SPECIAL BOARD OF COMMISSIONERS MEETING – ACHD K-6 MASK ORDER

HEALTH
Department

What is Public Health?

"Public Health": the health of the population as a whole

- Pursuant to MCL 333.2433
  - **A local health department shall continually and diligently endeavor to prevent disease, prolong life, and promote the public health** through organized programs, including prevention and control of environmental health hazards; prevention and control of diseases; prevention and control of health problems of particularly vulnerable population groups; development of health care facilities and health services delivery systems; and regulation of health care facilities and health services delivery systems to the extent provided by law.

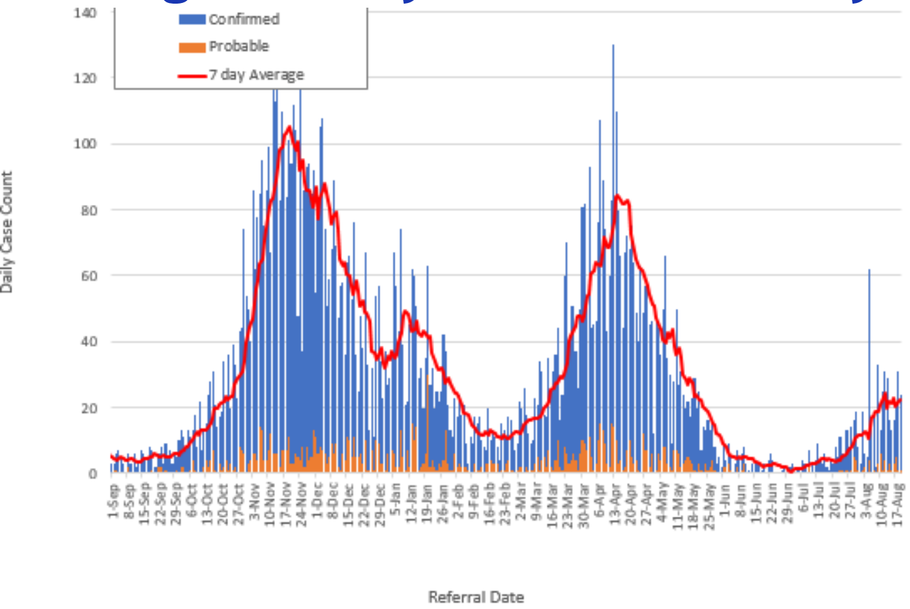
"Health": the state of being free from illness or injury.

- While a doctor treats people who are sick, public health professionals try to prevent people from getting sick or injured in the first place. They also promote wellness by encouraging healthy behaviors. (APHA)

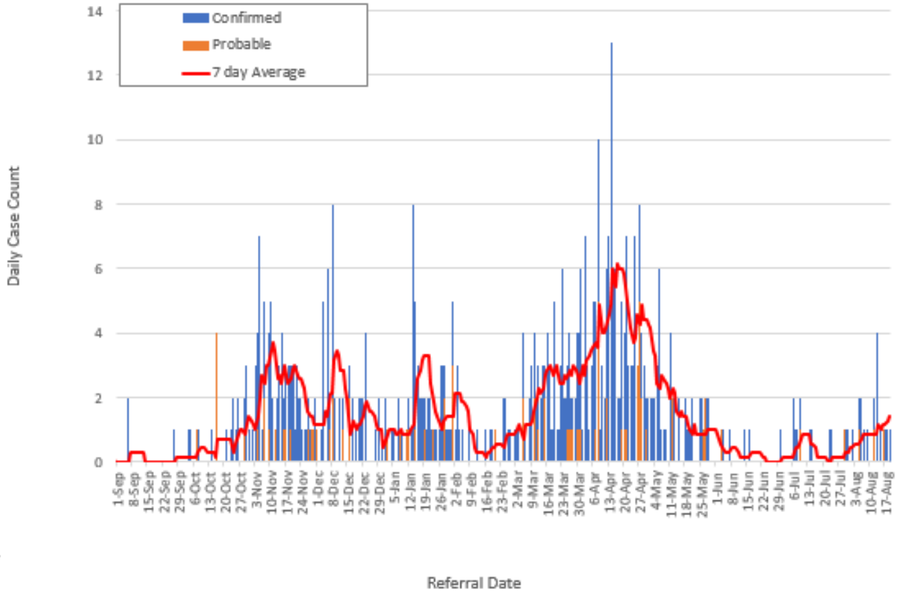
https://www.apha.org/what-is-public-health

Allegan County COVID-19 Data

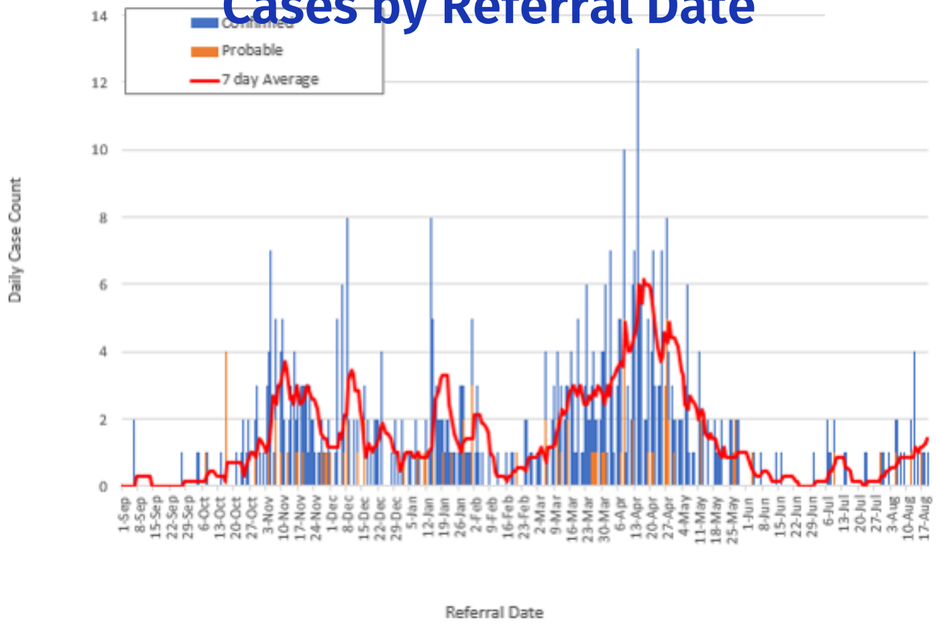
Allegan County COVID-19 Cases by Referral Date



Allegan County COVID-19 School Ages Cases by Referral Date



Allegan County Aged 5-11 Cases by Referral Date

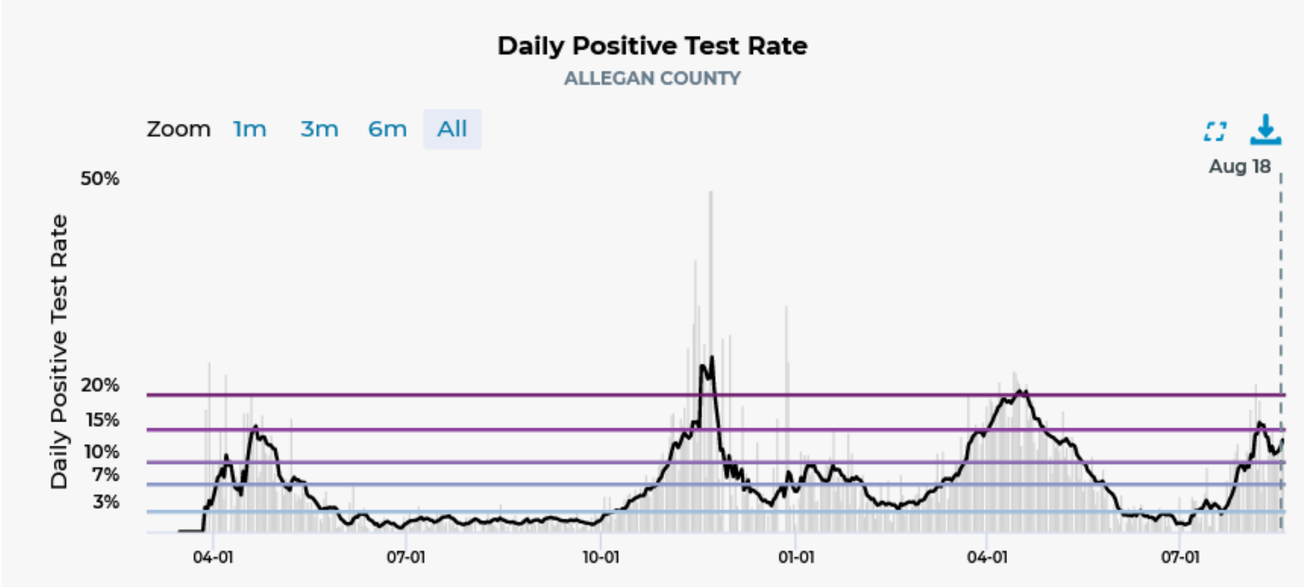


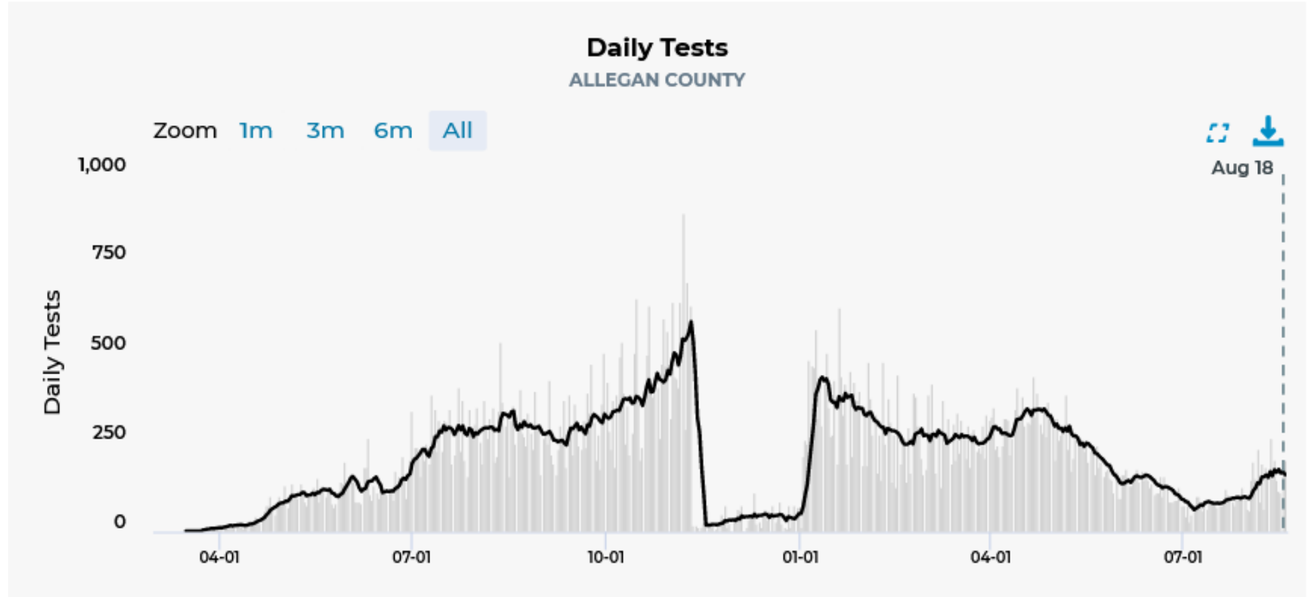
Allegan County COVID-19 Data

Data as of 8/18/2021

Test Results
Aug 11 - Aug 18

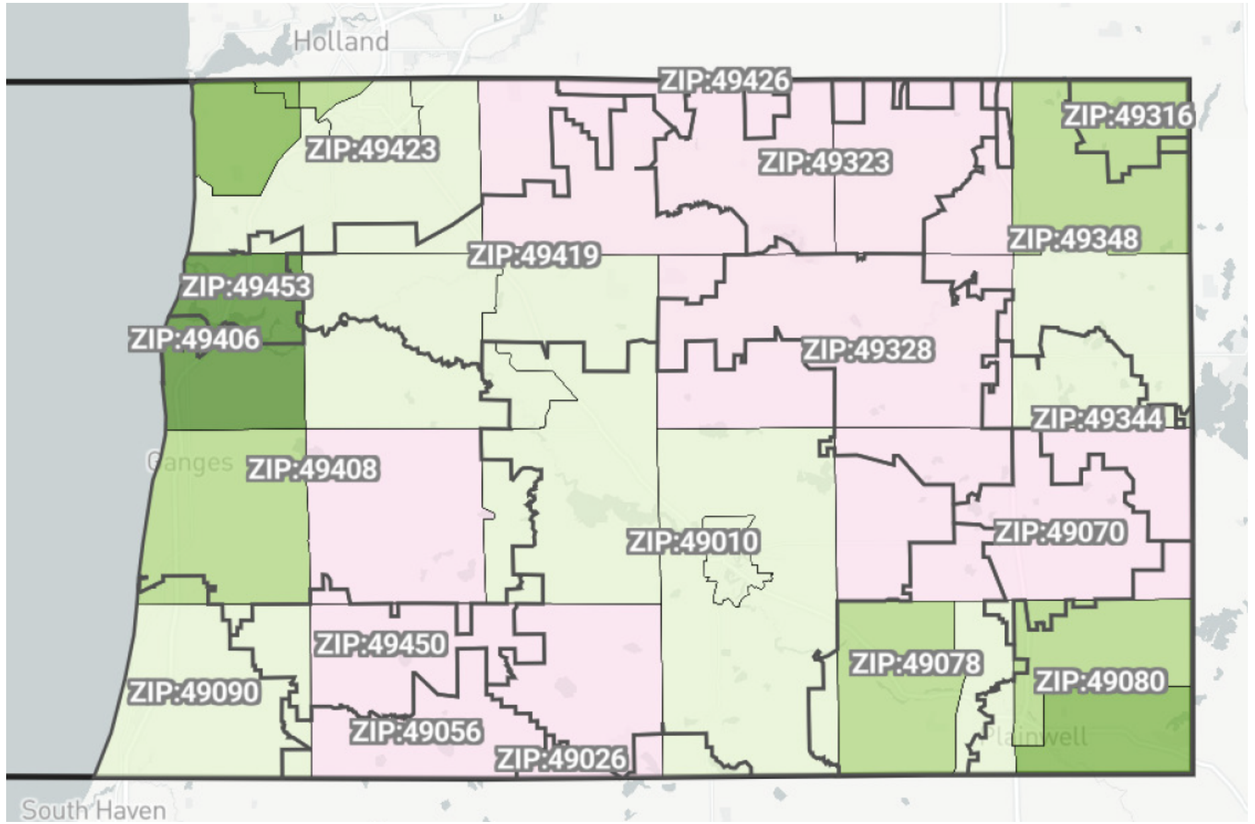
13.4%	159.7	1.3k
positive tests *	daily tests administered *	daily tests administered per million



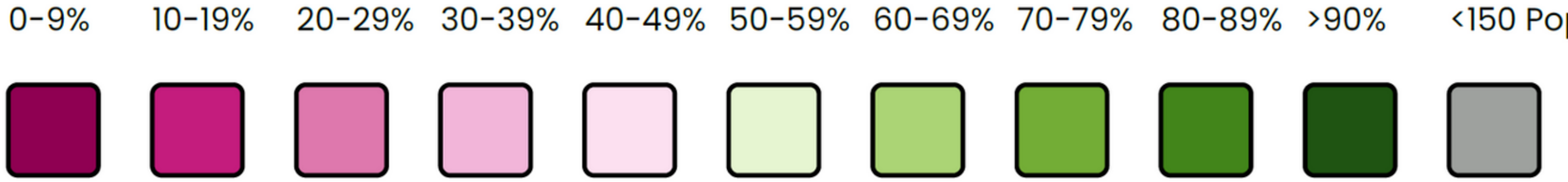


Allegan County COVID-19 Vaccine Data

Data as of 8/19/2021



Color coded by: Received 1 or More Dose (% Ages 16+)



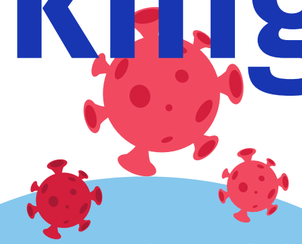
Roadmap to decision making

Weekly/Bi-Weekly Meetings with School Superintendents, continued to emphasize mask wearing is strongly recommended

Meetings with Legal and other Michigan local health departments

New Guidance from American Academy of Pediatrics, CDC and MDHHS

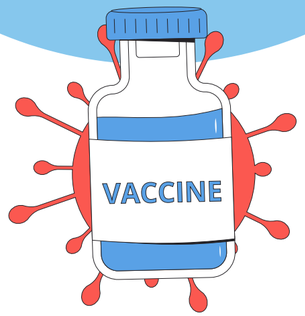
ACHD released updated COVID-19 School Guidance on 8/11/21, strongly recommending masks



Currently "High Transmission" in Allegan County

Surveillance of other communities/ states at peak of surge

Vaccine Coverage on County level, zip code level, and age group



Recent Questions on Mask Order

Why this age group?

- Kids 5-11 do not have an available COVID-19 vaccine
- People 11 years and younger must rely on other mitigation strategies to be protected from COVID-19.
  - Masks are the next best effective form of prevention

Was the psychological impact to kids considered?

- Yes - risks vs. benefits
- We've prioritized in-person learning for kids.
  - Schools were in person or hybrid (with masks in place) since last year
- Kids and other vulnerable populations are prioritized for timely case investigation/contact tracing no matter case trends
- Concerns about interruptions in school due to quarantines and positive cases

What are other counties doing?

Currently, Genesee, Kalamazoo, Allegan, Ottawa and Kent County health departments are five that have issued orders.

Recent Questions on Mask Order

Who is excluded?

The Order does not apply to:

1.Persons in the act of eating or drinking.

2.Persons outside if not engaged in activities involving direct physical contact.

3.Persons under the age of five years; however, supervised masking is strongly recommended.

4.Students with developmental conditions of any age attending school, although supervised masking is encouraged.

5.Teachers who are working with children who are hard of hearing or students with developmental conditions who benefit from facial cues.These teachers or staff must be vaccinated or comply with masking directive.

6.A person with a disability who cannot wear a mask, or cannot safely wear a mask, because of the disability as defined by the Americans with Disabilities Act (ADA, 42 U.S.C. 12101 et seq.) and Michigan Persons with Disabilities Act.

Recent Questions on Mask Order

Why is this being handled differently than the flu?

MDHHS Laboratory Data

There were **0** new positive influenza results (0C, 0N, 0SE, 0SW) reported by the MDHHS Bureau of Laboratories (BOL) during this time period.

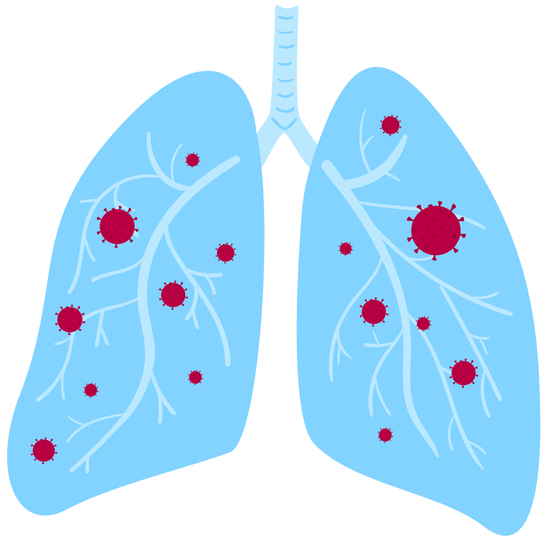
# of Positive Respiratory Virus Results by Region

Flu Type, Subtype	C	N	SE	SW	Summer 2021 Total	2020-21 Flu Season Total
Flu A, H1N1	0	0	0	0	0	0
Flu A, H3N2	0	0	2	0	2	1
Flu B	0	0	0	0	0	4
Total	0	0	2	0	2	
2020-21 Total	0	0	5	0		5

Data is provisional and may change as additional results are reported.

Total influenza-associated pediatric deaths in the U.S. and Michigan by season are listed in the table below.

	2017-18	2018-19	2019-20	2020-21
U.S. Total Source: CDC FluView	188	144	199	1
MI Total	3	3	6	0



According to the CDC, **490 children under age 17 years have died of COVID-19 in the US.**

COVID-19 and Age (aap.org)

Recent Questions on Mask Order

Is there any compromise?

The Order remains in effect until six weeks past the date COVID-19 vaccine is authorized and available to persons aged five years through age eleven, or until further notice from the Health Officer

- If the CDC Level of Community Transmission is in LOW for at least 7 days

Indicator - If the two indicators suggest different transmission levels, the higher level is selected	**Low Transmission Blue**	**Moderate Transmission Yellow**	**Substantial Transmission Orange**	**High Transmission Red**
Total new cases per 100,000 persons in the past 7 days	0-9.99	10-49.99	50-99.99	≥100
Percentage of NAATs[1] that are positive during the past 7 days	0-4.99%	5-7.99%	8-9.99%	≥10.0%

What this means:

These data points that tell us that there is less virus circulating within the community and less need for strict mitigation strategies. NOTE: these are not the only data points to consider since there are a lot of factors that can influence virus transmission

Sources:
https://covid.cdc.gov/covid-data-tracker/#county-view
https://covidactnow.org/us/michigan-mi/county/allegan_county/?s=21901116

Some Parental Concerns shared with ACHD

"Masks are not effective"

"Other people not wearing masks and the health of my child"

"Masks are harmful"

"I can't get my child vaccinated"

"The virus is too small for masks"

"School outbreaks pose risk to my family"

"The Delta variant poses more risk for kids"

Universal Masking vs. Individual Masking

Masks prevent infected persons from exposing others to SARS-CoV-2 by blocking exhalation of virus-containing droplets into the air (termed source control).

It is estimated that at least 50% or more of transmissions are from persons who never develop symptoms or those who are in the pre-symptomatic phase of COVID-19 illness.

In recent lab experiments, multi-layer cloth masks were more effective than single-layer masks, blocking as much as 50% to 70% of exhaled small droplets and particles.

Masks protect uninfected wearers. Masks form a barrier to large respiratory droplets that could land on exposed mucous membranes of the eye, nose, and mouth

Masks can also partially filter out small droplets and particles from inhaled air. Multiple layers of fabric and fabrics with higher thread counts improve filtration

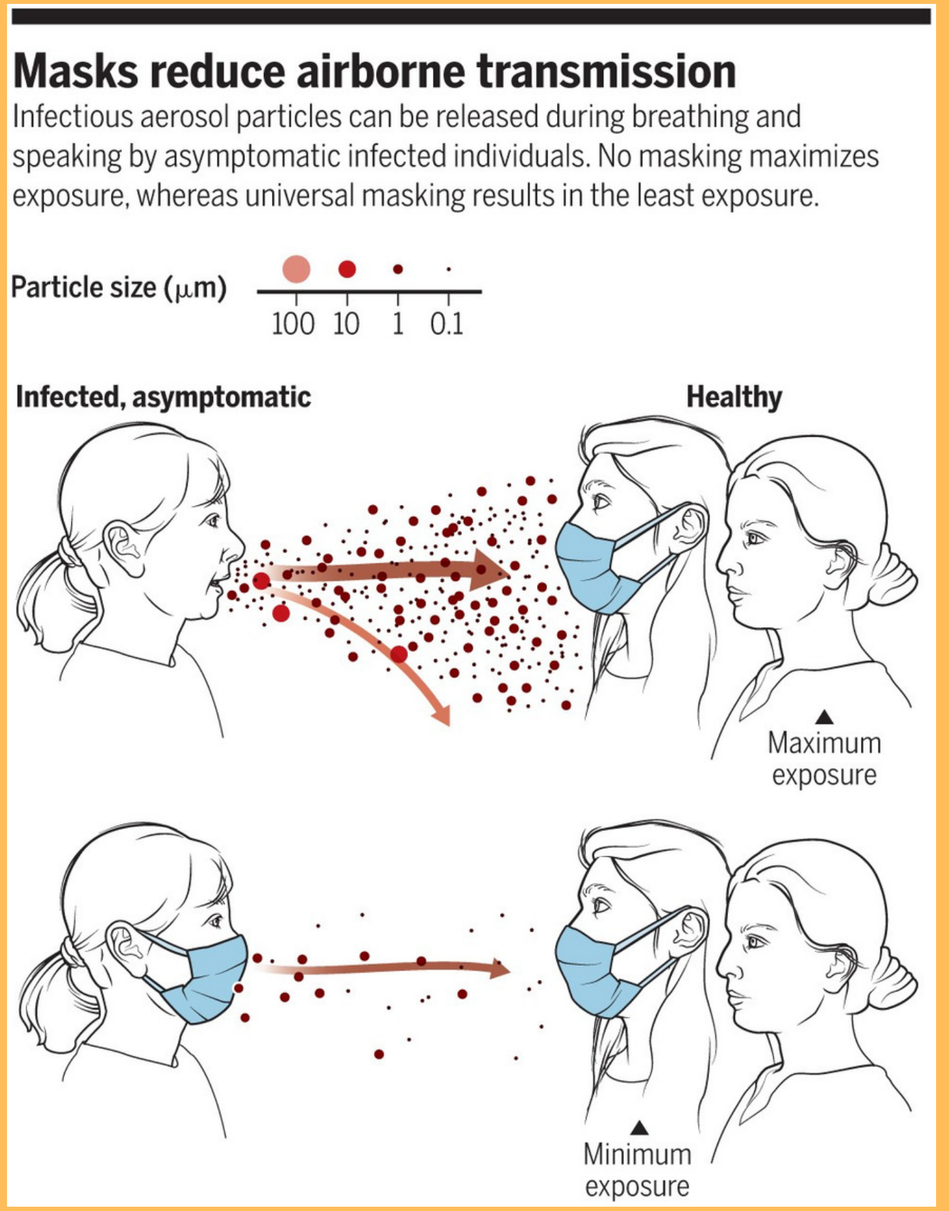
The observed effectiveness of cloth masks to protect the wearer is lower than their effectiveness for source control

Sources:

- Johansson MA, Quandelacy TM, Kada S, et al. SARS-CoV-2 transmission from people without COVID-19 symptoms. JAMA Netw Open. 2021;4(1):e2035057.
- Lindsley WG, Blachere FM, Law BF, Beezhold DH, Noti JD. Efficacy of face masks, neck gaiters and face shields for reducing the expulsion of simulated cough-generated aerosols. Aerosol Sci Technol. Published online January 7, 2021. doi:10.1080/02786826.2020.1862409
- Ueki H, Furusawa Y, Iwatsuki-Horimoto K, et al. Effectiveness of face masks in preventing airborne transmission of SARS-CoV-2. mSphere. 2020;5(5):e00637-20. doi:10.1128/mSphere.00637-20

Why masks are effective

Masks are not 100% effective, but they greatly reduce transmission



Sources:

- Reducing transmission of SARS-CoV-2 | Science (sciencemag.org)
- Mask adherence and rate of COVID-19 across the United States (nih.gov)
- An evidence review of face masks against COVID-19 | PNAS
- https://www.michigan.gov/documents/coronavirus/20210809_Data_and_modeling_update_vFINAL_732387_7.pdf
- https://www.medrxiv.org/content/10.1101/2021.08.10.21261726v1
- https://caldercenter.org/sites/default/files/WP%20247-1220_updated_typo.pdf
- https://onlinelibrary.wiley.com/doi/10.1111/apa.15870#apa15870-bib-0004
- https://www.preprints.org/manuscript/202103.0271/v1

Table. Studies of the Effect of Mask Wearing on SARS-CoV-2 Infection Risk[a]

Source	Location	Population studied	Intervention	Outcome
Hendrix et al	Hair salon in Springfield, Missouri	139 Patrons at a salon with 2 infected and symptomatic stylists	Universal mask wearing in salon (by local ordinance and company policy)	No COVID-19 infections among 67 patrons who were available for follow-up
Payne et al	USS Theodore Roosevelt, Guam	382 US Navy service members	Self-reported mask wearing	Mask wearing reduced risk of infection by 70% (unadjusted odds ratio, 0.30 [95% CI, 0.17-0.52])
Wang Y et al	Households in Beijing, China	124 Households of diagnosed cases comprising 335 people	Self-reported mask wearing by index cases or ≥1 household member prior to index case's diagnosis	Mask wearing reduced risk of secondary infection by 79% (adjusted odds ratio, 0.21 [95% CI, 0.06-0.79])
Doung-ngern et al	Bangkok, Thailand	839 Close contacts of 211 index cases	Self-reported mask wearing by contact at time of high-risk exposure to case	Always having used a mask reduced infection risk by 77% (adjusted odds ratio, 0.23 [95% CI, 0.09-0.60])
Gallaway et al	Arizona	State population	Mandatory mask wearing in public	Temporal association between institution of mask wearing policy and subsequent decline in new diagnoses
Rader et al	US	374 021 Persons who completed web-based surveys	Self-reported mask wearing in grocery stores and in the homes of family or friends	A 10% increase in mask wearing tripled the likelihood of stopping community transmission (adjusted odds ratio, 3.53 [95% CI, 2.03-6.43])
Wang X et al	Boston, Massachusetts	9850 Health care workers (HCWs)	Universal masking of HCWs and patients in the Mass General Brigham health care system	Estimated weekly decline in new diagnoses among HCWs of 3.4% after full implementation of the mask wearing policy
Mitze et al	Jena (Thuringia), Germany	City population aged ≥15 y	Mandatory mask wearing in public spaces (eg, public transport, shops)	Estimated daily decline in new diagnoses of 1.32% after implementation of the mask mandate
Van Dyke et al	Kansas	State population	Mandatory mask wearing in public spaces	Estimated case rate per 100 000 persons decreased by 0.08 in counties with mask mandates but increased by 0.11 in those without
Lyu and Wehby	15 US states and Washington, DC	State populations	Mandatory mask wearing in public	Estimated overall initial daily decline in new diagnoses of 0.9% grew to 2.0% at 21 days following mandates
Karaivanov et al	Canada	Country population	Mandatory mask wearing indoors	Estimated weekly 25%-40% decline in new diagnoses following mask mandates

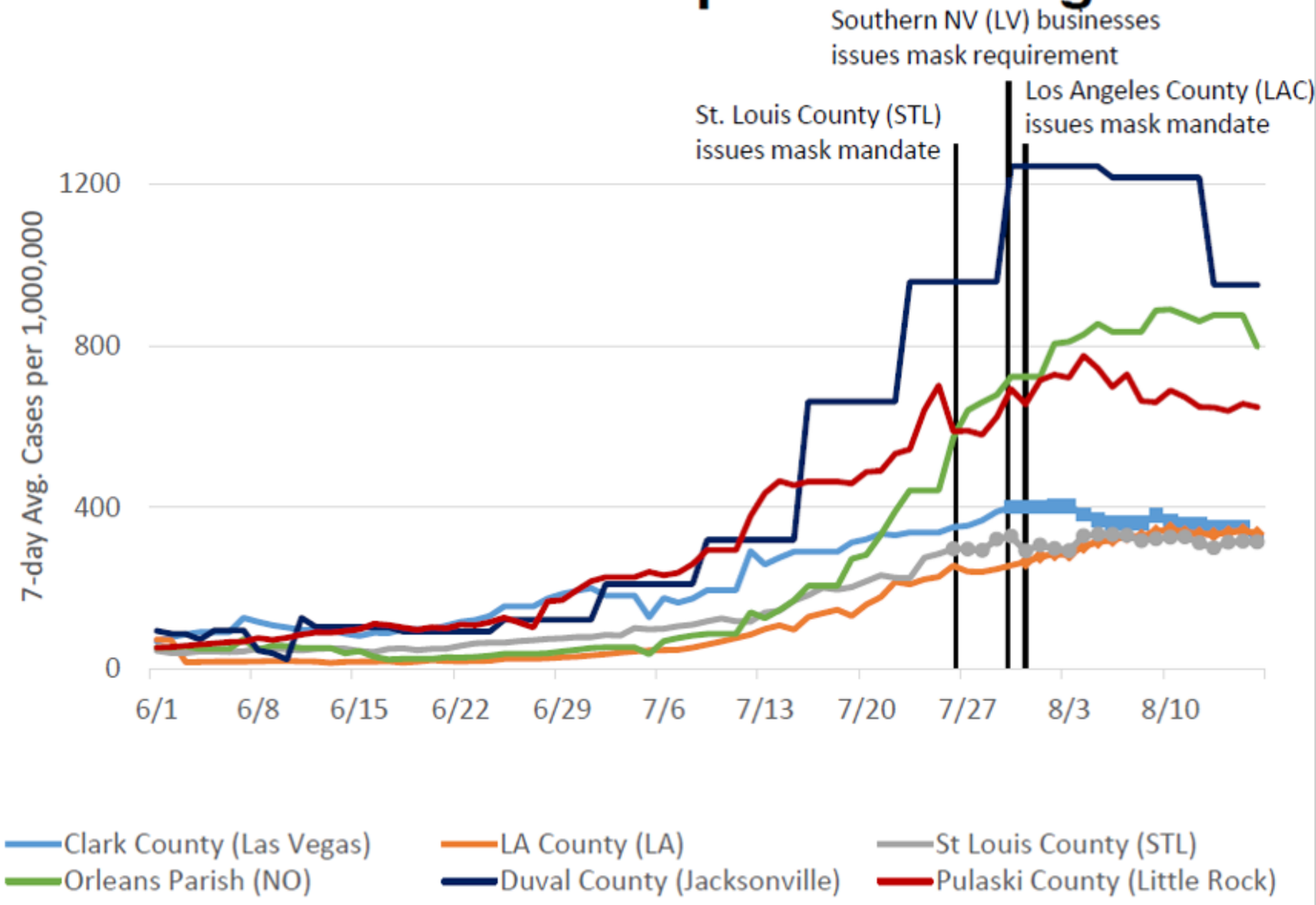
[a] See the Supplement for the complete table.

Mask mandates implemented after delta surge saw slower rates of increases in jurisdictions compared to those who didn't require masking

- Delta variant contributed to surges in several U.S. states in July
- Several states prohibited local masks mandates
- To date, there have been no national universal mask mandates regardless of vaccinations, only recommendations

- Several local jurisdictions passed mask mandates for indoor settings, regardless of vaccination status, in response to spread of the delta variant
  - Three were: LA County (LAC), St. Louis (STL), and Southern Nevada Health District (NV) including Clark County (Las Vegas)
  - In contrast, Orleans Parish (Louisiana), Pulaski County (Little Rock, Arkansas), and Duval County (Jacksonville, Florida) had no such mandates

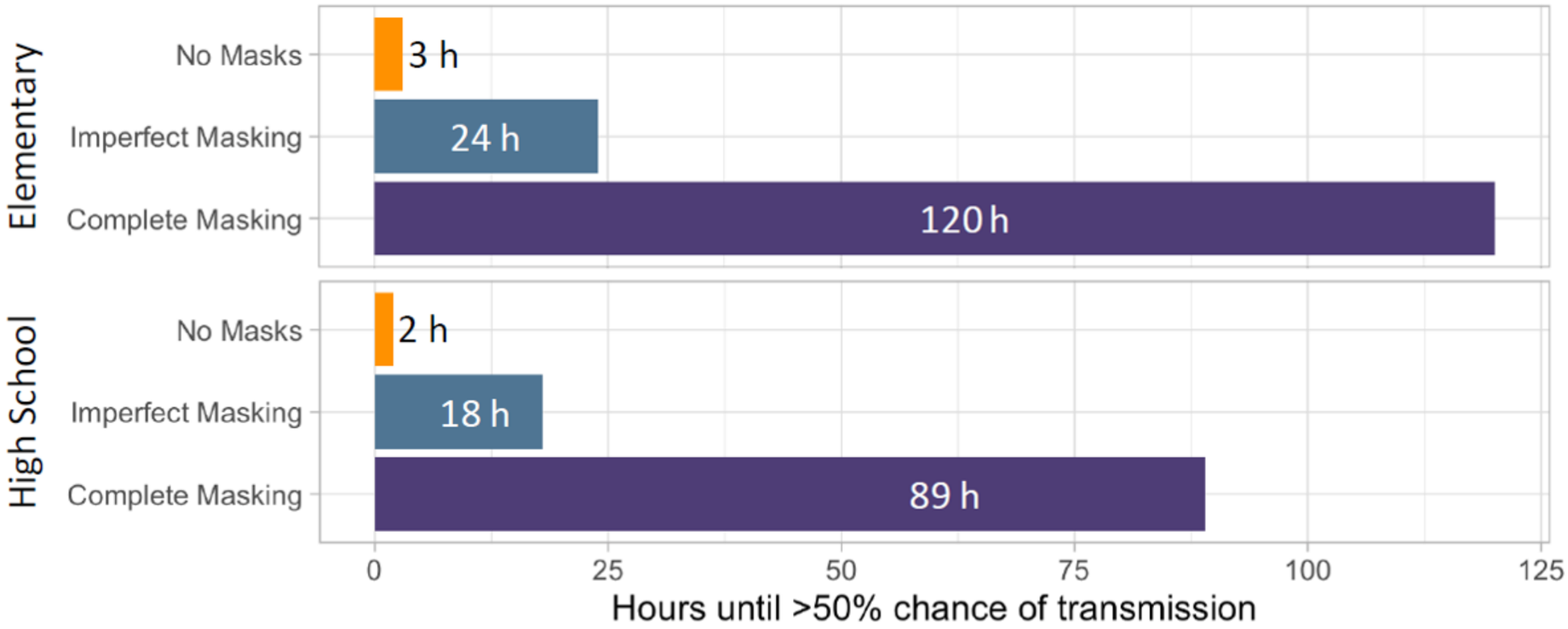
- **While other factors could have also contributed to lower case rates, jurisdictions with mask mandates have experienced lower spread of COVID-19 during the delta surge**



Sources: St. Louis City COVID-19 dashboard; LA County COVID-19 dashboard, CDC COVID Data Tracker; population sizes from CDC Wonder Bridged Race Estimates

Modeling: Masks can substantially reduce transmission in school settings

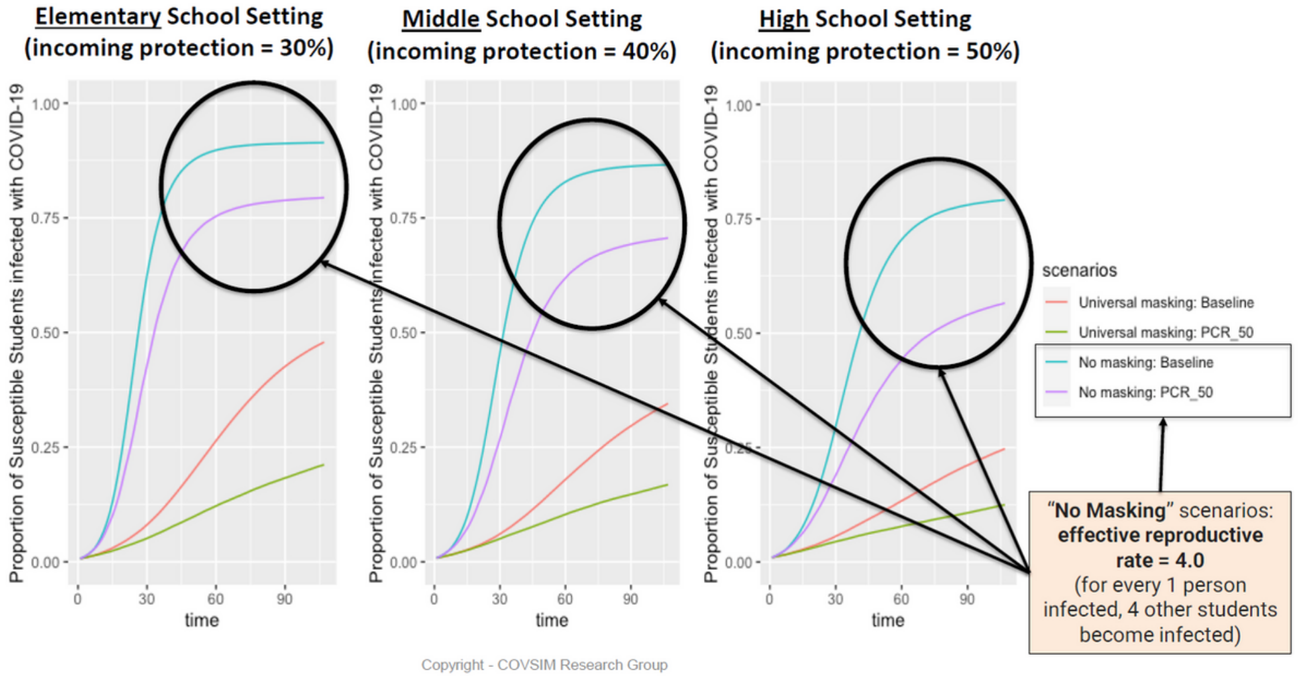
If 1 infectious child attends a class of 25 students, how long does it take for there to be a >50% chance of transmission occurring?



PUBLIC HEALTH

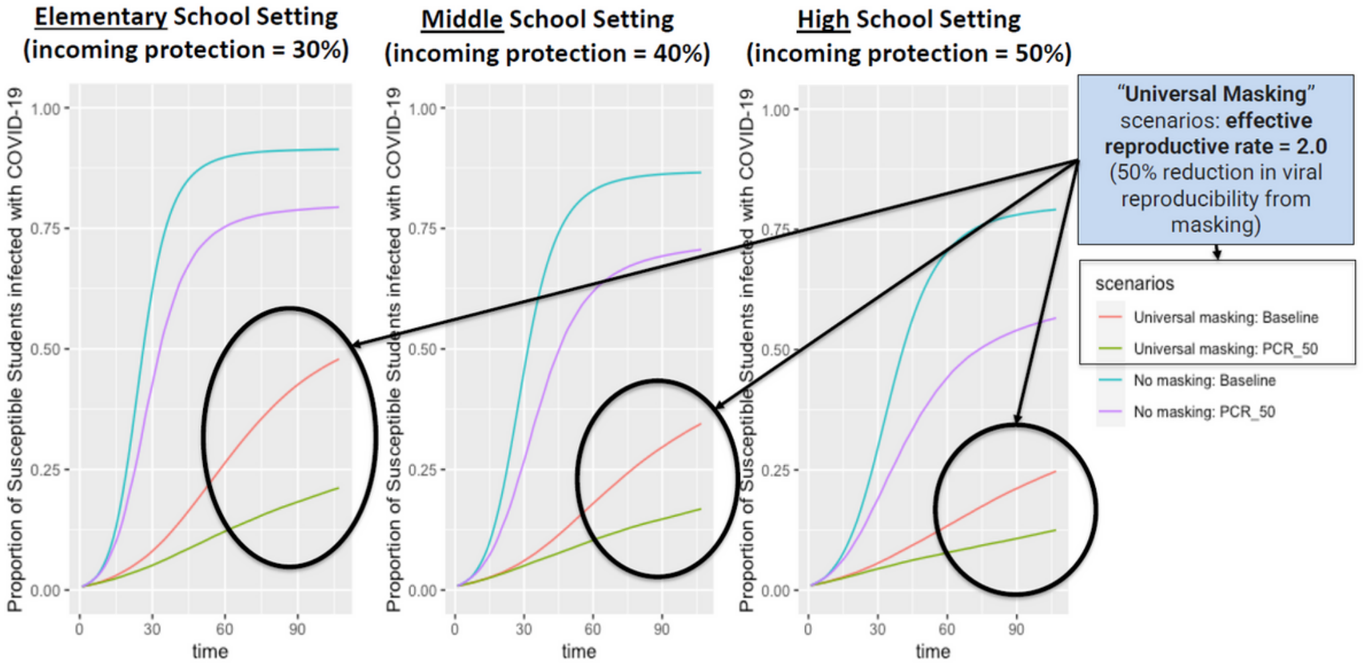
Estimates from the COVID-19 Indoor Safety Guideline, based on Bazant and Bush, A guideline to limit indoor airborne transmission of COVID-19, PNAS 2021. Simulations assume: delta strain, normal talking (not singing/etc.), with child age group for elementary and average between adult and child age groups for high school. Vaccine coverage was assumed to be 0% for elementary and 33% for high school, based on age-specific coverage rates as of 8/6/21. We assumed 95% mask fit/compliance for 'Complete Masking' and 75% for 'Imperfect Masking'.

https://www.pnas.org/content/118/17/e2018995118



"Universal Masking" scenarios: **effective reproductive rate (R0)= 2.0** (50% reduction in viral reproducibility from masking)

"No Masking" scenarios: **effective reproductive rate (R0)= 4.0** (for every 1 person infected, 4 other students become infected)



What does this all mean?

1. The Delta variant is *very* infectious; kids under 12 years old are not yet eligible for vaccines and therefore remain unprotected
2. Without masks or testing, up to 90% of susceptible students may become infected by the end of the semester (if only 30% have incoming protection)
3. Masks and testing, in combination, can prevent 40-70% of new infections (or more with high-quality, well-fitting masks)

Consequences may extend beyond the classroom and after the semester…

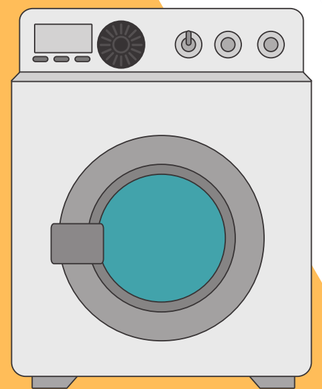
- Additional cases in the community--including among elderly grandparents and other family members--especially when community rates are already increasing (Goldhaber, 2021)
- More infected students leads to more days of school absences, forcing caregivers to take time off work
- Multi-inflammatory syndrome or Long-Covid, which occurs among nearly half of students and can last up to 8 months (Buonsenso, 2021a, Buonsenso 2021b)

Are masks harmful?

Children aged 7 to 13 years have been shown to be able to make accurate inferences about the emotions of others with partially covered faces.

Concerns about reduced oxygen saturation and carbon dioxide retention when wearing a mask have not been supported by available data, including recent statements from American Academy of Pediatrics.

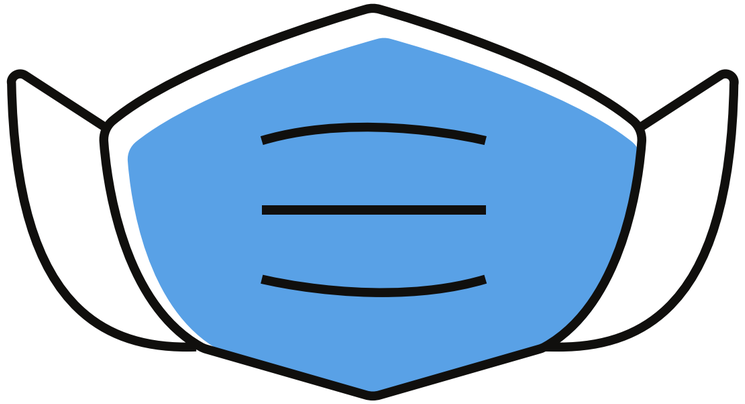
Cloth masks can be used safely more than once if you wash them each day. Proper laundering of cloth masks removes any viruses, bacteria or respiratory secretions that may build up on the mask. You should wash your cloth mask with soap and water after you are done using it for the day. It should be completely dry before you use it again. Clean, dry masks will not develop mold or make you sick.



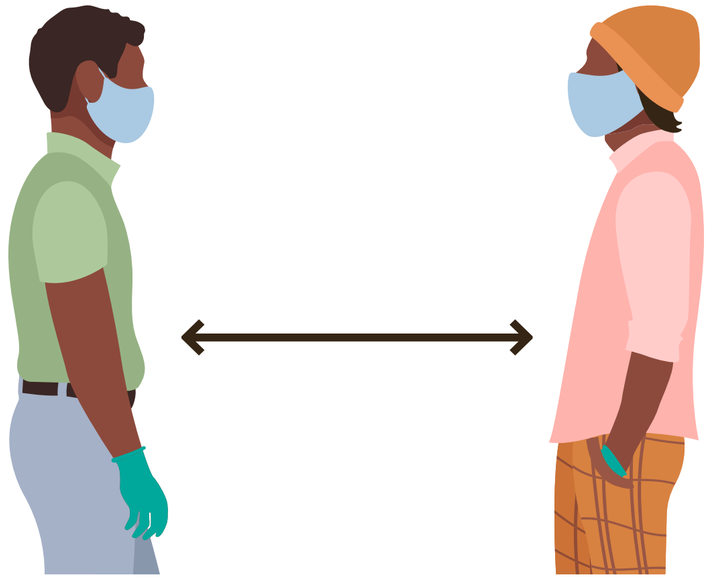
Sources:

- Ruba AL, Pollak SD. Children's emotion inferences from masked faces: Implications for social interactions during COVID-19. PLoS One. 2020;15(12):e0243708.
- Samannan R, Holt G, Calderon-Candelario R, Mirsaeidi M, Campos M. Effect of face masks on gas exchange in healthy persons and patients with COPD. Ann Am Thorac Soc. Published online October 2, 2020. doi:10.1513/AnnalsATS.202007-812RL
- https://www.hopkinsallchildrens.org/ACH-News/General-News/Myths-about-Masks-and-Other-Coronavirus-Facial-Cov

Is the virus too small for masks?



The virus cannot travel by itself. **It relies on respiratory droplets to go from person to person**



The Delta Variant has changed the game.

We are going into more concerning territory

- The Delta variant is highly contagious, more than 2x as contagious as previous variants and has a much higher viral load (transmits to more people from 1 person).
- When the CDC revised its guidance in May, the delta variant represented 1% of all cases. **Today that number is more than 80%.**
- Children can transmit the virus to others and can be sources for outbreaks
- Children can experience severe health outcomes from COVID-19 including MIS-C, Hospitalization, and Death
- Schools are starting full force in-person learning
- As a result, universal masking is a proven, safe, effective approach to reduce spread of the Delta variant.

Sources
https://jamanetwork.com/journals/jamapediatrics/fullarticle/2783022
https://www.cdc.gov/mmwr/volumes/69/wr/mm6931e1.htm?s_cid=mm6931e1_w#suggestedcitation
https://www.cdc.gov/mmwr/volumes/70/wr/mm7020a3.htm
https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2780861

3 NEWS NOW KMTV OMAHA

Sick kids running out of room at Omaha-area hospitals as start of school, COVID loom

THE OKLAHOMAN

RSV + COVID: “At Oklahoma Children's Hospital, available pediatric beds are scarce as RSV surges”

NEWS

Baton Rouge: Kids sick with Covid are filling up children’s hospitals in areas seeing spikes

daily advertiser

Louisiana remains COVID-19 capital of U.S. as hospitals struggle to find beds and staff

Tennessean.

‘All of them': Tennessee health chief says children's hospitals will fill up as the delta variant surges: “on pace to completely fill children's hospitals across the state by the end of next week.”

Arkansas Democrat Gazette

After record admissions, Arkansas ICUs down to last 8 beds

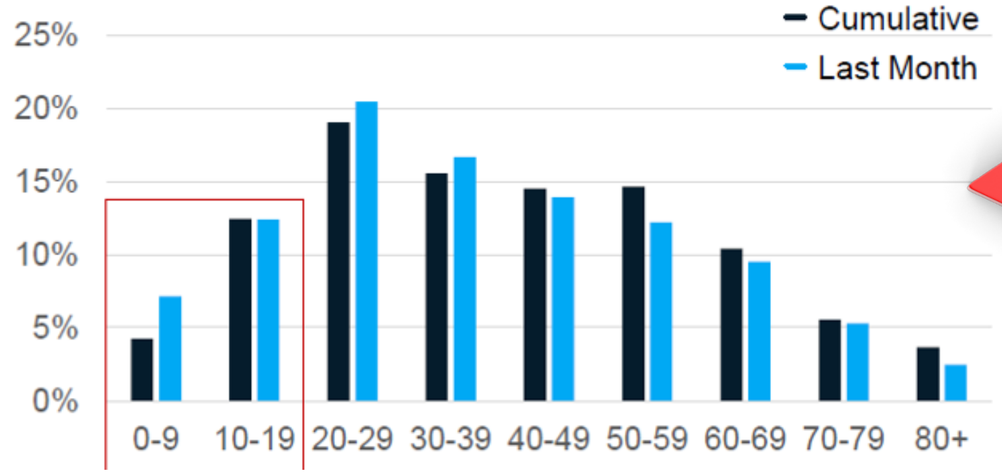
CNN

Dallas County has no pediatric ICU beds left, county judge says

Quote from county judge Clay Jenkins: "That means if your child's in a car wreck, if your child has a congenital heart defect or something and needs an ICU bed, or more likely if they have Covid and need an ICU bed, we don't have one. Your child will wait for another child to die," Jenkins said. "Your child will just not get on the ventilator, your child will be CareFlighted to Temple or Oklahoma City or wherever we can find them a bed, but they won't be getting one here unless one clears."

Delta will increase transmission in Children: SARS-CoV-2 can Negatively Impact Children Directly and Indirectly

- **Children can get infected with SARS-CoV-2: proportion of kids getting sick with COVID-19 is increasing**



Michigan Data

The Delta Variant: what we are seeing nationally and locally

Cumulative Number of Child COVID-19 Cases*

- 4,413,547 total child COVID-19 cases reported, and children represented 14.4% (4,413,547/30,700,985) of all cases

Overall rate: 5,864 cases per 100,000 children in the population

Change in Child COVID-19 Cases*

- 121,427 child COVID-19 cases were reported the past week from 8/5/21-8/12/21 (4,292,120 to 4,413,547) and children represented 18.0% (121,427/674,990) of the weekly reported cases

Over two weeks, 7/29/21-8/12/21, there was a 5% increase in the cumulated number of child COVID-19 cases (215,251 cases added (4,198,296 to 4,413,547))

Locally

Children aged 0-17 make 14.6% (1705/11697)of cases locally since the start of the pandemic

In the previous 2 weeks (7/29-8/12/21) Children cases have made up 20.7% of COVID cases (58/280)

https://www.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/children-and-covid-19-state-level-data-report/
MDSS

The Delta Variant: what we are seeing nationally

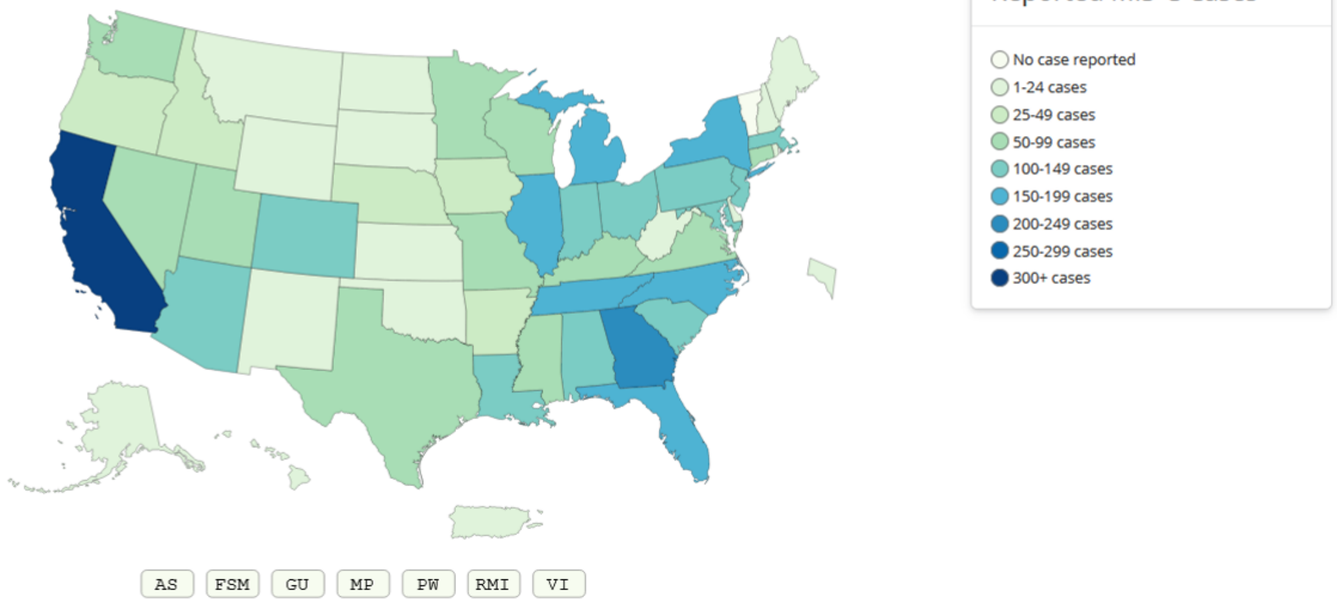
On a state-level, Texas is in the lead with **529** kids hospitalized for COVID19 today. **This equates to more than 8 hospitalized per 100,000 kids in the state of Texas.**

As of July 31, **4,404 kids** were diagnosed with MIS-C associated with COVID19 in the United States.

MIS-C Cases by Jurisdiction

Since reporting began in 2020, 52 U.S. jurisdictions (including 49 states, New York City, Puerto Rico, and Washington, DC) have reported at least one MIS-C case to CDC. Because of the small number of patients reported in some jurisdictions, this report includes case ranges instead of exact case counts from individual jurisdictions to protect the privacy of patients and their families.

Reported MIS-C Case Ranges by Jurisdiction, on or before July 30, 2021*

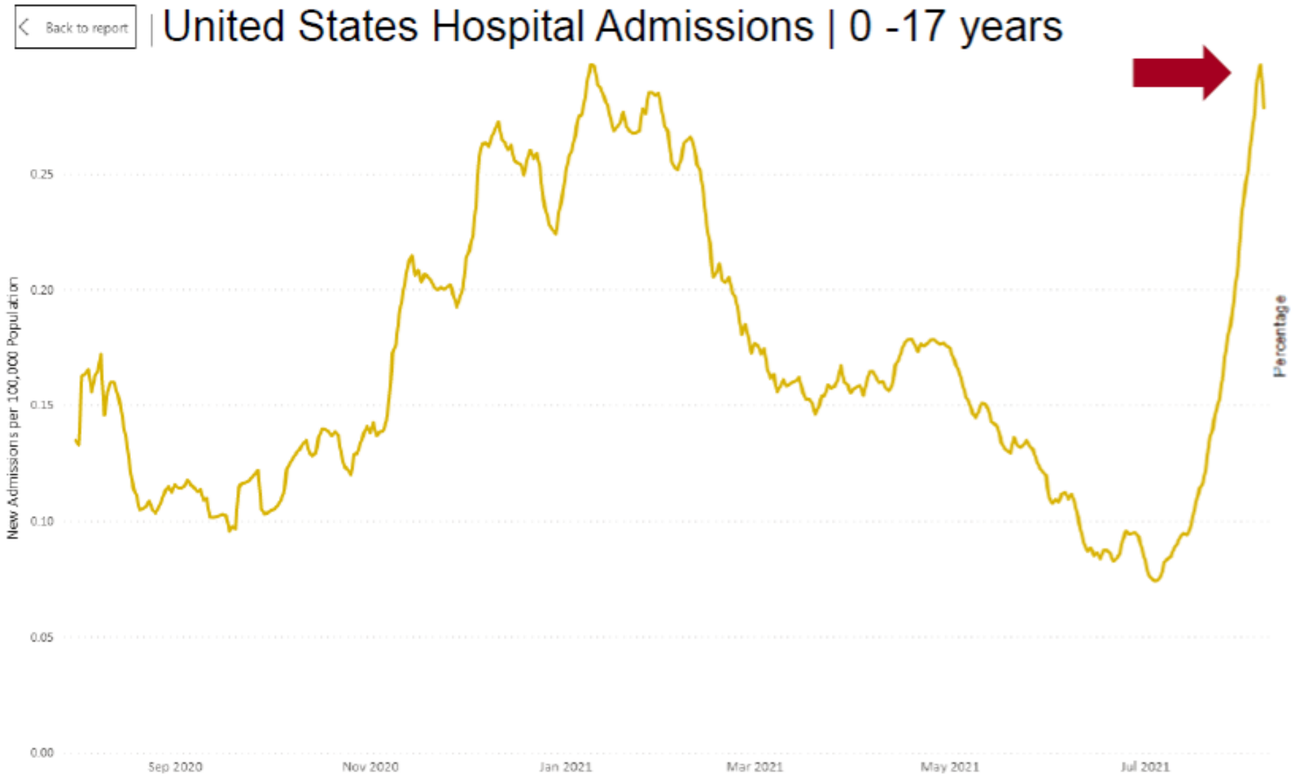


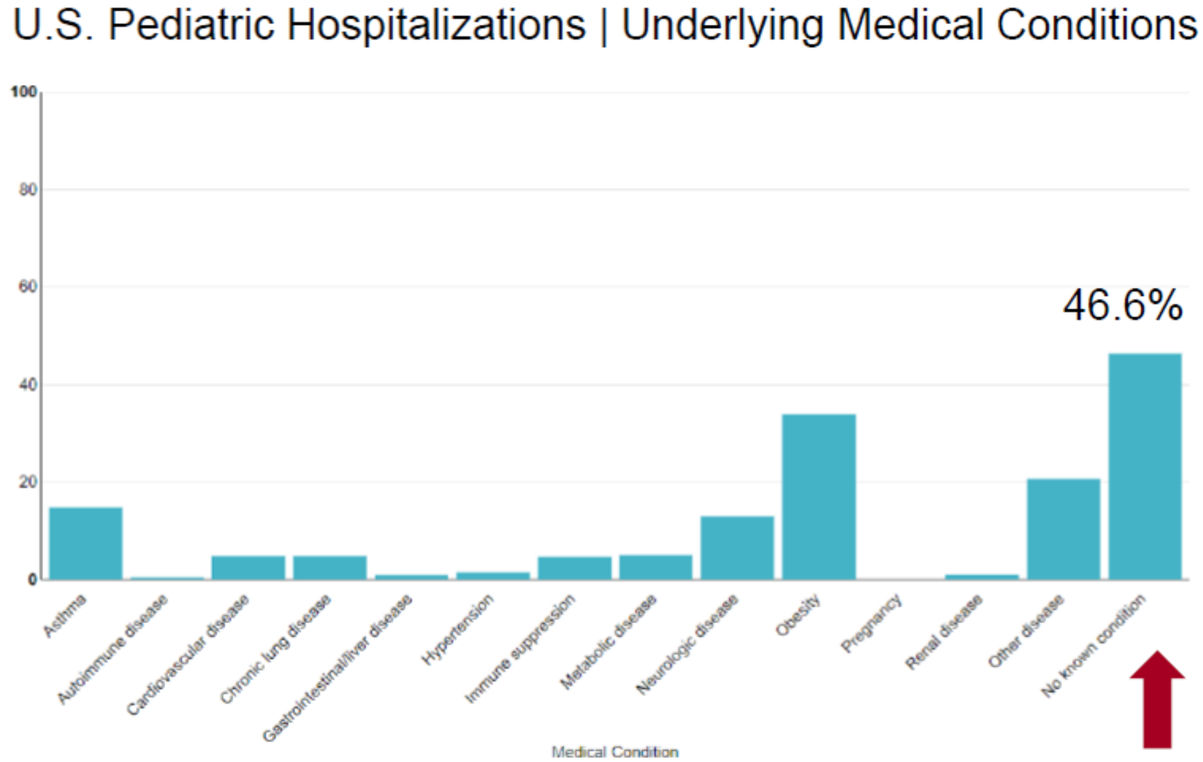
https://protect-public.hhs.gov/datasets/be0c321c689f44ac81b4771446b8eefc/explore?filters=eyJ0b3RfcGVkX3BhdF9ob3NwX2NvbmZfc3VzX2NvdiI6WzAsMzA2XSwidG90X3BlZF9wYXRfaG9zcF9jb25mX3N1c19jYyI6WzQ3Myw1OTFdfQ%3D%3D&location=0.000003,-3.419767,2.00&showTable=true&style=tot_ped_pat_hosp_conf_cov

https://covid.cdc.gov/covid-data-tracker/#mis-national-surveillance

SARS-CoV-2 can Negatively Impact Children Directly and Indirectly

- Children can experience severe health outcomes from COVID-19 including MIS-C and Hospitalization
  - **Hospitalizations among children nationwide is higher than it's ever been***
  - **Nearly half of children hospitalized have no reported underlying conditions†**





August 1, 2020-August 17, 2021

Sources: * CDC COVID Data Tracker > New Hospital Admissions; † COVIDNET

SARS-CoV-2 can Negatively Impact Children Directly and Indirectly

- While many school-aged children fully recover from COVID-19, **1 in 20 can experience symptoms last longer than four weeks and 1 in 50 can experience symptoms for more than 8 weeks**


Illness duration and symptom profile in symptomatic UK school-aged children tested for SARS-CoV-2

Erika Molteni*, Carole H Sudre*, Liane S Canas, Sunil S Bhopal, Robert C Hughes, Michela Antonelli, Benjamin Murray, Kerstin Kläser, Eric Kerfoot,

- Children experience many **Indirect Impacts** when there is uncontrolled spread of SARS-CoV-2
  - Loss of loved ones/caregivers: more than 136,000 children in the US lost a primary or secondary care giver (orphanhood-report.pdf (cdc.gov))
  - Adverse outcome to mental and physical health
  - Interferences with developmental milestones

Sources: Aerosol Dynamics Model for Estimating the Risk from Short-Range Airborne Transmission and Inhalation of Expiratory Droplets of SARS-CoV-2; Southern Nevada Health District; LA County; Retraction Notice.

Keeping Kids in School is a high priority

Masks help keep kids in school

More mitigation strategies in place=less interruptions in classroom

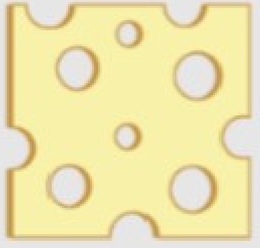
Missed in-person school negatively impacts children

- ACHD Updated COVID-19 School Guidance, www.allegancounty.org/coivd.
- Verlenden JV, Pampati S, Rasberry CN, et al. Association of Children's Mode of School Instruction with Child and Parent Experiences and Well-Being During the COVID-19 Pandemic — COVID Experiences Survey, United States, October 8–November 13, 2020. MMWR Morb Mortal Wkly Rep 2021;70:369–376. DOI: http://dx.doi.org/10.15585/mmwr.mm7011a1

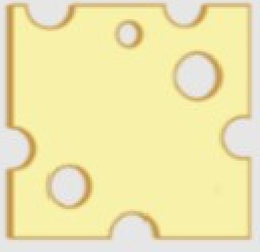
Layers of Defense Against COVID-19 in Schools

CDC recommended prevention strategies can be layered in different ways – the number and intensity of the layers can increase if community transition increases

As community transmission increases, more holes appear in the defenses, meaning more layers of protection may be needed.



As the vaccination rate within a building or facility increases, fewer holes will appear in the defenses.



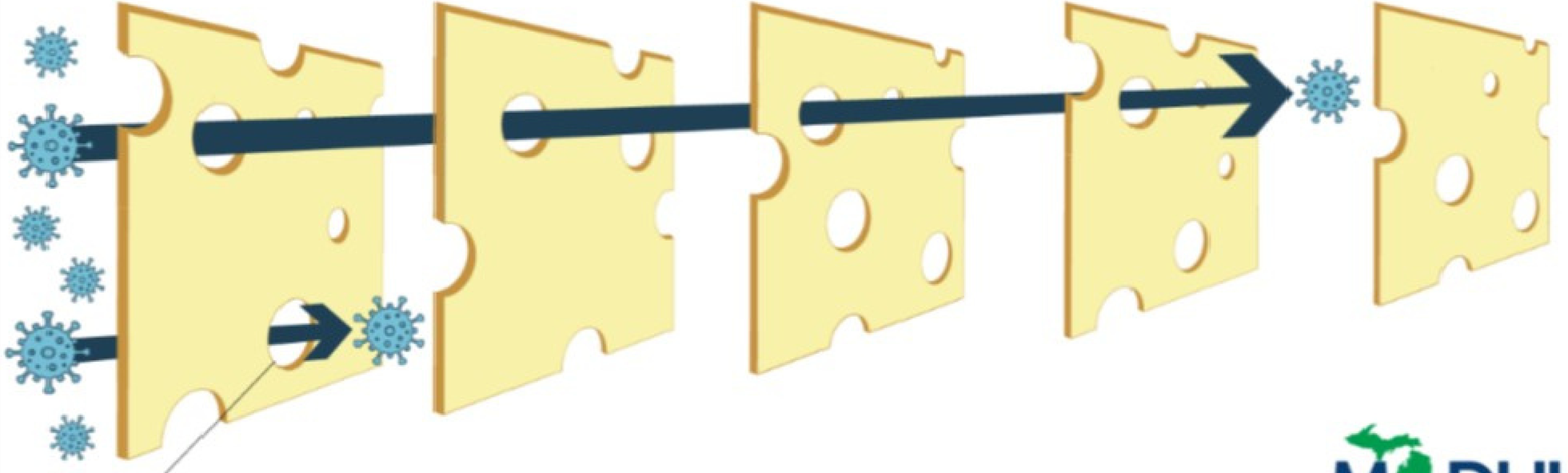
Promote **vaccination** against COVID-19 for eligible staff and students

Correctly and consistently use well-fitted **masks** that cover the nose and mouth

Arrange for **physical distancing**, including cohorting (grouping children together to reduce potential exposures)

Promote **screening** and **testing** for illness

Ensure **healthy environments** and **effective ventilation**



Holes in our defenses show that no one intervention is perfect, but layering them together increases success.

MDHHS Michigan Department of Health & Human Services

Adapted from Ian M. Mackay (virologydownunder.com) and James T. Reason

Why put this order in place?

1. The best tool for combating COVID-19 is vaccination. **For the population who does not have access, the next best tool is the protection of face masks.**

2. Keeping children in school is a high priority since the start of the pandemic.

3. Universal Face Masking is effective

4. The Delta variant is more transmissible and the amount of detectable virus of infected individuals is much higher, even in fully vaccinated individuals

5. Parents of those under 11 years of age do not have a choice to get their child vaccinated since the age group is not yet eligible

6. This order is effective until 6 weeks after this age group is eligible and has access to an authorized COVID-19 vaccine or Allegan County is in low risk for 7 days

Board of Commissioner Questions?