What Every School Nurse Wants or Needs to Know...
Mental Health Clinical Pearls

43rd Annual School Health Conference
Becky Austin-Morris, DNP, PMHNP-BC
Psychiatric & Mental Health Nurse Practitioner
Disclosures

• None
• No endorsement of any products within this educational activity
Objectives

• Nurse participants will self-report increased knowledge on assessment for and management of children’s mental health concerns

• Learners can describe one clinical pearl that will inform their school nursing practice
Our Why...
States with rankings 1-10 have lower prevalence of mental illness and higher rates of access to care for youth. States with rankings 39-51 indicate that youth have higher prevalence of mental illness and lower rates of access to care.

The 7 measures that make up the Youth Ranking include:

1. Youth with At Least One Major Depressive Episode (MDE) in the Past Year
2. Youth with Substance Use Disorder in the Past Year
3. Youth with Severe MDE
4. Youth with MDE who Did Not Receive Mental Health Services
5. Youth with Severe MDE who Received Some Consistent Treatment
6. Children with Private Insurance that Did Not Cover Mental or Emotional Problems
7. Students Identified with Emotional Disturbance for an Individualized Education Program.
# Youth Who Did Not Receive MH Services

<table>
<thead>
<tr>
<th>Rank</th>
<th>State</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Kansas</td>
<td>54.7%</td>
</tr>
<tr>
<td>19</td>
<td>Louisiana</td>
<td>54.9%</td>
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<tr>
<td>20</td>
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<td>55.4%</td>
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<tr>
<td>21</td>
<td>Nebraska</td>
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<tr>
<td>22</td>
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<td>23</td>
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<td>24</td>
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<tr>
<td>25</td>
<td>Hawaii</td>
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<tr>
<td>26</td>
<td>Wyoming</td>
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<tr>
<td>27</td>
<td>New Hampshire</td>
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<tr>
<td>28</td>
<td>Pennsylvania</td>
<td>57.5%</td>
</tr>
<tr>
<td>29</td>
<td>Alaska</td>
<td>57.8%</td>
</tr>
<tr>
<td>30</td>
<td>Missouri</td>
<td>58.8%</td>
</tr>
</tbody>
</table>

Mental Health in America, 2021
Youth - Insurance Did Not Cover MH - 2021

Mental Health Parity law 2008 promised equal coverage of mental health and substance use.

We still have much work to do!

<table>
<thead>
<tr>
<th>Rank</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Missouri</td>
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<tr>
<td>16</td>
<td>Alabama</td>
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<tr>
<td>17</td>
<td>Pennsylvania</td>
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<tr>
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<td>Georgia</td>
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<td>19</td>
<td>Virginia</td>
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<tr>
<td>20</td>
<td>Oregon</td>
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<tr>
<td>21</td>
<td>Delaware</td>
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<td>22</td>
<td>Indiana</td>
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<td>Illinois</td>
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<td>Maryland</td>
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<tr>
<td>25</td>
<td>West Virginia</td>
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<td>26</td>
<td>California</td>
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<td>27</td>
<td>Minnesota</td>
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<td>28</td>
<td>Mississippi</td>
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<td>29</td>
<td>Iowa</td>
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<tr>
<td>30</td>
<td>Louisiana</td>
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<td>31</td>
<td>New Mexico</td>
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<td>32</td>
<td>Utah</td>
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<tr>
<td>33</td>
<td>Oklahoma</td>
</tr>
<tr>
<td>34</td>
<td>Kansas</td>
</tr>
</tbody>
</table>

Mental Health in America, 2021
It is important to seek help early from their PHP or mental health professional. Just like physical illness, treating mental health problems early may help to prevent a more serious illness in the future.

Mental Health in America, 2021
Identify Students → Partner with Child/Parent/Caregivers/School Team

- Child’s mental health diagnosis
  - Co-occurring medical diagnosis
  - Contact information and ROI for direct communication
- Current medication list including OTC/supplements
- Length of time taking the medication
- Drug/food/other allergies and severe side effects in the past
- Identify triggers
- Identify interventions that help
Your Role

• Knowing (Awareness)
• Observing/checking in
  • Creating a safe trusting space
  • Empathy – active listening
• 3 Positives
  • Reinforce compliance/treatment (teach/practice coping skills)
• Communication to child’s network
• Medication administered as prescribed
• Monitor for side effects
• Training others on the team
Clinical Pearls by Typical Student/Patient Type

What is a clinical pearl?
• Anecdotal method of sharing information that is clinically relevant information based on experience or observation
Depression

• Not always easy to recognize in children
• Symptoms often hidden by behavioral or physical complaints
• For diagnosis: at least 5 symptoms present for a 2 week period

Youth symptoms:
• Irritable/cranky mood most of the day
• Loss of interest in usual/favorite activities
• Failure to gain weight as normally expected; overeating & wt. gain
• Changes in sleep (insomnia/hypersomnia)
• Psychomotor agitation/slowing
• Fatigue
• Self-critical, blaming oneself
• Decline in school performance – decreased motivation & concentration, frequent absences
• Thinking about death, not wanting to wake up or be here, writing about death.

Untreated depression increased the risk of suicide
• Giving things away
Treatment:

- Antidepressants – SSRIs (low and slow – med naïve)
  - Effective in relieving symptoms
  - Fluoxetine, Sertraline: FDA approved – 8 yoa & older
  - Escitalopram: 12 yoa

- Off-label – medications with anecdotal evidence but have not received FDA approval for use in children

- 60% will respond to medication treatment (must take daily/consistently)
- Duration – Remission then 6 to 9 months – to help prevent relapse

- Therapy/Coaching – Cognitive Behavioral Therapy (CBT) – recognize & change negative patterns of thinking & behavior

  NIH - TADS study (12 weeks)
  71% - Medication & CBT - symptoms, functioning & QOL significantly improved
  43% - Therapy only
  61% - Medication only
  35% - Placebo
Pearls For Nursing

Black box warning (2007)
• FDA for all antidepressant medications – 8-24 yoa
• “associated with an increased risk of suicidal thinking and/or behavior in a small proportion of C/A during the early phases”

Serotonin Syndrome
• SSRIs and other medications – inhibit serotonin uptake/metabolism, increase serotonin synthesis/release, activate serotonin receptors, or inhibit CYP450
  • Mild forms go undetected
  • Moderate symptoms: Mental status changes – agitation, hallucinations, delirium
  Tremor, clonus, hyperreflexia, muscle rigidity
  Tachycardia, diaphoresis, tachypnea, hyperthermia,
  hyperactive bowel, sialorrhea, and diarrhea
  **Seek medical treatment
  • Severe forms – life threatening emergency (seizures, coma, rhabdomyolysis, metabolic acidosis, abnormal blood clotting
Generalized Anxiety

- Anxiety – normal vs abnormal
- Disorder Diagnosis: Beyond their control, happening across settings, causes significant distress, and is present “for more days than not” for at least 6 months.
  - Pervasive worry about everything – internally focused
    - Undue distress – lead stomachaches and headaches, fatigue
    - Children – focused on performance in school or sports or meeting expectations
      - Drives extreme studying or practicing
  - Symptoms: restless, on-edge feeling, muscle tension, fatigue, tense, irritable, trouble concentrating, sleep disturbance, rigid
  - Onset: adolescents. More prevalent in girls

Treatment: Therapy – CBT, Exposure therapy
SSRIs, buspirone
Occasionally severe resistant to treatment - benzodiazepines
Pearls for Nursing

• SSRIs
  • Fluvoxamine – FDA approved IR for 8-17 for OCD (black box warning)
  • Buspirone – FDA approved age 7 up – anxiolytic (serotonin 1A partial agonist, serotonin stabilizer)

Activation Syndrome – SSRI adverse effects
  Cluster of hyperarousal symptoms – impulsivity, disinhibition, irritability, restlessness, insomnia
  Occurs – Onset of treatment or dose increase
  Risks – Comorbid ADHD
  Treatment – Decrease dose or discontinue

**Photosensitivity – wear sunscreen, stay out of direct sun

**May exacerbate IBS or multiple GI complaints
ADHD

- Most common reason children seek MH care
- Affects every 1 in 20 children
  - Boys 3-4x more than girls
  - Must show symptoms in two settings and symptoms interfere with functioning for at least six months
- 30-40% diagnosed have relatives with ADHD
- 3 types
  - Hyperkinesis
  - Inattentive
  - Combined
ADHD Treatment

• CBT
  • reducing related behaviors & developing/reinforcing positive behaviors & habits

• Behavioral Techniques
  • same routine every day
  • Organize everyday items
  • Keep rules simple, clear, and consistent

• Medication – most approved age 6 & up

<table>
<thead>
<tr>
<th>Stimulants</th>
<th>Class</th>
<th>Trade Name</th>
<th>Generic Name</th>
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</thead>
<tbody>
<tr>
<td>Amphetamines</td>
<td>Adderall</td>
<td>mixed amphetamine salts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Adderall XR</td>
<td>extended release mixed amphetamine salts</td>
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</tr>
<tr>
<td></td>
<td>Dexedrine</td>
<td>dextroamphetamine</td>
<td></td>
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<tr>
<td></td>
<td>Dextroamphetamine Spansule</td>
<td>dextroamphetamine</td>
<td></td>
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<tr>
<td></td>
<td>Vyvanse</td>
<td>Lisdexamfetamine (extended release)</td>
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</tr>
<tr>
<td></td>
<td>Concerta</td>
<td>methylphenidate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daytrana</td>
<td>methylphenidate (patch)</td>
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<tr>
<td></td>
<td>Focalin</td>
<td>dexamfetamine</td>
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<td></td>
<td>Focalin XR</td>
<td>extended release dexamfetamine</td>
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<tr>
<td></td>
<td>Metadate ER</td>
<td>extended release methylphenidate</td>
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<td></td>
<td>Metadate CD</td>
<td>extended release methylphenidate</td>
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<tr>
<td></td>
<td>Methylin</td>
<td>methylphenidate hydrochloride (liquid &amp; chewable tablets)</td>
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<td>Quillivant XR</td>
<td>extended release methylphenidate (liquid)</td>
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<td></td>
<td>Ritalin</td>
<td>methylphenidate</td>
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<td></td>
<td>Ritalin LA</td>
<td>extended release methylphenidate</td>
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<tr>
<td></td>
<td>Ritalin SR</td>
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<table>
<thead>
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<th>Non-stimulants</th>
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<th>Generic Name</th>
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<tbody>
<tr>
<td>Norepinephrine Uptake Inhibitor</td>
<td>Strattera</td>
<td>Atomoxetine</td>
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</tr>
<tr>
<td>Alpha Adrenergic Agents</td>
<td>Intuniv</td>
<td>extended release guanfacine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kapvay</td>
<td>extended release clonidine</td>
<td></td>
</tr>
</tbody>
</table>
• Affects on appetite & possibly sleep
• Beaded capsules may be opened and sprinkled in applesauce, yogurt. Should not be chewed
• Concerta – swallow whole (MOR)
  • Capsule passes GI tract → stool
• Patch – useful for those who cannot swallow pills or tolerate oral form
  • More bioavailable – does not go through first-pass metabolism
  • Duration of effect continues 2-3 hours after removal
• Atomoxetine – take w/food to avoid common SE – nausea or upset stomach
  • May be given at HS if causes tiredness/drowsiness
  • Present more at initiation and titrating up
  • Concurrent – fluoxetine will increase atomoxetine blood levels (reduce atomoxetine dose)
• Alpha II Agonists – ER – swallow whole/do not crush
  • Administer at the same time every day
  • “Dizzy legs” – hydration, food, rest
Medication Clinical Pearls
Autism Spectrum Disorder (ASD)

- SSRIs – anxiety, mood
- Alpha II agonist – impulsivity, inattention, hyperkinesis
- Second Generation Antipsychotics (SGA or atypical)
  - Most common prescribed - Risperidone, Aripiprazole for irritability in ASD
    - Dopamine agonist, plus serotonin action

PEARLSS (SGAs):
- Adherence and consistency is key
- Weight gain, lipid changes, risk for Diabetes T2 (lower w/Aripiprazole)
- EPS – D2 antagonist – nigrostriatal dopamine pathway
- Increased Prolactin levels – agonist – tuberoinfundibular dopamine pathway
  - Gynecomastia, Galactorrhea
Extrapyramidal Symptoms (EPS)

- Drug induced abnormal, uncontrollable, involuntary movements
- Cause: Dopamine receptor blocking agents
  - Akathisia – constant desire to move, very restless
  - Dystonia – involuntary muscle contractions
  - Myoclonus – quick muscle jerk
  - Tic/tremor
- Seek medical treatment

- AIMS assessment video
  - https://youtu.be/FBk8YYvOuD0

- Copy of AIMS assessment: https://cloudpractice.freshdesk.com/support/solutions/articles/3000084826-abnormal-involuntary-movement-scale-aims

- Child experiencing dystonia
  - https://youtu.be/y2D5HAWPVC4
Neuroleptic Malignant Syndrome (NMS)

- Rare 1-2/10,000
- 3 most common atypical agents: Risperidone, Olanzapine Aripiprazole
- Present with fever and rigidity
- Increased creatine phosphokinase (CPK) in 100% of cases
- Time of onset: initiation to 56 days (mean 8-16 days)
- Risk Factors:
  1) male
  2) 2 or more antipsychotics
  3) Hx of previous EPS/NMS
  4) Psychiatric disorders such as severe agitation, mood disorder, or delirium
  5) recent initiation or increase in dose
  6) IM injection of antipsychotics
  7) co-occurring dehydration, infection, malnutrition
  8) substance abuse
Neuroleptic Malignant Syndrome

https://youtu.be/xv7ssLHo_tE
Other helpful resources recommended


The life I touch for good or ill will touch another life, and in turn another, until who knows where the trembling stops or in what far place my touch will be felt.

~Frederick Buechner
Prepped and Ready

Shayla Sullivant, MD
Child and Adolescent Psychiatrist
Disclosures

I have no relevant financial relationships with the manufacturer(s) of any commercial product(s) and/or provider(s) of commercial services discussed in this CME activity.
Objectives

• Provide background on the problem of youth suicide
• Describe how Prepped and Ready began
• Share initial results of Prepped and Ready presentations
• Review how you can help bring Prepped and Ready videos to your community
Youth Risk Behavior Survey (CDC, 2020)

• 36.7% felt sad or hopeless 2+ weeks*
• 18.8% seriously considered suicide
• 15.7% made a plan for suicide*
• 8.9% attempted suicide*
• Less than 2.5% saw a medical provider for the attempt

*denotes increase from 2017 data
Between 1999-2016, suicide rates rose 45% in KS, 36% in MO (CDC, 2018)

Suicide rates rose across the US from 1999 to 2016.

- Increase 38 - 58%
- Increase 31 - 37%
- Increase 19 - 30%
- Increase 6 - 18%
- Decrease 1%

The Latest Data Show Youth Suicides Continue To Rise In Missouri And Kansas

KCUR | By Kelsey Ryan
Published February 27, 2019 at 3:05 PM CST

HEALTH

Why Is The Risk Of Youth Suicide Higher In Rural Areas?
March 15, 2015 · 5:15 PM ET
Heard on All Things Considered

The Wichita Eagle

POLITICS & GOVERNMENT

Kansas youth suicide increased by 50 percent in one year, report says
Meeting parents in the midst of a crisis is not the best time to provide education, and it often feels too late in the process. Prevention is needed.
Mortality Rates by Method

**Most lethal**
- Firearm: 89.6%
- Drowning: 56.4%
- Suffocation/hanging: 52.7%
- Poison by gas: 30.5%

**Least lethal**
- Jumping: 27.5%
- Drug ingestion: 1.9%
- Non-drug poisoning: 1.1%
- Cut/pierce: 0.7%

(Conner A, Azrael D, Miller M., 2019)
Figure 1. Relationship between household gun ownership in 2004 and log of youth suicide rate, 2005–2015.
Prepped and Ready
Methods:

- Parents living with youth <18 and English-speaking qualified
- Presentation was hosted at ten community sites in the Midwest, lasting ~90 minutes each
- Participants completed surveys electronically
CONTENT OVERVIEW

- Self-care for Parents: 5%
- Teen Brain, Impulsivity, Technology: 15%
- Eating Disorders: 15%
- Vaping, Substance Abuse: 15%
- Suicide is Preventable, Speaking Up, Safe Storage: 50%
Prepped and Ready: Steps to Action

4x
Participants in Prepped and Ready (2018-2019)

• N=581 (80.9% female)
• Age: 43% 18-44, 56% >=45 years
• Race: 90% White
• Education: 91% college graduate or higher
• Setting: 15% urban, 79% suburban, 6% rural
• Percentage reporting firearm ownership: 37.9%
Changes in Firearm Storage

• At baseline 37.9% reported firearm ownership
• Storage in the safest manner possible increased from 17.3% at baseline to 37.1% at 2-week follow-up
• The odds of storing in the safest manner increased 5.9 times
• Among owners, 39.7% learned more about storage at home after the presentation
Changes in Medication Storage

Medication Changes:
• At baseline 96.6% reported unlocked medication
• At final survey:
  • 56.5% had disposed of medication
  • 53.0% had locked up medication
  • 41.5% had used medication organizers
“I truly believe that this information could save the life of my child. I have started locking everything and honestly, it has improved my health…time well spent to save my child's life. Cannot thank you enough.”
Why shift to videos?

• To reach more people who have barriers to attending at a specific time
• To shorten the commitment as much as possible
• Scaling is much more feasible with videos
Prepped and Ready Course

- https://rise.articulate.com/share/Of4d9XLcB28D5ZL6vKCTQwrbGH_Uj6xp#/

LOVE WILL.

Children's Mercy
How to get involved?

Message us at Preppedandready@cmh.edu if you are interested in helping us advertise the video series this fall in your community!

We will provide you with everything you need to share with others (i.e., social media posts)
References


Eating Disorders
Increasing awareness and understanding & Recognizing your important role.

Our Story.
• Eating Disorders are
  • Caused by a combination of biological, psychological, and sociocultural factors
  • Non-discriminatory, Manipulative, Persistent & Mean

• A malnourished brain
  • Struggles to differentiate positive and negative feedback.
  • Has trouble learning
  • & Is prone to depression, anxiety and obsessiveness

• Your important impact
  • Awareness        Education
  • Encouragement    Consistency

• Resources:
• Healing isn’t perfect but it’s possible.
  • Use your resources
  • Early intervention is best
  • It takes a village

E (age 15) & Supportive sister
  • 3 years post treatment.
  • Healed and continuing on his journey
A few things that I notice.....

In my experience, it has been a little bit challenging by dealing with my ADHD. But I think that these slides may help my teachers to understand me little bit more.

~ Eli, 10 years old
A few things that I notice.....

Helpful
• I like it when teachers ask me for my side of the story, hear me out, believe me, and understand my point of view.
• I like it when the teacher taps my shoulder before instructions.
• Sometimes I need the instructions repeated because I might not understand.
• I need extra time to finish my work.

Not Helpful
• Sometimes I feel that teachers don’t hear me out and they don’t listen to my side of the story.
• I feel like everyone thinks teachers are always right and I am always wrong. For example, teachers say I am interrupting, and I don’t see it that way.
I’m Eli and I would like it if you could remember… that…

• I always really want to do a good job.
• Sometimes I need help.
• Sometimes I forget to ask for help.
• I’m really thankful that I have good teachers to help me learn and grow while I am on my voyage for learning.
Parent Panel Questions
Still in a Pandemic: Return to School Considerations

Atenas I. Mena, MSN, RN, CPN
Manager of School-Based Health Services
Children’s Mercy Kansas City
Objectives

• Review COVID-19 transmission rates
• Review Risk Mitigation Strategies for School
• Decipher between testing types and testing strategies
• Discuss Vaccine Availability and Hesitancy
National COVID-19 Rates

Daily Trends in Number of COVID-19 Cases in the United States Reported to CDC
COVID-19 Weekly Cases per 100,000 Population by Age Group, United States

March 01, 2020 - July 24, 2021

Cases

<table>
<thead>
<tr>
<th>Sex</th>
<th>Age</th>
<th>Race/Ethnicity</th>
</tr>
</thead>
</table>

Deaths

<table>
<thead>
<tr>
<th>Sex</th>
<th>Age</th>
<th>Race/Ethnicity</th>
</tr>
</thead>
</table>

Age Group

- 0-4 Years
- 5-11 Years
- 12-15 Years
- 16-17 Years
- 18-29 Years
- 30-39 Years
- 40-49 Years
- 50-64 Years
- 65-74 Years
- 75+ Years

*Case Earliest Date is the earliest of the clinical date (related to illness or specimen collection and chosen by a defined hierarchy) and the Date Received by CDC.


US: The most recent line level case record was reported during the week ending on Jul 24, 2021. Percentage of cases reporting age by date - 98.40%

US territories are included in case and death counts but not in population counts. Potential two-week delay in case reporting to CDC denoted by gray bars.

Last Updated: Jul 20, 2021
## Regional COVID-19 Percentage Change in New Cases (MARC 7/10/21)

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>New Cases</th>
<th>New Cases Rate Per 100K People</th>
<th>% Change in New Cases</th>
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</thead>
<tbody>
<tr>
<td>State of Kansas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARC Region</td>
<td>1,528</td>
<td>74</td>
<td>+38%</td>
</tr>
<tr>
<td>Kansas (Within MARC)</td>
<td>584</td>
<td>66</td>
<td>+93%</td>
</tr>
<tr>
<td>Johnson, KS</td>
<td>580</td>
<td>60</td>
<td>+101%</td>
</tr>
<tr>
<td>Leavenworth, KS</td>
<td>58</td>
<td>71</td>
<td>+132%</td>
</tr>
<tr>
<td>Miami, KS</td>
<td>40</td>
<td>117</td>
<td>+122%</td>
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<tr>
<td>Wyandotte, KS</td>
<td>126</td>
<td>76</td>
<td>+56%</td>
</tr>
<tr>
<td>Missouri (Within MARC)</td>
<td>944</td>
<td>80</td>
<td>+17%</td>
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<tr>
<td>Cass, MO (No KCMO)</td>
<td>59</td>
<td>56</td>
<td>+55%</td>
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<tr>
<td>Clay, MO (No KCMO)</td>
<td>77</td>
<td>63</td>
<td>+18%</td>
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<tr>
<td>Jackson, MO (No KCMO)</td>
<td>466</td>
<td>121</td>
<td>+10%</td>
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<td>Kansas City, MO</td>
<td>306</td>
<td>62</td>
<td>+40%</td>
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<tr>
<td>Platte, MO (No KCMO)</td>
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<tr>
<td>Ray, MO</td>
<td>11</td>
<td>48</td>
<td>-72%</td>
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</tbody>
</table>

Reported changes in the last 7 days with a 10-day lag (7/4/2021 - 7/10/2021) compared to the 7 days previous to that range (6/27/2021 - 7/3/2021)

Color indicates whether change was **favorable** or **unfavorable**
SARS-CoV-2 Variants Circulating in the U.S


**

Most common lineages #

- B.1.617.2 Delta VOC 51.7% 46.3-57.0%
- B.1.1.7 Alpha VOC 28.7% 24.1-33.4%
- B.1.526 Iota VOI 3.0% 1.5-4.8%
- B.1 1.1% 0.3-2.3%
- B.1.1.519 0.1% 0.0-0.5%
- B.1.2 0.0% 0.0-0.3%

Additional VOI/VOC lineages #

- B.1.351 Beta VOC 0.2% 0.0-0.8%
- B.1.525 Eta VOI 0.0% 0.0-0.3%
- B.1.429 Epsilon VOI 0.0% 0.0-0.3%
- B.1.617.1 Kappa VOI 0.0% 0.0-0.3%
- B.1.427 Epsilon VOI 0.0% 0.0-0.3%
- P.2 Zeta VOI 0.0% 0.0-0.3%

Other*

- Other 6.4% 3.5-9.6%

* Other represents >200 additional lineages, which are each circulating at <1% of viruses
** These data include Nowcast estimates, which are modeled projections that may differ from weighted estimates generated at later dates
# Sublineages of P.1 and B.1.351 (P.1.1, P.1.2, B.1.351.2, B.1.351.3) are aggregated with the parent lineage and included in parent lineage's proportion. AY.1 and AY.2 are aggregated with B.1.1.7.2.
# U.S. Vaccination Rates

<table>
<thead>
<tr>
<th>Total Vaccine Doses</th>
<th>Delivered 390,735,975</th>
<th>Administered 338,491,374</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>People Vaccinated</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>At Least One Dose</strong></td>
<td>Total 186,474,836</td>
<td>Fully Vaccinated 161,631,676</td>
</tr>
<tr>
<td>% of Total Population</td>
<td>56.2%</td>
<td>48.7%</td>
</tr>
<tr>
<td>Population ≥ 12 Years of Age</td>
<td>186,252,728</td>
<td>161,502,704</td>
</tr>
<tr>
<td>% of Population ≥ 12 Years of Age</td>
<td>65.7%</td>
<td>57%</td>
</tr>
<tr>
<td>Population ≥ 18 Years of Age</td>
<td>176,445,130</td>
<td>153,816,147</td>
</tr>
<tr>
<td>% of Population ≥ 18 Years of Age</td>
<td>68.3%</td>
<td>59.6%</td>
</tr>
<tr>
<td>Population ≥ 65 Years of Age</td>
<td>48,728,390</td>
<td>43,476,539</td>
</tr>
<tr>
<td>% of Population ≥ 65 Years of Age</td>
<td>89.1%</td>
<td>79.5%</td>
</tr>
</tbody>
</table>

161.6M People fully vaccinated
COVID-19 Impact on Students
Hospitalization of Adolescents (age 12–17 years) with Laboratory-Confirmed COVID-19

After initially decreasing in early 2021, adolescent hospitalization rates for COVID-19 increased during March–April.

During January–March 2021:
- 204 adolescent hospitalizations assessed*
- Nearly 1/3 required ICU admission
- 5% required mechanical ventilation
- None died

Adolescents age 12-17 years are now eligible to get a COVID-19 vaccine.

Vaccination:
- Protects against severe illness
- Allows kids to safely join group activities
- Is safe and free

*Age 12-17 years identified through the COVID-NET surveillance system (https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covid-net/purpose-methods.html)
Children CAN Transmit SARS-CoV-2

Children who likely got COVID-19 at two Utah child care centers spread it to household members:
- 12 kids likely got COVID-19 in 2 child care centers; 3 didn’t have symptoms.
- 12 people who had contact with the children outside the child care centers got infected* including some parents and siblings.
- 1 parent required hospitalization.

Slow the spread of COVID-19 in child care centers:
- Test contacts of patients with COVID-19
- Wash hands frequently
- Stay home when sick
- Encourage adults and children 2 years and older to wear masks
- Clean and disinfect frequently

At a Wisconsin overnight summer school retreat, students were tested before arrival:
- Students didn’t stay 6 feet apart or wear masks at the retreat.
- 1 student tested negative 1 week before retreat but developed symptoms and tested positive shortly after arrival.
- 76% of students/staff were diagnosed with COVID-19 during retreat.

Exposed students were quarantined at the retreat to protect their families and communities.

*Confirmed by probable.

LOVE WILL.
Multisystem Inflammatory Syndrome (MIS-C)

- Severe hyperinflammatory syndrome occurring 2 – 6 wks after acute SARS-CoV-2
- 4,018 MIS-C cases as of June 2, 2021
- Estimated incidence of 1 MIS-C case in 3,200 SARS-CoV-2 infections
- 60%–70% of patients are admitted to intensive care, 1% – 2% die
- 62% of reported cases occurred in Hispanic/Latino or Black, Non-Hispanic
Risk Mitigation Strategies to Support Keeping Schools Open and Safe
The Swiss Cheese Model

Multiple Layers Improve Success
The Swiss Cheese Respiratory Pandemic Defense recognizes that no single intervention is perfect at preventing the spread of the coronavirus. Each intervention (layer) has holes.

**Personal** responsibilities
- Physical distance, stay home if sick
- Hand hygiene, cough etiquette
- If crowded, limit your time

**Shared** responsibilities
- Ventilation, outdoors, air filtration
- Quarantine and isolation

**Masks**
- Avoid touching your face
- Fast and sensitive testing and tracing
- Government messaging and financial support
- Vaccines

Source: Adapted from Ian M. Mackay (virologydownunder.com) and James T. Reason. Illustration by Rose Wong
Risk Mitigation Strategies- Continue to Implement

1. Vaccination
2. Consistent and correct mask use
3. Physical distancing (> 3 feet)
4. Screening testing to promptly identify cases, clusters, and outbreaks
5. Ventilation
6. Handwashing and respiratory etiquette
7. Staying home when sick and getting tested
8. Contact tracing, quarantine, and isolation
9. Cleaning and disinfection
School Guidance Updated 7/12/21

Guidance for Keeping Schools Safe for Students and Staff

Information for educators and school health professionals

Children’s Mercy is committed to helping children return safely to school during the COVID-19 pandemic. We have compiled resources for school health care professionals to keep students, families and school staff safe during the 2021-22 school year.

Guidance for schools during the 2021-22 school year

As a community, we’re facing decisions about how best to keep schools safe during the COVID-19 pandemic. Experts at Children’s Mercy developed resources to help the community - both families and administrators - navigate in-person school during COVID-19.

COVID-19 Risk Mitigation Walkthrough

• Offers thoughtful guidance to schools and district leaders on the implementation and daily practices of COVID-19 risk mitigation strategies
• Provides individual feedback to school leaders, staff, and teachers
• Identifies trends across the school, district, and region
• Builds a common understanding of establishing and practicing a culture of safety and infection prevention
  • Children’s Mercy offers limited walkthroughs for Jackson County schools, for more information submit a COVID-19 Request
Risk Mitigation Strategies Observed
Increase Equitable Access to Full-Time in-person Learning

In April 2021, access to full-time, in-person school varied by race/ethnicity among K–12 students

- **75%** among non-Hispanic White students
- **63%** among non-Hispanic Black students
- **59%** among Hispanic students

High COVID-19 vaccination among teachers, staff, and eligible students is the best way to maximize access to full-time, in-person school

CDC.GOV bit.ly/MMWR62921
COVID-19 Vaccines
#1 Risk Reduction Strategy: Vaccination

- Achieving high levels of COVID-19 vaccination is one of the most critical strategies to help schools be safe
- Greatly reduces risk of COVID-19 infection
- Prevents severe COVID-19 illness
- Pfizer vaccine approved for children 12 years and older
## COVID-19 Vaccine VS Infection Concerns for Children

<table>
<thead>
<tr>
<th>COVID-19 Vaccine</th>
<th>COVID-19 Infection</th>
</tr>
</thead>
<tbody>
<tr>
<td>The rate of myocarditis/pericarditis is 12.6 cases per 1 million 2&lt;sup&gt;nd&lt;/sup&gt; doses of vaccine</td>
<td>Hospitalization rate of 1 per 100,000 children 12-17 years (2.5-3 times higher than influenza hospitalization rates)</td>
</tr>
<tr>
<td></td>
<td>One-third of hospitalized children require care in the intensive care unit</td>
</tr>
<tr>
<td></td>
<td>Multisystem inflammatory syndrome in children occur 1 in 3200 COVID-19 infections. 60-70% of children with MIS-C require intensive care unit management</td>
</tr>
<tr>
<td></td>
<td>Cardiac complications occur in children hospitalized with acute COVID-19 (12%) or MIS-C (67%)</td>
</tr>
</tbody>
</table>
Resources for Staff, Students and Families about COVID-19 Vaccines

How mRNA COVID-19 Vaccines Work

Understanding the virus that causes COVID-19.

Coronaviruses, like the one that causes COVID-19, are named for the crown-like spines on their surface, called spike proteins. These spike proteins are ideal targets for vaccines.

What is mRNA?

Messenger RNA or mRNA is genetic material that tells your body how to make proteins.

What is in the vaccine?

The vaccine is made of mRNA wrapped in a coating that makes delivery easy and keeps the body from damaging it.

How does the vaccine work?

The mRNA in the vaccine teaches your cells how to make copies of the spike protein. If you are exposed to the real virus later, your body will recognize it and know how to fight it off.

In April, more than half of adolescents and parents of adolescents reported the teen would get a COVID-19 vaccine

Most parents and adolescents wanted more information about:

- Vaccine safety for adolescents
- How well the vaccine works in adolescents

COVID-19 vaccination is safe and effective for adolescents

6 Facts You Need to Know

Fact No. 1

The COVID-19 vaccines cannot give you COVID-19.

The COVID-19 vaccines do not contain any live part of the virus and cannot cause an infection. They cannot cause a positive COVID-19 test.

Fact No. 2

The development of the COVID-19 vaccines did not skip any steps in determining their safety.

The COVID-19 vaccines have been evaluated in tens of thousands of people using the same steps as other vaccines to ensure they are safe. Scientists were able to test the vaccine quickly and safely by working together and using resources from academics, industry, and the government, which has never happened before.

Fact No. 3

The COVID-19 vaccines will not change your DNA or live inside you forever.

The current COVID-19 vaccines use messenger RNA (mRNA) which does not go into your DNA. Your body turns the mRNA into a protein to make an immune response (antibodies). Once your body makes antibodies, the mRNA and protein break down.

Fact No. 4

The COVID-19 vaccines do not cause miscarriage or infertility.

The COVID-19 vaccines have not been linked to miscarriages or infertility. The CDC and American College of Obstetrics and Gynecology do not recommend withholding COVID-19 vaccine in pregnant women who are otherwise eligible to receive vaccine.

Fact No. 5

The COVID-19 vaccines can be given to people who already had COVID-19.

People with a history of COVID-19 were included in the COVID-19 vaccine trials. The vaccine is safe and effective in people with a history of COVID-19.

Fact No. 6

We know exactly what is in the COVID-19 vaccines.

The ingredients of the currently used COVID-19 vaccines are publicly available, can be found on the vaccine fact sheet, and are provided at the time of administration.

We empower school communities to understand and make a plan for COVID-19 vaccination.

https://www.vaxteen.org/

https://www.schoolvaccinehub.org/
COVID-19 Vaccine Toolkit for Schools

COVID-19 Vaccine
May 22, 2021

http://www.mohealthyschools.com
COVID-19 Testing
Review: Symptoms of COVID-19

- Fever or chills
- Cough
- Shortness of breath or difficulty breathing
- Fatigue
- Muscle or body aches
- New loss of taste or smell
- Sore throat

- Congestion or runny nose
- Nausea or vomiting
- Diarrhea
- No symptoms
How to identify students/staff with COVID-19

Symptoms mimic other viral infections
- Most symptomatic people will require COVID-19 testing

Loss of taste and/or smell are highly specific for COVID-19

Younger children have mild symptoms
- Runny nose, nasal congestion, sore throat

Children less commonly have fever
- Screening for fever at school is not recommended
Implementation of COVID-19 Screening

- Clear communication with families
  - Symptoms of COVID-19
  - Sick children do not come to school in-person
- Honor system, apps, checklist
- Visual inspection at school to identify sick children
- Assessment for COVID-19 exposure (and quarantine)
Risk Reduction Strategy: Testing

• Most symptoms of COVID-19 are indistinguishable from other childhood infections
• Access to testing is key
  • Allows for rapid contact investigation in positive cases
  • Minimizes loss of in-person learning in negative cases
• Symptom screening practices will miss some students/staff with COVID-19
  • Some people will be asymptomatic
  • Layered mitigation strategies (masking, distancing, hand hygiene, vaccination)
• Increase in-person attendance when other respiratory viruses are circulating
CDC Recommendations for Testing

Permission to Test
- Parent Consent
- Student Consent

Obtaining Specimen
- Safe, private location
- Personnel to assist with specimen collection

Performing test
- CLIA waiver for onsite testing
- Coordination with outside lab to perform tests

Test Results
- Contact Investigation
- Reporting mechanism to state/local officials
- Confirmatory testing as needed
## Testing Strategies

<table>
<thead>
<tr>
<th>Testing Strategy</th>
<th>Reason to Test</th>
<th>How to Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptomatic</td>
<td>Start isolation</td>
<td>Rapid Antigen at school (may need PCR if negative depending on local policy)</td>
</tr>
<tr>
<td></td>
<td>Identify exposed people who need to quarantine</td>
<td>Specimen Collection at school for offsite PCR Testing</td>
</tr>
<tr>
<td>Exposure</td>
<td>Identify infection prior to onset of symptoms and start isolation</td>
<td>Rapid Antigen at school (may need PCR if negative depending on local policy)</td>
</tr>
<tr>
<td></td>
<td>Identify exposed people who need to quarantine</td>
<td>Specimen Collection at school for offsite PCR Testing</td>
</tr>
<tr>
<td></td>
<td>Alternative quarantine options</td>
<td></td>
</tr>
<tr>
<td>Screening</td>
<td>Identify infected people who are asymptomatic in order to decrease transmission</td>
<td>Rapid Antigen Testing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Single PCR Testing (Random sampling of at least 10% of unvaccinated populations)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pooled PCR Testing</td>
</tr>
</tbody>
</table>
## Test Types

<table>
<thead>
<tr>
<th>Specimen</th>
<th>PCR</th>
<th>Antigen</th>
<th>Antibody</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nasal, Midturbinate, Nasopharyngeal, Saliva</td>
<td>Midturbinate, Nasopharyngeal</td>
<td>Blood</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>High</td>
<td>Moderate</td>
<td>Moderate-high</td>
</tr>
<tr>
<td>Specificity</td>
<td>High</td>
<td>High</td>
<td>Moderate-High</td>
</tr>
<tr>
<td>Turn-Around Time</td>
<td>1 hour- 24 hours</td>
<td>15 minutes</td>
<td>1-2 days</td>
</tr>
<tr>
<td>Where is Test Performed?</td>
<td>Lab, on-site</td>
<td>On-site</td>
<td>Lab</td>
</tr>
<tr>
<td>What does it Tell You?</td>
<td>Recent or Active Infection</td>
<td>Active Infection</td>
<td>Evidence of Prior Infection</td>
</tr>
</tbody>
</table>
Know what to do with COVID-19 Test Results

**Negative**
- Symptomatic
  - Return to school when 24 hours fever free or appropriate isolation for illness
- Exposed
  - Shorten quarantine based on local public health authority guidance
- Screening
  - No action needed

**Positive:**
- Symptomatic, Exposed, or Screening
  - Start isolation
  - Contact investigation for exposed people to start quarantine
  - Notification of local public health authorities, state and district officials
## Testing Recommendations based on Transmission Level


<table>
<thead>
<tr>
<th>Indicator - if the two indicators suggest different transmission levels, the higher level is selected</th>
<th>Low Transmission Blue</th>
<th>Moderate Transmission Yellow</th>
<th>Substantial Transmission Orange</th>
<th>High Transmission Red</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total new cases per 100,000 persons in the past 7 days</td>
<td>0-9.99</td>
<td>10-49.99</td>
<td>50-99.99</td>
<td>≥100</td>
</tr>
<tr>
<td>Percentage of NAATs(^1) that are positive during the past 7 days</td>
<td>0-4.99%</td>
<td>5-7.99%</td>
<td>8-9.99%</td>
<td>≥10.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Students</th>
<th>Low Transmission(^1) Blue</th>
<th>Moderate Transmission Yellow</th>
<th>Substantial Transmission Orange</th>
<th>High Transmission Red</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not need to screen students.</td>
<td>Offer screening testing for students who are not fully vaccinated at least once per week.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teachers and staff</th>
<th>Low Transmission(^1) Blue</th>
<th>Moderate Transmission Yellow</th>
<th>Substantial Transmission Orange</th>
<th>High Transmission Red</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offer screening testing for teachers and staff who are not fully vaccinated at least once per week.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>High risk sports and activities</th>
<th>Low Transmission(^1) Blue</th>
<th>Moderate Transmission Yellow</th>
<th>Substantial Transmission Orange</th>
<th>High Transmission Red</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommend screening testing for high-risk sports(^2) and extracurricular activities(^3) at least once per week for participants who are not fully vaccinated.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommend screening testing for high-risk sports and extracurricular activities twice per week for participants who are not fully vaccinated.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cancel or hold high-risk sports and extracurricular activities virtually to protect in-person learning, unless all participants are fully vaccinated.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Low- and intermediate-risk sports</th>
<th>Low Transmission(^1) Blue</th>
<th>Moderate Transmission Yellow</th>
<th>Substantial Transmission Orange</th>
<th>High Transmission Red</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not need to screen students participating in low- and intermediate-risk sports.(^2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommend screening testing for low- and intermediate-risk sports at least once per week for participants who are not fully vaccinated.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Conclusion

• Children get COVID-19, but it is often a mild or asymptomatic disease
• Children can transmit the virus that causes COVID-19
• Some children get severe acute COVID-19 or MIS-C
• Risk Mitigation Strategies work!
• COVID-19 vaccines are safe and effective
• Testing can minimize loss of in-person learning
Resources

• Guidance

• Vaccines
  • https://www.schoolvaccinehub.org/
  • https://www.vaxteen.org/
  • http://www.mohealthyschools.com

• Testing
  • https://www.coronavirus.kdheks.gov/295/School-Based-Funding
References

- **Variant sequencing:** [https://covid.cdc.gov/covid-data-tracker/#variant-proportions](https://covid.cdc.gov/covid-data-tracker/#variant-proportions)
- **Vaccine rates:** [https://covid.cdc.gov/covid-data-tracker/#vaccinations](https://covid.cdc.gov/covid-data-tracker/#vaccinations)
- **Vaccine hesitancy:** [https://www.cdc.gov/mmwr/volumes/70/wr/mm7028e1.htm?s_cid=mm7028e1_w](https://www.cdc.gov/mmwr/volumes/70/wr/mm7028e1.htm?s_cid=mm7028e1_w)
- **Vaccines and race/ethnicity:** [https://www.cdc.gov/mmwr/volumes/70/wr/mm7028a1.htm?s_cid=mm7028a1_w](https://www.cdc.gov/mmwr/volumes/70/wr/mm7028a1.htm?s_cid=mm7028a1_w)
- **Myocarditis recommendations from ACIP:** [https://www.cdc.gov/mmwr/volumes/70/wr/mm7027e2.htm?s_cid=mm7027e2_w](https://www.cdc.gov/mmwr/volumes/70/wr/mm7027e2.htm?s_cid=mm7027e2_w)
- **Disparities in learning mode:** [https://www.cdc.gov/mmwr/volumes/70/wr/mm7026e2.htm?s_cid=mm7026e2_w](https://www.cdc.gov/mmwr/volumes/70/wr/mm7026e2.htm?s_cid=mm7026e2_w)
- **Hospitalization of kids:** [https://www.cdc.gov/mmwr/volumes/70/wr/mm7023e1.htm?s_cid=mm7023e1_w](https://www.cdc.gov/mmwr/volumes/70/wr/mm7023e1.htm?s_cid=mm7023e1_w)
- **Delta variant in a gym:** [https://www.cdc.gov/mmwr/volumes/70/wr/mm7028e2.htm?s_cid=mm7028e2_w](https://www.cdc.gov/mmwr/volumes/70/wr/mm7028e2.htm?s_cid=mm7028e2_w)
Q & A