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

A TOWN HALL CONVERSATION III

We will begin at 11 a.m.
Technology Building Blocks

- Epic Implementation
- Center for Innovation
- Telemedicine Investments
- Strong IT Organization
- Innovation Culture
- Strategic Commitment
- Tech Hub
“Luck is what happens when preparation meets opportunity.”
Role of Telemedicine in COVID-19 Response in the Hospital

Virtual Visits at the Hospital

- **Virtual Intensive Care**
  - Bi-directional audio communication
  - Privacy indicator for open video/audio
  - Telehealth button to contact Operations Center

- **Virtual Rounding with Vidyo**
  - Deployed 400+ iPads to enable telerounding

Partners
Major accomplishments:

• Camera and monitor installation completed in all 163 ICU rooms at HMH.

• vICU launched with the Neurosurgical ICU on March 16 with 24 beds. Within 10 days, we then launched in vICU in Medical ICU, Cardiac ICU, and Cardiovascular ICU – for a total of 126 beds.

• Between March 16 and May 11:
  – Responded to more than 400 Virtual Alert Button calls to the bedside
  – 7,000 remote connections into patient rooms using our two-way audiovisual technology

• We offer assistance to connect families with their loved ones, during this time of limited visitation to the hospital.
Transforming to Virtual Medicine

VIRTUAL VS. IN-CLINIC VOLUME

- **February**: 1.5% virtual
- **March**: 13% virtual
- **April**: 74% virtual
- **May**: 40% virtual

**MARCH 1**
66 virtual care providers

**MARCH 25**
900 virtual care providers

19 service lines added to virtual

70+ clinicians trained in-person at the Houston Methodist Technology Hub
Increase in Telemedicine

Houston Methodist Physician Organization
Total Visits

Data as of Jun 8, 2020
Virtual Care Visits: March 9 – May 7, 2020

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<th>Service</th>
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<td>MyMethodist Virtual Urgent Care</td>
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<td>E-Visits</td>
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<td><strong>Total</strong></td>
<td><strong>140,800</strong></td>
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Virtual Urgent Care Volumes

22,023 completed VUC visits all-time (YTD)

Visits by Gender
- Female: 16,013
- Male: 6,374

Visits by Age Group
- 0-4 years: 370
- 5-12 years: 671
- 13-18 years: 525
- 19-29 years: 5,024
- 30-39 years: 7,466
- 40-49 years: 4,570
- 50-64 years: 3,125
- 65-85 years: 614
- 86+ years: 22

Overall visits by gender and age group.
Role of Digital Care Pathways

Care pathways have provided a standardized set of information through text, phone or email about care before individuals get to the hospital and after they go home. This breaks patient information into bite-size chunks that are easily understandable and actionable by individuals.

- 98% patient satisfaction
- 80% patient engagement
- 50% reduction in readmissions
- 40% average reduction in emails & calls
- 10-15% improvement in HCAHPS scores

"It kept me well informed with all the texts and emails. I felt like y'all did a great job keeping track of me. I’m sure there are lots of other people and more to come. Thank you!"

"It was nice to get encouragement, suggestions, and updates to help make this time a little easier."

"I was able to get updated information via the emails."

"Everything was certainly very helpful."

"I love the tone of the messages. You’re so encouraging. Not treating me like a leper."

"How did you keep such good track of me? I felt supported. Watched. Less alone."

"Informative."
Role of “Bots”: Intelligent Automation

Intelligent Automation Team helped assign new insurance plan and Health Resources Services Administration to appropriate insurance claims.

Technology Platform for automation

634 claims submitted

2 days amount of time it took to submit claims

$12 Million in charges

15% expected reimbursement
Role of “Bots”
Role of “Bots”: Buoy Health

Buoy Virtual Triage Utilization for Employee Health Plan

Let’s assess your risk for coronavirus

Are you experiencing any of the following symptoms?

- Chills
- Cough
- Fever
- Difficulty getting enough air
- Sore throat
- None of the above

![Graph showing Houston Methodist Buoy Utilization (by Completion)]
Patient Engagement Initiatives During COVID-19

Guest iPads

When we changed our guest and visitor policies as part of COVID-19 precautions, we needed to find innovative ways to connect our patients and families.

- Google Duo
- Zoom
- WebEx
- Skype
- YouTube
- Netflix
- Hulu
- Disney+
- Prime Video
- HBO Go
- Spotify
- Pandora
- CDC
- Houston Public Health
- NPR News
- HM COVID-19 Information Line

Representative list of applications
Patient Engagement Initiatives During COVID-19

Amazon Alexa & Aiva

We are focused on engaging our patients and making their stay comfortable by bringing technologies they are familiar with in their homes.

350+ Devices deployed to cohorted COVID-19 units

Examples of Current Use Cases
- “Alexa, call 555.555.5555”
- “Alexa, tell me the news”
- “Alexa, play Frank Sinatra radio”

Future Use Cases
- “Alexa, I want to order food”
- “Alexa, I am in pain”
- “Alexa, call my Nurse”
Technology Supports Mission

At Houston Methodist, our patients are at the center of everything we do.

ICU nurses Alexandra Carnahan, left, and Carmina Catalan, right, have been caring for critically ill COVID-19 patients at Houston Methodist Hospital.

Danny Chang, a senior tech analyst for Houston Methodist, sets up computers on wheels for a special wing at the hospital's Katy campus that is dedicated to those with COVID-19.
Technology Protecting Providers

• **Rationale**
  – Protect providers during aerosol generating procedures, reduce unnecessary PPE use

• **Concept**
  – Shared concept on Social Media
  – Drs. Hsu and Masud (ICU) requested development; Juan Fernandez in HMRI Machine Shop
    • Facilities Department expanded concept to screening and sample collection, and for simple procedures
    • Reduce use of PPE to better protect staff
Taking Care of Our Employees

Welcome to Taking Care of You, a daily email all geared to helping our Houston Methodist employees take care of themselves during times of stress. It is a collaboration of resources from within our Houston Methodist family, and we hope this brings you some peace amid COVID-19.

Appreciation from the Community

This picture says, "You are our world!" Houston Methodist employees really are heroes every day and especially during this pandemic. You are rising to the challenge and making sacrifices in order to keep our patients at the center of everything you do.

Your spirit of teamwork, special talents and display of our CARE values are an inspiration to us all. We appreciate your dedication to keeping our patients and each other safe.

HealthyDirections Health Tip
by AIM Employee Wellness

25-Minute Full Body Strength Fitness Class with Lauren

Lauren Murray, health fitness coordinator, will lead you through this quick 25-minute full body strength training workout. Strength training is an important aspect of any fitness routine. Aim to incorporate at least two strength training workouts per week. For this workout, you will need a pair of dumbbells and a mat.

See videos previously featured.

Taking a Mental Break

Viewing artwork can help us refocus, explore something new and allow our minds to take a break. It is important that you have some moments of respite, even if only in your mind. Each year the Center for Performing Arts Medicine's Healing Arts Employee Photography Exhibition features nature photography from employees across the system. Use this photo to momentarily travel elsewhere.
HM’s New Normal – Keeping Patients and Staff Safe

- Dedicated COVID Units
- Cohorting Patients in ICUs
- Enhanced PPE
- Reduced Schedules
- Restricted Campus Access
- Temperature Screenings
- Updated Visitor Policy
- Mask Policy
- Physical Distancing
TESTING FOR COVID-19

- Viral RNA (RT-PCR)
- Antibodies against viral antigens
- Viral antigen (protein)
TESTING FOR COVID-19
What Questions Can Testing Answer?

• Who is actively infected? – RT-PCR
  – Surveillance (community, workplace) – asymptomatic
  – Clinical Diagnosis – symptomatic
  – Contact Tracing

• Who has been infected? – ANTIBODY
  – Surveillance (community)
  – Plasma donor qualification
  – Who is immune to COVID-19
    • Occupational safety
    • Peace of mind
• April: RT-PCR and serology of Houston Methodist workforce (N ~ 3,000)
  – 1) COVID cohorted units / ICU’s ~ 5% +
  – 2) non-COVID units ~1% +
  – 3) non-clinical employees 0% +
• Antibodies in about 2%
• June: < 1% + in all units
• Ongoing testing of employees continues
• The immune system eliminates anything that is not “myself”

• Immunity
  – the immune system recognizes a substance that isn’t “myself” – an ANTIGEN
  – recruitment of CELLS and ANTIBODIES that eliminate the foreign ANTIGEN

• A vaccine gives the immune system a “dress rehearsal” by delivering an antigen SAFELY

• The immune system then has a head start if it encounters “the real thing”
1. Is the vaccine safe?

2. Does it cause a humoral (antibody) immune response?

3. Does it cause a cellular immune response?

4. Does the immune response neutralize the virus?

5. Does it prevent infection or disease?

6. How long does immunity last?

7. Can the vaccine be produced and distributed effectively?

8. Will people take it?
VACCINES

Problems & Promises

Problems

• Time
  – World record for new vaccine = 4 years
  – Average time = 10 - 15 years
  – Some diseases = NEVER

• Risks
  – Some vaccines make disease worse
  – Some vaccines have side effects

• Practical issues
  – Pharma return on investment
  – Control of pandemic = harder to test vaccines
  – Logistical challenges are huge
  – Political issues

Promises

• Many new technologies
• Political / regulatory pressure
• $Billions and $Billions invested
VACCINES BASED ON VIRUSES

**VIRUS VACCINES**

**Weakened virus**
A virus is conventionally weakened for a vaccine by being passed through animal or human cells until it picks up mutations that make it less able to cause disease. Codagenix in Farmingdale, New York, is working with the Serum Institute of India, a vaccine manufacturer in Pune, to weaken SARS-CoV-2 by altering its genetic code so that viral proteins are produced less efficiently.

**Inactivated virus**
In these vaccines, the virus is rendered uninfected using chemicals, such as formaldehyde, or heat. Making them, however, requires starting with large quantities of infectious virus.

**VIRAL-VECTOR VACCINES**

**Replicating viral vector (such as weakened measles)**
The newly approved Ebola vaccine is an example of a viral-vector vaccine that replicates within cells. Such vaccines tend to be safe and provoke a strong immune response. Existing immunity to the vector could blunt the vaccine's effectiveness, however.

**Non-replicating viral vector (such as adenovirus)**
No licensed vaccines use this method, but they have a long history in gene therapy. Booster shots can be needed to induce long-lasting immunity. US-based drug giant Johnson & Johnson is working on this approach.

![Diagram of vaccine mechanisms](image)
**PROTEIN AND NUCLEIC ACID VACCINES**

### NUCLEIC-ACID VACCINES

**DNA vaccine**
- Electroporation
- Coronavirus spike gene
- DNA

A process called electroporation creates pores in membranes to increase uptake of DNA into a cell.

**RNA vaccine**
- RNA
- RNA is often encased in a lipid coat so it can enter cells

### PROTEIN-BASED VACCINES

**Protein subunits**
- Twenty-eight teams are working on vaccines with viral protein subunits — most are focusing on the virus’s spike protein or a key part of it called the receptor binding domain. Similar vaccines against the SARS virus protected monkeys against infection but haven’t been tested in people. To work, these vaccines might require adjuvants — immune-stimulating molecules delivered alongside the vaccine — as well as multiple doses.

**Coronavirus spike protein**
- Spike protein

**Coronavirus M protein**
- M protein

**Virus-like particles**
- Empty virus shells mimic the coronavirus structure, but aren’t infectious because they lack genetic material. Five teams are working on ‘virus-like particle’ (VLP) vaccines, which can trigger a strong immune response, but can be difficult to manufacture.

**Immune response**
- Coronavirus peptide
- VLP

**Immune response**
- Coronavirus peptide

RNA- and DNA-based vaccines are safe and easy to develop: to produce them involves making genetic material only, not the virus. But they are unproven: no licensed vaccines use this technology.
## VACCINE PROGRESS

### Major Players

<table>
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<tr>
<th>Company</th>
<th>Technology</th>
<th>Clinical Trial Phase</th>
<th>Goal for EUA</th>
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<td>RNA</td>
<td>2</td>
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<td>Pfizer / BioNTech*</td>
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<td>[Phase 1 planned 9/20]</td>
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<td>Age 60 and older</td>
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REMDESIVIR FOR MODERATE AND SEVERE COVID-19

Kevin Grimes, MD, MPH
Deputy Chair of Medicine
Assistant Professor
 Targets cysteine protease and clathrin mediated endocytosis

DRUG TREATMENT FOR COVID-19

S-001

Targets cysteine protease and clathrin mediated endocytosis

Published online April 13, 2020.
• Prospective, randomized, placebo controlled clinical trial
  – 1,063 severe patients at 68 sites
  – Time to recovery 11 days vs 15 days (p < 0.001)
  – Mortality rate 8% vs 11.6% (p = 0.059)
• A Phase 3 Randomized Study to Evaluate the Safety and Antiviral Activity of Remdesivir (GS-5734™) in Participants with Severe COVID19 (GS-US-540-5773)

• A Phase 3 Randomized Study to Evaluate the Safety and Antiviral Activity of Remdesivir (GS-5734™) in Participants with Moderate COVID19 (GS-US-540-5773)

• Results show that 5 days of Remdesivir are as good as 10 days
• Remdesivir (Gilead Simple trial)
  – Moderately ill patients: 14 treated / 14 discharged
  – Severely ill patients: 84 treated / 78 discharged
  – 7 patients treated with compassionate use Remdesivir (including 2 pregnant women, both did well)
  – As of 6/10/2020: 134 patients systemwide have been treated with EUA Remdesivir
Dr. Katherine Perez, PharmD, Dr. Chase Janak, PharmD
Nursing, Respiratory Therapy
Academic Office of Clinical Trials – Pauline Todd, Raquel Bunge
IRB – Dr. Miller, Mary Clancy
Countless other researchers & support staff

THANK YOU!
# Houston Methodist COVID-19 Cases by Day

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<th>Total Positive</th>
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Data as of June 9, 2020
Houston Methodist COVID-19 Cases by Day

Data as of June 9, 2020
Houston Methodist Current COVID-19 Stats

COVID-19 related patients through Houston Methodist as of June 10, 2020

Key Messages

- Houston Methodist has served 1,119 COVID-19 related in-patients to date.
- 873 patients have been successfully discharged.

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

Data as of June 10, 2020 at 9:00 am
### COVID-19 Case Fatality Rate by State

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<tr>
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<tr>
<td>CA</td>
<td>3.5%</td>
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<tr>
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Data as of June 10, 2020

[https://coronavirus.jhu.edu/data/mortality](https://coronavirus.jhu.edu/data/mortality)
Weekly COVID-19 Deaths

United States reported new deaths weekly

- Covid-19
- 2017-18 flu and pneumonia
- 1957-58 Asian flu (with pneumonia)
- Car crashes
- 2017-18 flu
- Heart disease
- Cancer

Causes of Death in April

Covid-19 killed more people last month than any other cause of death does in a typical April.

- Covid-19: 68,760
- Heart disease: 82,841
- Cancer: 48,688
- Chronic lower respiratory disease: 13,097
- Accidents: 12,385
- Stroke, brain aneurysm: 11,523
- Alzheimer’s: 9,035
- Diabetes: 6,833
- Liver disease: 3,323
- Septicemia: 2,342
- Suicide: 1,195
- Kidney disease: 1,188
- Flu, pneumonia: 4,778

Assumptions and Baseline Data for best-case scenario in NYC:

- 19.9% of people in NYC already infected and all have immunity
- 60% of people need to be infected to develop herd immunity
- 21,436 COVID-19 deaths to-date with 254 per 100K people, but no additional deaths as implied by CDC study
- 10% of deaths would have occurred anyway from another cause
- NYC is similar to national annual death rate (~864 per 100K people) from 2017 (without COVID-19)
- Similar percentage of people subsequently infected require hospitalization
- In-hospital mortality of 21% during crisis conditions, about double what would be achievable in non-crisis situation
- Rest of epidemic up until herd immunity develops is achieved in “non-crisis” situation

Results

Death rate would need to increase to approximately 450 per 100K people to achieve herd immunity.

This would represent a 50% increase in baseline deaths for 2020 over 2017.
Flattening All The Curves

1st Wave
Immediate mortality and morbidity of COVID-19

2nd Wave
Impact of resource restriction on urgent non-COVID conditions

3rd Wave
Impact of interrupted care on chronic conditions

1st Wave Tail
Post-ICU recovery

4th Wave
- Psychic trauma
- Mental illness
- Economic injury
- Burnout

Health Footprint of Pandemic

Time
The number of cardiac arrests for March/April last year was 107, according to MCHD. For the same period this year, the number is 149.

“Honestly being at the hospital is probably safer than being at the grocery store, or the bank, or a variety of other businesses around Houston,” said Jason Knight, Chief Medical Officer for HMTW.
Sharp Decline in Patient Visits for Heart Attack and Stroke

Percent of Patient Visits for Heart Attack and Stroke During COVID-19 Pandemic at BIDMC in Boston as Compared to 2019

Heart Attack
p=0.04

Stroke
p<0.001

Note: difference-in-differences analysis
Possible Pandemic Scenarios

“Whichever scenario the pandemic follows (assuming at least some level of ongoing mitigation measures), we must be prepared for at least another 18 to 24 months of significant COVID-19 activity, with hot spots popping up periodically in diverse geographic areas.”

Trigger for Moving to Phase II:

• Sustained reduction in cases for at least 14 days;

• Hospitals in the state are safely able to treat all patients requiring hospitalization without resorting to crisis standards of care;

• The state is able to test all people with COVID-19 symptoms; and

• The state is able to conduct active monitoring of confirmed cases and their contacts.
Coronavirus Action Plan

National Covid-19 Testing Action Plan
Pragmatic steps to reopen our workplaces and our communities

1. Launch a 1-3-30 plan to dramatically expand COVID-19 testing

2. Launch a COVID community healthcare corps for testing and contact tracing

3. Create a COVID-19 data commons and digital platform

National Plan to Enable Care Finding and Contact Tracing

Recommendation:
~30 contact tracers per 100,000 population

Greater Houston:
~2,000 contact tracers

# TMC Early Warning Signs Dashboard

**WE ARE WATCHING A SET OF EARLY WARNING SIGNALS TO INFORM FACT BASED CONVERSATIONS ABOUT THE NEED FOR ADDITIONAL MITIGATION ACTIONS**

<table>
<thead>
<tr>
<th>Monitoring metrics</th>
<th>Warning signals for Houston MSA</th>
<th>Current status</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVID-19 case growth trend</td>
<td>Case growth trend can be used to suggest future peaks, focused on 7-day trend of: • Upward trajectory of new daily cases</td>
<td><strong>7 days</strong> of positive average growth in daily case trend</td>
</tr>
<tr>
<td>ICU bed occupancy</td>
<td>Defined to meet both the state guidance(^1) and the typical non COVID-19 patient occupancy</td>
<td><strong>71%</strong> of base ICU capacity is in use • <strong>15%</strong> COVID-19 patients • <strong>56%</strong> non COVID-19 patients</td>
</tr>
<tr>
<td>Daily new COVID-19 cases</td>
<td>Daily caseload growth can be used to estimate future ICU occupancy, assuming current trajectory continues</td>
<td><strong>Current COVID-19 caseload growth trajectory suggests base ICU capacity could be exceeded in 5 weeks</strong></td>
</tr>
<tr>
<td>TMC System equipment &amp; PPE needs</td>
<td>30 days supply can be estimated based on current burn rate: • <strong>300K</strong> N95 masks • <strong>20M</strong> gloves • <strong>1.6M</strong> gowns</td>
<td><strong>1.1M</strong> N95 masks • <strong>28M</strong> gloves • <strong>10.8M</strong> gowns (disposable + reusable)</td>
</tr>
<tr>
<td>COVID-19 testing capacity (daily)</td>
<td>At least 5,000-10,000 PCR tests per day available for hospital patients and healthcare worker surveillance (with &lt;48 hour turnaround)</td>
<td><strong>8,323</strong> PCR tests per day (maximum) • <strong>~2-48 hour</strong> turnaround time</td>
</tr>
</tbody>
</table>

*Note: These warning signals are focused on TMC care of patients and healthcare workers and should be viewed in full context of testing and tracing efforts from public health officials.*


*“TMC” refers to the group of individual hospitals and institutions that make up Texas Medical Center.*
COVID-19 POSITIVE DAILY CASE GROWTH TREND
Greater Houston Area

Monitoring threshold:
Threshold is exceeded by the occurrence of a positive 7-day average growth.

Current status:
8 days of positive average growth in the new daily case trend.

TMC Early Warning Signs Dashboard

1. Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery and Waller
Source: USAFacts.org (https://usafacts.org/visualizations/coronavirus-covid19-texas-map/)

TMC - Texas Medical Center
"TMC" refers to the group of individual hospitals and institutions that make up Texas Medical Center.
TMC Early Warning Signs Dashboard

**AVERAGE DAILY NEW COVID-19 POSITIVE CASES BY WEEK (MONDAY-SUNDAY)**

# Daily average new cases in Greater Houston Area

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
<th>Week 7</th>
<th>Week 8</th>
<th>Week 9</th>
<th>Week 10</th>
<th>Week 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>97</td>
<td>194</td>
<td>415</td>
<td>234</td>
<td>215</td>
<td>232</td>
<td>227</td>
<td>246</td>
<td>290</td>
<td>267</td>
<td>407</td>
</tr>
</tbody>
</table>

Weeks:
- Week 1: (3/23-3/29)
- Week 2: (3/30-4/5)
- Week 3: (4/6-4/12)
- Week 4: (4/13-4/19)
- Week 5: (4/20-4/26)
- Week 6: (4/27-5/3)
- Week 7: (5/4-5/10)
- Week 8: (5/11-5/17)
- Week 9: (5/18-5/24)
- Week 10: (5/25-5/31)
- Week 11: (6/1-6/7)

1. Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery and Waller

**TMC**

“TMC” refers to the group of individual hospitals and institutions that make up Texas Medical Center.

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.
Monitoring threshold:
Threshold is exceeded by the occurrence of a positive 7-day average growth

Current status:
3.4% average growth in the COVID-19 daily hospitalizations trend

Notes:
While new daily cases may fluctuate for a variety of reasons (e.g., testing), the daily hospitalization trend shows an objective view of how COVID-19 impacts hospital systems.
TMC COVID-19 ICU OCCUPANCY TREND

% ICU occupancy

- Phase 1 reopening (5/1)
- Phase 2 reopening (5/18)
- Daily COVID-19 ICU occupancy
- 7-day trend of COVID-19 ICU occupancy

Monitoring threshold:
Threshold is exceeded by the occurrence of a positive 7-day average growth

Current status:
1.0% average growth in the COVID-19 ICU occupancy trend

Notes:
While new daily cases may fluctuate for a variety of reasons (e.g., testing), the ICU occupancy trend shows an objective view of how COVID-19 impacts hospital systems.
SCENARIO: HURRICANE COMING PRESENTS NEW CHALLENGES WITH COVID-19

Scope of failure mode
- 2020 hurricane season is predicted\(^4\) to be worse than normal
- If a hurricane hits, many people could be seeking shelter (either refuge of last resort or post event regional medical shelter): 42,000\(^4\) people sought emergency shelter during Hurricane Harvey in 2017; nearly the same number\(^2\) of people sought shelter for Hurricane Ike in 2008
- Some severe hurricanes lead to facilities exceeding their maximum capacity (e.g., George R. Brown convention center housed 10,000+ people for Harvey when planned capacity was 5,000\(^3\))

Houston context
- A Category 4 hurricane – Hurricane Jackson - is predicted to hit Houston in 1 week, and experts are anticipating that many neighborhoods may lose water and electricity for multiple days
- While many will evacuate to their designated shelter zone (Dallas, Austin, or College Station), experts predict that up to 10,000 people will require “refuge of last resort” in Houston during the storm and ~5,000+ will require regional medical shelter after the storm passes due to uninhabitable homes
- Typical shelter plans could mean co-locating thousands of people across numerous Houston facilities until conditions are safe to return, including electricity and plumbing
- George R. Brown and NRG anticipate housing thousands of people for up to two weeks

Critical issues to address
- Houston remained steady at approximately 300 new COVID-19 cases per day; however, without a vaccine or treatment, traditional hurricane sheltering could lead to an uptick in infections – especially in vulnerable populations without homes

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This document is solely intended for use as a simulation for discussion and does not represent any specific forecasts or recommendations.
Goals for the New Normal

1. Houston Methodist will be the safest hospital system in the world
2. Volumes will be back to normal by July 1
3. Achieve at least breakeven by the end of the year
4. Maintain full operations during a second surge
5. Avoid furloughs, layoffs, and pay cuts

These goals will be the guiding principles for ongoing decision making during this transition to the new normal. We will continue to adjust these goals as circumstances change.
Average Number of Outpatient Surgery Cases per Weekday

Average Weekday Outpatient Surgery Cases

- March 2-6: 232
- March 9-13: 216
- March 16-20: 160
- March 23-27: 56
- March 30-April 3: 37
- April 6-10: 36
- April 13-17: 43
- April 20-24: 49
- April 27-May 1: 61
- May 4-8: 135
- May 11-15: 194
- May 18-22: 226
- May 26-29: 227
- June 1-5: 221
- June 8-9: 206
Best Practices

- Stay Home When Possible
- Work From Home If Possible
- Practice Physical Distancing (6+ feet)
- Wear a Mask in Public
- Exceptional Hand Hygiene
- Minimize Contact in Common Areas (Break Rooms)
No masking the divide on face coverings

Confusing guidelines, personal beliefs drive Houston and’s decisions.
Efficacy of Face Masks in Preventing Virus Spreading

- Meta-analysis of 21 studies
- Use of masks by healthcare workers and and non-healthcare workers can reduce the risk of respiratory virus infection by 80% (OR=0.20, 95% CI=0.11-0.37) and 47% (OR=0.53, 95% CI=0.36-0.79)
- Study lacks details regarding types of masks
• Outward protection for cloth masks has been studied for decades
• Inward protection for cloth masks is less clear

"No direct evidence indicates that public mask wearing protects either the wearer or others. Given the severity of this pandemic and the difficulty of control, we suggest that the possible benefit of a modest reduction in transmission likely outweighs the possibility of harm. Reduced outward transmission and reduced contamination of the environment are the major proposed mechanisms, and we suggest appealing to altruism and the need to protect others.”
Safety of Airline Travel

- “The ventilation system requirements for airplanes meet the levels recommended by the Centers for Disease Control and Prevention for use with covid-19 patients in airborne infection isolation rooms.”

- Passengers should:
  - Do not travel if you are sick
  - Wear a mask
  - Wash hands
  - Keep overhead ventilation on and pointed down
  - Maintain social distancing to the extent possible

https://www.washingtonpost.com/opinions/2020/05/18/airplanes-dont-make-you-sick-really/