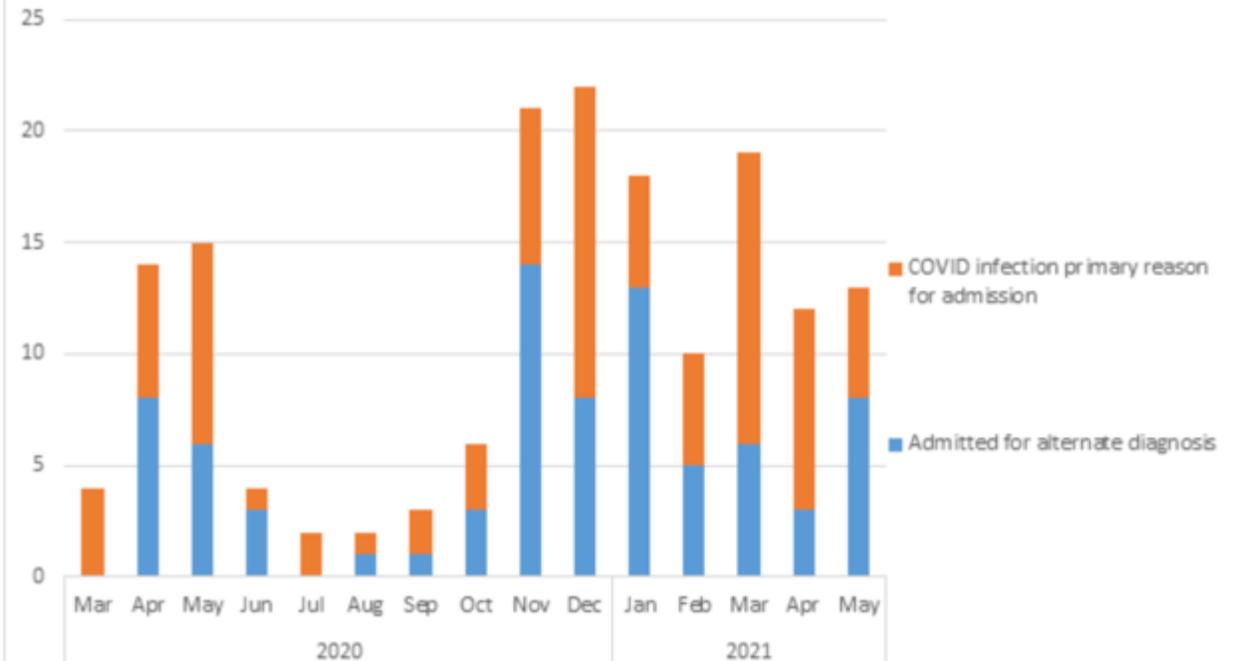


Yale New Haven Children's Hospital Experience: Acute COVID-19

Pediatric Patients Admitted with Positive COVID PCR

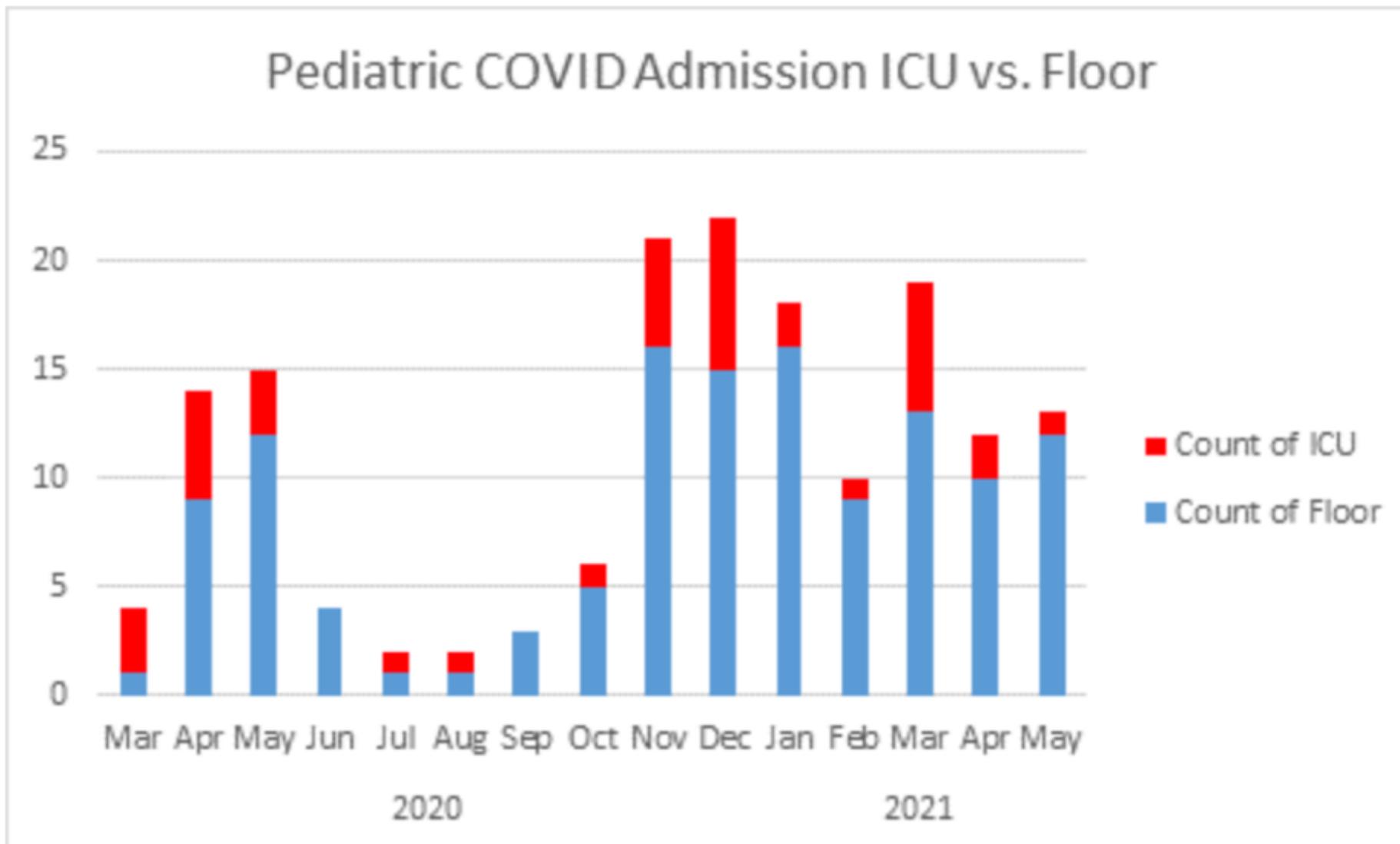


Pediatric Patients Admitted with Positive COVID PCR Symptomatic vs Asymptomatic



Not the sharp decrease described in adults- Kids may be asymptomatic and stay positive
We may be detecting old disease. And kids not vaccinated.

Severity of illness- Acute COVID-19



Multisystem Inflammatory Syndrome in Children (MIS-C)

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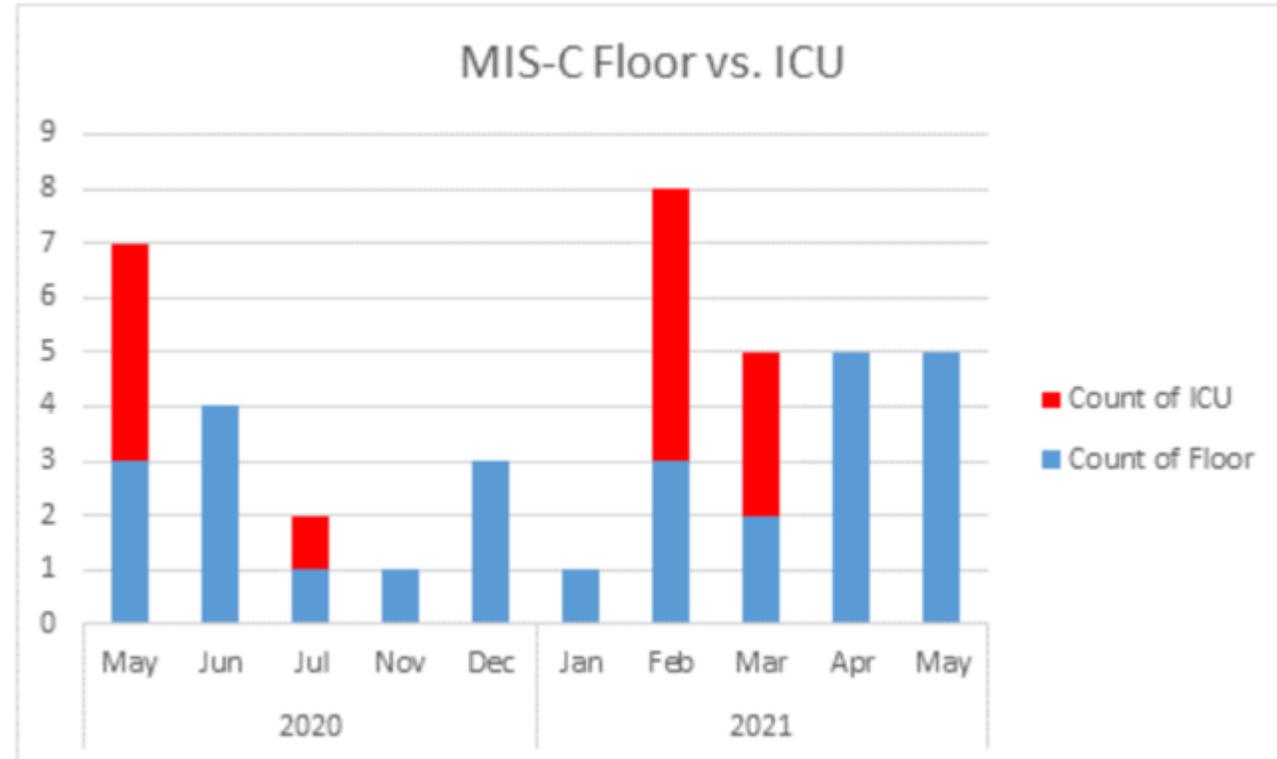
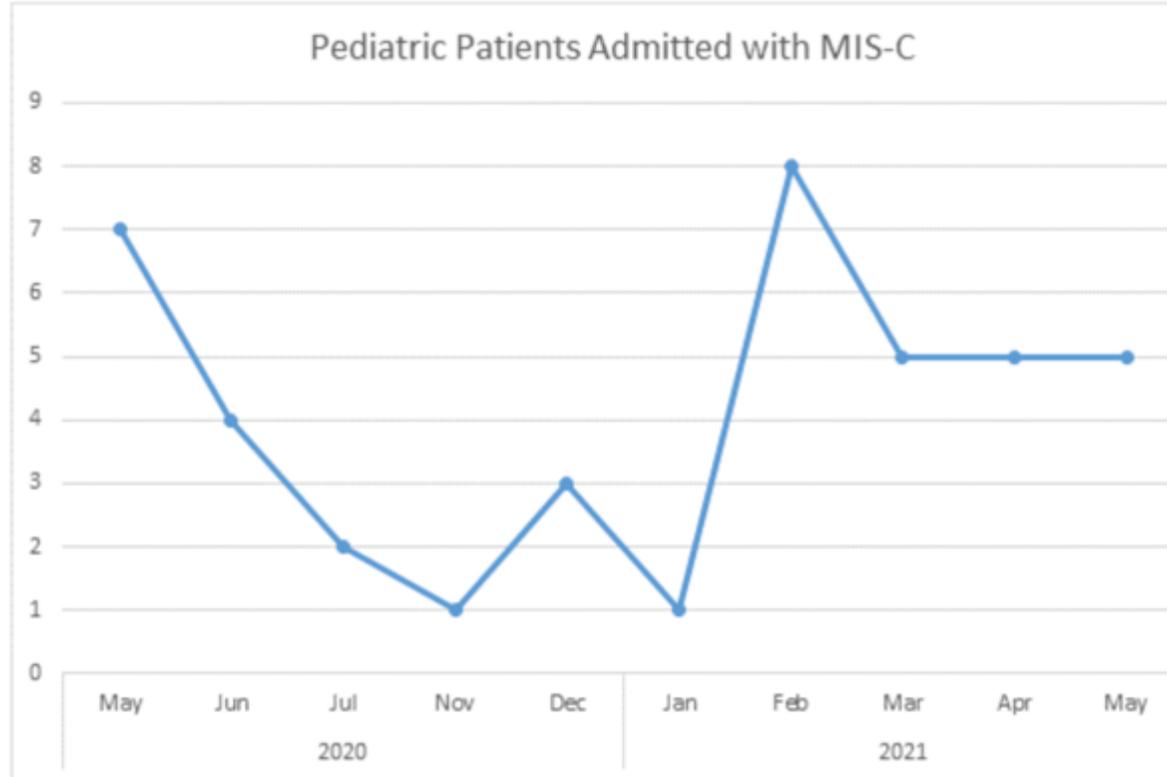
MIS-C* SHOULD BE SUSPECTED IN PATIENTS < 21 YEARS-OLD WITH:

- **Fever** (CDC criteria is ≥ 38.0 for ≥ 24 hours, but fevers are typically > 38.5 and persistent for ≥ 3 days) **AND**
- **Prior history of COVID + Testing or close contact with known positive COVID case in past 4 weeks AND**
- **No other plausible explanation for presentation** (e.g. sepsis with UTI, patients without clinical features of MIS-C)
- **Evidence of ≥ 2 systems of involvement:**
 - **GI:** Severe abdominal pain w/ or without GI symptoms (vomiting/diarrhea)
 - **Neuro:** Neurologic symptoms such as changes in mental status/vision, headache, signs of meningismus
 - **Mucocutaneous** findings seen in [Kawasaki Disease**](#) - (Each sign counts as a system to raise suspicion for MIS-C)
 - Rash - polymorphic
 - Oral Mucosal Changes - cracked lips, strawberry tongue
 - Conjunctivitis - non-purulent
 - Extremity changes - swelling, palmar/plantar erythema
 - **Lymphatic:** Cervical adenopathy > 1.5 cm
 - **Cardiac:** Signs of cardiogenic shock/dysfunction
 - **Hematologic:** Petechiae, bruising
 - **Respiratory:** Respiratory symptoms overall seem less likely to occur
 - **Renal:** Oliguria
 - **Other:** Reports of arthritis and severe pharyngitis/mimicking deep neck infections also reported

*The differential diagnosis for MIS-C is broad and clinicians may consider other clinical entities while pursuing workup and treatment

**Patients may meet criteria for KD and be diagnosed with MIS-C

YNHCH experience with MIS-C



Summary of the COVID experience

March 1- October 1

COVID positive (PCR) admissions:	44
COVID needing ICU care:	13
COVID positive (PCR) discharges:	44
COVID positive (PCR) PED boarders:	4
MIS-C (confirmed) admissions:	13
MIS-C needing ICU care:	5
MIS-C (confirmed) discharges:	13
COVID and MIS-C related mortalities:	0

As of February 5th

Totals to date:

COVID positive (PCR) admissions:	112
COVID needing ICU care:	28
COVID positive (PCR) discharges:	111
COVID positive (PCR) PED boarders:	7
MIS-C (confirmed) admissions:	19
MIS-C needing ICU care:	6
MIS-C (confirmed) discharges:	18
COVID and MIS-C related mortalities:	0

As of June 1- No mortality related to COVID-19

Totals to date:

COVID positive (PCR) admissions:	165
COVID needing ICU care:	38
COVID positive (PCR) discharges:	163
COVID positive (PCR) PED boarders:	8
MIS-C (confirmed) admissions:	41
MIS-C needing ICU care:	13
MIS-C (confirmed) discharges:	39
We will get to what is behind this box in a minute	
COVID and MIS-C related mortalities:	0

Taken care of
206 children with
COVID-19 or MIS-C

Vaccination in children 12-15 yr- Started May 13, 2021 in CT

- Pfizer and Moderna vaccines highly effective in children ages 12-15 yr
- About 1000 kids vaccinated in this age group, no infections.
- Similar adverse effects to those seen in adults

COVID-19 Vaccinations by Age Group

Cumulative number and percent of people who initiated COVID-19 vaccination and who are fully

Find in this Dataset

More Views | Filter | Visualize | Export | Discuss | Em

Age group	Population	At least one dose	At least one dose percent	Fully Vaccinated	Fully Vaccinated Percent	Date
12-15	176,600	52,566	29.8	91	0.1	05/26/2021
16-24	433,573	224,593	51.8	169,849	39.2	05/26/2021

The COVID-19 vaccine does NOT cause infertility

Current trials ongoing in 6mo-11 yr olds ongoing

Breakthrough disease is rare and not severe

– Connecticut experience

- 242 cases
- 1.47 million
- .016%

- Mostly female, 45% asymptomatic 13% hospitalized, 1.2% died (all underlying condition)

– National experience

- 10,000 breakthrough cases
- 101 million vaccinated
- .01%

- Mostly female, 25% asymptomatic, 10% hospitalized, 2% died (elderly)

- **THIS IS A HIGHLY EFFICACIOUS VACCINE**

A possible very rare complication post-vaccination (Peri/myocarditis)

- Sudden onset acute chest pain typically within 4 days of vaccine
 - Young males (teenagers in our case)
 - ALL patients have elevated troponin and abnormal ECG S-T segment elevation
- Treatment varies
 - We have treated with IVIG/steroids, some places use NSAIDS
 - Adults use NSAIDs and colchicine

Post vaccine myocarditis admissions:	5
Post vaccine myocarditis needing ICU care:	5
Post vaccine myocarditis discharges:	4

What is the current state of PPE and masking?

NO VACCINE		Indoor	VACCINE
Less Safe		Visit a barber or hair salon	
		Go to an uncrowded, indoor shopping center or museum	
		Ride public transport with limited occupancy	
		Attend a small, indoor gathering of fully vaccinated and unvaccinated people from multiple households	
Least Safe		Go to an indoor movie theater	
		Attend a full-capacity worship service	
		Sing in an indoor chorus	
		Eat at an indoor restaurant or bar	
		Participate in an indoor, high intensity exercise class	

Healthcare has higher standard

- We continue to require masking for patient care areas regardless of vaccination status
- Break rooms and non patient care areas we allow vaccinated people to remove masks if everyone Comfortable

Shortages are going away

COVID-19 Control Measures: Healthcare facilities should no longer use [crisis capacity strategies for N95s/respirators](#) as the supply and availability of NIOSH-approved respirators has increased and COVID-19 cases rates are reduced.

- Healthcare facilities should stop using non-NIOSH-approved respirators and consider using any that have been stored for *source control* where additional respiratory protection is not necessary.
- Respirators that were previously used and decontaminated should not be stored.
- In addition CDC guidance updates, FDA has posted a letter about [transition from use of non-NIOSH-approved and decontaminated disposable respirators](#)

CtDPH update June



Get your PPE for the fall!!!

Current COVID-19 testing and how does this relate to vaccination

ALL SYMPTOMATIC PATIENTS should be tested regardless of vaccination status

For asymptomatic patients different healthcare systems doing different things

Some have stopped pre-procedure testing we are continuing

Slow movement to not test asymptomatic vaccinated individuals routinely

very hard to know who is and is not vaccinated

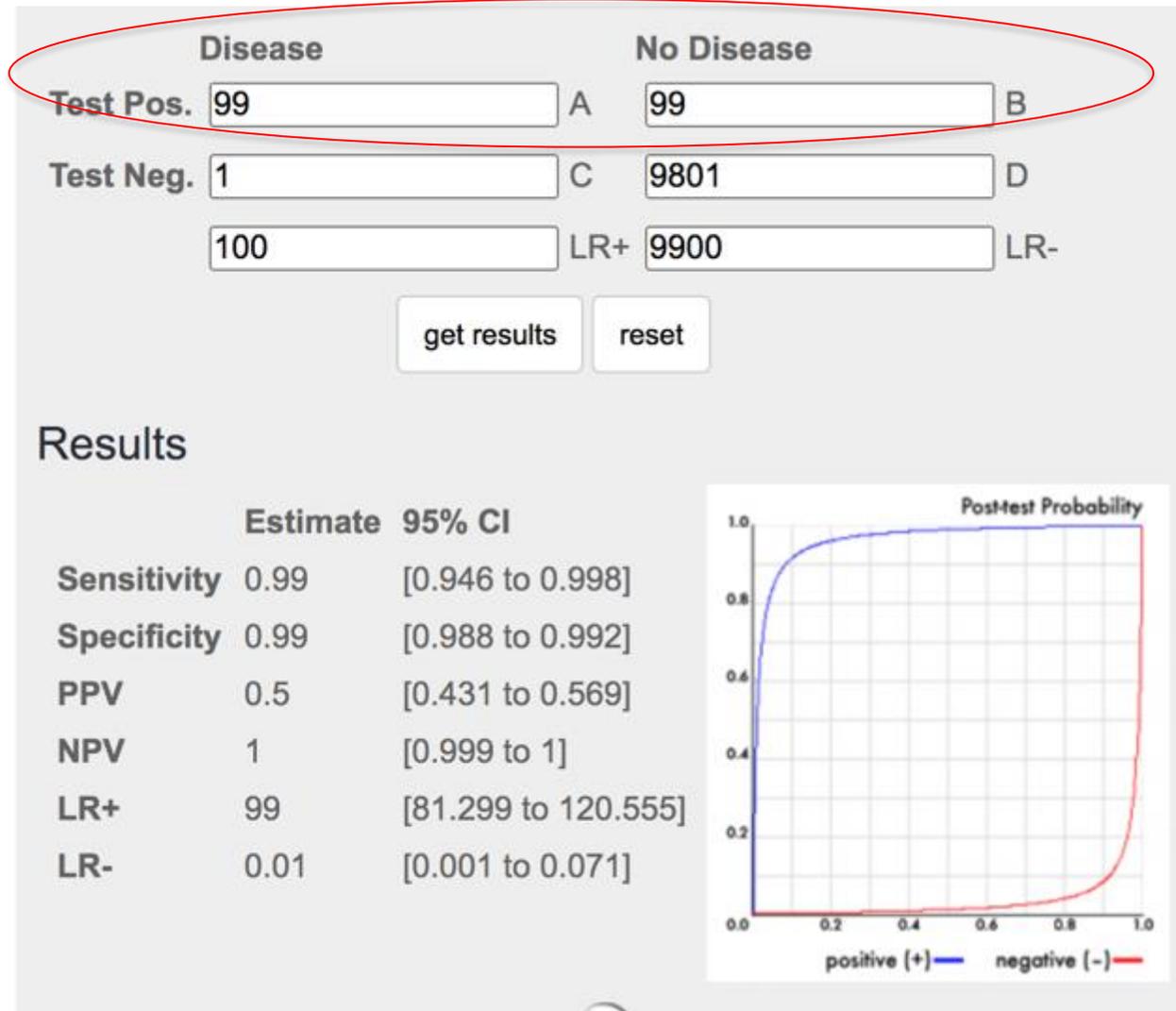


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Still no endorsement of antibody testing as a marker of protection

Interpreting a COVID-19 test result in times of low prevalence



**With 1% disease prevalence (1/100),
And a test that is 99% sensitive and specific**

**A positive result has a 50% chance of being a
True positive**

Things we need to plan for # 1 (This is already happening)



Children with psychiatric needs are overwhelming hospital emergency departments in CT

<https://ctmirror.org/2021/05/25/children-with-psychiatric-needs-are-overwhelming-hospital-emergency-departments-in-ct/>

Fixing the Children's Mental Health Crisis: It Takes a Community

The COVID-19 pandemic has made an already bad situation worse, leaving experts racing toward solutions.

By [Elaine K. Howley](#) | May 11, 2021, at 2:46 p.m.

<https://www.usnews.com/news/national-news/articles/2021-05-11/fixing-the-childrens-mental-health-crisis-it-takes-a-community>

Children's ED Behavioral Dashboard (<16y/o)

FYTD

	2020	2021	October	November	December	January	February	March	April	May
Visits	1,189	1,282	157	141	136	136	139	225	170	178
Admits	409	542	71	62	65	64	67	80	68	65
Boarders	169	470	61	41	40	58	66	85	64	55
Boarder Hrs	4,282	23,786	2,814	1,322	998	2,486	3,083	5,520	4,638	2,926

Things we need to plan for #2 (This may not happen)

Detections

RSV Numerator Data for the US

125

Number of Positive Samples^{a,D}

2021	RSV	Flu A	Flu B	COVID 19 ^f	Paraflu ^{1,2,3,4}	Adeno	HMPV	Rhino	CoV	Entero	Parecho
5/16-5/22	1	0	0	130	0	2	0	19	2	0	0
5/9-5/15	1	0	0	176	1	0	0	7	2	0	0
5/2-5/8	1	0	0	288	0	5	0	7	1	0	0

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Things we need to plan for #3 (This better not happen)

China confirms world's first human case of H10N3 bird flu but says it's highly unlikely to spread widely among people

UPDATED ON: JUNE 2, 2021 / 8:52 AM / AFP



<https://www.cbsnews.com/news/h10n3-bird-flu-china-first-human-case/>

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Take home messages

- We may finally be headed toward the back end of this mess due largely to vaccination
- A little bit of COVID-19 in the fall and winter mixed with RSV and influenza can cause problems with respect to sick visits and PPE
 - Plan now
- Long lasting effects of the pandemic on children that will be with us awhile

Acknowledgements

- **The Pediatric Infection Prevention Team**

- Richard Martinello MD Director, Infection Prevention
YNHHS
- Kathy Krechevsky

Pediatric COVID-19 Ambulatory Subcommittee

Charles Esposito et al

(Many, many participating members)

Questions??

Contact information

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YNHCH provides an every other week Question and Answer on pediatric COVID-19 for providers

If interested please let me know