



Welcome to the Front Lines of the Fight Against COVID-19

A TOWN HALL CONVERSATION

We will begin at 10 a.m.



Maintaining Health & Wellness in Challenging Times

Nathalie Sessions, RD, LD – Corporate Wellness Dietitian

January 13, 2021

Topics Covered

- Keep Stress in Check
- Move Daily
- Eat Mindfully



Keep Stress in Check

Practice Self-Care

Proactively Manage Stress

- Find healthy ways to manage *your* stress that are effective for *you*.
- Personal time to manage stress is very important to your overall health and well-being.
- Self-care is not selfish!



Develop Healthy Boundaries

DEFINE

Identify
desired
boundary

*and identify
the “why”*

COMMUNICATE

Say what
you need

*to those it
may affect*

STAY SIMPLE

Don't over-
explain

*“No” can be
a complete
sentence*

SET CONSEQUENCES

Say why it's
important

*Know how you will
hold yourself and
others to your set
boundary*

Develop Healthy Boundaries

Benefits:

- Avoid burnout
- Conserve emotional energy
- Foster less anger and resentment
- Leads to stable, healthy relationships
- Improves self-esteem



Discover Suitable (Enjoyable!) Techniques for Yourself

- **Prioritize sleep**
- Deep breathing
- Digital detox
- Aromatherapy
- Massage therapy
- Listen to music
- Journaling
- Gratitude
- Meditation
- Enjoy the outdoors
- News fast
- Cultivate optimism
- Physical activity
- Mindful eating
- And more!



80 to 90 percent of vitamin D the body gets is obtained from sunlight. The “sunshine vitamin” is actually a hormone with many vital functions including bone health and even mood. Recent research suggests an optimal vitamin D level may help protect individuals from contracting viral infections and lessen illness severity if one becomes sick. Food sources include fatty fish, eggs and fortified dairy. Practice sun safety and work with your healthcare provider to determine if supplementation is needed to correct a deficiency.

Cultivate Optimism

Ways to maintain a positive mindset:

- Focus on what's going well
- Realize you're not alone
- Make an effort to interact and connect
- Look at the big picture



Move Daily

Baseline Recommendations

FOR HEALTH PROMOTION

Aerobic Activity >> cardiovascular health; stamina; endurance; weight maintenance; fat-burning

- 3-5 days a week 30-60 minutes of moderate intensity
or
- 2-3 days a week 20-30 minutes of vigorous intensity

Strength Training

- 2 days per week >> balance; muscle strength; posture

Stretching

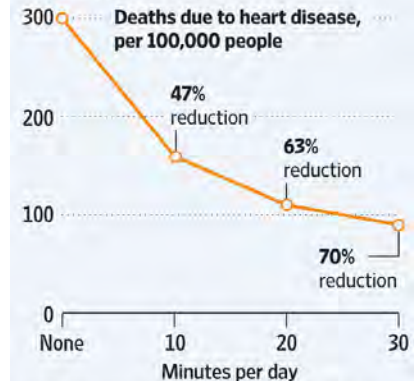
- Daily >> injury prevention; flexibility

Avoid being sedentary

- If sitting for long periods, stand up and move around at least once per hour

10-Minute Difference

Experts recommend 30 minutes of activity per day to lower the risk of a heart attack. But even doing 10 or 20 minutes can greatly reduce risk.



Note: Risk reduction was extrapolated from studies that tracked exercise in hours per week.

Source: Thomas Allison, Martha Grogan, Mayo Clinic
The Wall Street Journal

Choose Activities You Enjoy

Moderate physical activities include:

Walking briskly (~3 ½ miles per hour)

Bicycling (less than 10 miles per hour)

General gardening (raking, trimming)

Dancing

Golf (walking and carrying clubs)

Water aerobics

Canoeing

Tennis (doubles)

Vigorous physical activities include:

Running/jogging (5 miles per hour)

Walking very fast (4 ½ miles per hour)

Bicycling (more than 10 miles per hour)

Heavy yard work, such as chopping wood

Swimming (freestyle laps)

Aerobics

Basketball (competitive)

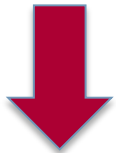
Tennis (singles)



Target Heart Rate

$220 - \text{Age} = \text{Max Heart Rate (MHR)}$

$\text{MHR} \times 0.50$



Lower End of
Target Heart
Rate

$\text{MHR} \times 0.85$



Higher End
of Target
Heart Rate



Eat Mindfully

Connect with the pleasure of food.

- Set the table
- Engage all of your senses
- Go slowly... Chew thoroughly
- Eat in silence when possible
- Avoid distractions
- Follow your own physical hunger cues

Hunger Quotient (HQ)	Degree of Hunger
1	Stuffed to the point of feeling ill
2	Extremely full
3	Satisfied
4	Slightly satisfied
5	Neutral
6	Slightly hungry
7	Hungry
8	Very hungry
9	Extremely hungry
10	Famished to the point of feeling like you're going to pass out

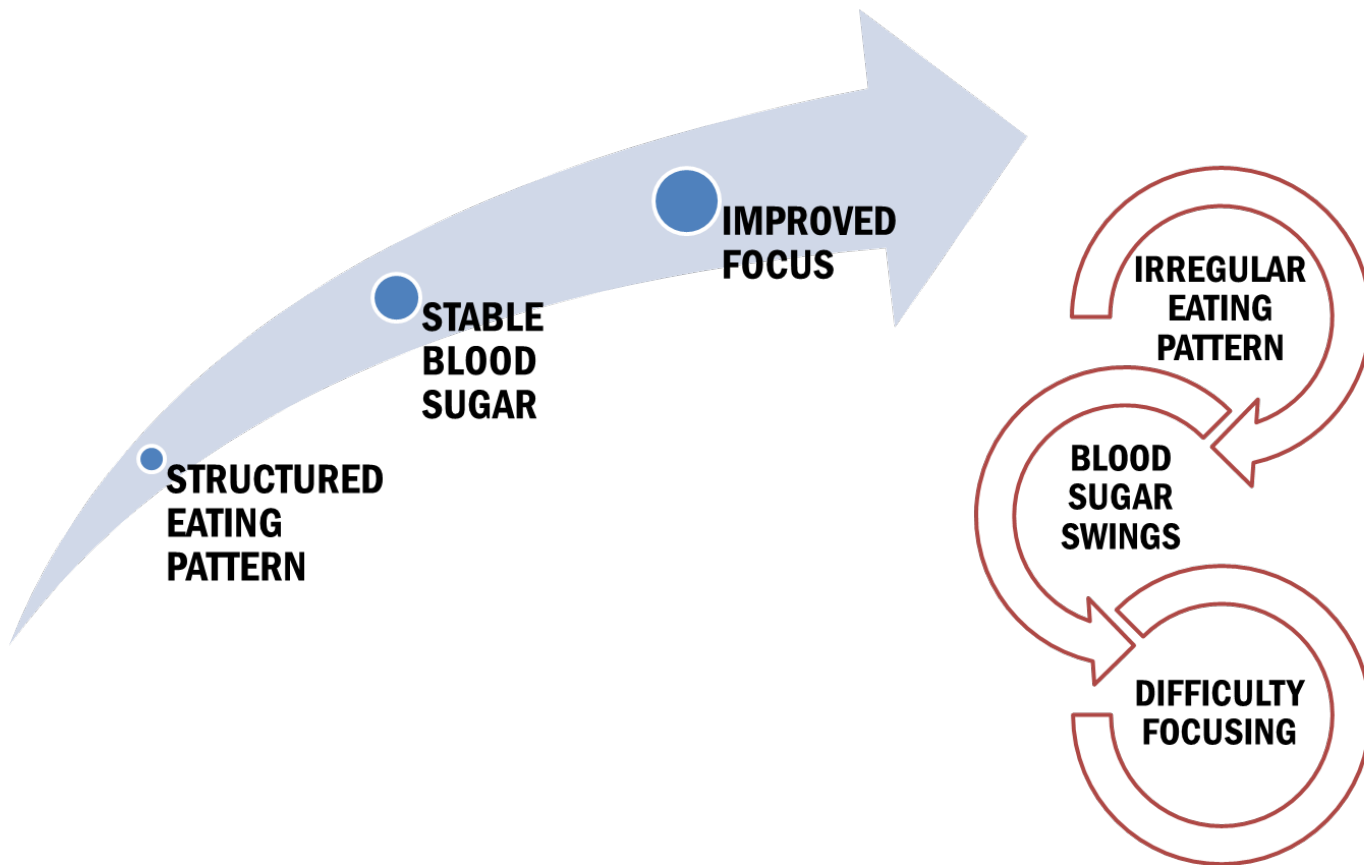
Fuel Well to Feel Well

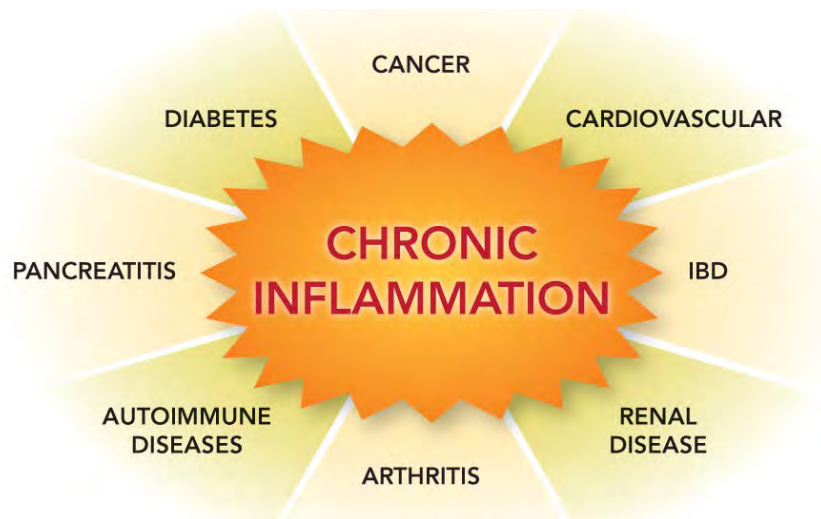
Eat balanced meals with a focus on wholesome foods. Choose a wide variety of colorful vegetables and fruits to meet your basic nutrient needs, along with whole grains, lean proteins and health fats.

Indulge consciously.



Fuel Well to Feel Well






The foods we choose to eat (or not to eat) can affect inflammation.



FOODS THAT FIGHT INFLAMMATION

Chronic inflammation has been linked to cancer, heart disease, diabetes, arthritis, depression, and Alzheimer's. Fight inflammation with a healthy diet. 

ANTI-INFLAMMATION FOODS

- **Tomatoes**
- **Fruits**
Strawberries, blueberries, oranges and cherries.
- **Nuts**
Almonds, walnuts, and other nuts.
- **Olive oil**
- **Leafy greens**
Spinach, kale, collards, and more.
- **Fatty fish**
Salmon, mackerel, tuna, and sardines.

INFLAMMATION FOODS

- **Fried foods**
- **Sodas**
- **Refined carbs**
- **Lard**
- **Processed meats**

Anti-inflammatory Foods

Daily Recommendations:

- Vegetables – 4-5 servings
- Fruits – 3-4 servings
- Whole Grains – 3-5 servings
- Beans & Legumes – 1-2 servings
- Healthy Fats – 5-7 servings
- Whole Soy Foods – 1-2 servings
- Tea – 1-2 cups

Weekly Recommendations:

- Pasta cooled al dente – 2-3 servings
- Fish & Seafood – 2-6 servings
- Other Lean Proteins – 1-2 servings

Unlimited: Cooked Asian mushrooms and Healthy Herbs & Spices



Dr. Weil's Anti-inflammatory Food Pyramid

Immune-Supporting Foods

Blue Zones Foods for Energy & Immunity



Beans



Greens



Sweet potatoes



Nuts



Green or herbal tea



Oats



Barley



Fruit



Olive oil



Turmeric



Garlic



Shiitake mushrooms



#bluezoneskitchen



Immune-Supporting Foods



GINGER = anti-inflammatory

GARLIC = defense against various viruses, including rhinovirus (cause of common cold), as well as influenza



BEANS = protein > key to helping bounce back from illness by contributing to fluid balance and enhancing immune response; provides materials for body to make antibodies, WBCs and other disease-fighting compounds



CITRUS FRUITS = rich source of vitamin C = antioxidant

RED PEPPERS contain twice the amount of vitamin C as oranges and other produce rich in C!

MUSHROOMS may stimulate the immune system with their vitamin B2 (riboflavin) = antioxidant; contain anti-inflammatory compounds selenium and ergothionine



CHICKEN SOUP triggers white blood cells in the body that help defend against infection and potentially lower respiratory tract inflammation



PROBIOTIC FOODS LIKE YOGURT with live, active cultures contain beneficial bacteria that can increase white blood cell counts

Food Sources of Nutrients

Food First



Leafy Greens

Vitamin A

Vitamin B

Vitamin C

Vitamin E

Vitamin K

Calcium

Magnesium

Carbohydrate

Fiber



Starchy Vegetables

Vitamin A

Vitamin B

Potassium

Carbohydrate

Fiber

Bold text - Nutrients from foods tied to immune function and/or reducing inflammation



Orange & Red Vegetables

Vitamin A

Vitamin B

Vitamin C

Vitamin K

Potassium

Carbohydrate

Fiber



Beans & Peas

Vitamin B

Vitamin K

Iron

Magnesium

Phosphorus

Potassium

Selenium

Zinc

Protein

Carbohydrate

Fiber



Other Vegetables

Vitamin B

Vitamin K

Sodium

Carbohydrate

Fiber

Food Sources of Nutrients

Food First

Fruit
Vitamin A
Vitamin B
Vitamin C
Vitamin K
Potassium
Carbohydrate
Fiber

Grains
Vitamin B
Vitamin D
Vitamin E
Calcium
Copper
Iron
Magnesium
Phosphorus
Potassium
Selenium
Sodium
Zinc
Protein
Carbohydrate
Fiber

Protein
Vitamin B
Vitamin D
Vitamin E
Vitamin K
Copper
Iron
Magnesium
Phosphorus
Potassium
Selenium
Sodium
Zinc
Protein
Fat

Bold text - Nutrients from foods tied to immune function and/or reducing inflammation



Houston Methodist Wellness Services

As innovators in health care, we effectively use lifestyle modification to improve health and well-being and reduce health care cost for companies as well as families. Every day, our talented, highly trained health promotion professionals are showing people how to change their futures by changing the way they eat, exercise and manage stress through a variety of programs.

To learn how you can provide these valuable services to your employees, contact our Corporate Wellness Consultant at 713.363.7007
wellnessconsultant@houstonmethodist.org

HOUSTON
Methodist[®]
LEADING MEDICINE

COVID-19 Update

Marc L. Boom, MD
January 13, 2021

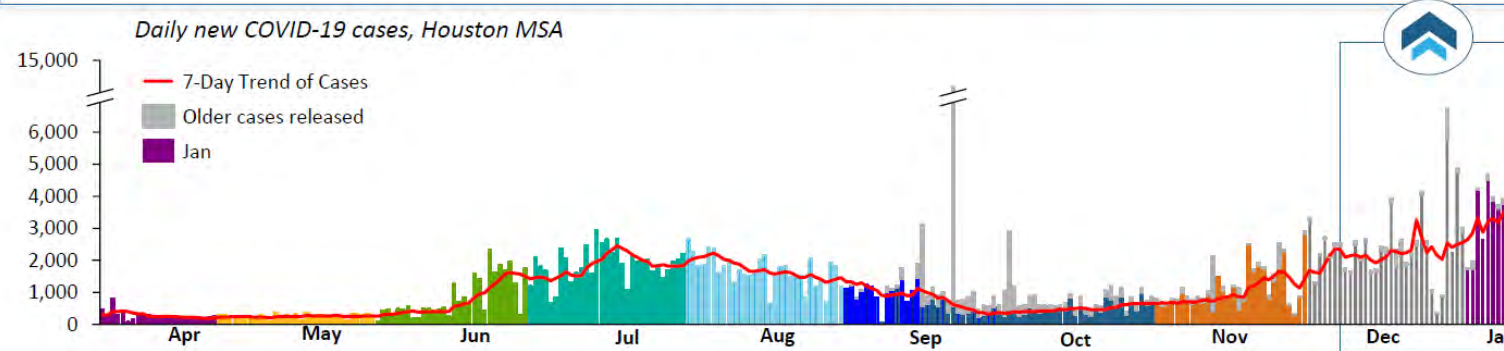
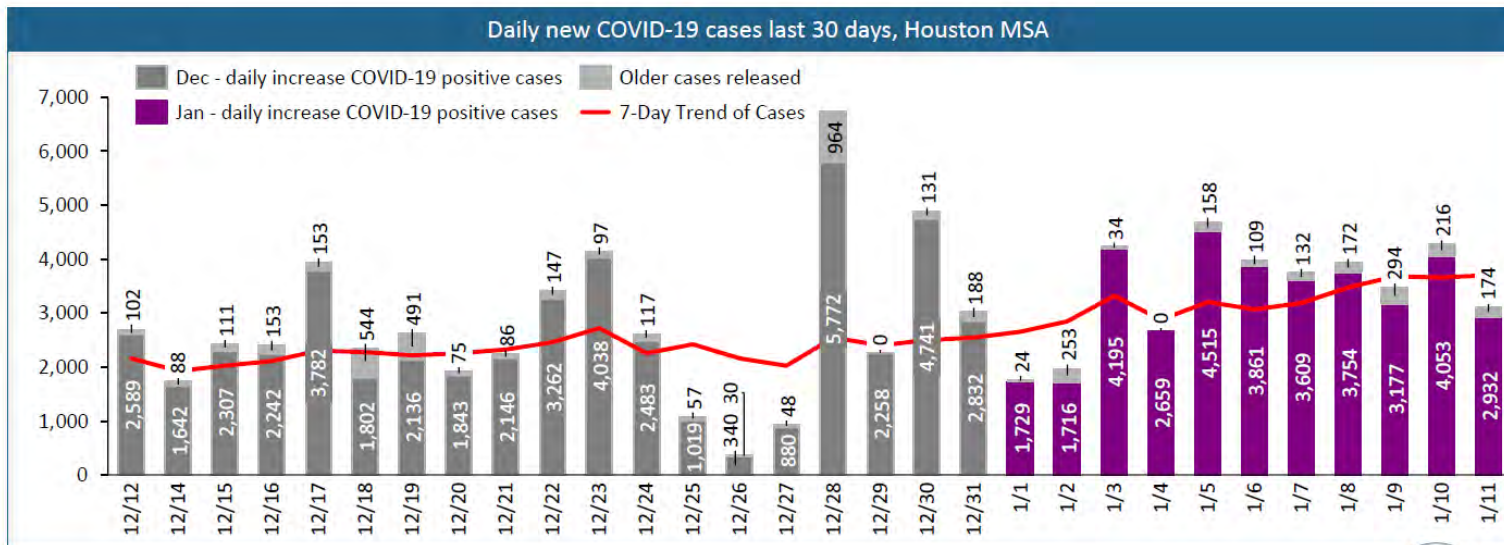


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COVID-19 CASE TRENDS

DAILY NEW COVID-19 POSITIVE CASES

Greater Houston Area¹



TMC | TEXAS MEDICAL CENTER

"TMC" refers to the group of systems that make up Texas Medical Center

Source: TX Health and Human Services (<https://www.dshs.texas.gov/coronavirus/>)

January 11, 2021

Monitoring threshold:

Threshold is exceeded by the occurrence of a positive daily growth rate (averaged over 7 days) in the new daily case trend

Current status:

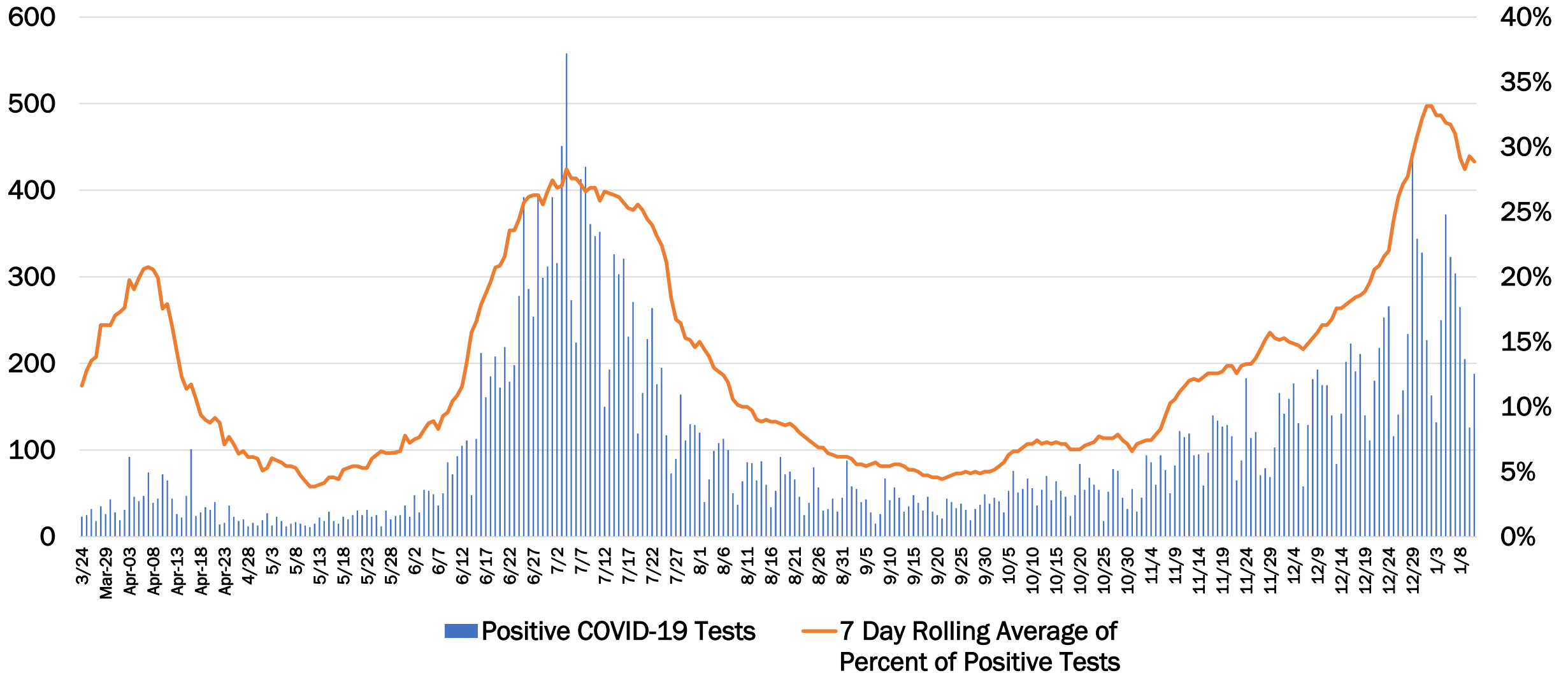
12 days of positive daily growth rate (averaged over 7 days) in the new daily case trend

Note: Data for MHHS current as of 12/7 pending update

This document is solely intended to share insights and best practices rather than specific recommendations. Individual institution data is shown as reported and has not been independently verified

Houston Methodist Testing Trend

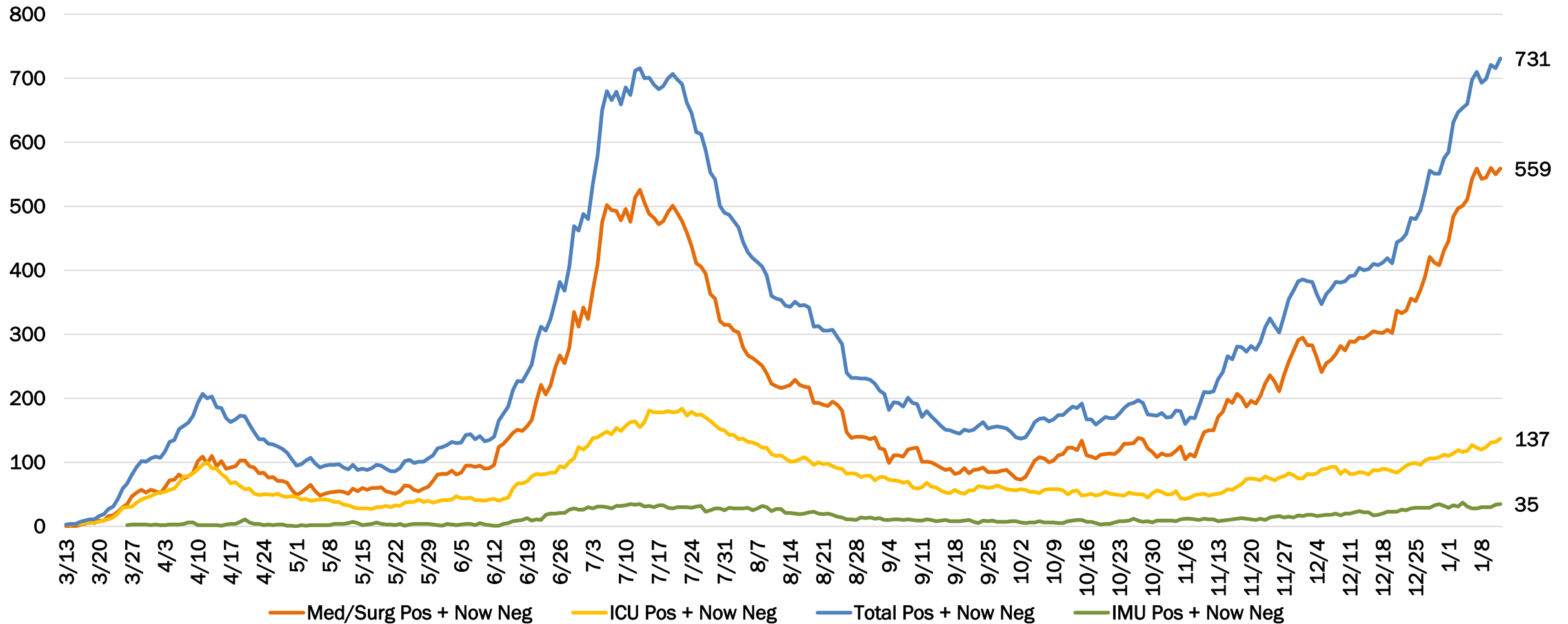
Confirmed COVID-19 Lab Tests



Houston Methodist COVID-19 Cases by Day

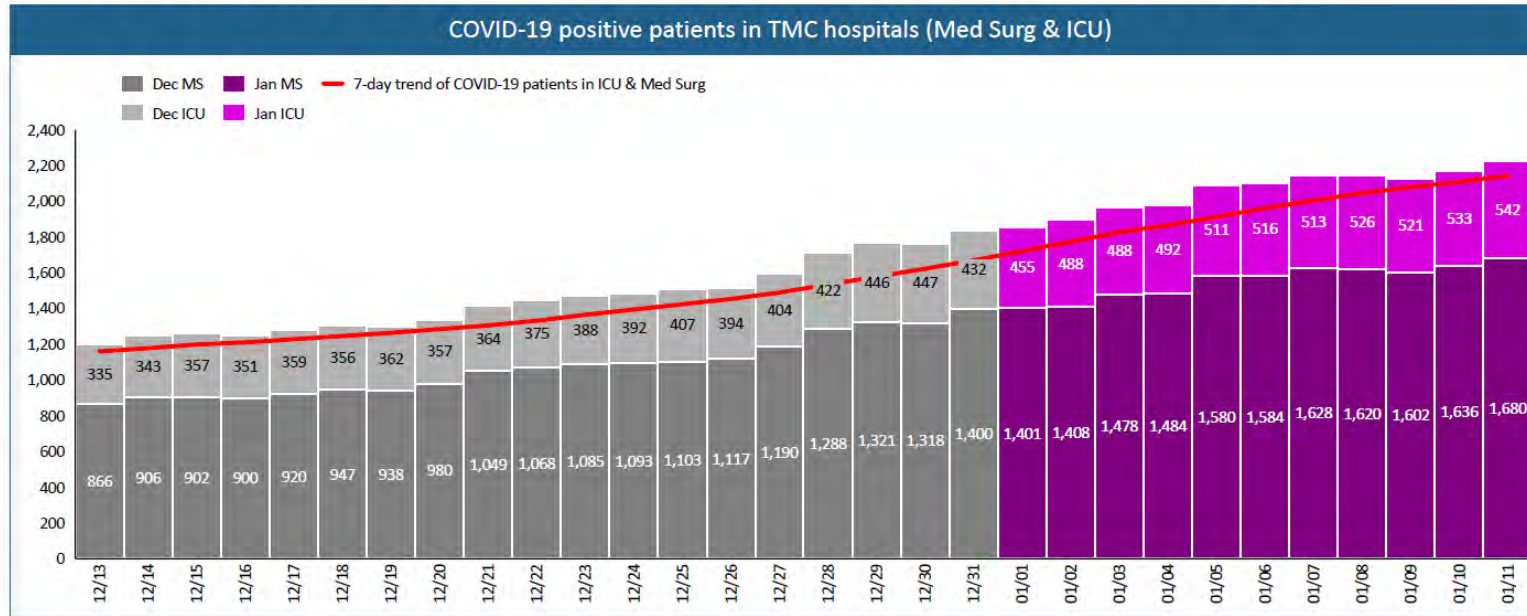


Houston Methodist COVID-19 Patients by Day



4 COVID-19 TMC HOSPITALIZATION

TOTAL TMC COVID-19 POSITIVE PATIENTS IN HOSPITAL



January 11, 2021

Current status:

1.6% total daily growth rate
(averaged over 7 days) in COVID-19 patients TMC hospitals

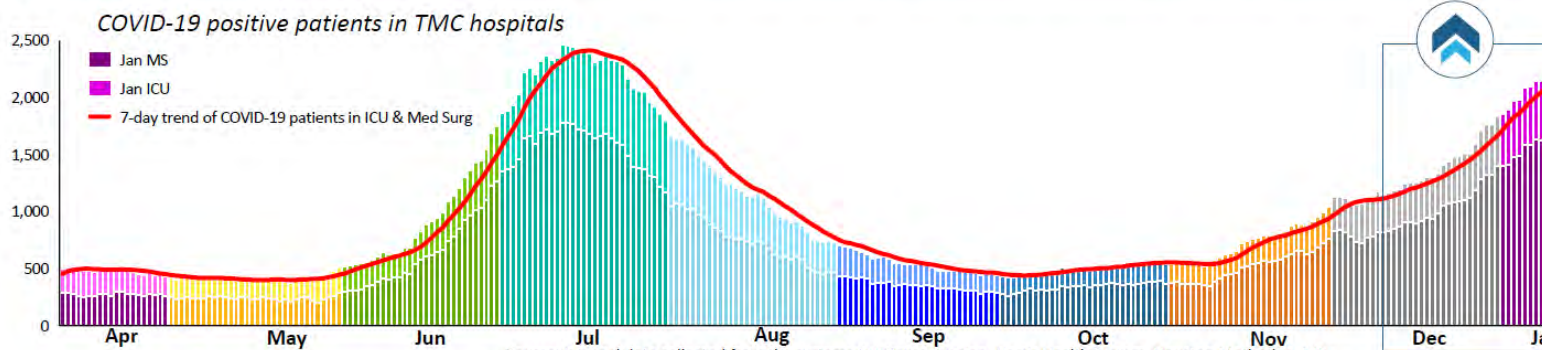
- **1.3% ICU daily growth rate**
- **1.6% Med Surg daily growth rate**

Notes:

While new daily cases may fluctuate for a variety of reasons (e.g., testing), the number of COVID-19 positive patients being treated in med surg and ICU shows an objective view of how COVID-19 impacts hospital systems

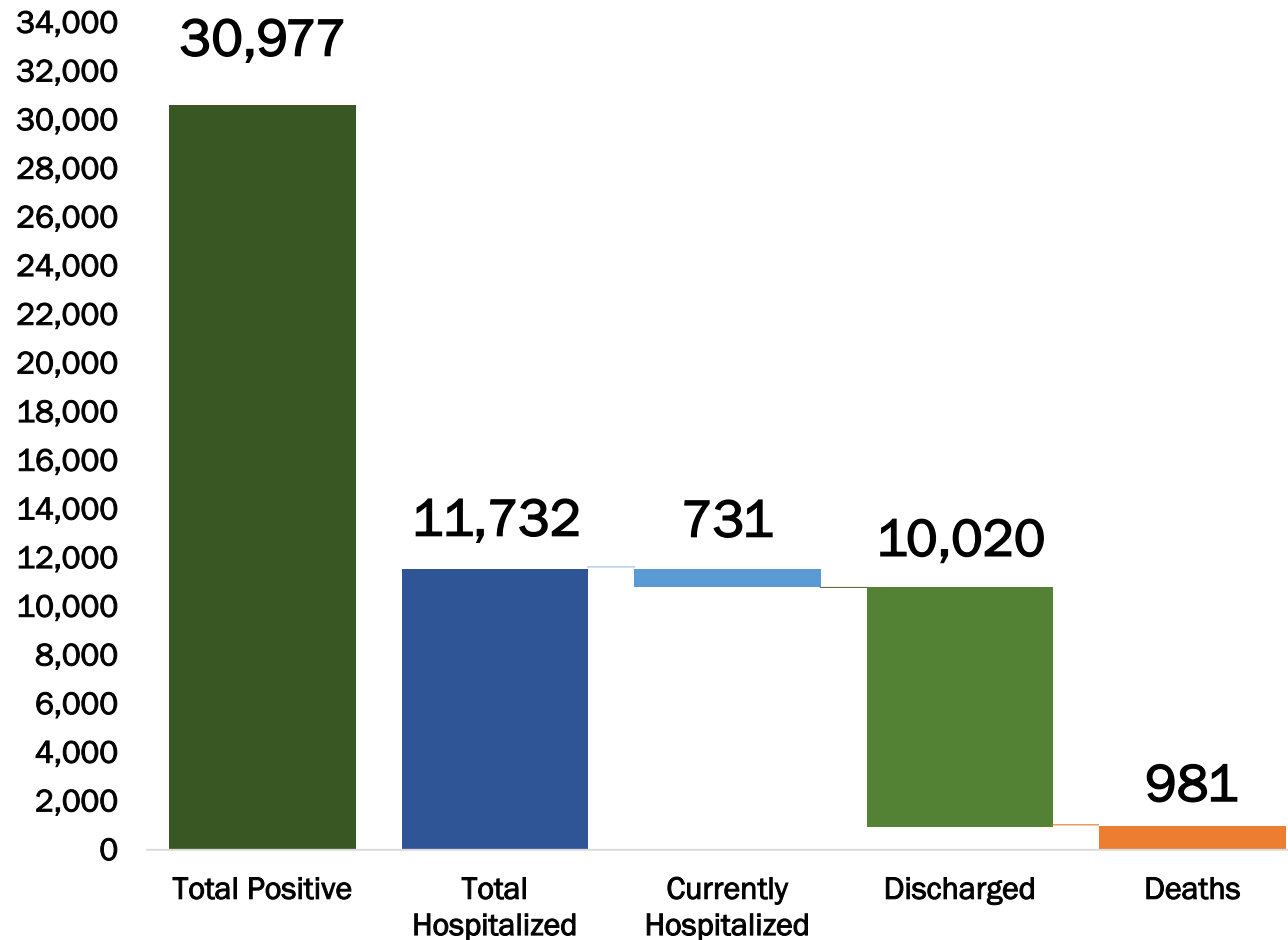
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Houston Methodist Current COVID-19 Stats

COVID-19 related patients through Houston Methodist as of January 12, 2021



Key Messages

▶ Houston Methodist has served 11,732 COVID-19 related in-patients to date.

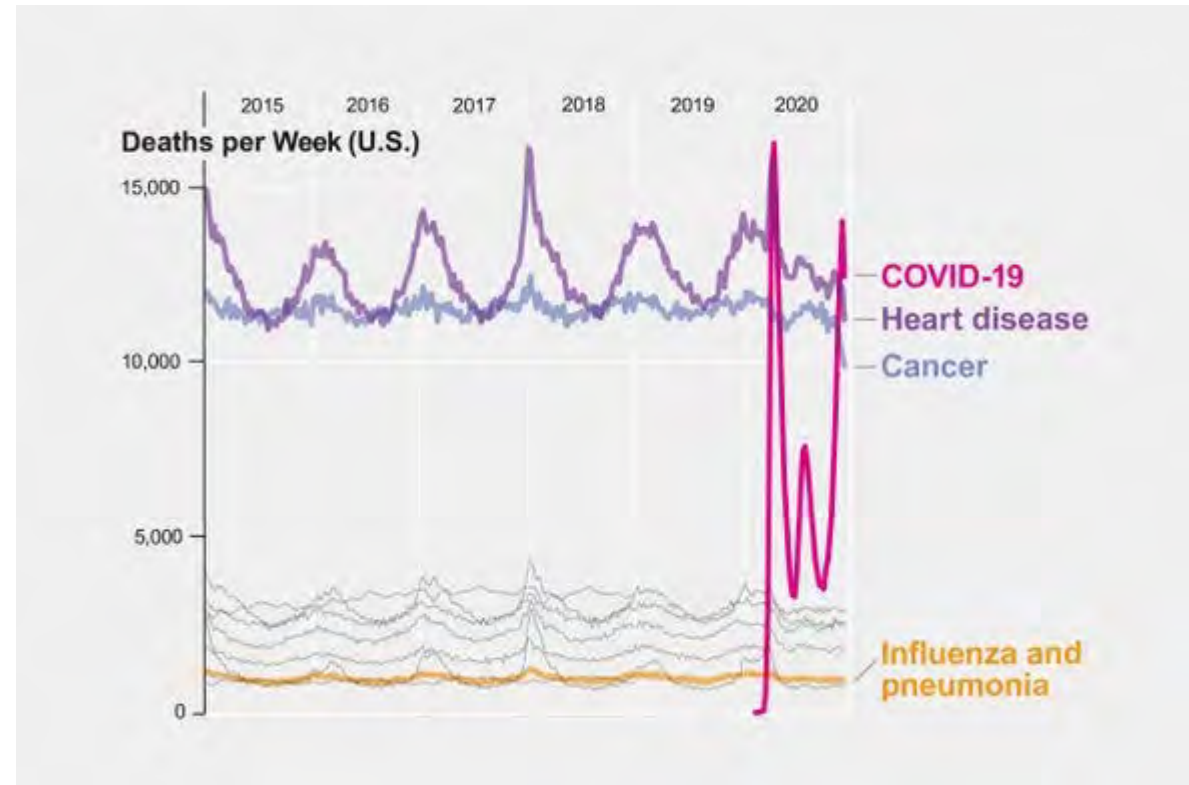
▶ 10,020 patients have been successfully discharged.

Houston Methodist Hospital, Baytown, Clear Lake, Continuing Care, Sugar Land, West, Willowbrook, Woodlands

Data as of January 12, 2021 at 7pm

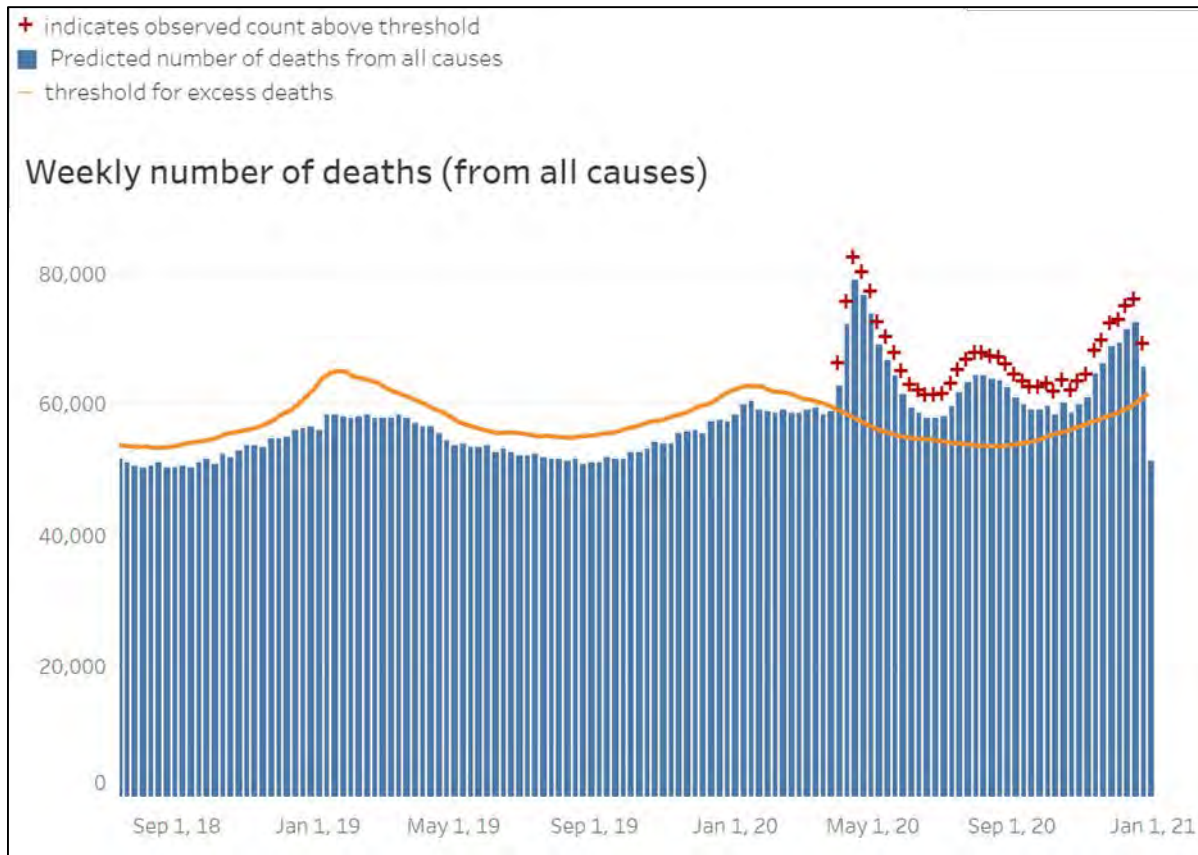
COVID-19 on Track to be Leading Cause of Death this Winter

“The prospect of a vaccine offers hope for 2021, but that solution will not come soon enough to avoid catastrophic increases in COVID-19–related hospitalizations and deaths...”

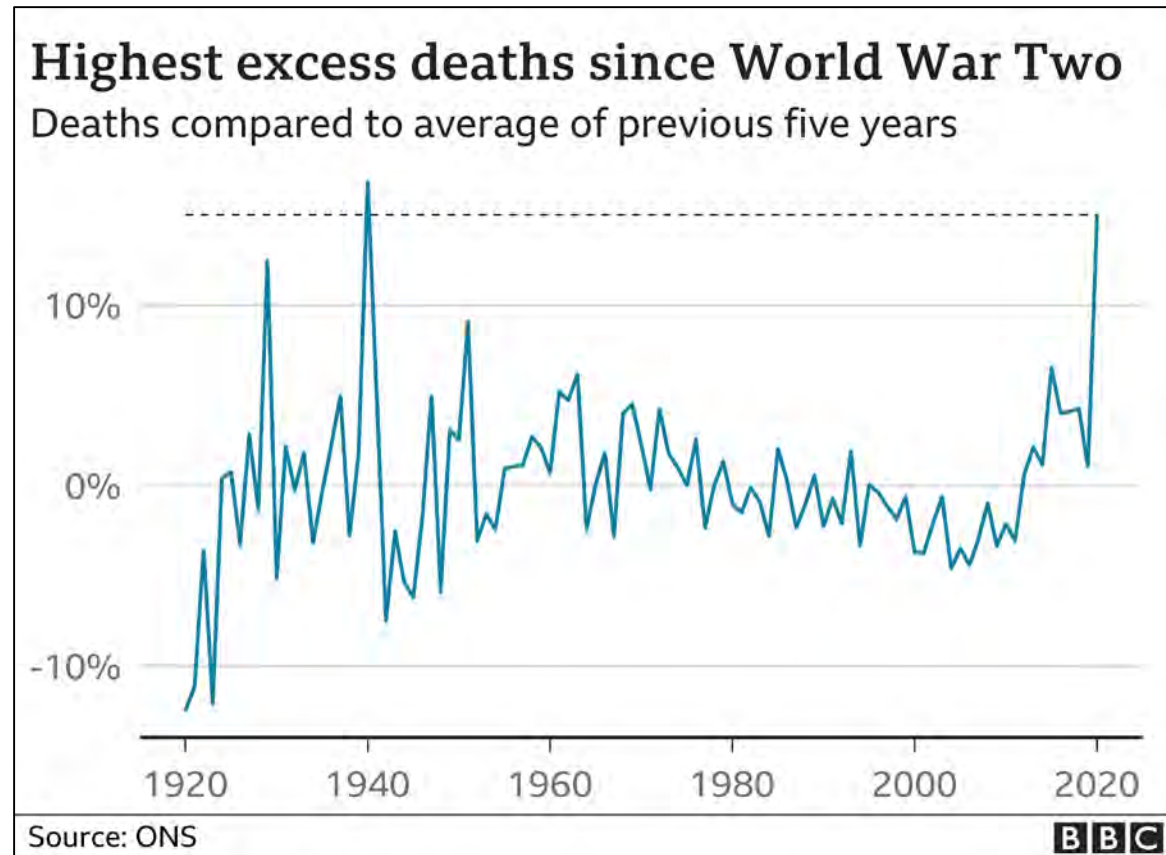


Excess Deaths from COVID-19

Excess Death: United States



Excess Death: United Kingdom



IHME Model for COVID-19 Hospital Beds Needs in Texas

Hospital resource use [↗](#)

[↗](#) Trend

[↗](#) Compare

[📍](#) Map

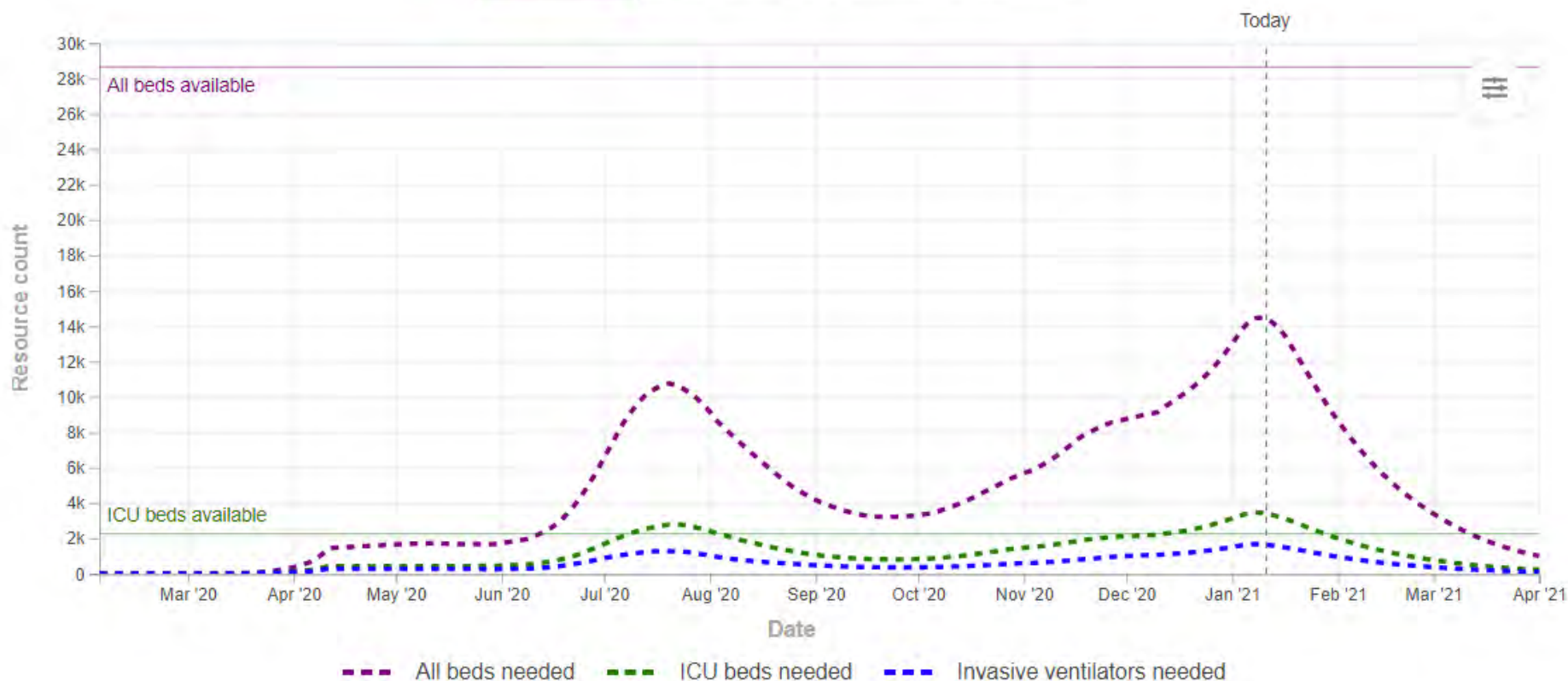
Hospital resource use indicates how equipped a location is to treat COVID-19 patients for the **Current pr...** [v](#)

All resources

All beds

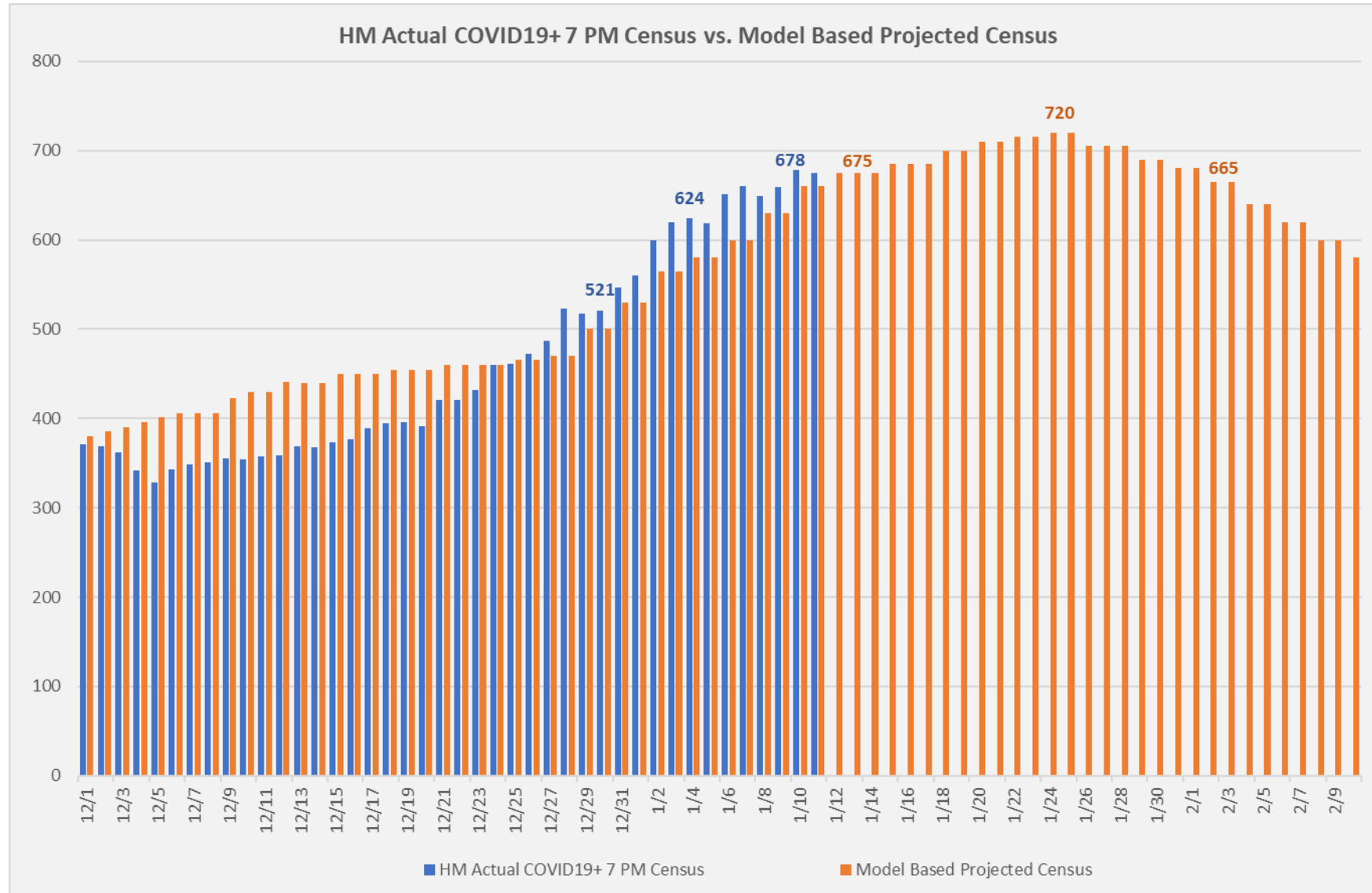
ICU beds

Invasive ventilators

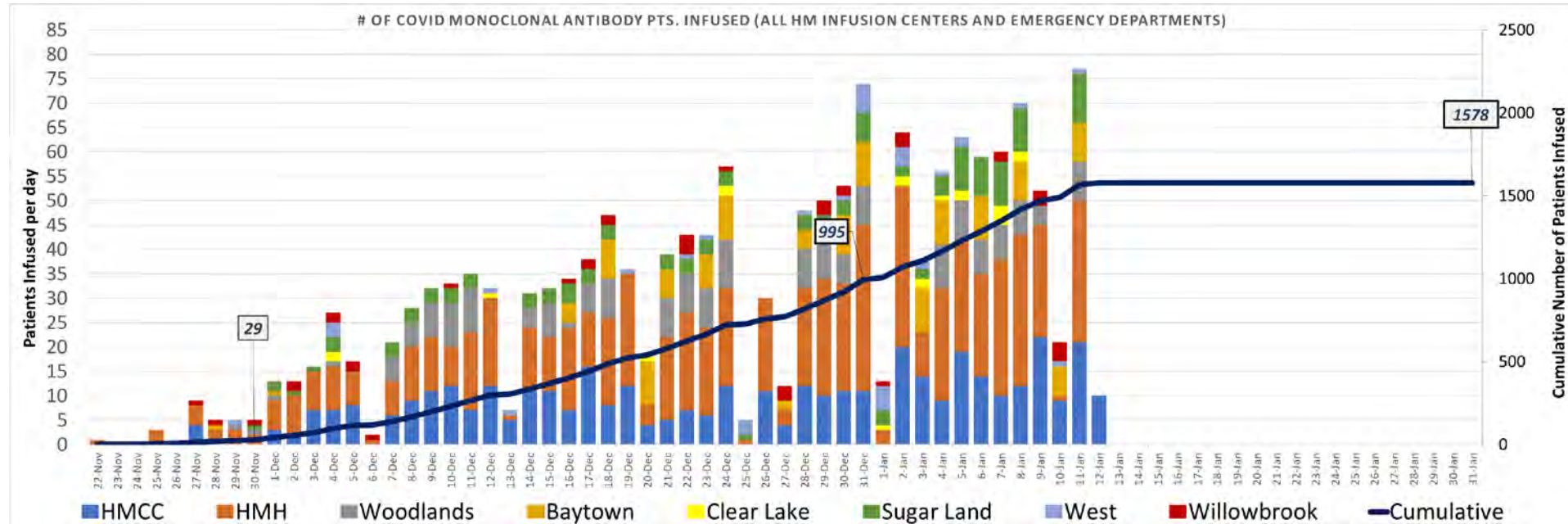


All resources specific to COVID-19 patients.

HM Modeling: COVID-19 Census



Monoclonal Antibodies

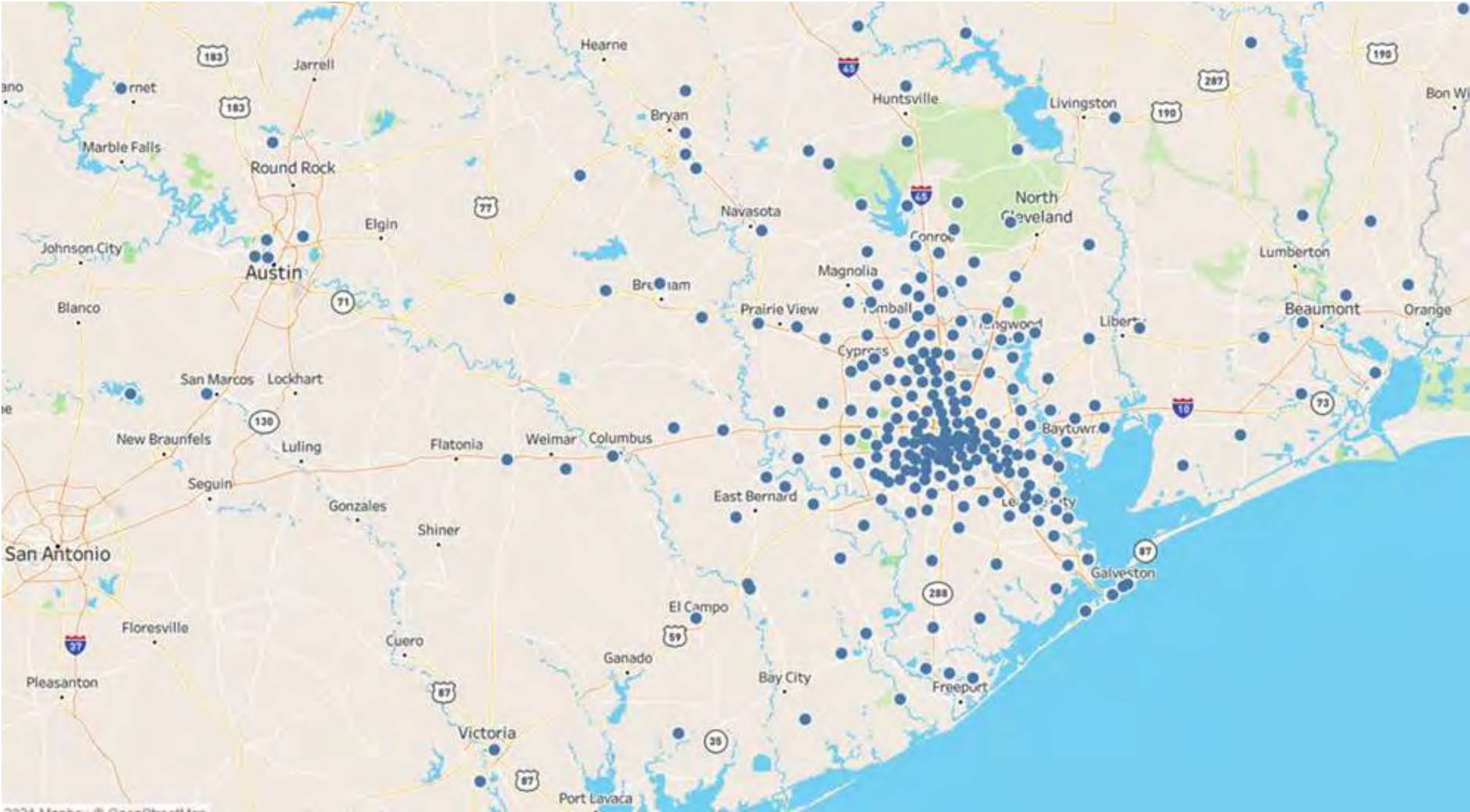


Patient outcomes from therapy assessed to date:

Effectiveness outcomes (N=1,466 patients)

- Mortality: 0%
- COVID-Related ED Visit: 42 patients (2.8%)
- COVID-Related Hospitalization: 61 patients (4.1%)
 - 46 patients discharged
 - Average LOS: 4.8 Days

Monoclonal Antibodies

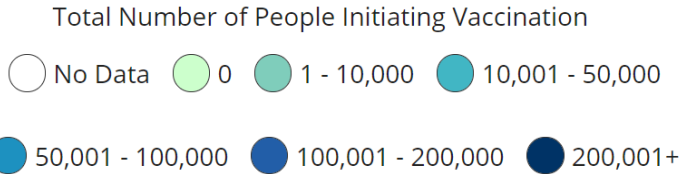
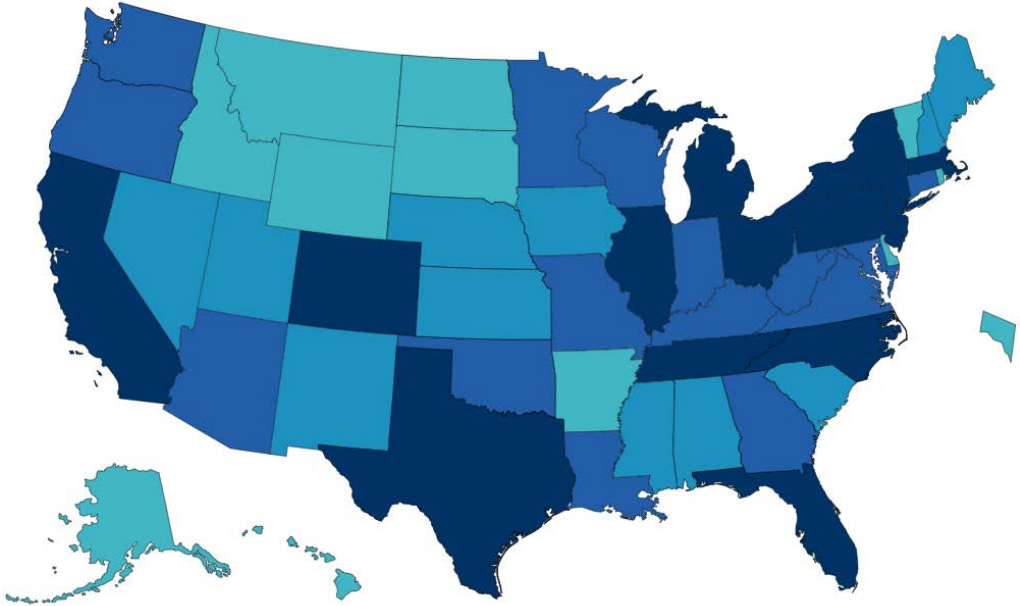


First Five Vaccines at HM



Nationwide Vaccine Distribution

Overall US COVID-19 Vaccine Distribution and Administration

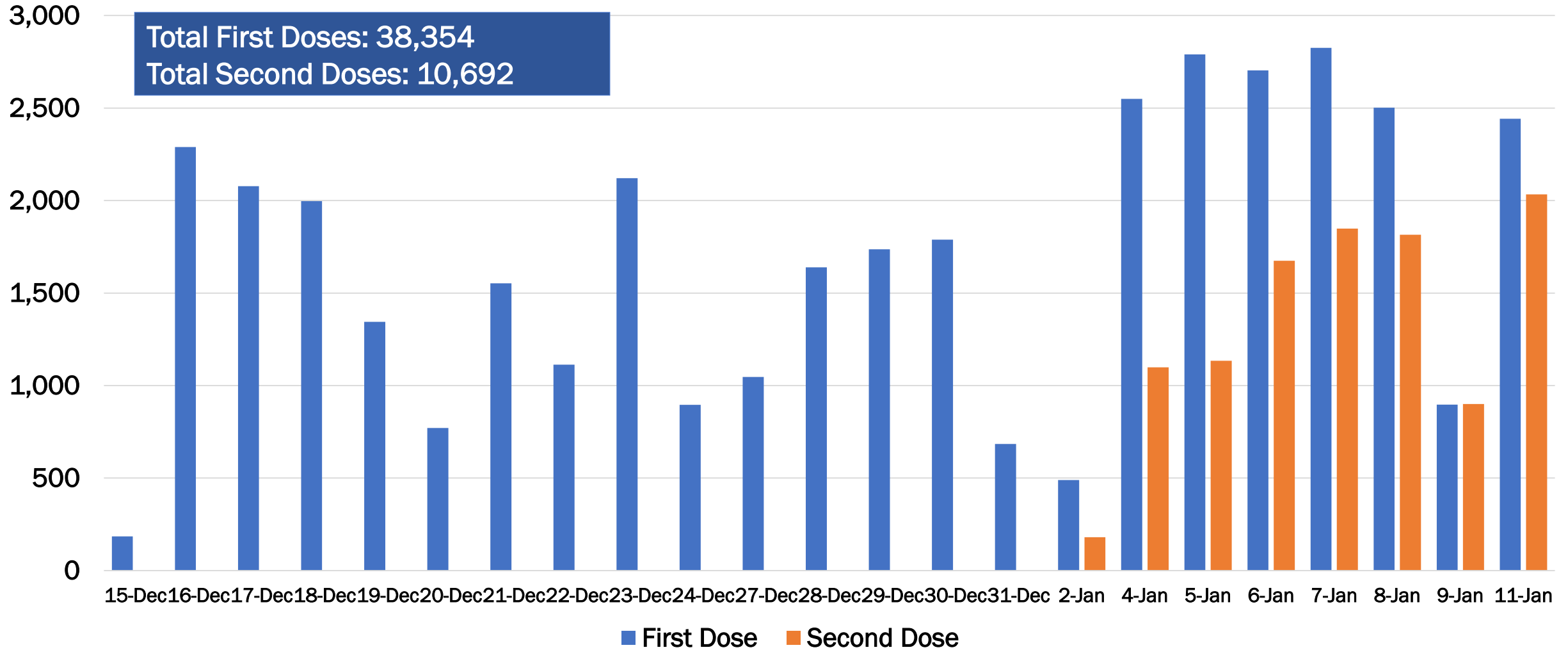


State	Distributed	Administered
CA	3,286,050	816,301
TX	1,949,125	911,461
FL	1,676,300	633,440
NY	1,622,100	579,532
PA	974,725	341,948
GA	960,975	170,571
IL	903,100	347,005
OH	866,050	311,890
NC	836,450	211,610
VA	797,150	190,607

Texas Stats:
 Total Distributed: #2
 Distributed per 100k: #48
 Total Administered: #1
 Administered per 100k: #18

HM Vaccine Distribution

Individuals Vaccinated at HM by Day

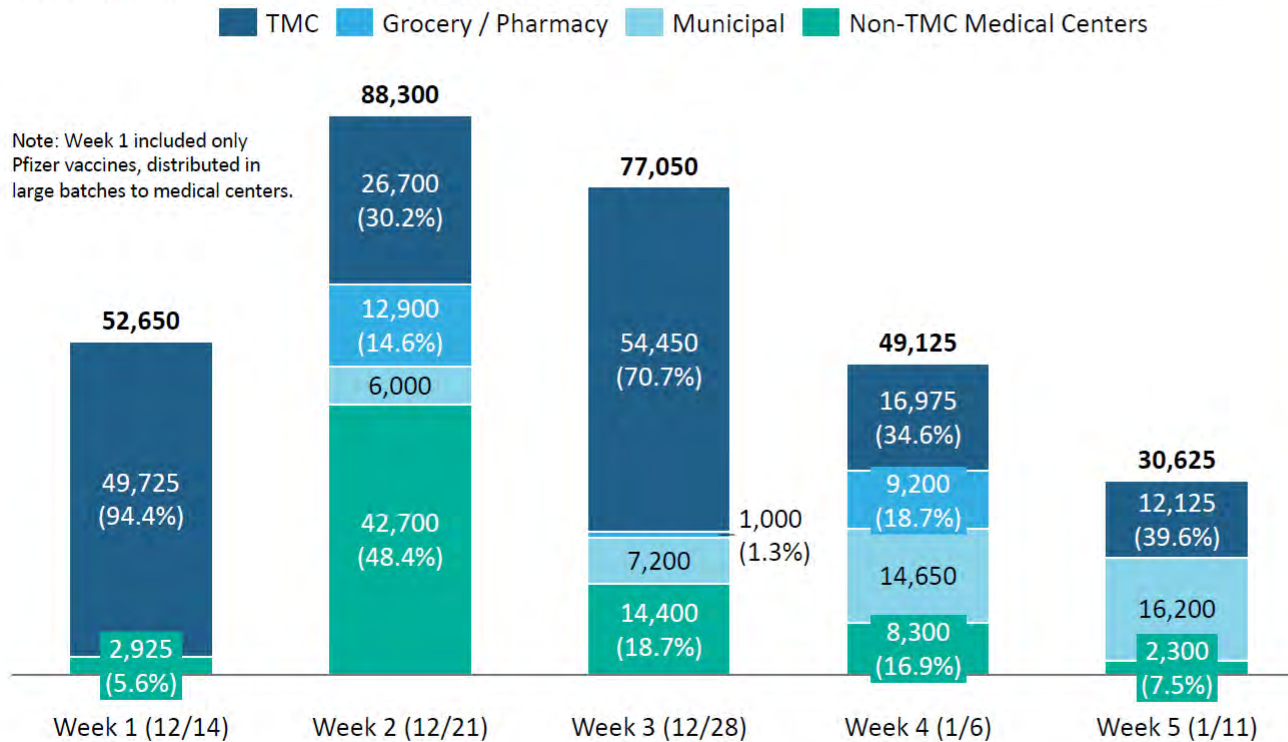


TMC Vaccination Statistics



COVID-19 VACCINE ALLOCATIONS FOR GREATER HOUSTON

Weekly vaccine allocation for Greater Houston Area¹ (# doses)



January 11, 2020

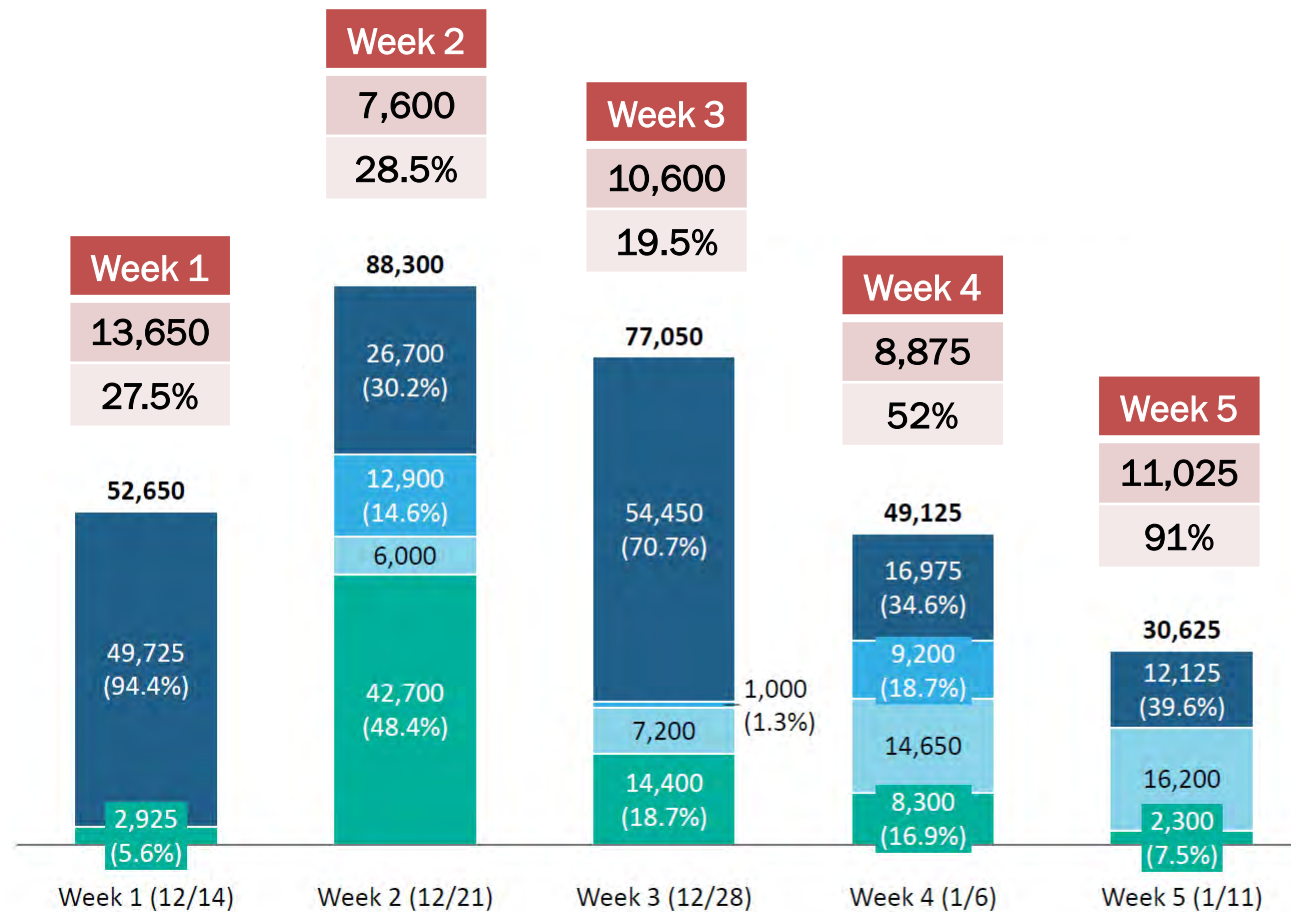
DSHS Allocation Week 5¹

In Week 5, **234 providers** in TX, including **28 large vaccination hubs**, will receive combinations of Pfizer & Moderna vaccine.

- **158,825 doses** will go to hubs, **38,300 doses** will go to other providers.
- **121,875 doses** will go to the Pharmacy Partnership for Long-Term Care.
- Providers will receive **500,000 second doses** for people first vaccinated a few weeks ago.

TMC Vaccination Statistics

Houston Methodist COVID-19 Vaccine Received and Percent of TMC Allocation



January 11, 2020

DSHS Allocation Week 5¹

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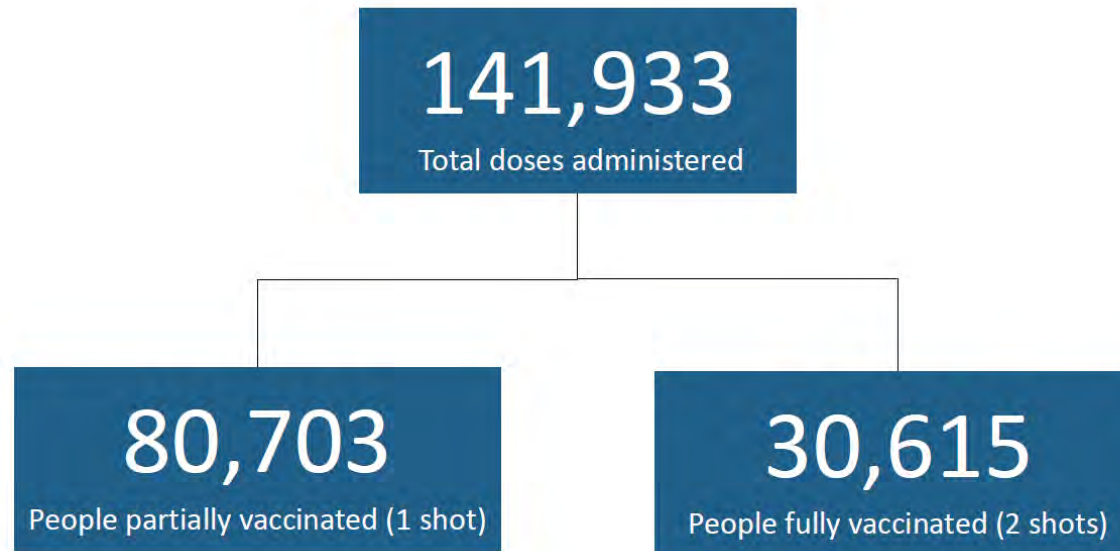
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TMC Vaccination Statistics



COVID-19 VACCINE TRACKER - TMC HOSPITAL SYSTEMS¹

Vaccines administered by TMC Institutions



1. Vaccine data includes: CHI Texas Division, Baylor College of Medicine, Texas Children's, Harris Health System, Houston Methodist, MD Anderson Cancer Center, Memorial Hermann, and UT Health
Note: May not include all hospitals within each system

2. Defined by DSHS. For more information: <https://www.dshs.texas.gov/coronavirus/immunize/vaccine.aspx>

January 10, 2021

Current status:

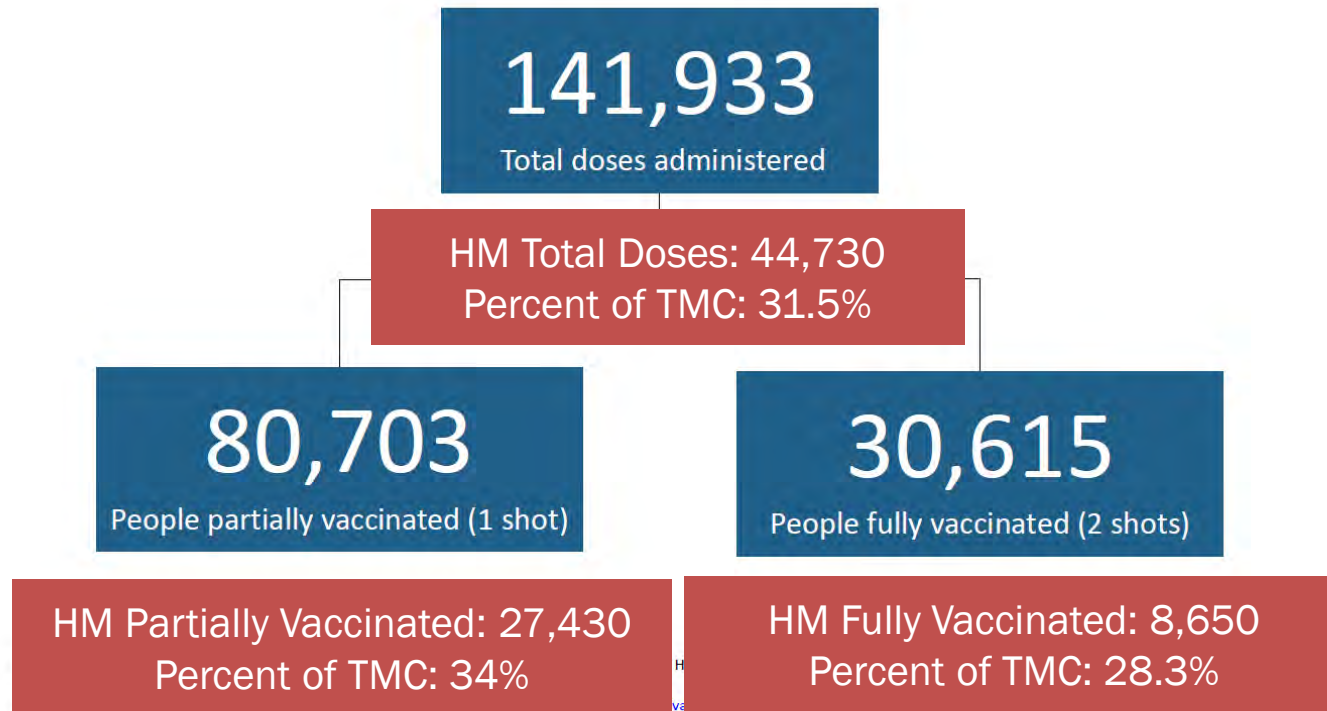
- 9,081 average doses administered per day over the last week by TMC institutions
- Distributing vaccines to Phase 1A and Phase 1B²

TMC Vaccination Statistics



COVID-19 VACCINE TRACKER - TMC HOSPITAL SYSTEMS¹

Vaccines administered by TMC Institutions



January 10, 2021

Current status:

- 9,081 average doses administered per day over the last week by TMC institutions
- Distributing vaccines to Phase 1A and Phase 1B²

HM Selected as Vaccination Hub for State

Houston Methodist was one of 28 organizations selected to be a vaccination hub for the State of Texas. There are three in Harris County – Houston Methodist, Harris County Public Health and Houston Health Department.

CITY|STATE

HOUSTON CHRONICLE • MONDAY, JANUARY 11, 2021 • PAGE A3 ★★

Mass vaccination sites launching

Health officials hope to ramp up inoculations as state nears 30,000 deaths from COVID-19

By Julian Gill
STAFF WRITER

Texas health officials this week will ramp up vaccine distribution as coronavirus-related deaths inch closer to 30,000 statewide.

The Department of State Health Services on Sunday released a list of 28 “vaccination hubs” as part of an effort to inoc-

ulate more than 100,000 people and streamline the sign-up process. An additional 158,825 doses – a combination of both Pfizer and Moderna – will be distributed at the hubs. Another 38,300 will be sent to other Texas providers.

Three Harris County hubs will receive a total 26,725 doses of the vaccine, with 8,000 going to Harris County Public Health, another

8,000 to the Houston Health Department and 10,725 to Houston Methodist Hospital.

The announcement came as the state reported another 186 COVID-19-related deaths for a total of 29,877 statewide. More than 13,000 people remain hospitalized. The majority of the state’s Trauma Service Areas, including Houston, continue to see COVID-19 hospitalizations make up more than 15 percent of total hospital capacity, the threshold that signifies “high hospitalizations.”

Rafael Lemaitre, a spokesman for Harris County Judge Lina Hidalgo, said the new vaccine supply is encouraging but should not distract from the surging numbers.

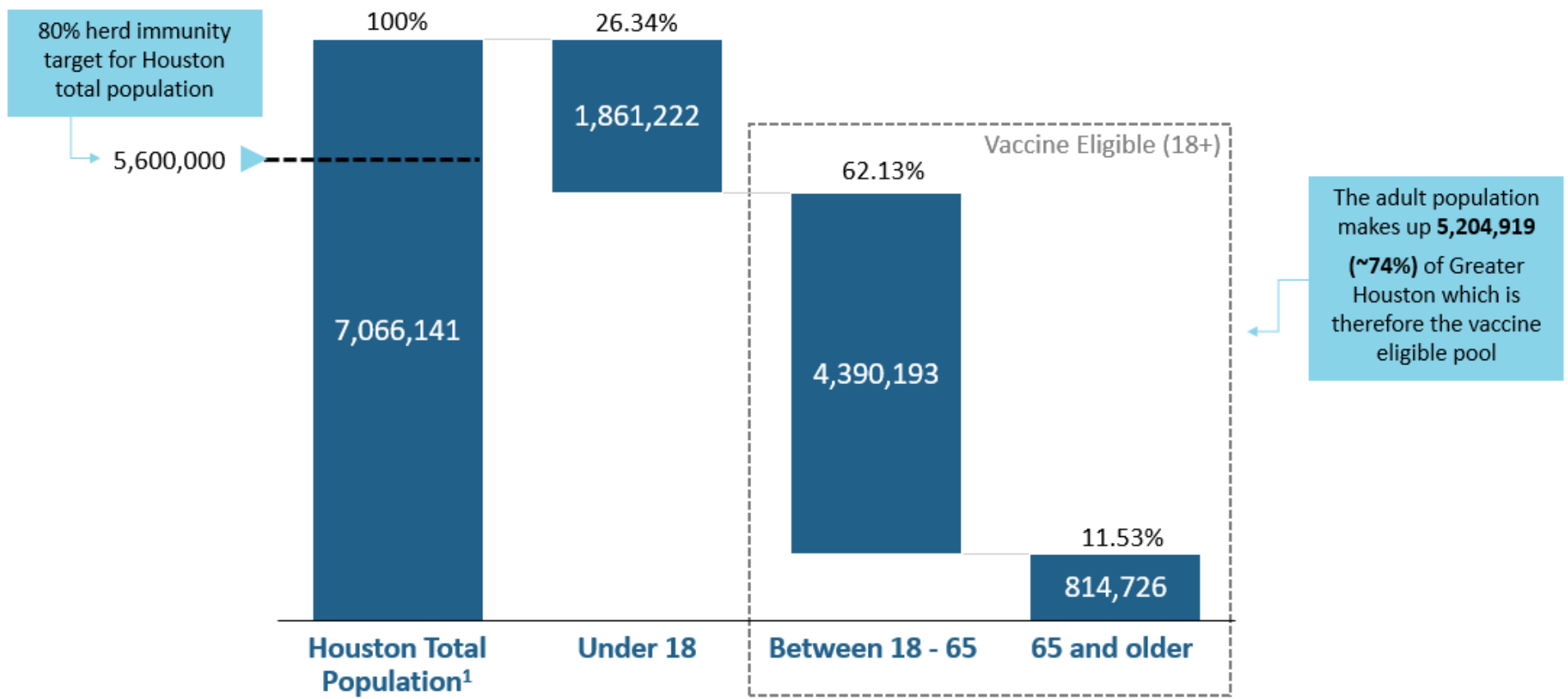
“Given where the hospitalization numbers are, we all need to focus on the current emergency situation, which won’t be solved by the relatively small amount of vaccine we’ve received,” he said.

As of Sunday, 1.86 million doses of the vaccine had been distributed statewide and 752,324

Vaccine continues on A14

TMC Analysis: Vaccine Needed for Greater Houston

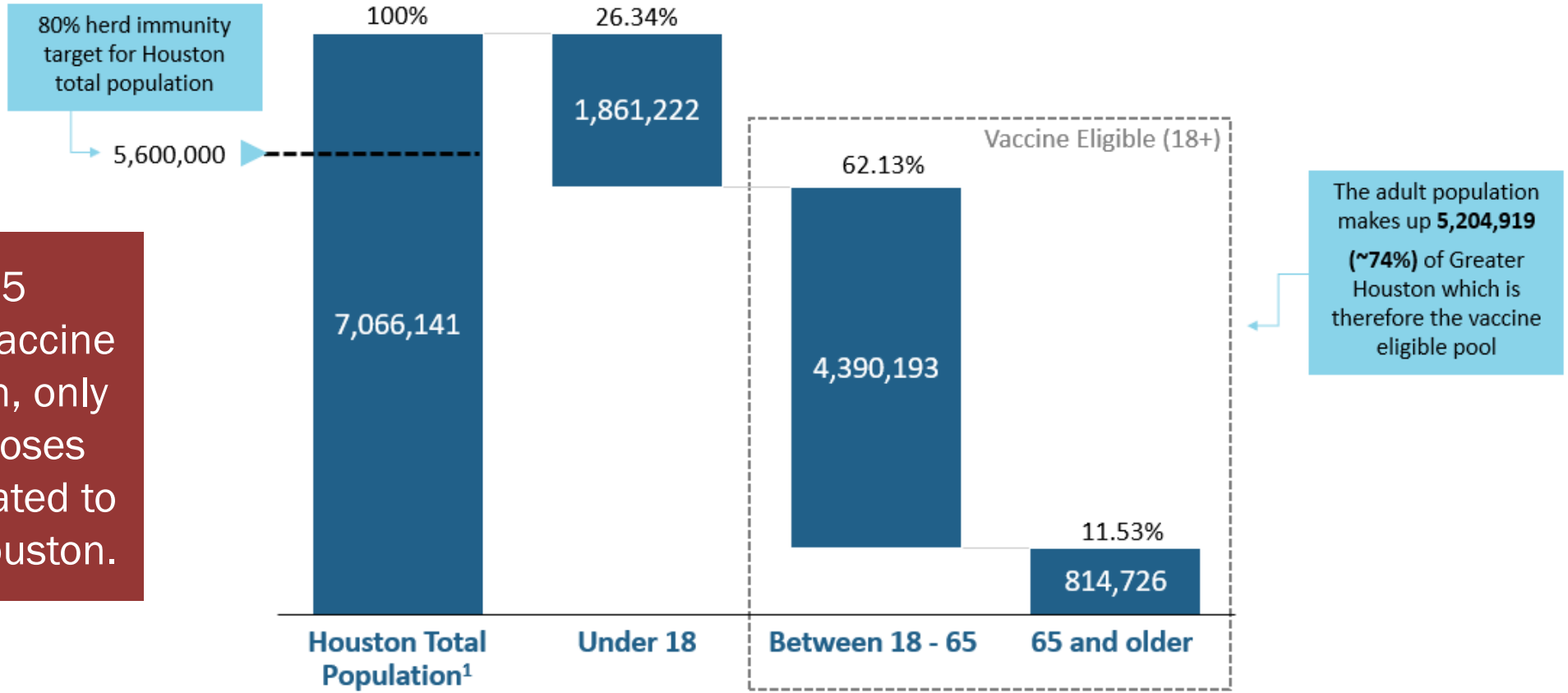
ACHIEVING HERD IMMUNITY IN HOUSTON



¹ Source : US Census. Houston MSA includes 9 counties: Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery and Waller

TMC Analysis: Vaccine Needed for Greater Houston

ACHIEVING HERD IMMUNITY IN HOUSTON



In the first 5 weeks of vaccine distribution, only 297,750 doses were allocated to Greater Houston.

¹ Source : US Census. Houston MSA includes 9 counties: Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery and Waller

TMC Analysis: Vaccine Needed for Greater Houston

THREE POTENTIAL SCENARIOS FOR REACHING HERD IMMUNITY IN HOUSTON

Administration rate and workforce needed to achieve herd immunity in set timeline

1 Current rate

10,964 vaccines / day

2.34 years to herd immunity

Requires full utilization of:

- **91** vaccinators / day
- **161** support staff / day

Current rate estimate is based on actuals observed at TMC institutions, plus assumption that all other Houston sites are distributing their full inventory allocation as it is received.

2 180-day

52,049 vaccines / day

180 days to herd immunity

Requires full utilization of:

- **434** vaccinators / day
- **766** support staff / day

Israel, with a similar population, has achieved 150,000 vaccinations per day with sufficient supply, plans to reach herd immunity in several months.

Note: Israel has a centralized healthcare system.

3 100-day

95,200 vaccines / day

100 days to herd immunity

Requires full utilization of:

- **781** vaccinators / day
- **1,379** support staff / day

- Initial analysis suggests that, given sufficient supply, the **180 days (Scenario 2)** should be achievable
- Note: these scenarios **do not currently consider ramp-up**

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LEADING MEDICINE

Immunology versus COVID-19

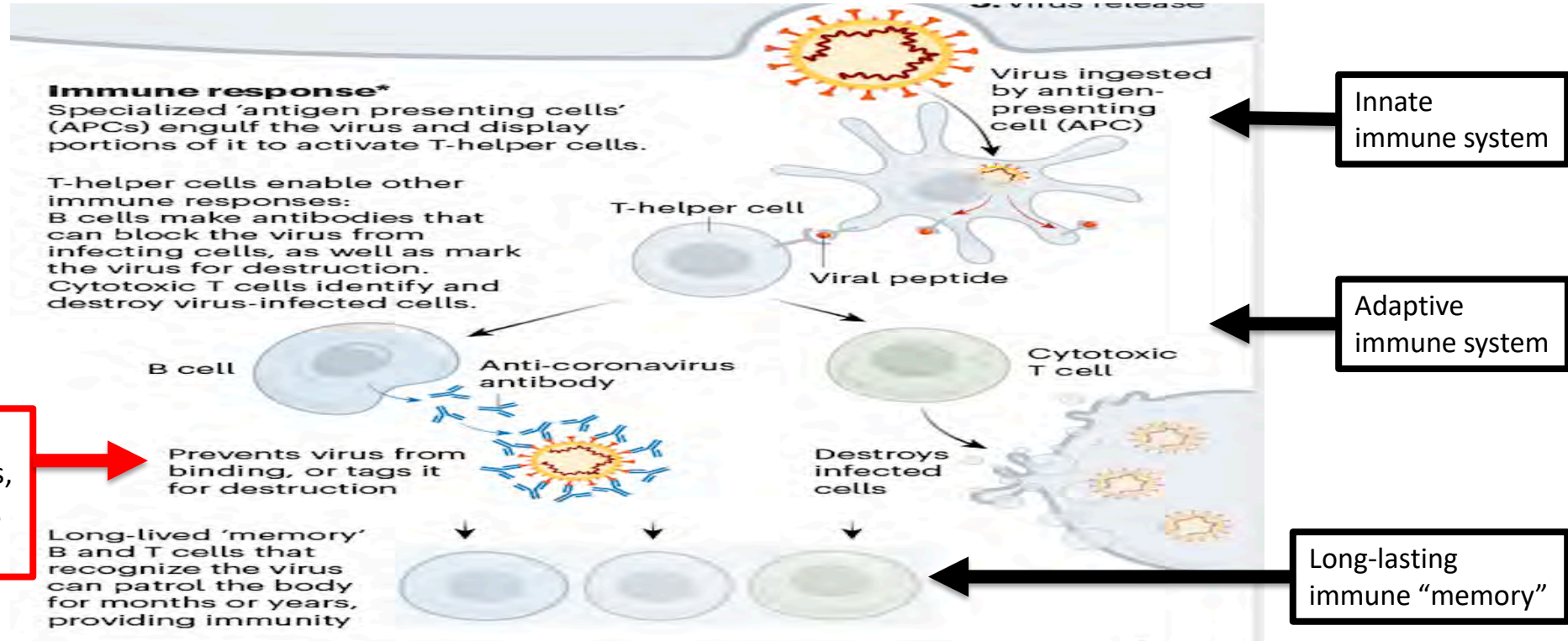
Town Hall – January 13, 2021

H. Dirk Sostman, MD FACR



How Immunity Can Fight Infection

Native Immunity

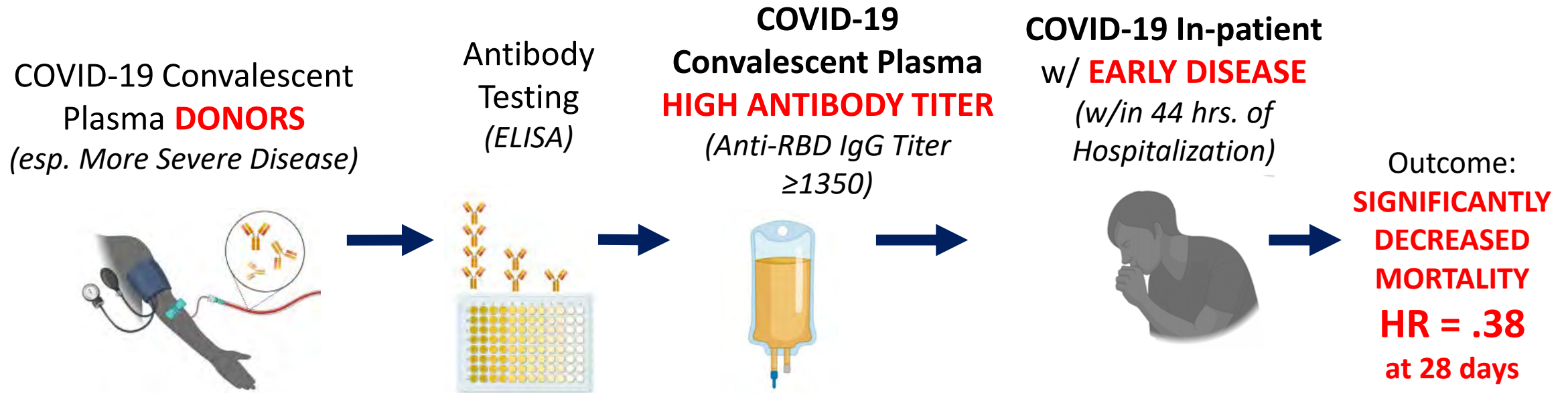


Passive immunity
(Monoclonal antibodies,
Hyperimmune globulin,
Convalescent plasma)

Anti-COVID-19 Antibody Treatments

Convalescent Plasma:

Houston Methodist Cohort Research Confirmed by RCT

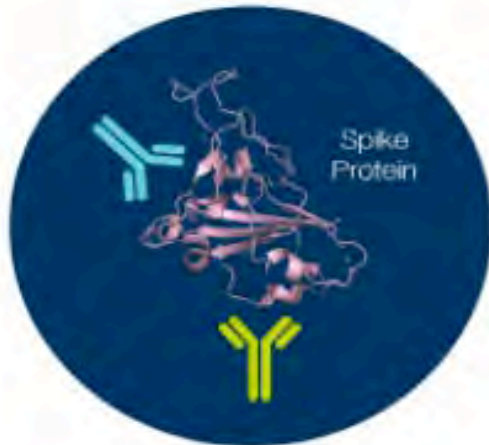


**Libster et al NEJM January 2021:
Randomized placebo-controlled trial found HR of 0.48**

Monoclonal Antibodies for COVID-19

Screening to assess the characteristics of the potential monoclonal antibodies

- Binding
- Neutralization
- Effectiveness
- Half life
- Safety



Testing, development, approval, manufacturing and distribution

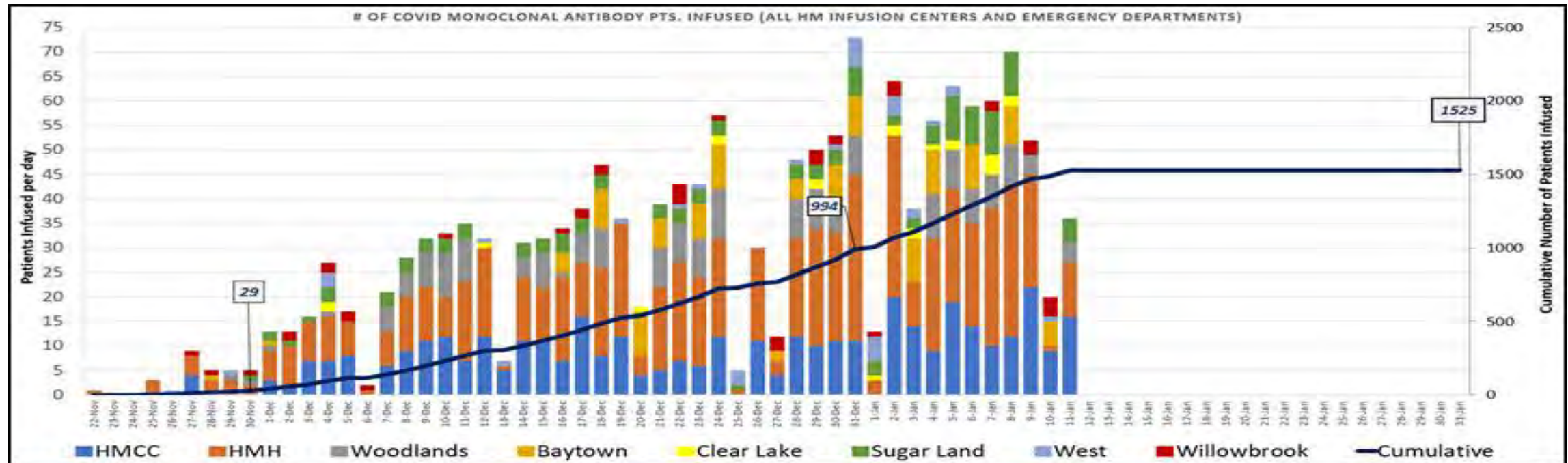
Astra Zeneca
Celltrion
Abcellera / Lilly
Regeneron
Centivax
Vir Biotechnology / GSK



- In early, mild COVID-19, HR ~ 0.35 – 0.40
- EUA for treatment of mild to moderate COVID-19
- Positive SARS-CoV-2 test, and high risk for progressing to severe COVID-19 and/or hospitalization
- High risk is defined as patients who meet at least one of the following criteria:
 - Body mass index (BMI) ≥ 35 • Chronic kidney disease • Diabetes • Immunosuppression • ≥ 65 years of age
 - Are ≥ 55 years of age AND have cardiovascular disease, OR hypertension, OR chronic respiratory disease

Monoclonal Ab Treatments at HM

- Patient outcomes from therapy to date:
- 1,500 Treated
- Mortality: 0%
- Patient with a COVID-Related Hospitalization after mAb: 4.1%
- Safety: No severe reactions reported



COVID-19 Vaccines

Approved Vaccines

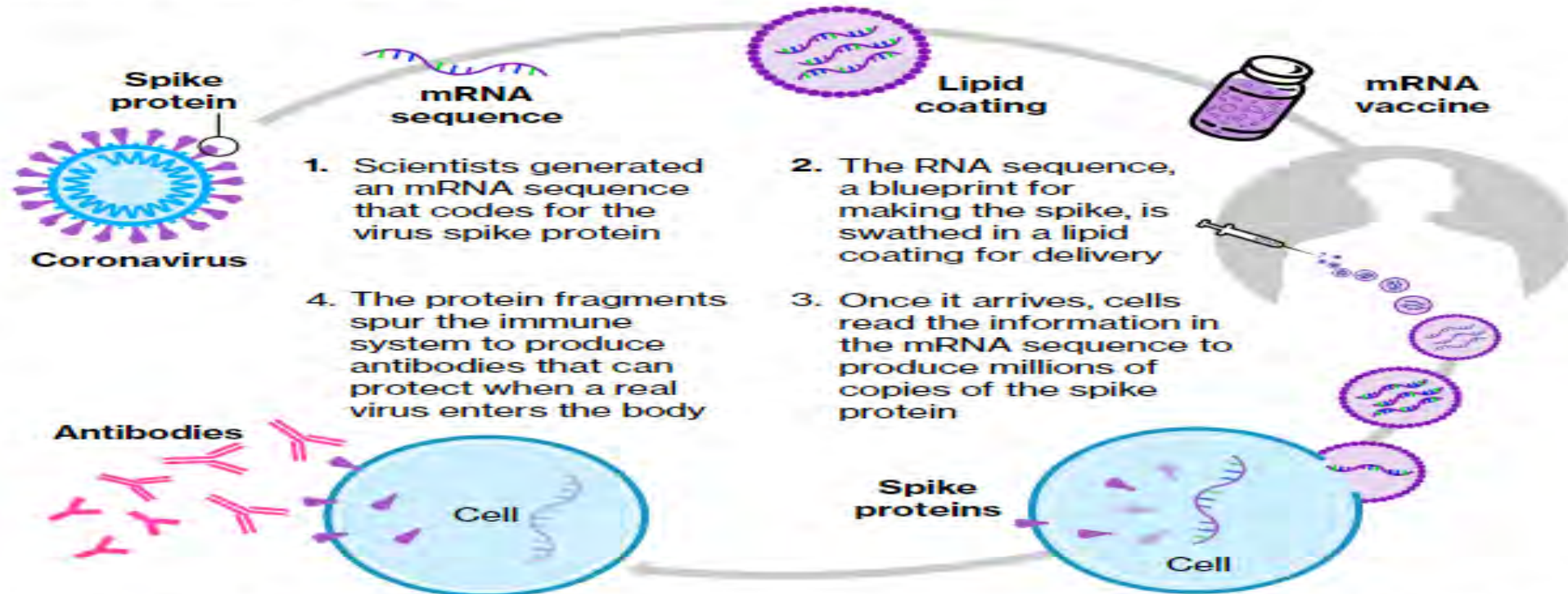
Vaccine	Antibody Response	T Cell Response	Technology	Protection (Monkeys)	Efficacy Overall	Efficacy vs. Severe	Efficacy vs. Asymptomatic
Moderna (US, UK, EU)	2x – 8x CP	100%	mRNA	Infection	94%	90%	???
Pfizer / BioNTech (US, UK, EU)	5x – 30x CP	94%	mRNA	Infection	95%	100%	???
Astra Zeneca (UK only)	= CP	100%	Viral Vector	Disease	70% (62% - 90%)	100%	27%

CP = convalescent plasma

mRNA Vaccine Technology

How mRNA Vaccines Work

The vaccine spurs healthy cells to produce viral proteins that stimulate a potent immune response



Sources: Pfizer, Bloomberg research

Bloomberg

Pfizer Vaccine: FDA Safety Overview

Adverse Effect (AE)	Vaccine Group	Placebo Group
Solicited inject site AE	73%	11%
Solicited systemic AE	70%	34%
Unsolicited non-serious AE	27%	13%
Serious AE	0.6%	0.5%
Withdrawal for AE	0.6%	0.5%
Allergic reaction	0.6%	0.5%
Death	2	4

Pfizer Vaccine: 18 – 55 Age Group

Mild – Moderate “Reactogenic” Effects

Adverse Effect	Vaccine Group	Placebo Group
Fever < 39° C	14%	0.3%
Fatigue	55%	22%
Headache	49%	23%
Chills	33%	4%
GI	12%	10%
Myalgia	35%	8%
Arthralgia	21%	5%
Pain / Anti-inflammatory Medication	45%	13%

Severe Allergy to COVID Vaccines (CDC)

- 21 cases in 1.9 million vaccinations
 - 11.1 / million (vaccine average = 1.3 / million)
- Timing
 - 71% within 15 minutes
 - 86% within 30 minutes
- Treatment
 - Antihistamines and Epi-Pen
 - Fatalities = 0
- Precautions
 - 81% had history of allergies, 33% of anaphylaxis (2/7 to vaccine)
 - Allergy to vaccine components or to first dose = do not vaccinate

COVID Vaccine Allergy

	PROCEED WITH VACCINATION	PRECAUTION TO VACCINATION	CONTRAINDICATION TO VACCINATION
ALLERGIES	<ul style="list-style-type: none"> History of food, pet, insect, venom, environmental, latex, etc., allergies History of allergy to oral medications (including the oral equivalent of an injectable medication) Non-serious allergy to vaccines or other injectables (e.g., no anaphylaxis) Family history of anaphylaxis 	<p>History of severe allergic reaction (e.g., anaphylaxis) to an injectable medication</p>	<ul style="list-style-type: none"> History of severe allergic reaction (e.g., anaphylaxis) to any component of the Pfizer-BioNTech vaccine History of severe allergic reaction (e.g., anaphylaxis) to another vaccine (not including Pfizer-BioNTech vaccine)
ACTIONS	<p>15-minute observation period</p>	<ul style="list-style-type: none"> Risk assessment Potential deferral of vaccination 30-minute observation period if vaccinated 	<p>Do not vaccinate</p>

Risk – Benefit of Vaccination

- If you live in the USA, your risk
 - Contracting COVID-19 = 4%
 - COVID-19 long-term complications (stroke, heart disease, etc.) ~1.3%
 - Hospitalization = 1%
 - Death = 0.1%
- Vaccine risks
 - Inconvenience ~ 50%
 - Anaphylaxis ~ 0.00001%
 - Other rare side effects (*guess – none yet documented*) ~ 0.0000001%
 - Death (*guess – no deaths yet*) ~ 0.000000001%

Vaccine Progress: Second Wave

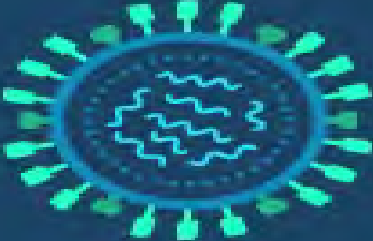
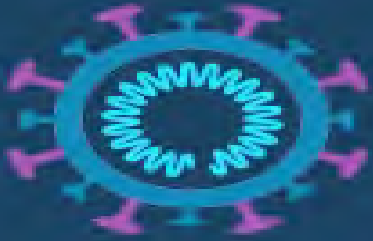
Vaccine	Antibody Response	T Cell Response	N of Doses	Technology	EUA Target
Oxford / Astra Zeneca	100% (= CP)	100%	2	Adenovirus Ad5 vector	December 2020 (UK) Q1 2021 (US)
Novavax	100% (2x CP)	100% (subgroup)	2	Peptide / nanoparticle	Q1 2021
J & J	100%	82%	1	Adenovirus Ad26 vector	Q1 2021
Inovio	94% overall	94% overall	2	DNA + electroporation	Q1 2021?
COVAXX				Synthetic peptide multi-epitope	Still in Phase 1
COVI-Vac				Intranasal live attenuated vaccine	Starting Phase 1
And many others, e.g.:	Sputnik V ICL	CanSino Sanofi, GSK	CNBG1 CNBG2	Novartis Medicago	Curevac Sinovac

<https://www.nytimes.com/interactive/2020/science/coronavirus-vaccine-tracker>

What Could Go Wrong?

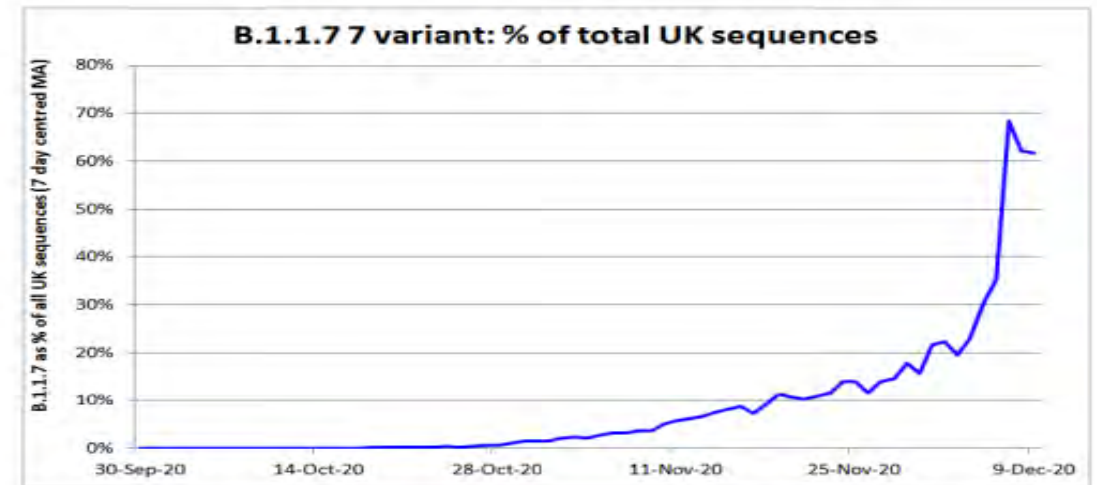
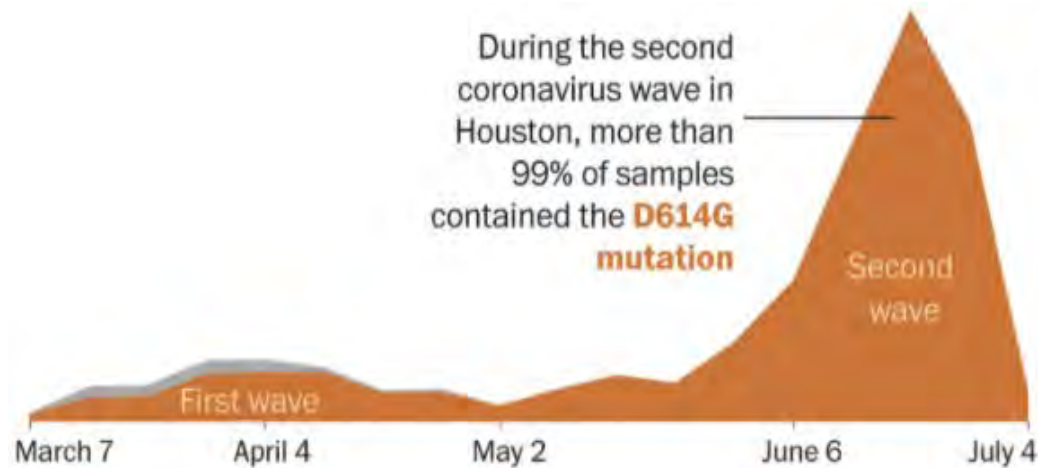
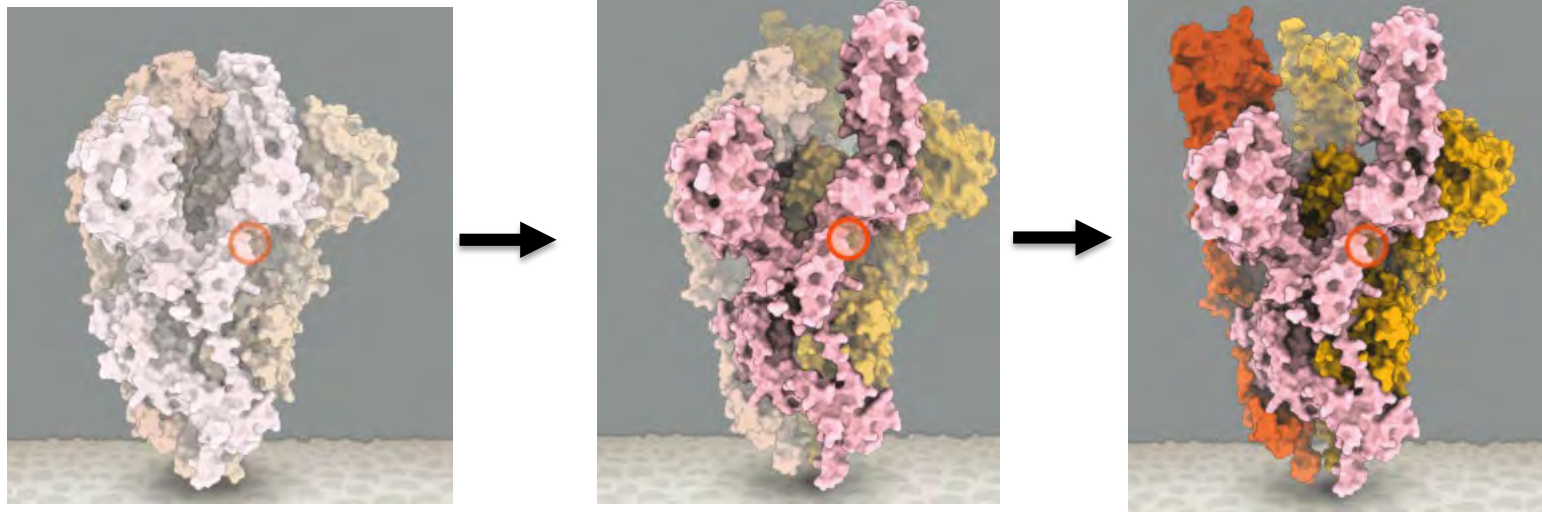
Viral mutations

- All viruses mutate – and evolve with selective pressure
- Coronavirus vs. Influenza
 - CoV has error correction, Flu does not
 - CoV mutation $\sim 10^{-6}$ per site
 - Flu mutation $\sim 3 \times 10^{-5}$ per site
 - Antigenic drift should be slower in CoV
 - Antigenic shift not seen in CoV (non-segmented genome)

Virus Properties	
<p>Influenza Virus</p> 	<ul style="list-style-type: none">• 4 strains, multiple subtypes• (-) strand, segmented RNA genome• HA and NA surface proteins• Enveloped
<p>SARS-CoV-2</p> 	<ul style="list-style-type: none">• 1 strain• (+) strand, non-segmented RNA genome• Spike (S) protein• Enveloped

What Could Go Wrong?

Viral mutation: D614G

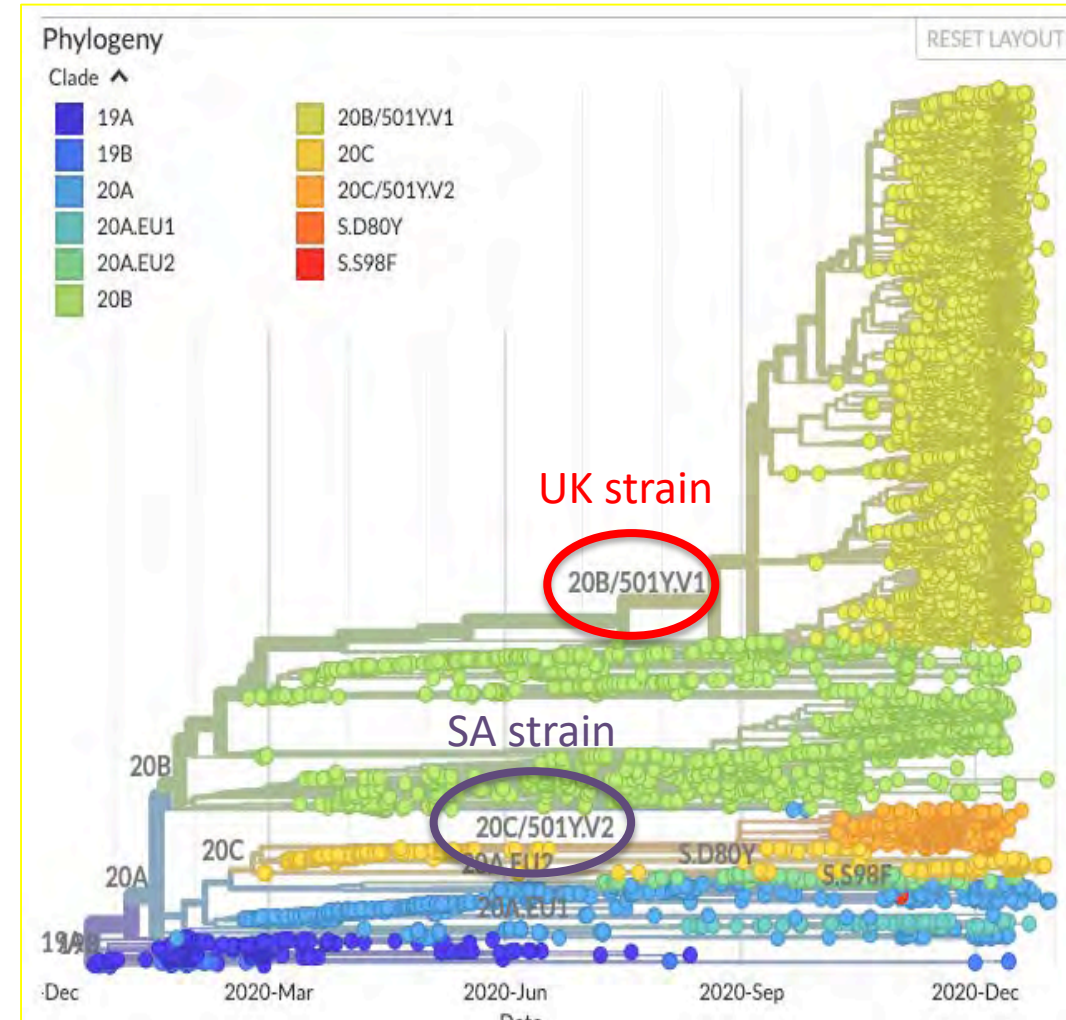


What Could Go Wrong?

Viral mutations

- D614G
 - Set of 4 mutations
 - Rare in March, 75% in September
 - Increases replication fitness
 - May be more sensitive to antibodies
- B.1.1.7 (501.Y.V1) – U.K.
 - Set of 17 mutations
 - 50-70% more transmissible
 - Frequent in < 20 y.o.?
- 501.Y.V2 – S. Africa
 - Appears to be more transmissible
 - Shares N501.Y mutation with UK strain
- Possible concerns
 - Drug resistance
 - mAb resistance
 - Vaccine failure (*however, Pfizer vaccine effective against N.501.Y mutation*)

SARS-CoV-2 evolution in 2020



What Could Go Wrong?

Viral mutations – Summary

- Viral mutations occur continuously
- Probabilistic process – “random” sites of mutation
- Selective pressure and random effects both affect spread of mutants
- SARS-CoV-2 mutates more slowly than influenza
- S protein mutants means mAb cocktails are advantageous
- S protein mutations – over time – likely will require us to update vaccines
- mRNA technology well suited to respond to viral mutations
- Transmissibility and lethality not necessarily connected
- **Best defense against more contagious viruses is strict MASKING, DISTANCING and HAND WASHING**

How to properly wear a face mask



ENSURE THE PROPER
SIDE OF THE MASK
FACES OUTWARDS



SECURE THE STRINGS
BEHIND YOUR HEAD
OR OVER YOUR EARS



PRESS THE METALLIC
STRIP TO FIT THE SHAPE
OF THE NOSE



COVER MOUTH
AND NOSE FULLY MAKING
SURE THERE ARE NO GAPS



WEAR MASK



DO NOT TOUCH THE
MASK WHILE USING IT,
IF YOU DO
WASH YOUR HANDS



REMOVE THE MASK
FROM BEHIND BY
HOLDING THE STRINGS
WITH CLEAN HANDS

FACTS. 
OVER FEAR
COVID-19

The Right Way to Wash Your Hands



Wet hands under running water



Apply soap and rub palms together



Spread the soap lather over the backs of hands



Make sure soap gets in between fingers



Grip fingers on each hand



Make sure to clean thumbs



Press fingertips into palm of each hand



Dry thoroughly with clean towel or paper towel

SOCIAL DISTANCING

What does it mean?

Social distancing is the practice of reducing close contact between people to slow the spread of infections or diseases.

Social distancing measures include limiting large groups of people coming together, closing buildings and canceling events.

AVOID

Group gatherings
Sleepovers
Playdates
Concerts
Theater outings
Traveling
Athletic events
Crowded retail stores

Malls
Workouts in gyms
Church Services
Visitors in your house
Non-essential workers in your house
Mass transit systems



KEEP YOUR DISTANCE

Visit a local restaurant to get take out
Visit grocery store

Pick up medications
Play tennis in a park



SAFE TO DO

Take a walk
Go for a hike
Yard work
Play in your yard

Clean out a closet
Read a good book
Listen to music
Cook a meal

Family game night
Go for a drive
Stream a favorite show

Call or email a friend or elderly neighbor to check in
Group video chats



HOUSTON
Methodist[®]
LEADING MEDICINE

Vaccine Distribution Plan

Roberta L. Schwartz, PhD
January 13, 2021



First Delivery of Vaccine Arriving at HMH!



First Vaccinations



Houston Methodist Vaccination Locations

Houston Methodist
Hospital



Open

Houston Methodist
Baytown



Open

Houston Methodist
The Woodlands



Open

Houston Methodist
West Houston



January 18

Houston Methodist
Clear Lake



January 18

Houston Methodist
Sugar Land



January 18

Houston Methodist
Willowbrook



January 18

Vaccine Distribution Guidance

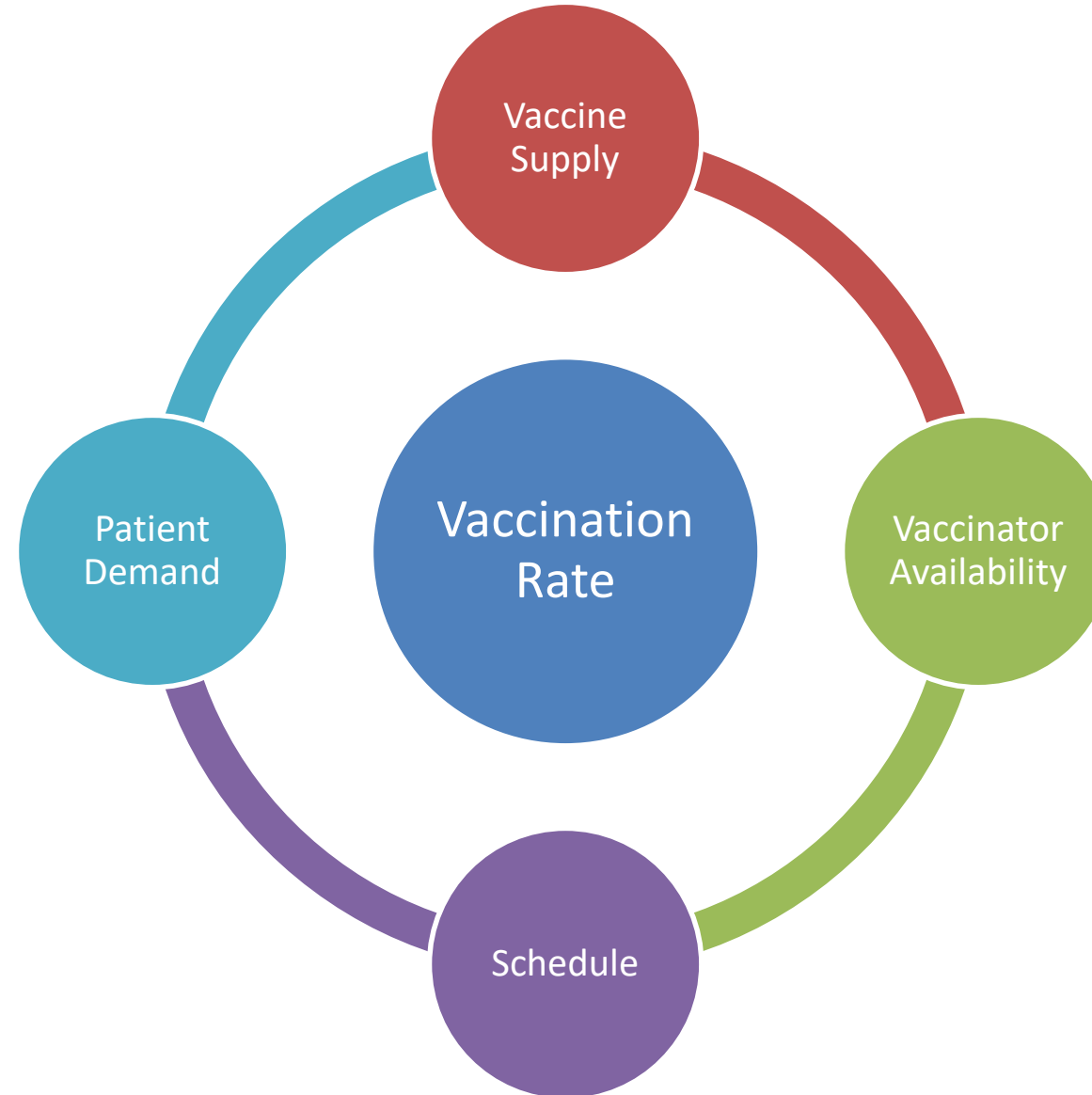
Federal:

- 1A.1: Healthcare workers
 - Hospitals, Long-Term Care, EMS, Home Health, Outpatient, ER/Urgent Care, Pharmacies, Public Health
- 1A.2: Residents of Long-Term Care Facilities
- 1B: Essential workers
 - Educators, Food & Agriculture, Utilities, Police, Firefighters, Correction Officers, Transportation
- 1C: Persons 65+ and Persons 16+ with a health care condition

State of Texas:

- 1A.1: Healthcare workers
 - Hospitals, Long-Term Care, EMS, Home Health, Outpatient, ER/Urgent Care, Pharmacies, Last Responders, School Nurses
- 1A.2: Residents of Long-Term Care Facilities
- 1B: (1) Persons 65+ and (2) Persons 16+ with a health care condition
- 1C: “under consideration”

Vaccine Distribution Constraints



Vaccine Distribution Plan at Houston Methodist

1A

- HM Employees
- Healthcare Workers
- First Responders (based on State criteria)

1B (Part One)

- Patients 75+ being scheduled

1B (Part Two)

- Patients 65+

1B (Part Three)

- Patients 16+ with a medical condition

Vaccine Distribution Plan at Houston Methodist

1A

- HM Employees
- Healthcare Workers
- First Responders (based on State criteria)

1B (Part One)

- Patients 75+ being scheduled

Patients invited to schedule now.

To date, 34,000 have scheduled.

1B (Part Two)

- Patients 65+

Limited number of slots currently available to public.

Additional availability depends on vaccine supply.

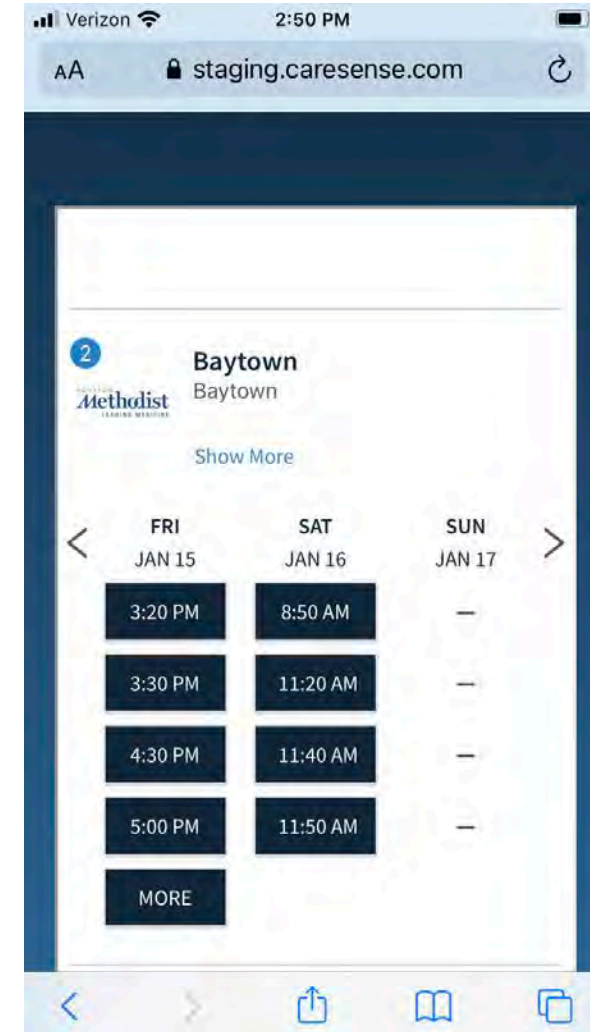
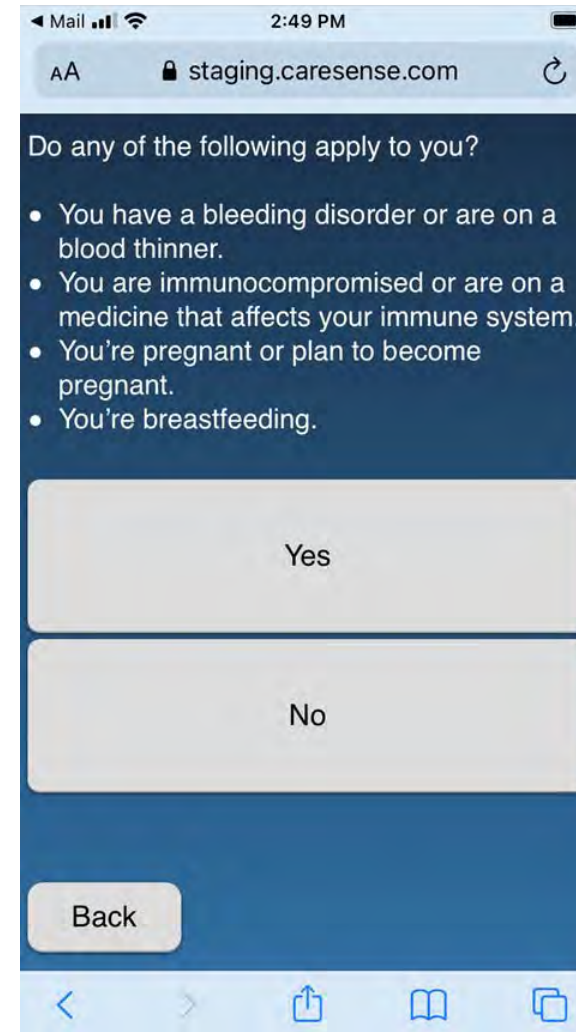
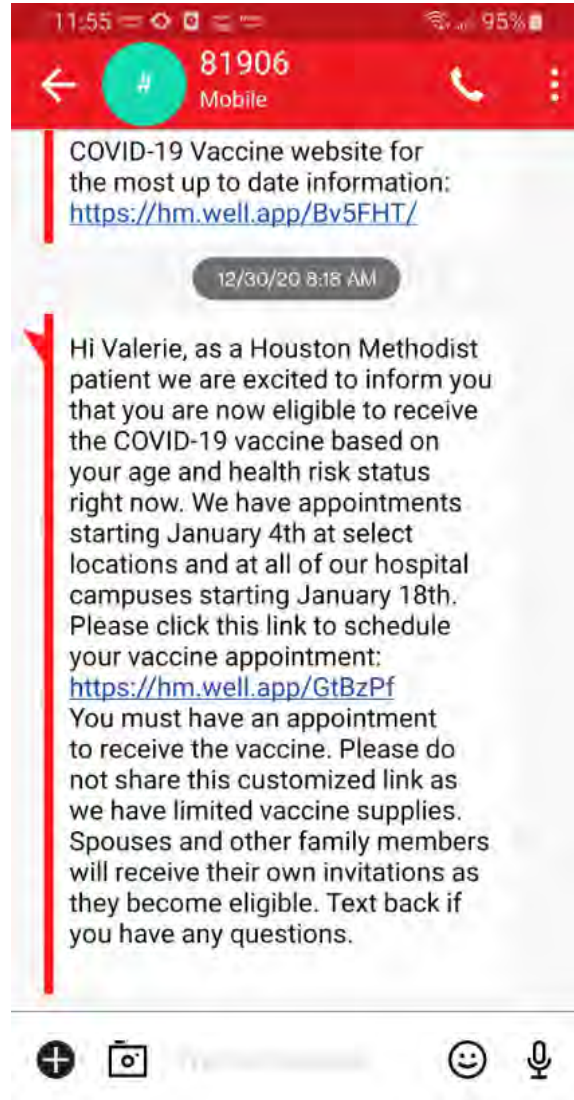
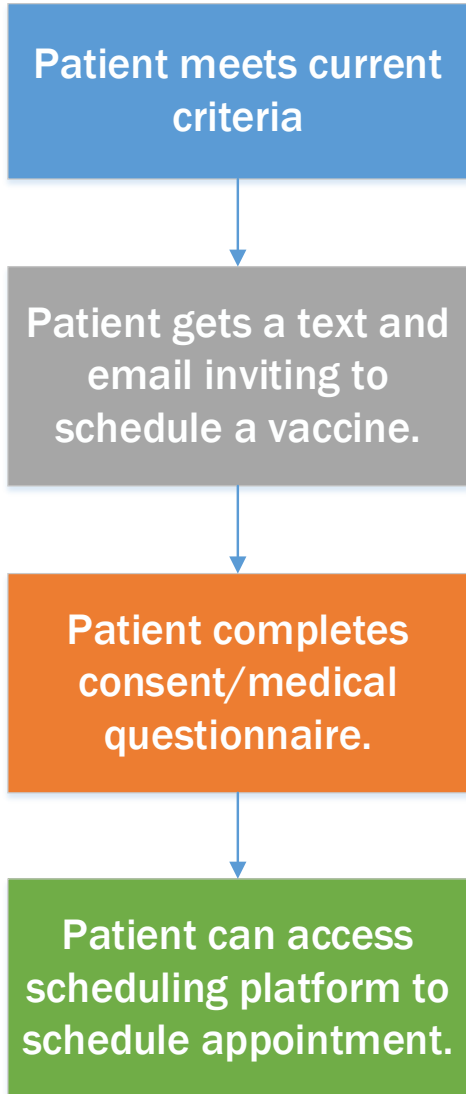
1B (Part Three)

- Patients 16+ with a medical condition

Adults with medical conditions will be invited to schedule when there is sufficient supply of vaccine.

Healthy adults will be invited to schedule vaccine appointments once there is sufficient supply and it is authorized by the State.

Scheduling – We Will Contact You!



HM Vaccine Distribution – Public Form



State of Texas COVID-19 Vaccine x +

https://www.houstonmeth...

A COVID-19 vaccine is currently only available to priority at-risk individuals. [Learn more >](#)

HOUSTON Methodist LEADING MEDICINE

State of Texas Vaccine Hub

Special notice: Houston Methodist is one of three sites in the Houston area selected by the State of Texas to serve as a vaccine hub.

If you are 65 or older, please fill out the form below. Please understand that filling out this form is no guarantee of a vaccine appointment. If you meet State Medical Criteria, you will receive additional information from Houston Methodist to schedule your COVID-19 vaccine appointment, including where to go and your appointment day and time. Your identification will be verified at the time of your appointment and must match your responses on the form. **Walk-ins will not receive vaccinations.**

Unfortunately, we will be limited by vaccine supply. If after filling out the form you do not receive a response from us, it means that all of the slots have been filled.

You can download a PDF of frequently asked COVID-19 vaccine questions [here](#).

Houston Methodist COVID-19 Vaccine Scheduling Form

The survey will take approximately 5 minutes to complete.

* Required

State of Texas COVID-19 Vaccine x +

https://www.houstonmeth...

1. Enter your answer

2. Last Name (Legal) *

Enter your answer

3. Date of Birth (Must be over 65) *

Please input date in format of M/d/yyyy

4. Mobile Phone Number *

Enter your answer

5. Preferred Language *

English

Spanish

6. Street Address *

Enter your answer

HM Vaccine Distribution

The screenshot shows a web browser window with the URL <https://www.houstonmethodist.org/coronavirus/vaccine-updates/>. The page features a breadcrumb trail: Home > For Patients > Coronavirus Disease. The main heading is "COVID-19 Vaccine Information". Below this, a welcome message states: "Welcome to Houston Methodist's COVID-19 vaccine information page. Here you will find information on patient vaccinations, [answers to frequently asked questions](#), helpful resources and a link to [Governor Greg Abbott's COVID-19 vaccine allocation process](#)." A subsequent paragraph asks visitors to check back for updates and share the page. A red "Special notice" states: "Houston Methodist is one of three sites in the Houston area selected by the State of Texas to serve as a vaccine hub. We are working with the state to finalize plans about the vaccine hub for the at-risk public. We will be limited by vaccine supply." Below this is a section titled "Important COVID-19 patient vaccine plan" with the text: "Houston Methodist is also offering the vaccine to at-risk, vulnerable patients who meet specific criteria." On the right side, a red box titled "COVID-19 VACCINE TRACKER" displays the number "38,354" and the text "Number of people vaccinated*" with a footnote: "*At Houston Methodist as of end of day 1/11/2021". At the bottom right, there is a section titled "Important Vaccine Links" with a link for "COVID-19 Vaccine Updates >".

COVID-19 Vaccine Updates | Hou x +

← → ↻ 🏠 🔒 <https://www.houstonmethodist.org/coronavirus/vaccine-updates/> ☆ 👤 ⋮

Home > For Patients > Coronavirus Disease

COVID-19 Vaccine Information

Welcome to Houston Methodist's COVID-19 vaccine information page. Here you will find information on patient vaccinations, [answers to frequently asked questions](#), helpful resources and a link to [Governor Greg Abbott's COVID-19 vaccine allocation process](#).

Please check back here often for vaccine updates and share this page with family and friends who also may have questions about the COVID-19 vaccine.

Special notice: Houston Methodist is one of three sites in the Houston area selected by the State of Texas to serve as a vaccine hub. We are working with the state to finalize plans about the vaccine hub for the at-risk public. We will be limited by vaccine supply.

Important COVID-19 patient vaccine plan

Houston Methodist is also offering the vaccine to at-risk, vulnerable patients who meet specific criteria.

COVID-19 VACCINE TRACKER

38,354

Number of people vaccinated*

*At Houston Methodist as of end of day 1/11/2021

Important Vaccine Links

[COVID-19 Vaccine Updates >](#)

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THANK YOU FOR ATTENDING OUR TOWN HALL CONVERSATION

If you would like more information about Wellness Services or The Society for Leading Medicine, please contact foundation@houstonmethodist.org

Take care and be well

