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

43rd Annual School Health Conference

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Psychiatric & Mental Health Nurse Practitioner

BEST CHILDREN'S HOSPITALS U.S.News RANKED IN 10 SPECIALTIES 2020-21

MAGNET RECOGNIZED AMERICAN NURSES CREDENTIALING CENTER

UMKC School of Medicine

KU SCHOOL OF MEDICINE The University of Kansas

Children's Mercy

Disclosures

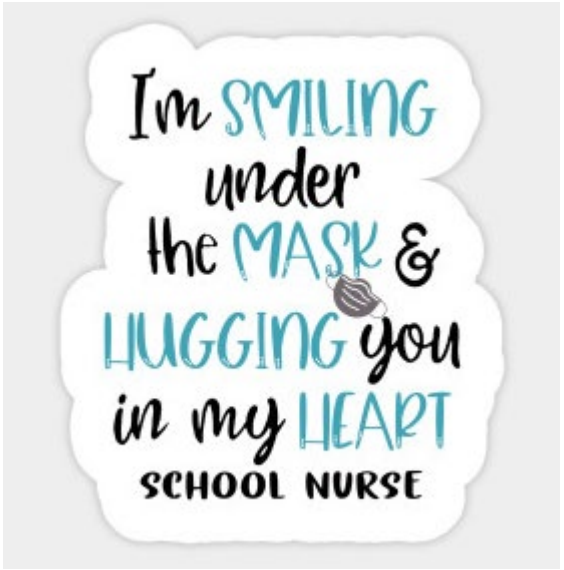
- None
- No endorsement of any products within this educational activity

Objectives

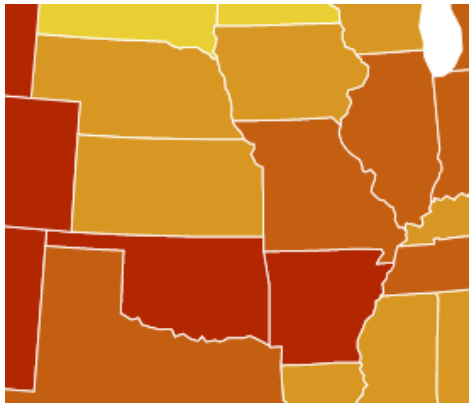
- Nurse participants will self-report increased knowledge on assessment for and management of children's mental health concerns
- Learners can describe one clinical pearl that will inform their school nursing practice

Our Why…


1 IN 10
CHILDREN SUFFER FROM A
DIAGNOSABLE
MENTAL ILLNESS


I'm SMILING
under
the MASK &
HUGGING you
in my HEART
SCHOOL NURSE

Youth MH Prevalence 2021



26	Kansas
27	Michigan
28	Indiana
29	Georgia
30	Texas
31	Missouri

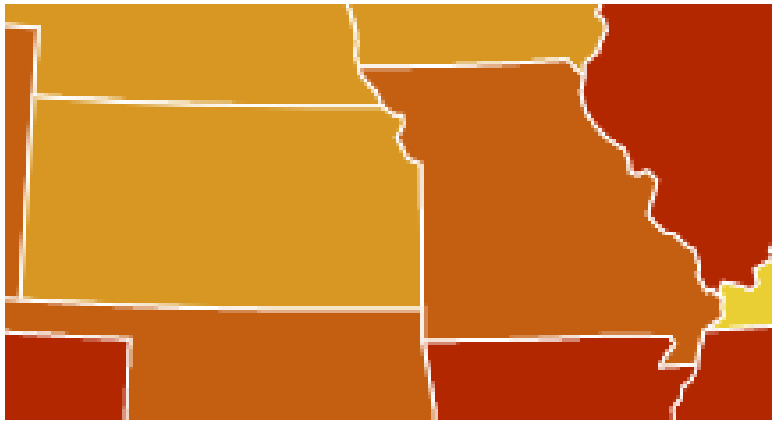
States with rankings 1-10 have lower prevalence of mental illness and higher rates of access to care for youth. States with rankings 39-51 indicate that youth have higher prevalence of mental illness and lower rates of access to care.

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.

Mental Health in America, 2021

Youth Who Did Not Receive MH Services



Rank ^	State	Percentage
18	Kansas	54.7
19	Louisiana	54.9
20	Minnesota	55.4
21	Nebraska	55.4
22	Montana	55.6
23	Michigan	55.7
24	New Jersey	55.7
25	Hawaii	56.2
26	Wyoming	56.6
27	New Hampshire	56.9
28	Pennsylvania	57.5
29	Alaska	57.8
30	Missouri	58.8

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!

Rank ^	State
15	Missouri
16	Alabama
17	Pennsylvania
18	Georgia
19	Virginia
20	Oregon
21	Delaware
22	Indiana
23	Illinois
24	Maryland
25	West Virginia
26	California
27	Minnesota
28	Mississippi
29	Iowa
30	Louisiana
31	New Mexico
32	Utah
33	Oklahoma
34	Kansas

Mental Health in America, 2021

CHILDREN'S MENTAL HEALTH MATTERS

Promoting children's mental health

Know the signs

- Feels very sad, hopeless or irritable
- Feels overly anxious or worried
- Is scared and fearful; has frequent nightmares
- Is excessively angry
- Uses alcohol or drugs
- Avoids people; wants to be alone all of the time
- Hears voices or sees things that aren't there
- Can't concentrate, sit still, or focus attention
- Needs to wash, clean things, or perform certain rituals many times a day
- Talks about suicide or death
- Hurts other people or animals; or damages property
- Has major changes in eating or sleeping habits
- Loses interest in friends or things usually enjoyed
- Falls behind in school or earns lower grades

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 2week 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

FDA-Approved ADHD Medication Table

Stimulants		
Class	**Trade Name**	**Generic Name**
Amphetamines	Adderall	mixed amphetamine salts
	Adderall XR	extended release mixed amphetamine salts
	Dexedrine	dextroamphetamine
	Dexedrine Spansule	dextroamphetamine
	Vyvanse	Lisdexamfetamine (extended release)
Methylphenidate	Concerta	methylphenidate
	Daytrana	methylphenidate (patch)
	Focalin	dexmethylphenidate
	Focalin XR	extended release dexmethylphenidate
	Metadate ER	extended release methylphenidate
	Metadate CD	extended release methylphenidate
	Methylin	methylphenidate hydrochloride (liquid & chewable tablets)
	Quillivant XR	extended release methylphenidate (liquid)
	Ritalin	methylphenidate
	Ritalin LA	extended release methylphenidate
	Ritalin SR	extended release methylphenidate
Non-stimulants		
Class	**Trade Name**	**Generic Name**
Norepinephrine Uptake Inhibitor	Strattera	Atomoxetine
Alpha Adrenergic Agents	Intuniv	extended release guanfacine
	Kapvay	extended release clonidine

Pearls

- 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

PEARLS (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

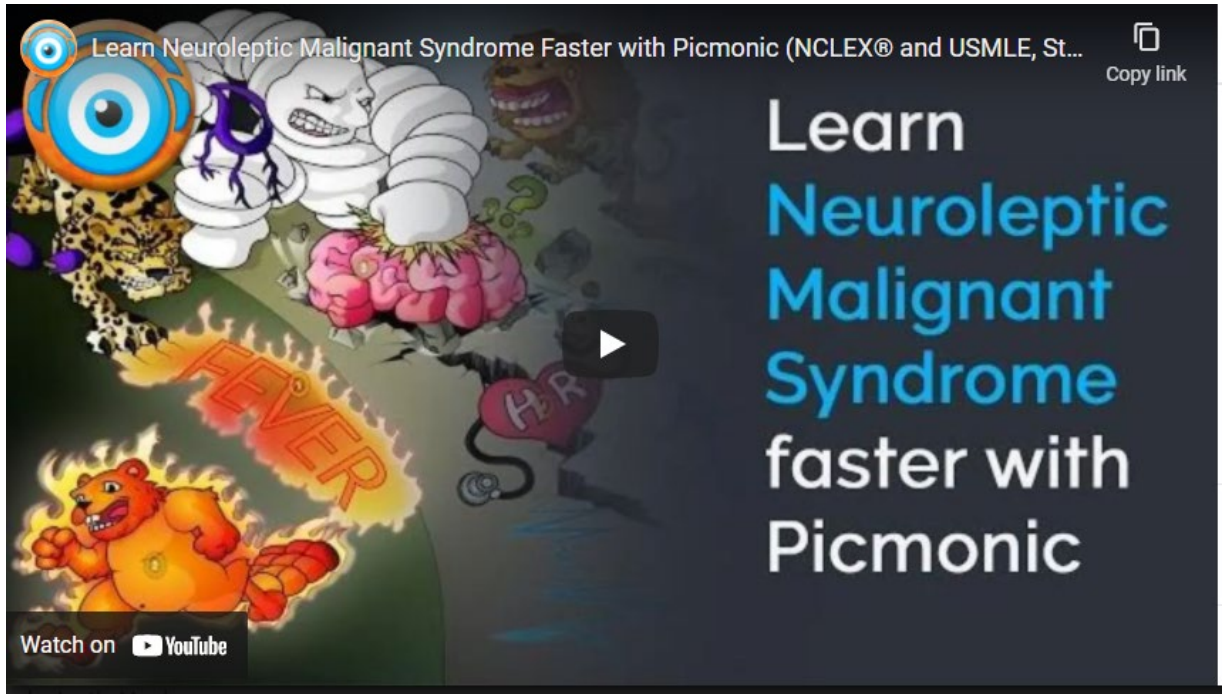
  - Copy of AIMS assessment: https://cloudpractice.freshdesk.com/support/solutions/articles/3000084826-abnormal-involuntary-movement-scale-aims-

- 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



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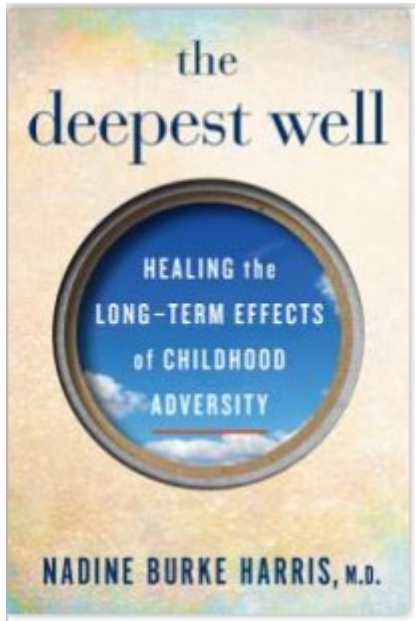

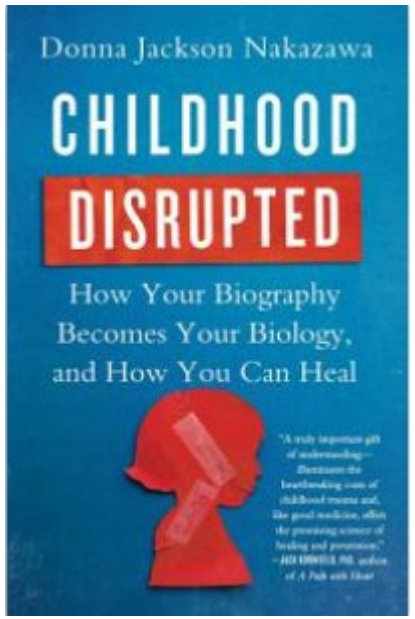

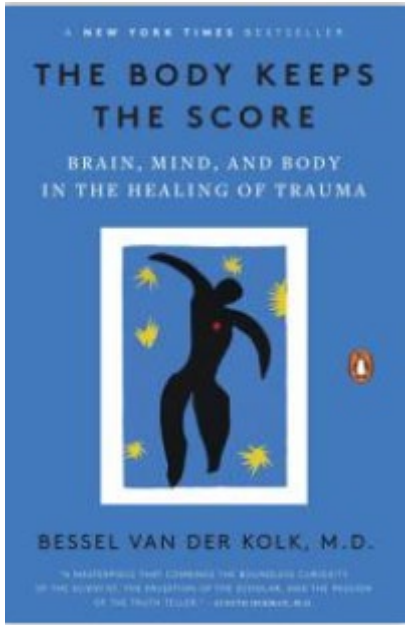

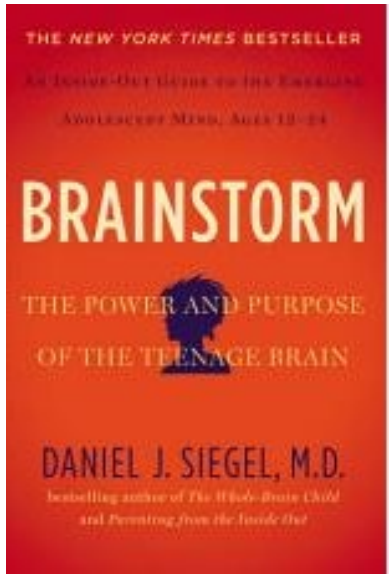

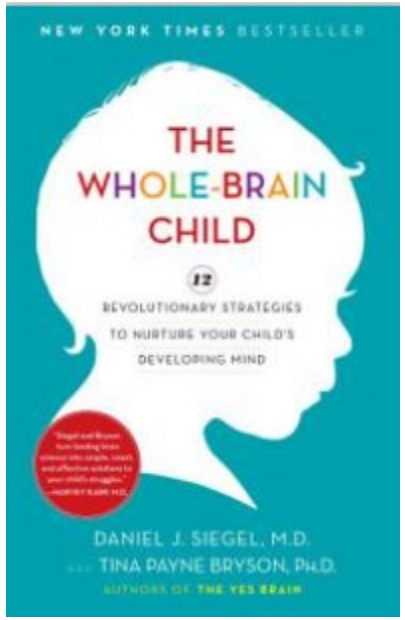

Other helpful resources recommended

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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

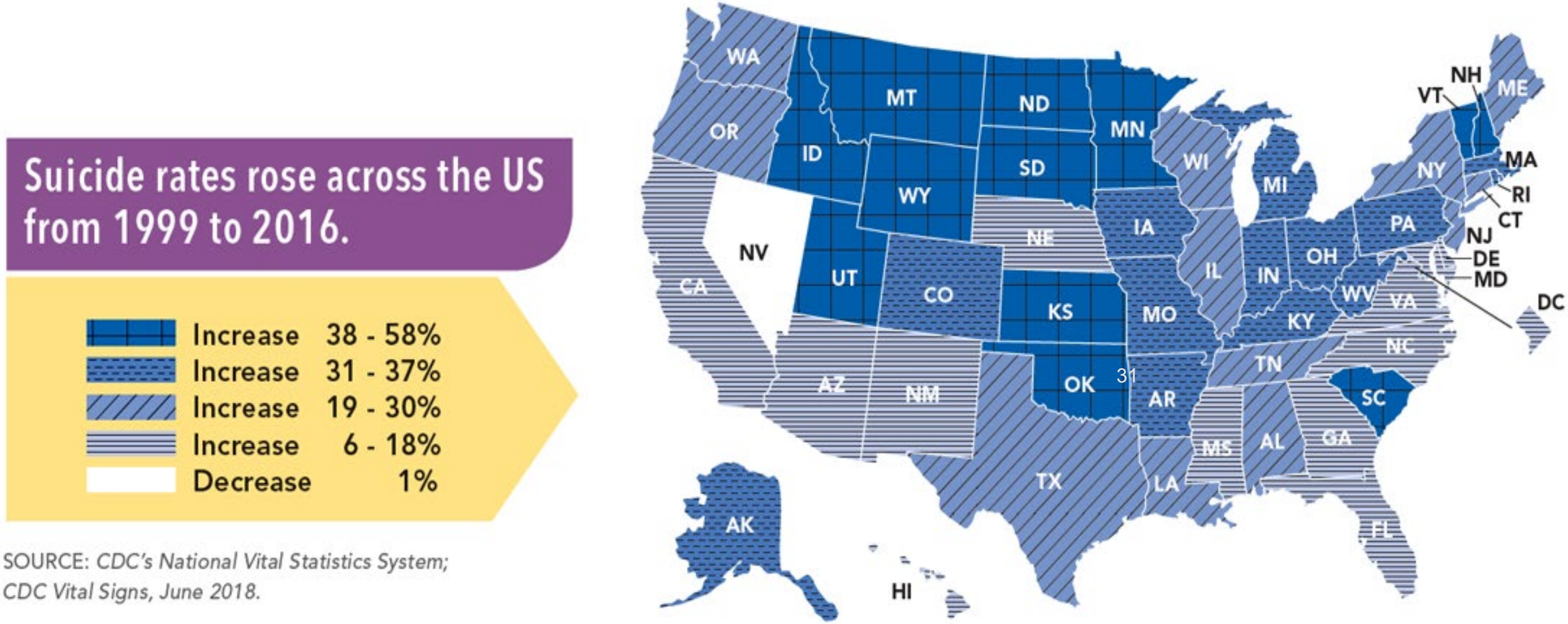
- Provide background on the problem of youth suicide
- Describe how Prepped and Ready began
- Share initial results of Prepped and Ready presentations
- Review how you can help bring Prepped and Ready videos to your community

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)



Health

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)

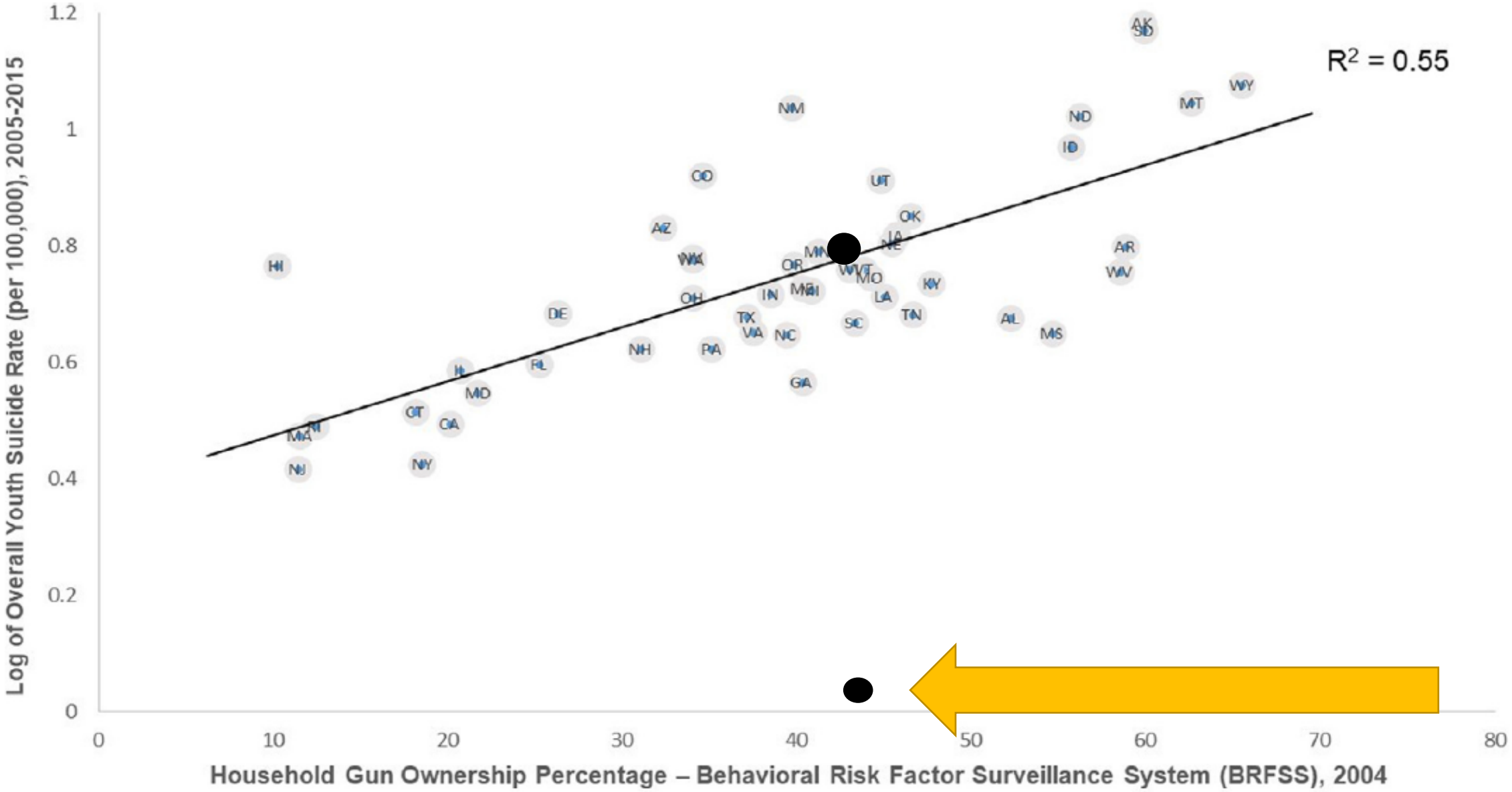
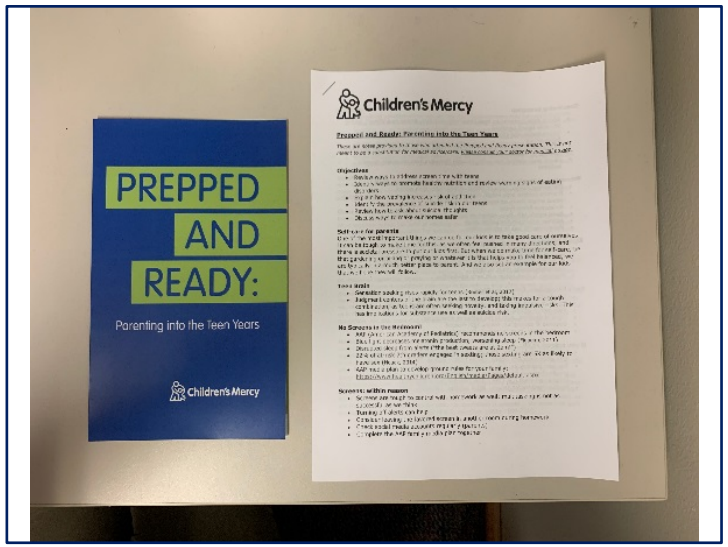


Figure 1. Relationship between household gun ownership in 2004 and log of youth suicide rate, 2005–2015.

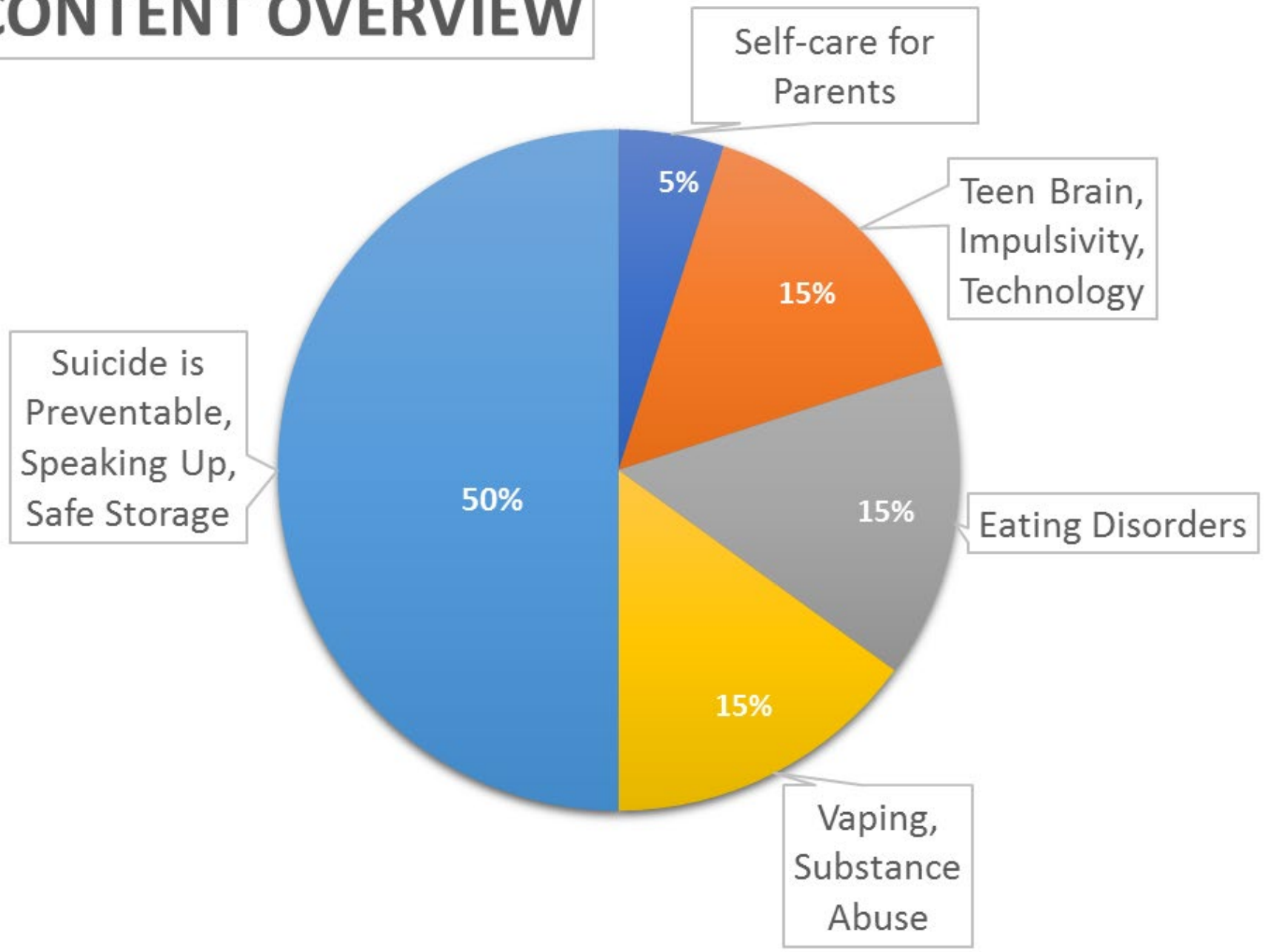
Prepped and Ready



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



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#/

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

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Eating Disorders

Increasing awareness and understanding & Recognizing your important role.

Our Story.

BEST CHILDREN'S HOSPITALS U.S.News RANKED IN 10 SPECIALTIES 2020-21

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- 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:
  - Children's Eating Disorder Center. EDC PFAC. POPS Program. www.nationaleatingdisorders.org. Nine Truths. ED Fact Sheet.

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

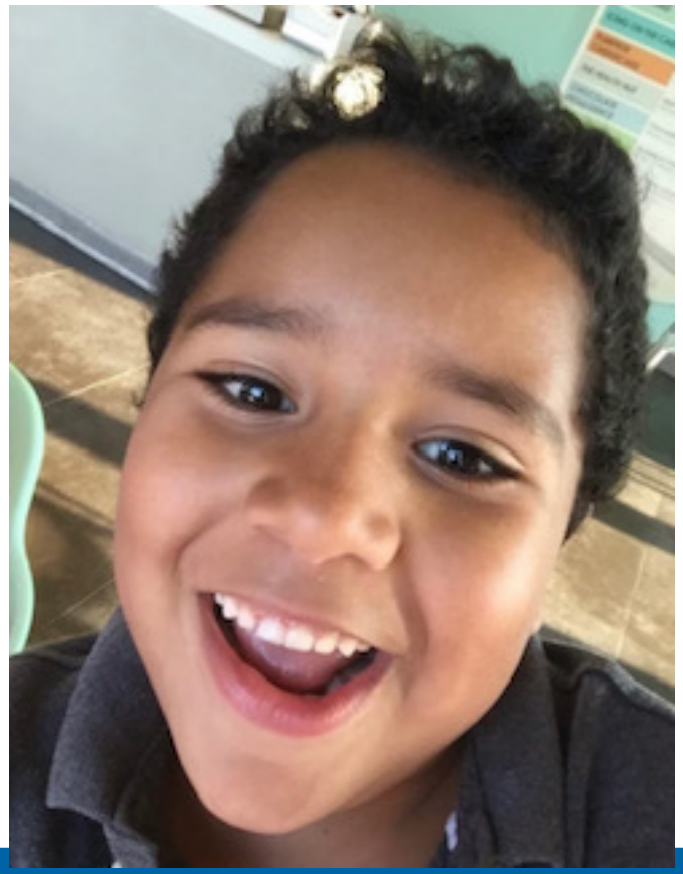
E (age 15) & Supportive sister

- 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

United States COVID-19 Cases, Deaths, and Laboratory Testing (NAATs) by State, Territory, and Jurisdiction

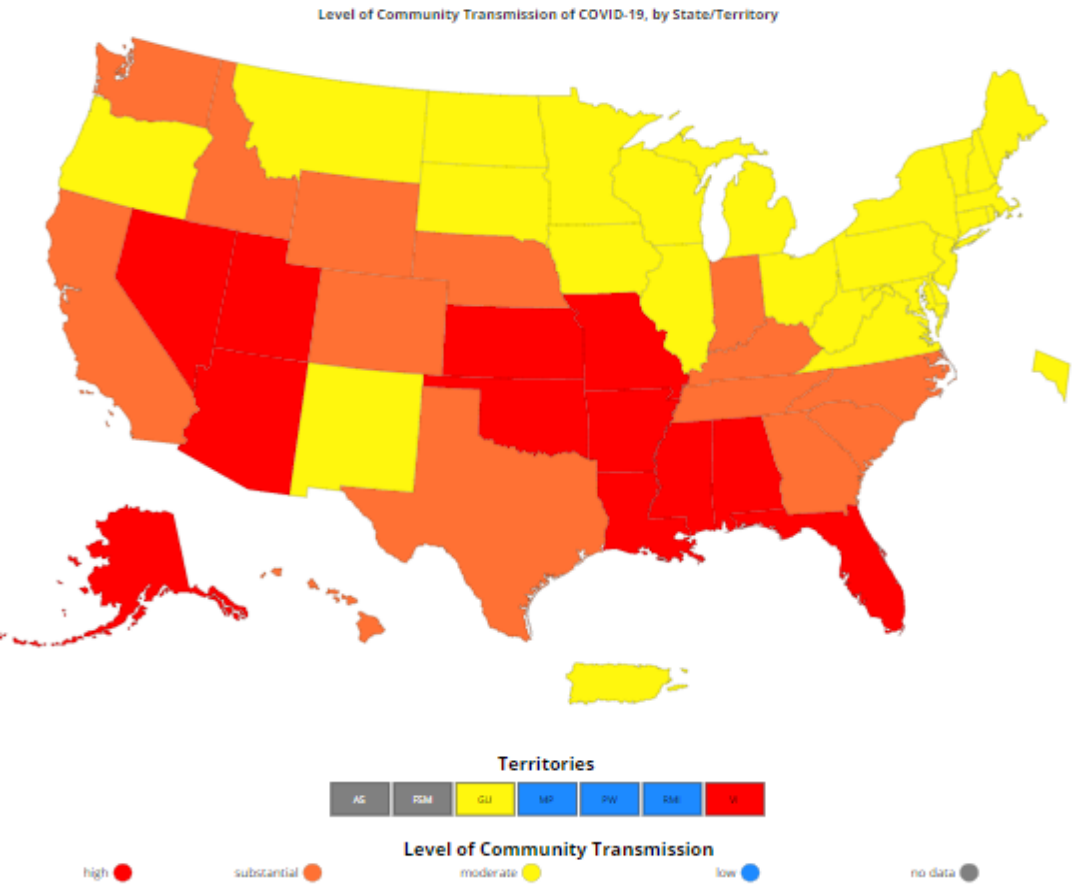
Maps, charts, and data provided by CDC, updated Mon-Sat by 8 pm ET†

UNITED STATES LEVEL OF COMMUNITY TRANSMISSION	7 DAY CASE RATE PER 100,000	7 DAY PERCENT POSITIVITY
Substantial	75	5.55%

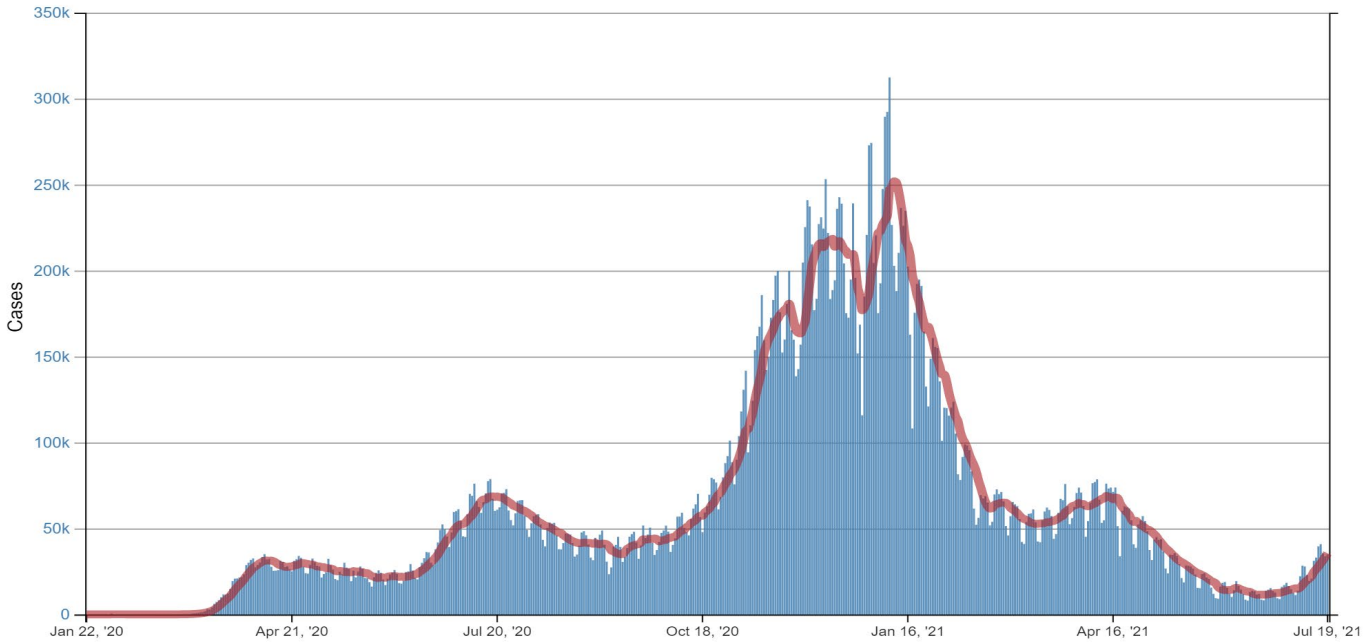
CDC | Data as of: July 20, 2021 6:04 PM ET. Posted: July 20, 2021 7:19 PM ET

View:
- Level of Community Transmission
- Cases
- Deaths
- Tests Performed
- Percent Positive

Level of Community Transmission is based on the number of cases in the last 7 days per 100,000 population and the number of tests in the last 7 days that have a positive result



Daily Trends in Number of COVID-19 Cases in the United States Reported to CDC



Children's Mercy

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

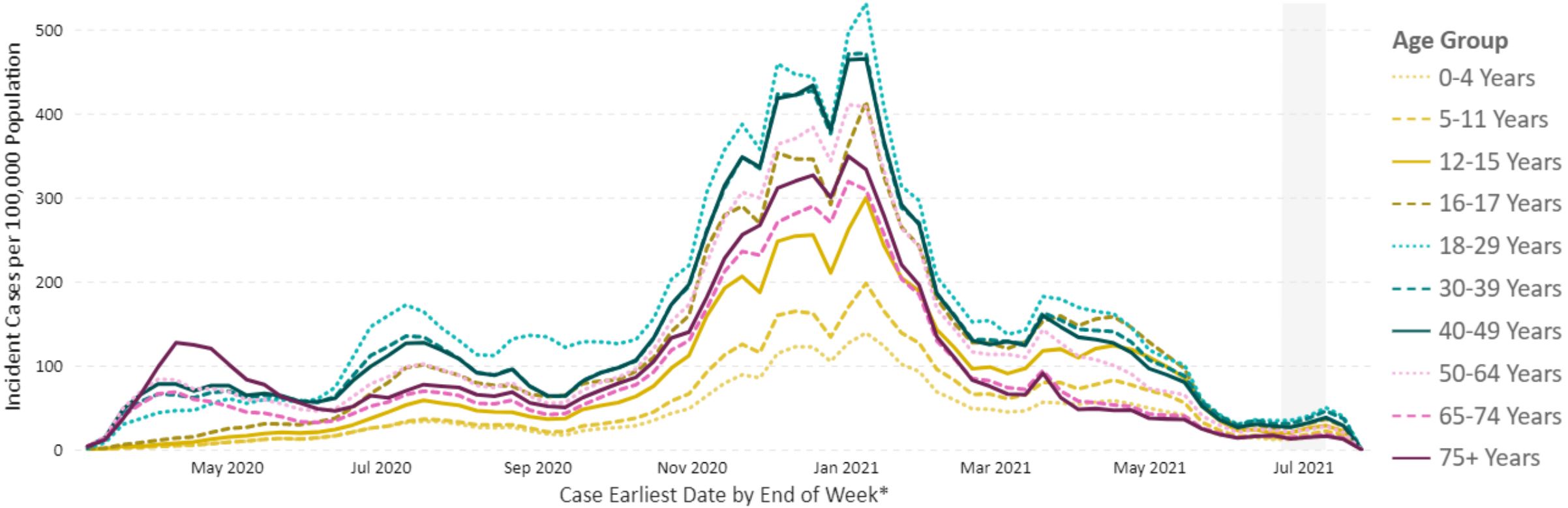
March 01, 2020 - July 24, 2021

Jurisdiction: US

3/7/2020 – 7/24/2021

Cases | Deaths

Sex | Age | Race/Ethnicity



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.

**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.*

Last Updated: Jul 20, 2021

Source: CDC COVID-19 Case Line-Level Data, 2019 US Census, HHS Protect; Visualization: Data, Analytics & Visualization Task Force and CDC CPR DEO Situational Awareness Public Health Science Team

COVID-19 Weekly Cases per 100,000 Population by Race/Ethnicity, United States

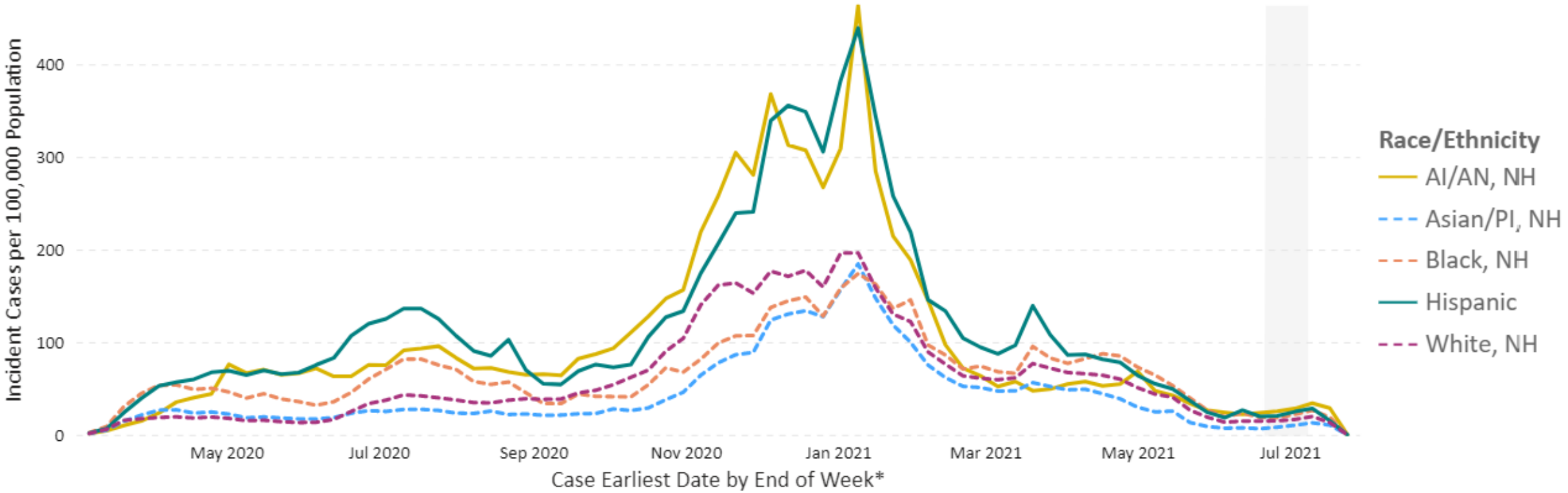
March 01, 2020 - July 24, 2021

Jurisdiction: US

3/7/2020 — 7/24/2021

Cases: Sex | Age | Race/Ethnicity

Deaths: Sex | Age | Race/Ethnicity



US: The most recent line level case record was reported during the week ending on Jul 24, 2021. Percentage of cases reporting race by date - 59.54%

*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. AI = American Indian, AN = Alaska Native, NH = Non-Hispanic, PI = Pacific Islander. Excludes cases with unknown or multiple races. *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.*

Last Updated: Jul 20, 2021

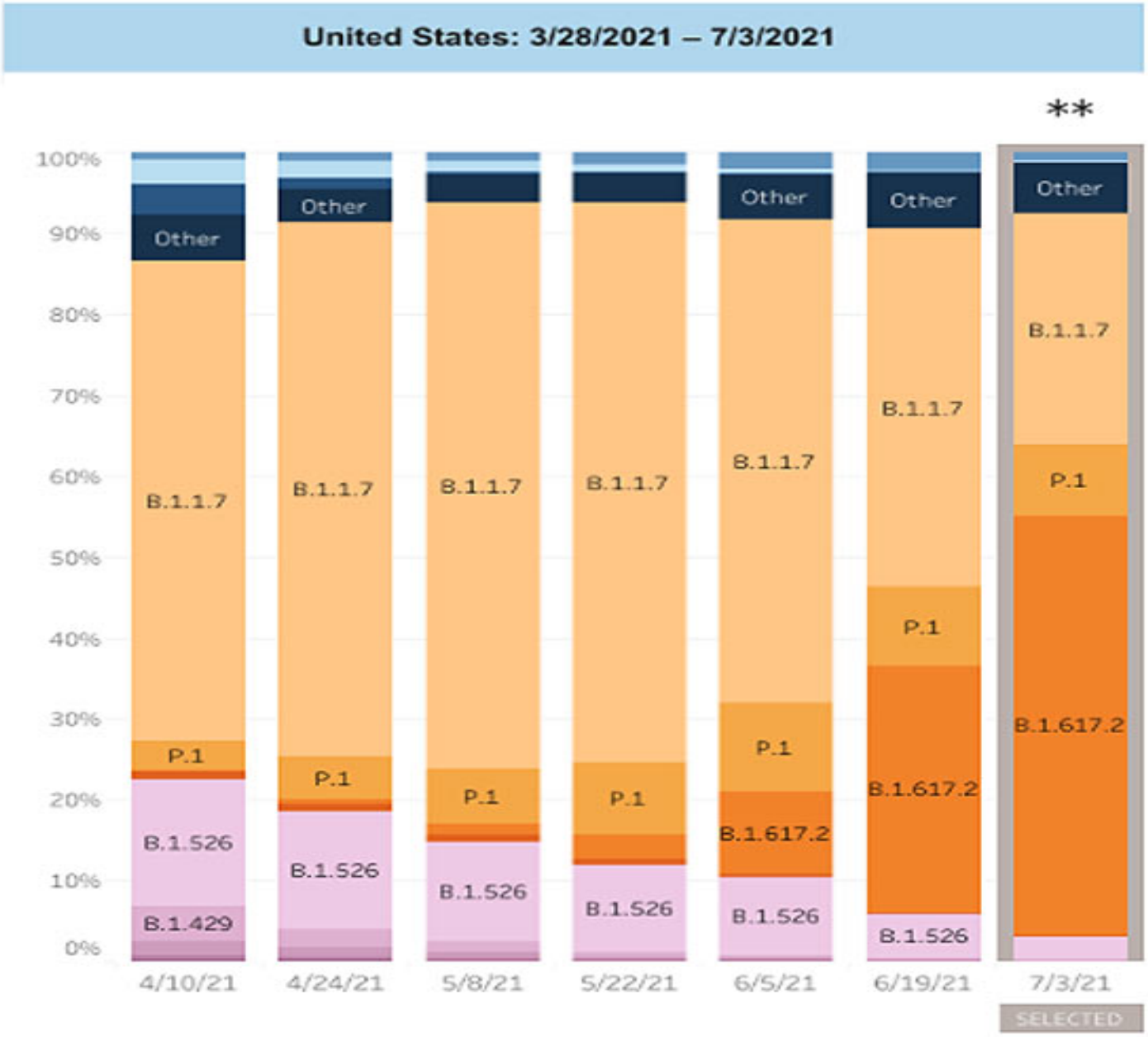
Source: CDC COVID-19 Case Line-Level Data, 2019 US Census, HHS Protect; Visualization: Data, Analytics & Visualization Task Force and CDC CPR DEO Situational Awareness Public Health Science Team

Regional COVID-19 Percentage Change in New Cases (MARC 7/10/21)

Jurisdiction	New Cases	New Cases Rate Per 100K People	% Change in New Cases
State of Kansas			
State of Missouri			
MARC Region	1,528	74	+38%
Kansas (Within MARC)	584	66	+93%
Johnson, KS	360	60	+101%
Leavenworth, KS	58	71	+132%
Miami, KS	40	117	+122%
Wyandotte, KS	126	76	+56%
Missouri (Within MARC)	944	80	+17%
Cass, MO (No KCMO)	59	56	+55%
Clay, MO (No KCMO)	77	63	+18%
Jackson, MO (No KCMO)	466	121	+10%
Kansas City, MO	306	62	+40%
Platte, MO (No KCMO)	25	46	0%
Ray, MO	11	48	-72%

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



United States: 6/20/2021 – 7/3/2021 NOWCAST

USA

	Lineage		Type	%Total	95%PI
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%
	P.1	Gamma	VOC	8.9%	6.1-11.9%
	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 linteage and included in parent lineage's proportion. AY.1 and AY.2 are aggregated with B.1.617.2.

U.S. Vaccination Rates

Total Vaccine Doses

Delivered	390,735,975
Administered	338,491,374

Learn more about the distribution of vaccines.

161.6M

People fully vaccinated

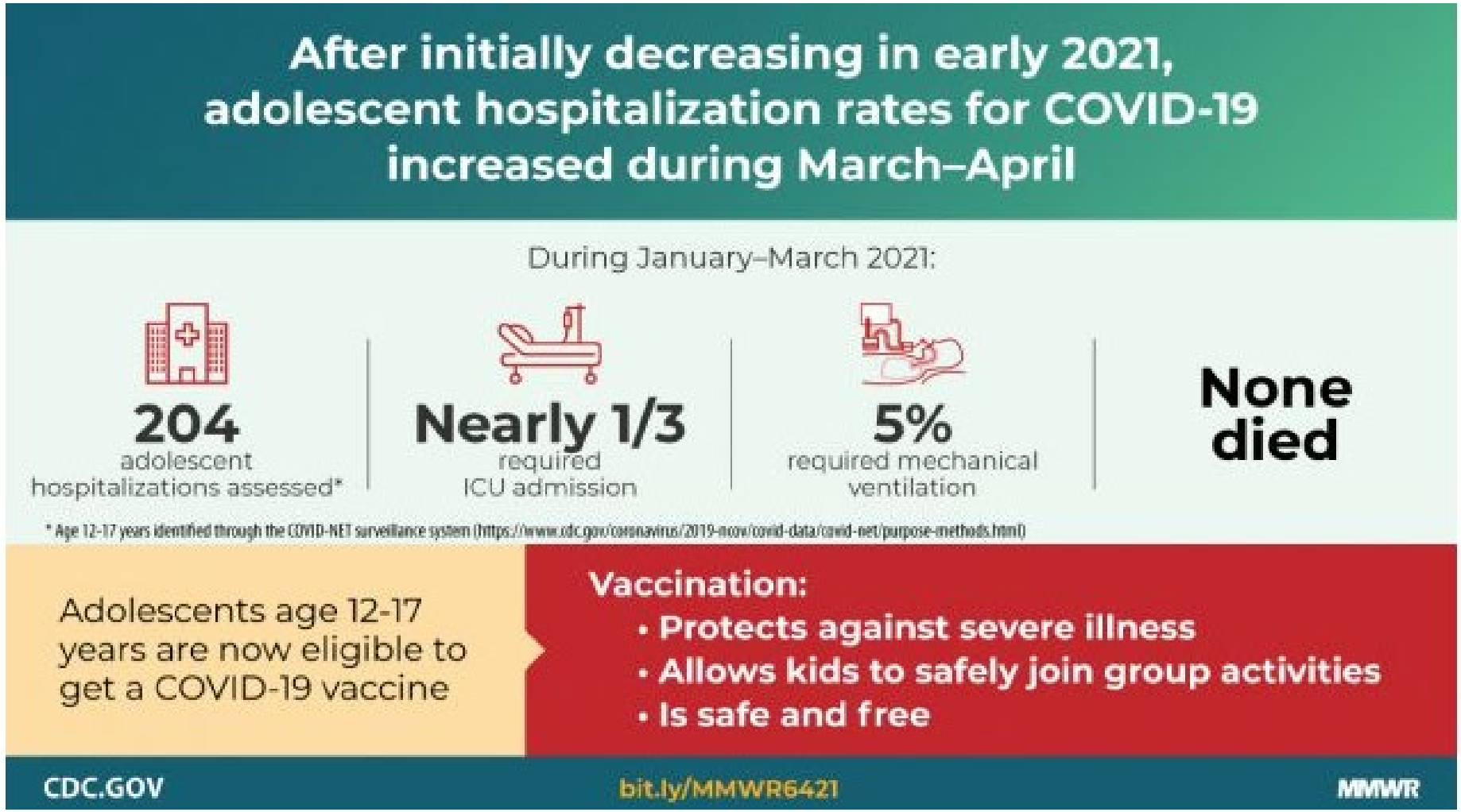
People Vaccinated	At Least One Dose	Fully Vaccinated
Total	186,474,836	161,631,676
% of Total Population	56.2%	48.7%
Population ≥ 12 Years of Age	186,252,728	161,502,704
% of Population ≥ 12 Years of Age	65.7%	57%
Population ≥ 18 Years of Age	176,445,130	153,816,147
% of Population ≥ 18 Years of Age	68.3%	59.6%
Population ≥ 65 Years of Age	48,728,390	43,476,539
% of Population ≥ 65 Years of Age	89.1%	79.5%

About these data

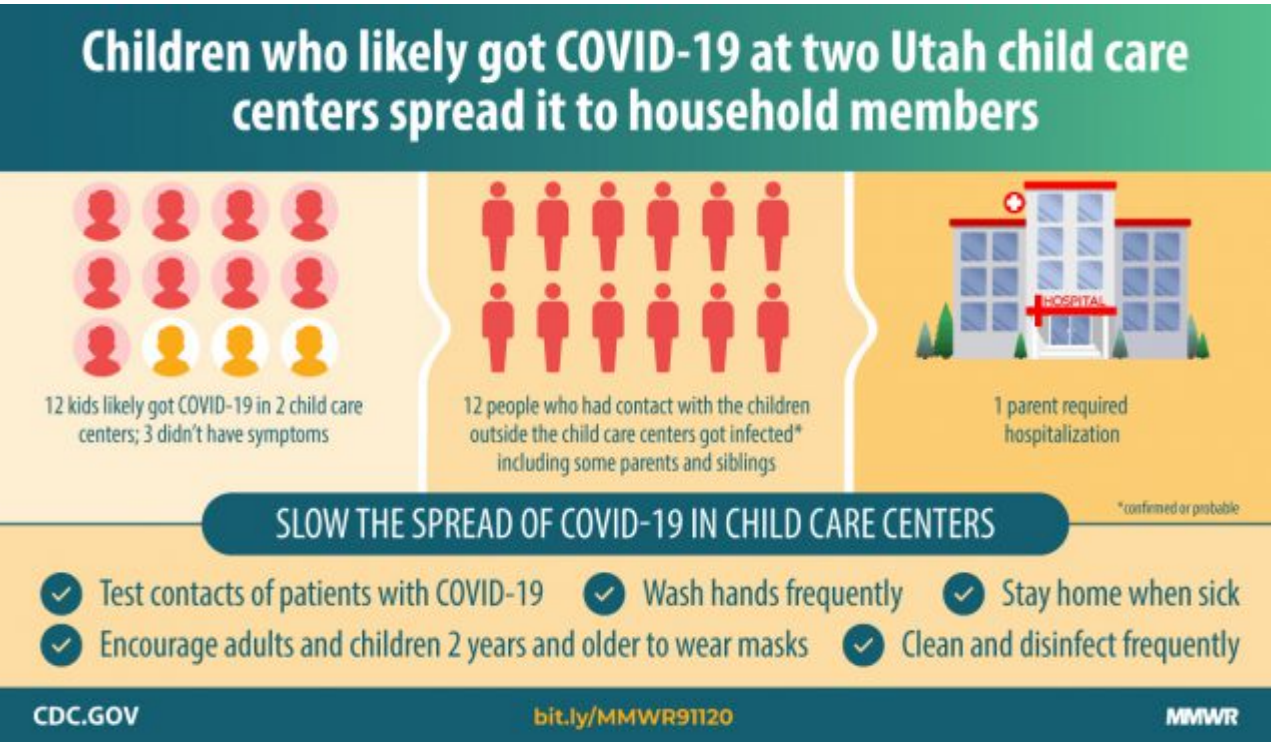
CDC | Data as of: July 20, 2021 6:00am ET. Posted: Tuesday, July 20, 2021 7:19 PM ET

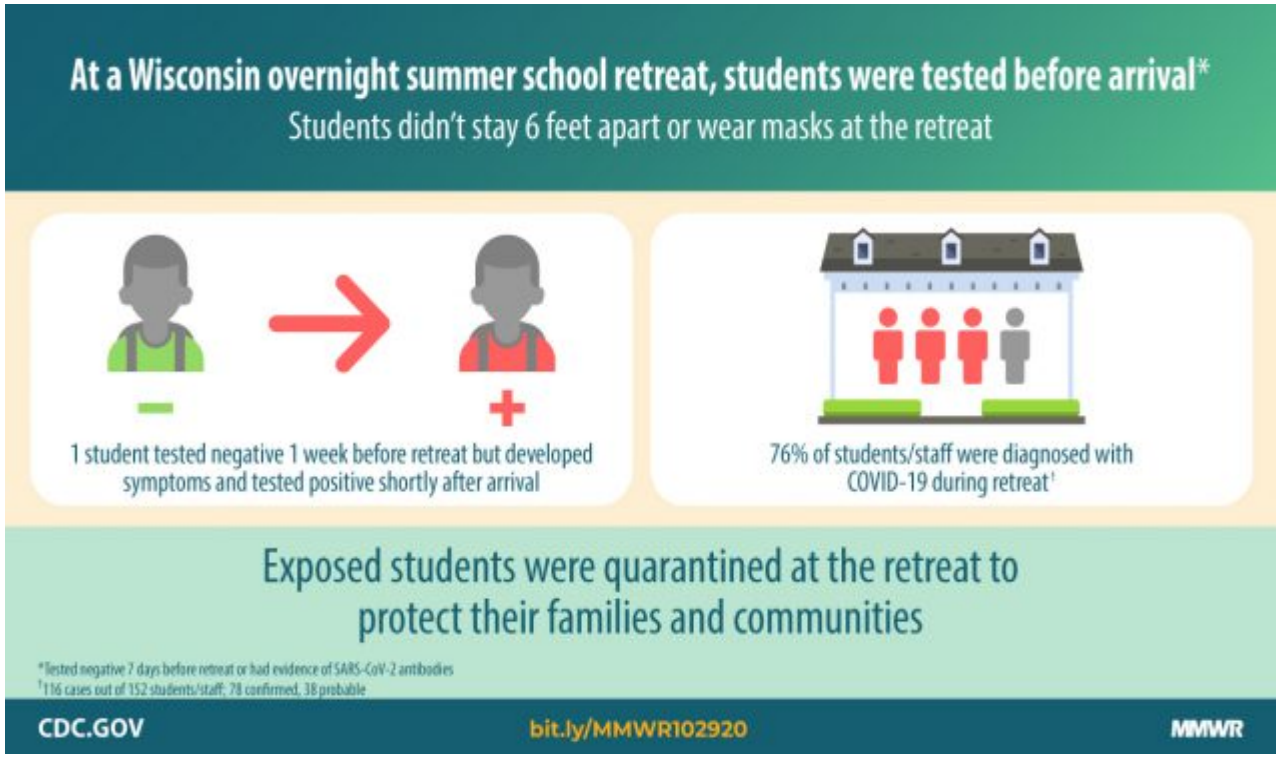
COVID-19 Impact on Students

Hospitalization of Adolescents (age12–17 years) with Laboratory-Confirmed COVID-19



Children CAN Transmit SARS-CoV-2





Multisystem Inflammatory Syndrome (MIS-C)

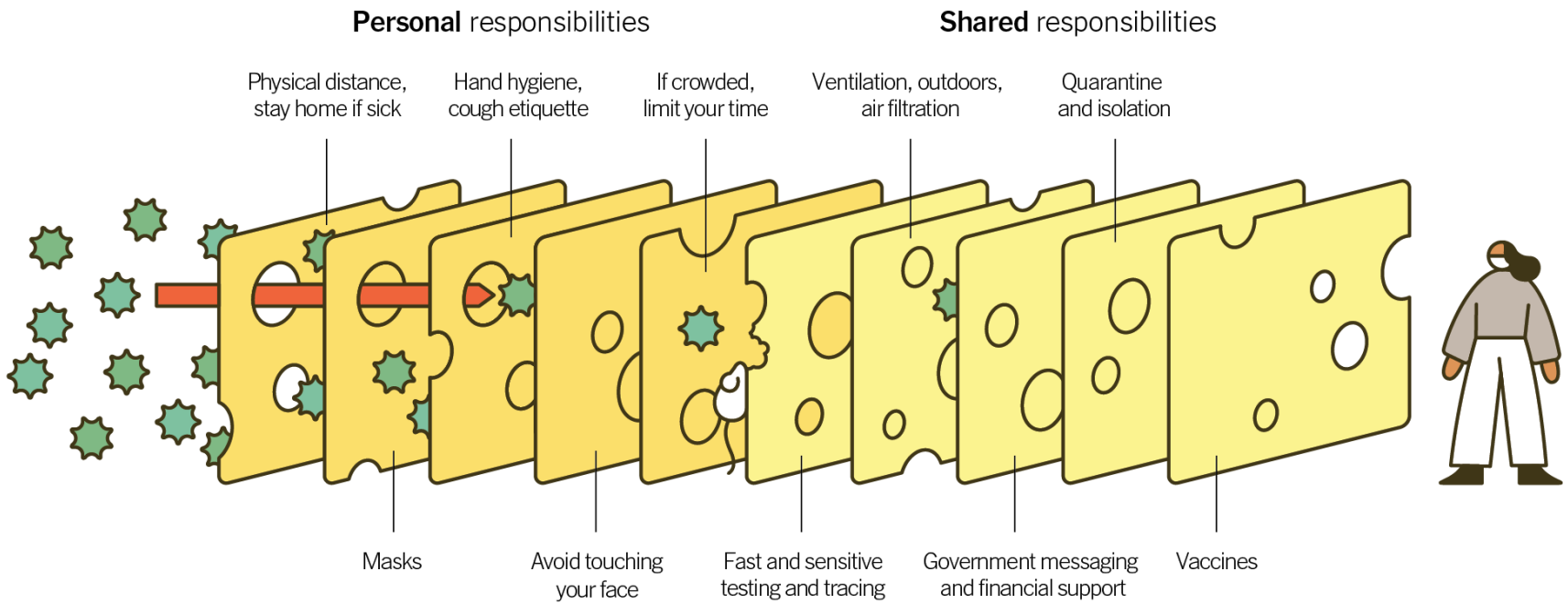
- Severe hyperinflammatory syndrome occurring 2 – 6 wks after acute SARS-CoV-2
- **4,018** MIS-C cases as of June 2, 2021
- Estimated incidence of 1 MIS-C case in 3,200 SARS-CoV-2 infections
- **60%–70%** of patients are admitted to intensive care, 1% – 2% die
- **62%** of reported cases occurred in 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.



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.

Read the guidebook >

COVID-19

Guidance for Keeping Schools Safe for Students and Staff

Children's Mercy

Updated: July 12, 2021

LOVE WILL.

https://www.childrensmercy.org/health-and-safety-resources/information-about-covid-19-novel-coronavirus/returning-to-community-activities/

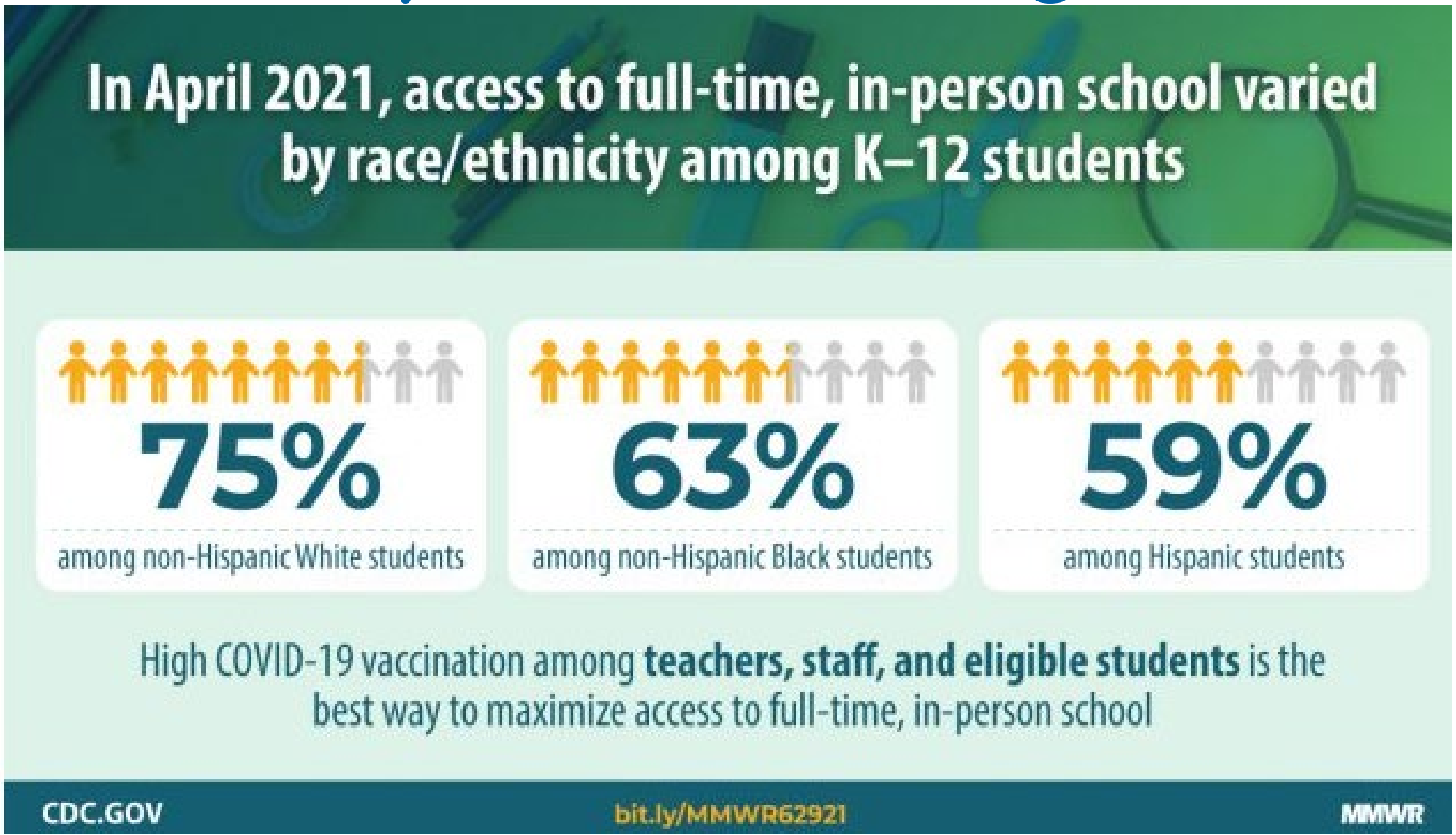
Children's Mercy

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



COVID-19 Vaccines

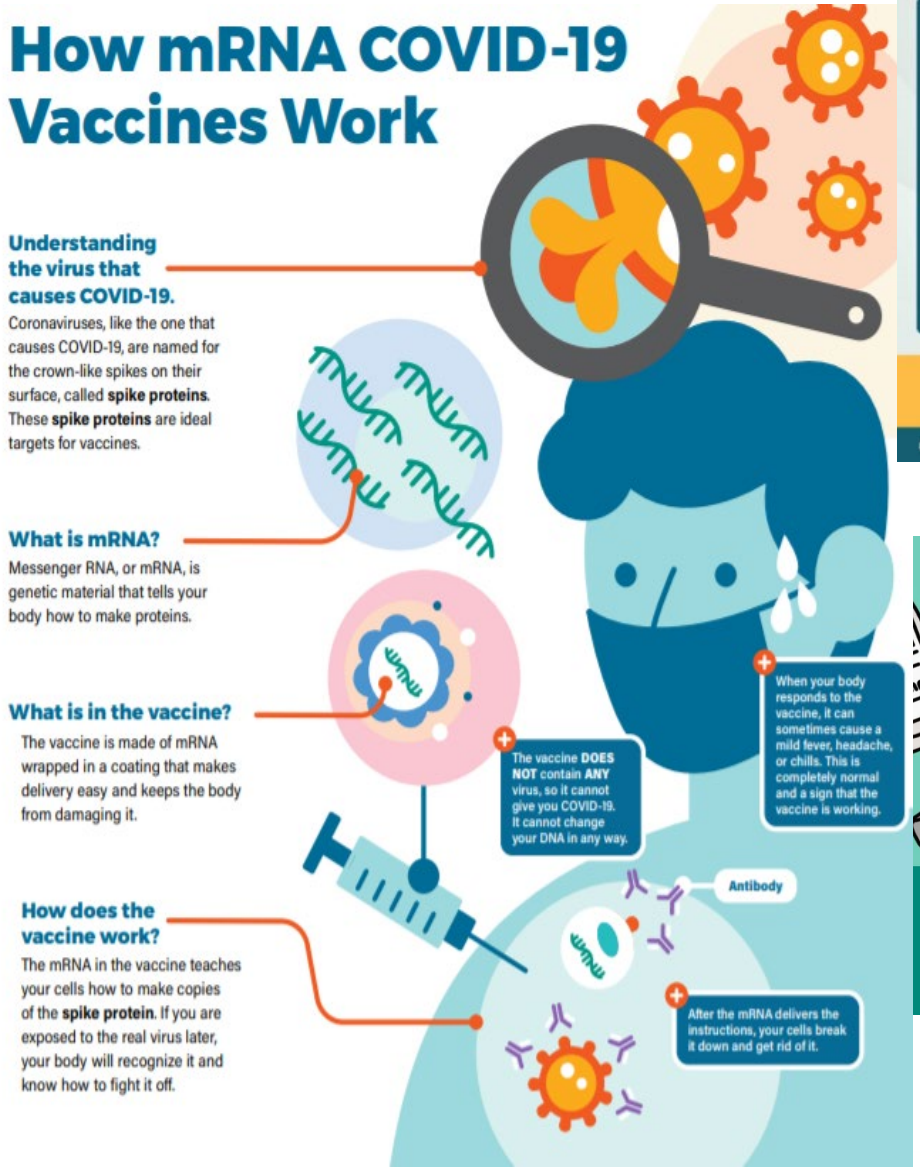
#1 Risk Reduction Strategy: Vaccination

- 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

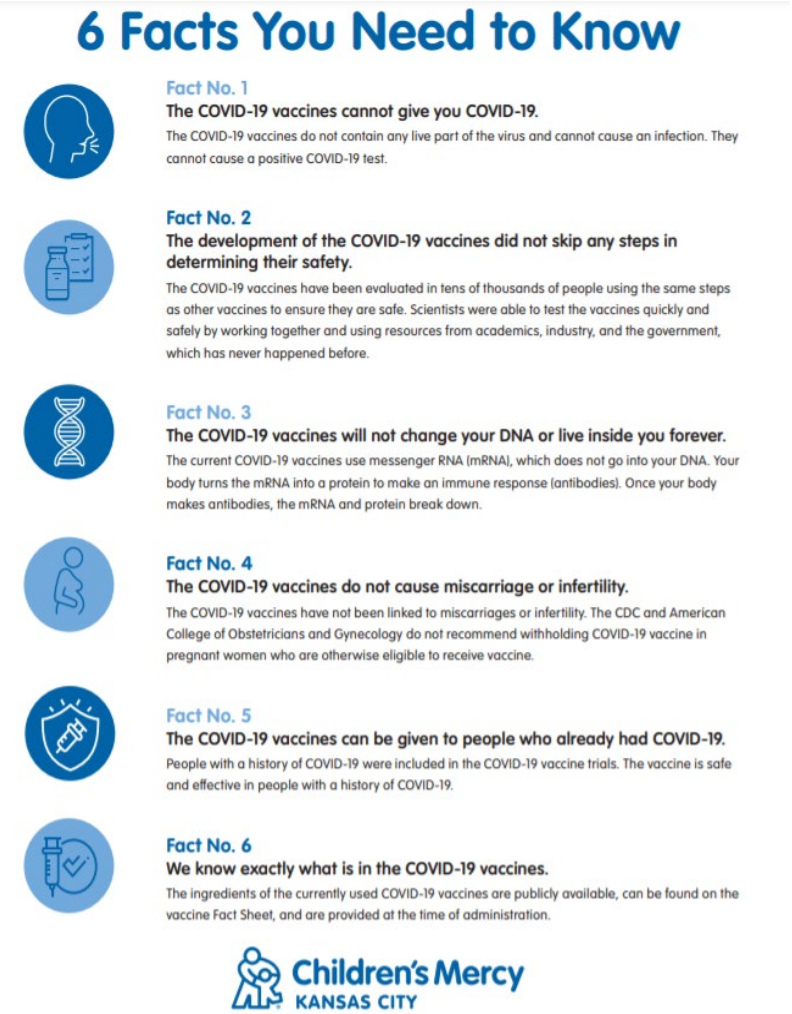
COVID-19 Vaccine	COVID-19 Infection
The rate of myocarditis/pericarditis is 12.6 cases per 1 million 2nd doses of vaccine	Hospitalization rate of 1 per 100,000 children 12-17 years (2.5-3 times higher than influenza hospitalization rates)
	One-third of hospitalized children require care in the intensive care unit
	Multisystem inflammatory syndrome in children occur 1 in 3200 COVID-19 infections. 60-70% of children with MIS-C require intensive care unit management
	Cardiac complications occur in children hospitalized with acute COVID-19 (12%) or MIS-C (67%)

Resources for Staff, Students and Families about COVID-19 Vaccines

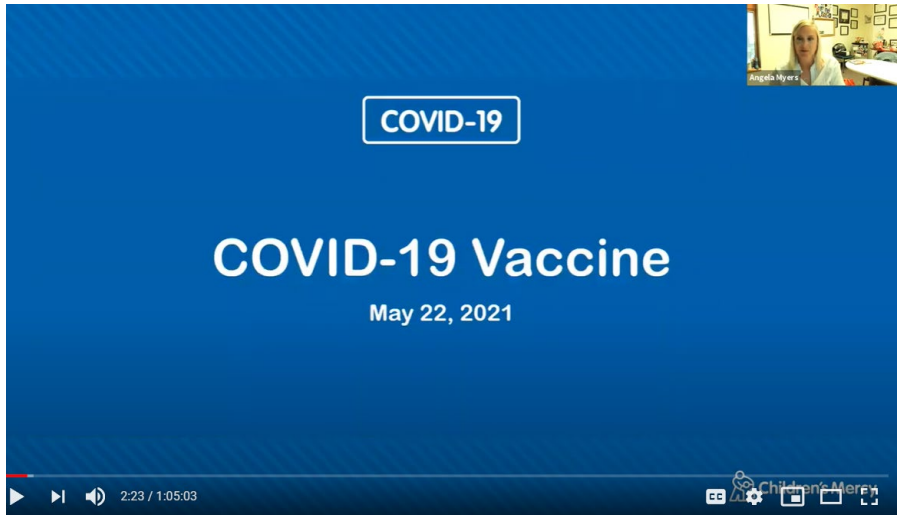


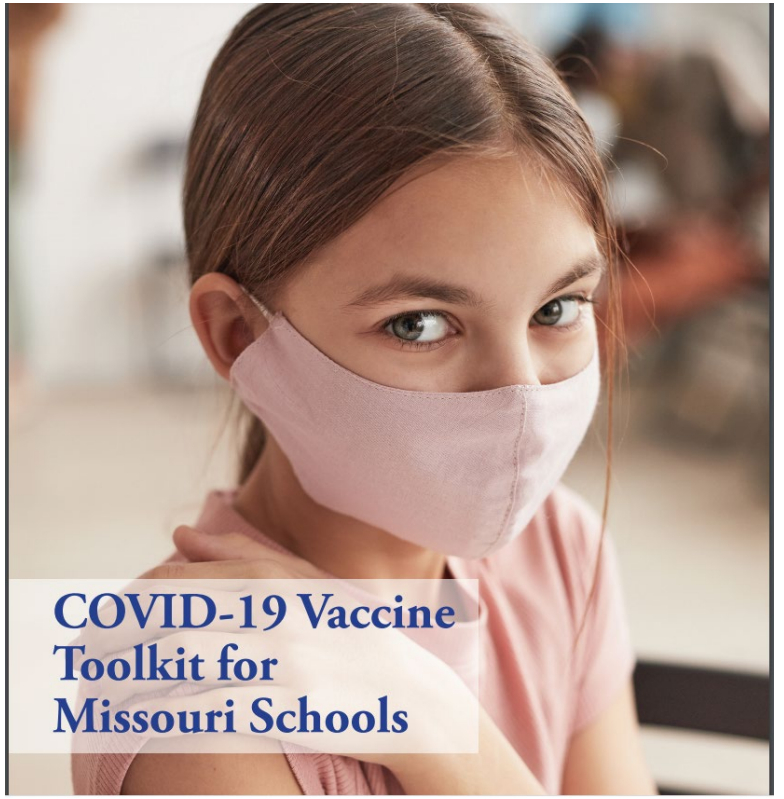
https://www.vaxteen.org/

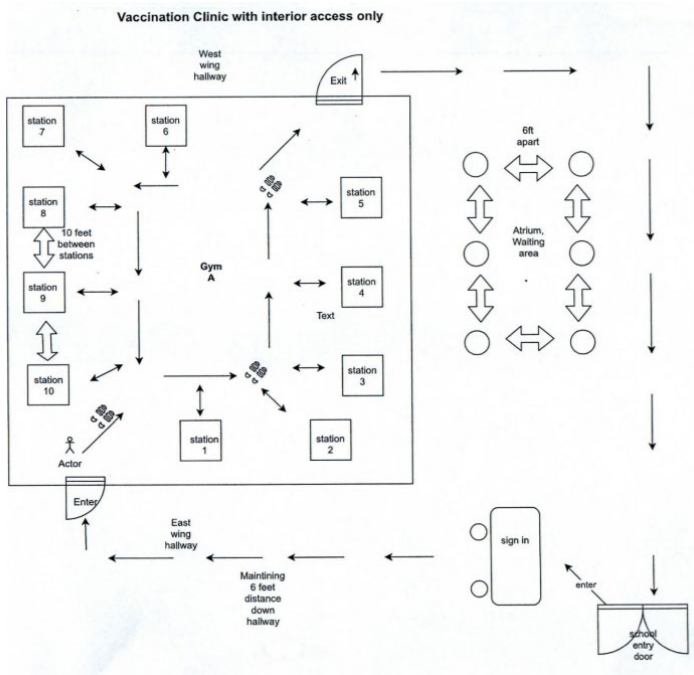
https://www.schoolvaccinehub.org/



COVID-19 Vaccine Toolkit for Schools





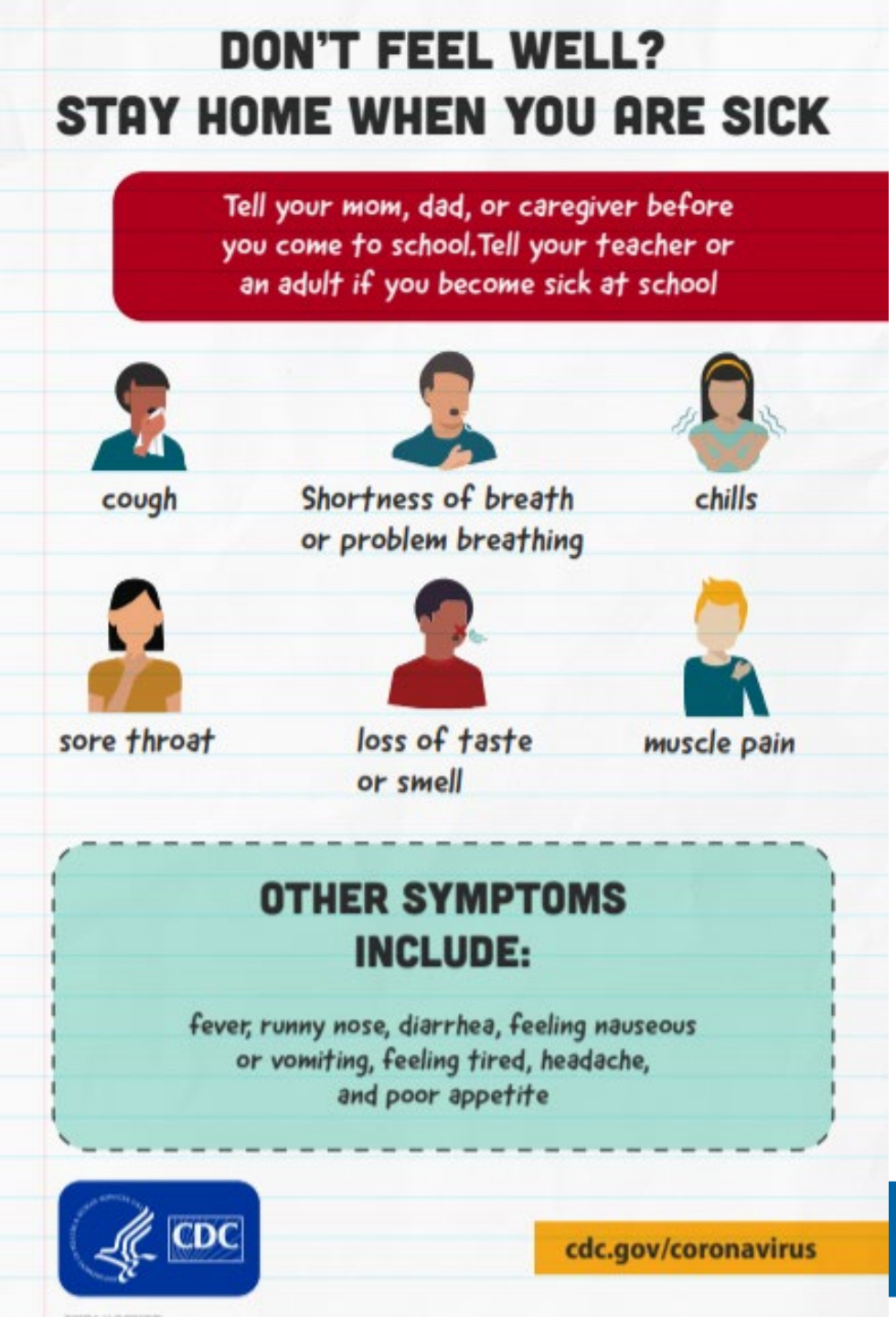


LOVE WILL.

http://www.mohealthyschools.com/

Children's Mercy

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

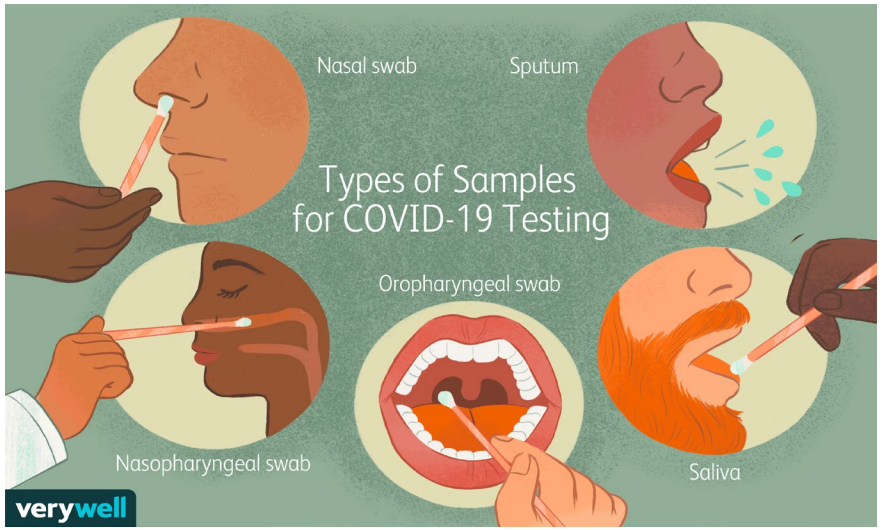
Test Results

- Contact Investigation
- Reporting mechanism to state/local officials
- Confirmatory testing as needed

Testing Strategies

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

Test Types



	PCR	Antigen	Antibody
Specimen	Nasal, Midturbinate, Nasopharyngeal, Saliva	Midturbinate, Nasopharyngeal	Blood
Sensitivity (Ability to identify someone WITH COVID-19)	High	Moderate	Moderate-high
Specificity (Ability to identify someone WITHOUT COVID-19)	High	High	Moderate-High
Turn-Around Time	1 hour- 24 hours	15 minutes	1-2 days
Where is Test Performed?	Lab, on-site	On-site	Lab
What does it Tell You?	Recent or Active Infection	Active Infection	Evidence of Prior Infection

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

(CDC: https://www.cdc.gov/ncezid/dpei/pdf/guidance-elc-reopening-schools-508.pdf)

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%

	Low Transmission[1] Blue	**Moderate Transmission Yellow**	**Substantial Transmission Orange**	**High Transmission Red**
Students	Do not need to screen students.	**Offer screening testing for students** who are not fully vaccinated at least once per week.		
Teachers and staff	**Offer screening testing for teachers and staff** who are not fully vaccinated at least once per week.			
High risk sports and activities	**Recommend screening testing for high-risk sports[2] and extracurricular activities[3]** at least once per week for participants who are not fully vaccinated.		**Recommend screening testing for high-risk sports and extracurricular activities** twice per week for participants who are not fully vaccinated.	**Cancel or hold high-risk sports and extracurricular activities virtually** to protect in-person learning, unless all participants are fully vaccinated.
Low- and intermediate-risk sports	Do not need to screen students participating in low- and intermediate-risk sports.[2]	**Recommend screening testing for low- and intermediate-risk sports** at least once per week for participants who are not fully vaccinated.		

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**
  - https://www.childrensmercy.org/siteassets/media/covid-19/guidance-for-school-re-opening-during-the-covid-19-pandemic.pdf
- **Vaccines**
  - https://www.schoolvaccinehub.org/
  - https://www.vaxteen.org/
  - http://www.mohealthyschools.com
- **Testing**
  - https://health.mo.gov/living/healthcondiseases/communicable/novel-coronavirus/pdf/k-12-screening-testing-program-guide.pdf
  - https://www.coronavirus.kdheks.gov/295/School-Based-Funding

References

- **COVID-19 rates:** https://covid.cdc.gov/covid-data-tracker/#datatracker-home
- **Variant sequencing:** https://covid.cdc.gov/covid-data-tracker/#variant-proportions
- **Vaccine rates:** https://covid.cdc.gov/covid-data-tracker/#vaccinations
- **Vaccine hesitancy:**
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
- Myocarditis recommendations from ACIP:
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
- Hospitalization of kids:
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

Q & A