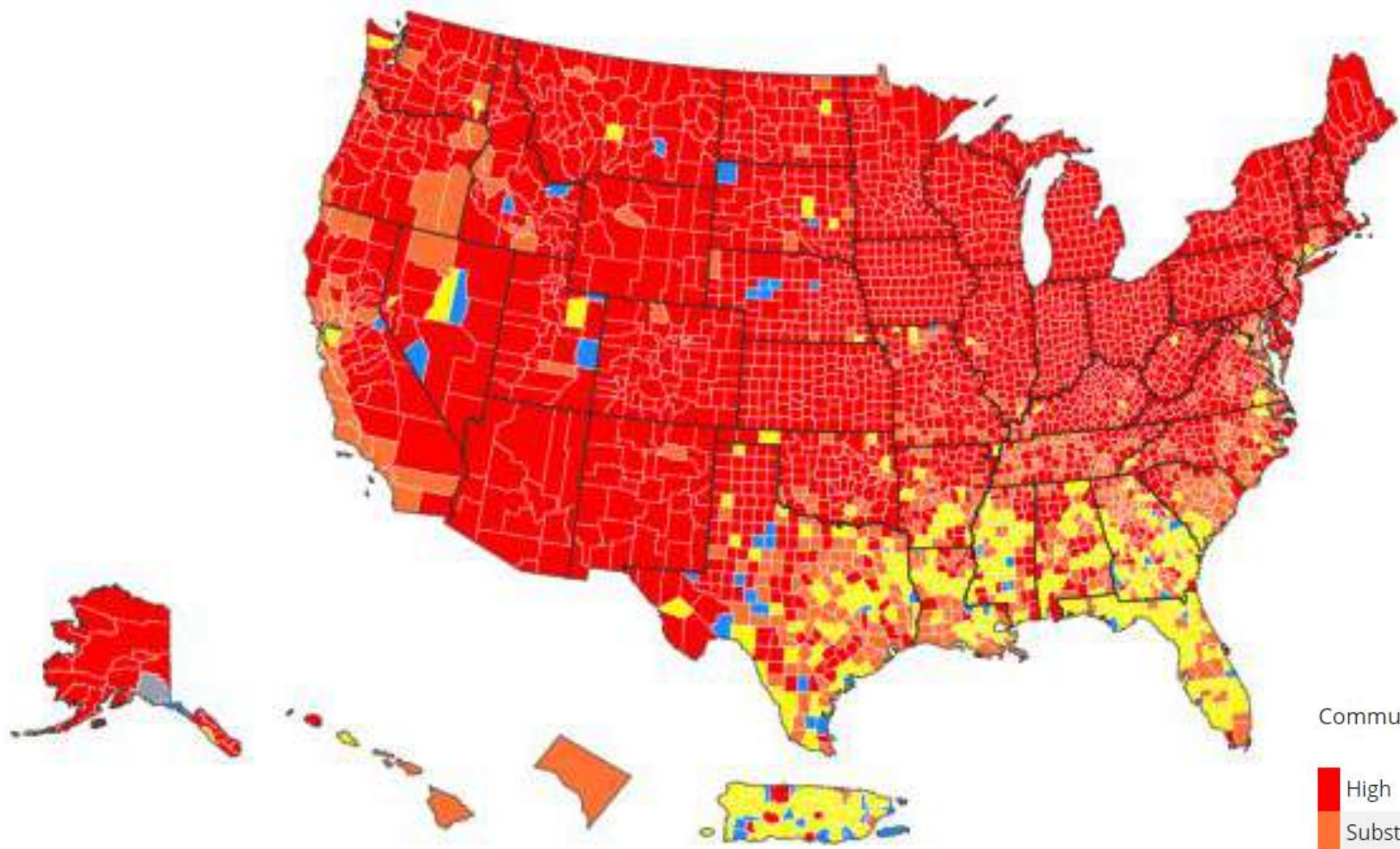


The Impact of COVID-19 on Children

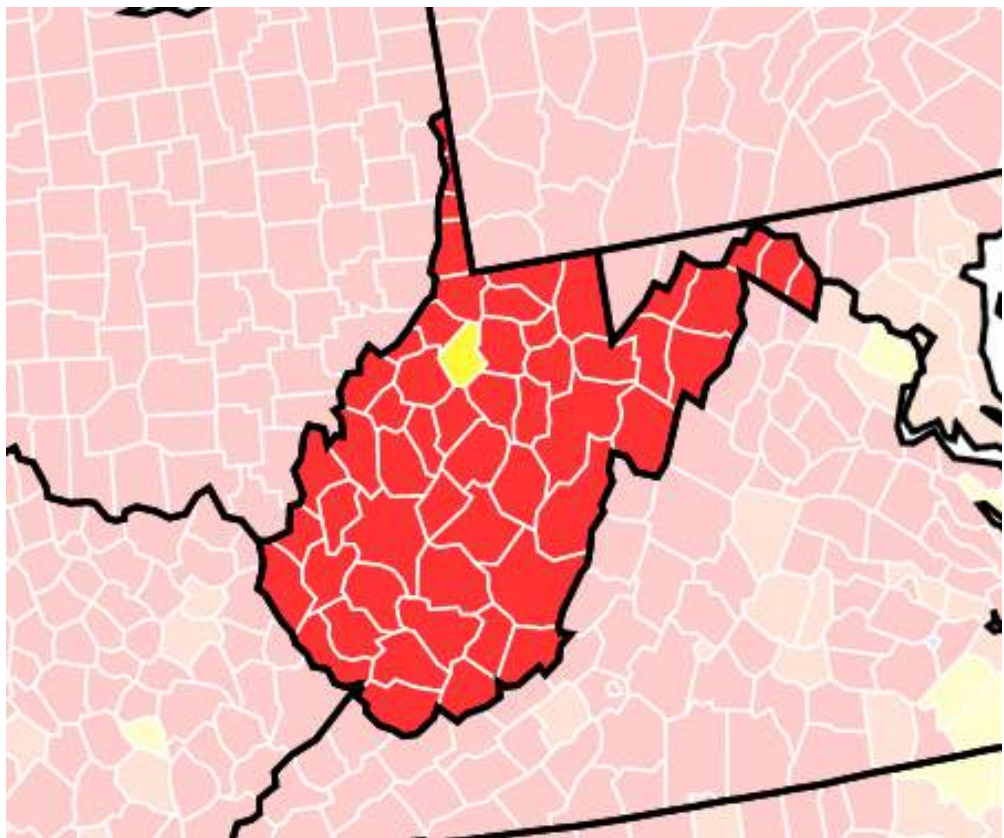
Mariana Lanata MD, FAAP





Community Transmission in US by County

	Total	Percent	% Change
High	2178	67.6%	-3.26%
Substantial	532	16.51%	-0.4%
Moderate	416	12.91%	3.32%
Low	93	2.89%	0.34%



West Virginia

[State Health Department](#)

7-day Metrics

Community Transmission ● High

[How is community transmission calculated?](#)

November 14, 2021

Cases	5,598
% Positivity	8-9.9%
Deaths	92
% Eligible Population Fully Vaccinated	47.3%
New Hospital Admissions (7-Day Moving Avg)	53

SO SO
HAPPY™



Vaccines
Save Lives.

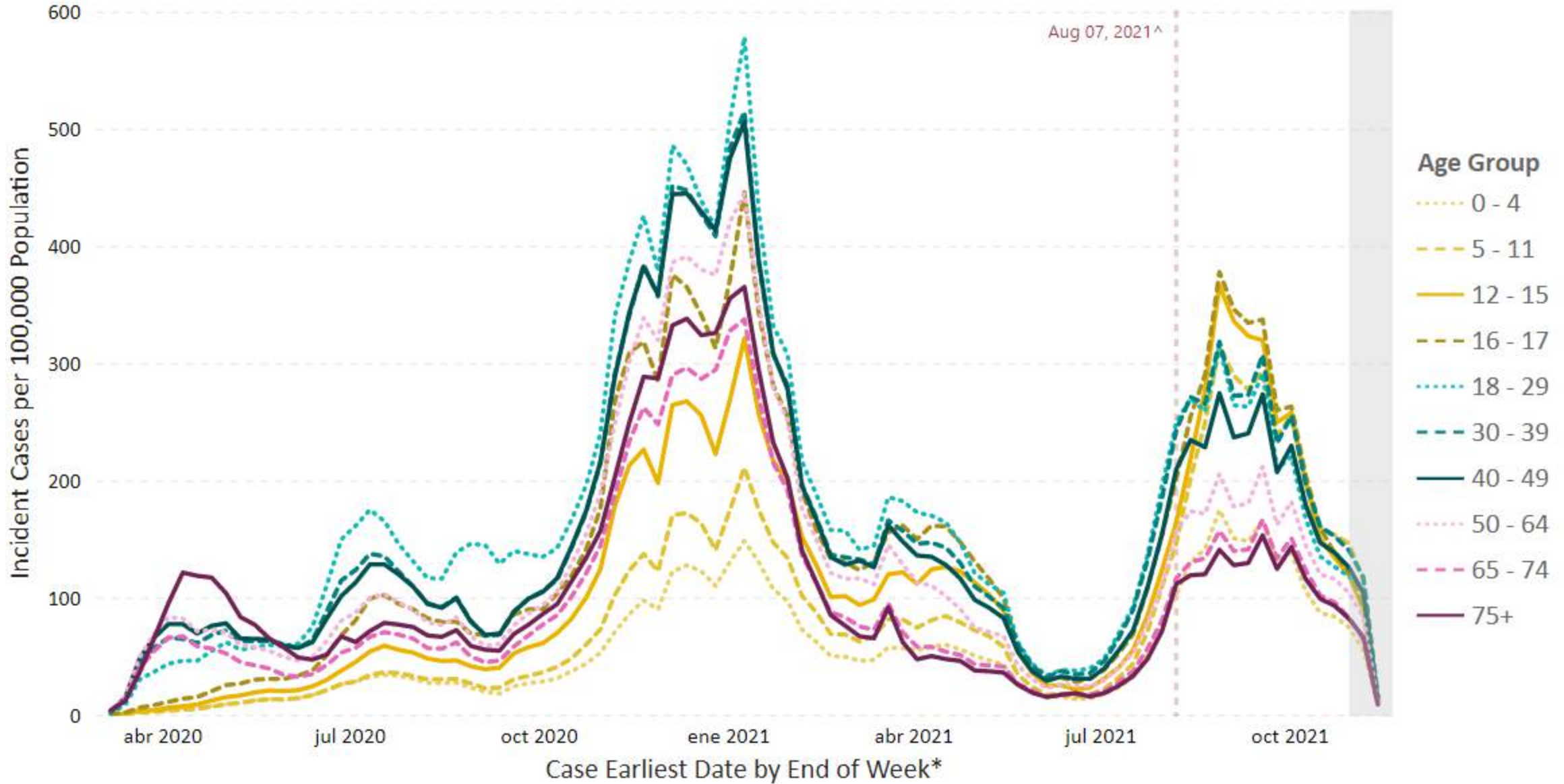




Looking back at the Pandemic so far...

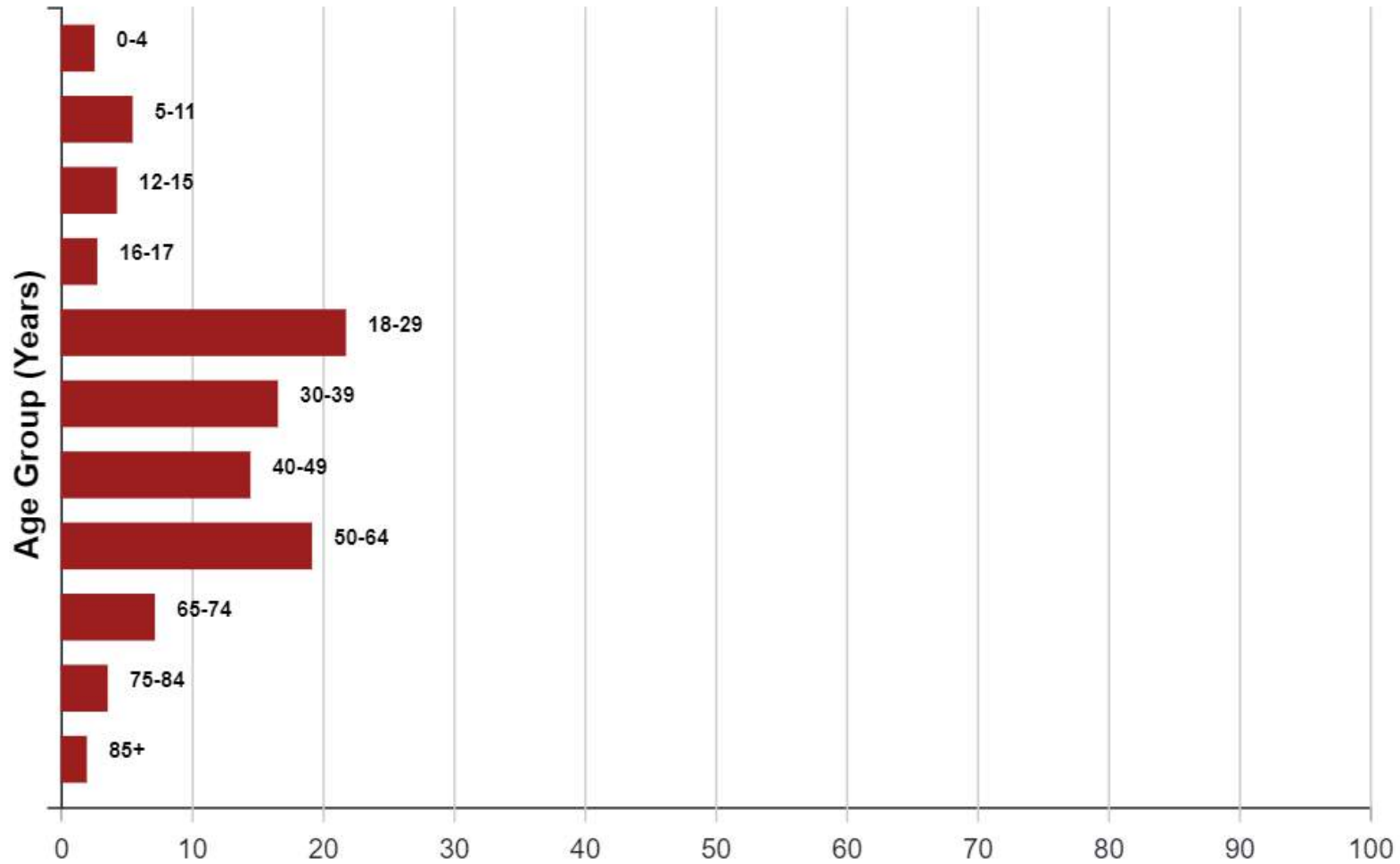
COVID-19 Weekly Cases per 100,000 Population by Age Group, United States

March 01, 2020 - November 13, 2021*



Cases by Age Group:

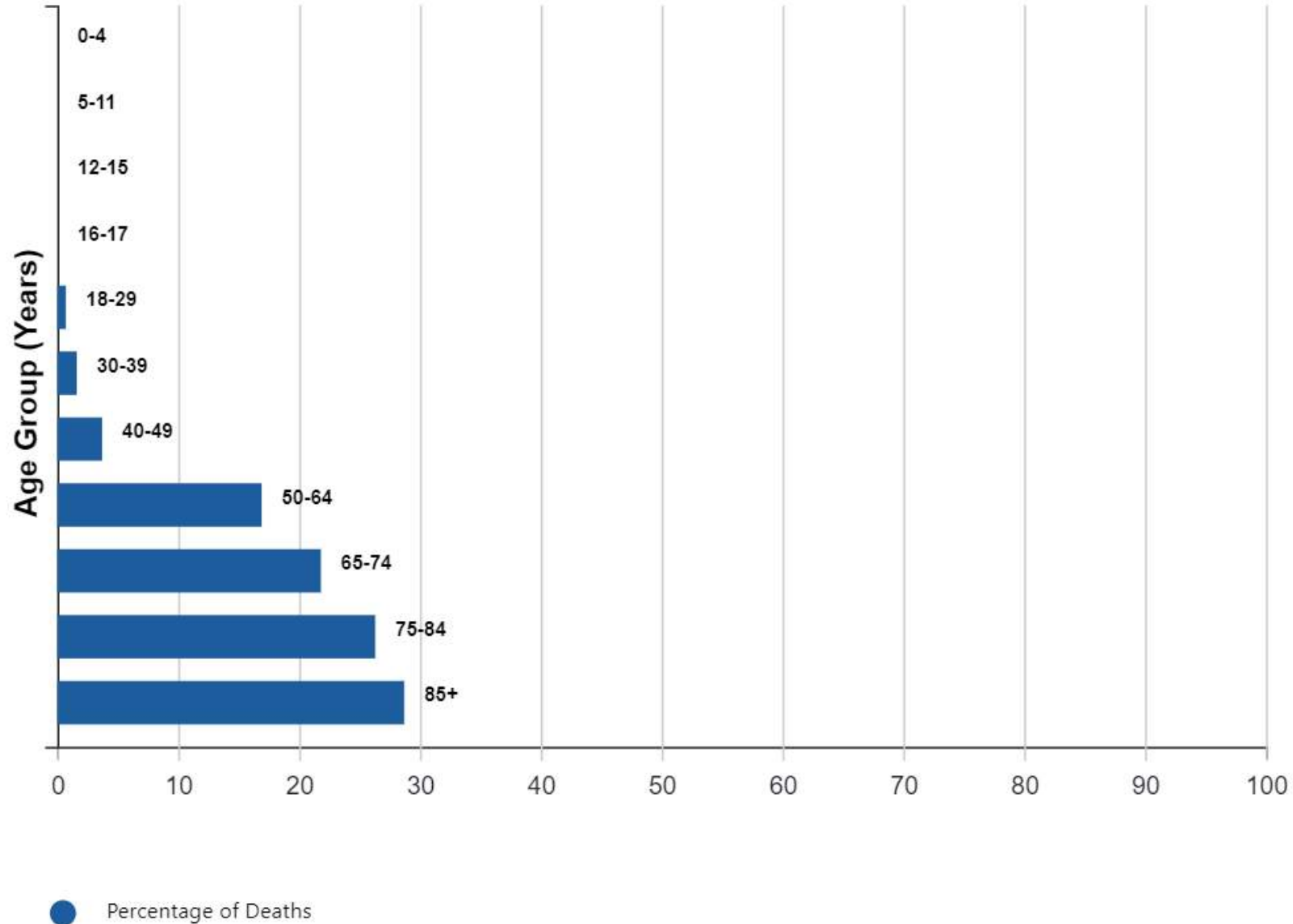
Data from 38,161,727 cases. Age group was available for 37,768,151 (98%) of cases.



● Percentage of Cases

Deaths by Age Group:

Data from 633,387 deaths. Age group was available for 633,296 (99%) of deaths.



Risk for COVID-19 Infection, Hospitalization and Death by Age Group

Rate ratios compared to 18- to 29-year-olds¹

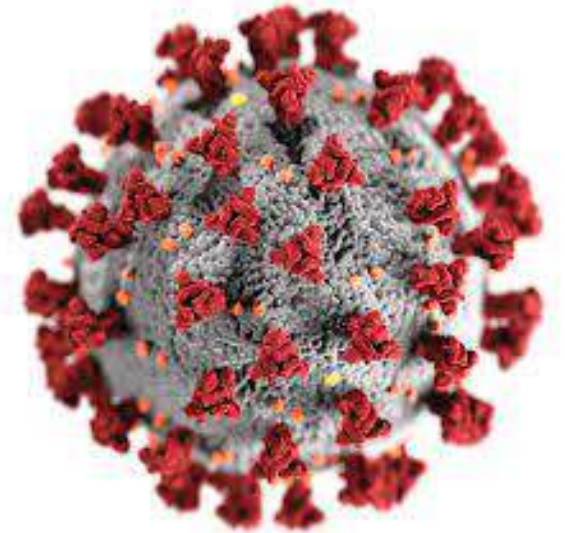
	0-4 years old	5-17 years old	18-29 years old	30-39 years old	40-49 years old	50-64 years old	65-74 years old	75-84 years old	85+ years old
Cases ²	<1x	1x	Reference group	1x	1x	1x	1x	1x	1x
Hospitalization ³	<1x	<1x	Reference group	2x	2x	4x	6x	9x	15x
Death ⁴	<1x	<1x	Reference group	4x	10x	35x	95x	230x	600x



**Why is COVID
important in
pediatrics?**

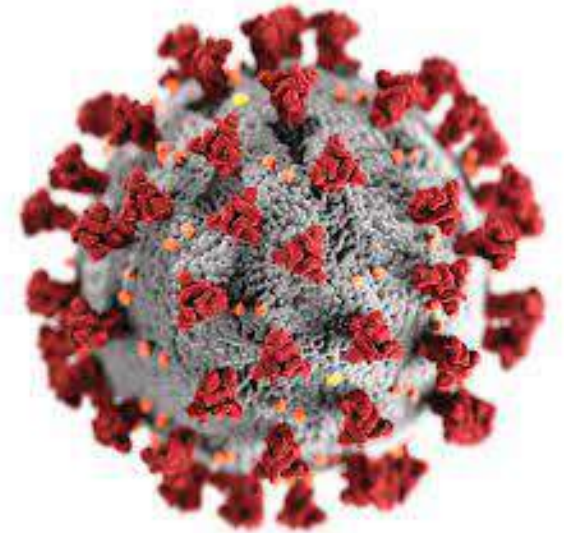
The Impact of COVID-19 on Children

- COVID-19 cases
- COVID-19 related hospitalizations
- COVID-19 associated mortality
- MIS-C
- Long Haul COVID



The Impact of COVID-19 on Children

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Epidemiology of COVID-19 in children in the US

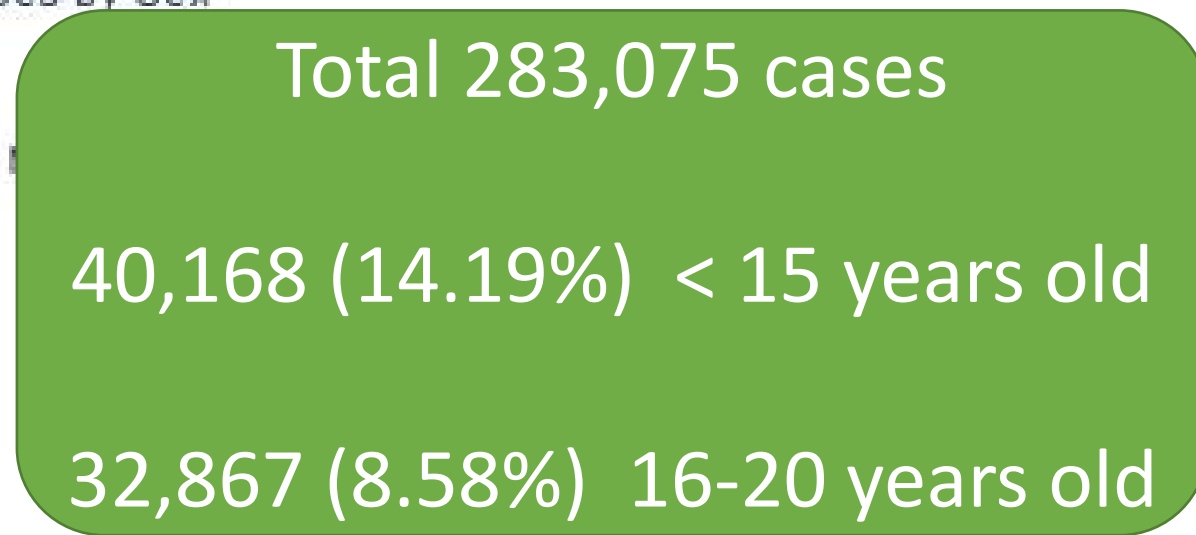
- >6.6 million children tested + for SARS-CoV2 in the US
 - About 16.8% of total cumulative cases
 - 122,229 child COVID-19 cases reported in the past week! (11/4-11/11)

Cases per age group in West Virginia

Demographics of Cases

Age Group	Percentage
0-4	2.65%
5-11	6.37%
12-15	5.17%
16-20	8.58%
21-25	8.25%
26-30	7.57%
31-40	14.07%
41-50	14.47%
51-60	13.16%
61-70	10.19%
71+	9.52%

Cases by Sex

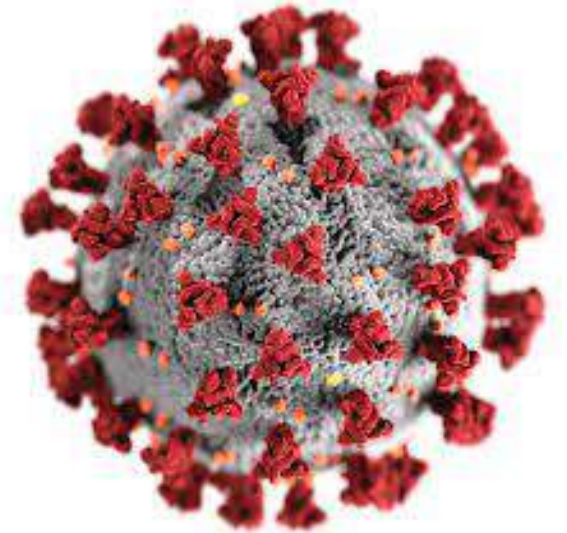


Cases by Race



The Impact of COVID-19 on Children

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COVID-19 related hospitalizations

- Children account for 1.7-4.3% of total COVID-19 hospitalizations
 - 24 states + NYC reported
 - Among children with COVID-19 only 0.1-2% result in hospitalization
 - Of those, 32% had no underlying conditions



Children with SARS-CoV-2 in the National COVID Cohort Collaborative (N3C)

- 91,865 pediatric SARS-CoV2 infections
- 5,213 (6%) were hospitalized
- 685 (13%) met criteria for severe disease
 - Mechanical ventilation (7%)
 - Vasopressor/inotropic support (7%)
 - ECMO (0.6%)
 - Death/discharge to hospice (1/1%)
- Male gender, African American race, older age and several pediatric complex chronic conditions were associated to higher clinical severity ($p < 0.05$)



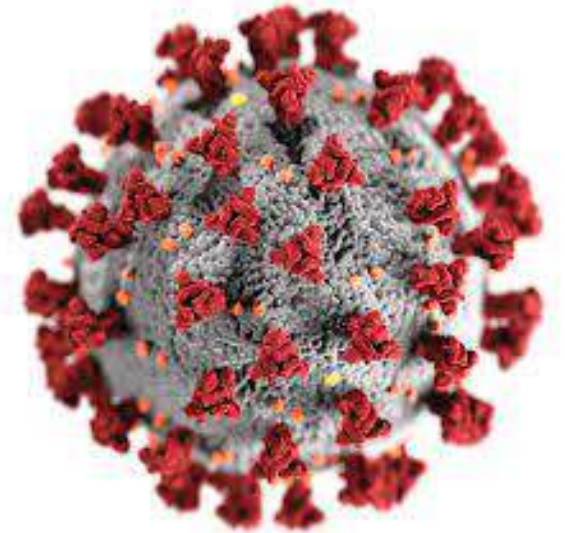
COVID-19 Hospitalizations in Children

- Children requiring hospitalizations were more likely to have:
 - Cardiac or congenital heart disease
 - Chronic lung disease
 - Genetic syndromes (Trisomy 21)
 - Prematurity (<37 WGA)
 - Immunocompromised condition
 - Obesity (BMI>95th percentile)
 - Young age or older adolescence
- Increased association of severe COVID-19 was observed among patients with 1 or more chronic conditions* vs those with none (adjusted odds ratio 3.27, CI 2.44-4.37)

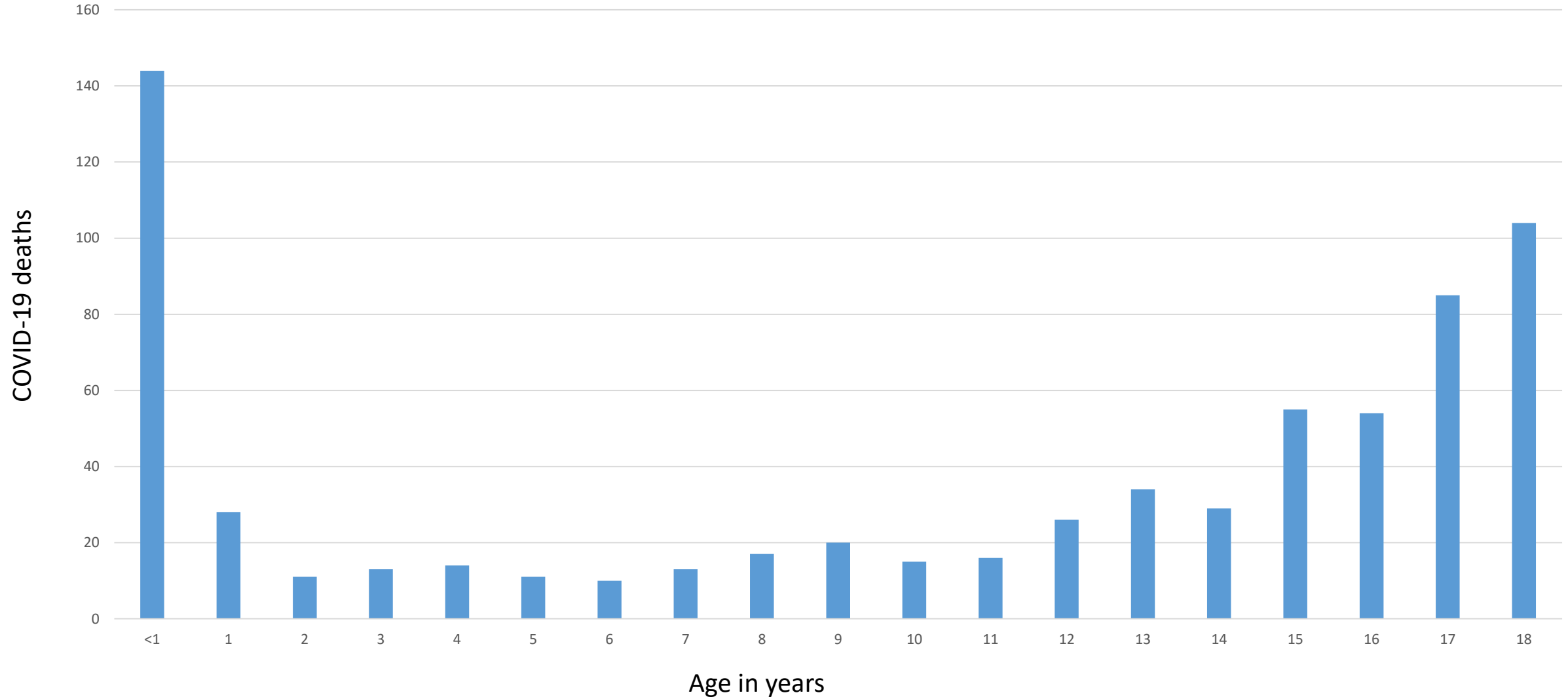
* Chronic conditions defined by AHRQ Healthcare Cost and Utilization Project, Chronic Condition Indicators for ICD-10-CM.

The Impact of COVID-19 on Children

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COVID-19 Deaths by Age Group, NCHS USA January 1st 2020 – Nov 10th 2021



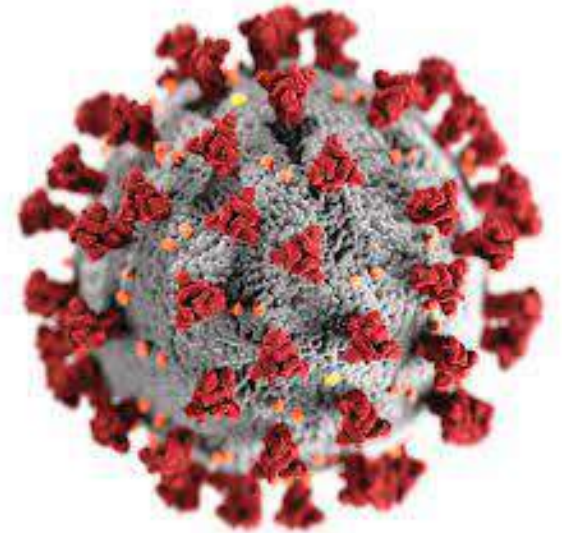


COVID-19 Deaths by Age Group, NCHS USA January 1st 2020 – Nov 10th 2021

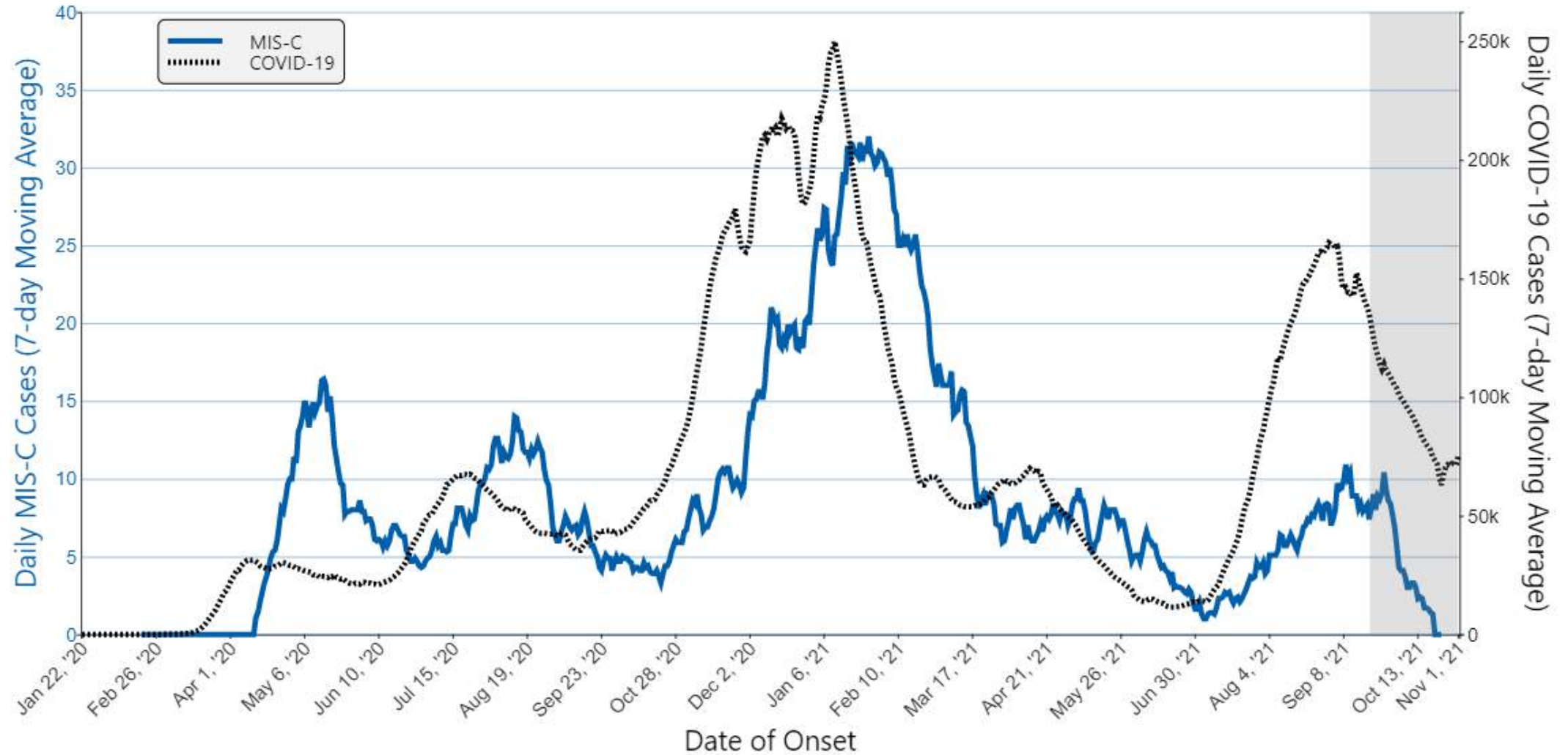
- 699 deaths <18 years of age
- 387 were 12 years old or older and already would of qualified for a vaccine
- 102 are between 5-11 years of age.

The Impact of COVID-19 on Children

- COVID-19 cases
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Daily MIS-C Cases and COVID-19 Cases Reported to CDC (7-Day Moving Average)



TOTAL MIS-C PATIENTS MEETING CASE DEFINITION*

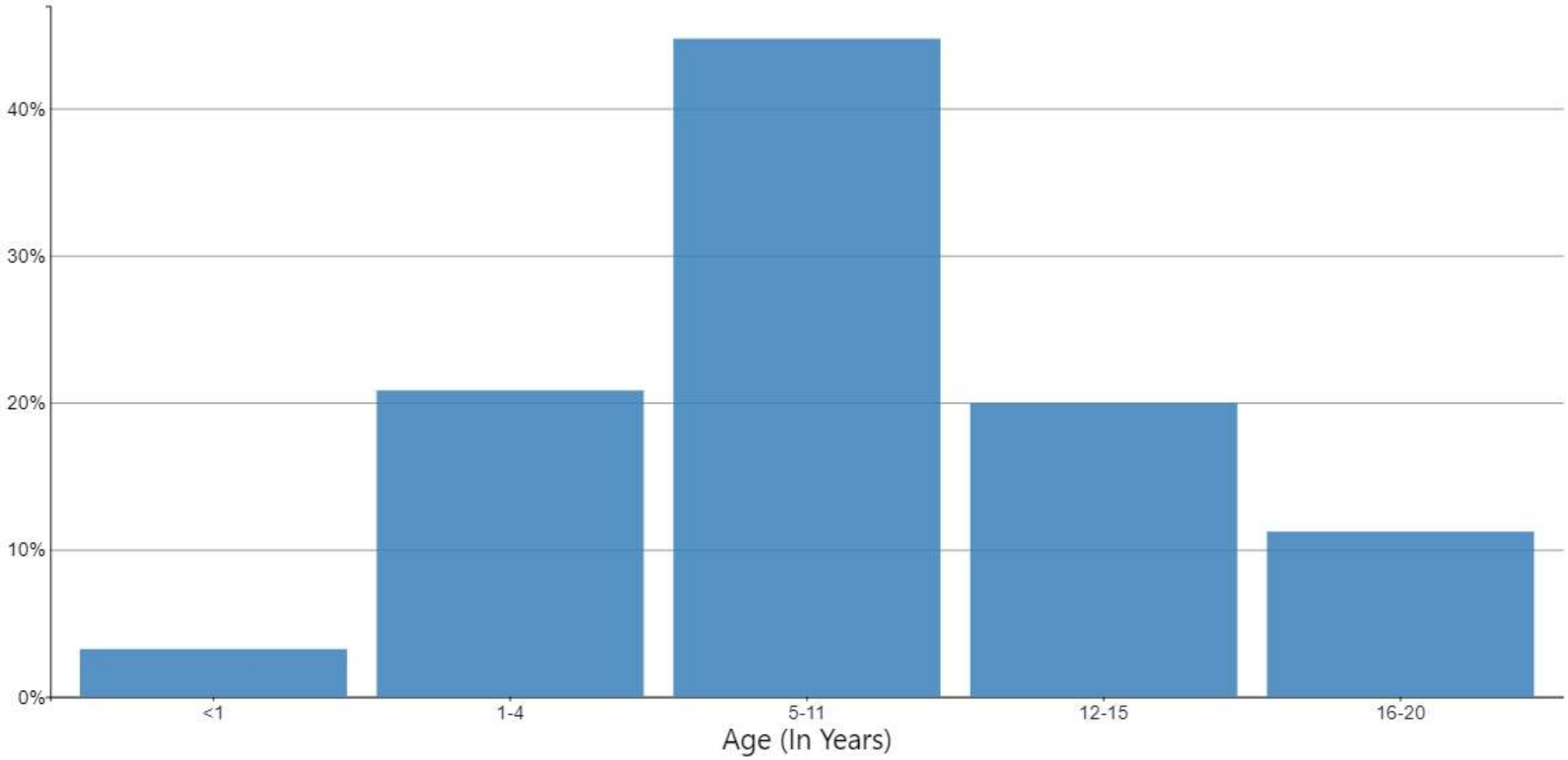
5,526

TOTAL MIS-C DEATHS MEETING CASE DEFINITION

48



MIS-C Patients By Age Group



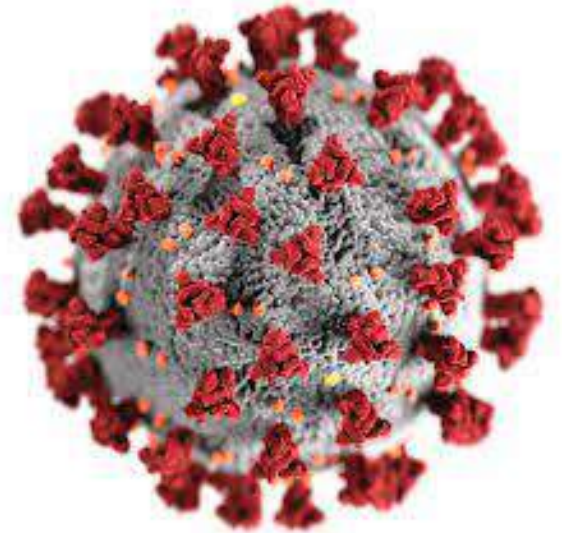


Children with SARS-CoV-2 in the National COVID Cohort Collaborative (N3C)

- 498 cases of MIS-C
- 153 (31%) met criteria for severe disease
- Obesity was the most common comorbidity present
- MIS-C cases demonstrated a more inflammatory laboratory profile and more severe clinical phenotype compared to COVID-19.
 - Higher rates of invasive ventilation (12%)
 - Need for vasoactive-inotropic support (31%)

The Impact of COVID-19 on Children

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Long Haul Covid

- Danilo Buonsenso, at the Gemelli University Hospital in Rome, led the first attempt to quantify long COVID in children.
- Interviewed 129 children aged 6–16 years, who had been diagnosed with COVID-19 between March and November 2020.
- More than one-third had one or two lingering symptoms four months or more after infection, and a further one-quarter had three or more symptoms.
- Insomnia, fatigue, muscle pain and persistent cold-like complaints were common — a pattern similar to that seen in adults with long COVID. Even children who'd had mild initial symptoms, or were asymptomatic, were not spared these long-lasting effects.



COVID-19 Outcomes: Long haul symptoms

- Meta-analysis of 15 publications on long-term COVID symptoms (14-100 days post viral infection) showed the most common symptoms to be:
 - Fatigue 58%
 - Headache 44%
 - Attention disorder 27%
 - Hair loss 25%
 - Dyspnea 24%



COVID-19 Outcomes: Long haul symptoms

- In a cohort analysis of 1400 non-hospitalized patients in California.
 - 27% had symptoms persisting >60 days
 - 32% of those with persistent symptoms were asymptomatic at the onset of disease
- In a Swiss cohort of 109 seropositive children (6 months after testing)
Most frequently reported symptoms for > 12 weeks were:
 - Tiredness 3%
 - Difficulty concentrating 2%
 - Increased need for sleep 2%



**Why is COVID
important in
pediatrics?**

Summary

- >6.6 million children infected by the virus
- 699 deaths
- Countless days hospitalized, off school, off works, multiple families affected...



Numbers within the new vaccine age group expansion (5-11 year of age)

1.9 million cases

8,300 hospitalizations

2,316 MIS-C cases

102 deaths

COVID-19 is now a
VACCINE
PREVENTABLE
DISEASE!!!



Thank you!
