



SCHOOL'S BACK IN SESSION...NOW WHAT?

A Situation Update & Practical Guidance For Parents

Allison Ross Eckard, MD
Division Director, Pediatric Infectious Diseases
September 22, 2020



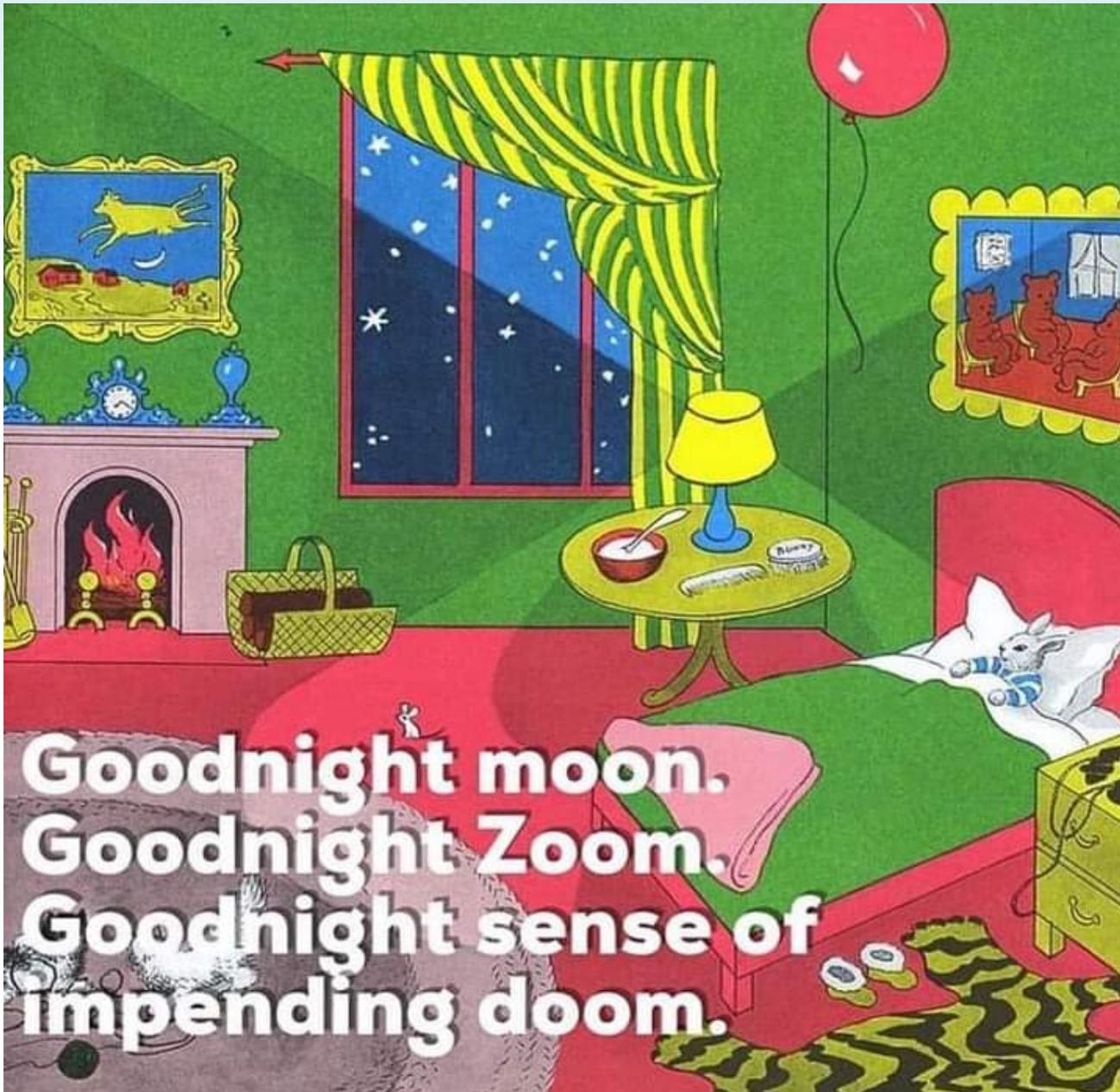
musc
Children's Health
Medical University of South Carolina

Changing What's Possible

Objectives & Disclaimers

- ▶ Our primary objective is to help parents better understand the current COVID-19 situation as it relates to:
 - ▶ South Carolina
 - ▶ Children in general and YOUR child
 - ▶ Returning to in-person school
 - ▶ Masks and kids
 - ▶ Quarantines, isolation & testing in the school setting
- ▶ Content derives from scientific literature/local data, local/national guidelines, & our expert medical opinions (as of 9/22/2020)





**Goodnight moon.
Goodnight Zoom.
Goodnight sense of
impending doom.**





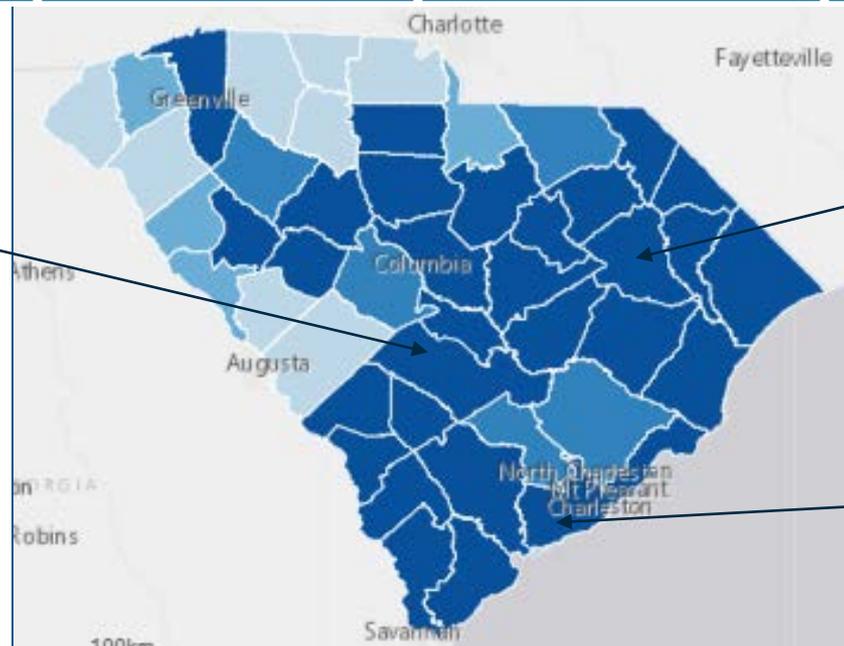
Where We Were...

A Brief Recap of the Last
Few Months

A Brief Recap of the Last Few Months

- ❖ South Carolina has been hit hard by COVID-19, especially when you consider case rate and death rate per 100k population. Much of South Carolina is rural and not necessarily equipped to handle this type of public health/medical crisis.

COVID-19 in South Carolina As of 11:59 PM on 9/13/2020			
Number of Tests All	Cases All	Hospitalizations All	Deaths All
1,155,593	132,680	8,448	3,077



Orangeburg
 Rate (per 100k): 3,465.04
 Cases--Confirmed positives: 2,986,
 Probable: 16
 Deaths--Confirmed: 118, Probable: 2

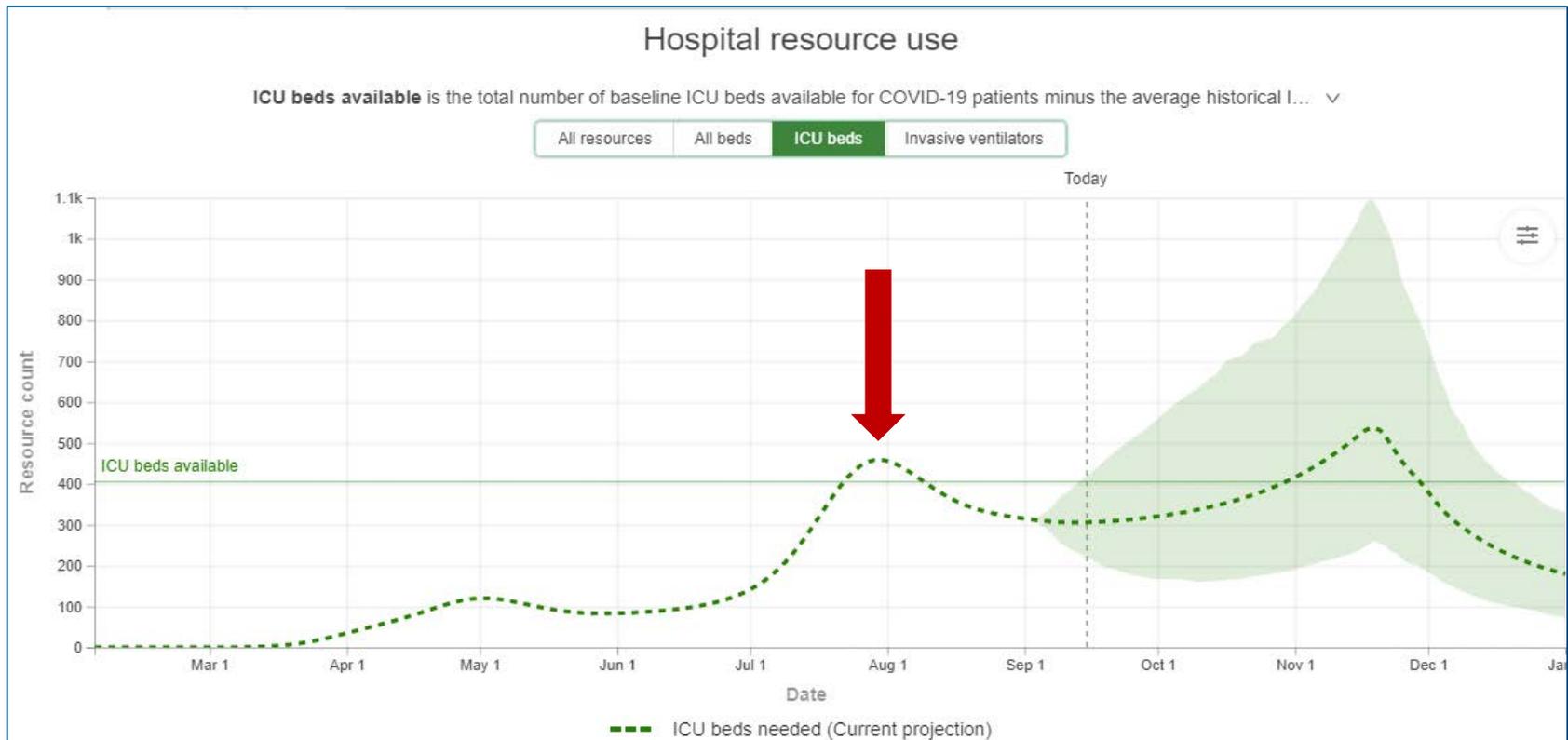
Florence
 Rate (per 100k): 3,340.73
 Cases--Confirmed positives: 4,620,
 Probable: 52
 Deaths--Confirmed: 172, Probable: 1

Charleston
 Rate (per 100k): 3,640.2
 Cases--Confirmed positives: 14,976,
 Probable: 215
 Deaths--Confirmed: 236, Probable: 18



A Brief Recap of the Last Few Months

- ❖ Hospitals were at or above capacity for many weeks at the height of the surge and on the verge of resorting to crisis standards. The situation for Charleston area hospitals has improved, but many hospitals in SC are still recovering.



A Brief Recap of the Last Few Months

- ❖ We only needed to take a look at Orangeburg to know this is NOT a normal situation.



Source: [Post and Courier](#), article dated 7/29/2020

Orangeburg Regional Medical Center, Orangeburg, SC



Source: [The Island Packet](#), article dated 7/19/2020

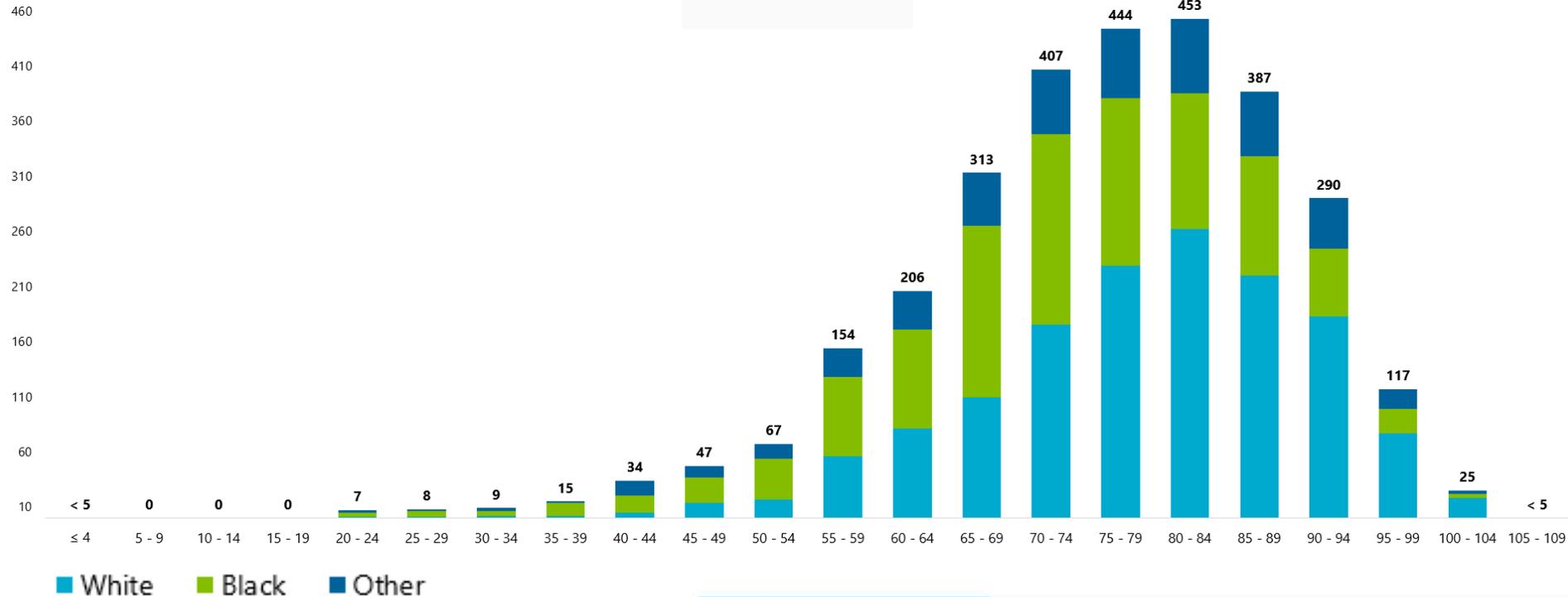


A Brief Recap of the Last Few Months

- ❖ While statistically older people & people w/ underlying conditions die more often from COVID-19, many “underlying conditions” are very common, and people often live normal lives for many decades with many of these chronic conditions.

Age of COVID-19 Reported Deaths, by Race (n=2,988)

As of 11:59 PM on 9/10/2020



Source: SC DHEC (9/15/2020)



Changing What's Possible

MUSCkids.org



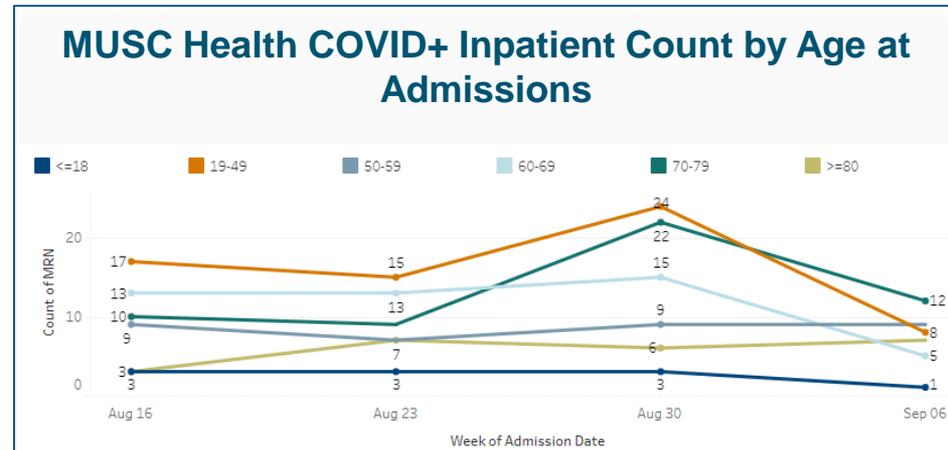
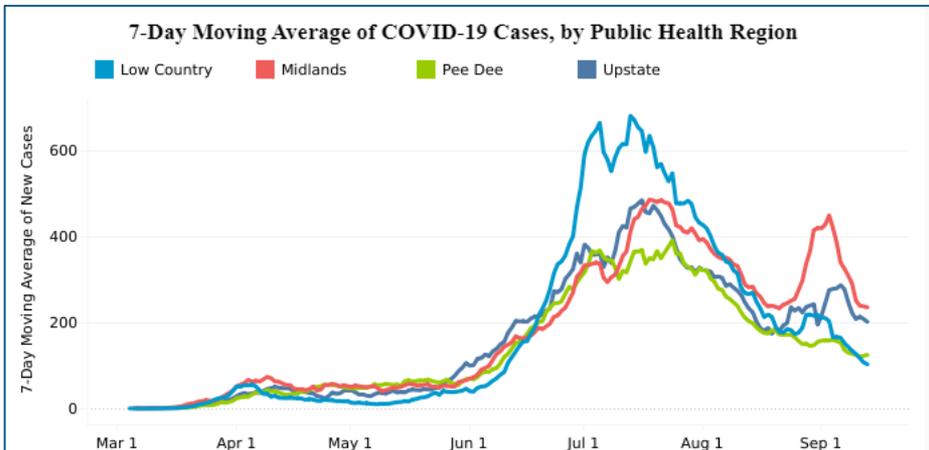
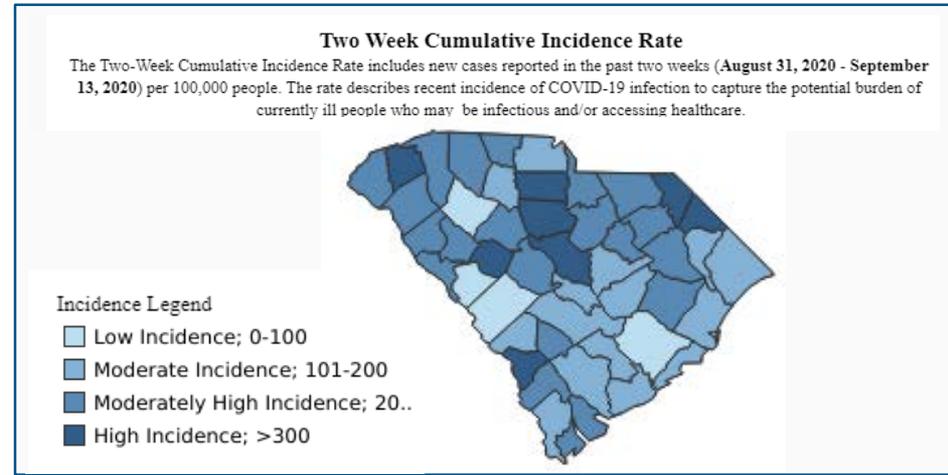
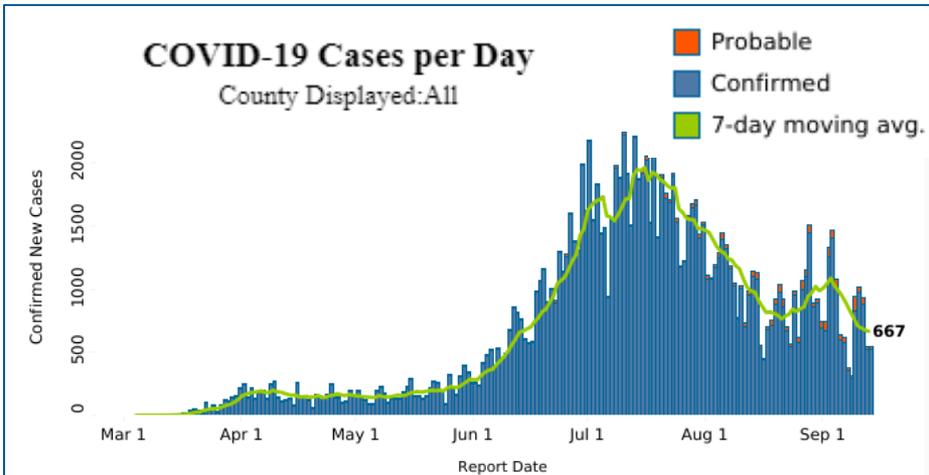


Where We Are...

A Brief Situation Report As School Opens

Our Current Situation

❖ Indicators have improved significantly, but we need to stay vigilant to continue trends.

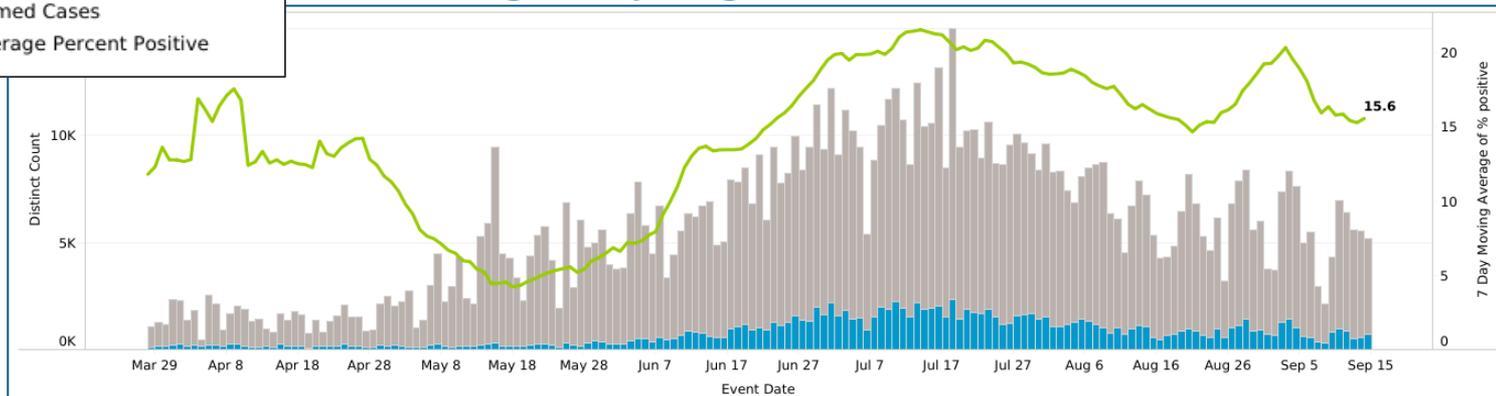


Our Current Situation

❖ Some indicators are still concerning, but may vary by region.

■ Number of individuals tested with a Viral Test
■ Number of Confirmed Cases
■ 7 Day Moving Average Percent Positive

Moving 7 Day Avg % Positive of COVID-19 Tests



County	Percent Positive	
Abbeville	High	28.2%
Aiken	High	10.3%
Allendale	High	26.4%
Anderson	High	16.6%
Bamberg	High	26.5%
Barnwell	High	13.3%
Beaufort	High	12.6%
Berkeley	High	11.2%
Calhoun	Medium	8.6%
Charleston	Medium	8.6%
Cherokee	High	58.3%
Chester	High	27.5%
Chesterfield	High	11.8%
Clarendon	High	13.7%
Colleton	High	14.1%

Darlington	High	17.4%
Dillon	High	15.1%
Dorchester	High	21.1%
Edgefield	High	15.5%
Fairfield	High	12.0%
Florence	High	15.1%
Georgetown	High	21.6%
Greenville	High	20.2%
Greenwood	Medium	9.3%
Hampton	High	15.8%
Horry	High	11.8%
Jasper	High	15.0%
Kershaw	High	15.2%
Lancaster	High	11.8%
Laurens	High	20.9%

Lee	High	15.8%
Lexington	High	11.8%
Marion	High	15.0%
Marlboro	High	15.2%
McCormick	High	11.8%
Newberry	High	20.9%
Oconee	High	15.9%
Orangeburg	High	13.3%
Pickens	High	14.6%
Richland	High	19.6%
Saluda	High	43.9%
Spartanburg	High	24.4%
Sumter	High	18.5%
Union	High	40.2%
Williamsburg	High	11.7%
York	High	15.4%



Our Current Situation

❖ Some indicators are still concerning, but may vary by region.

MUSC Health Status Summary by Area

Key Metric	Charleston	Florence	Lancaster
Sustained reduction in growth of reported infections for Tri-county region.	GREEN: 0.4%	GREEN: 0.6%	YELLOW: 1.00%
Downward trajectory of documented cases within a 14-day period. (Qualify for small numbers)	YELLOW: There is a positive slope of the trend line for the past week, but not the week prior.	YELLOW: negative 2-week slope but positive slope last week	GREEN: Decreases in trajectory of new cases over past 14-days
Number of reported cases per week is manageable with regard to medical care and capacity for effective contact tracing	RED: 678 cases reported last 7 days	RED: 334 cases, or 12.5 new cases per 10,000 population last week	RED: 180 cases reported week of 8/31-9/06
Diagnostic testing availability for all people with COVID-19 symptoms	GREEN	GREEN	GREEN
Return of diagnostic test results is done in a timely manner and that allows for rapid contact tracing	GREEN	GREEN	GREEN

Key Metric	Charleston	Florence	Lancaster
Area hospitals have ability to treat all patients requiring hospitalization without resorting to crisis standards	GREEN	YELLOW	GREEN
Social distancing recommendations at a population level are being followed. (N.B. Baseline is set from pre-COVID timeframe)	YELLOW	RED	RED
Number of super spreader events or cluster outbreaks of significant magnitude (GT 10 cases in discrete social group or setting) in past 30-days.	RED (Multiple Nursing Home Outbreaks Reported by DHEC)	RED – ongoing outbreaks in 3 Nursing Homes and 1 Residential Care Facility	YELLOW

Acute Hospital Bed Occupancy Report

As of 11:59 PM on 9/20/2020

764 COVID-19 Pts. Hospitalized <small>10.01% of inpatients are COVID</small>	199 COVID-19 Patients in ICU <small>26.05% of COVIDs are in ICU</small>	112 COVID-19 Patients Ventilated <small>14.66% of COVIDs are ventilated</small>
---	--	--





What We Know...

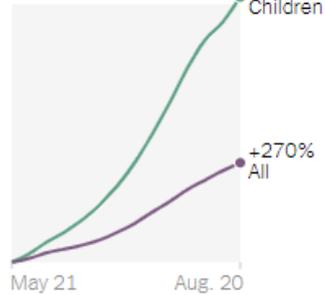
COVID-19 in Children

COVID-19 in Children

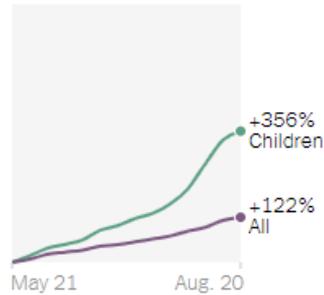
❖ YES, children get COVID-19 and numbers of children who have been infected continue to rise.

Cumulative change since May 21

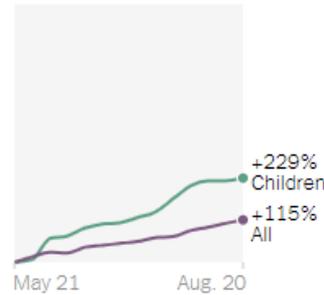
Cases



Hospitalizations

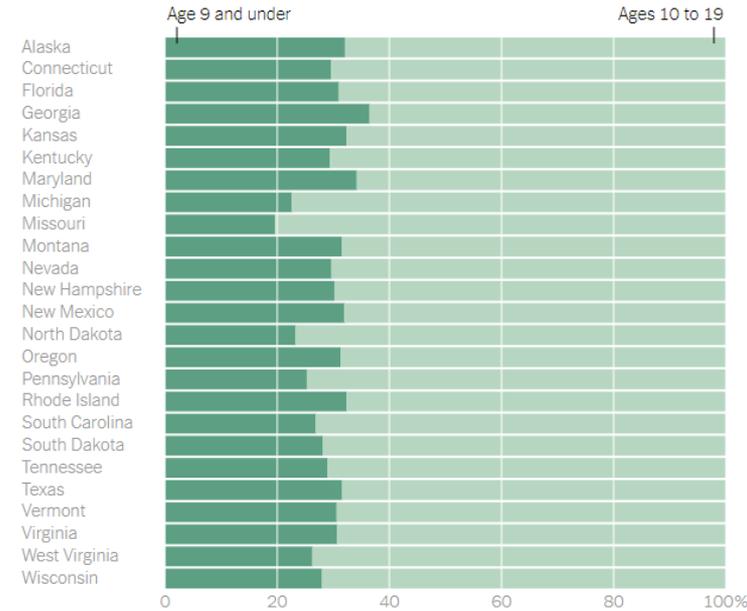


Deaths



Source: The American Academy of Pediatrics

Young children make up fewer of the reported cases than adolescents



* Note: Data represent cumulative counts since states began reporting; All data reported by state/local health departments are preliminary and subject to change. See detail in Appendix: Data from 49 states, NYC, DC, PR, and GU; Analysis by American Academy of Pediatrics and Children's Hospital Association

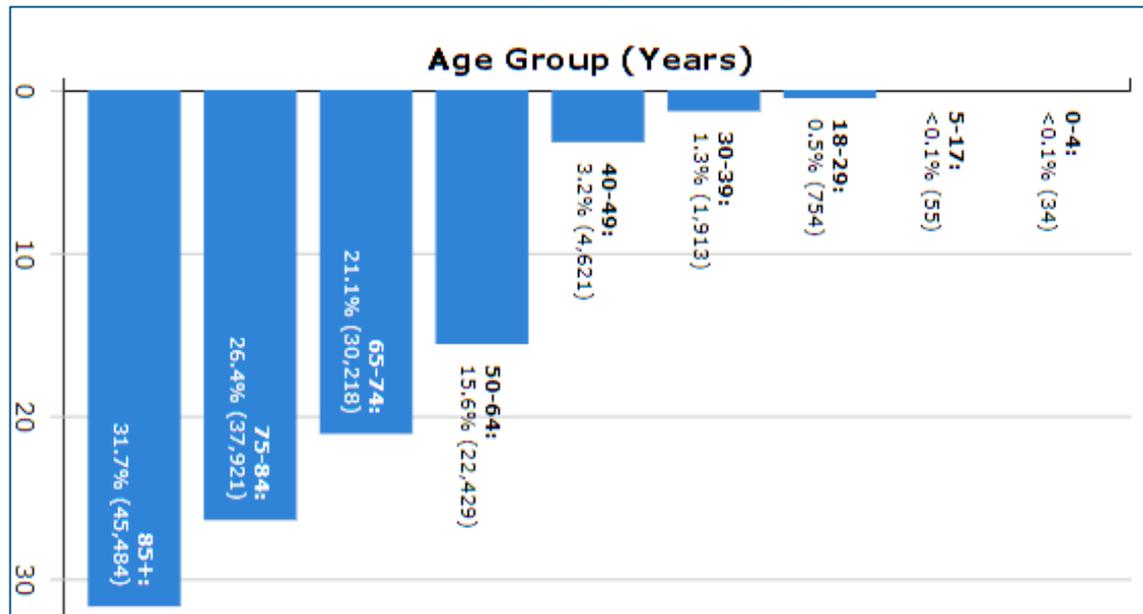


COVID-19 in Children

❖ Disease severity in children with acute COVID-19 is generally less than in adults but serious disease can still occur.

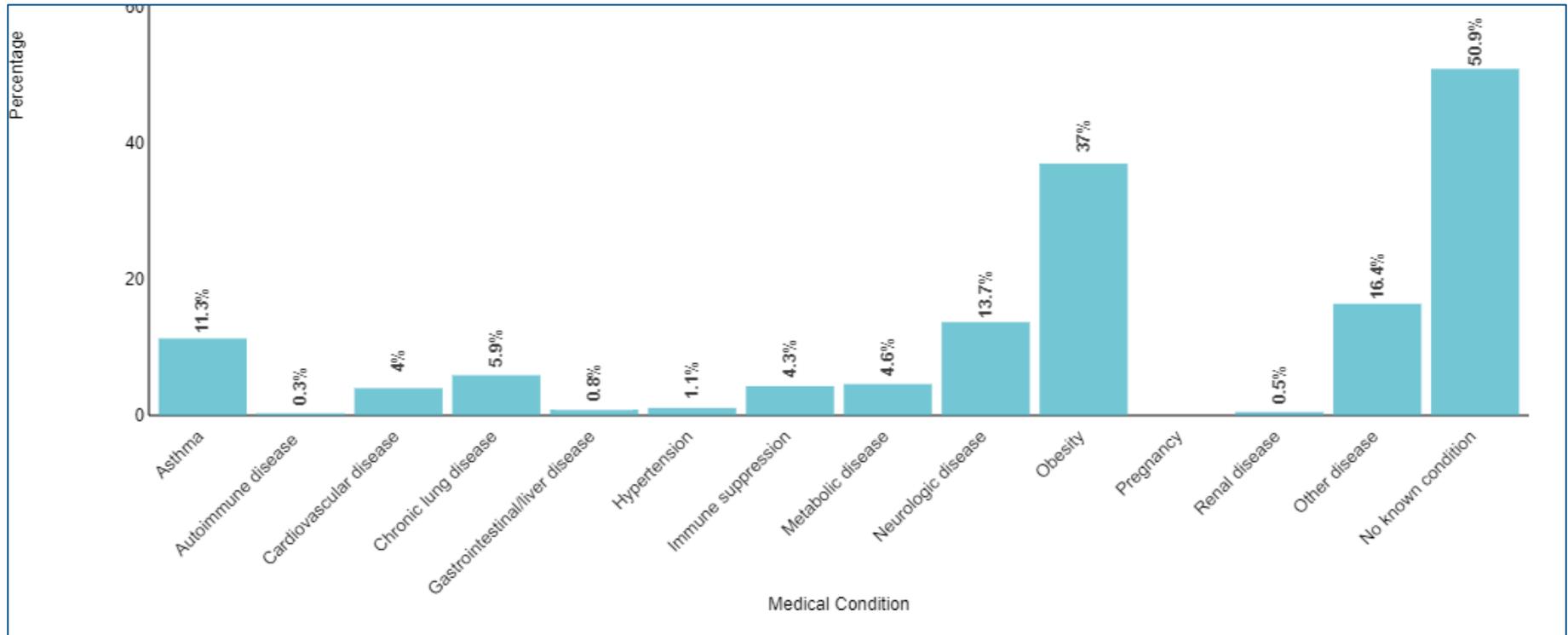
Date	Number of locations reporting age distribution of deaths	Cumulative total deaths (all ages)	Cumulative child deaths	Percent children of total deaths	Percent of child cases resulting in death [^]
9/10/20	42 states and NYC	160,856	105	0.07%	0.01%

Deaths by Age Group



COVID-19 in Children

❖ Children <2 years old and those with underlying conditions are most at risk for severe COVID-19 but are still generally less sick than adults; symptoms are often related to underlying condition.



COVID-19 in Children

❖ Multisystem inflammatory syndrome in children (MIS-C) is rare but is very serious and often life-threatening.

Multisystem Inflammatory Syndrome in Children (MIS-C) Associated With COVID-19 (Total = 21)
As of 11:59 PM on 9/10/2020



- MUSC has cared for 8 children with MIS-C, all of whom were previously healthy with no underlying medical condition.
- As of 9/3/2020, 792 confirmed cases of MIS-C and 16 deaths in 42 states, NYC, D.C. have occurred in the U.S.
- MIS-C cases rise in areas where the prevalence of COVID-19 increases.



COVID-19 in Children

❖ YES, children can transmit SARS-CoV-2 even if asymptomatic.

Morbidity and Mortality Weekly Report (*MMWR*)

SARS-CoV-2 Transmission and Infection Among Attendees of an Overnight Camp — Georgia, June 2020

Weekly / August 7, 2020 / 69(31);1023–1025

- Among those with available test results, 260 (76%) were positive (51%: 6–10 years; 44%: 11–17 years; 33%: 18–21 years).
- Attack rates increased with increasing length of time spent at the camp, with staff members having the highest attack rate (56%).
- Among 136 cases with available symptom data, 36 (26%) patients reported no symptoms.
- Among 100 (74%) who reported symptoms, those most commonly reported were subjective or documented fever (65%), headache (61%), and sore throat (46%).
- Staff members but not campers wore masks.



COVID-19 in Children

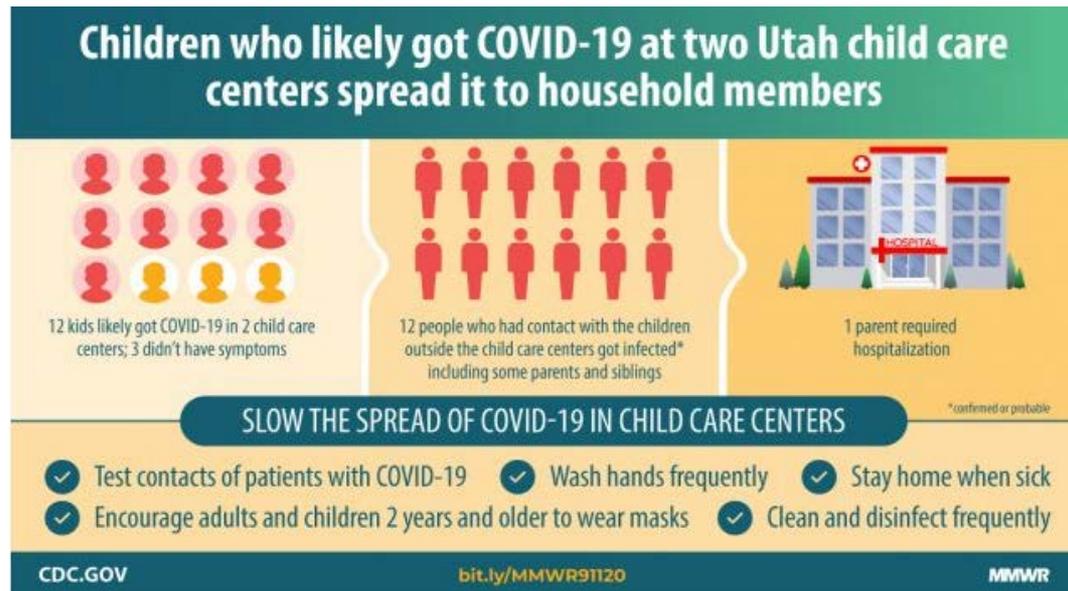
❖ **YES, children can transmit SARS-CoV-2 even if asymptomatic.**

Morbidity and Mortality Weekly Report (*MMWR*)

Transmission Dynamics of COVID-19 Outbreaks Associated with Child Care Facilities — Salt Lake City, Utah, April–July 2020

Early Release / September 11, 2020 / 69

- ▶ 12 children acquired COVID-19 in child care facilities. Transmission was documented from these children to at least 12 people. Transmission was observed from 2 of 3 children with confirmed, asymptomatic COVID-19.



COVID-19 in Children

❖ Headlines can be misleading. Read the whole article; verify facts.

Los Angeles Times

CALIFORNIA

Preschoolers are mask-licking germ bombs — yet few catch the coronavirus, data show

By SONJA SHARP

AUG. 28, 2020 | 7 AM

Though scientists can still only guess at why, a growing body of evidence suggests preschoolers are uniquely resilient to the novel coronavirus. Recent studies from the U.S., U.K., Singapore and Australia, among others, suggest they are far less likely to contract and spread the illness than older children and dramatically less likely to get sick from it than children even slightly older or younger.

<https://www.latimes.com/california/story/2020-08-28/few-preschoolers-catch-coronavirus-data>



COVID-19 in Children

“California has been really very cautious and very thoughtful,” Yeganeh said. “We are being very strict and trying to mitigate risk as much as possible.”

In fact, California has instituted some of the most stringent viral containment measures in the country, which is why experts believe many fewer preschoolers have fallen sick here than in Texas or Florida, despite those states’ smaller populations and fewer open child-care centers.

Here, parents are barred from the classroom, rugs and soft toys are frowned upon, and children 2 and older are expected to wear masks at all times.

“We had them practice at home so it wasn’t their first experience with wearing a mask,” said Paola Cervantes, executive director of Voyages Preschool in Mar Vista, who reconfigured her classrooms so that children could spend the whole day outside. “They tell us at this point, ‘I touched my mask, can I have hand sanitizer?’ [or] ‘I licked it, can I have a clean one?’”



Children do activities at separate tables at Voyages Preschool. (Christina House / Los Angeles Times)





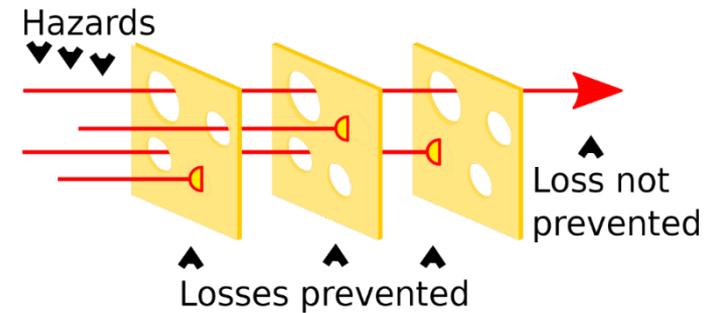
What We Can Do...

Taking Action to Minimize Transmission

Taking Action to Minimize Transmission

❖ Implementation of multiple mitigation strategies is most effective in reducing transmission of SARS-CoV-2.

- ▶ Classroom cohorting (no intermixing)
- ▶ Limiting cohort size
- ▶ Physical distancing measures (>6 feet)
- ▶ Hand hygiene and respiratory etiquette
- ▶ Proper ventilation
- ▶ Alternating schedules and staggered schedules
- ▶ Avoid sharing of objects (e.g., toys, electronic devices)
- ▶ Regular cleaning and disinfection, especially high-touch surfaces
- ▶ Limiting or eliminating high risk activities (e.g., choir, contact sports)
- ▶ Changes to physical environment/modified layouts (e.g., plexiglass barriers, utilizing outdoor space, physical guides)
- ▶ Symptom/contact screening and staying home when appropriate
- ▶ Universal mask usage for everyone over 2 years of age (with VERY few exceptions)



The Power of Masks



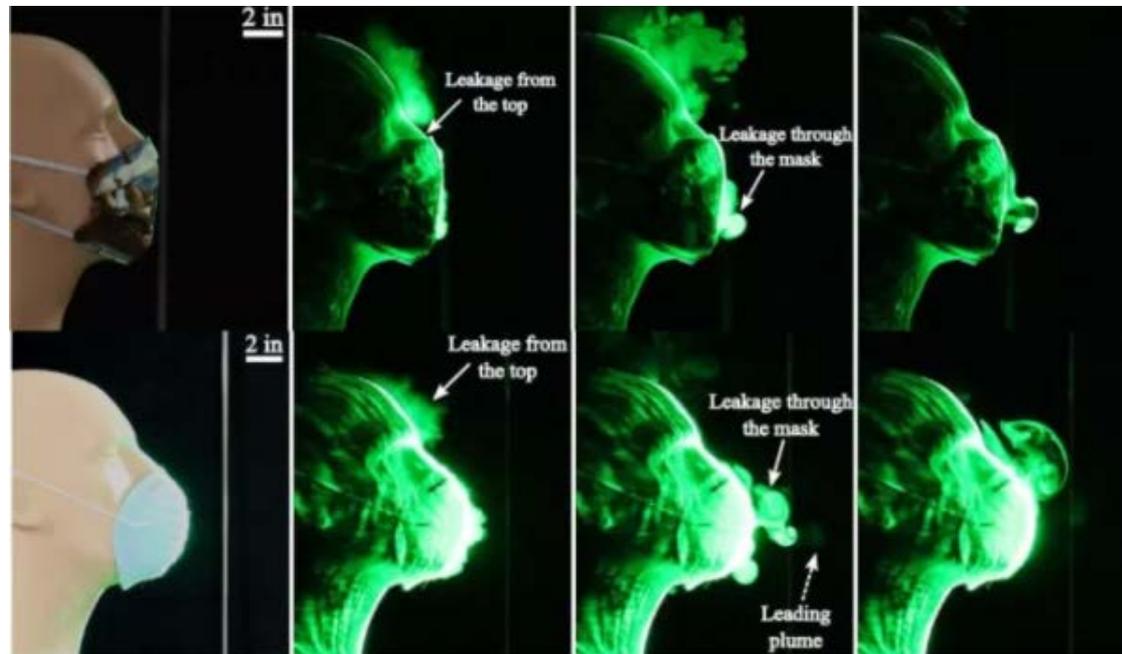
❖ Masks decrease spread of virus-containing respiratory **DROPLETS**, the primary mode of SARS-CoV-2 transmission.

▶ 6 feet = average distance large respiratory droplets from sneeze/cough travel before settling on to surfaces (based on pre-COVID studies)

▶ More recent simulation shows 12 feet (tracer droplets suspended midair for 3 min)

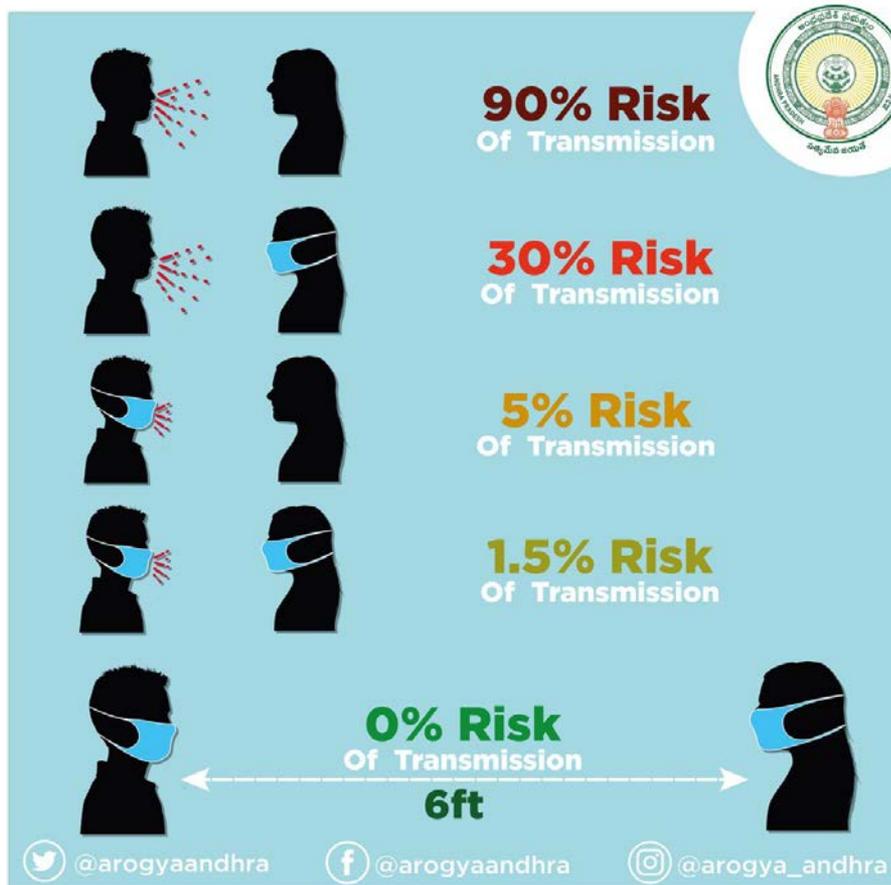
▶ Droplet spread decreased significantly w/ face coverings:

- ▶ Bandana = 3 ft., 7 in.
- ▶ Folded cotton handkerchief = 1 ft., 3 in.
- ▶ Stitched quilted cotton mask = 2.5 in.
- ▶ Cone-style mask = 8 in.



The Power of Masks

- ❖ Masks are highly effective in reducing SARS-CoV-2 transmission and should be mandatory in schools and childcare facilities for everyone ≥ 2 years old.



COVID Trifecta:

- Physical distancing
- Masks
- Hand hygiene

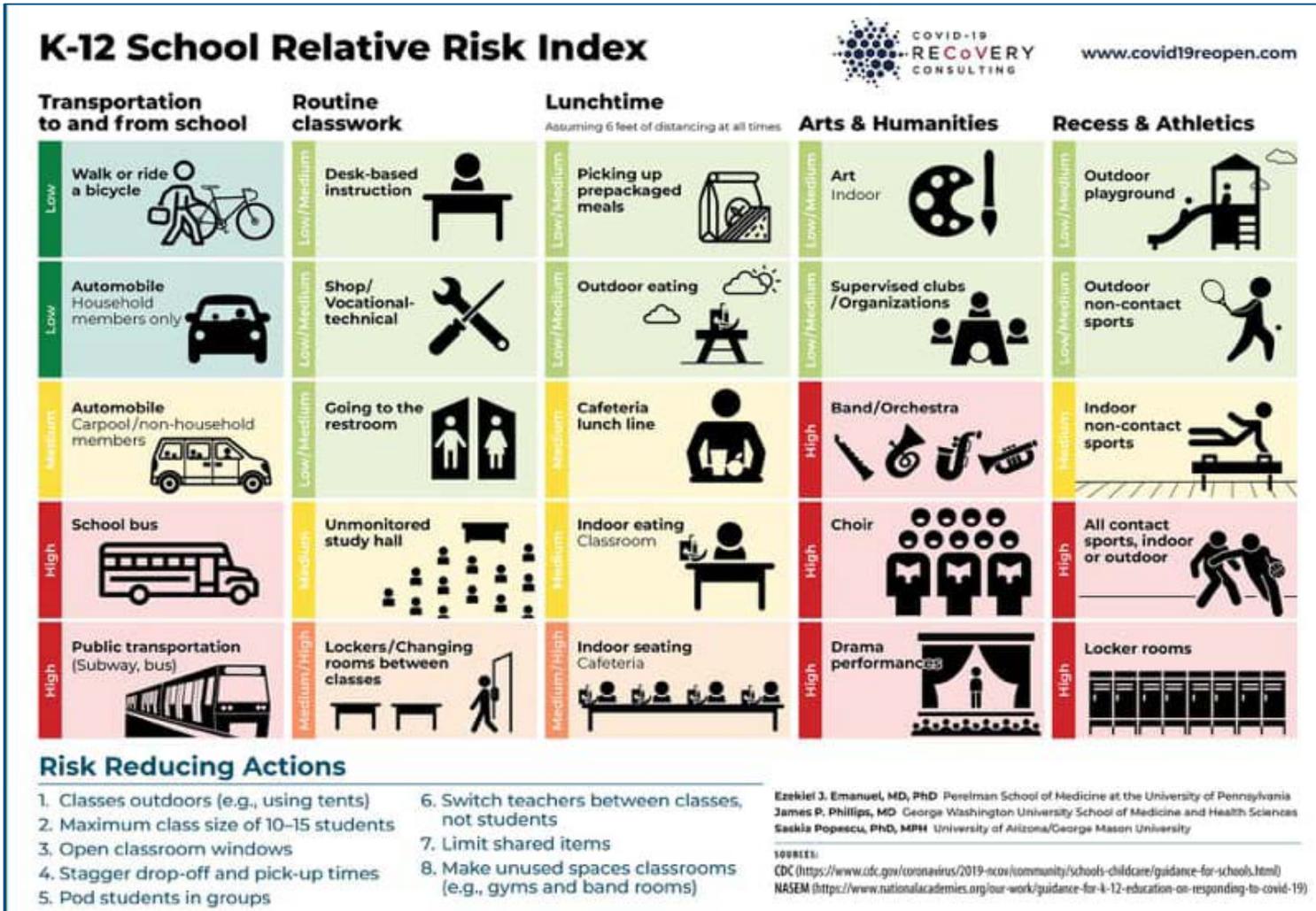
[Evidence for physical distancing/masks](#)
[Evidence for masks](#)

The Truth About Masks

- ❖ Masks are safe and pose little risk to healthy children even with prolonged wear; mask exemptions should be incredibly rare.
- ▶ There is no evidence that wearing a mask is dangerous to a healthy child's physical or emotional health
 - ▶ They are breathable and do not accumulate CO₂
 - ▶ They do not suppress the immune system
 - ▶ They do not increase transmission risk (vs. no masks)
- ▶ Exemptions may include severe cognitive or respiratory impairments, and facial injuries

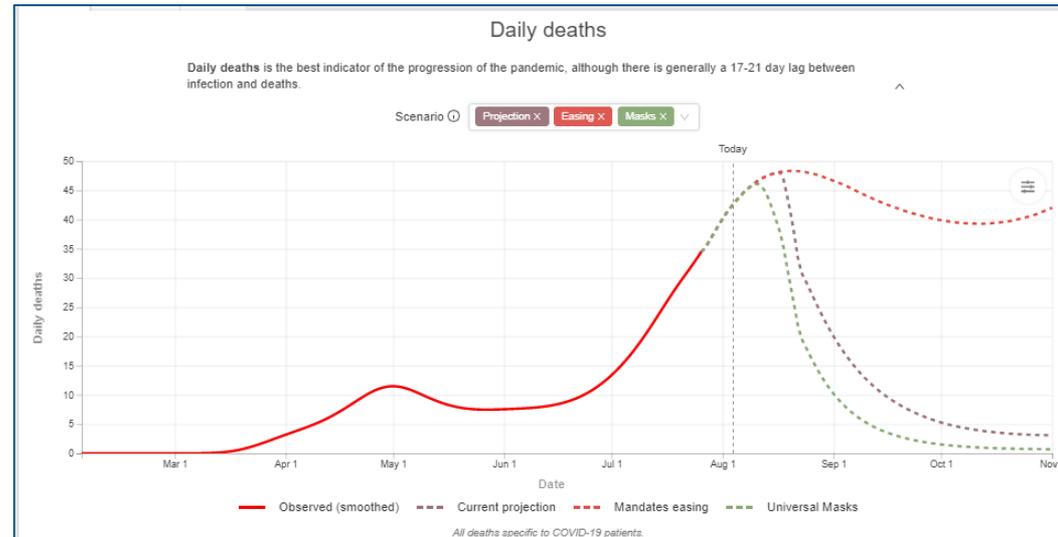


On-going Risk Assessment & Mitigation



It Takes A Village...

- ❖ Mitigation measures must be maintained in the community to decrease transmission and continue current trends.



It Takes A Village...

COVID-19 Event Risk Assessment Planning Tool

This map shows the risk level of attending an event, given the event size and location.

The risk level is the estimated chance (0-100%) that at least 1 COVID-19 positive individual will be present at an event in a county, given the size of the event.

Based on seroprevalence data, we assume there are ten times more cases than are being reported (10:1 ascertainment bias). In places with more testing availability, that rate may be lower.

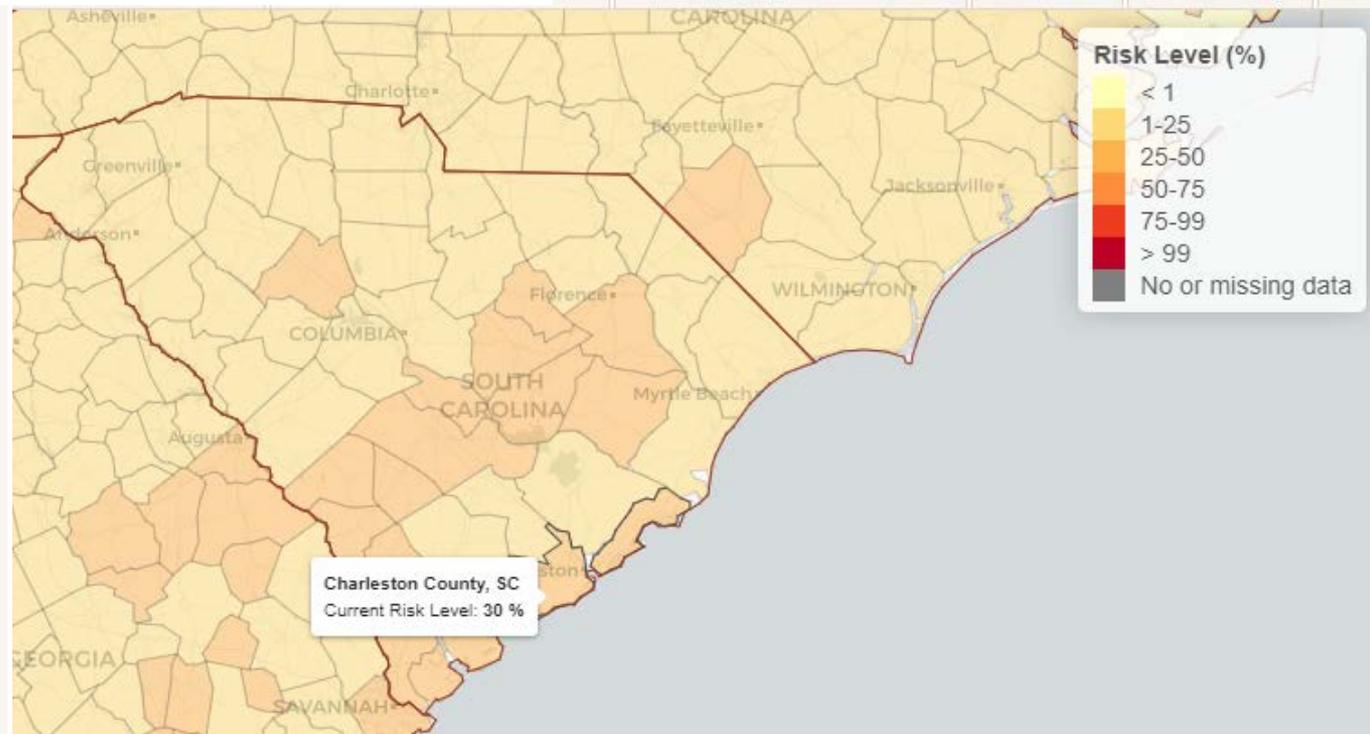
Choose an event size and ascertainment bias below

Event Size:



Select Ascertainment Bias

5 10



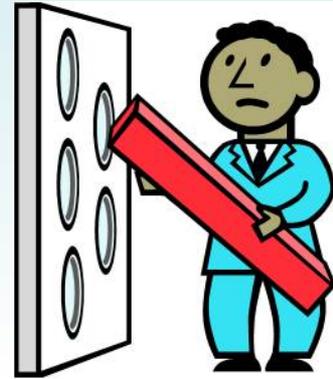


On-going Challenges...

Testing, Quarantines &
Return to School

On-going Challenges...

- ▶ CDC & DHEC guidelines used to navigate student/staff symptoms, exposures, testing, and exclusions/return to school
 - ▶ Logistical challenges arise when applying CDC guidelines to the school setting that may quickly result in entire classrooms quarantining, staff availability issues, & kids frequently in/out
 - ▶ DHEC interim guidance is “looser” than CDC guidelines, but some areas remain vague and subjective, which may identify fewer cases & increase transmission potential



On-going Challenges...



- ▶ What is considered “close contact”?
 - ▶ CDC: <6 ft of COVID-19 case ≥15 min, REGARDLESS OF FACE COVERINGS
- ▶ What is considered a “COVID-19 case”?
 - ▶ CDC: anyone w/ a positive test or clinically compatible illness (exposure starts 48 hrs PRIOR to symptoms/positive test)
- ▶ What constitutes a “clinically compatible illness”?
 - ▶ Common symptoms in children w/ COVID-19 include fever, headache, sore throat, cough, fatigue, nausea/vomiting, diarrhea.
 - ▶ Difficult to differentiate COVID-19 from other conditions; can look for other causes (flu, strep throat, asthma, etc.) but risk of co-infection & co-existing conditions
 - ▶ Testing is an option, but availability and timeliness issues



COVID-19 Testing Pearls



- ▶ Exposed students should be tested, but no sooner than 7 days after first contact with infectious individual
- ▶ *Even if test result is negative, student still quarantines for 14 days*
- ▶ **Only PCR tests reliable**; positive rapid test can help rule in disease but negative rapid test cannot rule out disease
- ▶ Regular testing of students and staff is NOT recommended

COVID-19 TEST	Antigen-based immunoassay	Antibody-based immunoassay	Real-time PCR
Analyte	Antigen	Antibody	Gene
Detectable period	From a few days after onset of symptoms	From 7-28 days after onset of symptoms	All of stages
Sensitivity	50-70% (expected)*	More than 95%	More than 95%
Specificity	50-70%*	Not clear*	More than 95%
Detection of asymptomatic infection	Depending on the amount of viral antigen	At the later stage of infection	From the early stage of infection
Status of use	Only some regions	Only some regions	All of countries (recommended by WHO & CDC)

*Based on conventional antigen-based immunoassay and affected by seasonal coronaviruses
Reference: Oral presentation from online forum of KOFST(The Korean Federation of Science and Technology Societies)



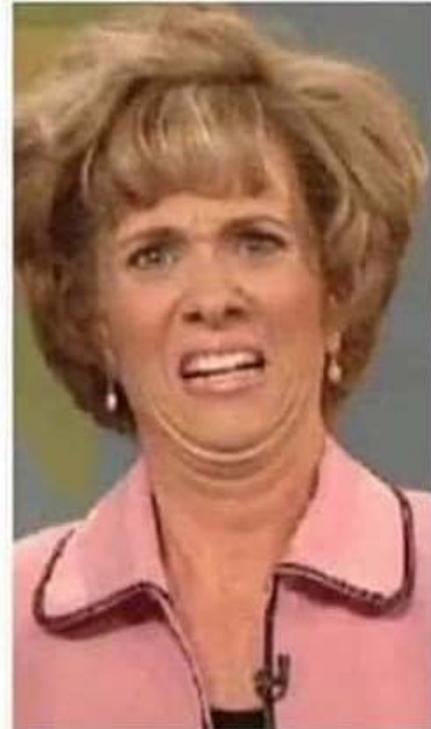
Every parent right now



**STARTING SCHOOL
IN PERSON**



**STARTING
SCHOOL ONLINE**



HOMESCHOOLING

