LEADING MEDICINE: A TOWN HALL CONVERSATION WITH DR. MARC BOOM

Town Hall Conversation XXVII

44

Concussions

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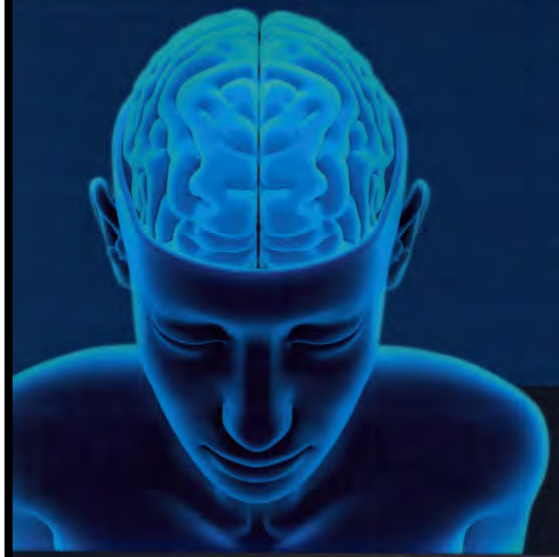
CONCUSSION CENTER

A "ding", "getting your bell rung", or what seems to be a mild injury caused by a bump, blow, or jolt to the head or body can lead to a concussion and should be considered significant.



What is a Concussion?

A disruption of brain functioning caused by a chemical imbalance.

Symptoms are often immediate, but can develop over several hours.

It's estimated that up to

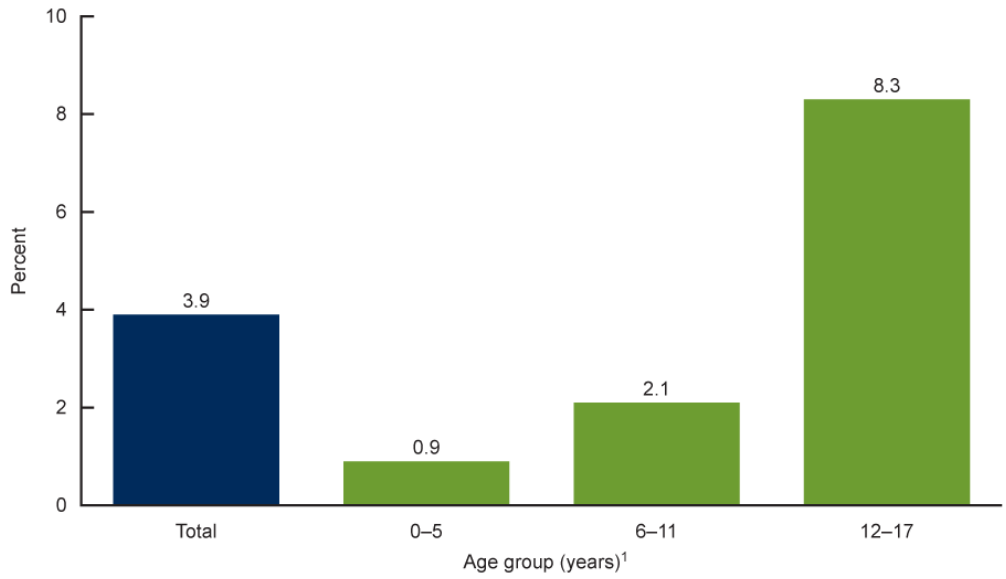
3.8

MILLION concussions occur each year.

Concussions accounted for about 8% of all injuries in high school sports.

90% of concussions DO NOT have a loss of consciousness.

Figure 3. Percentage of children aged 0–17 years who received a diagnosis of concussion or brain injury by a health care professional, by age group: United States, 2020



[1]Significant increasing linear trend with age ($p < 0.05$).
NOTES: "Received a diagnosis of concussion or brain injury" is based on respondents who indicated that the Sample Child had ever been checked for a concussion or brain injury by a health care professional and received a diagnosis of concussion or brain injury; all children are included in the denominator. Estimates are based on household interviews of a sample of the U.S. civilian noninstitutionalized population. Access data table for Figure 3 at: https://www.cdc.gov/nchs/data/databriefs/db423-tables.pdf#3.
SOURCE: National Center for Health Statistics, National Health Interview Survey, 2020.

SOURCE: National Center for Health Statistics, National Health Interview Survey, 2020.

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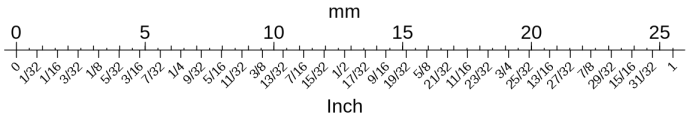
The brain can move up to 5 mm in a concussion.



SYMPTOMS OF A CONCUSSION

- Headache
- Mood and behavior changes
- Double or blurry vision
- Confusion & forgetfullness
- Nausea or vomiting
- Fatigue
- Loss of balance
- Light & noise sensitivity
- Difficulty concentrating
- Disturbed sleep

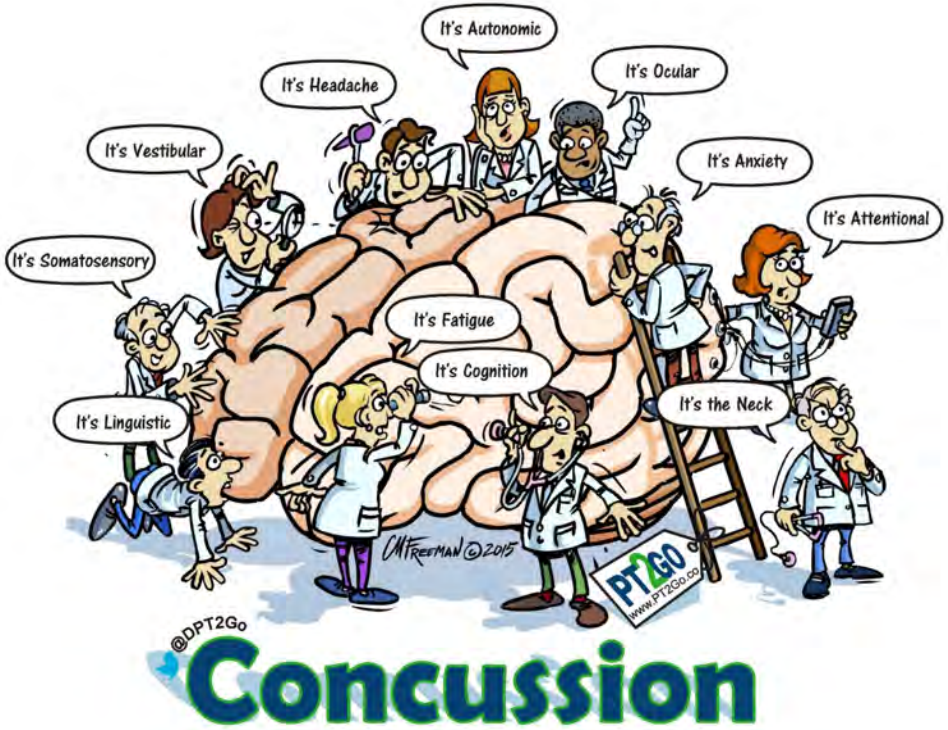
DANGER SIGNS

Symptoms getting worse =

- One pupil is larger than the other
- A headache that gets progressively worse
- Weakness, numbness, or decreased coordination
- Vomiting more than two times
- Confusion and slurred speech

- Females have a higher rate of post-concussive symptoms.
- Females are more likely to have cognitive problems.

A Concussion Is More Than a Brain Injury



What to Do If You Suspect a Concussion

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- Monitor for a few hours
- Never aspirin!!! Tylenol only
- No ibuprofen or naproxen for first 48 hrs.
  - Motrin or Aleve
- Ok to let sleep after a few hours and child seems to be the same or better
  - No need to wake up in middle of night
- Will want to sleep more
- Keep hydrated – appetite might be down
- Consult with primary care doctor or concussion specialist

Rest & Rehabilitate

- Active recovery and treatment
  - Brief rest 1-3 days
  - Reduce symptom irritants
- May need to miss some school
- Start sub-threshold activity early
  - Goldilocks approach of physical and cognitive activity
    - Follow different recovery patterns
- *"Submaximal exercise is safe and facilitates recovery."*
- Psychological, cervical, ocular-motor, and vestibular treatment
  - Target treatment: vestibular, autonomic, cervical, emotional

5 Steps – Back To School

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Step 1: Emphasize Cognitive and Physical Rest	• No physical/cognitive activity for a short period • Will start with lite reading when possible • May need to stay home from school
Step 2: Open for Modified Daily Class Schedule	• No participation in PE but maybe lite physical activity • Reduced workload • Extra time on exams and assignments
Step 3: Possible Return to Full Day of School	• Lite physical activity – cleared by a health provider • Gradually increase amount of schoolwork • Extra time on assignments and exams
Step 4: Reduce Accommodations/ Return to Moderate Physical Activity	• May engage in moderate physical activity • May start taking tests • Extra time on exams as needed
Step 5: Full Academic Load	• Physical activity without any restrictions • Return to school full time without any restrictions

Prevention

- Education
- Proper Equipment

  https://www.helmet.beam.vt.edu/
- Proper Technique
- Neck Strengthening

NECK STRENGTHENING EXERCISES

houstonmethodist.org/concussion | 713.441.8277

Neck strengthening is one of the most important things you can do to help prevent concussion and neck injuries. If you have access to neck-strengthening equipment, that's great, but you don't need it. The following descriptions show you how to do these easy exercises anytime, anywhere.

STANDING EXERCISES

For each of these exercises, you will hold for 10 seconds and repeat 3 times on each side.

1. **LATERAL SIDE BEND (NEUTRAL)** — Look straight ahead, use light pressure from your fingertips at the side of your head. Resist bending head sideways.
2. **LATERAL SIDE BEND (FLEXED)** — Look straight ahead, tilt the head toward the shoulder. Use light pressure from your fingertips at the side of your head. Resist tilting head farther to the side.
3. **FORWARD FLEXION (NEUTRAL)** — Look straight ahead, use light pressure from your fingertips at your forehead, resist bending the head forward.
4. **FORWARD FLEXION (FLEXED)** — Bend head forward, use light pressure from your fingertips at forehead. Resist bending head farther forward.
5. **EXTENSION (NEUTRAL)** — Look straight ahead, use light pressure from your fingertips at back of your head. Resist bending head backward.
6. **EXTENSION (FLEXED)** — Bend head slightly backward, use light pressure from your fingertips at back of your head. Resist bending head farther backward.
7. **ROTATION (NEUTRAL)** — Look straight ahead, use light pressure to the side of your head and resist turning head to the side.
8. **ROTATION (RESISTED)** — Look straight ahead and turn head slightly to the side. Use light pressure to the side of your head and resist turning head farther.

FLOOR EXERCISES

For each of these exercises, you will do this 10 times, working yourself up to another set of 10.

9. **NECK LIFT**
   1) Start with your back flat, knees bent and feet on the floor. Bend your shoulders and elbows to 90 degrees. Keep your shoulders, arms and elbows and back of your hands on the floor.
   2) Keep your head and neck straight, lift your head and neck straight up, like you are trying to touch the ceiling with your nose.

   This is slow and controlled. The count should be: up 1, 2, 3; down 1, 2, 3 and repeat. You should feel the muscles in the front of your neck starting to burn.

FLOOR EXERCISES

For each of these exercises, you will do this 10 times, working yourself up to another set of 10.

10. **NECK LIFT WITH HEADCURL**
    1) Start with your back flat, knees bent and feet on the floor. Bend your shoulders and elbows to 90 degrees.
    2) Lift your head up.
    3) Roll your chin into your chest, hold for 1 second and roll head back to the floor.

    The key to this exercise is slow and controlled. If your hands, shoulders or arms lift up while you are doing this exercise, you're not using your neck (shoulders or abs are engaged instead). Lift up and roll for 2 seconds, hold, and back down slowly — 1, 2, 3.

EXERCISES WITH GYM EQUIPMENT

The following exercises can be done with machines, free weights, exercise band or tubing. For each of these exercises use enough weight or resistance to do only 8 to 10 repetitions, 3 times (sets). Make sure your motion is slow and controlled.

11. **SHOULDER SHRUG** — Slowly shrug your shoulders up, back and down.
12. **SHOULDER PRESS** — Raise your arms so that elbows are even with shoulders and flexed at about 90 degrees. Then, raise the weight, band or tubing toward the ceiling while straightening the elbows.
13. **STANDING OR SEATED ROW WITH EXTERNAL SHOULDER ROTATION** — In a standing or seated position, using free weights or tubing, lift your arms to the front, stopping at 90 degrees. Now, pull backward, bending the elbows to 90 degrees. Pinch the shoulder blades together, then rotate forearms up. Hold for 1 second, then return to starting position.
14. **UPRIGHT ROW** — Standing with legs shoulder-width apart and knees slightly bent with palms of your hands in front of your thighs, hold the weight or use a band. Pull your arms up and stop at chest height. Shoulders should be at 90 degrees and elbows bent to the sides. Return to your starting position and continue.

Video demonstrations of each exercise can be viewed at houstonmethodist.org/concussion

https://www.houstonmethodist.org/concussion/

Mental Health Crisis in Adolescents and Teens

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American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN®

AMERICAN ACADEMY OF CHILD & ADOLESCENT PSYCHIATRY
WWW.AACAP.ORG

AAP-AACAP-CHA Declaration of a National Emergency in Child and Adolescent Mental Health

Home / Advocacy / Child and Adolescent Healthy Mental Development / AAP-AACAP-CHA Declaration of a National Emergency in Child and Adolescent Mental Health

- "Worsening crisis in child and adolescent mental health."
  - Soaring rates of depression, anxiety, trauma, loneliness, and suicidality
  - "Inextricably tied to the stress brought on by COVID-19 and the ongoing struggle for racial justice"
  - Represents an acceleration of trends observed prior to 2020

Suicide and Teens

- Suicide is the third leading cause of death in teenagers and adolescents.
- Suicide is the second leading cause of death in college students.
- Suicide rate increased 57% for ages 10-24 from 2007 to 2018.
- Five-fold increase in suicide attempts in ages 10-12.

Suicide and Teens

- 2013-2019 1 in 5 teens experienced an episode of major depression.
- 25% of females aged 12-17 reported having a depressive episode in the past year.
- Over 200,000 children in the US lost a parent or caregiver due to COVID.

During February 21–March 20, 2021, suspected suicide attempt ED visits were 50.6% higher among girls aged 12–17 years than during the same period in 2019; among boys aged 12–17 years, suspected suicide attempt ED visits increased 3.7%.

CDC Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

A-Z Index
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Morbidity and Mortality Weekly Report (*MMWR*)

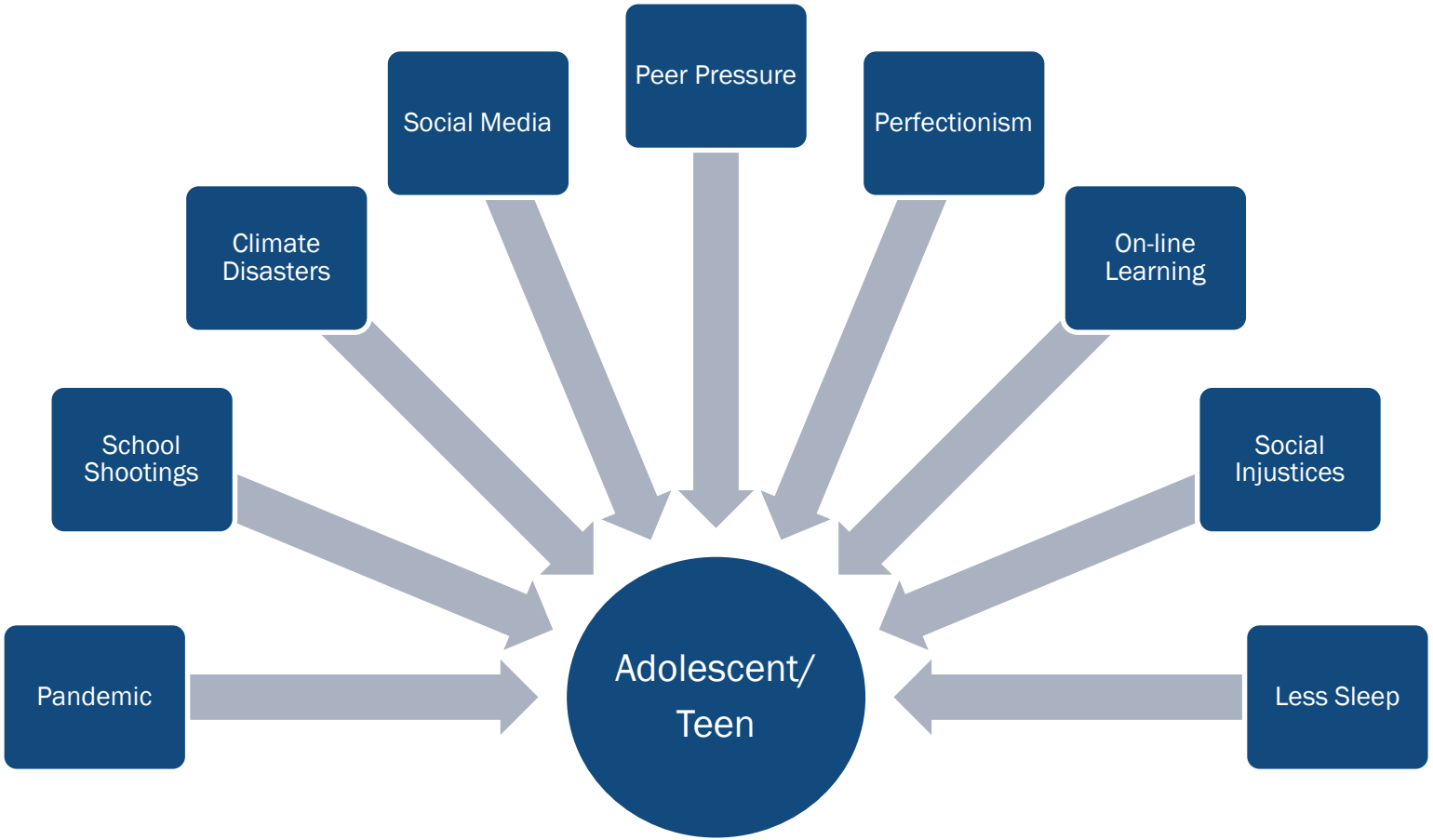
CDC

Emergency Department Visits for Suspected Suicide Attempts Among Persons Aged 12–25 Years Before and During the COVID-19 Pandemic — United States, January 2019–May 2021

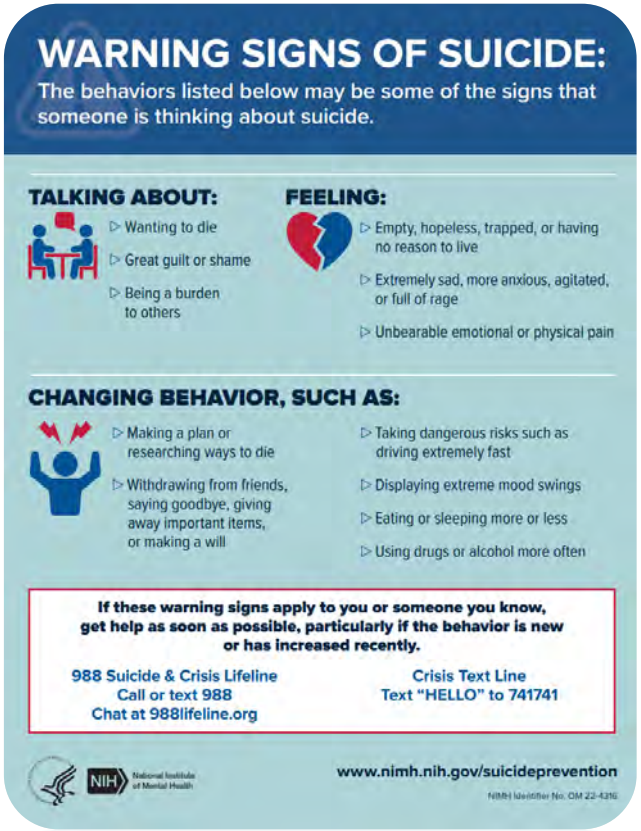
Weekly / June 18, 2021 / 70(24);888–894

On June 11, 2021, this report was posted online as an MMWR *Early Release.*

Ellen Yard, PhD[1]; Lakshmi Radhakrishnan, MPH[2]; Michael F. Ballesteros, PhD[1]; Michael Sheppard, MS[2]; Abigail Gates, MSPH[2]; Zachary Stein, MPH[2]; Kathleen Hartnett, PhD[2]; Aaron Kite-Powell, MS[2]; Loren Rodgers, PhD[2]; Jennifer Adjemian, PhD[2]; Daniel C. Ehlman, ScD[1,2]; Kristin Holland, PhD[1]; Nimi Idaikkadar, MPH[1]; Asha Ivey-Stephenson, PhD[1]; Pedro Martinez, MPH[1]; Royal Law, PhD[1]; Deborah M. Stone, ScD[1] (View author affiliations)


Peer Pressure
Social Media
Perfectionism
Climate Disasters
On-line Learning
School Shootings
Social Injustices
Pandemic
Adolescent/ Teen
Less Sleep

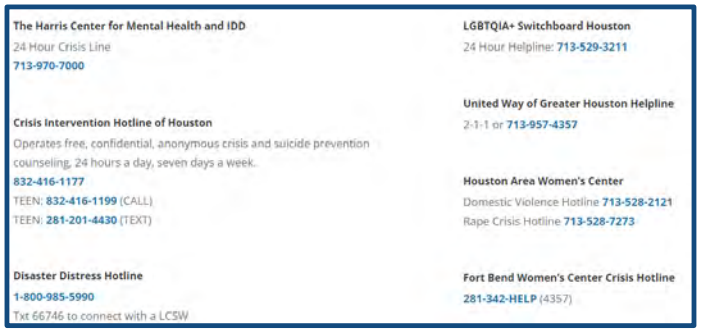
Warning Signs & Protective Factors Against Suicide



- Effective coping and problem-solving skills
- Strong social and family connections
- Access to quality mental health care
- Support from religious or social communities
- Lack of access to means to self-harm

Things You Can Do

- Lock it up!
  - Guns, medications, alcohol and chemicals
- Listen first, then talk, to your children
  - Support – do not lecture and do not judge
- Seek professional help
- Call 988
- Add 741741 (suicide crisis) to child's contacts
- Houston Hotline
  - 832.416.1177
  - TEEN: 832.416.1199 (CALL)
    TEEN: 281.201.4430 (TEXT)



Bullying & Resiliency

Marianne Carlson, PsyD

August 25, 2022

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Executive Summary

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1

Why a talk on bullying?

- Old problem, deeper impact
- We all have a part to play

2

Definitions and Current State?

- Cyberbullying: the new frontier of bullying
- Social, emotional, physical, behavioral impact

3

What YOU and I Can Do

- Know how to intervene
- Cultivate resiliency

Why a Talk on Bullying?

Prevalence & Climate

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1

- One out of four students report being bullied
- Bystander or Upstander?
- What is my school's climate?

*A **Healthy School Climate** reduces bullying*

Definitions & Current State

Holistic Impact

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2

Definitions:

- Imbalance of power & intent to harm
- Physical, Verbal, Emotional, **Cyber**

Current State:

- Physical
- Emotional
- Social
- Behavioral

Bullying impacts a child's sense of safety, stability, and ***ability to relationally connect***

What can we do?

Back to the Basics

3

- Be Informed! – Know the policies & laws
- Be Curious
- Cultivate Resiliency

Help students be curious & help them to ***activate their internal resources***

Resources

- Texas Education Code
- https://www.stopbullying.gov/resources/laws/texas
- https://crime-stoppers.org/bullying-prevention
- https://www.centerforsafeschools.org/
- https://www.houstonisd.org/Page/106693

Town Hall Conversation XXVII
Immunizations and Monkeypox Update

Ashley L. Drews, MD FACP

HM System Epidemiologist

August 25, 2022

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Immunizations

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Texas Minimum State Vaccine Requirements for Students Grades K-12

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2022 - 2023 Texas Minimum State Vaccine Requirements for Students Grades K - 12

This chart summarizes the vaccine requirements incorporated in the Texas Administrative Code (TAC), Title 25 Health Services, §§97.61-97.72. This document is not intended as a substitute for the TAC, which has other provisions and details. The Department of State Health Services (DSHS) is granted authority to set immunization requirements by the Texas Education Code, Chapter 38.

IMMUNIZATION REQUIREMENTS

A student shall show acceptable evidence of vaccination prior to entry, attendance, or transfer to a public or private elementary or secondary school in Texas.

Vaccine Required (Attention to notes and footnotes)	Minimum Number of Doses Required by Grade Level												Notes
	Grades K - 6th						Grade 7th	Grades 8th - 12th					
	K	1	2	3	4	5	6	7	8	9	10	11	12	
Diphtheria/Tetanus/Pertussis (DTaP/DTP/DT/Td/Tdap)	5 doses or 4 doses							3 dose primary series and 1 booster dose of Tdap / Td *within the last 5 years*	3 dose primary series and 1 booster dose of Tdap / Td *within the last 10 years*					**For K – 6th grade:** 5 doses of diphtheria-tetanus-pertussis vaccine; 1 dose must have been received on or after the 4th birthday. However, 4 doses meet the requirement if the 4th dose was received on or after the 4th birthday.[1] For students aged 7 years and older, 3 doses meet the requirement if 1 dose was received on or after the 4th birthday.[1] **For 7th grade:** 1 dose of Tdap is required if at least 5 years have passed since the last dose of tetanus-containing vaccine.* **For 8th – 12th grade:** 1 dose of Tdap is required when 10 years have passed since the last dose of tetanus-containing vaccine.* *Td is acceptable in place of Tdap if a medical contraindication to pertussis exists.
Polio	4 doses or 3 doses													**For K – 12th grade:** 4 doses of polio; 1 dose must be received on or after the 4th birthday.[1] However, 3 doses meet the requirement if the 3rd dose was received on or after the 4th birthday.[1]
Measles, Mumps, and Rubella[2] (MMR)	2 doses													**For K – 12th grade:** 2 doses are required, with the 1st dose received on or after the 1st birthday.[1] Students vaccinated prior to 2009 with 2 doses of measles and one dose each of rubella and mumps satisfy this requirement.
Hepatitis B[2]	3 doses													For students aged 11 – 15 years, 2 doses meet the requirement if adult hepatitis B vaccine (Recombivax®) was received. Dosage (10 mcg /1.0 mL) and type of vaccine (Recombivax®) must be clearly documented. If Recombivax® was not the vaccine received, a 3-dose series is required.
Varicella[2,3]	2 doses													**For K – 12th grade:** 2 doses are required, with the 1st dose received on or after the 1st birthday.[1]
Meningococcal (MCV4)								1 dose						**For 7th – 12th grade**, 1 dose of quadrivalent meningococcal conjugate vaccine is required on or after the student's 11th birthday. **NOTE:** If a student received the vaccine at 10 years of age, this will satisfy the requirement.
Hepatitis A[2]	2 doses													**For K – 12th grade:** 2 doses are required, with the 1st dose received on or after the 1st birthday.[1]

NOTE: Shaded area indicates that the vaccine is not required for the respective grade.

↓ Notes on the back page, please turn over.↓

Rev. 03/2022

Available at: Texas Minimum Vaccine Requirements for Students Grades K-12 Accessed 8/22/2022

Texas Minimum State Vaccine Requirements for College Entry

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- Meningococcal vaccine
  - All students are required to show proof of initial meningococcal vaccination or a booster during the 5-year period prior to enrolling
  - Must get the vaccine at least 10 days before the semester begins
  - Exceptions
    - 22 years or older by the first day of start of semester
    - Students enrolled in online classes only
    - Medical exemption signed by student's physician
    - Students who submit a signed affidavit declining vaccination for reasons of conscience

CDC Recommended Child and Adolescent Immunization Schedule for 18 years or younger

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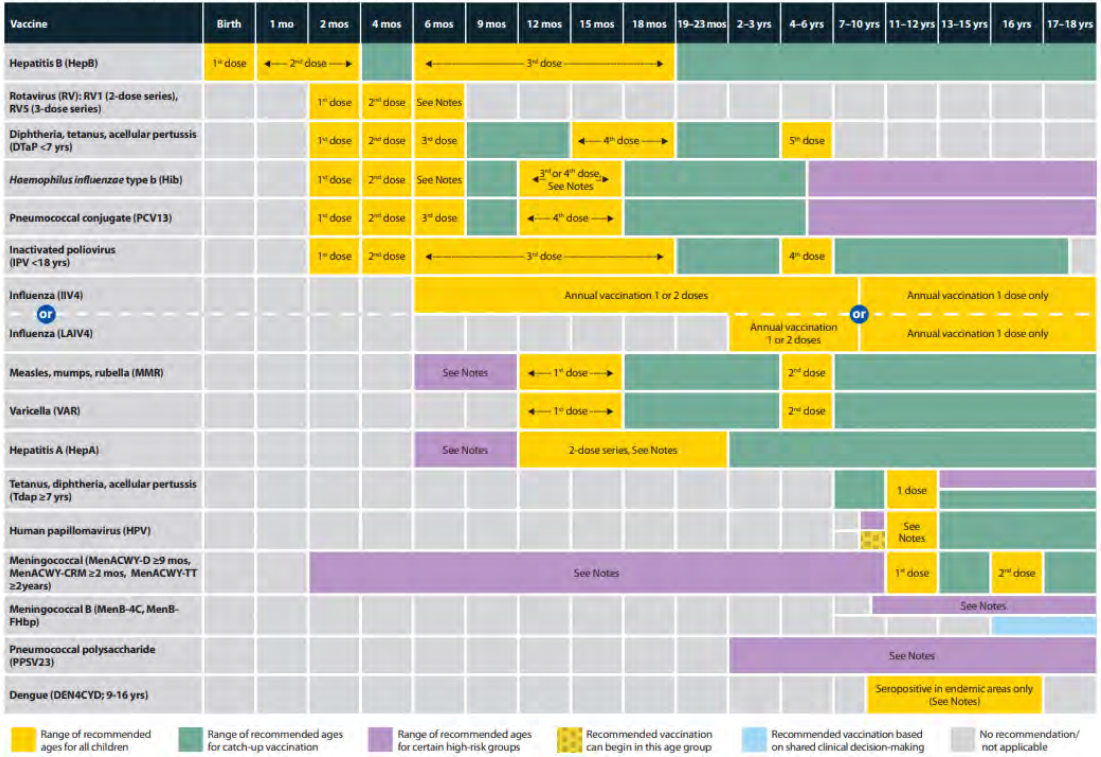
Table 1 Recommended Child and Adolescent Immunization Schedule for ages 18 years or younger, United States, 2022

These recommendations must be read with the notes that follow. For those who fall behind or start late, provide catch-up vaccination at the earliest opportunity as indicated by the green bars.
To determine minimum intervals between doses, see the catch-up schedule (Table 2).



Available at: https://www.cdc.gov/vaccines/schedules/downloads/child/0-18yrs-child-combined-schedule.pdf Accessed 8/19/2022.

COVID-19 Vaccines

- ACIP recommends COVID-19 vaccines for everyone ages 6 months and older
- COVID-19 vaccines can be administered on same day as other vaccines

CDC Recommended Adult Immunization Schedule by Age Group

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Table 1 Recommended Adult Immunization Schedule by Age Group, United States, 2022

Vaccine	19–26 years	27–49 years	50–64 years	≥65 years
Influenza inactivated (IIV4) or **Influenza recombinant** (RIV4)	1 dose annually			
or	or			
Influenza live, attenuated (LAIV4)	1 dose annually			
Tetanus, diphtheria, pertussis (Tdap or Td)	1 dose Tdap each pregnancy; 1 dose Td/Tdap for wound management (see notes)			
	1 dose Tdap, then Td or Tdap booster every 10 years			
Measles, mumps, rubella (MMR)	1 or 2 doses depending on indication (if born in 1957 or later)			
Varicella (VAR)	2 doses (if born in 1980 or later)		2 doses	
Zoster recombinant (RZV)	2 doses for immunocompromising conditions (see notes)		2 doses	
Human papillomavirus (HPV)	2 or 3 doses depending on age at initial vaccination or condition	27 through 45 years		
Pneumococcal (PCV15, PCV20, PPSV23)	1 dose PCV15 followed by PPSV23 OR 1 dose PCV20 (see notes)			1 dose PCV15 followed by PPSV23 OR 1 dose PCV20
Hepatitis A (HepA)	2 or 3 doses depending on vaccine			
Hepatitis B (HepB)	2, 3, or 4 doses depending on vaccine or condition			
Meningococcal A, C, W, Y (MenACWY)	1 or 2 doses depending on indication, see notes for booster recommendations			
Meningococcal B (MenB)	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations			
	19 through 23 years			
***Haemophilus influenzae* type b** (Hib)	1 or 3 doses depending on indication			

Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection

Recommended vaccination for adults with an additional risk factor or another indication

Recommended vaccination based on shared clinical decision-making

No recommendation/ Not applicable

Available at: Recommended Adult Immunization Schedule (cdc.gov) Accessed 8/19/2022.

Vaccine Exemptions

- Medical
  - For children with a valid medical contraindication to a vaccine or vaccine component
- Religious
  - For individuals whose religious beliefs oppose vaccination
- Philosophical
  - For individuals with a personal, moral or philosophical belief against some or all immunizations

Exemptions Permitted to School and Child Care

Immunization Requirements

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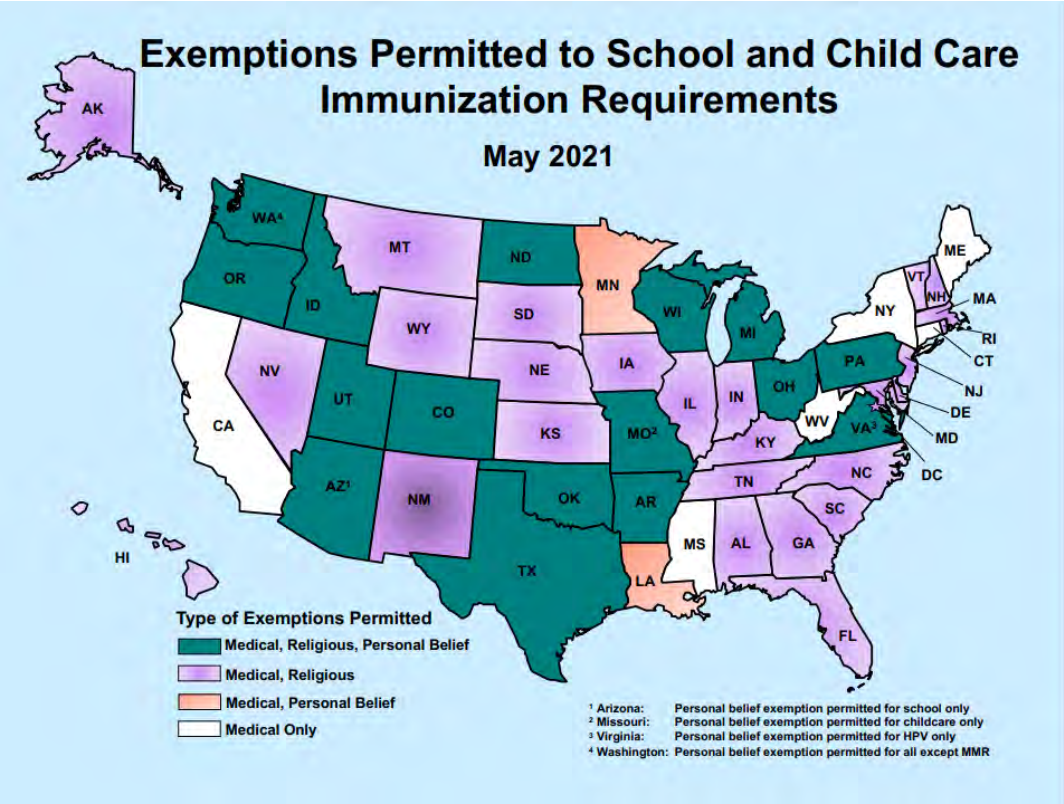
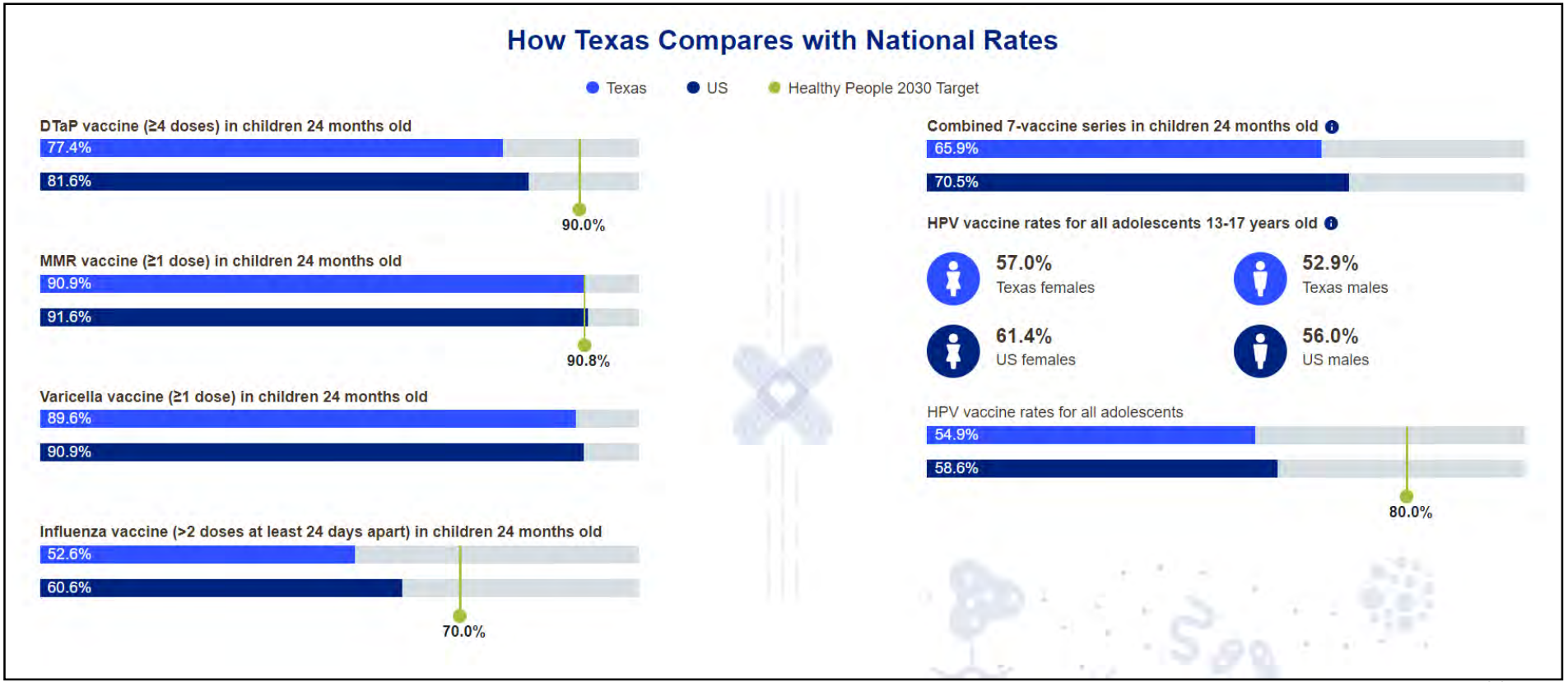


Available at: https://www.immunize.org/laws/exemptions.pdf Accessed 8/22/2022.

Vaccine Exemptions

- Vaccination rates in communities are inversely related to ease with which exemptions can be obtained
- States that allow both religious and philosophical exemptions have higher exemption rates than states that only allow religious exemptions
- States that allow both religious and philosophical exemptions have higher rates of vaccine preventable disease
- AAP, PIDS, IDSA, AAFP and AMA all support elimination of nonmedical exemptions to immunizations

State of Texas Child Vaccination Rates



Available at: https://downloads.aap.org/AAP/Vaccine/index.html?_ga=2.15483701.2027942445.1661199033-95048677.1661199033 Accessed 8/22/2022.

Vaccine Hesitancy

- Vaccine hesitancy is a delay in the acceptance or refusal of vaccination despite availability of vaccination services
- Vaccine hesitancy is influenced by
  - Complacency
    - The perception that the risk of vaccine-preventable disease is low
  - Convenience
    - The availability, affordability and accessibility of vaccines
  - Confidence
    - Trust in the safety and effectiveness of vaccines, the healthcare system and policymakers who recommend vaccines

Reasons Parents Refuse Vaccines

- Safety concerns
- Belief that vaccines do not work
- Belief that their child is not at risk
- Belief that the vaccine-preventable disease is not dangerous
- Belief that it is better to be naturally infected than vaccinated
- Belief that they know what is best for their child/they should have the right to make decisions for their child
- Lack of trust in government, public health authorities, pharmaceutical companies
- Religious/moral objections

First U.S. Polio Case in Nearly a Decade Highlights the Importance of Vaccination

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During the 1950s, as polio swept across the United States, vast iron lungs that enabled paralyzed children to breathe became a powerful symbol of a greatly feared disease. Credit: Science History Images / Alamy Stock Photo

Available at: https://www.scientificamerican.com/article/first-u-s-polio-case-in-nearly-a-decade-highlights-the-importance-of-vaccination/ Accessed 8/22/2022.

Consequences of Vaccine Hesitancy

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- Individual
  - Greater risk of acquiring vaccine-preventable disease
  - Even vaccine delay increases risk of acquisition of vaccine-preventable disease in the younger and more vulnerable population
- Societal
  - Increased risk of outbreaks of vaccine-preventable disease in the general population
    - Infection in children too young to be vaccinated
    - Infection in immunocompromised persons with suboptimal vaccine response even though they are vaccinated
  - Unnecessarily drain public health resources (testing, contact tracing, control measures)

Approach to Vaccine Hesitancy

- Maintain positive dialogue
- Identify and understand parental concerns
- Educate
  - Vaccine benefits and limitations
  - Vaccine safety and adverse events
  - Risks of natural infection
  - Correct misconceptions
- Maintain relationship
  - “If at first you don’t succeed try, try and try again” -Robert the Bruce, King of Scotland 1314

Monkeypox Update

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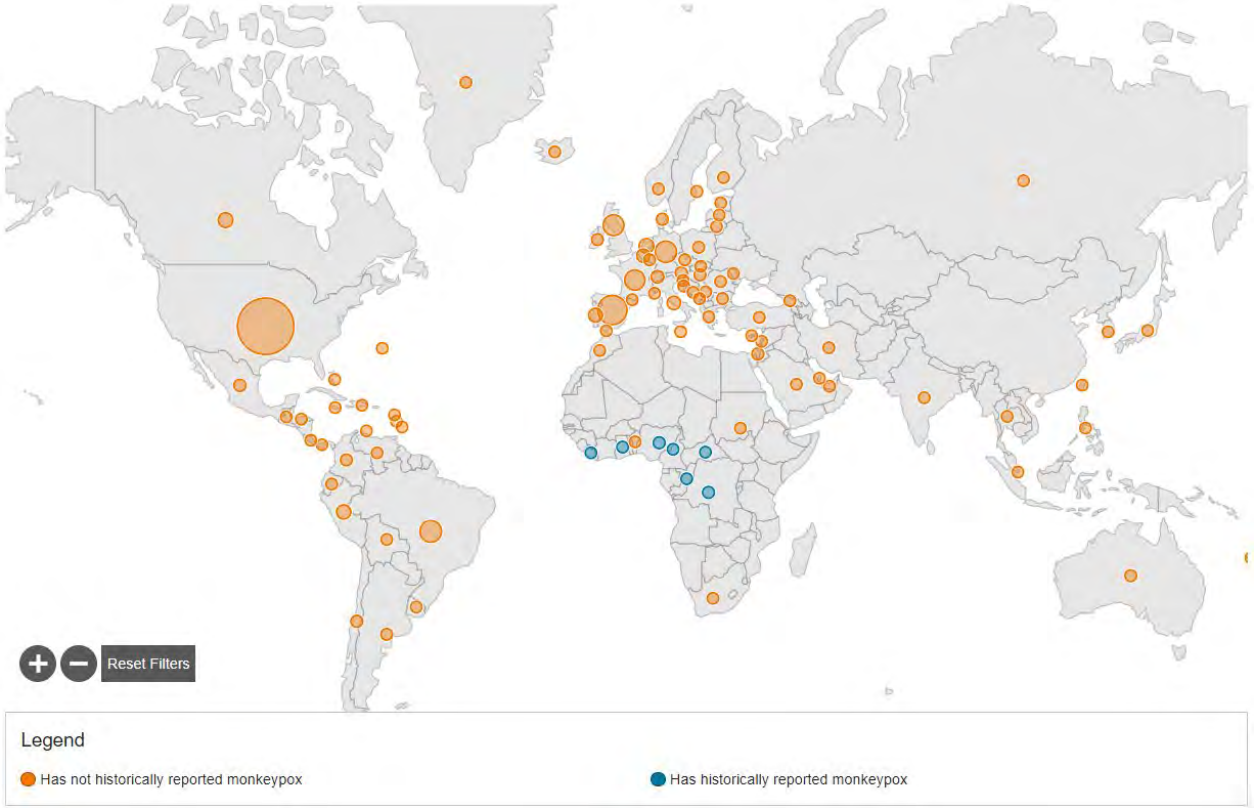
MONKEYPOX UPDATE

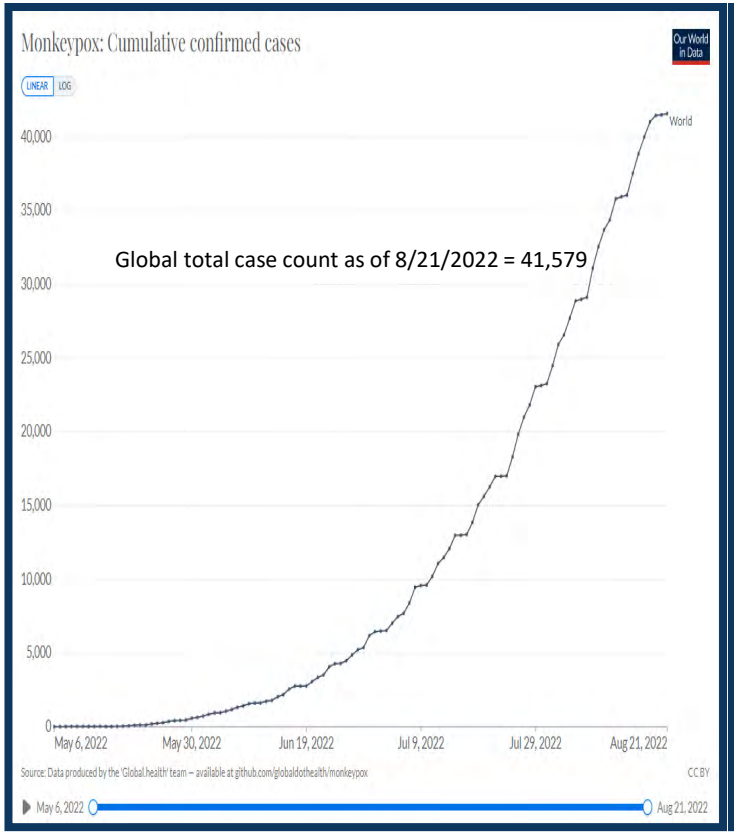
Global Outbreak



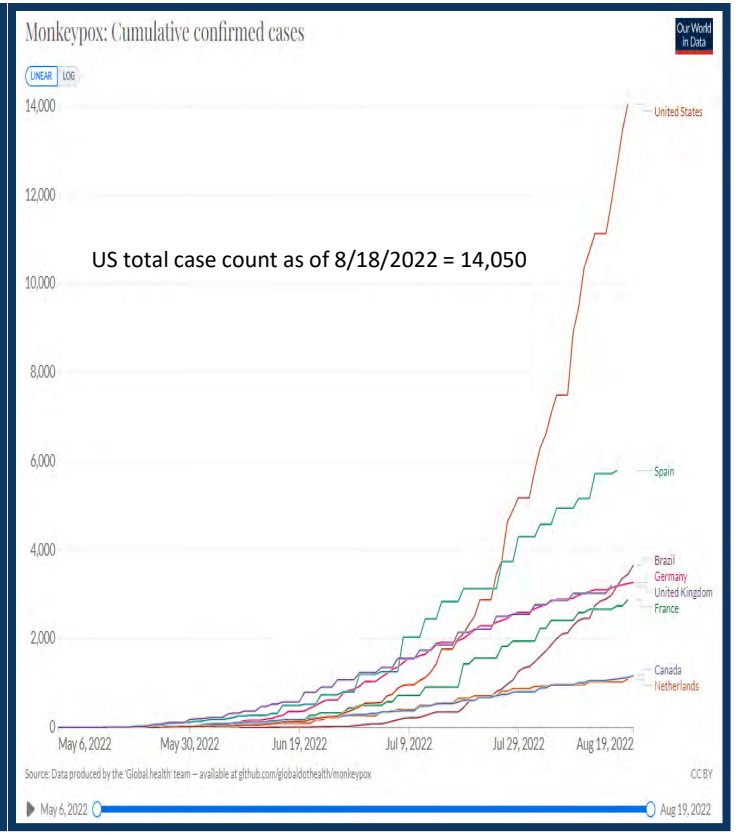
Available at: https://www.cdc.gov/poxvirus/monkeypox/response/2022/world-map.html. Accessed 8/22/2022

MONKEYPOX UPDATE

Global Case Count as of 8/21/2022



Global total case count as of 8/21/2022 = 41,579



US total case count as of 8/18/2022 = 14,050

Available at: https://ourworldindata.org/monkeypox. Accessed 8/22/2022.

MONKEYPOX UPDATE

Texas Update as of 8/19/2022

HOUSTON Methodist LEADING MEDICINE

Reported Monkeypox Cases in Texas by Public Health Region

Public Health Region	Number of Cases
PHR 1	2
PHR 2/3	525
PHR 4/5N	6
PHR 6/5S	450
PHR 7	107
PHR 8	23
PHR 9/10	3
PHR 11	2
Unknown	1
Total	1119

Reported Monkeypox Cases in Texas by Patient Sex

Sex	Number of Cases
Male	1097
Female	21
Unknown	1
Total	1119

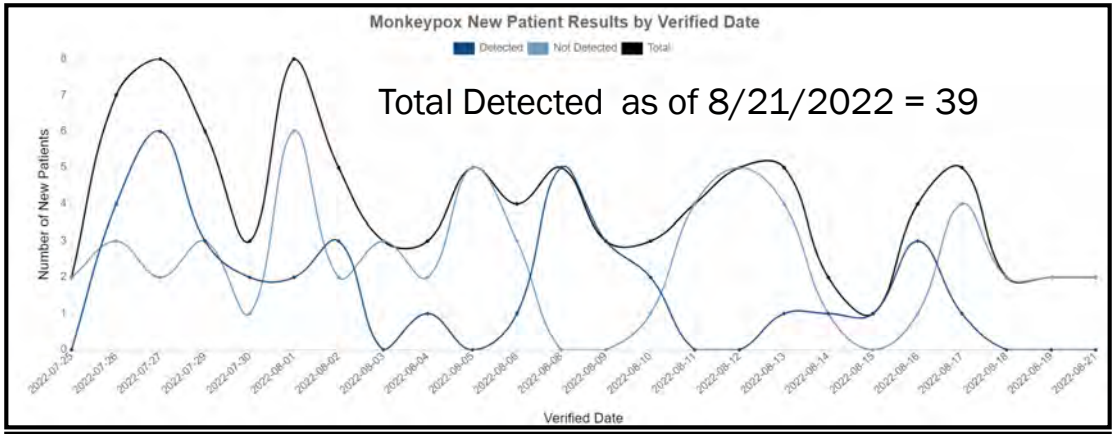
Reported Monkeypox Cases in Texas by Case Age at Time of Illness

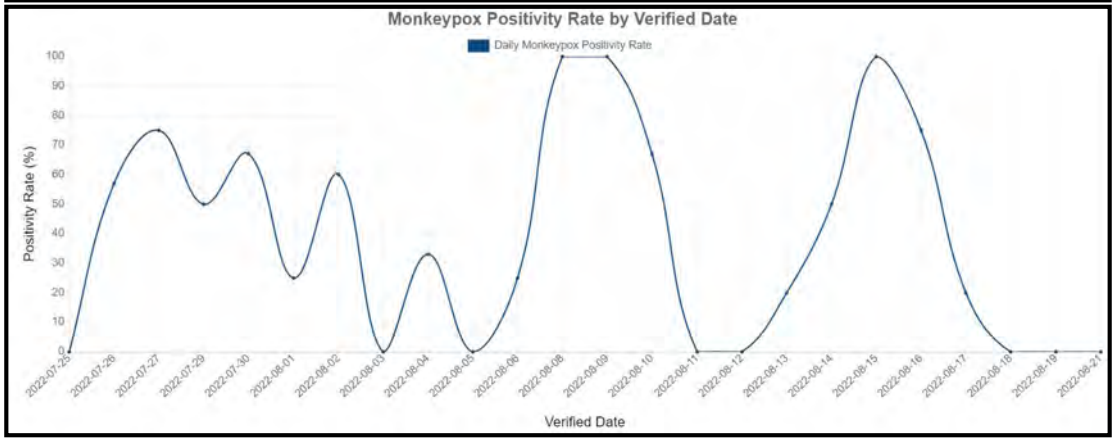
Age Category	Number of Cases
<18 Years	5
18-29 Years	313
30-39 Years	486
40-49 Years	201
50-59 Years	95
60+ Years	19
Total	1119

Available at: https://dshs.texas.gov/news/updates.shtm. Accessed 8/22/2022.

MONKEYPOX UPDATE

HMH Lab as of 8/21/2022

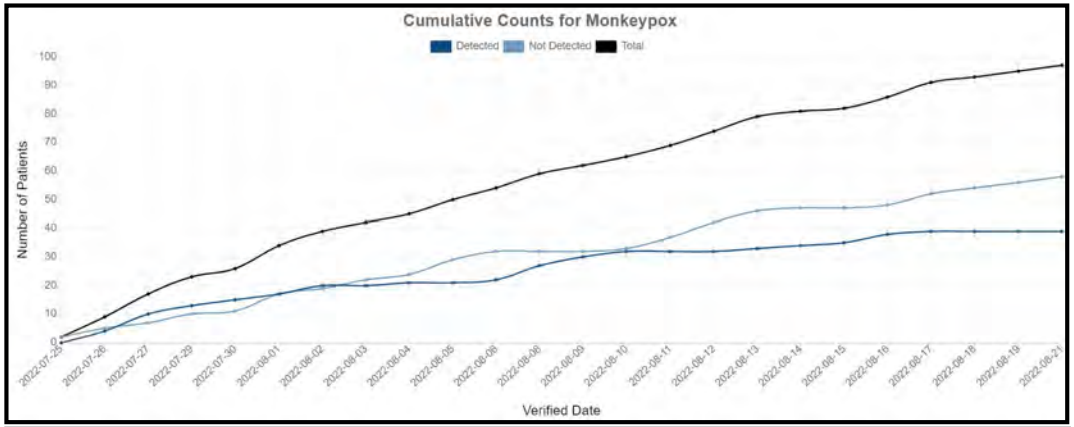


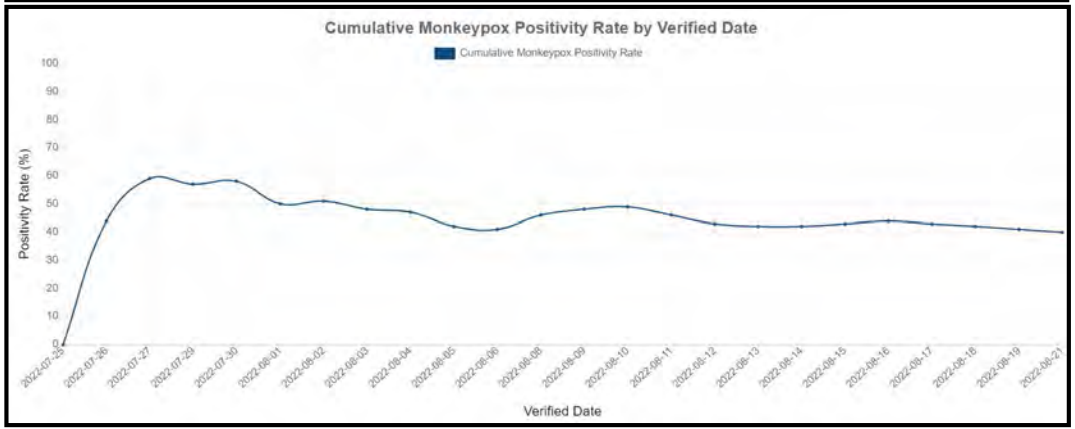


Available at: Monkeypox Patients Report. Accessed 8/22/2022.

MONKEYPOX UPDATE

HMH Lab as of 8/21/2022





Available at: Monkeypox Patients Report. Accessed 8/22/2022.

MONKEYPOX UPDATE

Basic Facts

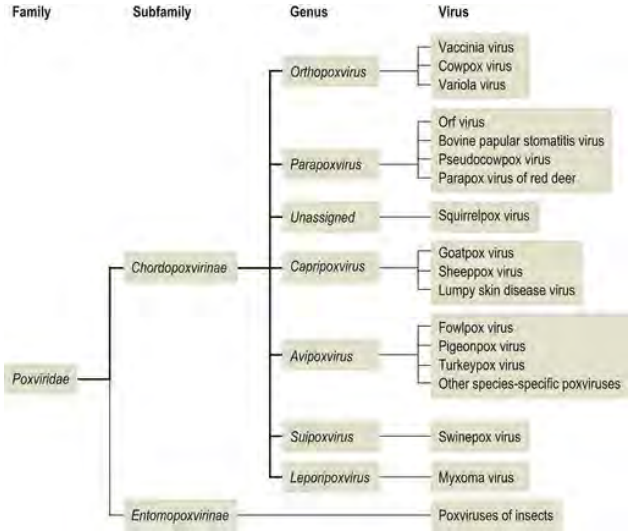
- Monkeypox is caused by the monkeypox virus
- Monkeypox virus is an orthopoxvirus
  - Same virus family as variola virus (smallpox) and vaccinia
  - Different virus family than varicella virus (chickenpox)
- Two types of monkeypox
  - West African and Central African (aka Congo Basin) now named clade II and clade I by WHO
  - Current outbreak is due to West African clade/Clade II
- Discovered in 1958, but first human case identified in 1970
- African rodents and non-human primates are thought to harbor the virus

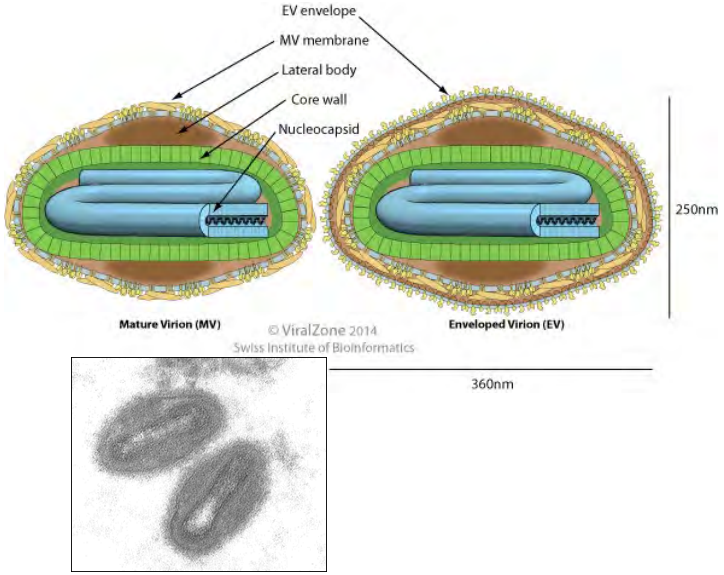
Available at: https://www.cdc.gov/poxvirus/monkeypox/faq.html. Accessed 7/24/2022.

MONKEYPOX VIRUS (MPXV)

HOUSTON Methodist LEADING MEDICINE

- Double stranded DNA virus of *Poxviridae* family





MONKEYPOX UPDATE

History

- First human case described in 1970 in Democratic Republic of Congo
- Sporadic outbreaks have occurred since then in endemic countries, typically related to interactions with wildlife reservoirs (rodents)
- Travel related cases have occurred from endemic locals, but person-to-person spread has been inefficient (until now)
- Person-to-person spread is driving the current outbreak

Available at: https://www.cdc.gov/poxvirus/monkeypox/transmission.html. Accessed 7/19/2022.

MONKEYPOX UPDATE

Transmission

- Transmission from animals
  - Being scratched or bitten by an infected animal
  - Preparing or eating meat using products from an infected animal
- Person-to-person spread is driving the current global outbreak
  - Direct contact with the infectious rash, scabs, or body fluids
  - Exposure to respiratory secretions during prolonged, face-to-face contact
  - Fomites
  - Vertical transmission from mother to fetus

Available at: https://www.cdc.gov/poxvirus/monkeypox/transmission.html. Accessed 7/19/2022.

MONKEYPOX UPDATE

Clinical Presentation

HOUSTON Methodist LEADING MEDICINE

- Incubation period: 1-3 weeks
  - Clinical presentation
    - Often starts with a prodrome of fever, malaise, headache, lymphadenopathy
    - Rash usually follows prodrome, though some people lack prodrome in current outbreak
    - Rash classically starts on the mouth/face then spreads to extremities including palms/soles
    - Rash often confined to groin/genital area in current outbreak
    - Lesions progress through different phases: enanthem, macules, papules, vesicles, pustules, and then scabs
    - Takes about 2-4 weeks to progress through all stages
    - Infectious until scabs have fallen off and fresh skin is evident

Available at: https://www.cdc.gov/poxvirus/monkeypox/transmission.html. Accessed 7/192022.

MONKEYPOX UPDATE

Clinical Course

- Self-limited disease for most
- Risk factors for more severe disease
  - Age (children at risk for more severe disease)
  - Underlying immunodeficiency
- Complications
  - Bacterial superinfections
  - Encephalitis
  - Pneumonitis
  - Conjunctivitis/keratitis

MONKEYPOX UPDATE

Prognosis

- Case fatality rates vary by clade
- Central African clade/Clade I
  - Causes more severe disease
  - CFR reported around 10%
- West African clade/Clade II
  - Causes milder disease
  - Reported CFR 3-6%
- Rare deaths have been reported thus far in the 2022 outbreak
  - Evolving situation

INCIDENCE OF MONKEYPOX

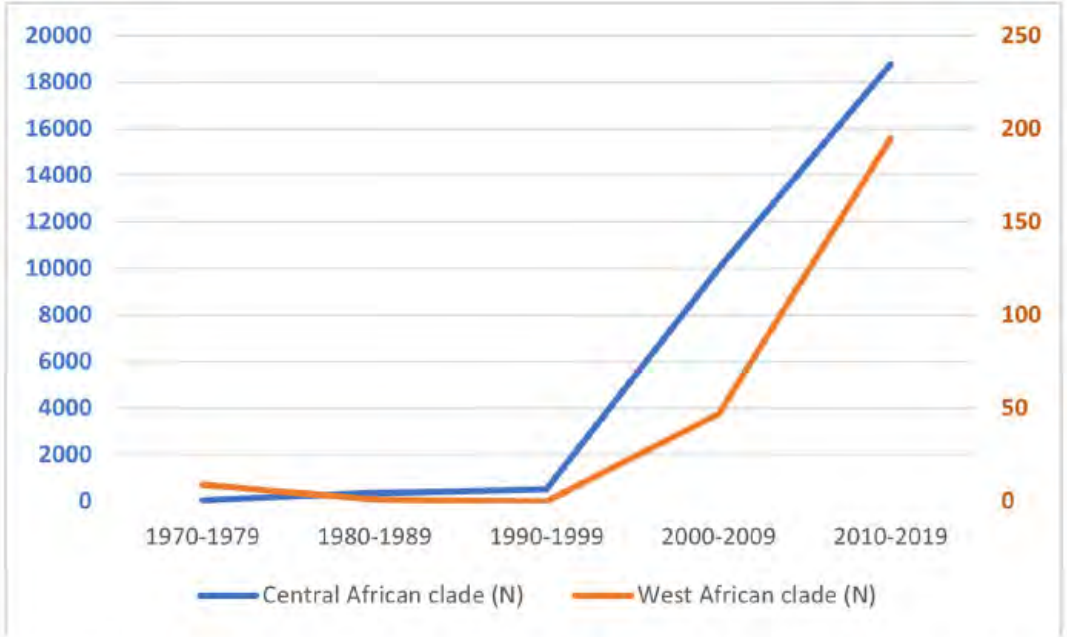


Fig 7. Evolution of number of cases per clade. For 2000–2019, the numbers for the Central African clade are based largely on suspected cases, per the reporting system by the Democratic Republic of the Congo.

https://doi.org/10.1371/journal.pntd.0010141.g007

PLOS Neglected Tropical Diseases https://doi.org/10.1371/journal.pntd.0010141

MONKEYPOX UPDATE

Why now?

- Protection from prior smallpox vaccination waning
- Growing human populations with increased interface and overlap of human and animal populations
- Civil unrest in endemic areas

MONKEYPOX UPDATE

Diagnosis

- Nucleic acid amplification test (RT-PCR)
  - 2 swabs from lesion material
- Serology

MONKEYPOX UPDATE

Countermeasures

- Medical countermeasures can be used for:
  - Pre-exposure prophylaxis
  - Post-exposure prophylaxis
  - Treatment

Vaccines

JYNNEOS

ACAM2000

Antivirals

Tecovirimat (TPOXX)

Cidofovir

Brincidofovir

Immune globulin

Vaccinia immune globulin

Slide courtesy of CDC.

MONKEYPOX UPDATE

Vaccines

- ACAM2000
  - Replication competent vaccine approved for the prevention of smallpox
  - Available for the prevention of monkeypox under expanded access (IND) protocol for the current monkeypox outbreak
  - Administered by scarification in a single dose
  - Associated with many side effects
    - Fever and LAD
    - Eczema vaccinatum
    - Fetal vaccinia
    - Generalized vaccinia
    - Progressive vaccinia
    - Encephalitis
    - Myocarditis/pericarditis

MONKEYPOX UPDATE

Vaccines

- Modified vaccinia Ankara (MVA)/Jynneos
  - Live, non-replicating vaccine
  - Licensed by FDA in 2019 for the prevention of smallpox and monkeypox disease in adults at least 18 years old
  - Administered as a subcutaneous or intradermal injection in 2 doses at least 4 weeks apart
  - Dose
    - Standard dose 0.5 mL/dose given subcutaneously
    - Dose sparing regimen 0.1 mL/dose given intradermally
  - Efficacy
    - Animal data immunogenicity studies support efficacy as PrEP
    - Clinical trial studies in over 3,000 persons in U.S. showed 99.7-99.8% seroconversion
    - Very limited evidence for efficacy as PEP

MONKEYPOX UPDATE

Vaccines

- Modified vaccinia Ankara (MVA)/Jynneos cont.
  - Safety
    - Excellent safety profile even in those with skin disorders or immunodeficiency
    - Safety not established in pregnancy, breastfeeding or pediatrics but use can be considered in the emergency setting
    - Contraindicated in those with serious hypersensitivity to any of its components (including severe allergy to cipro or gent)
  - Side effects
    - Injection site reaction
    - Headache
    - Myalgias
    - Lymphadenopathy

MONKEYPOX UPDATE

Treatment Algorithm for Use of Vaccine (JYNNEOS)

HOUSTON Methodist LEADING MEDICINE

Exposure to Confirmed Positive Patients or High Risk patients

High Risk Exposure

- Unprotected contact between a person's skin or mucous membranes and the skin, lesions, or bodily fluids from a patient or contaminated materials
  - Sexual contact
  - Inadvertent splashes of patient saliva to the eyes or oral cavity of a person
  - Ungloved contact with patient
  - Contact with linens or clothing
- Being inside the patient's room or within 6 feet of a patient during any procedures that may create aerosols from oral secretions, skin lesions, or resuspension of dried exudates without wearing an N95 or equivalent respirator and eye protection

Intermediate Risk Exposure

- Being within 6 feet for 3 hours or more of an unmasked patient without wearing, at a minimum, a surgical mask
- Activities resulting in contact between sleeves and other parts of an individual's clothing and the patient's skin lesions or bodily fluids, or their soiled linens or dressings (e.g., turning, bathing, or assisting with transfer) while wearing gloves but not wearing a gown
- People who attended an event or venue where there was a high risk of exposure to someone with confirmed monkeypox virus through skin-to-skin or sexual contact

Public Health Risk Exposure

Individuals over 18 years old who:

- Were diagnosed with gonorrhea or early syphilis within the past 3 months
- Are on HIV pre-exposure prophylaxis (PrEP)
- Attended or worked at a commercial sex venue or other venues where they had anonymous sex or sex with multiple partners (e.g., saunas, bathhouses, sex clubs, sex parties) within the past 21 days

MONKEYPOX UPDATE

Treatment

- Antivirals
  - Cidofovir
  - Brincidofovir
  - Tecovirimat
- Vaccinia immunoglobulin

MONKEYPOX UPDATE

Treatment – antivirals

- Antivirals
  - Cidofovir
    - In vitro activity against monkeypox
    - Shown to be effective against lethal MP infection in animals
    - No clinical data on efficacy against MP in humans
    - Associated with significant toxicity (nephrotoxicity)
  - Brincidofovir
    - Oral analog of cidofovir
    - Less toxicity

MONKEYPOX UPDATE

Treatment – antivirals

- Antivirals (cont.)
  - Tecovirimat
    - Antiviral approved to treat smallpox in adults and children weighing at least 3 kg
    - Orthopox VP37 envelope wrapping protein inhibitor-required for the formation of infectious viral particles essential for dissemination in the infected host
    - Drug of choice for monkeypox
    - Available through expanded access from the CDC for MP
    - ONLY available through the CDC for MP currently
    - Can be used in combination therapy with cidofovir/brincidofovir in severe cases
      - Side effects
        - HA
        - N/V
        - Abdominal pain
        - Hypoglycemia
      - Available in IV and po formulation
        - 600 mg q 12 hours for 40-120 kg
        - 600 mg q 8 hours for >120 kg
        - No renal or hepatic dose adjustment needed

MONKEYPOX UPDATE

Treatment

- Persons who should be considered for treatment
  - Persons with severe disease (e.g., encephalitis)
  - Persons who may be at high risk of severe disease:
    - immunocompromised;
    - pediatric patients, especially if <8 years of age;
    - pregnant or breastfeeding people;
    - persons with one or more complications
  - Persons with aberrant or complicated monkeypox infections, including accidental implantation in eyes, mouth, or other anatomical areas where monkeypox virus infection might constitute a special hazard (e.g., the genitals or anus)

Slide courtesy of CDC.

Houston Methodist & COVID-19 Update

Marc L. Boom, MD | August 25, 2022

HOUSTON Methodist® LEADING MEDICINE

Honor Roll Hospital

By *U.S. News & World Report*

HOUSTON Methodist
LEADING MEDICINE

EXCELLENCE IN PATIENT CARE & SAFETY

Houston Methodist Hospital is recognized by *U.S. News & World Report* as

NO. 1 IN TEXAS and **TOP 15 IN THE NATION**.

4,500
hospitals **evaluated** this year

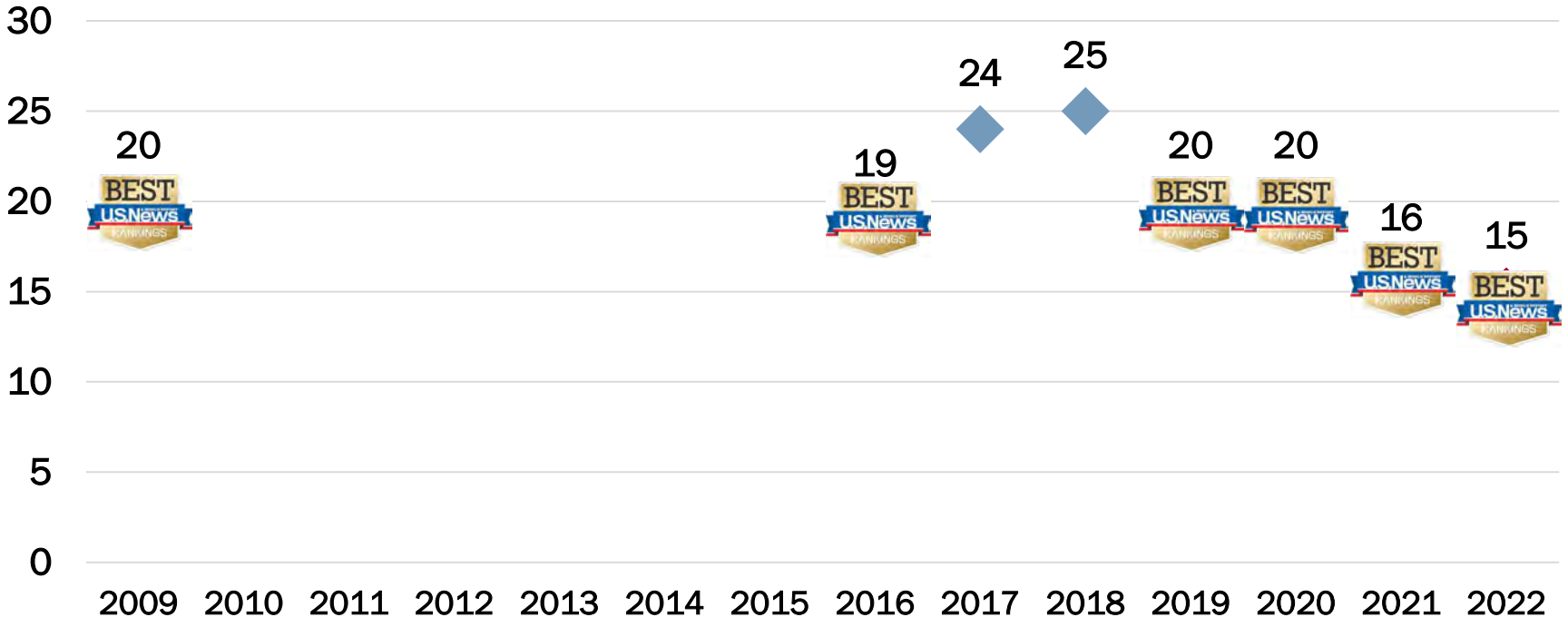
20
hospitals are on the **Honor Roll**

1
nationally ranked Honor Roll hospital in **Texas**

Honor Roll Hospital

By *U.S. News & World Report*

HOUSTON Methodist LEADING MEDICINE



Honor Roll Hospital

By *U.S. News & World Report*

HOUSTON Methodist
LEADING MEDICINE

EXCELLENCE IN PATIENT CARE & SAFETY

Hospitals nationwide are ranked by *U.S. News & World Report* for their unwavering commitment to patient care and excellence in:

QUALITY OF CARE
Includes advanced technology, nurse staffing and medical resources

HOSPITAL REPUTATION
Annual survey of nearly 33,000 board-certified physicians

PATIENT EXPERIENCE
Based on a survey asking patients to provide an overall assessment of their hospital experience

PATIENT OUTCOMES
Measures include patient protection, safety, survival rates and hospital readmission

U.S. News & World Report Summary

HOUSTON Methodist LEADING MEDICINE

- Houston Methodist Hospital improves Honor Roll ranking to **#15** up from **#16**. The highest Honor Roll ranking in history.
- Named **No. 1 in Texas** 11 years in a row
- HMH is **ranked for the 30th consecutive year** in at least one specialty
- Received "High Performing" in **18 out of 20** procedures & conditions
  - Rated "average" in the newly added procedures uterine and ovarian cancer surgery
- For the 16th consecutive year, Houston Methodist Hospital **ranked in more specialties** than any hospital in Texas
- HMSL is ranked **#5 in Houston** (tied with MH Memorial City) and **#9 in Texas** (4-way tie); no other HM hospitals are ranked in Houston or Texas
- Houston Methodist Hospital is ranked in **10 of 15 specialties**:
  - Cancer (#29) ↓
  - Cardiology & Heart Surgery (#13) ↑
  - Diabetes & Endocrinology (#9) ↑
  - Gastroenterology & GI surgery (#8) ↑
  - Geriatrics (#22) →
  - Neurology & Neurosurgery (#15 tie) ↑
  - Obstetrics & Gynecology (#25) ↓
  - Orthopedics (#11) ↑
  - Pulmonology & Lung Surgery (#18) ↑
  - Urology (#21 tie) ↑

Best Hospitals Honor Roll

HOUSTON Methodist LEADING MEDICINE

2021

1. Mayo Clinic (Rochester)
2. Cleveland Clinic
3. UCLA Medical Center
4. Johns Hopkins
5. Massachusetts General
6. Cedars-Sinai Medical Center
7. New York Presbyterian Hospital-Columbia and Cornell
8. NYU Langone Hospitals
9. UCSF Medical Center
10. Northwestern Memorial Hospital
11. University of Michigan Health
12. Stanford Health Care-Stanford Hospital
13. Hospitals of the University of Pennsylvania-Penn. Presbyterian
14. Brigham and Women's Hospital
15. Mayo Clinic (Phoenix)
16. **Houston Methodist**
17. Barnes-Jewish Hospital
17. Mount Sinai Hospital
19. Rush University Medical Center
20. Vanderbilt University Medical Center

2022

1. Mayo Clinic (Rochester)
2. Cedars-Sinai Medical Center
3. NYU Langone Hospitals
4. Cleveland Clinic
5. Johns Hopkins
5. UCLA Medical Center
7. New York Presbyterian Hospital-Columbia and Cornell
8. Massachusetts General
9. Northwestern Memorial Hospital
10. Stanford Health Care-Stanford Hospital
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14. Brigham and Women's Hospital
15. **Houston Methodist**
16. Mount Sinai Hospital
17. University of Michigan Health
18. Mayo Clinic (Phoenix)
19. Vanderbilt University Medical Center
20. Rush University Medical Center

HMH Specialty Rankings
2014-2022

HOUSTON Methodist LEADING MEDICINE

SPECIALTY	2014	2015	2016	2017	2018	2019	2020	2021	2022
Cancer	42	36	44	--	--	39	17	23	29
Cardiology & Heart Surgery	18	21	21	16	14	16	12	15	13
Diabetes & Endocrinology	35	23	8	23	42	49	28	16	9
Ear, Nose & Throat	--	--	--	--	--	--	49	--	--
Gastroenterology & GI Surgery	13	10	11	12	15	14	14	10	8
Geriatrics	31	26	19	23	29	34	26	22	22
Gynecology	43	45	--	--	--	--	26	19	25
Nephrology*	31	28	38	39	35	15	19	NA	NA
Neurology & Neurosurgery	14	16	17	18	24	34	23	21	15
Ophthalmology	--	--	--	--	--	--	--	--	--
Orthopedics	31	22	23	21	26	14	13	12	11
Psychiatry	--	--	--	--	--	--	--	--	--
Pulmonology & Lung Surgery	22	17	17	15	23	24	20	19	18
Rehabilitation	--	--	--	--	--	--	--	--	--
Rheumatology	--	--	--	--	--	--	--	--	--
Urology	18	19	32	--	--	--	--	29	21

*No longer ranked as of 2021

of Ranked Specialties in Texas

HOSPITAL	2021	2022
Houston Methodist Hospital	10	10
UT Southwestern Medical Center (Dallas)	9	9
MD Anderson Cancer Center	7	7
Baylor St. Luke's Medical Center	6	6
Memorial Hermann Hospital + TIRR*	3	1
Baylor University Medical Center (Dallas)	3	1
Baylor, Scott & White The Heart Hospital (Plano)	1	1
Baylor, Scott & White Insititute for Rehabilitation (Dallas)	1	1
St. David's North Austin Medical Center	1	1
The Menninger Clinic	1	1
Memorial Hermann Memorial City	1	0
Houston Methodist Sugar Land Hospital	1	0
Texas Health Presbyterian Hospital (Dallas)	1	0
St. David's Medical Center (Austin)	1	0

HMH specialties ranked 1st in TX:

- Cardiology & Heart Surgery
- Diabetes & Endocrinology
- Gastroenterology & GI Surgery
- Geriatrics
- Gynecology
  - Only ranked hospital in TX
- Neurology & Neurosurgery
- Orthopedics
  - Only ranked hospital in TX
- Pulmonology & Lung Surgery

* Memorial Hermann Hospital had no ranked specialties in 2022; TIRR ranked in Rehabilitation

Relentlessly Consistent and Sustained Focus

HOUSTON Methodist LEADING MEDICINE

2004 - 2010

2006

2012

2014

2019

External Scorecard

HOUSTON Methodist LEADING MEDICINE

	Honor Roll	CMS Star	Leapfrog	Vizient
Mayo Clinic	1	★★★★★	A	★★★★★
Cedars-Sinai Medical Center	2	★★★★★	C	-
NYU Langone Hospitals	3	★★★★★	A	★★★★★
Cleveland Clinic	4	★★★★★	B	-
Johns Hopkins Hospital	5	★★★★	A	-
UCLA Medical Center	5	★★★★★	B	
New York-Presbyterian Hospital	7	★★★★★	C	-
Massachusetts General Hospital	8	★★★★★	A	-
Northwestern Memorial Hospital	9	★★★★★	C	-
Stanford Health Care	10	★★★★★	A	★★★★★
Barnes-Jewish Hospital	11	★★★	C	★★★★★
UCSF Medical Center	12	★★★★	A	-
Hospitals of the University of Pennsylvania	13	★★★★★	A	★★★★★
Brigham and Women's Hospital	14	★★★★	A	★★★★★
Houston Methodist Hospital	15	★★★★★	A	★★★★★
Mount Sinai Hospital	16	★★★★	A	-
University of Michigan Health-Ann Arbor	17	★★★★★	A	-
Mayo Clinic-Phoenix	18	★★★★★	A	-
Vanderbilt University Medical Center	19	★★★★	A	-
Rush University Medical Center	20	★★★★★	A	★★★★★

Patients Are at The Center of Everything We Do

HOUSTON Methodist LEADING MEDICINE

When academic medical centers compete on safety, quality and service, PATIENTS WIN.

When academic medical centers collaborate on education and research (innovation), PATIENTS WIN.

COVID-19 Viral Load Detected in City of Houston Wastewater

HOUSTON METHODIST LEADING MEDICINE

HOUSTON

August 15, 2022

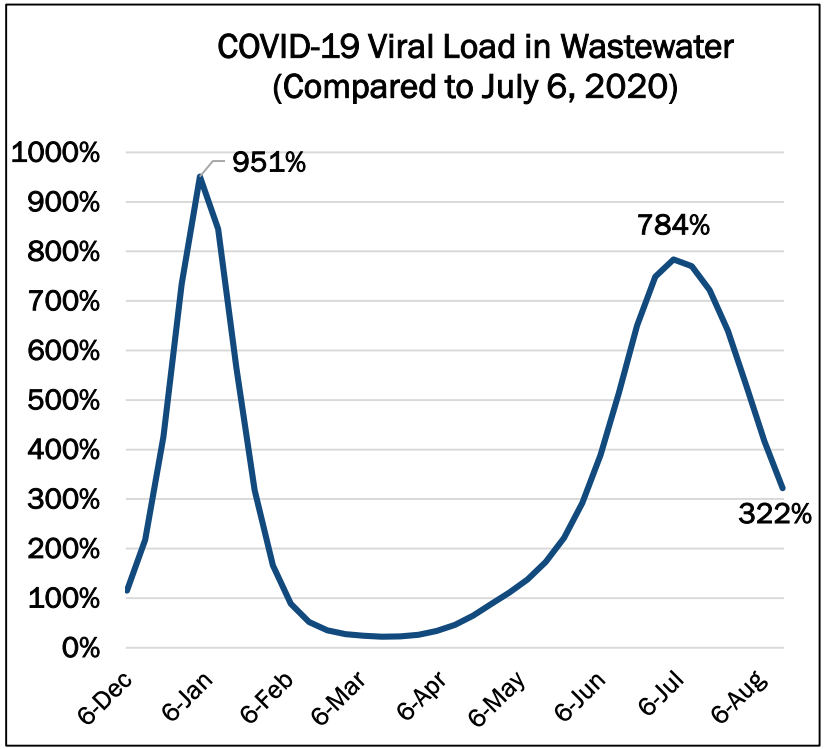
Viral Load:

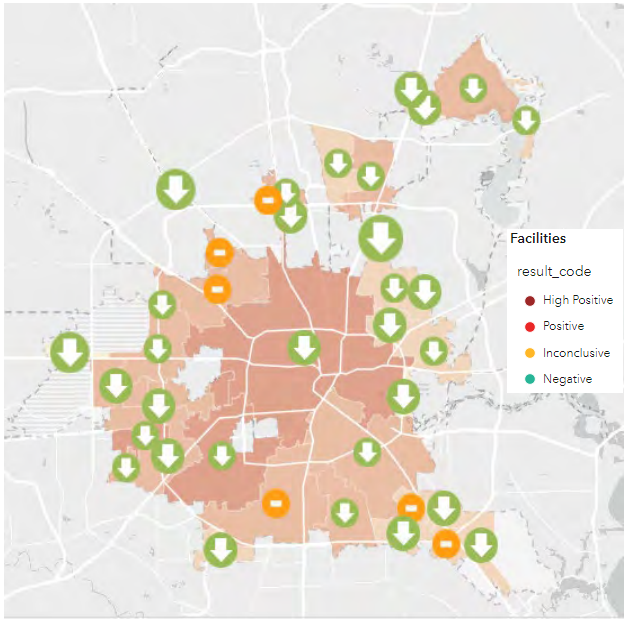
322%

In comparison to July 6, 2020

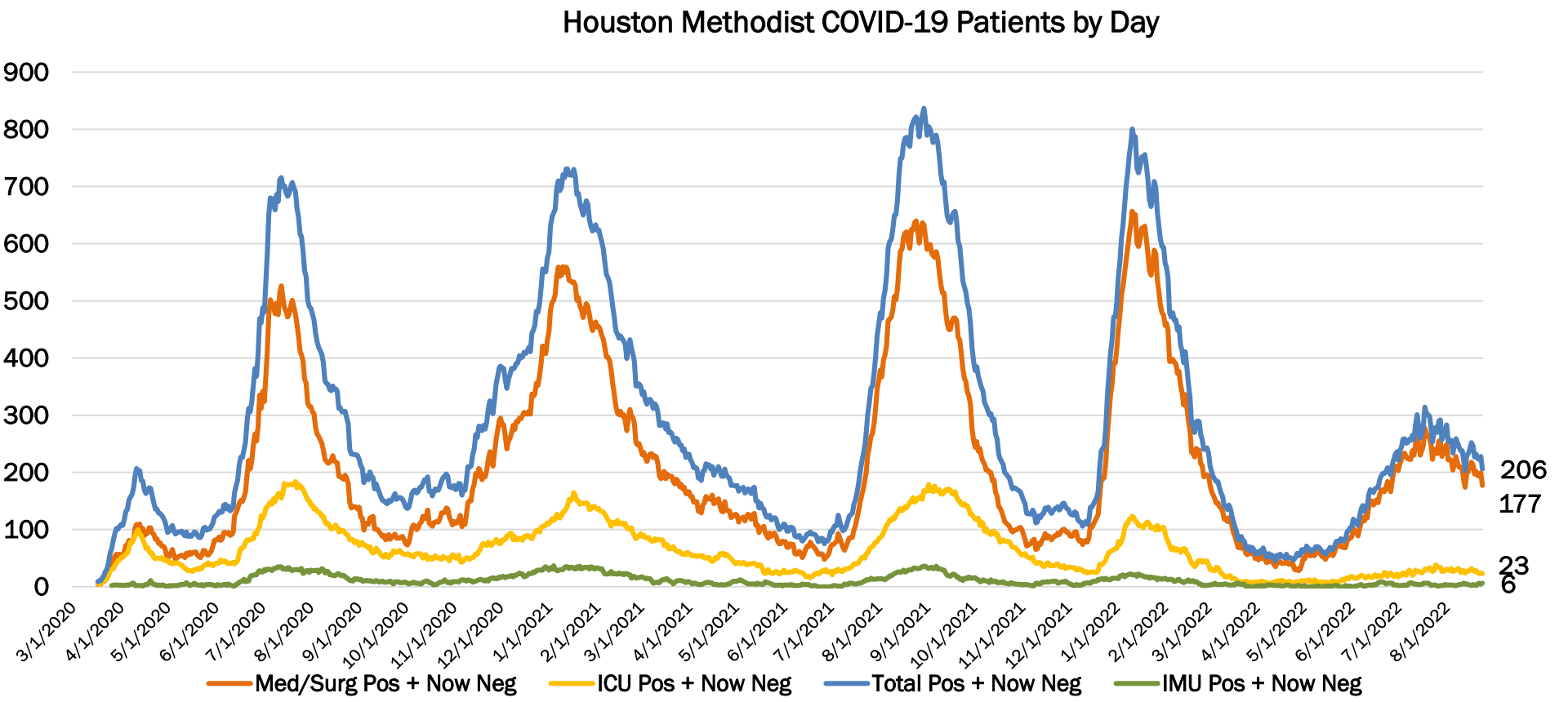
Positivity Rate:

26%





Houston Methodist COVID-19 Cases By Day



Data as of August 23, 2022

CDC COVID-19 Guidelines

HOUSTON Methodist LEADING MEDICINE

General Guidance:

- Important for individuals to be up to date with all available COVID-19 vaccination.
- Testing is not recommended for screening of asymptomatic people without known exposures in most community settings.
- Individuals should consider exposure risk for activities, including local levels of COVID-19 infections, ventilation, physical distance, etc.
- If exposed to COVID-19 individuals should wear a high-quality mask for 10 days and test on day 5.

If You Test Positive for COVID-19:

- Individuals should isolate from others, regardless of vaccination status.
- Isolate at home for at least 5 days. If after day 5, the individual is fever-free for 24 hours without medication isolation may be ended.
- If the individual had moderate illness or a weakened immune system, isolation should continue through day 10. If you had severe illness, consult MD before ending isolation.
- Once isolation is ended, individual should still wear a high-quality mask around others through day 10.

Houston Methodist Foundation Signature Event

HOUSTON METHODIST
Inaugural Golf Classic
FRIDAY, OCTOBER 28, 2022 | GOLF CLUB OF HOUSTON

HM Inaugural Golf Classic

- October 28, 2022 at Golf Club of Houston
- Supporting the Six Centers of Excellence
- Chaired by PLC member Alard (Al) Kaplan


HOUSTON
Methodist
LEADING MEDICINE